

[Message from  
The President](#)[Up Close](#)[Activity Report in  
the Fiscal Year of 2012](#)[Site Data](#)[Related Information on  
CSR Report](#)[Company Overview /  
CSR Management](#)[Yokohama Rubber CSR Web site](#) > Activity Report in the Fiscal Year of 2012

## Activity Report in the Fiscal Year of 2012

### Activity Report in the Fiscal Year of 2012

The Yokohama Rubber Group has prepared this report to show our stakeholders what our ideas are, what we achieved in FY2012, and what issues we face as we strive to build a trusted identity as a contributing member of the global community.

[▶ Corporate Governance and Compliance](#)[▶ Environmental Preservation](#)[▶ Together with our Customers](#)[▶ Together with our Employees](#)[▶ Together with our Business Partners](#)[▶ Together with our Shareholders and Investors](#)[▶ Together with our Society](#)

### Activity Report in the Fiscal Year of 2012

[▶ Corporate Governance and Compliance](#)[▶ Environmental Preservation](#)[▶ Together with our Customers](#)[▶ Together with our Employee](#)[▶ Together with our Business Partners](#)[▶ Together with our Shareholders and Investors](#)[▶ Together with our Society](#)[▲ Go to Page Top](#)

[Message from  
The President](#)
[Up Close](#)
[Activity Report in  
the Fiscal Year of 2012](#)
[Site Data](#)
[Related Information on  
CSR Report](#)
[Company Overview /  
CSR Management](#)

[Yokohama Rubber CSR Web site](#) > [Activity Report in the Fiscal Year of 2012](#) > Corporate Governance and Compliance



## Corporate Governance and Compliance

### Corporate Governance and Compliance

Yokohama Rubber Group is making every effort to fortify and improve the support system for corporate governance to be established in order to realize management with transparency and fairness under our Corporate Philosophy. Thereby, this is becoming the management body to maintain our ever evolving corporate value in order for our management to continue to win unshakable credibility.

#### Corporate Governance Support System

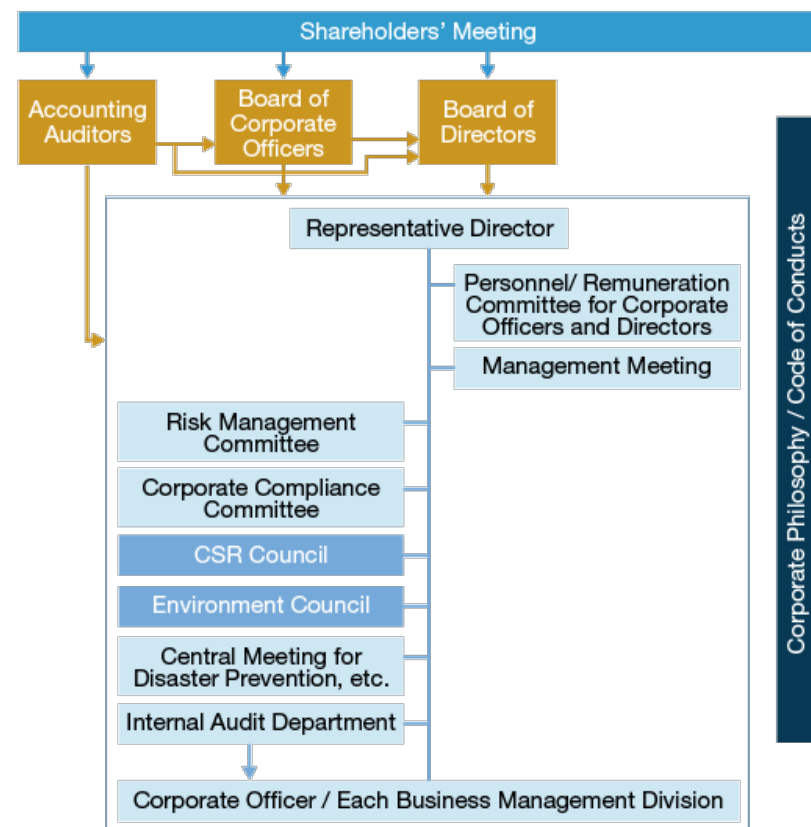
Our support system of corporate governance is on top of various organizations stipulated under Companies Act (General Shareholder's Meeting, Representative Director, Board of Directors, Board of Auditors, and Accounting Auditors). We have also deployed a Corporate Officer System in order to ensure prompt management decision making and execution of work operations by making clear the supervision of our management and execution of work operations. Also, in order to fortify strategizing functions in our top management, we conduct deliberation to understand the current status of various business schemes and business strategies by holding Management Meeting among our Directors as core members. The Chair of the Board Meeting is our Chairman and cannot serve as a Corporate Officer at the same time. Furthermore, at the 137th General Shareholder's Meeting held on March 28, 2013, a proposal was made and approved to select one candidate as an External Director. Under our systems, Corporate Auditors can get know the status of our business operations by attending various important meetings or committees such as the Management Meeting. We have three pillars in our auditing system; the audits done by our Corporate Auditors who supervise work execution by our Directors, accounting audits done by our independent accounting auditors as external audits, finally, the audits done by our Internal Audit Department for work operation by our each corporate division and group companies, plus accounting audits. They function by maintaining each other's independency; by establishing the three pillars of the audit system, our Corporate Auditors can fortify the function of Corporate Auditors by obtaining information from our Accounting Auditors and Internal Audit Department in a timely manner. Also, in order to secure transparency and fairness in appointment and various benefits of our Directors, we will determine them at the Board of Directors' Meeting by establishing a Personnel/Remuneration Committee for Corporate Officers and Directors followed by our review. We have deployed the Merit System so that the part of their remuneration is in proportion with our actual business performance. Also, the measurement for critical matters such as conflict of interest will be determined in accordance with the Regulations of our Board of Directors.

### Activity Report in the Fiscal Year of 2012

#### Corporate Governance and Compliance

- ▶ Environmental Preservation
- ▶ Together with our Customers
- ▶ Together with our Employees
- ▶ Together with our Business Partners
- ▶ Together with our Shareholders and Investors
- ▶ Together with our Society

## Corporate Governance Supporting System (as of March 29, 2012)



▲ [Go to Page Top](#)

## Improvement of our Corporate Governance System

We have made resolutions under the "Basic Guidelines for Corporate Governance in Accordance with Companies Act" during our Board of Directors' Meeting in May 2006. Not only do we follow up with their activity status every year, but also we keep making further enhancements such as our review by aiming for clearer description of the "Guidelines of the Elimination of Anti-Social Behavior" in April 2009. Also, to comply with the J-SOX Law effective from the fiscal year of 2008 (evaluation of support system for financial account in accordance with Financial Instruments and Exchange Act), it has been confirmed that our corporate governance system is effective both in internal and external evaluation in the fiscal year of 2012. We will continue to make improvements on this aspect as well in order to maintain our sustainable and effective functions.

▲ [Go to Page Top](#)

## Risk Management Support System

We have established a Risk Management Committee to manage risks in a cross-sectional manner and handle properly anything that may impact our company management greatly. Our Risk Management Committee has two functions; to "act promptly in case of any emergency situation occurred" and to "confirm what to do towards potential risks and establish a meticulous risk management supporting system". We have divided potential risks towards the entire Yokohama Rubber Group into Safety, Earthquake/Fire, Compliance, Environment, and so on; followed by our development upon setting up of guidelines and measurements from each Committee and Body for Meeting. Also, each of our business units is addressing not only the preceding descriptions, but also various risks related to quality and business management.

In the wake of the Great Eastern Japan Earthquake that struck the Tohoku region on March 11, 2011, we established a "Central Disaster Handling Division" under our President as the Head, to handle the emergency situation right after the earthquake broke out. The Central Disaster Handling Division gave instructions to our employees on duty remaining in our company premises and office buildings, understanding of damage situation both in human and facilities, any measures to avoid the effect on our customers, and relief goods for our operation sites in the affected area and its surrounding areas. Our Risk Management fulfilled its duties in a sense but it became clear that there are so many areas for further inspection and enforcement needing to be made. We will thereby evaluate the impact of the earthquake in a more holistic way to fortify our risk management support system. We have made efforts to organize our response to changes in the expected intensity and tsunami height resulting from a coupled earthquake epicenters in the Tokai, Minami Tokai and Nankai areas, as released by the Cabinet Office of Japan on March 30, 2012. In order to achieve this, we should not ignore any of our activities on normal days; we will continue to work more on our PDCA activities which is to sample any possible risks, discuss what to do with them, let the relevant personnel know about them, followed by our verification.

## Our Approaches for Corporate Compliance

### ■ Our Basic Notion of Corporate Compliance

Our basic notion of Corporate Compliance is "not just to pursue operational profit, but also to enhance our presence as a corporate citizen by respecting social ethics, high credibility, and fair business, while proactively engaging in the environmental protection".

### ■ Our Supporting System for Corporate Compliance

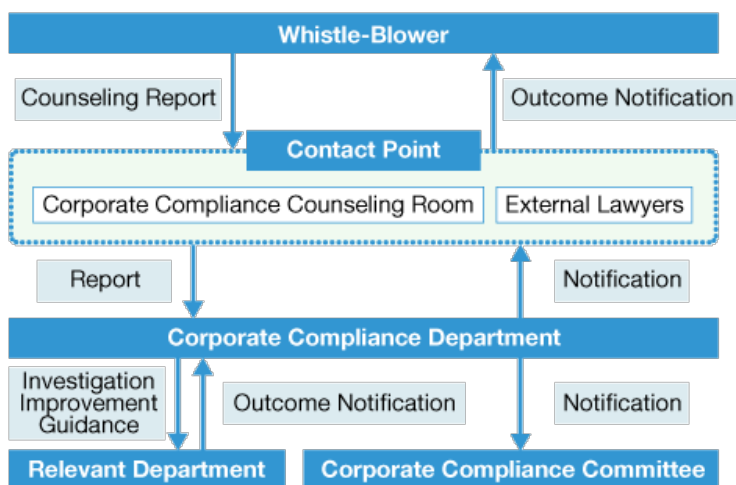
We are holding meetings under the "Corporate Compliance Committee" to review and confirm any incidents related to corporate compliance and activities as to its enlightenment four times every year. Our President has been appointed as the Committee Chair and its Secretariat is from our Corporate Compliance Department. Every division in Yokohama Rubber Group is placed with personnel who belong to the Corporate Compliance Department as well, to continue to share the progress of the activities in internal enlightenment and related information in the workplace. In our domestic Group Companies as well, we have appointed our managers to facilitate each of them to develop the same level of activities. We are aiming to do the same for our overseas offices, too; we have completed the appointment of our managers to facilitate all our overseas business locations since the fiscal year of 2010.

### ■ Whistle-Blowing System (Corporate Compliance Hotline / General Counseling Room)

The Corporate Compliance Hotline refers to the system to entertain even anonymous whistle-blowing as our Corporate Compliance Department and our external legal office as contact points, being in place in accordance with Whistle-Blower Protection Act. You can find its telephone number, fax number, and e-mail address on "Corporate Compliance Card" to be distributed to all our domestic Yokohama Rubber Group's employees. There were 39 reports in the fiscal year of 2012.

The General Counseling Room is the contact point where all our internal email users can utilize as to any doubt or anxieties at work related to Corporate Compliance. Each case is handled by personnel from the Legal Department. In the fiscal year of 2012, we received 26 cases of questions and concerns for items to confirm or seeking advice.

#### Whistle-Blowing System (Corporate Compliance Hotline)



\*We will notify with the outcome for whistle-blowers who had identified themselves.

## ■ Activities on Seminars and Various Enlightenment

We are trying to be effective in order to have our employees equipped with general knowledge as basic knowledge of Corporate Compliance by combining it with special contents they need to take note of at work. In the fiscal year of 2012, continuing from the fiscal year of 2011, we focused on the education towards our expatriates overseas in order to enhance our Corporate Compliance Support System overseas; and also focused on legal compliance and harassment training with management personnel at affiliates.

### Seminars Conducted (fiscal year of 2012)

Name	Number of participants (people)
New employee compliance training	48
Domestic subsidiary compliance training	1,085
Managerial antitrust law course	277
Foreign language contract reading course	149
Pre-departure orientation for overseas dispatch	46
Global representative training	10
Russia competition law training	5
Other	13
Grand total	1,633

## ■ Global Compliance Meeting

The Global Compliance Meetings that were launched last year in which persons in charge of compliance and legal affairs from our overseas subsidiaries gather were held 2 times this year and participated in by 11 subsidiaries. If a compliance violation occurs at an overseas subsidiary, local staff must respond in accordance with local laws. This meeting was established in order to foster a consistent approach globally in terms of local staffs' awareness and ability to identify compliance violations. Accordingly, it was very beneficial for learning about the levels of compliance at each company.

## ■ Privacy Policy for Employees

We strictly manage employees' personal information by obtaining prior consent by quoting the purpose of its usage. We understand the importance of employees' personal information and ensure its proper treatment; we also let our employees know through our internal intranet that we continue to take measures to protect their personal information.

## ■ Measurement against any Violations

- No sanctions against Anti-Monopoly Acts have been imposed on our company.
- No sanctions against fraudulent accounting practice, any discrimination or misconducts at workplace have been imposed on our company.
- No sanctions owing to any violation against environmental regulations have been imposed on our company.
- No complaints have been lodged over the loss of our customers' data.
- There has been the following case of a breach confirmed against the law with regards to the supply of products, services, and their usages.

Unregistered Sales of toluene and methyl ethyl ketone

In the past, we have sold toluene and methyl ethyl ketone to installers of industrial products without registering as a business conducting general sales of poisonous and deleterious substances. This was discovered in April 2012 after being pointed out by a business partner. The solvent was switched to a product not subject to the Poisonous and Deleterious Substances Control Law and on August 23 the chain of events were reported to the Health and Welfare Office Manager in Hiratsuka, Kanagawa Prefecture.

## Environmental Preservation

### Environmental Preservation

#### Environmental GD100

Following the principle of dealing fairly with society and valuing harmony with the environment, we shall assert our world-class strengths in technologies for protecting the environment.

- Continued improvement of environmental management.
- Action to combat global warming.
- Contributing to the creation of a sustainable recycling society.

#### GD100 guidelines for action on the environment

For the sake of future generations and this irreplaceable planet, we shall act to protect the environment.

##### Practice of global environmental management

We will adopt consistent, high-level environmental management practices at all operations worldwide.

##### Contribution to society through manufacturing

We will take action to minimize the environmental impact in all products.

##### We will take action to protect the environment as a duty to society by practicing top-level environmentally conscious production.

All industrial waste will be recycled.

##### Improvement of communication with society and local communities

#### Yokohama Rubber Environmental Policy

Following the principle of dealing fairly with society and valuing harmony with the environment, we shall assert our world-class strengths in technologies for protecting the environment.

1. Yokohama Rubber will initiate measures considerate of the environment in all of its activities as well as make all of its manufactured goods environmentally-friendly products. Additionally, we will deepen communication with stakeholders as well as strive to make contributions to local communities and society as a whole.
2. Yokohama Rubber will strengthen its environmental management system to become a company trusted by its stakeholders and will continually strive to help improve the environment through the mitigation of its impacts on the environment as well as through the prevention of environmental pollution and sensory nuisances using preemptive approaches.
3. Yokohama Rubber will comply with all related laws, regulations, and agreements as well as endeavor to continually implement activities that help improve the environment.
4. Yokohama Rubber will strive to prevent global warming, conserve energy and resources as well as promote resource recycling aimed at the fulfillment of a recycling-oriented and low-carbon society.
5. Yokohama Rubber will strive to conserve biological diversity and use organic resources sustainably in its business activities.

### Activity Report in the Fiscal Year of 2012

▶ Corporate Governance and Compliance

#### ▼ Environmental Preservation

Environmental Management

Environmentally-Friendly Products

Reduction of Greenhouse Gas Emission

Utilization of Natural Resources / Reduction of Industrial Waste

Emission Provision onto Water, Air, and Soil

Management of Chemicals

Biological Diversity

▶ Together with our Customers

▶ Together with our Employees

▶ Together with our Business Partners

▶ Together with our Shareholders and Investors

▶ Together with our Society



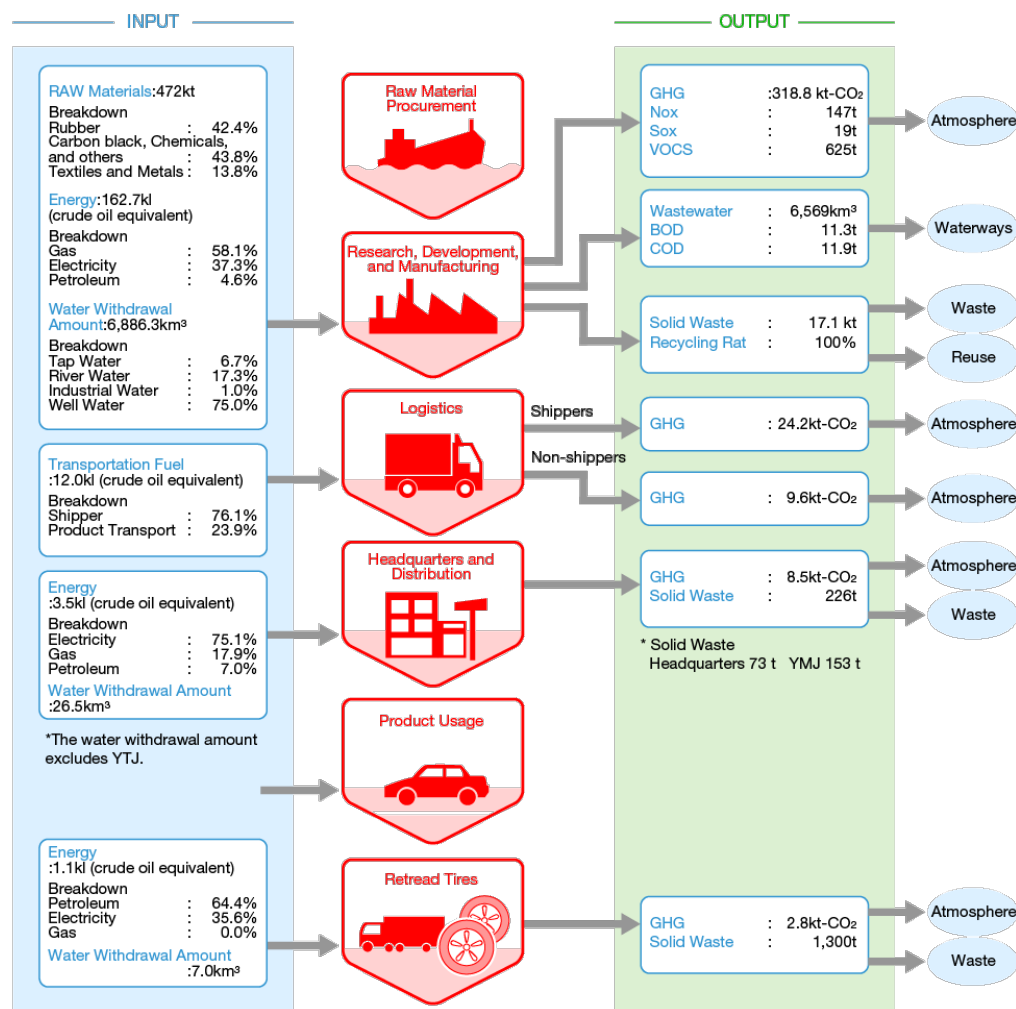
6. Yokohama Rubber will promote harmony with local communities as part of its commitment to work with and become a company that is trusted by local communities.
7. Yokohama Rubber shall publish this policy and make it known to all.

November 15, 2011

Director and Managing Corporate Officer, General Manager,  
Corporate Social Responsibility Division  
The Yokohama Rubber Co., Ltd.

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## Overall Picture of Environmental Burden



\* GHG emission is calculated based on the actual emission coefficient.

### <Statistics Source>

Research, Development, and Manufacturing:  
Yokohama Rubber's 8 domestic operation sites  
Headquarters and Distribution:  
Headquarters Building, YTJ, Tire Distribution Companies, YMJ  
Retread Tires:  
Yokohama Tire East Japan Retread Co., Ltd. and Sanyo Retread Co., Ltd.

▶ Environmental Management

▶ Environmentally-Friendly Products

▶ Reduction of Greenhouse Gas Emission

▶ Utilization of Natural Resources / Reduction of Industrial Waste

▶ Emission Provision onto Water, Air, and Soil

▶ Management of Chemicals

▶ Biodiversity

## Environmental Preservation

### Environmental Management

[Guidelines](#)
[Achievements](#)

#### Guidelines

#### Supporting System of CSR & Environmental Affairs

Yokohama Rubber has established a system to plan for and promote important social responsibility issues facing the entire Yokohama Rubber Group, with the ultimate goal to build a trusted identity as a contributing member of the global community. The CSR Council led by the Chairman and CEO as well as the Environmental Council chaired by the President serve as the supervising bodies that promote CSR and environmental management. Each of these councils meets twice per annum. The CSR Council deliberates safety, quality, human rights, labor practices, social contribution activities, corporate governance and compliance matters. The Environmental Council evaluates the performance of the Yokohama Rubber Group's environmental activities and the progress made in response to issues, and proposes improvements for subsequent fiscal years.

We also have three task forces, six committees, and one sub-council that promote CSR and environmental activities as sub-bodies within both councils. To practice consistent and high-level environmental management at all of our overseas business locations, we hold a Global Environment Council meeting each year, which is a gathering of managers from our overseas business locations. Twenty people, including from major overseas factories and core distribution subsidiaries, attended the FY2012 event held on December 14. On the day of the meeting, all attendees engaged in a discussion focusing on environmental policies and initiatives. This helped to confirm the further strengthening of CSR activities and environmental management at our overseas business locations.

[Click here to refer to our Supporting System of CSR and Environmental Promotion Framework](#)

#### Enforcement of Global Environmental Management Based on ISO14001

We aim to keep up with the high-quality environmental management under the same standard both in domestic and overseas group companies; thereby we have placed ISO14001 which is the international standard of Environmental Management System as the basis of our management.

We are trying to get all our operation sites to obtain ISO14001; so far, a total of 15 operation sites in Japan, comprising ten from Yokohama Rubber and five from our group for domestic operations have obtained it, whereas overseas a total of 13 operation sites have been certified.

In addition, our non-manufacturing sites are promoting environment management in accordance with 'Environment GD100' and our approach to the environment. The Yokohama Rubber head office in Japan and a Group distribution subsidiary in Australia have acquired ISO14001 certification, under which they are further advancing their environmental management.

In the fiscal year of 2012, we aimed to acquire blanket ISO14001 certification for the Yokohama Rubber head office as well as 10 production sites in order to further integrate our environmental management.

### Activity Report in the Fiscal Year of 2012

▶ Corporate Governance and Compliance

▼ Environmental Preservation

#### Environmental Management

Environmentally-Friendly Products

Reduction of Greenhouse Gas Emission

Utilization of Natural Resources / Reduction of Industrial Waste

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▶ Together with our Customers

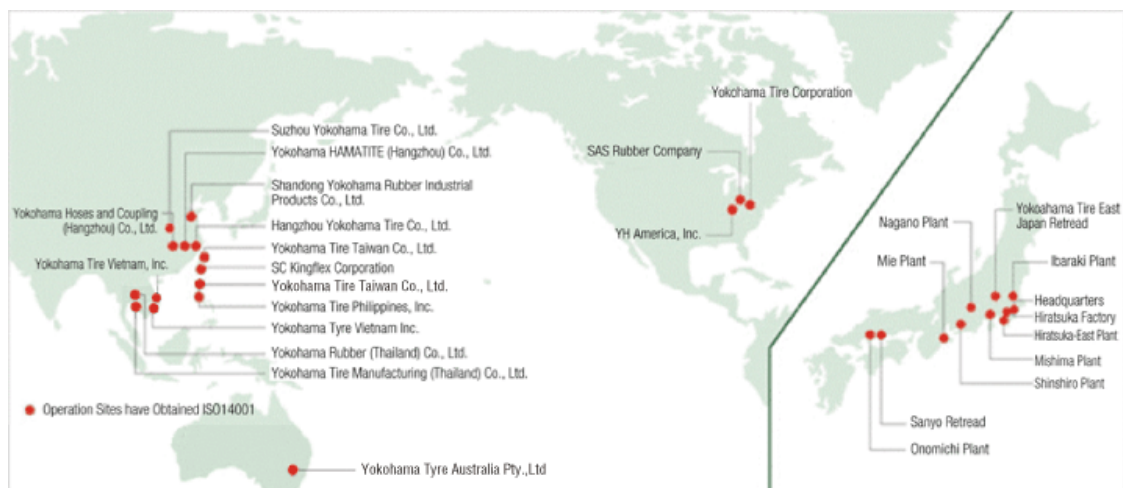
▶ Together with our Employees

▶ Together with our Business Partners

▶ Together with our Shareholders and Investors

▶ Together with our Society





[Click here to refer to our Participation in Worldwide Approaches.](#)

▲ [Go to Page Top](#)

## Achievements

### Execution of Comprehensive Environmental Audit

We are conducting audits as to continual progression for improvement on the management system of environmental management, improvement on the environmental performance, and minimizing environmental risks per operation unit by conducting internal audits of business locations as a first-party audit, corporate wide environmental audits by the CSR and Environmental Affairs Department as a second-party audit, and an external audit as a third-party audit every year (all audits are based on ISO14001). Also, our CSR and Environmental Affairs Department is checking and verifying the score of self-evaluation at each business site in accordance with the guidelines of the "Environment GD100" for domestic distribution companies within our group. Incidentally, there was no suspected item as to any violation against environmental legislation among all the auditing items in the fiscal year of 2012.

#### ■ Internal Audit(ISO14001)

According to our manual of ISO14001, we conducted likewise at all our operation sites in the fiscal year of 2012 as well.

Through our internal audit, we can make sure of our continual leverage of the function levels from our environmental management system. We conducted our audit not just to operate and maintain the "Environmental Management System", but also by setting our common themes as "whether our system is duly functioning for our purposes, whether each of our group is walking the talk by reviewing and setting up the guidelines, purposes, and target by shifting more focus on the reduction of environmental burden even more proactive manners during their normal business activities."

#### ■ Corporate-Wide Environmental Audit

In order to make overall improvements to environmental management and work towards the cross deployment of key issues, corporate wide environmental audits are conducted by the CSR and Environmental Affairs Department.

In the fiscal year of 2012, we thoroughly audited the chemical substance control system mainly for our production sites. Also, we were promoting various activities to contribute to the society and implementing checks focused on the level of communication with local residents nearby which is initiated by each of our operation site.

#### ■ External Audit (ISO14001)

During FY 2012, an integrated EMS certification registration audit was conducted by an ISO audit registration organization that covered all of Yokohama Rubber's production bases and its Headquarters, and as a result certification was acquired. No serious flaws with our management system were pointed out during the audit. Going forward the scope of the integration certification will be expanded to include domestic production subsidiaries.

▲ [Go to Page Top](#)

### ■ Environmental Training

We have incorporated environmental training as one of the subjects for newly hired employees. Also, we are holding a "Techno College" which is CSR and environmental training by targeting our technicians and staff member who have been with our company for two to three years. Incidentally, a total of 46 persons attended this seminar in the fiscal year of 2012.

Meanwhile, in order for our managerial and supervisor level employees to thoroughly understand ISO14001, we are conducting "training classes for environmental internal auditor". Including 174 personnel who have completed this course to get certified in the fiscal year of 2012, currently total 1,420 personnel have been registered and are already active as our internal auditors.

### ■ Enhancement of our Personnel Enlightenment

As part of our activities for personnel enlightenment for the environment, we are conducting something to aim for improvement by getting involved with our entire personnel by sending our President's message towards all our employees in the Energy Saving Month in February and the Environment Month in June every year. During our Environment Month in June, we are open for any proposals with regards to energy saving from all our employees, followed by awarding the ones among all the entries which have brought about significant improvement effect for energy saving. Also, in addition to our proposals for improvement, we are internally gathering environmental slogans and environmental posters. In the fiscal year of 2012, we were able to receive 4,648 entries for slogans and 119 entries for posters.

## 2012 Environmental Poster



Nagano Plant,  
Manufacturing Division  
Manufacturing overhead  
Daisuke Miyashita  
(Hiroyuki)



Mie Plant,  
Technology Division  
Yuzuki Ukyo  
(Nanako)



Mishima Plant  
Valcanning  
Kazuhide Watanabe



Research Department  
Research Group 3  
Sumi Tanaka



Industrial Products Plant,  
Manufacturing Division 2  
Asuka Tsuda  
(Shinya)



Hiratsuka East Plant  
Quality Assurance Division  
Megumi Matsushima



Aviation Parts  
Manufacturing Division 2  
Yoshihiro Kato



Ibaraki Plant  
Production Technology Division  
Manami Otsu



Shinshiro Plant  
Manufacturing Division 1 Smelting  
Takaaki Nihashi



Tire Testing Department  
Testing Group 2  
Masaki Makino



Ibaraki Plant,  
Manufacturing Division  
Hisao Osono



Onomichi Plant  
Hamagomu Logistics Co., Ltd.  
Chushikoku Branch  
Yoshiaki Iijiro



Mishima Plant  
Manufacturing Division 2  
Haruna Sato  
(Shun)



Thank you for  
all your submissions.  
CSR & Environmental  
Affairs Department

### ■ President's Award for Environmental Contribution

As a part of our strategy to raise awareness and enlighten with regards to the environment through our work operation, we have been giving out a "President's Award for Environmental Contribution" through our system. The fields for the award consists of a "Factory Award" for the production group, a "Products Award" for the groups of development and designing of environmentally-friendly products, and an "Office Award" for secretarial groups such as sales and administrative teams, as well as a "Special Award" that has been established for especially unique product development efforts and initiatives.

We select these upon screening and reviewing as to their activities for the past one year per case description of their field from all our groups of our entire corporation. The award winning groups from each award will receive the certificate from our President every year in June.

By implementing this "President's Award for Environmental Contribution", it is evident that all our employees can have even better awareness of "Getting involved with environmental contribution" from their daily operation work.

## The President's Award for Environmental Contribution in the Fiscal Year of 2012

	Fields of Environmental Contributions Award		Award Winning Groups
Factory Award	Top Award for Excellence		Shinshiro Plant / Shinshiro-Minami Plant
	Award for Excellence		Ibaraki Plant
	Award for Excellence		YOKOHAMA TIRE MANUFACTURING(THAILAND)CO.,LTD.
	Award for Excellence		Nagano Plant
	Award for Excellence		Yokohama Mold Co., Ltd.
Product Award	Top Award for Excellence	DUOTEX Conveyor Belt	Industrial Products Technical Department, Development Group 1
	Award for Excellence	High Surface Pressure Rubber Bearings VS-1	Industrial Products Technical Department ,Development Group 2
	Award for Excellence	TBS Ultra-Flat Tire for North America	Tire Design Department 3 / Tire Production Technology Department
Office Award	Top Award for Excellence		YTJ Nagano Company
	Award for Excellence		YMJ Chugoku Company
	Award for Excellence		YMJ Tokyo Hamatite Company
	Award for Excellence		YMJ Hokkaido Company
Special Award	Recycling Award Lavatory Module		Aerospace Engineering Department.
	Smooth Stopping Award iG 50 (Ice Guard 5).		Tire Design Department 1
	Biological Diversity Award		Mie Plant

▲ [Go to Page Top](#)

## Compliance with Various Legal Restrictions

### ■ Zero Environmental Accidents

There was no incident of Environmental Accident in the fiscal year of 2012.

### ■ Strengthening our Compliance with various Regulated Parameters

From fiscal year of 2008 onwards, we are trying to strengthen our control measures by setting up our voluntary control values in order to ensure our compliance of regulated parameters. We are reviewing our voluntary control values on a regular basis based on our measurement value in the past by reflecting onto statistical method. Also, we are fortifying our control system by internally defining terminologies such as "Environmental Trouble, Major Environmental Near-Accident, and Environmental Near-Accident". We will act immediately for corrective measures in the event of any environmental trouble or major environmental near-accident occurring.

### ○ Definition of Terminologies

- Environmental Accident
  1. An accident that causes significant damage outside the company and was covered in the newspaper or other news media.
  2. An accident that results in a government cease and desist order, such as improvement order or suspension of use order.
- Environmental Trouble
  1. A situation that results government warning or instruction.
  2. A situation where the company failed to meet a pollution regulation requirement.
  3. A situation where an environmental pollutant such as carbon, waste oil or solvent is leaked or emitted into the environment from a factory, resulting in minor pollution.
  4. A situation deemed as an environmental trouble by the company's environmental officer (General Manager of the CSR & Environmental Affairs Department).
- Major Environmental Near-Accident
  1. A near-accident in which environmental pollution was not caused outside the business site, but a liquid pollutant leaked or was at risk of leaking into the drainage canal or the street gutter connected to the drainage canal.

2. A situation deemed as a major environmental near-accident by the company or site's environmental manager because it has been identified as an emergency situation in advance after it exceeded the predetermined environmental impact score set for each site.
- Environmental Near-Accident
    1. A minor leakage of a liquid pollutant or scattering of a powdered pollutant not considered as an environmental accident, environmental trouble or major environmental near-accident above.
    2. A situation where the leakage of a liquid pollutant or scattering of a powdered pollutant was about to occur or was anticipated to occur.

## ■ Our Response to Environmental Troubles

There were three cases of environmental troubles (three cases in Onomichi Plant) in the fiscal year of 2012; we had thereby taken corrective measures accordingly.

For any environmental troubles unable to comply with regulated values, we reported to the governmental body immediately after such occurrence.

## ■ Our Response to Major Environmental Near-Accident

There were six cases of major environmental near-accident in the fiscal year of 2012; five cases for water quality (including non-conformity of voluntary control value of water discharge) and one case for atmosphere (including scattering of carbon); we thereby took corrective measures accordingly.

For major environmental near-accidents which exceeded their voluntary control values, we reviewed each case based on our measurement value in the past by reflecting onto a statistical method.

▲ [Go to Page Top](#)

---

[Message from The President](#)
[Up Close](#)
[Activity Report in the Fiscal Year of 2012](#)
[Site Data](#)
[Related Information on CSR Report](#)
[Company Overview / CSR Management](#)
[Yokohama Rubber CSR Web site](#) > [Activity Report in the Fiscal Year of 2012](#) > [Environmental Preservation](#) > Environmentally-Friendly Products

# Environmental Preservation

## Environmentally-Friendly Products

[Guidelines](#)
[Achievements](#)
[Case Introduction \(Tires\)](#)
[Case Introduction \(MBs\)](#)

### Guidelines

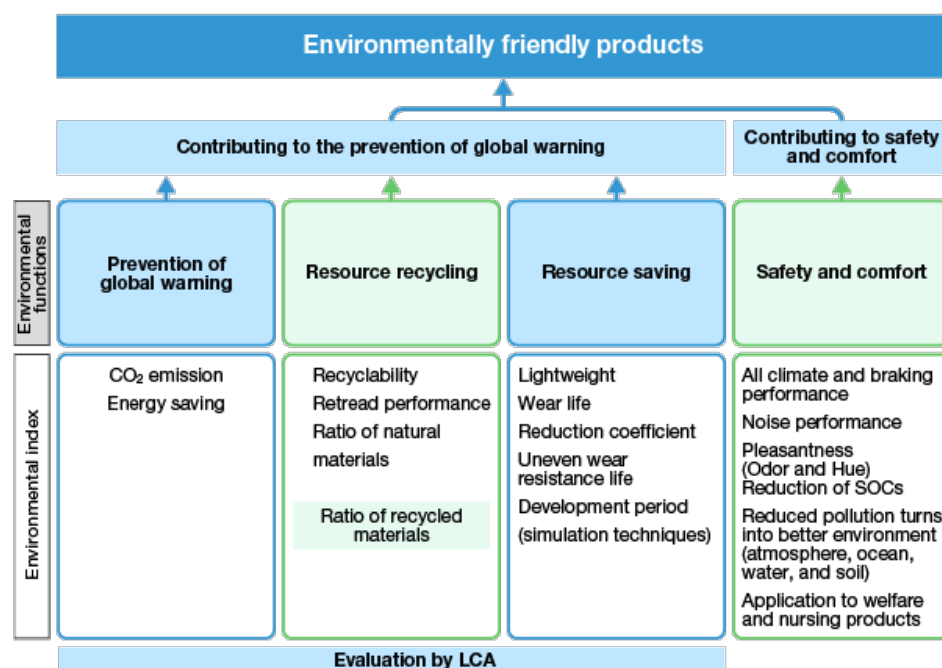
#### Our Notion for Environmentally-Friendly Products

It is the Yokohama Rubber Group's desire to continue to support co-existence and growth for both people and automobiles through providing tires as our main products. In order to achieve this, we wish to contribute to our customers' happiness and wellbeing by continually providing products that can meet diversified requirements such as not just tires to pursue environmental design, but also tires mainly for sport purposes that can incorporate environmental design whilst aiming to balance environmental design and the drivers' sense of joy for racing.

Furthermore, in our products other than tires, we work to develop environmentally-friendly products that contribute to reductions in greenhouse gas, reductions in chemical substances contained in products, and energy savings.

In terms of newly developed products, our definition of "Environmentally-Friendly Products" is products that exceed 5% or more than existing products on the evaluation average under four categories; "prevention of global warming", "resource recycling", "resource saving", and "safety and comfort" whilst no deterioration is observed from all categories. We aim for all the products to be environmentally-friendly products by 2017.

#### Four Pillars of Environmental Function and its Index



## Activity Report in the Fiscal Year of 2012

▶ Corporate Governance and Compliance

▼ Environmental Preservation

Environmental Management

### Environmentally-Friendly Products

Reduction of Greenhouse Gas Emission

Utilization of Natural Resources / Reduction of Industrial Waste

Emission Provision onto Water, Air, and Soil

Management of Chemicals

Biological Diversity

▶ Together with our Customers

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▶ Together with our Society



## System Creation so that only Environmentally Products can turn into Commodities

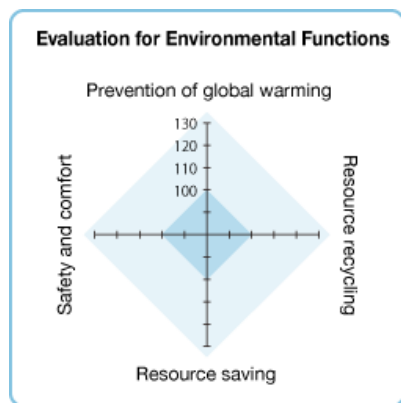
By using "Product Assessment Check Sheet" in new product development, Yokohama Rubber is screening our design adaptability to the environment. The Product Assessment Check Sheet refers to the scores in 17 items in total from planning to production stage of the products, CO<sub>2</sub> emissions during usage, ELV compliance in Europe, and so on. Upon conducting judgment of the total score both in initial development stage and prior to mass production, we only go ahead with mass production for products that can meet those standards.

Also, we are deploying our evaluation method called the Environmental Design Radar Chart in order to improve our company's comparison method of our products. This is our method to digitize by comparing with our benchmark (products in 1998) by roughly classifying environmental design into four categories; prevention of "global warming," "resource recycling," "resource saving," and "safety and comfort". Our evaluation is made more objective by digitizing the degree of improvement by comparing with our existing products.

Currently, we define our Environmentally-Friendly Products as ones that exceed 5% or more than existing products of each index on the average under four categories whilst no deterioration is observed from all categories; we strictly set the rules that any products other than environmentally products will not be approved as new products. By applying this, now, it is no longer easy to develop new products anymore as it has become compulsory even for special sport tires that used to require travelling performance only to clear the preceding criteria as well. We will continue to fulfill our responsibility as a contributing member of the global community as we have our systems in place so that "we will not produce other than environmentally-friendly products".

From now on as well, we will contribute to society through our manufacturing by utilizing our various performance simulation technologies and material technologies, not only to reduce rolling resistance, but by thoroughly discussing from the developing concept stage as to which items can meet the standards of environmentally-friendly products in the light of comprehensive aspects.

### Radar Chart of our Evaluation for Environmental Function



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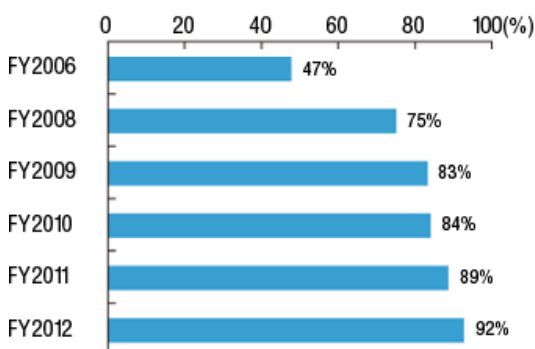
## Achievements

### Ratio of our Environmentally-Friendly Products in the Fiscal Year of 2012

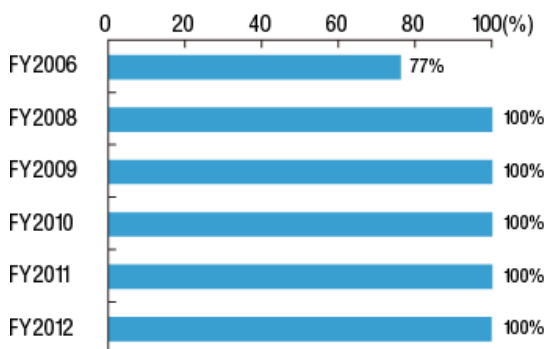
From the fiscal year of 2006 onwards, we started to aggregate the ratio of our environmentally-friendly products versus our entire product line-ups. We are calculating the share ratio versus both in our entire product line-ups and our new products; in the fiscal year of 2012, the share ratio in our entire product line-ups has resulted in 92% which is a 3 point increase compared to the fiscal year of 2011, whereas the share ratio in our new products has achieved 100% from the fiscal year of 2008 onwards.

From now on, we will continue to make various efforts to aim for 100% by the end of the fiscal year of 2017 as to share ratio in our entire product line-ups.

#### Share Ratio of our Environmentally-Friendly Products versus our Entire Product Line-Ups



#### Share Ratio of our Environmentally-Friendly Products versus our New Products

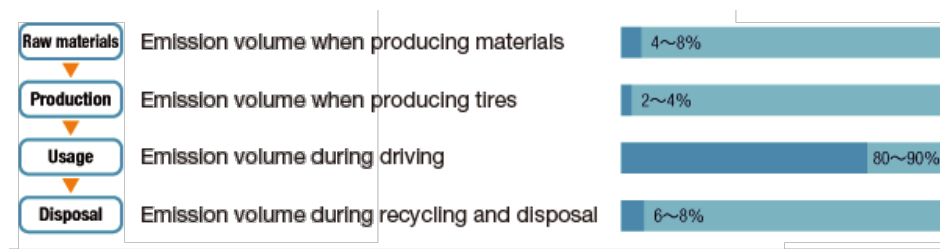


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## LCA Evaluation for Tires

LCA (Life Cycle Assessment) refers to the method to understand the environmental load (CO<sub>2</sub> emission) in numeric data of each stage of the products from production to disposal. For the case of tires, since 80 – 90% of CO<sub>2</sub> emission would take place during usage period of their entire life cycle. Yokohama Rubber is especially focusing on "coming up with environmentally-friendly products to realize low fuel consumption".



\*The graph above shows approximate values as to products from Yokohama Rubber

## Yokohama Rubber's Manufacturing Philosophy Imputed in "BlueEarth"

Yokohama Rubber has been pursuing technology and product development by focusing on the improvement of fuel consumption by reducing rolling resistance, along with our major launch of "eco tire DNA" since 1998 well ahead of our competitors. However, pursuing fuel efficiency and environmental friendliness would not suffice to fulfill our responsibility as a tire manufacturer. In order to win even better customer satisfaction, not just "fun" and "joy" that can contribute to motorization per se, we needed to realize product development of the next stage under a new concept of being "gentle to people and society". As a result of new technology and product development promoted for the purpose of achieving these performances, we released BluEarth AE-01 in 2010. In 2011 we released BluEarth-1 AAA spec which achieves top-ranking fuel economy and BluEarth RV-01 for RVs, while in 2012 we released BluEarth-A that achieves both environmental performance and high maneuverability. In this manner we have expanded our product lineup. Furthermore, we have also incorporated the new technologies fostered with BluEarth in other tires and attached "the BluEarth Technology Mark" to designate the tires that are equipped with these technologies.

\*New technologies that constitute "BluEarth Technology"

- Technology to maintain fuel efficiency and less hassle for maintenance work called "AIRTEX" – our endeavour to achieve "zero" air leak
- Natural material and material technology to reduce WET stress called "Orange Oil"
- Evaluation technology to digitize the relativity between human muscle force and stress called "Biological Monitoring"
- Technology for relativity detection between aerodynamics of the tires and travel resistance

BluEarth Technology Mark



## Technical Development aimed at a Sustainable Society

### ■ Aerodynamically-designed tires to achieve vehicular drag reduction technology

A car body's drag and a tire's roll resistance are major factors that impede with a vehicle's fuel economy, with drag accounting for 65% of a vehicle's resistance and roll resistance accounting for 20%.

While the concept of reducing drag on the tire itself by making tires slimmer and removing unevenness from tire sidewalls has been around up until now, by using tire design to changing the way air flows around a vehicle, Yokohama Rubber has approached research and development from the new perspective of reducing the drag for the entire body of the car.

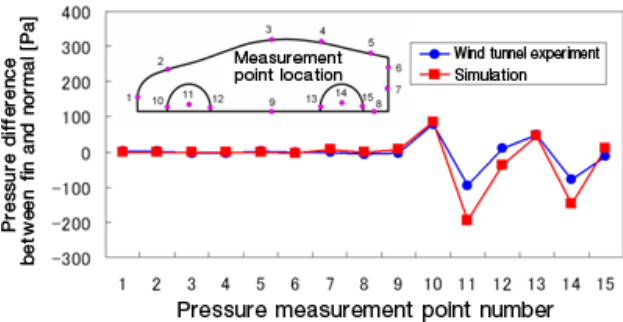
Although reducing roll resistance is a standard means for tires to support reduced fuel consumption, by using tire design to reduce drag it is possible to achieve reduced fuel consumption that both works against roll resistance while maintaining tire properties.

The low fuel-consuming BluEarth-1 tire that was released in March 2011 employs a dimple design that reduces drag. Through subsequent research it was determined that further drag reduction could be achieved by equipping fin projections on the inner sides of tire sidewalls.

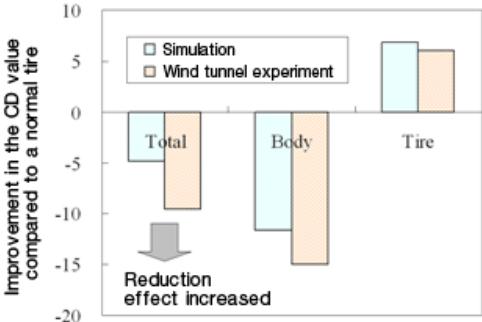
The EV (electric vehicle) concept that we developed in house and revealed at the Tokyo Auto Salon in January, 2013, AERO-Y, is equipped with proto-type tires that employ this design. In an aim for commercialization going forward, we will further advance technological development while giving consideration to matching between the wheel and tire while using means such as wind power simulations utilizing wind tunnel tests\* and super computers.

\* Tests using devices and equipment (wind tunnel) that artificially reproduce and measure actual wind flows that have been generated at a small scale

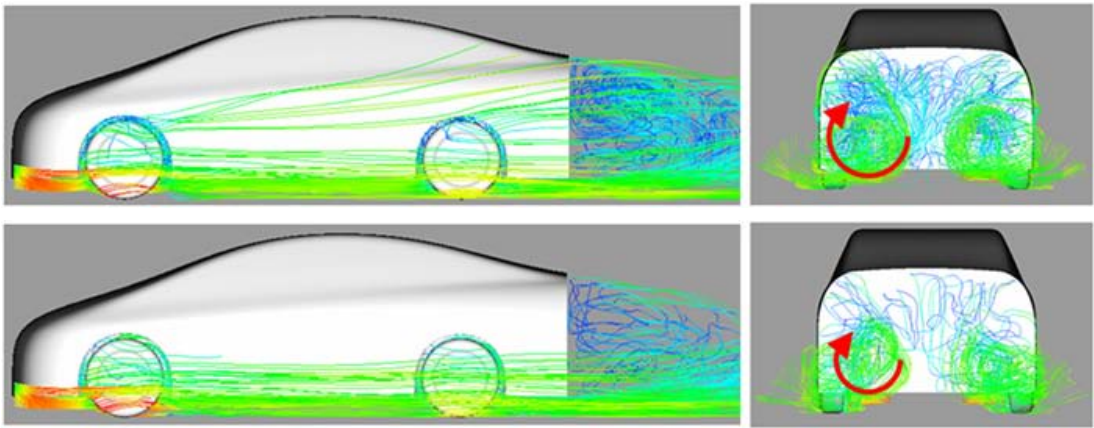
Comparison of pressure distribution



Comparison of CD value (The figures under "Tire" and "Body" represent the effects of each, while "Total" represents the effect of the vehicle overall. 1 count is 1/1,000)



Vehicle-side and rear streamline distribution (upper chart: normal tire, lower chart: inside fin tire)



Tire-related environmentally-friendly products

The fuel-efficient tire for passenger vehicles: BluEarth-A

The fuel-efficient tire BluEarth-A equipped with high maneuverability was newly added to the BluEarth series that protects the green Earth and its people. By employing two types of silica and increasing the quantity of orange oil in our Specialized Nano Blend Compound, we have been able to reduce rolling resistance and improve wet grip. As a result, we have achieved the A/b label within the grading system of the Japan Automobile Tire Manufacturers Association (JATMA).

Furthermore, the new design has employed an asymmetric tread pattern to secure high tread rigidity that supports high-power sedans while controlling deterioration of quietness during times of abrasion.

Compared with the existing product (Earth-1), the new product achieves a 20% improvement in wet breaking performance, an 11% improvement in wet stability (lap time), and a 7% improvement in dry stability (lap time) while achieving a 0.5 dB reduction in vehicle passing noise and a 4.4 improvement in JC08 mode fuel consumption (compared to the DNA ECOS). In this manner the tire achieves excellent total performance while being a more fuel-efficient tire that is friendly to the environment.



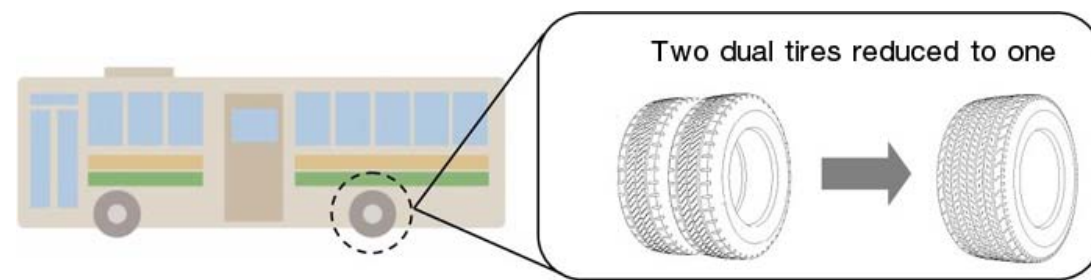
## ■ The ultra-flat single tire SPIRALLOOP belt structure for trucks and buses

With ultra-flat single tires it is possible to fit with one single tire the drive shaft and pivot of trucks and buses that are equipped with dual tires, which secures loading space and an improved ability to board and alight thanks to the lower floor, a reduction of weight that allows lower fuel consumption, and resource savings through reductions in volumes of waste rubber and CO<sub>2</sub> emissions.

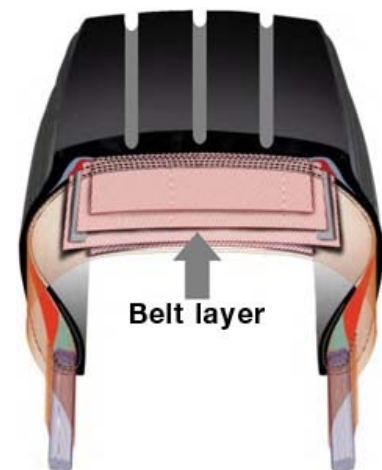
In the development of this ultra-flat single tire, with the conventional belt structure it was difficult to secure wear resistance and durability. The employment of the new SPIRALLOOP belt structure in response to this adds a zero degree belt formed through circumferential wrapping around the traditional belt structure. In doing so both environmental performance and tire performance (wear resistance and durability) were achieved.

Products that employ the SPIRALLOOP belt structure include the TY517E (435/45R22.5) which was released in Japan in 2009 for hybrid fixed route buses and the RY407, TY517 (445/50R22.5) which were released in North America in 2013 for trailers.

### Ultra-flat single tires



### Traditional belt structure for trucks and buses



## Products employing the SPIRALLOOP belt structure



Drive axle tire: TY517



Trailer axle tire: RY407

## ■ Studless tires for passenger vehicles: iceGUARD 5

“iceGUARD 5” was developed as a new product in “the iceGUARD” series for studless tires for passenger vehicles that incorporates the BluEarth concept.

In addition to further improvements to improve the basic function of studless tires of grip on icy surfaces, environmental consideration has been given by improving fuel efficiency.

For grip on icy surfaces, a basic function of studless tires, “new micro suction balloons” and “suction white gel” have been employed in the development of a “super-suction” rubber that achieves an approximately 21% improvement in the amount of water absorption compared to “the existing triple-suction rubber” product. Furthermore, an asymmetric tread pattern focused on improving grip on icy surfaces has been newly employed. This excellent grip on icy surfaces enabled through the synergy of newly developed compounds and newly developed tread patterns achieved a further improvement of 8% compared to the existing product which had established a favorable reputation.

The side profile technologies for the BluEarth RV-01, a premium low fuel consuming tire specialized for minivans were employed to improve fuel efficiency and contribute to the environment. By correcting the flexion of tire sides, this controls energy loss and reduces rolling resistance by 5% compared to existing products. The BluEarth Technology Mark has been imprinted as an attestation of the attainment of outstanding environmental performance of the tire side achieved through improved fuel efficiency.

Furthermore, the product received the Good Design Award in 2012 as a result of the new adoption of an asymmetric pattern design with a focus on improving grip on icy surfaces, the safety achieved through improved grip on icy surfaces, and its status as an environmentally-friendly product attained through improvements in fuel efficiency.

## The BluEarth Technology Mark imprinted on iceGUARD 5 and the tire side



**iceGUARD 5**  
iG50 FIVE

Receiving the Good Design Award in 2012

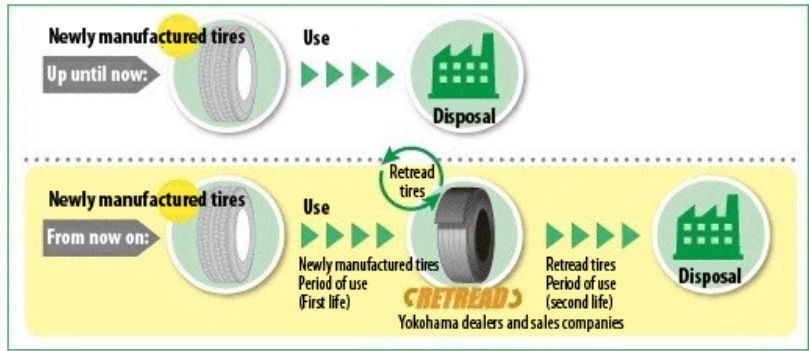


## ■ Retread tires

Retread tires are re-used tires in which a buff machine (a planning machine) is used to uniformly cut the tread surface of a tire that has been worn away through driving, after which new tread rubber is affixed and

vulcanized to restore the function of the used tire. They are also called retreaded tires. The reuse of resources reduces the number of waste tires and contributes to the reduction of CO<sub>2</sub> emissions that would otherwise be released in the tire production process. Demand for retread tires has increased in recent years because they are economical due to reduced costs. In addition to our existing products, the product lineup for retread tires includes products based on the Z.ENVIRONMENT concept of ultimate comprehensive environmental performance under the new tire brand of ZEN for trucks and buses. The products that have been released under this brand include ZEN 701ZE, which is a premium all-season tire that focuses on abrasion resistance; ZEN 702ZE-i, which is a premium all-season tire that focuses on fuel efficiency; ZEN 902ZE, which is a studless tire that focuses on fuel efficiency; and ZEN 903ZW, which is a studless tire that focuses on performance on snowy and icy surfaces.

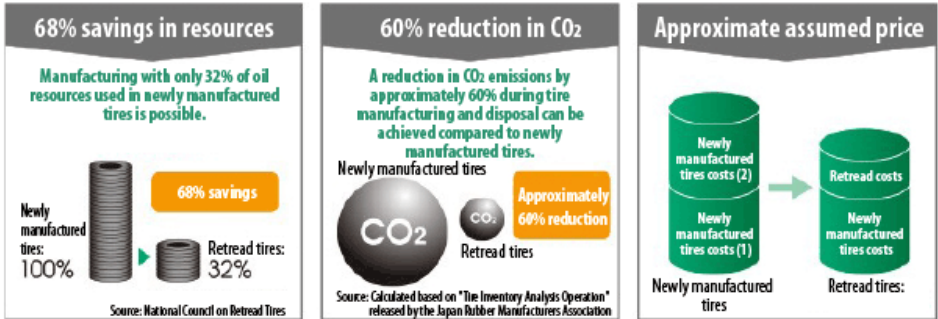
About retread tires



Retread tire manufacturing method



Benefits of retread tires



The ZEN retread tires lineup





**MB Group environmentally-friendly products that are applicable to a wide range of industrial fields such as land, ocean, and air**

### ■ 70 MPa resin hose for hydrogen stations

A hydrogen replenishment hose has been developed for use at 70 MPa hydrogen stations to serve as part of the infrastructure to promote the expansion of fuel cell vehicles that are expected to be the ultimate in eco-cars that do not emit air pollutants or CO<sub>2</sub> while driving. Through verification\* at 70 MPa hydrogen stations we have improved safety and workability during vehicle replenishment.

\*The commissioned project of New Energy and Industrial Technology Development Organization (NEDO))



### ■ A highly flexible and durable high-pressure large-diameter hose for large-scale construction machinery

The operating parts of construction machinery (power shovels, dumpers, etc.) are hydraulic, and hydraulic hoses serve the role of conveying that pressure. Among the many types of construction machinery, hoses used in machinery for excavating mine resources must not only be large and capable of high output, but because they are used in harsh environments, hydraulic hoses require high performance in all aspects, including supporting high-pressure, having large diameters, and being flexible. In the design of the high-pressure large-diameter hoses for mining construction machinery that we have recently developed, we have achieved better flexibility and higher durability than existing products through FEM analysis of hose movements using actual machinery and the optimization of construction and materials. In doing so we have reduced the frequency of hose replacement and contributed to reductions in waste materials.

### ■ Development of the general purpose Duotex conveyor belt that achieves both a long life and the ability to recycle

The Duotex series consists of general purpose conveyor belts optimal for carrying various loose items such as crushed stone, cement, wood chips, and lime. The series is mainly for use at locations such as stone pits, recycling yards, and fresh concrete plants in Japan (Figure 1).

With the recent renewal of the series, we newly developed highly-abrasion resistant rubber for the cover rubber in the Duotex series, a part which has a significant impact on the life of products. In addition to improving the basic function as a belt, reduced weight and composition with recycled materials is also achieved, making it an environmentally-friendly product that achieves a balance between having a long life and allowing for recycling. In terms of the belt structure, all of the core belt material is two-ply (two-layered), with the endless portion being more stable than existing products. In addition, by using the extremely flexible characteristics of the two-ply structure, it has become possible to make the pulley diameter smaller than in existing conveyor systems and an efforts was made to achieve more compact equipment design. The extensibility of the belt has been well received and the same level of low extensibility has been achieved as existing products (Figure 2).



Figure 1: The Duotex conveyor belt



Figure 2: Duotex catalog



## ■ Highly durable and reliable marine hose that supports new international standards

The marine hose that we have developed under the Seaflex brand has been developed as a marine hose that supports the new GMPHOM2009 standards established by the Oil Companies International Marine Forum (OCIMF) and formal certification has been acquired for all models (Figures 1 and 2). The GMPHOM2009 standards that have been revised for the first time in 20 years have stipulations that cover the manufacturing, specifications, and testing methods of marine hoses. The standards call for higher durability than in the past and have introduced a large number of strict conditions such as dynamic fatigue tests that take place up to 25,000 times.

Marine hoses are large hoses used in the marine transport of petroleum and crude oil, and are used for equipment such as systems carrying crude oil between tankers moored to buoys on the sea and equipment used in the production, storage, and shipment of floating petroleum and gas used in undersea oil field development. Because there is the risk of serious marine pollution incidents occurring if these hoses become damaged, they are required to be highly reliable against things such as oil leaks.



**Figure 1: Prototype testing dynamic torsion and bending status (formal certification test)**



**Figure 2: Prototype breaking test (formal certification test)**



**Figure 3: New standards prototype use status**

## ■ Development of VS-1 high surface-pressure compact rubber bearings for bridges

Rubber bearings for bridges are installed between bridge girders and bridge piers and fulfill the role of supporting the load of bridge girders and absorbing and seismically isolating the flexion, expansion, and contraction of bridge girders. The VS-1 high surface-pressure compact rubber bearings that have been developed employ a unique design using cylindrical steel (pot plate) to surround like a wall a laminated rubber circle composed of stacked up rubber and steel plate (Figure 1). In doing so the unique tractability of rubber bearing is maintained while being able to support high pressure of approximately twice ( $25\text{N/mm}^2$ ) that of conventional products, achieving high-level load support performance. In addition, because the pot plate restricts excessive transformations, this means that there is little distortion in the rubber even under high pressure and the load on internal steel plates is reduced. Accordingly, the steel plates are thin, making possible a product that is much smaller and lighter compared to existing products(Figure 2)

Furthermore, even if a load higher than the allowed range is applied such as in a large earthquake, the structure is such that first the bolt holding together the upper plate and pot plate will break and a gap will open between the pot plate and fixture materials. Through this mechanism it is easy to see the parts requiring maintenance from outside, improving safety and workability (Figure 3).

Utilizing these characteristics, it is possible to use the product in bridges that have become dilapidated or damaged in addition to newly built bridges, and accordingly it is hoped that the product can contribute to bridges with longer lives and resource savings.

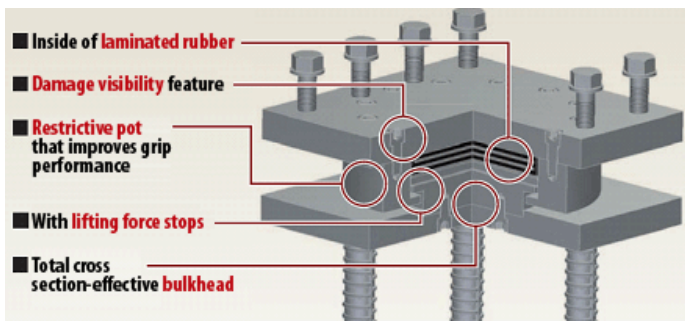


Figure 1: VS-1 structure and characteristics

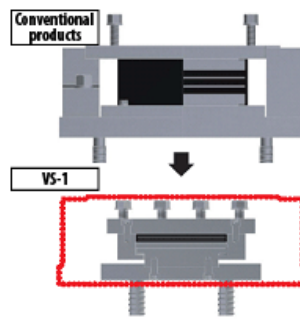


Figure 2: Size comparison

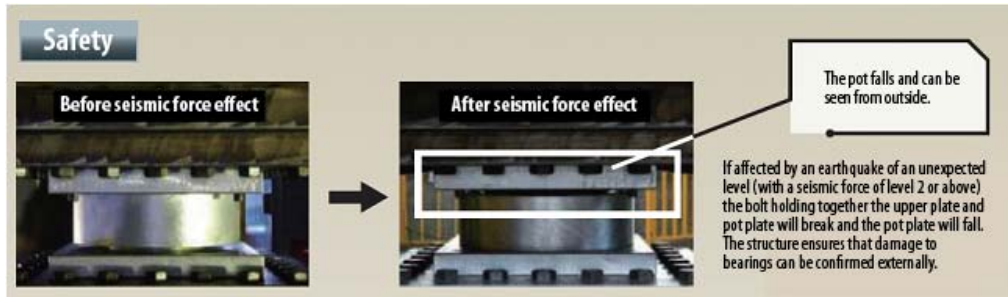


Figure 3: Damage visibility feature

### ■ The Medi-Air wheelchair cushion

So that wheelchair users can feel reassured sitting in their wheelchairs, Yokohama Rubber has developed the Medi-Air series of wheelchair air-cell cushions. Yokohama Rubber has provided a series of products using rubber and air for the purpose of shock absorption, including tires that absorb the shock between cars and the road, air fenders that absorb shocks to enable tankers to be moored to quays, and air springs for industry. We hope that the development of these technologies can serve in some small way to improve “the quality of life” for wheelchair users by making sitting less painful and mitigating the risk of bedsores.

As a new product in “the Medi-Air” series of wheelchair air-cell cushions, “the Medi-Air Sky (Figure 2)” was released in May 2012 to accompany the existing “Medi-Air 1 (Figure 1)” product. This new product was then awarded with the 2012 Good Design Award in October.

“The Medi-Air Sky” uses a structure that allows for air adjustment to be conducted manually and was developed based on the theme of a product that allows wheelchair users that are able to propel themselves to enjoy going out “more readily and more freely”. Through a function that detects and notifies with a sound before hitting the bottom, we have aimed to expand the range that wheelchair users can feel reassured to operate in. “Medi-Air Sky” is also a product for which welfare equipment rental is covered by nursing-care insurance, and under the Services and Supports for Persons with Disabilities Act costs are provided for as a supportive device.

Medi-Air series employs the unique air isolation technologies and sensor technologies of Yokohama Rubber to achieve features that have not been provided with air cushions up until now, such as “the simple replacement of air cells (Figure 3)” and “a sensor for detection before hitting the bottom (Figure 4)”.



Figure 1: Medi-Air1



Figure 2: Medi-AirSky (winner of the 2012 Good Design Award)



Figure 3: Air cell removed



Figure 4: Sensor for detection before hitting the bottom

## ■ Aircraft lavatory module using recyclable thermoplastic plastic

While fiber-reinforced plastic (FRPs) parts that are used in large quantities in aircraft are light and high strength, because they are materials that are difficult to recycle, they are generally disposed of by burning or pulverization.

The lavatory module for the Boeing 737 aircraft that has been recently developed uses flame-resistant PVC recyclable plastic chips to replace the glass-fiber reinforced plastic (GFRP) used in large quantities in interior parts. By forming the product with an optimal wall thickness the mass, strength, durability, airworthiness, and flammability characteristics of previous products is maintained while a contribution is made to reductions in the environmental footprint through the adoption of recyclable materials.



▲ [Go to Page Top](#)

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## Environmental Preservation

### Reduction of Greenhouse Gas Emission

[Guidelines](#)
[Achievements](#)
[Case Introduction](#)

#### Guidelines

#### Targets

By positioning ourselves for various countermeasures for global warming, one of our most important issues to tackle, we are trying to implement activities to realize a low-carbon society by developing approaches on carbon management such as deployment of energy-saving equipment, changing into clean fuel, and thorough energy-saving activities by establishing our Expert Committee.

#### Setting a New Medium to Long-Term Greenhouse Gas Reduction Target

In aim of our shared global goal of reducing greenhouse gases by half by 2050, we have set a new medium to long-term greenhouse gas reduction target. While previous medium to long-term targets have only aimed to reduce the greenhouse gases produced through the activities of Yokohama Rubber and domestic Group companies, the recently set target not only covers the activities of all Group companies throughout the world, it also covers our entire value chain that encompasses emissions when customers use our products, emissions from the procurement of raw materials and materials, and emissions from the disposal of products. Furthermore, as a starting point for the ideal goal of reducing greenhouse gases by half by 2050, in setting our targets we have set high-level goals from the perspective of backcasting. Going forward, based on this new target we will devise a roadmap for achieving our target while having internal discussions through various committees and among management employees. We plan to establish a concrete action plan for the GD100 Phase IV that studies have already commenced for.

Long-term target: By 2050 reduce the CO<sub>2</sub> emission produced throughout the Group's entire value chain by at least 50% of that in the base year (2005)

Mid-term target: By 2030 reduce the unit base of CO<sub>2</sub> emissions per net sales by at least 40% of that in the base year (2005)

#### Our Target for Environmental Activities

In accordance with the Kyoto Protocol, the Group set a short-term target of "Reduce GHG emission within our domestic group by 12% on the average compared to the benchmark year over the five years from fiscal year 2008 to fiscal year 2012." As a result of efforts to reduce GHG emissions, we achieved this target through our results last year.

The medium-term target for 2020 will be maintained as is, and for FY 2013 we will set the following target aimed at achieving the target for 2020 and implement activities accordingly.

- Short-term reduction target value (FY 2013)  
"Reduce GHG emission unit within our domestic group by at least 1% compared to FY 2012."
- Mid-term target in 2020  
"By the fiscal year of 2020, try to reduce GHG emissions within our domestic group by 25% compared to our benchmark year."

### Activity Report in the Fiscal Year of 2012

▶ Corporate Governance and Compliance

▼ Environmental Preservation

Environmental Preservation

Environmentally-Friendly Products

#### Reduction of Greenhouse Gas Emission

Utilization of Natural Resources / Reduction of Industrial Waste

Emission Provision onto Water, Air, and Soil

Management of Chemicals

Biological Diversity

▶ Together with our Customers

▶ Together with our Employees

▶ Together with our Business Partners

▶ Together with our Shareholders and Investors

▶ Together with our Society

## Financial Risks of our Businesses where Climate Change may Impact

### 1. Critical Risks due to Regulations

Around the world regulations aimed at preventing global warming are becoming stricter and in order to support these regulations it is expected that capital investments and product development costs will increase. There are concerns of significant increases in energy costs being triggered by increased costs for energy supply companies. Furthermore, if it is not possible to support these regulations, it could lead to a decrease in production volume in the event of suspended plant operations or damage to the corporate image.

### 2. Critical Risks due to Physical Influence

Our company is producing and distributing seasonable commodities such as snow tires; the amount of snowfalls or fluctuation of outside temperature owing to climate change might lead to a reduction in snow tire sales. Any climate change in the production areas of natural rubber may affect the steady procurement of raw materials, cause the cost of raw materials to increase, or cause production volumes of key products to decrease. Furthermore, the occurrence of large-scale natural disasters by global warming could make it difficult to continue production activities depending on the region.

### 3. Other Critical Risks

As people become more aware of energy conservation with the advance of global warming, the consumer behavior of general consumers could shift from ownership-based consumption to shared consumption. There are concerns that this type of change in behavior could lead to a decrease in demand for our products.

▲ [Go to Page Top](#)

## Financial Opportunities through Climate Change

### 1. Major Opportunities through Regulations

As the need for “the commodities to meet environmental regulations” may grow rapidly, it might lead to great business opportunities as we go about the development of products to meet those requirements.

Example 1: Product development of regenerative energy such as solar energy generation, or product development and launching that can meet regulations on vehicle fuel consumption.

Example 2: Product development and launching of tires along with the ratio increase in electrical cars.

Example 3: Product development (other than tires) along with the ratio increase in electrical cars (fuel batteries, high-pressure hydrogen hose, etc.)

Example 4: Mandatory installation of tire pressure monitoring system along with the legal regulations of air pressure control of tires.

Example 5: Inner tire materials with lesser tire pressure leaks according to the legal regulations as to tire pressure control.

### 2. Major Opportunities through Physical Influence

Actualize the needs of marine related products due to water surface elevation and their product development. Product development of sealing materials to alleviate temperature rise in the house, thermal insulation materials on the rooftop, etc.

Providing heavy equipment related to the construction to brace for flood (example: high-pressure hoses, conveyor belts or that kind, or tires for heavy construction vehicles).

### 3. Other Major Opportunities

Boost the sales of environmentally-friendly products (our commodities to alleviate climate change).

We can expect sales growth on a consolidated basis; alleviation and adaption to climate change is a worldwide issue and such business management should become global as well.

▲ [Go to Page Top](#)

## Participation in “National Campaign” to Prevent Global Warming

We are participating in a “National Campaign” (Challenge 25) to prevent global warming as a nation. As a member of Challenge 25, we post our President's message for both the Environment Month in June and Energy Saving Month in February at business locations; also, we are trying to promote corporate-wide Cool Biz and Warm Biz for our personnel to adopt.

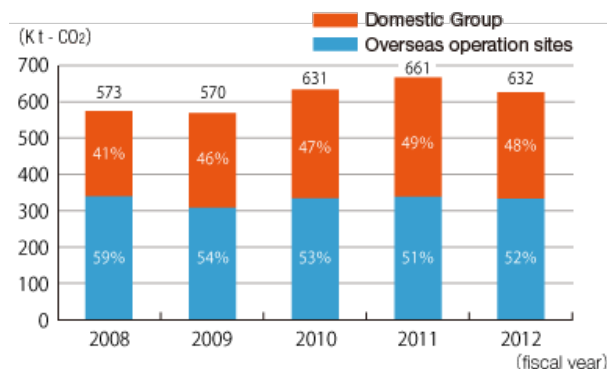
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## Emission Volume of Greenhouse Gases within Domestic and Overseas Group Companies

During FY2012, greenhouse gas emissions at domestic group companies and overseas production bases were 632,000 tons -CO<sub>2</sub>, with domestic group companies accounting for 52% of emissions, and overseas production bases accounting for 48% of emissions. The number of overseas production bases increased by one with the addition of a natural rubber processing plant from FY2010.

### Greenhouse gas emissions at domestic group companies and overseas production bases



\* The accounting period for the fiscal year of 2011 is from April to December. As such, data for the generated amount from January to March 2011 (fiscal year of 2010) has been added to this to provide a tally for the full calendar year.

Emission volume of greenhouse gases within the domestic Yokohama Rubber Group had exceeded our national reduction target as per Kyoto Protocol; 15.6% reduction which is the average of five years from the fiscal year of 2008 to fiscal year of 2012 in terms of actual emission coefficient\*<sup>1</sup>, whereas a reduction of 19.2% for adjusted emission coefficient\*<sup>2</sup> by comparison with our benchmark year\*<sup>3</sup>.

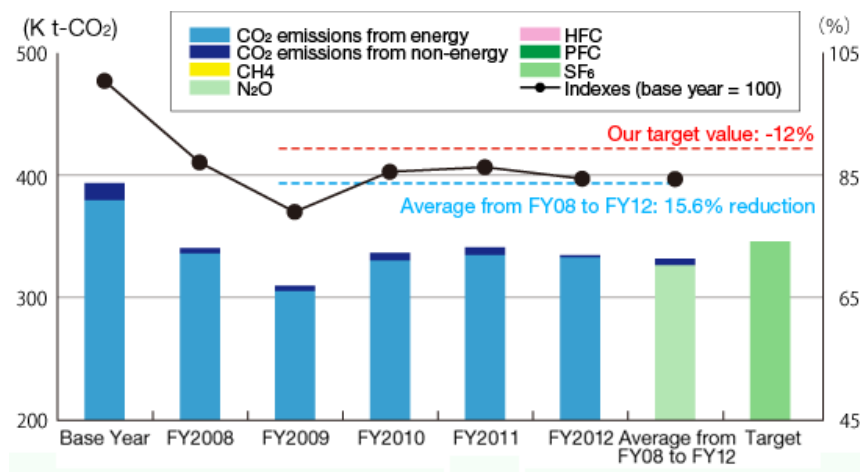
\*1 actual emission coefficient: the amount of CO<sub>2</sub> emissions in order for the electricity company to generate 1kWh of electrical power

\*2 adjusted emission coefficient: coefficient by reflecting Kyoto mechanism credits onto actual emission coefficient

\*3 benchmark year: basically it is the year 1990 except HFC, PFC, and SF<sub>6</sub> that are set as year 1995 in accordance with Kyoto Protocol.

\* Calculation method of greenhouse gas (GHG): we are complying with the "Manual for Greenhouse Gas Emission Volume Calculation and its Reporting" issued by Ministry of the Environment and Ministry of Economy, Trade and Industry.

### Domestic Yokohama Rubber Group's Total Greenhouse Gas Emission and Comparison with Benchmark Year (actual emission coefficient)



\* Targeted fiscal year is the average from FY08 to FY12 which is the same with Kyoto Protocol.

\* The accounting period for the fiscal year of 2011 is from April to December. As such, data for the generated amount from January to March 2011 (fiscal year of 2010) has been added to this to provide a tally for the full calendar year.

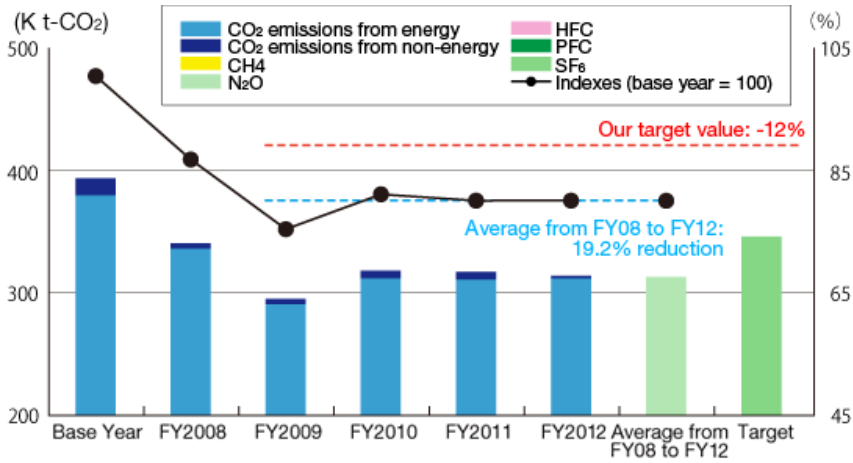
### Breakdown per Substance of Greenhouse Gas Emission Volume in FY2012(actual emission coefficient)

	%
	FY2012
CO <sub>2</sub> emissions from energy	99.34
CO <sub>2</sub> emissions from non-energy	0.59
CH <sub>4</sub>	0.02



N <sub>2</sub> O	0.05
HFC	0
PFC	0.001
SF <sub>6</sub>	0
Total Greenhouse gas	100

**Domestic Yokohama Rubber Group's Total Greenhouse Gas Emission and Comparison with Benchmark Year (adjusted emission coefficient)**



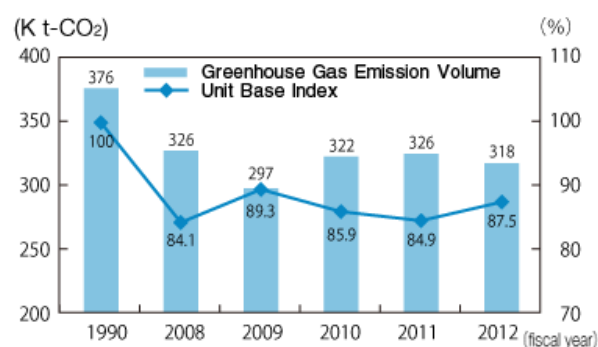
\* Targeted fiscal year is the average from FY08 to FY12 which is the same with Kyoto Protocol.  
 \* The accounting period for the fiscal year of 2011 is from April to December. As such, data for the generated amount from January to March 2011 (fiscal year of 2010) has been added to this to provide a tally for the full calendar year.

**Breakdown per Substance of Greenhouse Gas Emission Volume in FY2012(Adjusted emission coefficient)**

	%
	FY2012
CO <sub>2</sub> emissions from energy	99.31
CO <sub>2</sub> emissions from non-energy	0.62
CH <sub>4</sub>	0.02
N <sub>2</sub> O	0.05
HFC	0
PFC	0.001
SF <sub>6</sub>	0
Total Greenhouse gas	100

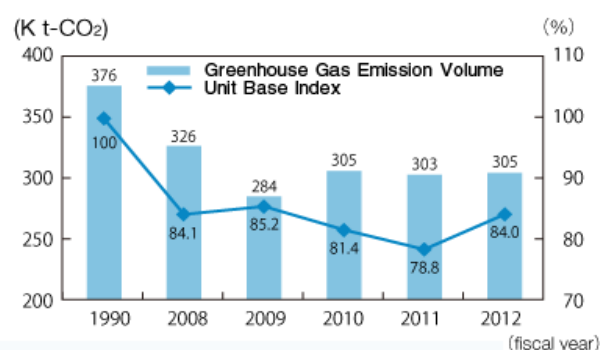
Although there was a 12.5% reduction in the actual emission coefficient compared to the base year for the unit base per production amount in our domestic operation sites, due to a reduction in production volume this represents a 3.1% deterioration compared to 2011. Meanwhile the adjusted emission coefficient has resulted in a 16.0% reduction which is a 6.6% deterioration compared to fiscal year of 2011.

## Our Domestic Production Sites' Greenhouse Gas Emission Volume and Unit Base Index of Production Amount (Actual Emission Coefficient)



\* The accounting period for the fiscal year of 2011 is from April to December. As such, data for the generated amount from January to March 2011 (fiscal year of 2010) has been added to this to provide a tally for the full calendar year.

## Our Domestic Production Sites' Greenhouse Gas Emission Volume and Unit Base Index of Production Amount (Adjusted Emission Coefficient)



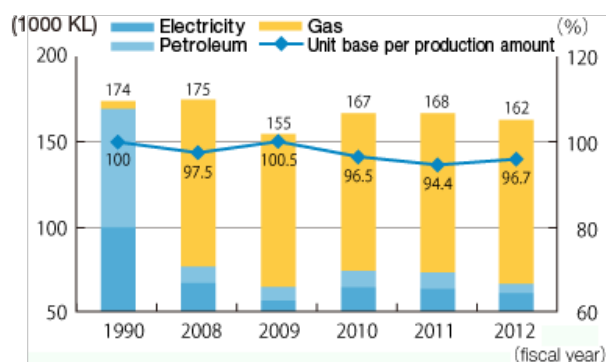
\* The accounting period for the fiscal year of 2011 is from April to December. As such, data for the generated amount from January to March 2011 (fiscal year of 2010) has been added to this to provide a tally for the full calendar year.

▲ [Go to Page Top](#)

## Our Domestic Factories' Energy Consumption Volume and Base Unit

Although various energy conservation measure were implemented during FY 2012 in an effort to improve energy efficiency, due to the large-scale reduction in domestic production volume as a result of the sluggish economy in Europe and China, the energy base unit deteriorated by 2.4% compared to FY 2011.

## Our Domestic Operation Sites' Energy Consumption Volume and Base Unit Index of Production amount



\* The accounting period for the fiscal year of 2011 is from April to December. As such, data for the generated amount from January to March 2011 (fiscal year of 2010) has been added to this to provide a tally for the full calendar year.

▲ [Go to Page Top](#)

## Reducing CO<sub>2</sub> Emission Volume during Transportation

Since Yokohama Rubber is classified as Known Shipper, we are conducting our reduction measures together with carriers that are our business partners by establishing an aggregation system to manage CO<sub>2</sub> emission volume, energy consumption, and so on within the limit of property rights set forth by the law such as products, half-finished products, industrial waste, and so forth.

In order to address these, we are developing various reduction activities by targeting 1% improvement of the unit base per energy consumption every year; as for CO<sub>2</sub> emission volume, we are targeting a 25% reduction (compared to the fiscal year of 2006) by the fiscal year of 2020 as a medium-term goal.

## ■ Addressing on Tires Group

- 1) Advancement of modal shift
  - Increasing adoption of ferries to transport tire products to the particular areas (Sapporo, Fukuoka, Sendai)
  - Expansion of rail road routes
- 2) Addressing on effective transportation
  - Improvement of loading efficiencies at factory and distribution center shipments, and increasing size of transportation vehicles
  - Reduction of unnecessary transportations introducing proper volume of inventories and placement of transportation bases.
- 3) Integrated efforts with carriers to improve fuel efficiency
  - Promotion of the adoption of fuel-efficient cars in an aim for improved fuel efficiency

## ■ Addressing on MB (multiple business) Group

- Advancement of modal shift
- Expansion of rail road routes in remote transportation
  - Expansion of ferry transportation

CO<sub>2</sub> emission volume related to MB logistics for a year from January to December 2012 amounted to 4,160 tons, reduced by 12% compared to the fiscal year of 2006 (6,123 tons) .

Unit base of the energy improved by 22%, which achieves the initial target improvement of 6% compared to the fiscal year of 2006, owing to the increased use of JR freight and the increase of ferry transportations.

In the expansion of the modal shift, we achieved results of 18.1% (ton-based) compared to 6.8% in 2007 (no data for 2006).

▲ [Go to Page Top](#)

## Streamlining of Transport Energy

As Yokohama Rubber Group's effort to reduce CO<sub>2</sub> emission volume and improve the unit base of the energy in the fiscal year of 2012, we promoted a modal shift (expanded use of ferry and rail transportation). In addition, we worked to improve loading efficiencies through the use of efficient loading methods upon factory shipment. While the transportation amount increased by approximately 2% during FY 2012, CO<sub>2</sub> emissions during transportation were reduced by 2% to 24,200 tons per year (down 600 tons year-on-year). The unit base per energy consumption was 42.4kl per million ton kilometers, an improvement of 4% year-on-year.

## ■ Major Improvements

[Tire Group]

1. A significant improvement in the ferry utilization rate (71% to 78%) was achieved for shipments to specific regions (Sapporo, Fukuoka, and Sendai).
2. For 25% of land transportation to the Kyushu region, railway transportation using 31FT containers was used.
3. As a result, the modal shift achievement rate for tire product transportation improved from 17% to 20%.
4. Through the use of efficient loading methods for plant shipments, per-capacity loading efficiency was improved 2% year-on-year.

[MB Group]

1. For shipments to remote areas such as Hokkaido, the modal shift achievement rate was improved from 14% to 18% through expanded use of railway transportation.

▲ [Go to Page Top](#)

## Case Introduction

### Cases of Initiatives During FY 2012

## ■ Full Operation of Co-generation Systems

At tire plants that use a large volume of energy and steam, it is possible to make a significant reduction in CO<sub>2</sub> emissions through the adoption of co-generation systems that supply energy and steam. As of FY 2012, Yokohama Rubber has completed the introduction of co-generation systems at four domestic plants. As a result of continuous 24-hour operations, approximately 60% of the energy and nearly all of the steam used by plants has been supplied, enabling us to achieve a CO<sub>2</sub> reduction and a reduction in the power purchased from electric companies

Shinshiro Plant co-generation system



Mie Plant co-generation system



■ Energy Saving Improvements to Job Sites Through Heat Insulation Materials

Because insulation fitting the measurements of our equipment and piping is not possible using the heat insulation products that are available, we conduct the manufacturing and installation of heat insulation materials internally.

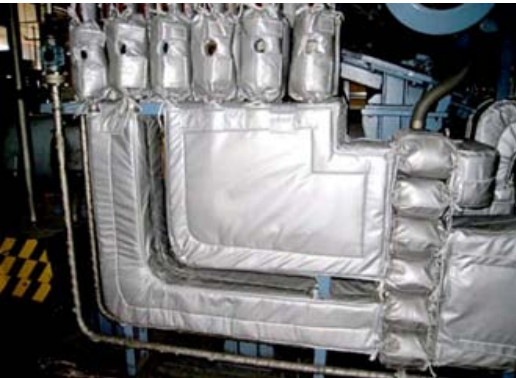
Since FY 2007 we have installed heat insulation materials to cover steam pipework and conducted energy-saving activities to prevent heat release.

We continued to install heat insulation materials to cover steam pipework during FY 2012.

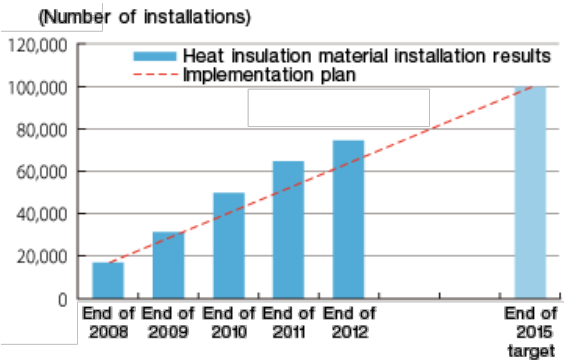
Heat insulation material production members



Pipe insulation



Number of heat insulation material installations



\* The accounting period for the fiscal year of 2011 is from April to December. As such, data for the generated amount from January to March 2011 (fiscal year of 2010) has been added to this to provide a tally for the full calendar year.

A cumulative total of 75,000 heat insulation material installations has been made at all production bases as of 2012.

## ■ Conversion of boiler fuels to gas in Onomichi Plant

During FY 2012, we converted all boiler fuels from A type heavy oils to town gases at Onomichi Plant. We reduced CO<sub>2</sub> emissions from boilers by approximately 40% by converting all boiler fuels to town gases with a small environmental footprint.

### Onomichi Plant boiler equipment



## ■ Utilization of highly-efficient pumps

Energy savings of 50% were achieved by optimizing pump capacity at production facilities and updating equipment to the latest highly-efficient pumps.

### Shinshiro Plant highly-efficient pump equipment



### Mishima Plant highly-efficient pump equipment



## ■ Utilization of high-performance hydraulic units

Energy savings of at least 50% were achieved by updating the hydraulic units at production facilities to the latest high-performance hydraulic units with highly-efficient motors and an inverter function.

### Mishima Plant high-performance hydraulic units





## ■ Energy-Saving Month Activities

Based on the slogan of “starting winter energy saving and energy conservation through first-hand efforts,” we started preparations three months prior to our energy-saving month in February. Substantial outcomes based on the accumulation of small efforts were achieved thanks to the integrated efforts that were made by the production department, equipment maintenance department, and administration department at plants.

### Energy saving education held during the preparation period



### PR activities during the energy-saving month



### Energy-saving patrol activities



## ■ Cases of energy savings with equipment

1. Renewal to highly efficient lighting equipment and expanded adoption of LED lamps
2. Renewal to highly efficient heat pump air conditioners
3. Renewal to highly efficient power transformer
4. Renewal to highly efficient pumps
5. Increasing adoption of power inverters in fan pumps
6. Decrease of compressed air pressure in factories
7. Improving high efficiency of the temperature controlling machines.

## ■ Promotion of Energy-Saving Activities at the Headquarters Building

We believe that GHG reduction activities are important not only for operation sites, but also for buildings and offices throughout the Group, and we accordingly promote various energy-saving activities at our offices. Yokohama Rubber signed the EEB Manifest covering energy efficiency within buildings and offices in December 2009 that has been put forth by the World Business Council for Sustainable Development (WBCSD), a council that the Group participates in. As a first step, we have set a greenhouse gas emissions reduction target for the headquarters building and we have implemented various energy-saving initiatives. As a result of further strengthened initiatives in response to requests to save energy last summer, we achieved a 42.7% reduction during FY 2012 compared to the base year of FY 2009. Going forward we will set challenging targets for offices in Japan and overseas besides our headquarters as we work to save energy and reduce greenhouse gas emissions.

### ○ CO<sub>2</sub> Reduction Targets for the Headquarters Building

Reduce GHG emission by 25% by 2020 compared to the base year of 2009

### ○ Energy-Saving Policy for the Headquarters Building

In addition to energy-saving activities and initiatives to be participated in by all staff members, hardware improvements are to be implemented, including the adoption of highly-efficient lighting such as LED, improvements to air conditioning equipment, insulation of the building roof, saving energy used for OA equipment, and updating moving equipment with top-run products.



○
 Changes in Greenhouse Gas Emissions by the Headquarters Building

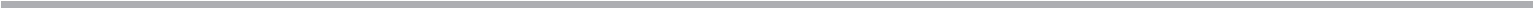
	Base year of 2009	2010	2011	2012
CO <sub>2</sub> emissions (t-CO <sub>2</sub> )	1,743	1,593	1,174	999
Compared to base year (%)	100%	91.4%	67.4%	57.3%

\*As a result of the change in the accounting period for 2011, 2009 and 2010 are calculated from April to March and 2011 and 2012 are calculated from January to December.

■
 Examples of administrative-based energy saving improvements

1. Continuation and expansion of black illumination at the office
2. Implementation of cool biz (May 14 to October 12) and warm biz (December 1 to March 31) programs
3. Thoroughly ensuring that the lights are turned off when leaving seats and that the standby current of OA equipment is turned off when returning home
4. During the energy-saving month of February, have department head conduct energy-saving patrols
5. Improve awareness of energy-saving by visualizing the amount of energy used by the office
6. Expand energy-saving improvements by entering improvement cases in a database
7. Energy-saving activities that consist of reviewing the machining process (reducing the time required for manufacturing processes, etc.)

▲
[Go to Page Top](#)



[Message from The President](#)
[Up Close](#)
[Activity Report in the Fiscal Year of 2012](#)
[Site Data](#)
[Related Information on CSR Report](#)
[Company Overview / CSR Management](#)

[Yokohama Rubber CSR Web site](#) > [Activity Report in the Fiscal Year of 2012](#) > [Environmental Preservation](#) > Utilization of Natural Resources / Reduction of Industrial Waste

## Environmental Preservation

### Utilization of Natural Resources / Reduction of Industrial Waste

[Guidelines](#)
[Achievements](#)

#### Guidelines

#### Reduction Target of Industrial Waste

Accompanying the commencement of GD100 Phase III, we have revised the reduction target.

[Domestic Factories]

- Reduce the total quantity of industrial wastes in the three-year period from 2012 to 2014 by 35% compared to 2006
- Reduce the unit base for industrial wastes by at least 1% every year

[Overseas Factories]

- Reduce the unit base for industrial wastes by at least 1% every year

#### Our Target for Zero-Emission

We have been working so that more of our factories can achieve total zero-emissions within our group both in our domestic and overseas operation sites.

[Domestic Factories]

- Maintain a 100% rate of recycling resources at all factories

[Overseas Factories]

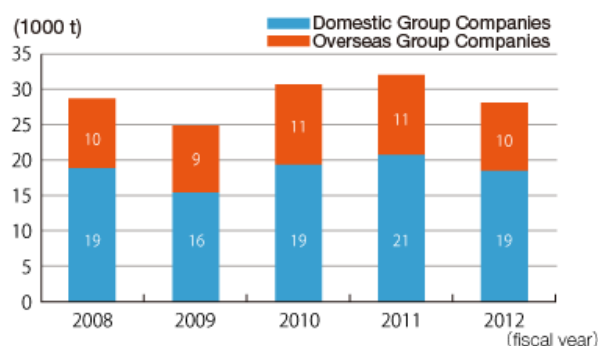
- By the final year of GD100 of 2017, achieve total zero-emissions at all overseas factories

#### Achievements

#### Generated Amount of Waste Materials by the Group Domestically and Overseas

The generated amount of waste materials by the entire Group domestically and overseas was reduced by 12.5% year-on-year to 28,077 tons during FY 2012.

#### Generated Amount of Waste Materials by the Group Domestically and Overseas



#### Activity Report in the Fiscal Year of 2012

▶ Corporate Governance and Compliance

▼ Environmental Preservation

Environmental Management

Environmentally-Friendly Products

Reduction of Greenhouse Gas Emission

**Utilization of Natural Resources / Reduction of Industrial Waste**

Emission Provision onto Water, Air, and Soil

Management of Chemicals

Biological Diversity

▶ Together with our Customers

▶ Together with our Employees

▶ Together with our Business Partners

▶ Together with our Shareholders and Investors

▶ Together with our Society

## Our Addressing the Reduction of Industrial Waste

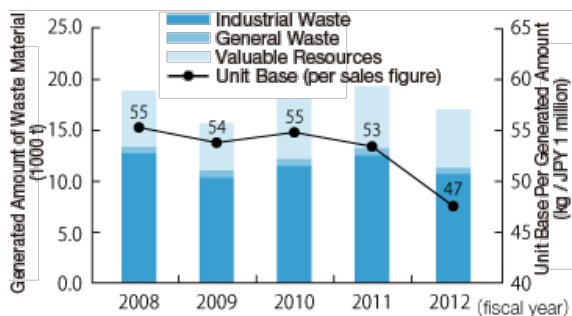
### Generated Amount of Waste Material and its Unit Base at Domestic Operation Sites

The generated amount of waste materials\*1 in FY 2012 resulted in 17,074 tons, an 11% decrease compared to FY 2011 (January to December) and we were able to improve the unit base of the generated amount of waste materials (per net sales) by 11% compared to FY 2011.

During GD100 Phase III (FY 2012 to FY 2014) that began in FY 2012, we will work towards achieving the newly set target. We will continue working towards minimizing product scrap during FY 2013.

\*1 Refers to any waste materials as a result of normal production activities including everything such as industrial waste, general waste, and valuable resources. Incidentally other than that, there were 2,660 tons of waste generated by the disposal of some facilities that are excluded from our target management in FY 2012.

### Changes in Generated Amount of Waste Material and its Unit Base



\*This indicates the amount generated during the accounting years from 2008 to 2010 (April to March period). The accounting period for the fiscal year of 2011 is from April to December. As such, data for the generated amount from January to March 2011 (fiscal year of 2010) has been added to this to provide a tally for the full calendar year.

For the amount generated during FY 2012, the generated amount for the accounting year lasting from January to December is displayed.

### Achievement of 100% Recycled Resources from Industrial Waste of our Domestic Operation Sites

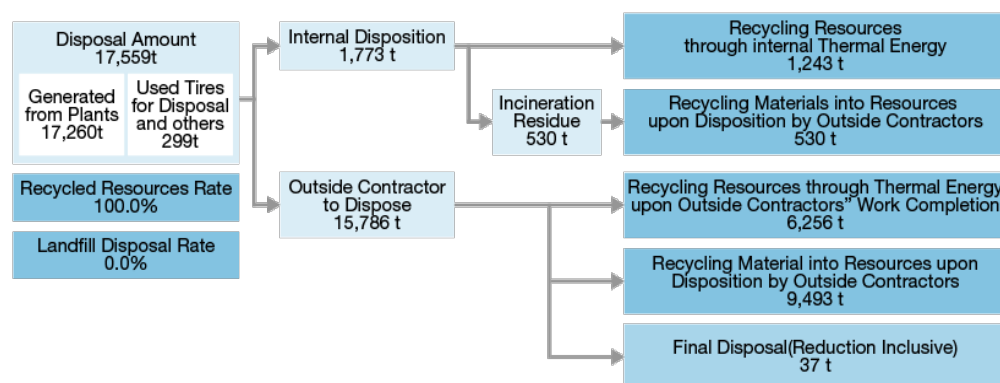
Since Yokohama Rubber has achieved Total Zero-Emissions\*2 in all our domestic operation sites in March 2006, we have been working on "100% recycled resources\*3 from our industrial waste".

As a result, we were able to achieve our target of "recycling 100% of our industrial waste into resources" in all our domestic operation sites in the fiscal year of 2009. We maintained this in the fiscal year of 2012 as well; we will continue to do likewise from the fiscal year of 2013 onwards.

\*2 Definition of total zero-emissions: not generating any direct landfill disposal at all.

\*3 Definition of 100% recycling resources is not to leave any disposal (= direct landfill disposal + incineration amount of the materials without any useful purposes) until the end.

### Flowchart of Industrial Waste Disposal (FY2011)



## ■ Promotion of Zero-Emissions at Overseas Operation Sites

We are promoting activities aimed at achieving complete zero-emissions status at our overseas production sites in order to promote environmental activities that are consistent with our approach taken in Japan. As a result of these efforts, thus far five of our production sites in Asia have achieved complete zero-emissions status. Although no additional production sites achieved complete zero-emissions status in the fiscal year of 2012, we investigated issues primarily at our production sites in the United States and promoted initiatives aimed at attaining this status. In the fiscal year of 2013, we will continue with our efforts to increase the number of production sites that have achieved the status of complete zero-emissions.

## ■ Management of Proper Disposition with Waste Disposal Contractors

In order to prevent any case of unlawful disposal such as unauthorized dumping, every year we are conducting onsite audits based on Yokohama Rubber's own auditing standard. We have conducted 88 cases of audits in the fiscal year of 2012 in total. As a result, we were able to confirm that all our contractors are handling our disposal in the proper manner.

## ■ Storage and Disposal of PCB-Containing Waste

We are properly storing and disposing of used machines that contain PCB such as transformers or condensers in accordance with our national legislation (Law Concerning Special Measures against PCB Waste). In the fiscal year of 2012, we had completed the disposition of 3 machines in total at domestic group companies that contain PCB. From fiscal year of 2013 onwards, as for our machines that contain PCB registered in advance, we will continue to store them properly and wait for the notification of availability for disposal.

▲ [Go to Page Top](#)

## Consideration towards Raw Materials for Product

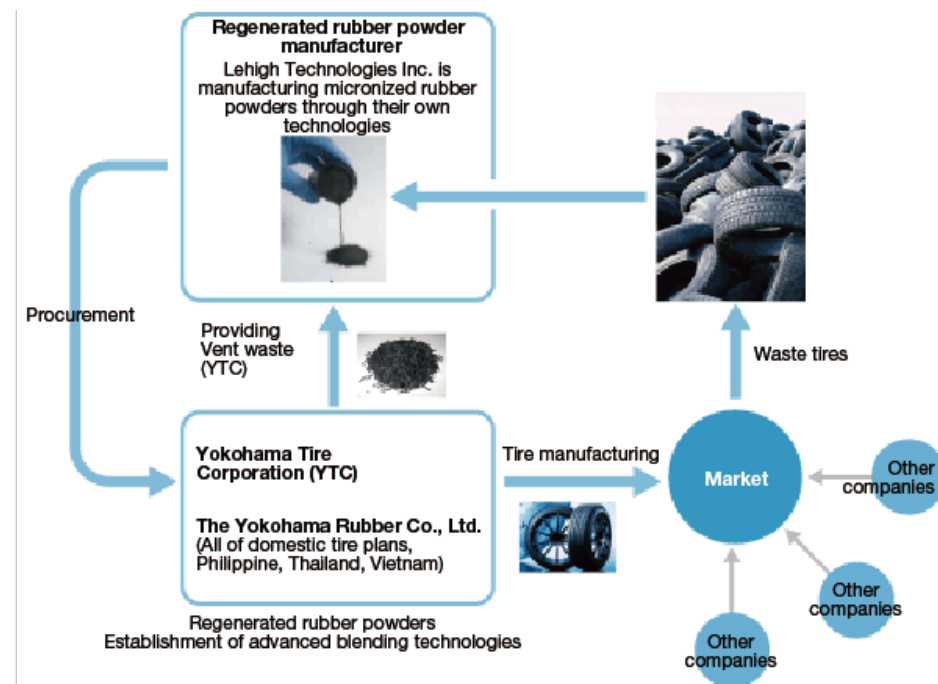
### ■ Proactively Utilizing Non-Fossil Raw Materials

We are promoting the use of non-fossil fuel derived raw materials in order to expand our use of natural resources. As part of this effort, we have significantly increased the amount of silica used to manufacture our tires.

### ■ Increasing the Ratio of Regenerated Rubber Used

The Yokohama Rubber Group is actively working to effectively utilize recycled raw materials and increase the use of various forms of regenerated rubber in its tires. Regenerated rubber powder is recycled rubber in a powdery state created by pulverizing waste tires, which are typically used mainly for heat. This regenerated raw material greatly contributes to resource conservation and resource recycling. Conventionally, it has been difficult to use regenerated rubber powder in tire applications because the particle size has been large, leading to a weaker physical property when combined with rubber. However, Yokohama Rubber has established a compounding technology that improves this physical property by blending rubber with finely ground regenerated rubber powder. We began mass producing tires with this blend of rubber and regenerated rubber powder in February 2009. Over the last four years we have expanded our use of regenerated rubber powder and as a result increased the ratio of regenerated rubber used in our tires by 2.3 times compared to 2008. Currently, we are utilizing regenerated rubber powder in various compounds found mainly in PC, TB, and OR tread liners manufactured at our plants in Japan, the United States, the Philippines, Thailand, and Vietnam. During FY 2012, we also started studying the use of regenerated rubber powder at two plants in China. We are working to improve the level of our blending technologies and actively striving to expand the compounds that can be blended with regenerated rubber powder. Since first using regenerated rubber powder at a plant in the United States in 2006, the Yokohama Rubber Group now uses an amount equivalent to 598,000 waste tires, as calculated by a major regenerated rubber powder manufacturer. This is equivalent to saving some 41,200kl of crude oil and 141 million kWh of electricity. This also means that we have been able to reduce some 15,800 tons of CO<sub>2</sub> emissions into our atmosphere. These efforts to promote the use of regenerated rubber powder have been regarded favorable, and in October 2012 we received the 2012 "3R Suishin Kyogikai Chairman's Award" sponsored by the 3R Suishin Kyogikai. Moving forward, we will continue to promote the manufacture of tires with regenerated rubber powder at our new or expanding overseas production sites as part of our commitment to effectively utilize recycled raw materials on a worldwide scale.

## Resources Circulation by Using Regenerated Rubber Powder



## Environmental Impact Reduction Effect from the Use of Regenerated Rubber\*1

Helping Tire Companies  
Create the Greenest Tires Possible



**Cumulative:**  
**January 2006 to December 2012**



### Product

Pinvents & Rubber Powder  
(Salem, VA plant)

### Waste Description

Yokohama Closed-Loop

### Landfill Avoidance

Rubber Powder  
(Japan)

End-of-Life Tire

**598,000 tires\***

\*passenger tire equivalents



### Oil Saved

**41,200 kliter**



### Energy Saved

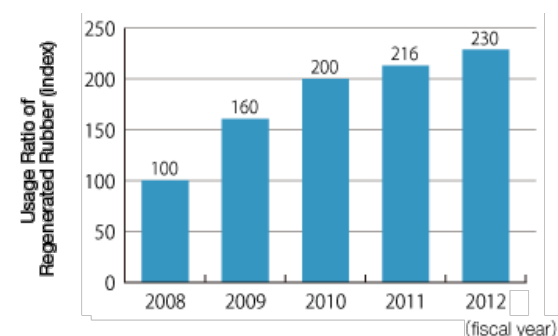
**141,000,000 kWh**



### CO<sub>2</sub> Emissions Saved

**15,800 ton**

## Changes in Usage Ratio of Regenerated Rubber\*2



\*1: Data provided by Lehigh Technologies

\*2: Ratio of new rubber consumption based on results of acceptance inspections



### ■ Addressing by our Retread Tire Business

All truck and bus tire products offered by Yokohama Rubber have been designed based on the assumption of retreading. Currently, the subsidiary Yokohama Tire East Japan Retread Co., Ltd. and Sanyo Retread Co., Ltd. are expanding this business by replacing the ditched parts of used tires (tread part) with new ones, followed by providing them to their customers.

Currently the ratio of regenerated tires is about 19.5% of the tires for trucks and buses (source from Council of Regenerated Tires in Japan) but in the midst of growing demand for retread tire as recycled resources, we are trying to expand their sizes and attend to more diversified needs.

### ■ Reuse of Used Vulcanized Bladder as Raw Materials

In 2007, we successfully commenced our internal mass production of used vulcanized bladder\*; this is the very first case in our industry by establishing technologies for mass production of recycled rubbers to be reused as raw materials of tire products. Since recycled rubbers being produced through twin axis screw extruders which we deployed for treatment facilities are able to produce raw materials for rubber with relatively higher quality compared to conventional technologies, the great feature is they can be used as raw materials of tire products, etc. without compromising their quality.

As for tire products, we are using them mainly for tires for passenger cars and part of the tire parts for trucks and buses. Also, regenerated rubbers available in the market are to be used more widely other than tire products such as a part of raw materials of industrial rubber products like conveyor belts; we are also considering their deployment for the tires of construction vehicles. We will continue to expand their usage by applying them to tire products and rubber products from now on.

\* Bladder: Refers to sub-material made of rubber to be used during vulcanization process of tire manufacturing; it will be blown like a balloon to press tires from inside onto the mold.

#### Twin axis screw extruders

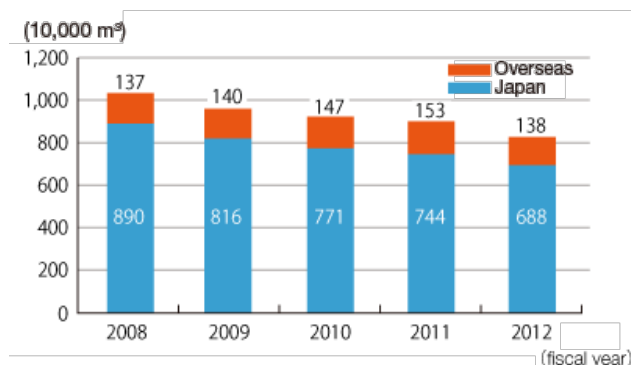


▲ [Go to Page Top](#)

## Consideration towards Water Source

### ■ Total Water Withdrawal Amount Overseas and in Japan

In the fiscal year of 2012, our total water withdrawal amount from water source resulted in 8,250,000 m<sup>3</sup> both in our domestic and overseas factories. The breakdown is 6,880,000 m<sup>3</sup> from domestic operation sites and 1,380,000 m<sup>3</sup> from overseas operation sites.



■ Total Water Usage, Usage of Reused and Recycled Water, and Water Circulation Rate

In the fiscal year of 2012, total water usage in our domestic operation sites resulted in 79,550,000 m³; the breakdown is 72,670,000 m³ for the usage amount of reuse and regeneration and 6,880,000 m³ for water withdrawal amount; the water circulation rate was as good as 91.4%.

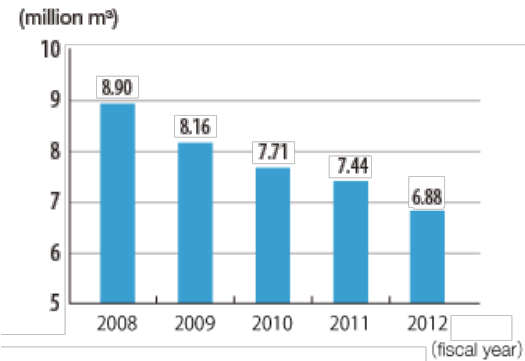
■ Addressing to Reduce Water Withdrawal by our Domestic Operation Sites

In the fiscal year of 2012, with anticipation of a 1% improvement in the unit base from the results of FY 2011 we developed our activities by targeting 7,660,000 m³; consequently, we were able to achieve our target with 6,880,000 m³, which is a decrease of 7.5% year on year. The breakdown of water withdrawal from water source in the fiscal year 2012 was 500,000 m³ for clean water, 1,170,000 m³ for river water withdrawal, 70,000 m³ for industrial water, and 5,140,000 m³ for well water withdrawal.

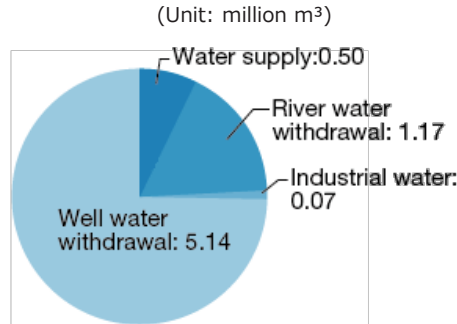
○ Primary Actions for Water Resource Preservation

- 1. Usage of the circulated facility cooling water
- 2. Collection of steam condensate from vulcanization process
- 3. Conduct overflow prevention of our reservoir tanks
- 4. Conduct water leak prevention measure of underground piping
- 5. Ensuring of daily inspection and patrol and repairing leaking points

Changes in Water Withdrawal Amount at our Domestic Operation Sites



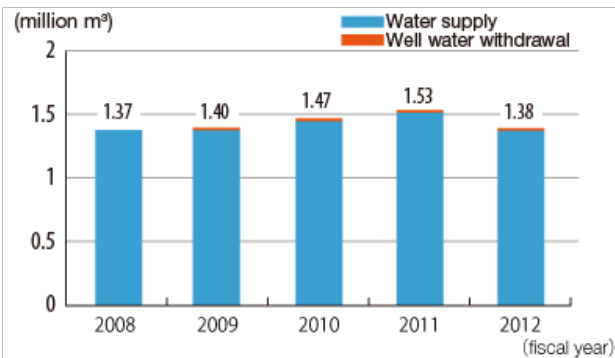
Breakdown of Water Withdrawal Amount from Water Source in the Fiscal Year of 2012



■ Addressing to Reduce Water Withdrawal by our Overseas Factories

In the fiscal year of 2012, with anticipation of a 1% improvement in the unit base from the results of FY 2011 we developed our activities by targeting 1,680,000 m³; consequently, we were able to achieve our target with 1,380,000 m³, which is a decrease of 9.8% year on year. The breakdown of water withdrawal from water source in the fiscal year 2012 was 1,370,000 m³ for clean water and 1,000 m³ for well water withdrawal.

Changes in Water Withdrawal Amount at our Overseas Operation Sites



[Message from  
The President](#)
[Up Close](#)
[Activity Report in  
the Fiscal Year of 2012](#)
[Site Data](#)
[Related Information on  
CSR Report](#)
[Company Overview /  
CSR Management](#)
[Yokohama Rubber CSR Web site](#) > [Activity Report in the Fiscal Year of 2012](#) > [Environmental Preservation](#) > Emission Provision onto Water, Air, and Soil

## Environmental Preservation

### ○ Emission Provision onto Water, Air, and Soil

#### Achievements (Initiatives)

#### Achievements (Initiatives)

#### Measures to Prevent Water, Air, and Soil Pollution

For the environmental burden that is produced through our production activities, R&D, offices, and all of our business activities, at the Yokohama Rubber Group we set independent management standards that are stricter than those required in accordance with laws and regulations, and based upon which we conduct constant monitoring. At the same time, we are strengthening activities aimed at reducing our environmental burden, such as improvements to our production process. Furthermore, we work to prevent environmental pollution by identifying environmental pollution risks and conducting regular monitoring and assessments.

▲ [Go to Page Top](#)

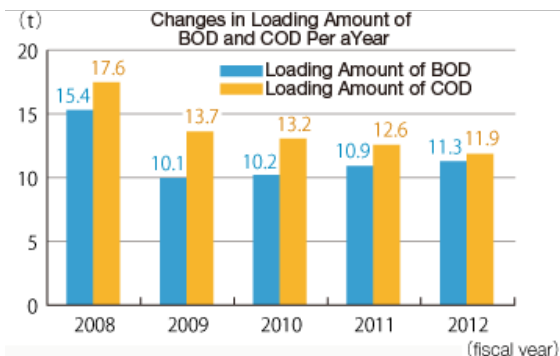
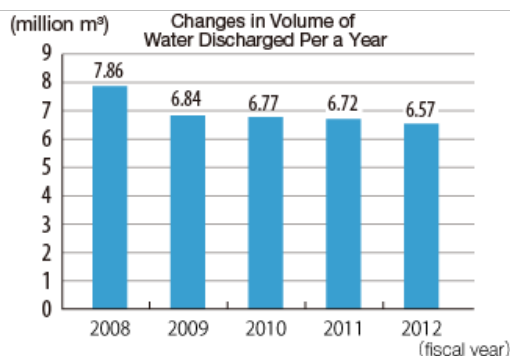
#### Reduction in Water Discharged and Enforcement of Water Quality Control

As for water quality control of discharging water, we are trying to enforce our management system by setting up our "Voluntary Set Parameter Value" which is stricter than the parameter set by the law.

No environmental accidents occurred during FY 2012. There were three cases of environment trouble: the notification of exhaust gas volume was exceeded, cooling water was discharged to the storm drain, and control volume of the rainwater drainage was exceeded for some factories. Although these incidents were reported to authorities and cleaned up using proper means, there were no environmental troubles leading to significant damage outside the company.

As for reduction of discharge water, in accordance with our reduction measures for water usage, we were able to reduce our water discharge by 154,000 m<sup>3</sup> compared to FY 2011.

Our Mie Plant is discharging water into the Hinokijiri River, our Mishima Plant into the Goten River, our Shinshiro Plant into the Noda River, our Shinshiro-Minami Plant into the Kuroda River, and our Ibaraki Plant into the Sonobe River. The average parameter of each plant was relatively low at 4.7mg/l for BOD density whereas 4.0mg/l for COD density; there was no impact on the river at a 11.3 tons BOD loading amount and a 11.9 tons COD loading amount. Note that business locations that switched over to direct discharge to public sewerage were not subject to the survey.



### ○ Activity Report in the Fiscal Year of 2012

▶ Corporate Governance and Compliance

▼ Environmental Preservation

Environmental Management

Environmentally-Friendly Products

Reduction of Greenhouse Gas Emission

Utilization of Natural Resources / Reduction of Industrial Waste

[Emission Provision onto Water, Air, and Soil](#)

Management of Chemicals

Biological Diversity

▶ Together with our Customers

▶ Together with our Employees

▶ Together with our Business Partners

▶ Together with our Shareholders and Investors

▶ Together with our Society

## Enforcing Air Pollution Prevention Control

We are trying to enforce our management system by setting up our voluntary set parameter values in order to comply with various regulated values.

There were no incidents that led to air pollution during FY 2012.

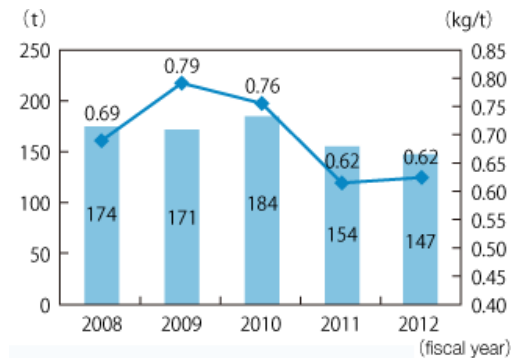
### ■ Discharging Volume of NOx and SOx, plus Production Quantity per Base Unit

We carefully manage the concentration of our NOx and SOx emissions to fully comply with parameters set by the law, and there was no case where we exceeded our voluntary set parameter value.

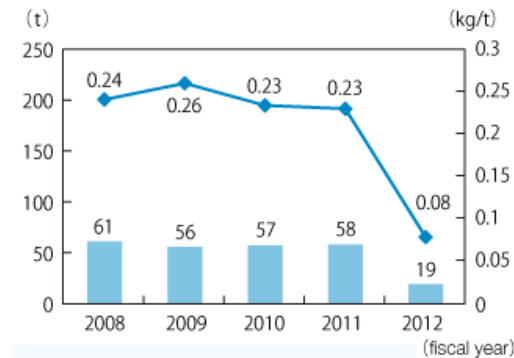
In FY 2012, we were able to reduce our NOx and SOx emissions compared to FY 2011, but the NOx discharging volume per base unit deteriorated slightly.

In order to reduce NOx and SOx emissions, we are switching to highly efficient boilers and cleaner fuel.

**Loading Amount of NOx Emission and its Unit Base**



**Loading Amount of SOx Emission and its Unit Base**



## Controlling Emissions of Ozone-Depleting Substances

We used to deploy as a metal cleanser chlorofluorocarbon-141b (HCFC-141b), which is controlled under Montreal Protocol as ozone-depleting substance; as such we had completely abolished using it effective from September 2007 by making some improvements with our cleansing methods. Since then, we no longer use or emit any ozone-depleting substances anymore.

## Our Measurements on Contaminated Soil

We are regularly conducting water quality inspections by installing a shallow well for observation purposes in seven of our domestic operation sites (for our Nagano Plant, we are conducting direct soil analysis as they are located high in the water vein, whereas for our Onomichi Plant, we are conducting the analysis of leachate as they are located on the land reclaimed from the sea). In the fiscal year of 2012 as well, we have cleared all the standards as to controlled substance according to soil contamination measurement law. Also, even though our Hiratsuka Factory had exceeded the standard on chlorine-organic solvents in the past, cleaning has been completed at one of two locations based on the understating of the authorities that the base value has not been exceeded for at least two years. At the remaining location, currently they are still continuing with the cleansing treatment through aeration; now their density of underground water is below standard for the underground water environment.

## Our Measurements for Dioxide

Our Mie Plant has a waste incinerator is equipped and they are regularly conducting measurement of its density once a year.

They have cleared the regulated parameter in the fiscal year of 2012 as well.

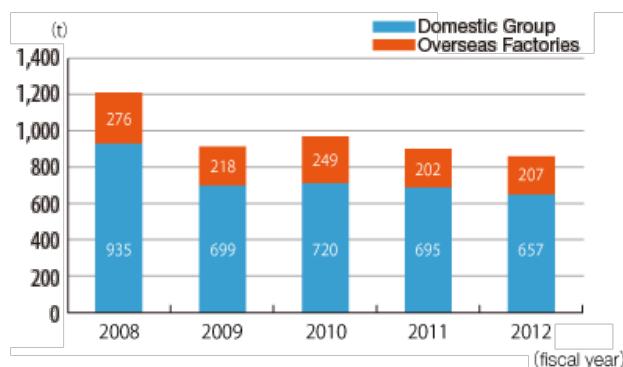
### Result of Measurement for Dioxide at our Mie Plant

Office Names Facility Names	Items	Regulated Parameters	Value of FY2012	Legal Names
Mie Plant Incinerator	Gas Emission (ng-TEQ/m <sup>3</sup> N)	10	<b>0.0160</b>	Act on Special Measures against Dioxins
	Water Discharge (pg-TEQ/L)	10	<b>0.3200</b>	
	Residue in the Incinerator (ng-TEQ/g)	3	<b>0</b>	
	Scattered Ash (ng-TEQ/g)	3	<b>0.43</b>	

## Total Amount of VOCs Emission by the Group in Japan and Overseas

During 2012, the total amount of volatile organic solvent (VOC) emission by the Group in Japan and Overseas was reduced 3.7% year on year to 864 tons.

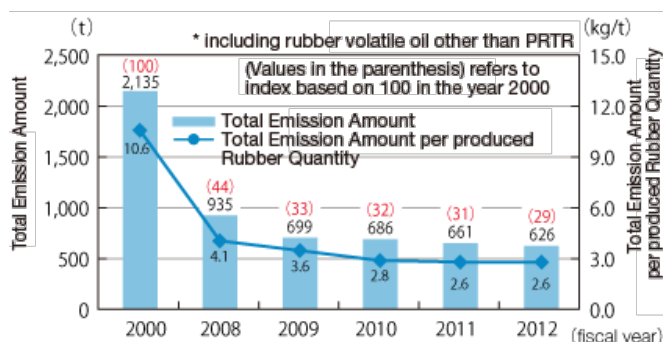
### Total Amount of VOCs Emission by the Group in Japan and Overseas



## Reduction of VOCs at Domestic Operation Sites

As a result of our effort to reduce volatile organic solvent (VOCs) which is the major substance as to emission amount, we were successfully able to reduce by 5.5% compared to the previous fiscal year in FY 2012 at our domestic factories. While production volume was nearly the same at the previous year (down by 1.2%), this reduction was made possible through initiatives aimed at avoiding toluene and cement in the solvents used during hose manufacturing and the deployment and operation of solvent collection facilities to collect a part of VOCs which we used to emit in the atmosphere in the past. We will continue to promote the reduction of emission amounts going forward.

### Total Amount of VOCs Emission and Base Unit of Production Quantity at Domestic Factories



The bars above refer to the total emission amount (emission amount + shifted amount) expressed by the unit [ton].

The line above refers to the emission amount per produced rubber quantity expressed by the unit [kg/ton].

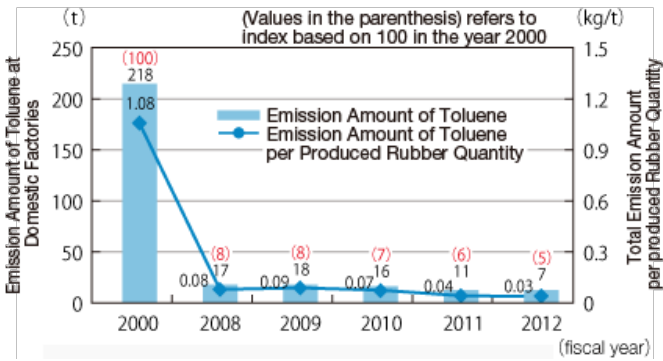
- Calculation formula of unit base = total emission amount / produced rubber quantity
- Including rubber volatile oil other than PRTR (Pollutant Release and Transfer Register)
- Total Emission Amount = Emission Amount + Amount to be Disposed as Industrial Waste (equivalent to shifting portion under PRTR)



■ Reduction of Chemical Substance under PRTR\* at Domestic Factories

In the fiscal year of 2012, the total of emissions and shifting amount of chemical substances under PRTR was 106.6 tons, which was a reduction by 70.0% compared to the fiscal year of 2000. Especially toluene, which used to be the majority of our emissions to the atmosphere, was reduced by 95.0% compared to the fiscal year of 2000.

Emission Amount of Toluene at Domestic Factories



\* PRTR refers to a system to register emission and shifting amount of chemical substance. This is a system to understand the source and emission amount of any toxic chemical substances followed by announcing them to the public.

[Message from The President](#)
[Up Close](#)
[Activity Report in the Fiscal Year of 2012](#)
[Site Data](#)
[Related Information on CSR Report](#)
[Company Overview / CSR Management](#)

[Yokohama Rubber CSR Web site](#) > [Activity Report in the Fiscal Year of 2012](#) > [Environmental Preservation](#) > Management of Chemicals

## Environmental Preservation

### Management of Chemicals

[Guidelines and Supporting Systems](#)
[Achievements \(Initiatives\)](#)

#### Guidelines and Supporting Systems

#### Guidelines and Supporting Systems for the Management of Chemicals

Although up until now it has enough to manage specific toxic substances, such as those designated by the EU's (ELV <sup>\*1</sup>) Directive, the number of toxic substances subject to management (such as substances of concern (SOC <sup>\*2</sup>) and substances of very high concern (SVHC <sup>\*3</sup>) are increasing every year. Currently, in order to comply with chemical materials management laws and regulations in Japan and overseas and promote environmental preservation, it is necessary to manage chemical substances contained in products throughout the entire supply chain. We manage chemical substances contained in products on a global scale and provide environmentally-friendly products that do not contain substances such as substances of very high concern.

- \*1. ELV: An EU directive aimed at reducing the environmental load of scrapped vehicles (restricts use of lead, mercury, cadmium, and hexavalent chromium)
- \*2. SOC: In addition to 6 substances which are prescribed by RoHS, restricts use of deca-PBD, hexabromocyclododecane, perfluorooctane sulfonate (PFOS), asbestos, and other substances (a total of 10 substances)
- \*3. SVHC: Designates substances subject to authorization and registration based on the REACH Regulation, candidate substance are added as necessary



▲ [Go to Page Top](#)

### Activity Report in the Fiscal Year of 2012

▶ Corporate Governance and Compliance

▼ Environmental Preservation

Environmental Management

Environmentally-Friendly Products

Reduction of Greenhouse Gas Emission

Utilization of Natural Resources / Reduction of Industrial Waste

Emission Provision onto Water, Air, and Soil

#### Management of Chemicals

Biological Diversity

▶ Together with our Customers

▶ Together with our Employees

▶ Together with our Business Partners

▶ Together with our Shareholders and Investors

▶ Together with our Society

## Promoting of the Reduction of Substances of Environmental Concern

In response to changes in the chemical substance regulations of various nations such as the EU's ELV Directive and the RoHS Directive \*1, as well as the REACH Regulation \*2 and CLP Regulation \*3, we conduct technological development for alternatives to substance subject to regulation and develop construction methods to reduce VOC emissions.

1. Case of development of alternative technology in response to the REACH Regulation (adhesive for battery pack)

We developed the FLASH ONE / FE1-120 adhesive for lithium-ion battery packs to be used for mobile phones and digital cameras. As it supports the REACH Regulation as it is free of organotin, it has been well received by major electronics manufacturers and mass production has been commenced.

2. Case of initiatives to reduce VOC emissions (development of a construction method not using adhesives for LPG hoses for general home use)

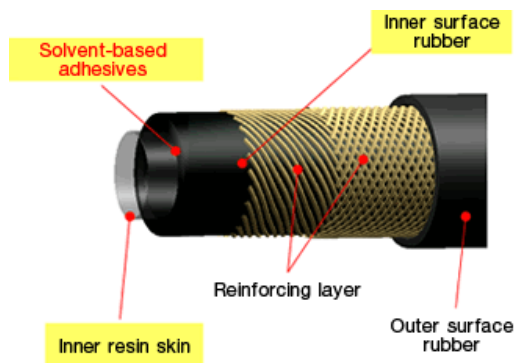
Hoses used for LP gas transport have a multilayered structure that uses resin in the barrier layer to control permeability to gas and up until now organic solvent adhesives have been used at the adhesive between the resin and rubber. Utilizing denatured rubber formulation technology, we have achieved direct adhesion between resin and rubber and as result reduced the emissions of volatile organic solvents (VOCs) in the manufacturing process for these products to zero.

\*1. RoHS: An EU regulation on hazardous substances used in electrical and electronic equipment (restricts use of lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyl (PBB), and polybrominated diphenyl ether (PBDE))

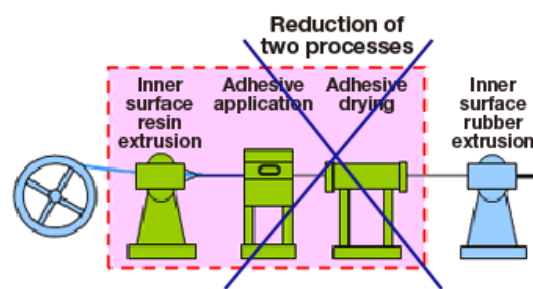
\*2. REACH: Authorization system for chemical substances supervised under the EU's ECHA

\*3. CLP: A regulation on the classification, display, and packaging of substances announced by the EU and their compounds and molded articles

### Structure of propane gas hose



### Hose manufacturing process



▲ [Go to Page Top](#)

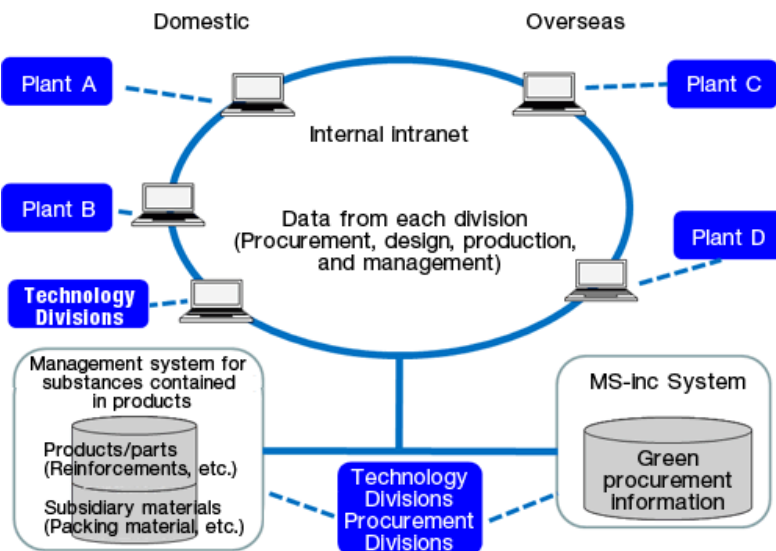
## Establishment of a Global Product Chemical Substance Management System

Up until now, the internal integrated management system for chemical substance data, MS-InC, was used as a company-wide common management method for information on purchased goods (raw materials, subsidiary materials, and parts) in order to manage specific toxic substances. In order to ensure thorough and appropriate chemical substance management, we have established a system for guaranteeing the non-inclusion of substances of concern (SOCs) in subsidiary materials and parts, a system for providing evidence on the non-inclusion of SOCs. Using the system we manage the substances contained in the purchased products that are used by our domestic and overseas factories.

In order to uniformly manage internally information on the inclusion of substances of very high concern that will likely increase going forward, we have launched a management system for substances contained in products and we are working to expand our database and strengthen our chemical substance management system across all divisions.

Furthermore, in order to understand and improve the level of chemical substance management, we have established chemical substance management standards. Self-assessment checks on chemical substances are conducted at domestic and overseas business locations and efforts are made to assess issues involving chemical substance management and make improvements. Through these efforts we are building a framework that allows us to maintain and improve the level of chemical substance management at domestic and overseas factories.

## Chemical Substance Management System Concept Diagram



▲ [Go to Page Top](#)

## Measurement for Legal Regulations

As part of our global support, we have completed regulation in accordance with the EU's REACH Regulation within the export quantity limitations and the registration deadline for products that are imported directly or indirectly to the EU. Furthermore, we have completed notification under the CLP Regulation for chemical products such as glue, and to support the GHS <sup>\*1</sup> that has been adopted by countries around the world we are issuing SDS <sup>\*2</sup> and applying product labels. In response to domestic regulations and in compliance with the revised Chemical Substance Control Law, this year we have continued to submit notification on the quantity and use of raw materials purchased overseas.

In accordance with the Dodd-Frank Act issued by America's Securities and Exchange Surveillance Commission (SEC), minerals (tantalum, tin, gold, and tungsten) from conflict areas in the Congo are defined as conflict minerals, and listed companies are required to disclose information on their use. We do not use conflict minerals intentionally and investigations have confirmed that we do not use conflict minerals. We will continue to confirm the use of conflict minerals.

See our procurement policy [here](#).

\*1. GHS: The Globally Harmonized System of Classification and Labeling of Chemicals as stipulated by the United Nations that specifies the basic format for label display and SDS preparation

\*2. SDS: Safety data sheet for chemical substances required for the communication of safety information

▲ [Go to Page Top](#)



## Environmental Preservation

### ○ Biological Diversity

[Guidelines](#)
[Achievements](#)

#### Guidelines

#### Guidelines on Biodiversity

The "Basic Law on Biodiversity" was announced and became effective in June 2008, followed by the "Biodiversity Declaration – Action Guidelines and its Guidance" by the Japan Business Federation, and the "Guidelines of Public Participation on Biodiversity" that announced by the Ministry of the Environment in Japan in the following year of 2009. Since Yokohama Rubber is in the same line of those concepts, we have established "Yokohama Rubber's Guidelines on Biodiversity" in order to facilitate corporate-wide approaches on biodiversity.

#### ■ Basic Guidelines

We are running our business by heavily relying on the grace given by nature. We should pass on this rich nature to our future generations by addressing the preservation of biodiversity and utilization of sustainable biological resources through our business activities, whilst recognizing the fact that the "linking diversified lives equals to biodiversity", which is the basis of this grace, has been dwindling rapidly on a global scale lately.

#### ■ Action Guidelines

##### 1. Recognition as a Management Issue

Since Yokohama Rubber is directly using biological resources and conducting business activities that may affect biodiversity, we recognize the importance and risks towards the grace of nature. Therefore we will address the preservation of biodiversity from a long-term perspective.

##### 2. Participation by All Employees

We will raise the awareness of our employees in regards to the grace of nature. All our employees will contribute to the preservation of biodiversity both at work and their local communities.

##### 3. Determine the Effect on Biodiversity and its Reduction

We will determine the effect that our business activities may have on biodiversity, and shall thereby try to avoid or minimize such effect.

##### 4. Preservation of Biodiversity through the Supply Chain

In order to preserve biodiversity, by understanding that it is important to be considerate as early as the stage of resource extraction, we shall contribute to the preservation of biodiversity at resource mining sites through cooperation with relevant personnel of the supply chain.

##### 5. Sustainable Usage of Biological Resources

We will work on any sustainable usage of biological resources by gathering knowledge with regards to biodiversity, and also through technological development, innovation of design and production, or approaches to biodiversity in the value chain.

##### 6. Information Sharing and Communication

We will work on the information gathering or social requirement as to preservation of biodiversity; we shall thereby disclose our activities and achievements proactively to facilitate dialogue and tie-ups with our stakeholders, such as customers, local communities, NGOs, and the government.

### ○ Activity Report in the Fiscal Year of 2012

▶ Corporate Governance and Compliance

▼ Environmental Preservation

Environmental Management

Environmentally-Friendly Products

Reduction of Greenhouse Gas Emission

Utilization of Natural Resources / Reduction of Industrial Waste

Emission Provision onto Water, Air, and Soil

Management of Chemicals

#### Biological Diversity

▶ Together with our Customers

▶ Together with our Employees

▶ Together with our Business Partners

▶ Together with our Shareholders and Investors

▶ Together with our Society



### Addressing the Preservation of Biodiversity

As part of the preparatory stage for commencing initiatives aimed at the preservation of biodiversity, Yokohama Rubber has started our preliminary exploration of the surrounding area of our sites (15 sites in domestic and 15 sites in overseas). This process consists of first taking aerial photographs to confirm the scope of the natural environment and then assessing the status of the natural environment in accordance with that scope.

After completion of the preliminary exploration, we conducted a detail study on the impact of our business activities on the natural environment and studied the issues that Yokohama Rubber should respond to. The following have been positioned as key issues.

(1) Initiatives to protect aqueous environments in the areas surrounding our factories

(2) Initiatives to protect biodiversity in natural rubber growing areas

Currently, employees are leading activities for (1) at each business location based on themes that have been decided on.

#### ■ (1) Initiatives to protect aqueous environments in the areas surrounding our factories

In the production activities of Yokohama Rubber, large volumes of water resources are used as cooling water for production equipment, making the sustainable use of these resources and the preservation of the local environment key issues for the Group.

Accordingly, as a first step to protect aqueous environments in the areas surrounding our factories, starting from April 2011 we have conducted studies on the current status of midstream and downstream of Miya River, and on the riverside of Hinokijiri River in the area surrounding the Mie Plant (over three times in the early summer, summer, and fall). Based on the results of these studies, activities have been conducted every month since March 2012.

In addition, studies were conducted at the Shinshiro Plant, (including the Shinshiro Minami Plant) and the Mishima Plant three times during 2012. We will fully kickoff activities at each of these plants during the spring of 2013.

#### ○ Mie Plant

Located in Ise City, Mie Prefecture, water intake is from the Miya River system, which is said to be one of the clearest river systems in Japan. Water is discharged into the Hinokijiri River, which is a tributary of the Isuzu River.

We have conducted activities since 2011 with the aim of reducing the impact on these two rivers and the surrounding wildlife at four locations near the plant.

In Watarai-cho in the upstream of the Miya River, we participate in the Corporate Forest tree planting initiative sponsored by Mie Prefecture and use the know-how gained through our Yokohama Forever Forest Project as we participate in efforts aimed at local groundwater recharge.

In the hinterlands in the downstream of the Miya River, we monitor birds with the aim of improving the abundance of local nature, and as part of these efforts, we have created our own wildfowl catalog and observation map.

In the midstream of the Hinokijiri River, in addition to surveying water quality, we also observe black killifish and flying dragonflies. We not only analyze water quality data but also conduct monitoring activities including the creation of habitat distribution charts for black killifish in order to confirm the impact on the ecosystem where water is discharged.

In addition, at the Ominato sea coast facing the Ise Bay where these two rivers finally exit into the sea, we conduct studies on conditions on the seashore and work to protect the seaside plants. Because this location is a spawning ground for the endangered loggerhead sea turtle, we try to visualize the sea coast as it once was in Japan as we implement activities aimed at further enriching the biota consisting of the beach and its living creatures.

With the exception of the Corporate Forest activities sponsored by Mie Prefecture, the other three activities are implemented by the employees of the Mie Plant every month. In addition, we conduct cleaning activities and unnecessary driftage removal with people from the local community on a regular basis.



**Birds observation in the hinterlands in the downstream of the Miya River**



**Studying the number of killifish in the midstream of the Hinokijiri River**



**Studying the beach on the Ominato sea coast**



**Results of cleaning on the Ominato sea coast**

#### **Shinshiro Plant, Shinshiro - Minami Plant**

The two plants located in Shinshiro, Aichi Prefecture uptake water from and discharge water to the Noda River and Kuroda River, which are tributaries of the Toyo River system that flows through the eastern part of Aichi Prefecture.

Based on an awareness of the benefits of the Toyo River system and with the aim of minimizing the impact of our production activities, we conducted studies three times during FY 2013 on the water quality, aquatic life, birds, and vegetation at three locations: on the Noda River and Kuroda River surrounding our business locations and at Yotsuya Senmaida in the upstream of the Toyo River system.

Based on the results of these studies, we held a workshop in November 2012 to discuss and consider our activities from FY 2013 onward. We decided to monitor biodiversity at the two water discharge area and at the water source at Yotsuya Senmaida and to conduct environmental preservation activities such as grass mowing.

As a result, we were able to announce to the local community at a community explanatory meeting in February 2013 the commencement of activities to protect aquatic environments near production bases during FY 2013 that were proposed by employees from Shinshiro Plant and Shinshiro Minami Plant.



Survey results

Survey point	Water quality (electrical conductivity)	Vegetation	Aquatic life	Birds
Yotsuya Senmaida (Water source)	76μS/cm	<ul style="list-style-type: none"><li>Wavy bittercress</li><li>Henbit, etc.</li></ul>	<ul style="list-style-type: none"><li>Black-spotted pond frog</li><li>Japanese tree frog</li><li>Wrinkled frog</li><li>Lefua echigonia</li></ul>	<ul style="list-style-type: none"><li>Kite</li><li>Buzzard</li><li>Redstart</li><li>Bullfinch</li></ul>
Noda River (Water discharge area)	117μS/cm (Shinshiro Plant water discharge: 104μS/cm)	<ul style="list-style-type: none"><li>False nettle</li><li>Japanese hop</li><li>Cleavers</li><li>Field horsetail, etc.</li></ul>	<ul style="list-style-type: none"><li>Calopteryx atrata selys larvae</li><li>Rhinogobius kurodai</li><li>Freshwater shrimp</li><li>Japanese pond turtle, etc.</li></ul>	<ul style="list-style-type: none"><li>Northern goshawk</li><li>Pigmy woodpecker</li><li>Shrike</li><li>Bunting, etc.</li></ul>
Kuroda River (Water discharge area)	135μS/cm (Shinshiro-Minami Plant water discharge: 161μS/cm)	<ul style="list-style-type: none"><li>Bur cucumber</li><li>Cocklebur</li><li>Mugwort, etc.</li></ul>	<ul style="list-style-type: none"><li>Stenopsyche griseipennis larvae</li><li>Rhinogobius kurodai</li><li>Dark chub</li><li>Sand loach</li><li>Bullfrog</li></ul>	<ul style="list-style-type: none"><li>Kingfisher</li><li>Pigmy woodpecker</li><li>Shrike</li><li>Bunting, etc.</li></ul>

\*The electrical conductivity for Shinshiro-Minami Plant water intake (pumped water) is 520μS/cm (hot spring water)



**Vegetation study at Noda River**



**Aquatic life study at Noda River**



**Rhacophorus schlegelii at Yotsuya Senmaida**



**Employee workshop**

#### **○ Mishima Plant**

The plant at Mishima, Shizuoka Prefecture uptakes well water with a source from the Daiba River and Yamada River, the Sakura River, and the Genbee River that are tributaries of the Kano River flowing through Mishima, and discharged into the Goten River that is also tributary of the Kano River. A characteristic of Mishima is the abundance of springs and the extremely high water quality, and accordingly we recognize the importance of reducing the impact of our production activities on the environment. Based on this awareness, our employees conducted studies three times during FY 2012 on the water quality, aquatic life, birds, and vegetation on the Goten River and Kano River surrounding our business locations. Based on these results, a workshop was held at the plant during October 2012, and conducting environmental preservation activities that contribute to a healthy water cycle has been adopted as the policy towards biodiversity preservation activities for FY 2013. Based on this we will prepare an implementation plan and conduct environmental preservation activities.





## Survey Results

Survey point	Water quality (electrical conductivity)	Vegetation	Aquatic life	Birds
Goten River (water discharge area)	Overflow upstream: 184 $\mu$ S/cm Plant water discharge: 147 $\mu$ S/cm Overflow downstream: 171 $\mu$ S/cm	<ul style="list-style-type: none"> <li>◎ Reed canary grass community</li> <li>◎ Wild rice community</li> <li>• Brazilian waterweed</li> <li>• Curled pondweed</li> <li>• Willow, etc.</li> </ul>	<ul style="list-style-type: none"> <li>• Macromia larvae</li> <li>• Pale chub</li> <li>• Gudgeon</li> <li>• Abbottina rivularis, etc.</li> </ul>	<ul style="list-style-type: none"> <li>• Kingfisher</li> <li>• Bulbul</li> <li>• Kestrel, etc.</li> </ul>
Kano River (water discharge downstream)	88 $\mu$ S/cm	<ul style="list-style-type: none"> <li>◎ Reed community</li> <li>◎ Giant ragweed community</li> <li>• Verbena brasiliensis</li> <li>• Panicum dichotomiflorum</li> <li>• Cayratia japonica etc.</li> </ul>	<ul style="list-style-type: none"> <li>• Onychogomphus viridicostus larvae</li> <li>• Rhinogobius kurodai</li> <li>• Pale chub</li> <li>• Japanese mitten crab</li> <li>• River prawn etc.</li> </ul>	<ul style="list-style-type: none"> <li>• Great egret</li> <li>• Little egret</li> <li>• Little ringed plover</li> <li>• Kingfisher</li> <li>• Pigmy woodpecker</li> <li>• Fan-tailed warbler etc.</li> </ul>



Water quality survey on the Goten River (before overflow)



Little egret on the Goten River



Wall of giant ragweed on the Kano River



Little ringed plover on the Kano River

## Initiatives During FY 2013

During FY 2013, we continued activities aimed at protecting the aquatic environments surrounding our factories at our three major domestic factories (the Mie Plant, the Shinshiro Plant, (including the Shinshiro Minami Plant), and the Mishima Plant), and our other four major factories (the Onomichi Plant, the Ibaraki Plant, the Nagano Plant, and the Hiratsuka Factory), we commenced our third survey for preparation. Although these activities have just been commenced, unique activities for each factory are being developed based on a style of employees independently thinking, making proposals, and putting plans into action. With the implementation of these activities, employees are often surprised at the new discoveries they find in the local natural environment as each and every employee steadily approaches these activities in a forward-looking and positive manner.



## ■ (2) Initiatives to protect biodiversity in natural rubber growing areas

### ○ Features of Value Chain of Rubber Manufacturing Industry

As we utilize numerous kinds of raw materials (major categories: natural rubber, synthetic rubber, carbon, various blending agents, fibres, and metals), in our rubber manufacturing business, our suppliers are spreading all over the world, mainly overseas.

The greatest impact to be made on biodiversity is "natural rubber" and "metals". Natural rubber is being produced from the farms that are being established by developing the areas rich in biodiversity of Southeast Asia. Metals are being extracted in the mines from developing countries.

### ○ Issue of the Sustainability of Natural Rubber

Yokohama Rubber conducts business activities that use natural resources, metals, and mineral resources such as natural rubber. Natural rubber, which is produced on plantations in South East Asia, is believed to have a particularly strong impact on the biodiversity of the region. Meanwhile, while the biodiversity of the South East Asia region where natural rubber is produced (Thailand, Malaysia, Indonesia, etc.) is abundant, because the regions that face the risk of destruction are mostly the same regions as biodiversity hotspots, consideration towards natural preservation is required in local development and procurement activities.

Particularly in Thailand from which we import large volumes of natural rubber, there are many small plantations, and from our position at the top of the supply chain it does not make it easy for us to contribute to the involvement of these small plantations with biodiversity preservation. However, as Yokohama Rubber operates a tire plant and natural rubber processing plant in Thailand, we would like to contribute to the preservation of biodiversity within the scope of our influence from a long-term and global perspective. For this reason we have conducted studies on the natural environment surrounding our natural rubber processing plant and natural rubber plantations and worked to assess the state of biodiversity at small-scale plantations. As a result, we have come to realize that natural rubber plantations in Thailand could have a rich ecosystem like the natural woodlands that coexists with nearby populated areas in Japan. We will continue detailed studies based on this belief that it may be possible to achieve a positive balance between natural rubber cultivation and biodiversity.

▲ [Go to Page Top](#)

---

[Message from  
The President](#)
[Up Close](#)
[Activity Report in  
the Fiscal Year of 2012](#)
[Site Data](#)
[Related Information on  
CSR Report](#)
[Company Overview /  
CSR Management](#)

[Yokohama Rubber CSR Web site](#) > [Activity Report in the Fiscal Year of 2012](#) > Together with our Customers



## Together with our Customers

### Guidelines

#### Fundamental Quality Policy on Customer Satisfaction

We contribute to society by planning, designing, producing, and selling attractive products for the satisfaction of our customers while maintaining a quality assurance system in all of our processes, including service. To this end, we will conduct systematic activities to ensure that all the basic steps in our quality assurance activities function properly.

#### Consistent Company-wide Quality Assurance Activities

In FY 2012, the CSR Council is now also responsible for deliberating quality assurance initiatives for the entire company, in order to implement the activities throughout the company. To this end, we plan, design, produce and sell the attractive products that satisfy our customers, while enhancing our quality assurance system at all process by adopting the company-wide guidelines. During FY 2013, the Company-wide Quality Improvement Cases Announcement Council was also held as part of initiatives to make significant improvements in the awareness of all employees towards quality.

▶ Assurance of the Safe Tire Products

▶ Assurance of the Safe MB Products

▶ Communication with our Customers (in order to select our products correctly)

▲ [Go to Page Top](#)

## Activity Report in the Fiscal Year of 2012

▶ Corporate Governance and Compliance

▶ Environmental Preservation

### ▼ Together with our Customers

Assurance of the Safe Tire Products

Assurance of the Safe MB Products

Communication with our Customers ( in order to select our product correctly)

▶ Together with our Employees

▶ Together with our Business Partners

▶ Together with our Shareholders and Investors

▶ Together with our Society



## Assurance of the Safe Tire Products

[Guidelines](#)
[Achievements](#)

### Guidelines

#### Basic Notion of the Activities for Quality Assurance

The basic notion of our quality assurance activities at the Tire Group is expressed under the "Quality Guidelines" in accordance with Yokohama Rubber's Corporate Philosophy; "We will enrich people's lives and contribute to their happiness and wellbeing by devoting our wholehearted energies and advanced technologies." We are continually working on our daily operation with quality assurance based on these quality guidelines.

#### Quality Guidelines

1. We will continually provide quality products so that our customers from all over the world can purchase with confidence followed by their sense of satisfaction. We will thereby grow as a corporation and contribute to society by maintaining proper profits through not just customer satisfaction, but also winning their sense of trust afterwards.
2. We will continue to make improvements on our activities of the entire process of Tire Group in order to meet our customers' requirements, as well as to comply with the entire regulations related to all the products we provide, plus any requirements of the quality management of ISO9001 and ISO/TS16949 by aiming for the establishment of even better corporate structures.
3. In order to realize these quality guidelines, each division will set forth their own quality targets, review their status, followed by ensuring their achievements.
4. We will get all our relevant directors and employees thoroughly familiarized with these quality guidelines.

▲ [Go to Page Top](#)

### Achievements

#### Our Approaches for Quality Assurance

#### Our Approaches for Customer Service

We swiftly share the product information given by our customers to the respective sections in our company. We always develop our business activities to meet our customers' expectations, promptly solving issues indicated by our customers coordinating with our related sections.

## Activity Report in the Fiscal Year of 2012

▶ Corporate Governance and Compliance

▶ Environmental Preservation

▼ Together with our Customers

### Assurance of the Safe Tire Products

Assurance of the Safe MB Products

Communication with our Customers ( in order to select our product correctly)

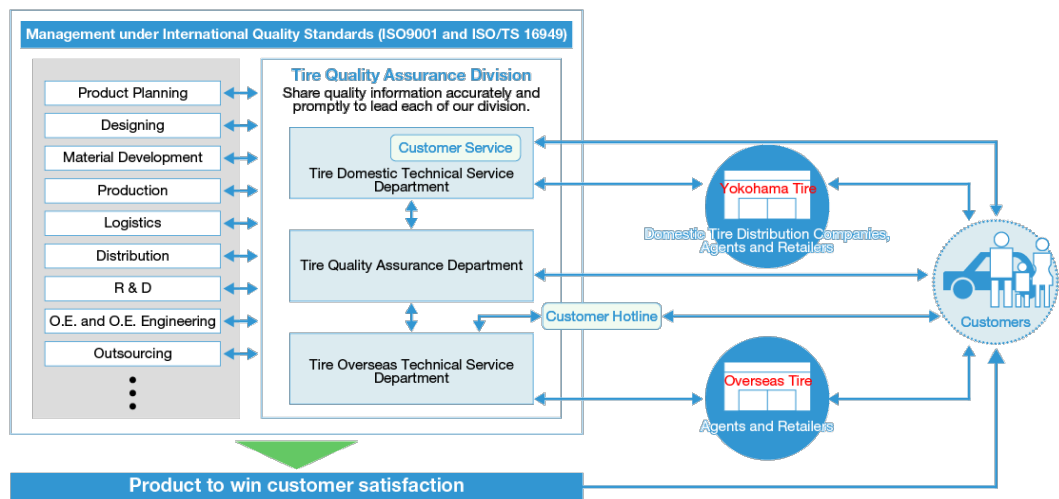
▶ Together with our Employees

▶ Together with our Business Partners

▶ Together with our Shareholders and Investors

▶ Together with our Society

Flow Chart of our Customer Feedback and its Notification



Thin arrows in the diagram refer to information flow; the thick arrows refer to the providing flow.

■ Activities for Quality Assurance

1. Construction of the quality management system (Action to ISO9001 and ISO/TS16949)  
The basis of the supporting system of quality assurance in automobile industry is to comply with ISO/TS16949. This is the quality management system standard required by major automobile industry which is a prerequisite in order for us to develop our various businesses on a global scale. So far, our three domestic plants, plus five overseas plants in which tires for passenger cars, trucks, and buses have obtained preceding certifications are manufactured; we are about to expand this on a global stage. Also, we are proactively facilitating so that our managerial level of supervisors of each division can obtain qualification as internal quality auditor; we have newly certified 93 personnel in the fiscal year of 2012 through our various training sessions and seminars (total number of certified personnel: 714).

Status of Certification Obtaining as to International Quality Standards (the Latest Year/Month for Renewal)

		ISO9001	ISO/TS16949
Domestic	Mishima Plant	June 2012	June 2012
	Shinshiro Plant	June 2012	June 2012
	Mie Plant	June 2012	June 2012
	Onomichi Plant	June 2012	June 2012
Overseas	Yokohama Tire Corporation	Dec. 2012	—
	Yokohama Tire Philippines Inc.	May. 2011	May. 2011
	Hangzhou Yokohama Tire Co., Ltd.	Oct. 2012	Oct. 2012
	Yokohama Tire Manufacturing (Thailand) Co., Ltd. *	June 2012	June 2012
	Suzhou Yokohama Tire Co., Ltd.	Apr. 2012	Oct. 2012

\* Obtained at 2 plants; tires for passenger car plus tires for trucks and busses

2. Improvement of the Support System of Quality Assurance from the Perspective of our Customers  
In order to improve our supporting system of quality assurance, we are trying to leverage the level of our quality system aiming for the solution for any issues being identified from our customers' perspective through our internal quality audit.
3. Conducting Quality Examination by our Top Executives  
We believe that any activities on quality improvement can be achieved only through high awareness of our top executives including our President in order to motivate our workers at our various operation sites; further actions for improvement could even accelerate and fortify it. Therefore our company is conducting "Quality Examination by our Top Executives" to examine annually each of our plants and divisions by our management team.
4. Improvement on the Performance Level for Plant Supervisors  
In order to fortify our strength at operation sites, our Tire Global Quality Assurance Division is continually conducting Enlightenment and Training Programs by focusing on the quality of each hierarchy, primarily plant supervisors, to improve our overall quality level at all our plants. We plan to provide new training for supervisors at overseas plants during FY 2013 as we respond to globalization.

## 5. Quality Assurance Activities Related to Development Operation

We are striving to deliver products with quality assurance by conducting Design Reviews to evaluate achievements for each step from product planning, designing, to production. Also we follow up with our customers how much they are satisfied after sales, followed by feedback to our development operation team in order to develop and provide even better products all the time.

## 6. Safety Assurance through the Entire Life Cycle of Tires

In order for our customers to continue to use our safe products comfortably, we handle promptly in the event of any incident that may cause inconvenience to our customers such as product recall by notifying to our customers as soon as possible.

▲ [Go to Page Top](#)

## Our Approaches for our Domestic Tire Service

### ■ Basic Notion of the Activities for Domestic Services

The basic guidelines as to quality of our Tire Group are set forth in our "Quality Guidelines". Tire Domestic Technical Service is always developing service activities from our customers' perspective in order for them to duly satisfy with our products and establish a sense of trust according to those guidelines.

### ■ Supporting System of our Services

In order to facilitate obtaining highly-accurate market information and prompt action in case of any defect of our products, our supporting systems are already in place as follows:

- We have placed our personnel from the Tire Domestic Technical Service Department in six cities nationwide in Japan (Sapporo, Sendai, Tokyo, Nagoya, Osaka, and Fukuoka).
- We have formed our service network by operating our qualification system (YFS = YOKOHAMA FIELD SERVICE)\* applicable to our regional distribution companies and sales offices in Japan (349 nationwide).
- We are holding seminars and reporting sessions for our regional distribution companies and sales offices to introduce our new products, develop our service guidelines, and share some market information.

\* Qualification system (YFS = YOKOHAMA FIELD SERVICE) refers to our system to grant qualifications to eligible personnel as to product knowledge, prompt response to customer complaints and so on upon training and testing at our seminar organized by the Tire Domestic Technical Service Department. There are 708 individuals who possess this qualification at the point of fiscal year of 2012.FY2012 Target value: 26 employees / Actual value: 28 employees / 2013 Target value: 30 employees

### ■ Obtaining Market Information and Application to our Products

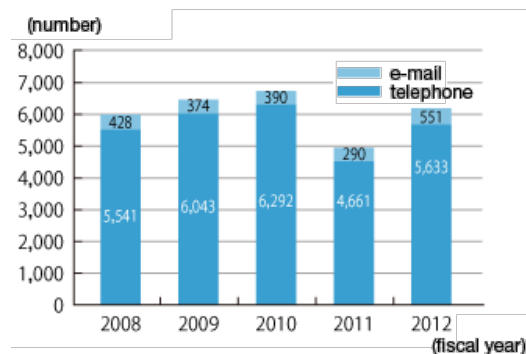
We have our framework in place to obtain and analyze customer feedback and market evaluation, develop them internally, and apply them into our next products in order to provide products to ensure we win continual customer satisfaction.

#### 1. Obtaining Market Information

Our personnel from Tire Domestic Technical Service Department are conducting hearings from our customers and surveys of actual tires based on the information from our distribution companies. The gathered information will be developed internally as Technical Correspondence to improve the performance of our products and apply it into our next products as well. 629 pieces of correspondence were issued in the fiscal year of 2011 (April to December), in contrast to 628 in the fiscal year of 2012 (January to December).

#### 2. Development of Gathered Information at our Customer Service

##### Changes in the Number of Cases Directed to our Customer Service



\*The number in 2011 is from April to December.

Our Customer Service team stationed in our headquarters is handling customer inquiries as to tires including obtaining information such as market evaluation or complaints as to our products. They are dealing directly with our customers through telephone or e-mail, followed by developing such precious information gathered

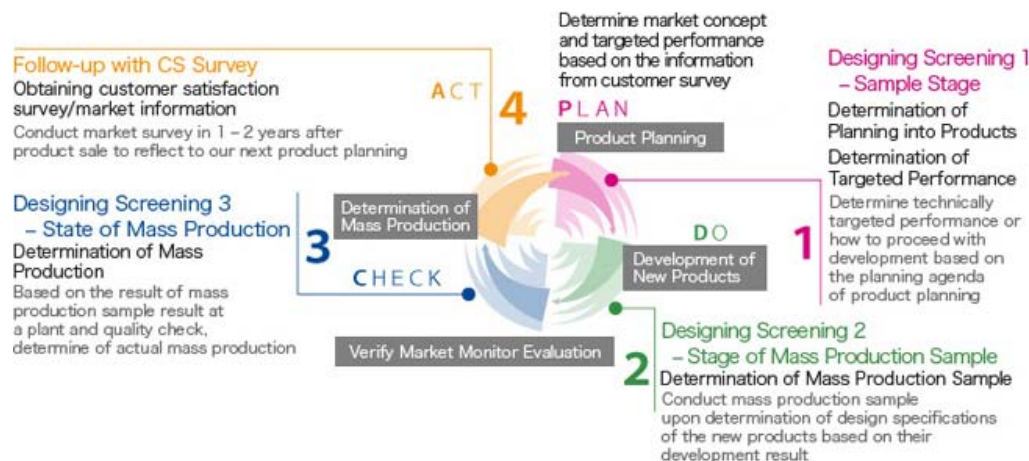


throughout the company in a prompt manner. This is to help improve our product performance, catalogue, and our homepage. Also, we gather and analyze information from our customers, or for any information related to quality issue, followed by reporting internally to apply them into our next product.

### 3. Holding Reporting Sessions for Customer Satisfaction Survey (CS Reporting Session) of our New Products

We are obtaining and analyzing market evaluations as to our new products by holding CS Reporting Sessions together with our Development Division to apply such information into our next products. We held such sessions seven times in the fiscal year of 2012.

#### Flow Chart of our Market Adaptability Verification



#### ■ Market Enlightenment Activities – Customer Seminar

We are conducting various activities that will lead to customer satisfaction; as we hope that we could draw more interest and attention from many of our customers into tires by enlightening them with proper usage of tires. We have conducted such Customer Seminars 57 times in the fiscal year of 2012.

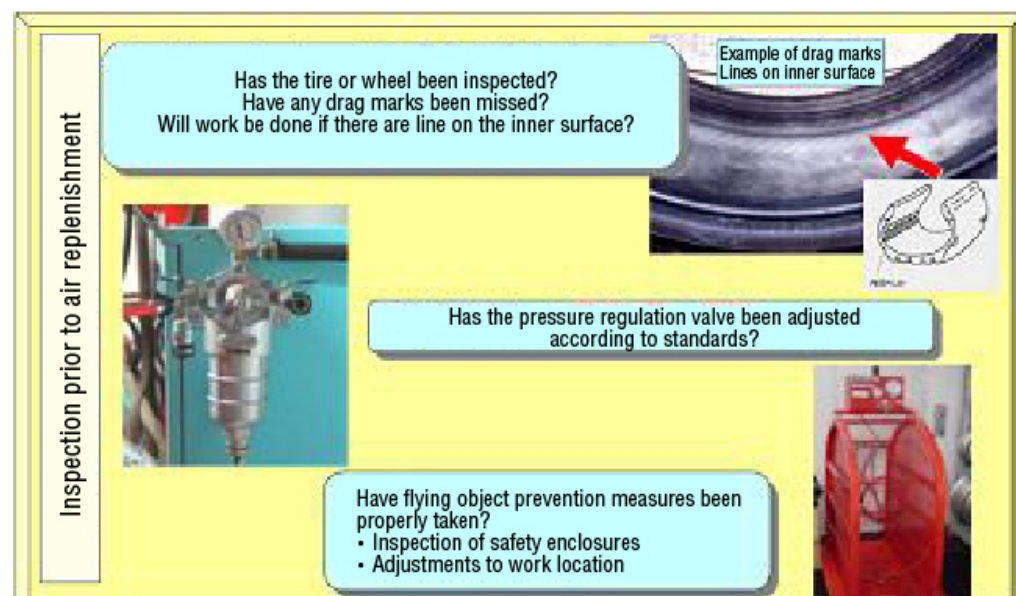
#### ○ Filling Operation of Tire Air – Special Seminar

It is required by law to conduct special seminars and so on under Ordinance on Industrial Safety and Hygiene (Ministerial Order by Department of Labor) towards the workers who are involved in the filling operation of tire air.

Yokohama Rubber is conducting various seminars in accordance with our regulations conducted by our personnel of Tire Domestic Technical Service Department or employees at our distribution companies who are qualified as a lecturer for Filling Operation of Tire Air – Special Seminar mainly for our valued customers from Tire Distributors and Transporting Companies.

#### ○ Seminars for Drivers (Mainly our Valued Customers from Bus Companies and Transporting Companies)

We are conducting various seminars as to basic knowledge of tires plus daily inspection and maintenance work in order for professional drivers, i.e. our valued customers who deal with precious passengers and cargoes, to keep making improvements with their safety driving, economical driving, and quality transportation. These days since we have noticed that many of our valued professional drivers are more inclined to be concerned about environmental issues and various approaches on cost cutting, we are bringing up the relativity of tire and fuel efficiency as well.



#### Document of our Seminars for Drivers



▲ [Go to Page Top](#)

## Approaches of Overseas Tire Service

### ■ Basic Notion of Overseas Service Activities

The basic guidelines as to quality for our Tire Group are set forth in our "Quality Guidelines". The Tire Overseas Technical Service Department is always developing service activities from our customers' perspective in order for them to duly satisfy with our products and establish a sense of trust according to those guidelines.

### ■ Execution of Market Adaptability Verification and Incorporation in Products

We are conducting the below-mentioned activities in each step from the stage of product planning to after service.

1. Prior to Market Launching: Market adaptability verification of new products through utilization of market monitor
2. After Marketing Launching: Obtain market quality information and conduct customer satisfaction survey
3. Planning Stage: Propose objectives of new products based on market information

You may wish to refer to Our Approaches for our Domestic Tire Service for the [Flow Chart of our Market Adaptability Verification](#).

### ■ Expansion of our Global Service Network

We are conducting the below-mentioned measures in order for our customers located all over the world to be able to use our products with a great level of satisfaction as we expand our global service network.

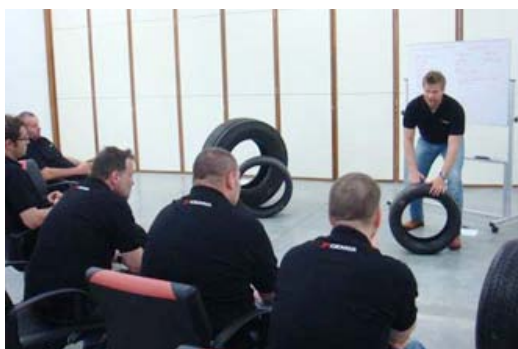
1. We have placed our Technical Service Personnel in each of our regional business locations in North America, China, Europe, Asia, Central and South America, Middle East, and Africa.
2. We have established the network by technical staff from each distribution companies and agencies under our regional sites. This is to provide our technical service to each country all over the world excluding Japan.
3. Obtain highly accurate information as to product usage and requirements from our products for each region and country.

## ■ Training for service engineers

### ○ Establishment of the Tire Service Training Center in Thailand

October 2011 saw the inception of the Company's tire service training center in Thailand as part of wider efforts to reinforce the training of Yokohama Rubber service engineers around the world. Service engineers engage in technical services such as the collecting of market and quality information as well as technical information initiatives designed to further increase customer satisfaction. This tire training center is a facility for producing service engineers capable of engaging in practical service provision, as much as possible from the perspective of customers. During FY 2012 we conducted training for 62 service engineers from 28 countries. This training has incorporated a test course for experiencing actual tire and vehicle properties, making it possible to receive training more closely linked with local communities. As a result of receiving this training, it has improved the abilities of engineers to utilize the information system using the web as well as the accuracy of information. Through this training we aim to additionally enhance technical service capabilities of service engineers around the world and to further increase customer trust and confidence in the Yokohama brand.

#### Training for service engineers



### ○ Training surrounding vehicle tires for construction and industrial use

For 14 service engineers from 8 countries around the world engaged in sales and technical services surrounding vehicle tires for construction and industrial use such as on construction sites and in mining operations, during FY 2012 the tire production plant in Onomichi was the location of highly specialized training session covering the range from manufacturing processes to design methods and knowledge, as well as analysis techniques using actual tires as study materials. Through this training that improves capabilities to gather customer information onsite and tire analysis skills the Company continues in its efforts to enable system engineers to provide the high technical service levels that match and satisfy the requirements of customers for vehicle tires for construction and industrial use.

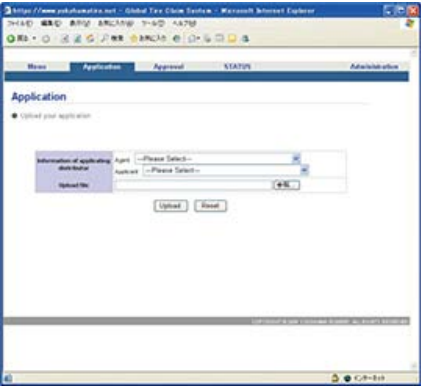
#### Training surrounding vehicle tires for construction and industrial use



## ■ Quality information aggregation system

The information gathered through the quality information system that was initiated in 2010 has been analyzed and applied to the establishment of better products, through means such as improvements to existing products and the planning of new products.

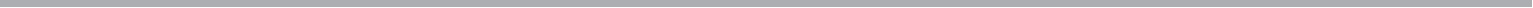
Information Collection System Using the Internet



■ Collection of Customer Information for Vehicle Tires for Construction and Industrial Use

Usage conditions for vehicle tires for construction and industrial use vary considerably depending on the customer. We collect information on individual customers in order to select and recommend

▲ [Go to Page Top](#)



[Message from The President](#)
[Up Close](#)
[Activity Report in the Fiscal Year of 2012](#)
[Site Data](#)
[Related Information on CSR Report](#)
[Company Overview / CSR Management](#)

[Yokohama Rubber CSR Web site](#) > [Activity Report in the Fiscal Year of 2012](#) > [Together with our Customers](#) > Assurance of the Safe MB Products



## Assurance of the Safe MB Products

[Guidelines](#)
[Achievements](#)

### Guidelines

#### Basic Notion of the Activities for Quality Assurance

Our MB Group sets forth its mid and long term guidelines as to "raise customer credibility by continually providing high quality products all the time". We are trying to facilitate to enforce our quality assurance supporting system in mid and long term by ensuring safety for not just our primary customer mainly manufacturers, but subsequent secondary, tertiary users, and every consumer's life being surrounded by products from our MB Group, followed by granting them with peace of mind.

#### ■ MB Group – Mid and Long Term Approach Guidelines as to Quality Assurance

We will raise customer credibility by continually providing high quality products all the time.

In order to gain customer credibility, we will ensure:

1. Customer-centric systematic quality management and product development
2. Effectuation of quality control system and continuation of autonomous quality improvement activities
  - (1) Attainment of zero complaints outflow
  - (2) Operation of quality management system (introduction of the system in new locations, businesses at ease) in consideration of QCD (quality, cost, delivery).
3. Preparation of crisis management system and continuous correspondence to it
4. Continuation of customer-centric technical service activities
5. Global development of above mentioned guidelines

▲ [Go to Page Top](#)

### Achievements

#### Our Approaches for Quality Assurance

#### ■ Work Operations by our MB Group

Our MB Group is dealing with various commodities for mainly hoses and couplings, industrial products, adhesives and sealants, and aerospace products. Our mainstay products are industrial rubber products such as various hoses and conveyer belts, adhesives, various sealing materials, fuel tanks for aircraft, lavatory units and more; our major customers are the manufacturers of automobiles, construction equipment, air frames, vehicles, industrial facilities, public corporations, and construction companies. Our products will be delivered to our customers through our distribution companies and agencies. In addition to those B-to-B products, we are manufacturing various B-to-C products as well, such as golf goods.

As for those products, we will ensure safety assurance through incoming goods inspections for raw materials to use, half-finished goods inspections such as blended rubber materials, product inspections for final products; we are also trying to secure quality with their design by conducting designing screening from the stage of product planning, the stage of designing, and the stage of process designing.

## Activity Report in the Fiscal Year of 2012

▶ Corporate Governance and Compliance

▶ Environmental Preservation

▼ Together with our Customers

Assurance of the Safe Tire Products

### Assurance of the Safe MB Products

Communication with our Customers ( in order to select our product correctly)

▶ Together with our Employees

▶ Together with our Business Partners

▶ Together with our Shareholders and Investors

▶ Together with our Society



## ■ Lecture classes related to customers' correspondence in our company

In "Industrial Technology & Sales Department" which was launched in June 2009, experienced engineers with products knowledge related to industrial materials, HAMATITE, hose plumbing stay at each representative sales company. They develop activities to hold lecture classes for products knowledge and handlings to develop human resources and enhance communication at the sales companies and locations, aiming at smooth correspondence to our customers.

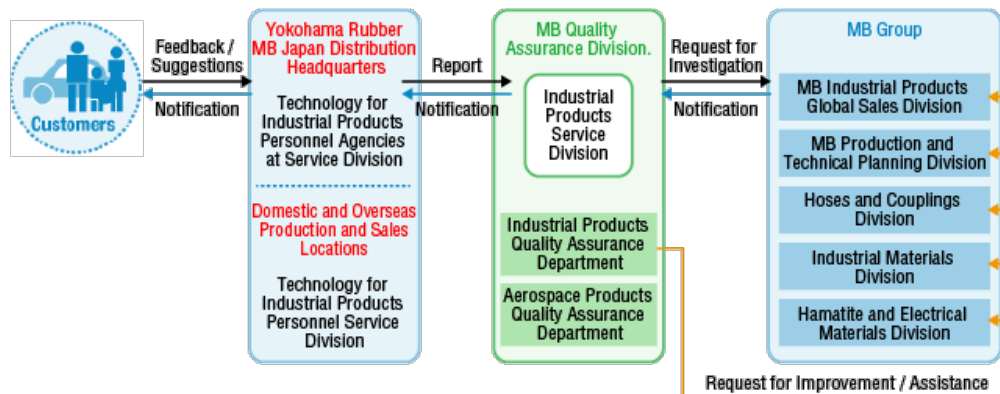
44 lecture classes were held in fiscal year 2012 (from January to December)



## ■ Approaches for our Customers

New company "Yokohama Rubber MB Japan" was launched in October 2010, Integrating a part of function in MB sales companies and industrial products marketing department of our head office. With this, we integrated marketing power of sales companies which were close to our customers and back up function of manufacturers, we plan to introduce system development with a feeling of identification and swift decision making. We deploy a staff member from quality assurance department of a manufacturing company, who improves consciousness of product quality of our staff during the course of lecture related to product quality to our sales staff members, and are working to continuously provide our customers with safe and high quality products.

### Flow Chart of our Customer Feedback and its Process



## ■ Our Internal Activities for Quality Assurance

### 1. Risk Management – Dealing with Customers

We are operating under, and at the same time revising timely the requirements of the "Measurement Action for the Market" in order to act promptly and adequately for various business practices of diversified product lines of our MB Group by making clear about actions and supporting system for our MB products' safety issues. Also, in the event of any quality issues or complaints in the market over our products already delivered to our customers, not just we act promptly to solve the problems, but also we take actions to avoid any recurrence. As for preventive measure for recurrence, we will verify its validity by conducting quality audit on a regular basis whilst checking whether corrective measures are duly conducted.

Also, we have our framework called the "Meeting for Product Improvement" where relevant divisions get together to lead to product improvement based on quality information in the market not to allow any quality issue to occur. We are aiming for the improvement on CS by relevant divisions to get together through this framework.

### 2. Activities on Quality Improvement – Framework to be in place to maintain customer credibility

Our MB Group has formed their activities on quality improvement by reflecting their mid and long term guidelines to facilitate their activities.

1. We are continually making improvements based on the verification of international quality management systems such as "ISO/TS-" per sector. Our Industrial Products Business Group has obtained this certification by establishing quality assurance supporting system with more clear regulations and structures as to their operational responsibility at our Technology, Production, and Sales Division; upon integration and organizational shifting based on their functions as Industrial Products, Adhesives and Sealants, and Hoses and Couplings Businesses.

We continuously acquire certification of "ISO/TS-" at our overseas production bases as well.

**Acquisition of "ISO9001, ISO/TS16949" at our production sites in Japan and overseas (year and month of the latest update)**

	Production sites		ISO9001	ISO/TS16949
Domestic	Ibaraki Plant		January 2012	January 2012
	Nagano Plant		January 2012	January 2012
	Hiratsuka East Plant		January 2012	January 2012
	Hamatite Nakahara Plant		January 2012	-
	Hamatite Ibaraki Plant		January 2012	-
	Plant of Industrial Material		January 2012	-
Overseas	YH AMERICA INC.	KENTUCKY HOSES DIV.	-	October 2012
		KENTUCKY HAMATITE DIV.	-	September 2012
		SOUTH CAROLINA HOSES DIV.	-	February 2013
	SAS RUBBER COMPANY	HOSES DIV.	January 2011	-
		INDUSTRIAL DIV.	August 2010	-
	SHANDONG YOKOHAMA RUBBER INDUSTRIAL PRODUCTS CO., LTD.		August 2011	-
	YOKOHAMA HOSES & COUPLING (HANGZHOU) CO., LTD.		March 2009	-
	YOKOHAMA HAMATITE (HANGZHOU) CO., LTD.		October 2010	-
	SC KINGFLEX CORPORATION		March 2011	-
	YOKOHAMA RUBBER (THAILAND) CO., LTD. (YRTC)	HOSES DIV.	April 2012	March 2012
		HAMATITE DIV.	April 2009	-

2. Our internal audit and examination activities have been conducted throughout all the plants, technical divisions, and overseas operation sites of MB Group; we are trying to facilitate to raise awareness of quality and activities for improvement including "Quality Examination by our Top Executives" conducted by our Directors. Also, for the purpose of fortifying our quality framework, we are promoting the obtainment of qualifications as internal auditor; about 280 employees have obtained this qualification at the point of March 2013.



### 3. Fortification of Global Quality Assurance Supporting System

MB Group has overseas operation sites; 2 in North America, 3 in China, 1 in Taiwan, and 1 in Thailand. We are expanding our activities by aiming for our universally common quality standard by summarizing various rules on quality assurance activities, by making clear about the authorities on responsibilities between overseas operation sites and relevant domestic divisions from product planning to quality assurance supporting system after sale. Enlightenment materials for quality for both expatriate staff and local staff are duly utilized in all our operation sites.



#### ■ Supporting System for Customer Complaints by Working with YAA

Our Aerospace Division is producing a Lavatory Module (a unit for washroom) for 737 passenger aircraft to be manufactured by Boeing in the USA. They are manufactured in our Aerospace Products Plants in our Hiratsuka Factory; only Lavatory Modules which have passed our final inspection will be shipped out to the USA. Lavatory Modules which have been installed in the passenger cabin of 737 passenger craft by Boeing in the USA will be subject to appearance checks and various performance tests (turning on the lights, fire alarms, water for hand-washing, etc.); a Non-Conformance Tag would be issued as a countermeasure for the problems in the event of any irregularities being detected at this stage.

Our Quality Assurance Department is always monitoring Boeing's website (exclusive site for Yokohama Rubber); we would immediately contact via e-mail to our personnel of quality assurance of YAA (YOKOHAMA AEROSPACE AMERICA, INC.) to request to find out the situation along with investigation at Boeing. Based on the discussion at YAA, investigation result, internal discussion, and its investigation result, we will try to improve Yokohama Rubber's credibility by requesting Boeing to take corrective action or implement countermeasures or by filing an appeal to Boeing. Because YAA is able to directly conduct product investigation and adjustments with customers onsite, they have contributed to reducing the time required for an answer.

YAA is also working as a marketing front of spare parts of Lavatory Modules, and contribute to improvement of product quality and customer satisfaction, communicating with Boeing and many airlines which operate 737 passenger aircrafts, and absorbing complaints and demand from the airlines and passengers ,and coordinating them liaising the information to Yokohama Rubber .

▲ [Go to Page Top](#)

---

[Message from  
The President](#)
[Up Close](#)
[Activity Report in  
the Fiscal Year of 2012](#)
[Site Data](#)
[Related Information on  
CSR Report](#)
[Company Overview /  
CSR Management](#)

[Yokohama Rubber CSR Web site](#) > [Activity Report in the Fiscal Year of 2012](#) > [Together with our Customers](#) > Communication with our Customers ( in order to select our product correctly)



## ○ Communication with our Customers ( in order to select our product correctly)

[Guidelines](#)
[Achievements](#)

### Guidelines

#### Our Basic Stance and Attitude

Yokohama Rubber's Corporate Code of Conduct, that "we will win customer satisfaction and credibility through developing and providing socially valid products and services with meticulous consideration for safety", comprises Yokohama Rubber's strong intention to deliver correct product information to our customers as per described below.

#### Our Ideas towards Advertisement and Rules to Comply

We are paying attention all the time as to how our advertisement and promotion styles ought to be in order for more people to understand our products, services, and corporate activities as much as possible. We are trying to disseminate the latest information accurately and in a timely manner through our home page or press releases to all our stakeholders. Especially, our website consists of two structures; one is the homepage to provide information on entire Yokohama Rubber Group's business including Yokohama Rubber and our Affiliated, another one is the homepage by mainly focusing on providing product information such as domestic tires for mending, hoses and couplings, adhesives and sealants, industrial products, aerospace, golf products and more. Also as a member of the Tire Fair Trade Council, we are striving in various advertising and promotion activities in accordance with applicable regulations by regularly attending and cooperating with the respective committees in charge of various levels derived by formulating the regulations of the said Council along with its actions, and also, by conducting status surveys in the market to make sure that members are strictly complying with the notion of fair competition. There is no case to violate the regulations in the fiscal of 2012. The same notion for advertisements can be applied to our overseas offices as well.

#### Attending to Customer Inquiries

Product inquiries can be made through [Homepage](#) in addition to via telephone. We will try to attend to your inquiry as soon as possible from our relevant department.

▲ [Go to Page Top](#)

## ○ Activity Report in the Fiscal Year of 2012

▶ Corporate Governance and Compliance

▶ Environmental Preservation

▼ Together with our Customers

Assurance of the Safe Tire Products

Assurance of the Safe MB Products

**Communication with our Customers ( in order to select our product correctly)**

▶ Together with our Employees

▶ Together with our Business Partners

▶ Together with our Shareholders and Investors

▶ Together with our Society

## Product Labeling

Japan Automobile Tire Manufacturers Association has established a Grading System by integrating the "performance on rolling resistance" of tires and "wet grip performance" as an effort in order to facilitate the promotion of low fuel consumption tires; not just to define as low fuel consumption tires for those tires meeting certain parameters, but also that they have a labeling system (display method) in place to provide correct information for our customers started from January 2010. Incidentally, there was no case of violation as to information provided on performance through labeling in the fiscal year of 2012.

### One of the Examples of the Label



▲ [Go to Page Top](#)



[Message from  
The President](#)
[Up Close](#)
[Activity Report in  
the Fiscal Year of 2012](#)
[Site Data](#)
[Related Information on  
CSR Report](#)
[Company Overview /  
CSR Management](#)

[Yokohama Rubber CSR Web site](#) > [Activity Report in the Fiscal Year of 2012](#) > Together with our Employees



## Together with our Employees

### Guidelines

#### Guidelines about "People"

We will create an environment in accordance with our management policy of creating a workplace to value, improve, and energize people, where each of our ever-diversifying personnel can equip themselves with the necessary skills and perform by utilizing their capabilities to the fullest. Also, we aim to create a workplace where our employees can realize a work-life balance.

We will continue to raise the awareness of our personnel so that they can perform on the global stage and are capable to deliver the business strategy of GD100 and various technical strategies.

[▶ Employment](#)
[▶ Workplace with Safety and Health](#)
[▶ Enlightenment and Training](#)
[▶ Work-Life Balance](#)
[▶ Diversity in human resources](#)
[▶ Human Rights](#)

## Activity Report in the Fiscal Year of 2012

[▶ Corporate Governance and Compliance](#)
[▶ Environmental Preservation](#)
[▶ Together with our Customers](#)

### ▼ Together with our Employees

[Employment](#)
[Workplace with Safety and Health](#)
[Enlightenment and Training](#)
[Work-Life Balance](#)
[Diversity in human resources](#)
[Human Rights](#)
[▶ Together with our Business Partners](#)
[▶ Together with our Shareholders and Investors](#)
[▶ Together with our Society](#)

▲ [Back to Top Page](#)

[Message from The President](#)
[Up Close](#)
[Activity Report in the Fiscal Year of 2012](#)
[Site Data](#)
[Related Information on CSR Report](#)
[Company Overview / CSR Management](#)

[Yokohama Rubber CSR Web site](#) > [Activity Report in the Fiscal Year of 2012](#) > [Together with our Employees](#) > Employment

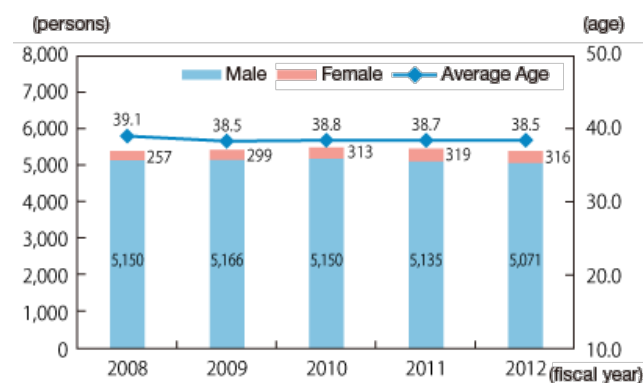


## ○ Employment

### Achievements

### Status of Employment

#### Number of Employees per Gender and Average Age



#### Yokohama Rubber Group's Number of Employees per Region

(unit)

		FY2008	FY2009	FY2010	FY2011	FY2012
Overseas	Japan	10,311	10,437	10,480	10,422	10,172
	North America	1,821	1,932	2,040	2,150	2,195
	Asia	4,565	5,104	5,730	6,384	6,349
	Europe	75	79	223	316	696
Total		16,772	17,552	18,473	19,272	19,412

\* Consolidated Number of Employees: number includes personnel of our affiliates

▲ [Go to Page Top](#)

## ○ Activity Report in the Fiscal Year of 2012

- ▶ Corporate Governance and Compliance
- ▶ Environmental Preservation
- ▶ Together with our Customers
- ▼ Together with our Employees

### Employment

Workplace with Safety and Health

Enlightenment and Training

Work-Life Balance

Diversity in human resources

Human Rights

▶ Together with our Business Partners

▶ Together with our Shareholders and Investors

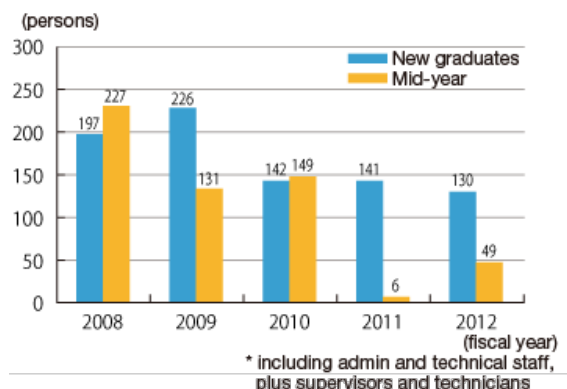
▶ Together with our Society

## Stable Employment

### ■ Stable Employment of Fresh Graduates and Mid-Career Employment Depends on our Business Strategies

We are employing a stable number of fresh graduates from a long-term perspective. Also, we are employing professionals with relevant experience (mid-career employment) depending on our business operation needs.

#### Changes in the Number of Hiring



▲ [Go to Page Top](#)

## Employee Benefits and Welfare

Yokohama Rubber has various types of Employee Benefit packages in place so that our employees can continue to work and live comfortably. As for accommodations, we provide a dormitory for single employees who have met certain criteria; also, we provide company apartments for those who relocate together with their family members, whereas we provide housing allowance for those who are with family members but have no history of relocation. Also, all our sites have a canteen for employees where healthy and affordable meals are provided; company canteens are used as a place for communication and mingling such as for social gathering at night time under the theme of local gourmet dishes. Temporary or contract workers are also allowed to use company canteens. Other than that, we are also supporting a part of employees' lives such as group insurance covering the entire employees of the domestic Yokohama Rubber Group.

### ■ Retirement Allowance System

Our pension consists of a one-time retirement lump sum grant and defined contribution pension; the ratio is about 60% and 40%, respectively. The one-time retirement lump sum refers to a one-off payment only without subsequent pension receivable.

▲ [Go to Page Top](#)

## Status of Labor-Management Relationship

We have established a Labor-management consultation system in a wide spectrum such as employment, work conditions and employee benefits under the recognition that company growth and employees' stable life are common goals both by Labor and management. Our Labor-Management Council consists of the Central Labor-Management Council and Local Labor-Management Council located in each office, and various types of Labor-management committees to conduct discussion by reviewing various important issues. Specific items with regards to any changes in work operation shall be usually discussed in the committee meeting to be held one month in advance.

#### Ratio of Union Members/Non-Union Members (as of December 2012) (unit: person)

Union Members	4,900
Non-Union Members	528
Total	5,428

▲ [Go to Page Top](#)

[Message from  
The President](#)
[Up Close](#)
[Activity Report in  
the Fiscal Year of 2012](#)
[Site Data](#)
[Related Information on  
CSR Report](#)
[Company Overview /  
CSR Management](#)

[Yokohama Rubber CSR Web site](#) > [Activity Report in the Fiscal Year of 2012](#) > [Together with our Employees](#) > Workplace with Safety and Health



## Workplace with Safety and Health

[Guidelines](#)
[Achievements](#)

### Guidelines

#### Basic Guidelines

Safety and sanitation are the basis of all our activities.

We aim to prevent any occupational injuries, create a pleasant workplace and overall health for our workers under the strong leadership of our managers and supervisors, along with our entire group's employees' cooperation of this matter.

▲ [Go to Page Top](#)

#### Supporting System of Safety and Health Management

We formed the "Safety and Health Sub-Committee" per division and workplace and the "Office-Wide Safety and Health Committee (legally stipulated)" per office under our Central Committee of Safety and Health, which consists of one representative out of about 200 persons (0.5%). Activities on safety and health are an important approach common in companies and unions. Through interaction with the Japan Rubber Manufacturers Association and Japan Rubber Workers Union Confederation to share safety information with other companies and other union confederation members, we are also trying to facilitate those by labor and management sides getting together. We also share our activities with our subcontractors by having them join their respective committees. As for our various overseas offices, they have their own supporting system in place according to the prevailing law under their country's governance.

## Activity Report in the Fiscal Year of 2012

▶ Corporate Governance and Compliance

▶ Environmental Preservation

▶ Together with our Customers

▼ Together with our Employees

Employment

**Workplace with Safety and Health**

Enlightenment and Training

Work-Life Balance

Diversity in human resources

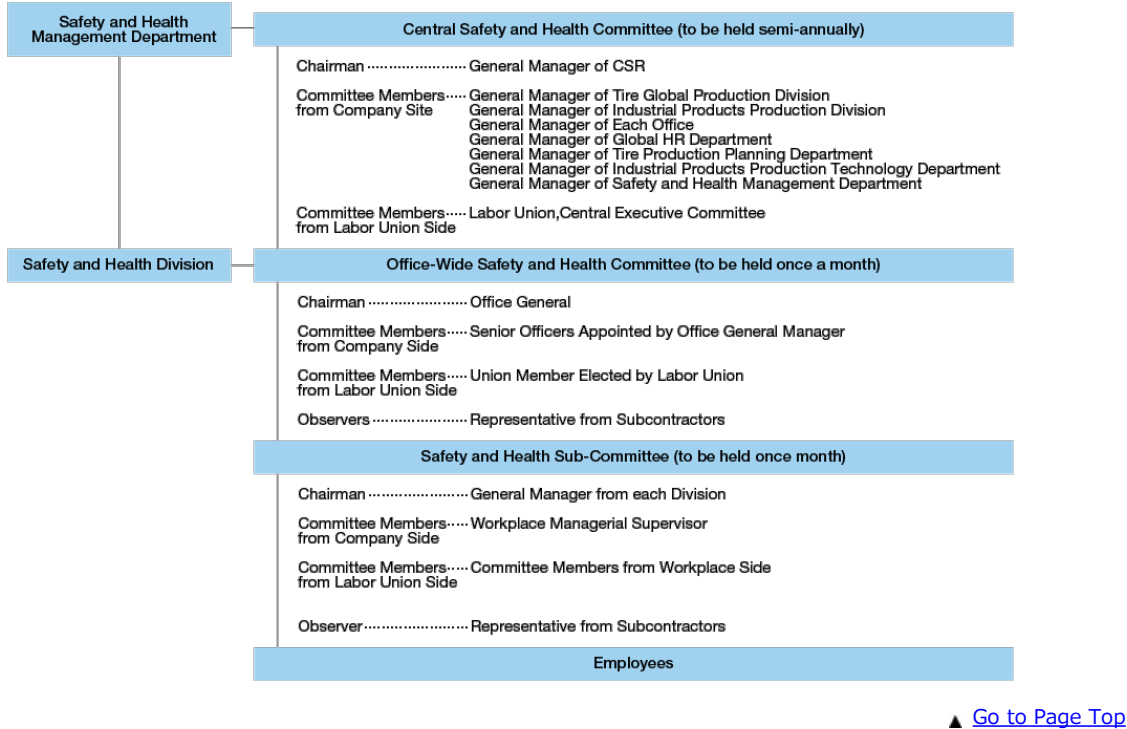
Human Rights

▶ Together with our Business Partners

▶ Together with our Shareholders and Investors

▶ Together with our Society

Our Supporting System of Safety and Health Management



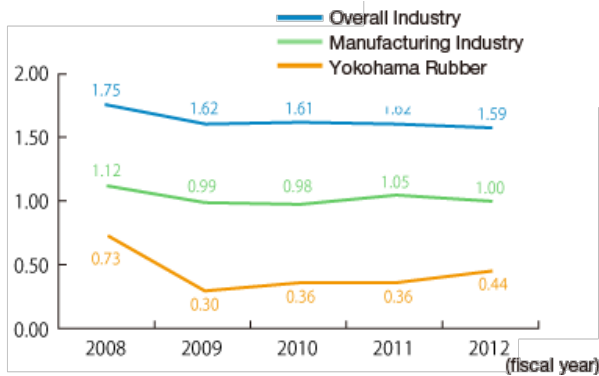
Achievements

Status of the Occurrence of Occupational Disasters

In our domestic operations, the percentage of workers’ leave in FY 2012 deteriorated from 0.36 to 0.44 from the previous year. The total number of leave arising from disaster was six, two of these incidents were due to interference with an operating part during unattended operations. In order to prevent such accidents, we will promote education that urges employees to act responsibly and to continue to improve the situation by raising awareness of safety such as proactively stimulating various activities at each workplace. Examples include visualizing our activities by using a safety activities board. From now on, we will continue to make improvements to leverage our awareness levels by identifying potential risks as well.

\* Percentage of workers' leave = (number of the case of occupational disaster / total work hours) x 1million hours  
\* Every piece of data is an aggregated value per year (from January to December)  
\* All industries (excluding general construction industry), manufacturing industries are based on "Survey on Recent Occupational Accidents"; statistics announced by Ministry of Health, Labour and Welfare

Frequency of Occupational Accidents (Percentage of Workers' Leave)



▲ [Go to Page Top](#)

Six Pillars of Approaches Aiming For Safety Workplace

Yokohama Rubber Group is conducting six pillars of approaches in our domestic operation sites in order to fortify safety and accident prevention even further. Also, we have conducted "Corporate-Wide Convention for Safety and Accident Prevention" for entire domestic operation sites grouped together, pledging to "aim for a workplace environment without any existence of risks" as an entire corporation as a team by sharing various activities with regards to safety and health, plus accident prevention from each operation site. In our overseas offices, each of our operation sites is conducting their own convention for safety and accident prevention to promote various approaches towards safety.



## 1. Establishment of Occupational Health Safety Management System (OSHMS)

Out of the strong intention by our management to aim for the establishment of organization systems or management systems in order for our operation sides to duly fulfill to bring about total zero risks, we are trying to get each of our offices to obtain the certification of Occupational Health Safety Management System (OSHMS); as a result, nine of our offices were able to obtain as of 2012 (six domestic offices in FY 2011, one domestic office and two overseas offices in FY 2012).

Also, in order for us to keep making improvements by understanding each office's strengths and weaknesses, aiming for renewal in FY 2013 we are reinforcing and promoting internal audits for safety both in domestic and overseas offices by setting up our auditing items all in common in our entire corporation.

## 2. Making our Facilities Safer

We have taken measures by utilizing the method of risk assessment that can be "pre-emptive management" of accident prevention, conducting identification and evaluation of any potential risks in our existing facilities, followed by prioritizing them. Also by gathering our workers' ideas, we are creating repair tools and facilitating automation of the facilities so that they can still be processed without workers acting when trouble occurs; this is how we aim to create various facilities that ensure safety and comfort.

## 3. Further Enlightenment for Safety

We are trying to train our workers for good sensibility; who can foresee risks in any potential incident. We are conducting KYT (Kiken [Risk] Yochi [foresee] Training) which is to be done by every worker every day, along with sampling and improvement for Hiyari Hatto (a near accident) incident that are voluntary activities to be attended by everybody. We are also conducting training at Taikan Dojo (training through actual experience for accident prevention). Also, we have facilitated enlightenment on safety by focusing on communication like supervisor interacting with a worker one-by-one whilst understanding the meaning of each operation until they can have autonomy to conduct safe operations on their own. In addition, in an aim to further improve work safety, we promote open work observation and make gradual revisions to safe work manuals from the perspective of the office organization. Through those approaches, we are trying to share and utilize our activities for accident prevention towards all entire workers in all our premises.

### KYT model performance (Mishima)



### Open work observation (Onomichi)



## 4. Creating Comfortable Workplaces

We have been proceeding with facility maintenance, improvement on work method, maintenance management in order to maintain comfortable work sites by conducting measurement of the work environment. Also, using 5S as a basis (Seiri [tidiness], Seiton [being organized], Seisou [cleanliness], Seiketsu [hygiene], and Shitsuke [discipline]), we are trying to facilitate efficient manufacturing such as required products when needed, and at required quantity only.

## 5. Promoting Workers' Mental and Physical Health

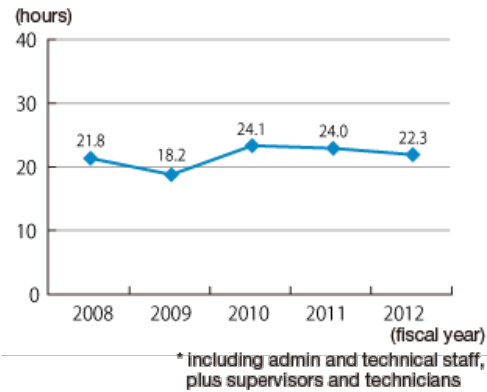
In order to prevent overworking or health hazard that comes from overstress, we are monitoring workers' working hours, also, we are providing counseling session or making improvement of work operation for our workers who engage in long hours. Also, we have set up our company's preventative management and placed a counseling care as our activities for workers' mental health. Furthermore, we are conducting special health screening as well; we have started giving medical guidance for those who are subject to special medical guidance.

### Establishment of Measurement as to Working Long Hours and No Overtime Work Days

We are trying to shorten working hours by specifying the days for workers to go home without any overtime work; this is determined by our each office.

Also, when the special provisions as to Overtime Work Agreement were to be applied, both labor and management sides verify the legitimacy in advance, make sure such overtime work cannot be habitual from now on; we are also conducting a hearing session along with future improvement plans.

Changes of our Average Overtime Work Hours



○ How to Deal with our Personnel who are Working Long Hours

We are conducting counseling by our company doctor or giving guidance according to the working hours based on our guidelines by properly managing workers' hours spent in the premises and their actual working hours.

○ Measurement for Workers' Mental Health

We are providing various counseling sessions by psychiatrist, specialized counselor, or counseling on the phone; we are also conducting consultation by company doctor to prevent any health hazard arise from overworking.

○ Counseling Support System and Program to Assist Workers to Return to Work

As for returning work for those workers on a long leave associated with mental health, we are trying to have them return by planning as follows; upon conducting hearing session with him or her in person, checking with his/her doctor-in-charge, company doctor, public health nurse, and company, followed by reviewing its method, timing, or any restriction for work. Even after their return, we are still conducting 3-party counseling by himself/herself, company doctor, and company to release any restrictions on work gradually; we are following up until it there are totally no restrictions with him/her at all.

6. Prevention of Traffic Accidents

All our sites are continually conducting traffic accident prevention activities and ride sharing drills by fortifying supporting system, functions, and activities to prevent traffic accidents especially through standing on the side of the road in traffic by holding a placard during rush hours and to identify the risk points in commuter routes. Also, we are conducting enlightenment activities under the cooperation with local police or agency related to traffic safety.

[Message from The President](#)
[Up Close](#)
[Activity Report in the Fiscal Year of 2012](#)
[Site Data](#)
[Related Information on CSR Report](#)
[Company Overview / CSR Management](#)

[Yokohama Rubber CSR Web site](#) > [Activity Report in the Fiscal Year of 2012](#) > [Together with our Employees](#) > Enlightenment and Training



## Enlightenment and Training

### Achievements

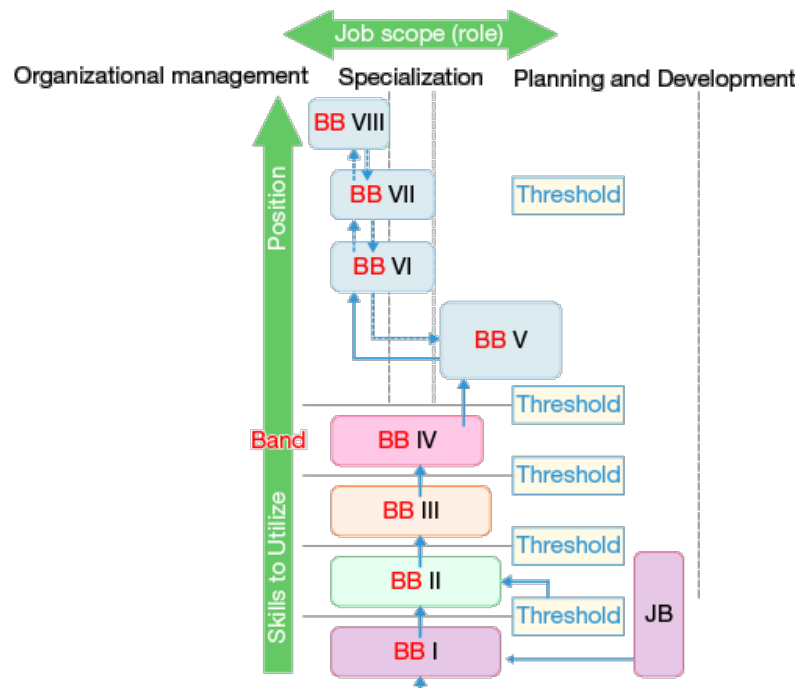
#### Guidelines on Training our Personnel

We are fully supporting aforementioned notion based on the idea that it is growth of every single one of our employee that will lead to our company's growth. We have an enlightenment system in place to train "professional personnel" with a strong desire for achievement and wide spectrum, and those who fulfill their performance by influencing people around them.

#### Training of the Candidates as Core Personnel

We are trying to develop our personnel's individual skills such as required mind-set, capabilities, and development of various skills to expand our businesses on a global scale, as well as leadership skills per hierarchy, problem solving skills related to workplace, presentation, and negotiation. Our new Human Resources System called GLOBAL which has been implemented in 2010 is focusing on personnel training for those who are able to perform on a global stage. For example, we have set up seven hierarchies from new entry level to divisional General Manager; each threshold must be cleared in order to go up to the next level. The threshold comprises of performance evaluation, work experience (total number of work rotation), compulsory training, and language skills; this way, relevant personnel can acquire necessary skills as a candidate so he/she can perform on the global stage by clearing each threshold one-by-one.

#### Overview of GLOBAL, our New Human Resource System



## Activity Report in the Fiscal Year of 2012

- ▶ Corporate Governance and Compliance
- ▶ Environmental Preservation
- ▶ Together with our Customers
- ▼ Together with our Employees
  - Employment
  - Workplace with Safety and Health
  - Enlightenment and Training**
  - Work-Life Balance
  - Diversity in human resources
  - Human Rights
- ▶ Together with our Business Partners
- ▶ Together with our Shareholders and Investors
- ▶ Together with our Society

## Our Various Personnel Training Program

### ■ Brother System for Fresh Graduates

This is our system for senior employees to take care of our fresh graduates both for their work and personal lives for the next two years from their commencement. This system has been around for as long as 25 years already; initially it started as a system to give man-to-man training by seniors to nurture young technicians, now it has been spread to the entire fresh graduates under comprehensive work position (main career track).

### ■ "Advanced Specialist" and "Technical Masters" to Accumulate and Inherit our Technologies and Skills

We are certifying our personnel as "Advanced Specialists" with a top level of specialization in a technology area those who have contributed greatly among them and those who are necessary to fortify our businesses so that they can focus on their activities on technology. Also, we are certifying from our personnel as "Technical Masters" those who are able to train juniors by utilizing their specialized skills and knowledge among our employees in the technical fields in order to inherit our technology to the new generation. We have certified 23 Advanced Specialists and 21 Technical Masters at the point of December 2012.

### ■ Conducting Overseas Training for Fresh Graduates

Starting from the fiscal year of 2009, we have been providing training for all our fresh graduates under comprehensive work position in our overseas group offices for about two months plus in order to have them enhance their sensibility towards different cultures through hands-on experience of diversified culture while they are young. Currently, 208 people have been trained.

### ■ Enlightenment for Company Expatriates and their Family Members

Amid global expansion of our businesses, currently about 140 employees are working overseas and their number is on the rise every year. Starting from the fiscal year of 2009, we are providing overseas pre-relocation seminars to enlighten them with mainly how to proceed with work operation in different cultures. The seminar consists of any necessary formalities, safety lecture per destination region (necessary knowledge as to status of their public order and ensure safety), language training, and information on schooling for their dependent family members.

### ■ Incentive to obtain Official Certifications

We have an incentive system for our employees to obtain official certifications which are advanced levels which may not be easy to obtain but yet are essential for our company growth; the company is thereby trying to encourage our personnel to obtain as many as possible.

Certification	Number of Achievement Cases				
	2008	2009	2010	2011	2012
Radiation Protection Supervisor	0	1	0	1	-
Certified Measurer	1	0	2	0	-
Special Class Boiler Expert	0	1	0	0	-
Qualified Energy Manager	5	5	0	1	4
Class-1 Health Supervisor	4	6	1	7	8
Industrial Hygiene Health Officer	-	-	-	-	1
High Pressure Gas Production Safety Manager	5	2	1	1	1
Class-1Boiler Expert	1	1	1	4	1
Operations chief of radiography with X-rays	1	2	1	1	2
Class-3 Electrical Chief Engineer	0	0	0	1	-
Manager in Charge of Pollution Control	1	0	0	0	1

■ **Qualified Employee Allowance**

A qualified employee allowance was newly established in 2012 for those assigned to business the company is responsible for, such as the submission of required notifications by plants. Currently,126 employees have been qualified.

■ **Foreign Language Subsidy**

To encourage improvements in foreign language abilities, a foreign language subsidy has been provided to those employees who have achieved at least intermediate level in a language other than their native tongue. Currently, 367 employees have been received the subsidies.

■ **Personal Information Sharing for Training (Personal Folders)**

We have our personal folders in place which are open to both comprehensive work positions and administrative staff so that the staff themselves or their supervisors can view through their PC for their employment history, training history, language skills, and so on. This is meant as an assistant tool to set up their future training plans by verifying their background.

▲ [Go to Page Top](#)

| **Human Resource Evaluation System Aiming for Personal Growth (C2S)**

C2S is an acronym of Challenge & Communication System; this has been in place for active interaction between organization and individuals by realizing fair remuneration through objective human resource information as much as possible. Every half year supervisors have a discussion with their subordinates where employees will set their challenges to address upon hearing action suggestion as to their challenges and roles. There will be another dialog in the end of the term to verify their achievements and growth, followed by supervisor's evaluation. Individual employees will grow through pertinent guidance and advice from their supervisors. C2S is subject to all the personnel in comprehensive work position in YRC unit.

Implementation Ratio of C2S (comprehensive work position/all the personnel): 34.5%

▲ [Go to Page Top](#)

---



[Message from The President](#)
[Up Close](#)
[Activity Report in the Fiscal Year of 2012](#)
[Site Data](#)
[Related Information on CSR Report](#)
[Company Overview / CSR Management](#)

[Yokohama Rubber CSR Web site](#) > [Activity Report in the Fiscal Year of 2012](#) > [Together with our Employees](#) > Work-Life Balance



## Work-Life Balance

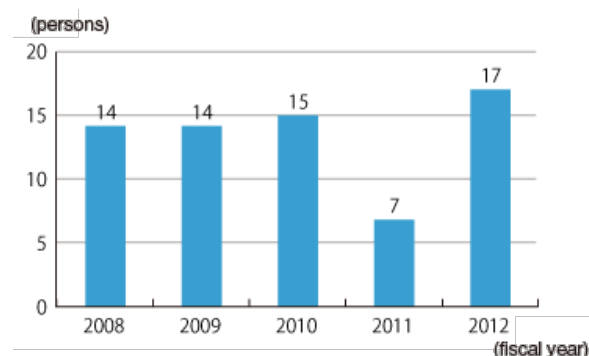
### Achievements

#### Support through our Systems

#### Childcare Leave System

Since 1992, we have been supporting our employees with a child less than 1 year old (up to 1 year and 6 months if certain criteria are met) by establishing some regulations for childcare leave.

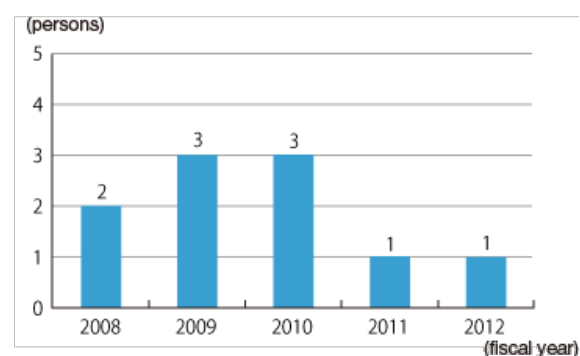
#### Changes in the Number of Employees who have taken Childcare Leave (unit: person)



#### Family-Care Leave System

Since 1994 we have deployed a system to support our employees with family members who need nursing care on a steady basis. Also, we are expanding the range for "nursing leave for children" (5 days/annually) which is to take care of the children who became ill, until their children enter the elementary school by the law.

#### Changes in the Number of Employees who have Taken Nursing Leave for Children (unit: person)



## Activity Report in the Fiscal Year of 2012

▶ Corporate Governance and Compliance

▶ Environmental Preservation

▶ Together with our Customers

▼ Together with our Employees

Employment

Workplace with Safety and Health

Enlightenment and Training

### Work-Life Balance

Diversity in human resources

Human Rights

▶ Together with our Business Partners

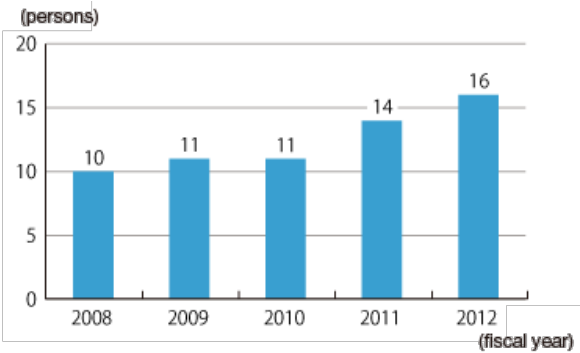
▶ Together with our Shareholders and Investors

▶ Together with our Society

■ Shorter Working Hour Scheme

Employees may utilize our shorter working hour scheme for those who have pre-school children or any family members who need nursing care upon the relevant employees' request. Also, we have a staggered working hour system for those who have children with in the third year of primary school or younger. Furthermore, since fiscal year of 2010 we have deployed a system for employees those who wish, located in the assigned area only without having relocation for the next two years.

Changes in the Number of Employees who have taken Shorter Work Hour Scheme (unit: person)



■ Volunteer Leave System

Since 2008, we have established our volunteer leave system up to five days annually to provide the environment for our employees so that they can get involved with some volunteer activities rather easily. In the fiscal year of 2011, 44 personnel took the leave to support the affected areas of the Great East Japan Earthquake.

■ Leave System for Jury

We have established a jury-leave system since fiscal year of 2009.

■ Child-birth Leave and Child-care Leave

So far male employees had been entitled to take a paid two-day child-birth leave and an unpaid one-year child-care leave. The amendment on April 1, 2011, to up to ten days of leave until the child is one year old marks not only an increase in the number of leave days but also the number of leave takers has gone up by a wide margin.



▲ [Go to Page Top](#)

Assistance through Various Seminars

■ Second Life Seminar

We are holding seminars for our employees in their 50's to assist their lives during employment and their plans after retirement as much as possible; this is being held under co-organization by labour and management sides every year. The seminar consists of Yokohama Rubber's pension plan, briefing over re-employment system, purpose to set up their life plans, pension scheme, know-how on fund operation, and so on by bringing up some actual cases. Since the seminar contents may be peculiar depends on their region, this is organized and conducted by each of our offices.

▲ [Go to Page Top](#)

[Message from The President](#)
[Up Close](#)
[Activity Report in the Fiscal Year of 2012](#)
[Site Data](#)
[Related Information on CSR Report](#)
[Company Overview / CSR Management](#)

[Yokohama Rubber CSR Web site](#) > [Activity Report in the Fiscal Year of 2012](#) > [Together with our Employees](#) > Diversity in human resources



## Diversity in human resources

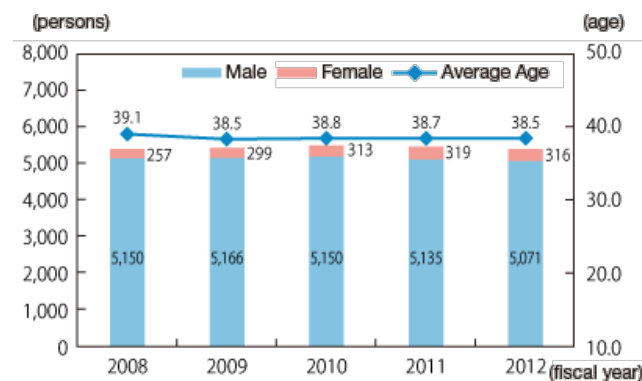
### Achievements

In order to continue to survive in the global business world by achieving our various goals as set forth in GD100, we need to facilitate utilizing our personnel with diversified value more than ever before. We will continue to make efforts to create workplaces so that all our employees including foreigners, female workers, and disabled persons can work together as a team with passion and enthusiasm.

### Diversified hiring of general-career-path employees

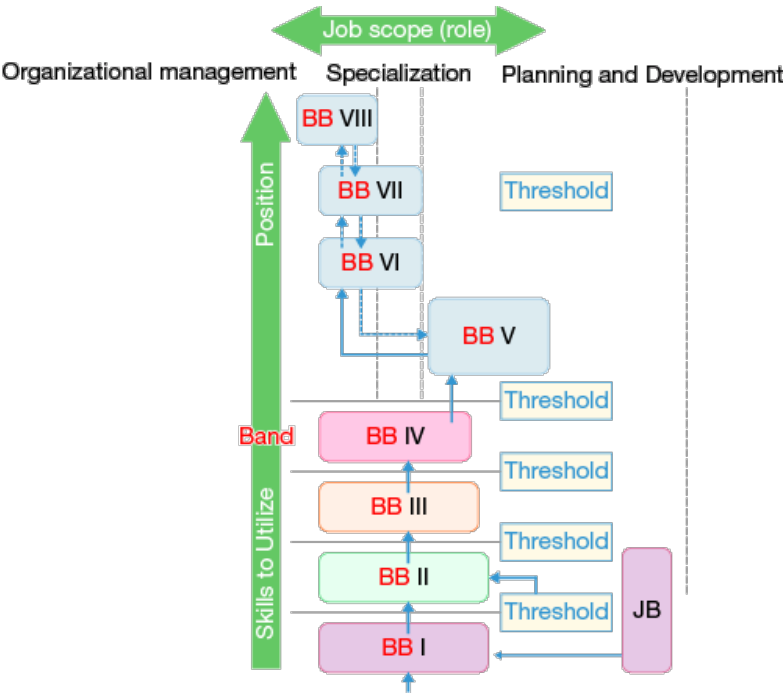
Our hiring decisions do not consider nationality or gender. Our human resources system GLOBAL, introduced in July 2010, has significantly widened the regulations for changing from clerical to general-career-path employee with the objective of providing ambitious and capable employees with the opportunity to take a proactive work approach. In April 2012 the system was used by 17 employees who changed their career path. Notably, we have no gender gap in basic work compensation. Moreover, as of the end of fiscal year 2012, we (non-consolidated) had 31 foreign employees in Japan.

### Number of male and female employees and average age



## Activity Report in the Fiscal Year of 2012

- ▶ Corporate Governance and Compliance
- ▶ Environmental Preservation
- ▶ Together with our Customers
- ▼ Together with our Employees
  - Employment
  - Workplace with Safety and Health
  - Enlightenment and Training
  - Work-Life Balance
- Diversity in human resources**
  - Human Rights
  - ▶ Together with our Business Partners
  - ▶ Together with our Shareholders and Investors
  - ▶ Together with our Society

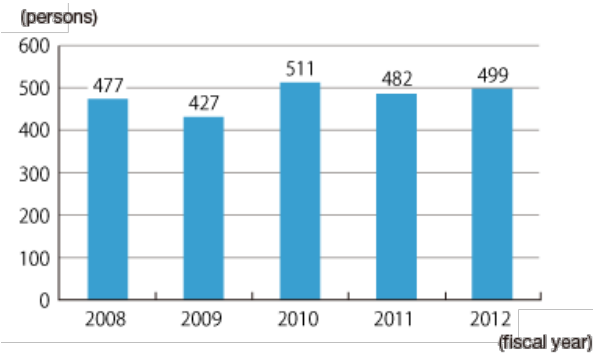


▲ [Go to Page Top](#)

### Utilization of Re-Employment for 60 years old or above

At the end of December 2012, the Company had 427 employees re-hired under the "Partner Program" introduced in 2006 for re-hiring after reaching mandatory retirement at age sixty. To be eligible, applicants must (1) be willing to work; (2) satisfy certain assessment standards; and (3) have taken a recent health examination certifying that nothing stands in the way of resuming employment, among other conditions. In fiscal year 2012, 80.4% of mandatory retirees used the program. They are working together as an active force with high skill levels who pass on their technical knowledge to junior staff. Furthermore during FY 2013 we will establish a company to allow for employees reaching retirement age to actively use their technical skills and experience, and it is our policy to provide increased opportunities for re-employment going forward.

### Change in the Number of Re-Employment

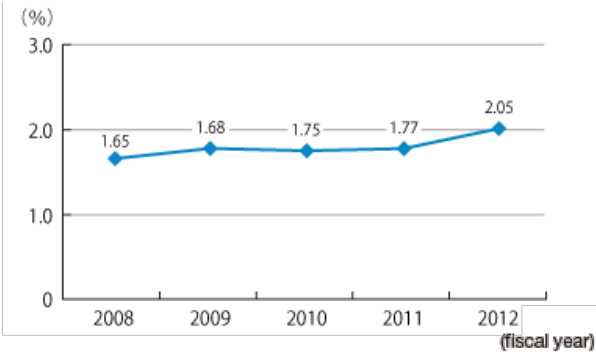


▲ [Go to Page Top](#)

### Employment of people with disabilities

To date, the Company has been hiring at its operating sites at regular intervals graduates with disabilities, centered on work content within the scope of existing job duties that is manageable regardless of a disability. In order to widen the scope of hiring employees with disabilities, the Company started to develop new business operations. Moreover, in March 2012, in order to offer work places to an increased number of hires with disabilities, the Company launched operations at Yokohama Peer Support Co., Ltd., established for the employment of persons with disabilities. Subsequently, on May 31 the entity acquired recognition as a Special Provision Subsidiary under the Act for the Promotion of Employment of Persons with Disabilities (Disabled Persons Employment Promotion Act). We have focused on the employment of persons with intellectual disabilities since January 2012, and as of December 2012, 17 persons with disabilities were employed. The full-year employment ratio for FY 2012 (April 2012 to March 2013) was 2.05%. In order to promote the employment of persons with disabilities, the Yokohama Rubber Company and domestic group companies will continue to create work places where staff members with a diversity of backgrounds are able to proactively apply their capabilities.

Changes in the Employment Ratio of people with disabilities



▲ [Go to Page Top](#)

---



[Message from The President](#)
[Up Close](#)
[Activity Report in the Fiscal Year of 2012](#)
[Site Data](#)
[Related Information on CSR Report](#)
[Company Overview / CSR Management](#)

[Yokohama Rubber CSR Web site](#) > [Activity Report in the Fiscal Year of 2012](#) > [Together with our Employees](#) > Human Rights



## Human Rights

### Achievements

#### Respecting Human Rights and Legal Compliance

##### ■ Compliance Card

We are ensuring a sense of respect for human rights by distributing cards with descriptions herein for all our domestic employees that reads; "We (Yokohama Rubber and Group Companies) will act based on the following eight pillars of principles, regardless of being inside or outside of the country, respecting all kinds of human rights, complying with related legislations, international rules, and their spirits, in order to create a sustainable society by applying good common sense all the time."

As for our overseas offices, each subsidiary has their own code of conduct catered to their region based on these principles.

1. Provide socially useful products and services, followed by securing customer satisfaction and credibility
2. Fair, transparent, and free competition with proper trading
3. Fair disclosure of company information
4. Realize employees' comfort and affluence
5. Proactive approach for environmental issues
6. As "good corporate citizens"
7. Protection and management of company assets and information
8. Contribute to each country or region by complying with their prevailing laws

##### ■ Countermeasures for Sexual Harassment

We have set forth our basic guidelines as to workplace without any form of sexual harassment; we have placed it on our "Human Resources Corner" of our internal intranet with its supporting system such as where to contact for counseling and to lodge complaints. There were 11 cases reported to our Compliance Hotline (Whistle-Blowing System) as to harassment and we have settled all the cases in the proper manner in the fiscal of 2012.

##### ■ Countermeasure for Power Harassment

We have set forth our tips to solve any form of power harassment; we have placed it on the "Human Resources Corner" of our internal intranet with its supporting system such as where to contact for counseling and handling complaints.

##### ■ Survey of Labor Laws and Labor Practices at our Group Companies

Every year, we are conducting a survey with regards to labor conditions or CSR on human resources at our group companies both in domestic and overseas to ensure they comply with the prevailing legislations.

▲ [Go to Page Top](#)

## Activity Report in the Fiscal Year of 2012

- ▶ Corporate Governance and Compliance
- ▶ Environmental Preservation
- ▶ Together with our Customers
- ▼ Together with our Employees
  - Employment
  - Workplace with Safety and Health
  - Enlightenment and Training
  - Work-Life Balance
  - Diversity in human resources
- Human Rights
  - ▶ Together with our Business Partners
  - ▶ Together with our Shareholders and Investors
  - ▶ Together with our Society

## Together with our Business Partners

### Together with our Business Partners

#### Guidelines

#### Basic Guidelines of Yokohama Rubber's Procurement

Yokohama Rubber Group is aiming for co-development under fair and equal trading as our basis, by establishing the sense of trust to realize our co-existence and co-prosperity. Especially, we will proceed with our activities to establish our credibility; for example by developing our CSR activities to our business partners, green procurement, and co-research as examples.

#### Basic Guidelines

##### Procure optimum raw materials, equipment, and construction.

In order to provide better products, we will continue to procure/order optimum raw materials, materials, and construction.

##### Trading with fairness and impartiality

We will conduct fair and equal trading based on the notion of free competition.  
Also, we source all our business partners from all over the world through global perspective.

##### Reasonable selection of our partners

As for the selection of our partners, we will determine them based on economical reasonability under consideration of comprehensive perspectives; their quality, price, stable supply, ability for technology development, and environmental friendliness.

##### Partnership

We will establish an equal and fair cooperative relationship through healthy trading with our business partners; we will enhance mutual understandings and credibility to achieve growth with one another.

##### Compliance

During our procurement activities, we will abide by all the related regulations and social standards in addition to not disclosing any confidential information we came to know during trading.  
Also, we will try not to conduct any misleading behaviour by reflecting onto our socially accepted ideas.

##### Harmony with the environment

We will try to purchase raw materials with a lesser burden to the earth environment.

#### Activity Report in the Fiscal Year of 2012

- ▶ Corporate Governance and Compliance
- ▶ Environmental Preservation
- ▶ Together with our Customers
- ▶ Together with our Employees
- ▼ **Together with our Business Partners**
  - Development of CSR to our Business Partners
  - In Order to Establish Credibility with Business Partners
  - Green Procurement
  - ▶ Together with our Shareholders and Investors
  - ▶ Together with our Society

## Utilizing Locally Sourced Raw Materials as well as Realizing Co-existence and Co-prosperity with Local Communities

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Due to the globalization of its business, the Yokohama Rubber Group promotes the use of locally sourced raw materials in consideration of quality and cost. These activities enable us to avoid supplier risk by diversifying our procurement sources and to reduce logistics as well as inventory costs. This also helps us to contribute to the development of local industries and build good relationships with our local suppliers.

At plants in China (Suzhou Yokohama Tire Co., Ltd. and Hangzhou Yokohama Tire Co., Ltd.), we have already switched over to the use of local products. Furthermore, at our plant in Russia (Yokohama R.P.Z.), we are procuring raw materials from the CIS (Commonwealth of Independent States) and Russia. In addition, next year we will procure and develop local raw materials for the plant in India where operations are scheduled to commence.

## Responding to Conflict Minerals

---

At the Yokohama Rubber Group, we endeavor to take into consideration human rights and the environment in our global procurement activities. As part of these efforts, we do not intentionally use minerals (tantalum, tin, gold, and tungsten) from conflict areas in the Congo. In addition, to make sure that we are not using conflict minerals, we request that business partners conduct investigations and confirmation.

▶ Development of CSR to our Business Partners

▶ In Order to Establish Credibility with Business Partners

▶ Green Procurement

▲ [Go to Page Top](#)

---

[Message from The President](#)
[Up Close](#)
[Activity Report in the Fiscal Year of 2012](#)
[Site Data](#)
[Related Information on CSR Report](#)
[Company Overview / CSR Management](#)

[Yokohama Rubber CSR Web site](#) > [Activity Report in the Fiscal Year of 2012](#) > [Together with our Business Partners](#) > Development of CSR to our Business Partners

## Together with our Business Partners

### Development of CSR to our Business Partners

#### Achievements

We are trying to establish a reliable relationship one another based on fair and equal trading; we will continue to ensure our co-existence and co-prosperity and leverage our service levels as a partner through our various CSR activities.

#### Workshops together with Suppliers and the "Purchasing Code of Conducts"

During FY 2011, in order to deepen understanding of CSR at our business locations overseas and in Japan, we held workshops on the requirements of CSR for the relevant staff, workshops on CSR guidelines for business partners, and workshops on self-assessments at our domestic business sites. We also conducted training for overseas staff in charge of purchasing on the importance of CSR activities. During FY 2012, we held workshops for business partners at all business locations and learned about topics such as legal compliance and biodiversity together with business partners as we worked together to improve our CSR activities. During FY 2013, we will hold our second self-assessment and workshop for business partners and study ongoing activities with business partners, such as the adoption of a CSR activity award system.

#### Workshop at Shinshiro Plant



#### Workshop at Hiratsuka Factory



#### Workshop at Mie Plant



#### Workshop at Mishima Plant



### Activity Report in the Fiscal Year of 2012

- ▶ Corporate Governance and Compliance
- ▶ Environmental Preservation
- ▶ Together with our Customers
- ▶ Together with our Employees
- ▼ Together with our Business Partners

#### Development of CSR to our Business Partners

In Order to Establish Credibility with Business Partners

Green Procurement

- ▶ Together with our Shareholders and Investors
- ▶ Together with our Society

[Message from  
The President](#)
[Up Close](#)
[Activity Report in  
the Fiscal Year of 2012](#)
[Site Data](#)
[Related Information on  
CSR Report](#)
[Company Overview /  
CSR Management](#)

[Yokohama Rubber CSR Web site](#) > [Activity Report in the Fiscal Year of 2012](#) > [Together with our Business Partners](#) > In Order to Establish Credibility with Business Partners

## Together with our Business Partners

### In Order to Establish Credibility with Business Partners (Fair and Equal Transactions)

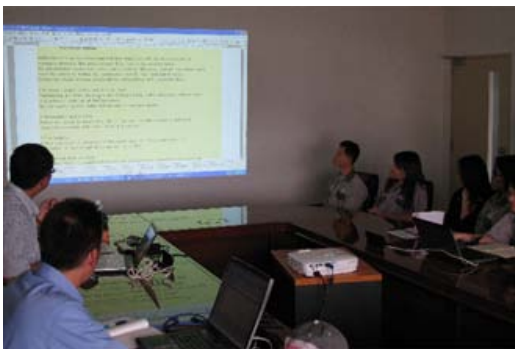
#### Achievements

#### Fair and Equal Selection of Business Partners

We select our business partners based on the notion of "open trade, fair and equal free competition". We are proactively recruiting new business partners in accordance with the law. Furthermore we are fully utilizing such methods as obtaining quotations from multiple companies and determining suppliers through digital auctions.

#### Purchasing Code of Conduct Formulated and in Practice

In 2011, we prepared a new set of ethics on purchasing that defines matters that must be considered by purchasing representatives in the selection of fair and equal trade in our Fundamental Procurement Policy as well as shows ethical problems that must be avoided. Together with our fundamental policy, this set of ethics was formulated into the Purchasing Code of Conduct. Furthermore, during FY 2012 the level of understanding of this code was confirmed and re-education implemented through the holding of self-assessments of compliance with purchase ethics.



### Activity Report in the Fiscal Year of 2012

- ▶ Corporate Governance and Compliance
- ▶ Environmental Preservation
- ▶ Together with our Customers
- ▶ Together with our Employees
- ▼ Together with our Business Partners

Development of CSR to our Business Partners

#### In Order to Establish Credibility with Business Partners

Green Procurement

- ▶ Together with our Shareholders and Investors
- ▶ Together with our Society



## Compliance and Guidance towards Overseas Plants

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We are trying to further enhance the above-mentioned by reviewing the purchasing guidelines on a regular basis to meet the requirements of TS16949 (quality standards mainly for automobile industry), proper procurement operation and law-abiding, and to prevent any fraudulent activities. Also, we issue Basic Requirements of Material Procurement by incorporating the preceding items for our overseas plants in order to guide overseas purchasing representatives with their proper work operations.

### ■ Compliance with Subcontracting Law and Supervision of Procurement Operation

We conduct internal training for personnel in charge of materials procurement and subcontracted procurement as to the Subcontracting Law when they enter or are posted in the company, followed by having them attend external seminars for the Subcontracting Law on a regular basis in order to brush-up this knowledge and provide updated information.

Our Global Procurement Division pays a visit to all the Materials Procurement and Subcontracted Procurement Divisions in our offices regularly, to ensure there is no case of breach against any items under Subcontracting Law through confirmation and guidance through internal operational audits, in order to maintain our law-abiding stance.

▲ [Go to Page Top](#)

## Joint Research with our Business Partners

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Currently, we are proactively working together with ZEON Corporation, a synthetic rubber manufacturer and with Tokyo Rope Manufacturing Co., Ltd., a manufacturer of steel code to develop environmentally friendly products, especially synthetic rubber which is optimum material for fuel efficient tire or lightweight tire, and steel code.. Also, we are conducting joint research together with Songkran University in Thailand, one of the major production sites, to utilize resources at the production site of natural rubber and to contribute to the improvement of work conditions of rubber farmers there.

▲ [Go to Page Top](#)

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## Together with our Business Partners

### Green Procurement

#### Achievements

Yokohama Rubber has been working on the development and usage of raw materials to contribute to the environment under the cooperation of our business partners with preservation of forest resources, control global warming, usage of recycled raw materials, and expansion of non-petroleum raw materials as the main themes. Furthermore, we manage parts procurement based on the Yokohama Green Procurement Guidelines. We ask that all suppliers confirm whether products contain SOC (substances of concern) and ask that they submit a statement of non-use.

#### Preservation of Forest Resources

In order to preserve forest resources, we have abolished wooden pallets or wooden crates which we used to deploy massively in the past. We have almost completed switching all of them into recyclable metal pallets or plastic pallets. As for imported raw materials, we used to have some problems with extra costs incurred by using used pallets for re-export but this issue was closed at the last half of fiscal year 2009. These days we are trying to apply the same approaches at our overseas operation sites.

Also as for the paper made of wood as raw material, we were able to reduce year by year the amount of importing by addressing the company-wide reduction effort on paper usage. The amount of our paper purchase from January 2012 to December 2012 resulted 60% in comparison to that in fiscal year 2006. As for the type of paper to use, we purchase paper classified as eco-friendly as the first priority.

#### Changes in Amount of Purchased Paper

Fiscal Year	2006	2008	2009	2010	2011	2012 (from January 2012 to December 2012)
Purchased Amount (JPY1000)	10,458	9,206	8,245	7,083	6,906	6,245
Comparison with FY2006	100%	88%	79%	68%	66.1%	60%

▲ [Go to Page Top](#)

#### Control Global Warming

We are currently working on the development of resin for air-conditioning for automobiles by collaborating with downstream automobile manufacturers and upstream raw material manufacturers. This is in accordance with the scheme to switch from CFC 134a with high coefficient to CFC with lesser coefficient for global warming. Also in terms of the transportation of raw materials, we contribute to the reduction of CO<sub>2</sub> emissions by trying to have our overseas plants procure their raw materials from local suppliers to reduce CO<sub>2</sub> through logistics operations.

### Activity Report in the Fiscal Year of 2012

- ▶ Corporate Governance and Compliance
- ▶ Environmental Preservation
- ▶ Together with our Customers
- ▶ Together with our Employees
- ▼ Together with our Business Partners
  - Development of CSR to our Business Partners
  - In Order to Establish Credibility with Business Partners
- Green Procurement**
  - ▶ Together with our Shareholders and Investors
  - ▶ Together with our Society

## ■ Development of Resin for AC Hose to Cope with New CFC

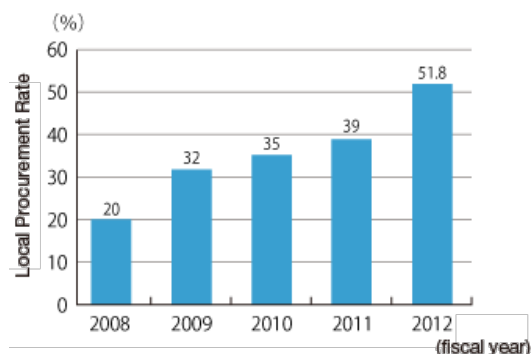
Since CFC 134a, which is a cooling medium for the hose of air-conditioning for automobiles, has a high coefficient for global warming, it will be switched to 1234yf, which has a lesser coefficient for global warming. We are also in the middle of the development of the hose of air-conditioning for automobiles by using new type of resin; whilst proceeding under collaboration with resin manufacturers as a conventional nylon-kind resin low in durability which requires some development into a new type of resin.

## ■ Reduction of CO<sub>2</sub> Emission through Transportation (Facilitation of Local Procurement)

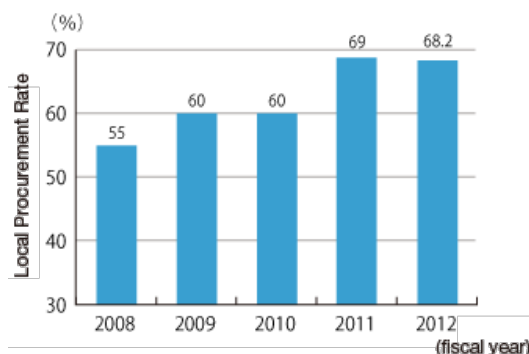
Our plants in China made a big improvement in terms of local procurement. Also, our plants in the USA used to import some of the raw materials from Japan due to being unable to arrange them locally, but now they are able to purchase them from the local market. In addition, at our plant in Russia we have used local Russian raw materials.

### ○ Changes in Local Procurement in China

Changes in Local Procurement in our Suzhou Plant



Changes in Local Procurement in our Hangzhou Plant



\* The accounting period for the fiscal year of 2011 is from April to December. As such, data for the generated amount from January to March 2011 (fiscal year of 2010) has been added to this to provide a tally for the full calendar year.

▲ [Go to Page Top](#)

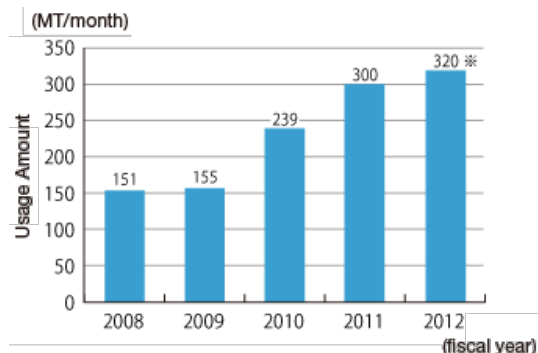
## Expansion of Recycled Raw Materials

In the past, recycled rubber used to be widely deployed as recycled raw materials for tires. However, blending this recycled rubber deteriorates their physicality, so the applicable range of their parts was quite limited; we had some limitations as to its usage. Also, as for rubber powder generally available in the market, it is likewise with recycled rubber; it used to greatly deteriorate the physicality and was unable to be used for tires.

Yokohama Rubber had signed the Agreement of Co-Development with Lehigh Technologies, Inc. in the USA with "Micronized Rubber Powders" to undertake further fining down of rubber powders to go about research on the usage of rubber powder for tires.

As a result, if rubber powder is micronized, its physical property decreases very little. It was understood that the manufacturing cost (mainly electricity) of Lehigh Technologies would not increase so much. As a result micronized powder from rubber was enabled to be arranged into various kinds of compounds, which led to increase the usage of the recycled materials substantially. We anticipate the further expansion in the future.

### Changes in Usage of Recycled Raw Materials (Recycled Rubber and Rubber Powders)



\* Calculated from April 2011 to March 2012 for 2011, and January to December for 2012

▲ [Go to Page Top](#)

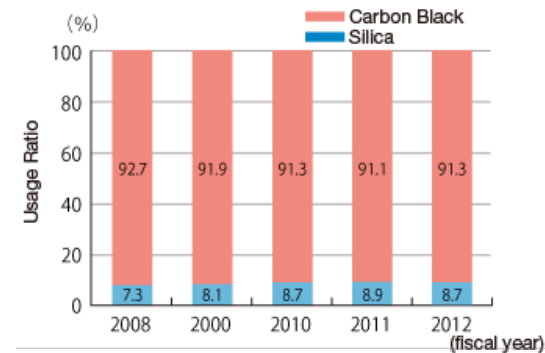
## Do Away with Petroleum-Based Raw Materials

In order to phase out from raw materials being dependent on petroleum as soon as possible, we are currently in the midst of development under collaboration with our business partners to develop non-petroleum-based raw materials as our main raw materials.

### ■ Switching from Carbon Black into Silica

Carbon black is the essential raw material for rubber; it is manufactured through imperfect combustion of petroleum-based oil or charcoal-based (tar-based) oil, as such it is not considered as high in extraction rate. At the same time, silica's basic raw material is from sand, which is almost unlimited in supply; the good thing about silica is to limit the usage of petroleum-based resources but its negative aspect is it is fairly expensive and not easily being blended with rubber. We are thus able to overcome this problem by selecting Silane Coupling Agent and development of blending machines; upgrading to the preceding methods is currently taking place gradually.

#### Changes in our Usage Amount of Carbon Black and Silica



### ■ Usage of Plant-Based Oil

In the past, petroleum-based oil was the mainstream as the oil for rubber. Plant-based oil was unable to be used due to its poor compatibility with natural rubber or synthetic rubber such as SBR. Under collaboration with our business partners, we were able to develop orange oil which is high in compatibility with the preceding rubber types; we are now able to use it as high grip oil.

▲ [Go to Page Top](#)

## Yokohama Green Procurement Guidelines

With the management of chemical substances contained in products as a form of entrance control, we ask that suppliers work towards environmental preservation and manage procurement items in accordance with our Green Procurement Guidelines. Furthermore, based on our Green Procurement Policy, we purchase raw materials, outsourced items, subsidiary materials, and equipment in accordance with environmental footprint standards.

### ■ Green Procurement Policy

We procure raw materials, parts, packaging, etc. that are environmentally friendly, clean, and safe.

1. We make decisions on procurement and purchasing based on the status of environmental management system adoption by each supplier.
2. We work to thoroughly prevent the inclusion of substances of concern (SOCs).
3. We promote the purchase of environmentally-friendly products (green procurement).
4. We reduce waste.

Specifically, we confirm (1) the status of environmental management system acquisition, (2) the status of environmental preservation initiatives, and (3) the status of substances of concern (SOC) management systems. As a requirement for products to be procured, we request the submission of documents such as (1) a substances of concern (SOC) survey form and (2) a pledge of non-inclusion. An image of substances of concern (SOC) survey form is displayed for reference.

Image of a substances of concern (SOC) survey form

<Form>  
The Yokohama Rubber  
Co., Ltd.  
(Responsible department  
or division)

Image of a substances of concern (SOC) survey form  
We ask that a survey be conducted and a report be made on the inclusion of chemical substances such as lead, mercury, cadmium, hexavalent chromium, asbestos, and PBB (polychlorinated biphenyls) that are prohibited or restricted by Yokohama Rubber

Substances of concern (SOC) survey form

Company name		
Address		
Report date		
Person responsible for report	Department	
	Name	
	Telephone number	
	Fax number	
	E-Mail	

Chart 1. Products not containing SOC's

Product number and product name		Product number and product name
①	We request a statement on products not containing SOC's for products that are delivered.	
②		
③		

Chart 2. Products containing SOC's

Product number and product name	Name of chemical substance contained	Cas No.	Content percentage (w%)	Purpose of inclusion

[Message from  
The President](#)
[Up Close](#)
[Activity Report in  
the Fiscal Year of 2012](#)
[Site Data](#)
[Related Information on  
CSR Report](#)
[Company Overview /  
CSR Management](#)

[Yokohama Rubber CSR Web site](#) > [Activity Report in the Fiscal Year of 2012](#) > Together with our Shareholders and Investors



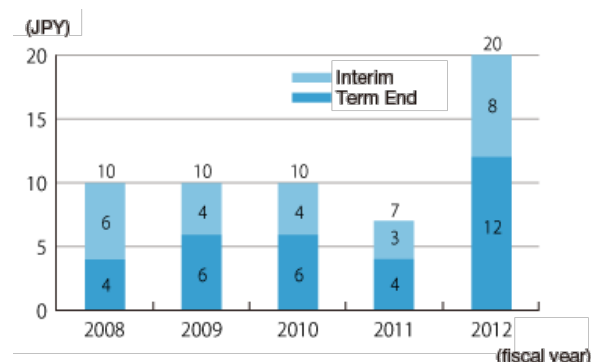
## Together with our Shareholders and Investors

### Guidelines

#### Guidelines as to Dividends

We are in the stance of applying necessary internal reserves in order to achieve our future business development and enhance our management quality; our fundamental guidelines are to maintain a stable amount of dividends. We paid annual dividends of ¥20 per share for the current fiscal year, consisting of an interim dividend of ¥8 and a year-end dividend of ¥12.

#### Changes in Dividends per Share


[▶ Development of our Proactive IR Activities](#)
[▶ In Order to Hear from our Shareholders](#)
[▲ Go to Top Page](#)

## Activity Report in the Fiscal Year of 2012

- ▶ Corporate Governance and Compliance
- ▶ Environmental Preservation
- ▶ Together with our Customers
- ▶ Together with our Employees
- ▶ Together with our Business Partners
- ▼ **Together with our Shareholders and Investors**
  - Development of our Proactive IR Activities
  - In Order to Hear from our Shareholders
  - ▶ Together with our Society





## Development of our Proactive IR Activities

### Achievements

#### Holding Briefing Sessions as to Financial Closing

We are holding briefing sessions as to financial closing for security analysts and corporate investors. Since the last half of the fiscal year of 2006, we have been conducting such briefing sessions at the timing of each financial closing per quarter.

In March 2013, we conducted questionnaires with some security analysts about our briefing sessions as to financial closing. It was indicated that while there is still room for improvement in the time allocation, they were satisfied with the presentations and the Questions and Answers. Though the reflection of shareholders' wishes and ideas, we will continue to engage in appropriate information disclosures.

#### Information Disclosure on our IR Homepage

We have upgraded [our Exclusive Homepage](#) for our shareholders and investors, where a variety of IR information, i.e. not just Messages from our Presidents, Information related to Financial Closing, or Mid-Term Management Plans, but also Introduction of our Businesses, Explanation of our Financial Statements, can be found.

#### Distribution of IR Information Tools

In addition to our distribution of Interim and Term-End Financial Reports to our shareholders and investors, we are issuing our Annual Report (Report on Financial Closing in English) as well. Also, we create our Annual Report in a Japanese version and all the contents therein can be found in our homepage. From the fiscal year of 2008 onwards, in order to provide the material of briefing sessions for our shareholders and investors in an even more timely manner, we are currently providing such information on our homepage in PDF format.

#### Conducting of Individual Meetings

We also conduct individual meetings with our security analysts and corporate investors.

#### Conducting of General Meeting for Shareholders

During our annual General Meeting for Shareholders, we are trying to provide our business reports for our shareholders by continuing to make improvements to present it in a straightforward manner. At our 137th General Meeting for Shareholders, President Noji provided an explanation of our business activities using a slide presentation.

▲ [Go to Page Top](#)

## Activity Report in the Fiscal Year of 2012

- ▶ Corporate Governance and Compliance
- ▶ Environmental Preservation
- ▶ Together with our Customers
- ▶ Together with our Employees
- ▶ Together with our Business Partners
- ▼ Together with our Shareholders and Investors
  - [Development of our Proactive IR Activities](#)
  - In Order to Hear from our Shareholders
  - ▶ Together with our Society

[Message from The President](#)
[Up Close](#)
[Activity Report in the Fiscal Year of 2012](#)
[Site Data](#)
[Related Information on CSR Report](#)
[Company Overview / CSR Management](#)

[Yokohama Rubber CSR Web site](#) > [Activity Report in the Fiscal Year of 2012](#) > [Together with our Shareholders and Investors](#) > In Order to Hear from our Shareholders

## Together with our Shareholders and Investors

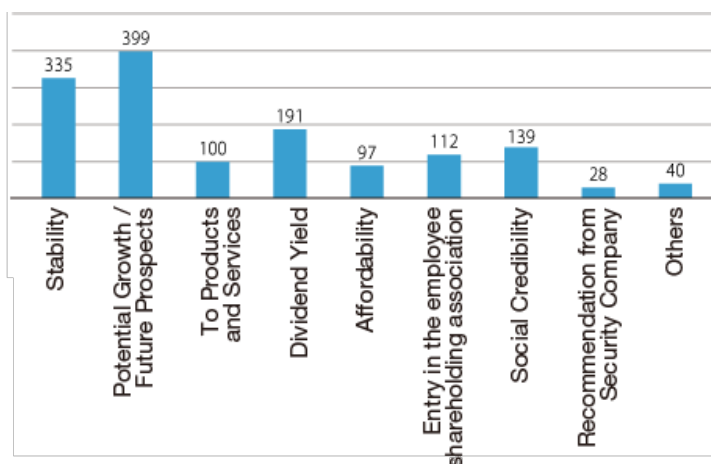
### In Order to Hear from our Shareholders

#### Achievements

#### Conducting Questionnaires with our Shareholders

We are conducting annual questionnaires with our shareholders at the same time as the issuance of our Term End Financial Report in order to hear from them later on. We started this from the fiscal year of 2004 and have conducted eight times in total so far. In the fiscal year of 2012, we were able to hear from 784 questionnaire respondents as to their motivation of the purchase of our shares and information usable for some improvement in the future. Based on the opinions and requests received, we have been playing a video in a visual form so that they can have a clearer picture as to our information on performance, activities, and products. Also, we have made some improvements mainly on our structure of Term End Financial Reports to present it in a more straightforward manner. We will hereby continue to utilize such information to keep improving our IR activities.

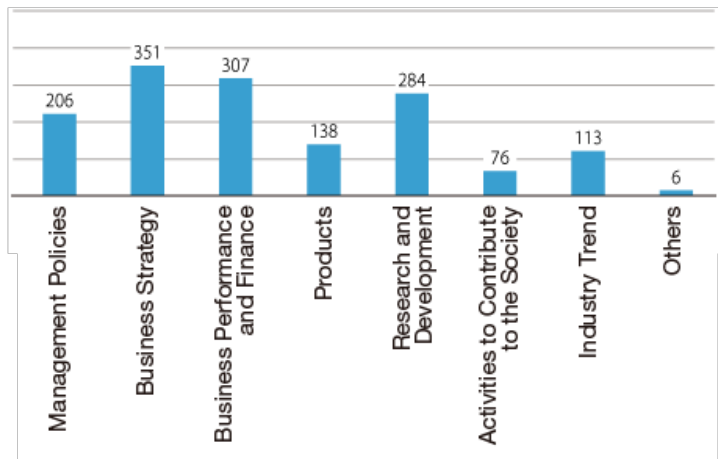
#### Motivation of the Purchase of our Shares (Multiple Replies)



### Activity Report in the Fiscal Year of 2012

- ▶ Corporate Governance and Compliance
- ▶ Environmental Preservation
- ▶ Together with our Customers
- ▶ Together with our Employees
- ▶ Together with our Business Partners
- ▼ Together with our Shareholders and Investors
  - Development of our Proactive IR Activities
  - [In Order to Hear from our Shareholders](#)
  - ▶ Together with our Society

Information Usable for some Improvements in the Future (Multiple Replies)



▲ [Go to Top Page](#)

[Message from  
The President](#)
[Up Close](#)
[Activity Report in  
the Fiscal Year of 2012](#)
[Site Data](#)
[Related Information on  
CSR Report](#)
[Company Overview /  
CSR Management](#)

[Yokohama Rubber CSR Web site](#) > [Activity Report in the Fiscal Year of 2012](#) > Together with our Society



## Together with our Society

### Guidelines

#### Basic Stance

We will continue to enhance mutual understandings and credibility by reflecting our stakeholders' feedback onto our corporate activities by conducting two-way communication with both of our internal and external stakeholders while providing information in a timely manner. As we develop our business on a global level, we have relationships with local communities in various situations, including the environment and law, culture, traditions, and the economy.

The communication with local communities at the locations of individual business locations is described in the section on "[Site Data](#)."

▶ [How we Handled External Complaints](#)

▶ [Evaluation from the Society](#)

▶ [Social Contribution Activities](#)

▶ [Other Social Activities](#)

## Activity Report in the Fiscal Year of 2012

▶ [Corporate Governance and Compliance](#)

▶ [Environmental Preservation](#)

▶ [Together with our Customers](#)

▶ [Together with our Employees](#)

▶ [Together with our Business Partners](#)

▶ [Together with our Shareholders and Investors](#)

### ▼ Together with our Society

[How we Handled External Complaints](#)

[Evaluation from the Society](#)

[Social Contribution Activities](#)

[Other Social Activities](#)

▲ [Go to Page Top](#)



## How we Handled External Complaints

### Achievements

#### How we Handled External Complaints

Yokohama Rubber has reviewed our complaint handling procedure manual to handle any complaint at our domestic operation sites in order to cope with the same quality and the same level, and also try to get as accurate information as possible.

Also, we will verify the situation upon receipt of any complaint by visiting the person who provided such information. We shall thereby notify the result after conducting relevant countermeasures in a proper manner. We are applying numerous measures in order to achieve zero complaints from our local residents.

For fiscal 2012, we have continued the pollution source control sources and environmental patrols. As a result, four cases were recorded (two for noise and two for odor), compared with the target of six or less.

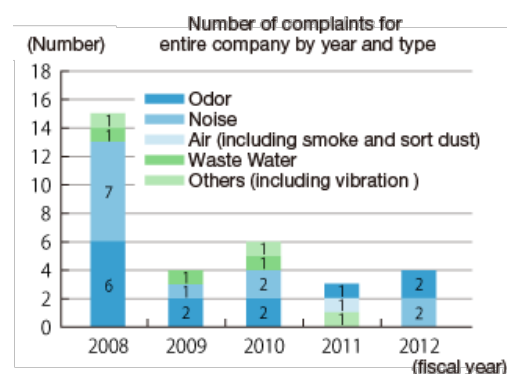
In the fiscal year of 2013 we aim at four or less cases per year.

Going forward we will make continuous improvements focused on odor control and noise and vibration control as we aim for zero external complaints.

#### The Number of Complaints against our Operation Sites and their Measures

Items	Our Goals (by FY2017)	Achievement of FY2012	Evaluation	FY2013 target
Complaints from Outside	0	Achieved with 4 cases (target was 6 cases or less)	Passed	4 cases or less of complaints

#### Changes in the Number of Complaints



## Activity Report in the Fiscal Year of 2012

- ▶ Corporate Governance and Compliance
- ▶ Environmental Preservation
- ▶ Together with our Customers
- ▶ Together with our Employees
- ▶ Together with our Business Partners
- ▶ Together with our Shareholders and Investors
- ▼ Together with our Society

### How we Handled External Complaints

Evaluation from the Society

Social Contribution Activities

Other Social Activities

[Message from The President](#)
[Up Close](#)
[Activity Report in the Fiscal Year of 2012](#)
[Site Data](#)
[Related Information on CSR Report](#)
[Company Overview / CSR Management](#)

[Yokohama Rubber CSR Web site](#) > [Activity Report in the Fiscal Year of 2012](#) > [Together with our Society](#) > Evaluation from the Society



## Evaluation from the Society

### Achievements

#### Evaluation from the Society in the fiscal year of 2012

#### ■ Receipt of Governmental Subsidy by the Chinese Tire Production Base Hangzhou Yokohama Tire Co., Ltd. in Recognition of Regional Social Contribution Activities

The regional economic and environmental social contribution activities by the Yokohama Rubber Group's Chinese tire production base, Hangzhou Yokohama Tire Co., Ltd., have been highly regarded, and in recognition of these efforts it has received the largest amount of subsidy as an independent company from the city of Hangzhou and from the Hangzhou Economic and Technological Development Zone.

An economic contribution that has been highly regarded was the completion ahead of time of a project to expand production capacity utilizing our proprietary small-scale fabrication methods, while environmental contributions that have been well received include the introduction of exhaust emission control equipment and wastewater treatment equipment, significant reductions in volume of electricity used through energy-saving activities, and the planting of a cumulative total of 24,000 trees in our Yokohama Forever Forest Project. As a result of these various environmental contribution initiatives, Hangzhou Yokohama Tire Co., Ltd. has been designated as the only environmental protection model company in the Hangzhou Economic and Technological Development Zone, and accordingly it has been positioned as an educational base for encouraging and improving the awareness of neighboring companies and community residents towards environmental protection.



Company employees and Chairman Mochinaga Yoshito holding the award given to Hangzhou Yokohama Tire Co., Ltd. by the Hangzhou Economic and Technological Development Zone

▲ [Go to Page Top](#)

## Activity Report in the Fiscal Year of 2012

- ▶ Corporate Governance and Compliance
- ▶ Environmental Preservation
- ▶ Together with our Customers
- ▶ Together with our Employees
- ▶ Together with our Business Partners
- ▶ Together with our Shareholders and Investors
- ▼ Together with our Society
  - How we Handled External Complaints

### Evaluation from the Society

- Social Contribution Activities
- Other Social Activities



## ■ Receipt of the 2012 Good Design Award for Three Tire and Welfare-Related Products

The 2012 Good Design Award was received for the SUV tire, GEOLANDAR SUV; the studless tire for passenger vehicles, iceGUARD 5\*; and the wheelchair air cushion, Medi-Air Sky. We have received the Good Design Award for seven consecutive years since 2006 for nine products (tire, golf, and welfare-related products) and the BluEarth next-generation environmental tire concept.

The Good Design Award is a comprehensive design endorsement system sponsored by the Japan Institute of Design Promotion (a public interest incorporated foundation), and it is participated in by many companies and organizations in Japan and overseas. Products that have been awarded with the Good Design Award are permitted to use the "G" mark which signifies outstanding design characteristics.

\*Nickname: "iceGUARD 5", product name: "iceGUARD iG50"



Medi-Air Sky

▲ [Go to Page Top](#)

## ■ Receipt of Environmental Award at a French Tire Business Fair for the Flagship Fuel-Efficient Tire BluEarth-1

The flagship BluEarth-1 tire of the fuel-efficient tire brand BluEarth received an environmental award in the Pneu Expo Innovations Trophy at Pneu Expo 2012, which is a specialized tire business fair that was held in France from February 7, 2012 to February 9, 2012.

The Pneu Expo is one of the largest tire business fairs that is participated in by companies, organizations, and specialists involved with tire manufacture, import, supplying, service, systems, and media.

The Pneu Expo Innovations Trophy is composed of three categories: 1. Environmental Actions, 2. Shop Equipment Innovations, and 3. Service Innovations, and an award is given for particularly outstanding achievements for each category. We received the Environmental Actions award for activities, products, and services that contribute to environmental preservation. In addition to the outstanding fuel efficiency of the BluEarth-1, its achievement of a reduced burden on people and society and the continual long-term development of fuel-efficient tire were well regarded.

▲ [Go to Page Top](#)

## ■ Receipt of the Top Honors in China's Leading Tire Ranking by the Fuel-Efficient BluEarth AE-01 Tire

The fuel-efficient BluEarth AE-01 tire for passenger vehicles was awarded with the highest honors (China's Tire of the Year) at China's leading tire raking, China's 2012 (5th) Tire of the Year.

The safety, fuel efficiency, and handling performance of the tire were well regarded, and it was awarded with top honors for having the best comprehensive performance.

China's Tire of the Year is a tire award sponsored by the affiliate of Peoples' Daily Press, Motor Trend China Co., Ltd., which published the "Autoclub Motortrend" automotive specialty magazine. "Autoclub Motortrend" is the Chinese version of the US automotive magazine "Motor Trend," and it has a large impact among vehicle users. Accordingly, the receipt of this award is expected to make a significant contribution to the improved recognition of Yokohama brand and BluEarth AE-01 in China.



Chairman Yasunori Takeuchi of Yokohama Tire Sales (Shanghai) Co., Ltd.(left) holding the award and Publisher & Editor-in-Chief Sun Gang of Motor Trend China

## ■ Receipt of the 3R Suishin Kyogikai Chairman's Award for the Use of Regenerated Rubber Powder

Our tire technology division was awarded with the 3R Suishin Kyogikai Chairman's Award sponsored by the Reduce, Reuse, and Recycle Promotion Committee (3R Suishin Kyogikai) in 2012. This reward reflects the positive reception of the Yokohama Rubber Group's active use of regenerated rubber powder in Japan and overseas.

As part of efforts to strengthen the 3R activities in the tire technology division, we have adopted the use of recycled raw materials with a focus on divisions involved with tire materials design. Regenerated rubber powder is manufactured by pulverizing waste tires and other materials, and the use of regenerated rubber powder leads to resource savings and resource recycling.

Although it was difficult in the past to combine regenerated rubber powder with other rubber materials due to large grain size, we have established technologies that allow us to combine regenerated rubber powder with various compounds, and in February 2009 we commenced mass production of tires composed of regenerated rubber powder. The use of regenerated rubber powder has expanded since then, and the regenerated rubber use volume ratio at Yokohama Rubber has grown by 2.2 times between 2008 and 2012.

Meanwhile, use of regenerated rubber powder by overseas group companies is increasing. At Yokohama Tire Corporation (United States), the US tire production and sales company, a regenerated rubber powder manufacturer has been hired to process the vent waste arising during tire manufacturing for use during tire production, and use is also being promoted in the manufacturing process for passenger vehicle, truck, and bus tires at tire production and sales companies in the Philippines, Thailand, and Vietnam. Going forward the Yokohama Rubber Group will actively promote the use of regenerated rubber powder at overseas operation sites to be newly established or expanded.

\*Vent waste: Rubber waste generated by trimming the surface of tires after the vulcanization process within the tire manufacturing process is completed.

▲ [Go to Page Top](#)

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## Social Contribution Activities

### Social Contribution Activities in Japan

#### Efforts to improve QOL (Quality Of Life) Through the Medi-Air Wheelchair Cushion

At Yokohama Rubber, we conduct the following activities to support the various social activities of wheelchair users and improve their quality of life (QOL).

- Inspired by the participation in the Asia Cross-Country Rally of the athlete Takuma Aoki, who is paralyzed from the waist down, since 2009 we have provided our Medi-Air wheelchair air cushions that reduce the burden on the lower body for use in the rally (Figure 1).
- At the International Home Care & Rehabilitation Exhibit held in October, a lecture was held by Japan's former track-and-field representative for the Paralympics, Masaki Chiba, on how to select a wheelchair and cushion that are suitable for oneself. The event is viewable on the [YouTube Yokohama Rubber Channel](#).
- We sponsored and cooperated in the running of the Nissan Cup Oppama Championship, a nationwide wheelchair marathon that was held in December.
- The London Paralympic wheelchair tennis player Satoshi Saita has used our Medi-Air Sky for daily use.
- At the Third Life Science Seminar of the New Industrial Fields Human Resource Development Project at the Kanagawa Academy of Science and Technology, we provide an explanation to university students and graduate students on the concerns of wheelchair users towards sitting and the flow of product development in the case of the development of Medi-Air.
- Medi-Air is a product that was developed through joint research with Professor Hiromi Sanada of University of Tokyo Graduate School of Medicine. Between March 19, 2013 and August 11, 2013, Medi-Air 1 was displayed at the Museum of Health and Science of the University of Tokyo Hospital as the result of industry-academia cooperation under the fifth planned exhibition entitled "Physical Medicine Supporting a Healthy and Long Life: Standing and Walking."



Figure 1. Wheelchair of 2012 Asia Cross-Country Rally athlete Takuma Aoki

## Activity Report in the Fiscal Year of 2012

- ▶ Corporate Governance and Compliance
- ▶ Environmental Preservation
- ▶ Together with our Customers
- ▶ Together with our Employees
- ▶ Together with our Business Partners
- ▶ Together with our Shareholders and Investors
- ▼ Together with our Society
  - How we Handled External Complaints
  - Evaluation from the Society
  - [Social Contribution Activities](#)
  - Other Social Activities

### ■ Commencement of an Ecological Studies Project Aimed at Ecological Preservation in Laojunshan, Yunnan Prefecture, China

Yokohama Tire Co., Ltd. (China), the Yokohama Rubber Group's supervising company in China commenced an ecological studies (education support) project in July 2012 at the minority village of Heyuan within the Laojunshan Nature Reserve in Lijiang, Yunnan Prefecture. As this project has been implemented as part of the virgin forest and green life environmental preservation activities of Yokohama Tire Co., Ltd. (China), the project aims to support the education of local poor households and prevent timber theft in mountains and forests as a model project for the sustainable development and preservation of the ecosystem in the Heyuan community. Although there has been pro-active cooperation with the preservation of the local ecosystem, due to the long cultivation cycles of some economic crops there are at times temporary reductions in economic income, causing an increased burden for the education expenses of children. Decisions on such households to receive support are made by the Heyuan villagers association. We believe that with this project it will be possible to prevent the theft of timber by residents seeking to increase income and encourage the preservation of privately-owned forests in the village.

▲ [Go to Page Top](#)

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[Yokohama Rubber CSR Web site](#) > [Activity Report in the Fiscal Year of 2012](#) > [Together with our Society](#) > Other Social Activities



## Other Social Activities

### Participation of Various Initiatives both Domestically and Overseas

#### United Nations Global Compact

Yokohama Rubber approved and signed the initiative of the "Global Compact" advocated by the United Nations in May 2012. Yokohama Rubber and its affiliates will support, observe, and practice the ten principles of corporate social responsibility related to human rights, labor standards, the environment, and the prevention of corruption which the Global Compact requires companies



#### United Nations World Food Programme

Yokohama Rubber endorses the United Nations World Food Programme (WFP) in undertaking to eradicate hunger and poverty and supports the activities of the WFP as a trustee.

#### Challenge 25 Campaign

Yokohama Rubber has been participating and acting in accordance with "Challenge 25", a national program to help prevent global warming that has been developing since January 14, 2010.

#### Japan Business Federation's "Biodiversity Declaration" - Facilitation Partners

Yokohama Rubber is in accordance with the idea of "Japan Business Federation's Biodiversity Declaration" and their facilitation partners since 2009 to develop various approaches for "preservation of biodiversity". Basic policies and action guidelines have been set forth as "Yokohama Rubber's Guidelines on Biodiversity".

#### Japan Business Federation's "Implementation Scheme for a Low Carbon Society"

Yokohama Rubber is in accordance with, and participating in various activities for Japan Business Federation's "Implementation Scheme for a Low Carbon Society" under the vision of "Japanese industries playing a role as core functions with their technological strength in order to achieve our target which is to halve the greenhouse gas emission of the world in 2050".

## Activity Report in the Fiscal Year of 2012

- ▶ Corporate Governance and Compliance
- ▶ Environmental Preservation
- ▶ Together with our Customers
- ▶ Together with our Employees
- ▶ Together with our Business Partners
- ▶ Together with our Shareholders and Investors
- ▼ Together with our Society
  - How we Handled External Complaints
  - Evaluation from the Society
  - Social Activities

## Other Social Activities

## ■ WBCSD (World Business Council for Sustainable Development)

WBCSD refers to the unified association consists of top executives from global corporations in order to perform their leadership in their industry, have lively discussion, and propose policies with regards to the environment and sustainable development. Yokohama Rubber is participating in the Tire Industry Project which is to conduct surveys pertaining to possible impact on the environment and health to be made by tires, and to promote various activities to save energies in the buildings and offices.



▲ [Go to Page Top](#)

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