

# Strengthening Environmental Management Activities at Factories Outside Japan

In the Sumitomo Heavy Industries Group, we are acting to strengthen our environmental risk management and our activities to prevent global warming at factories in countries other than Japan.

## Stronger Environmental Risk Management

### ▶ Strengthening environmental management systems at factories outside Japan

In the Sumitomo Heavy Industries Group, we are advancing our efforts to strengthen environmental risk management at factories outside Japan. Environmental regulations and other such requirements are growing more stringent at the locations of our factories outside Japan. With guidance from local authorities, we are working continuously to strengthen our environmental management systems at each factory in order to comply with local law.

### ▶ Priority Management System Established in the China Area

The China area has a maximum of eight factories in operation, categorized by area. In order to provide centralized environmental management operations for these Chinese factories, we established a department in our Shanghai offices in 2011 to provide overall environmental management supervision of the China area. A full-time manager has been assigned in this department, and the manager is acting to provide guidance on environmental management operations in the factories, engage in supervisory operations, and pursue other such activities.

The matters required by environmental laws and regulations in China have been growing more stringent in recent years. In order to continue in business, it has become essential to strengthen management functions relating to the prevention of environmental pollution. Our Shanghai offices had already been providing each factory with information about revisions occurring in environmental regulation, and was providing guidance on improving the systems to address changes. Since fiscal year 2015, however, we have also been actively consolidating details of the guidance received from the supervisory units of environmental management authorities in the various areas where our factories are located and disseminating that and related information laterally among all the factories. We hold regular video conferences between the Shanghai office and the head office on matters relating to environmental management.

The Sumitomo Heavy Industries Group's factories in the China area are our only overseas factories that hold regular environmental management meetings in the same way as our factories in Japan. These meetings bring together the environmental managers of each of our factories in China to hear explanations of environmental policy from the head office, to present reports on the status of environmental management at each factory, and so on. These activities are contributing to the raised level of environmental management throughout the area.



Environmental management meeting

When we first started holding environmental management meetings, they were organized around reports on the management status at each company as the main focus. We have gradually been raising the level of content for discussion and debate, however, and the meeting in 2015 included questions and answers that extended into actual management operations from the perspective of centralized supervision of activities to achieve environmental objectives at individual factories. These meetings are also going beyond the discussion of arrangements. The environmental managers from the various factories have begun conducting on-site patrols at the factory where the meeting is being held. We are holding these on-site patrols so that, for instance, environmental risks can be spotted from the fresh perspective of environmental managers from the other factories and so that advanced activities to promote energy saving at the venue factory can be disseminated laterally with the other factories. This is contributing greatly to raising the level of on-site management in the area as a whole.

### ▶ Promoting Environmental Risk Assessment at Factories in China and Southeast Asia

Of the Sumitomo Heavy Industries Group factories outside Japan, those in China and Southeast Asia face relatively higher environmental risks. We are therefore implementing environmental risk assessments, taking the procedures for environmental risk assessment used at factories in Japan as a basis. We initially started the environmental risk assessments from the management items that present the highest risk for the particular factory. Since then, we have gradually been increasing the number of items for assessment. In fiscal year 2015, we provided the results of environmental risk assessments conducted at the mother factories in Japan to the factories of affiliated businesses outside Japan. This furthered the lateral dissemination of knowhow regarding particular measures to address environmental risks that were experienced in the past at factories in Japan.

At some of our factories outside Japan, we are implementing environmental risk assessments in a way that unifies the identification of environmental concerns that require coverage under ISO 14001 with the development of systems for addressing those concerns.

### ▶ Promoting ISO 14001 External Certification and Expanding Promotion Efforts

All Sumitomo Heavy Industries Group factories in Japan have already acquired ISO 14001 external certification. We are therefore advancing our efforts to expand the acquisition of ISO 14001 external certification by our factories outside Japan.

#### Group companies outside Japan that have received the ISO14001 certification

Company name	Date of Certification
Sumitomo (SHI) Demag Plastics Machinery GmbH (Wiehe factory)	April 1998
Sumitomo (SHI) Cyclo Drive Germany GmbH	March 2006
Sumitomo (SHI) Cryogenics of Europe, Ltd.	June 2008
Ningbo Sumiju Machinery, Ltd.	September 2008
Dalian Spindle Cooling Towers Co., Ltd.	December 2008
SHI Manufacturing & Services (Philippines) Inc.	January 2011
Sumitomo (SHI) Cyclo Drive China Ltd.	May 2011
Sumitomo (SHI) Demag Plastics Machinery GmbH (Schwaig factory)	July 2011
Link-Belt Construction Equipment Company, L.P., LLLP	August 2011
Suminac Philippines Inc.	September 2011
Sumitomo Heavy Industries (Tangshan), Ltd.	March 2012
Demag Plastics Machinery (Ningbo) Co., Ltd.	December 2012
Sumitomo Heavy Industries (Vietnam) Co., Ltd.	May 2013
Sumitomo NACCO Materials Handling (Vietnam) Co., Ltd.	June 2013
Sumiju Magnet (Kunshan) Co., Ltd.	November 2013
Sumitomo (S.H.I.) Construction Machinery (Tangshan) Co., Ltd.	November 2014

## Strengthening Environmental Management Activities at Factories Outside Japan

We establish environmental management systems at Sumitomo Heavy Industries Group factories outside Japan in accordance with the environmental regulations in place at the particular factory locations, where requirements vary from one to the other. The factories that have established environmental management systems under ISO 14001 have organized the basic elements relating to environmental management in systematic form. This means that significant benefits can be obtained when the management methods used at factories in Japan and other such information is disseminated laterally.

In fiscal year 2015, one of our factories in China newly acquired ISO 14001 external certification. As a result, all of our manufacturing plants in the China area have now acquired ISO external certification.

### ▶ Promoting Environmental Audits in Factories Outside Japan

The head office Environmental Management Division implements periodic environmental audits of Sumitomo Heavy Industries Group factories outside Japan.

Environmental audits at factories outside Japan have applied the same standards as factories in Japan since fiscal year 2012. We are checking the environmental management activities at each factory with the aim of reducing its environmental risk to the same level as at our factories in Japan.

The frequency of audits is determined according to the environmental risk at the factory in question, taking local environmental requirements into consideration. During the audits, we check the status of on-site management and related matters. This includes determining whether activities are underway to comply with local conditions, including environmental regulations regarding the atmosphere, wastewater, and so on, and regulations regarding waste disposal, that differ from regulations in Japan. In fiscal year 2015, we conducted environmental audits at four factories in China and the Southeast Asia area.



Environmental audit underway on-site

Sumitomo Heavy Industries Group's factories outside Japan individually determine their own environmental policies and environmental objectives, and each pursues its own environmental management activities.

Each factory establishes its own individual environmental policies. In doing so, each factory takes the Sumitomo Heavy Industries Group environmental policies into account and incorporates its particular circumstances into its policies. These environmental policies, together with the environmental objectives for the fiscal year, are explained to all factory employees at the start of the fiscal year. This education provides an important framework in which the employees can position the environmental management activities at their factory.

Every factory sets up bulletin boards in the workplace break areas where notices relating to environmental management are posted for employees. Notices of environmental policies and environmental objectives are posted together with results of environmental measurements, energy consumption, and other environmental management data of all kinds.

As the level of environmental management at the factories rises, these notices are increasing the amount of information available.



Environmental bulletin board

### ▶ Upgrading Educational Systems for Environmental Managers at Factories Outside Japan

We initially set up and administered the environmental management system at Sumitomo Heavy Industries Group factories outside Japan so that the focus of environmental management activities was on activities to prevent environmental pollution. As the requirements of local environmental management laws and regulations have grown more sophisticated, however, and a growing number of factories have acquired ISO 14001 external certification, we have gradually expanded the scope of management. This means that the environmental managers at the various factories are being required to demonstrate higher levels of knowledge, management expertise, and other such capabilities, and we are therefore developing a system for their continuing education.

As part of this initiative, we invited the environmental manager at our Shanghai offices to come to Japan for a sophisticated educational program. This involved sitting in on environmental audits at our factories in Japan, hearing lectures on the practical business of environmental measurement at the business divisions engaged in construction of environmental facilities, and so on.

In fiscal year 2015, we also initiated a first effort in providing assistance to factories outside Japan that were working to acquire ISO 14001 external certification. We therefore provided the environmental managers at our Indonesia factories with training in environmental management that included the state of environmental management system operations in accordance with ISO 14001 at factories in Japan.



Shanghai office environmental manager education

### ▶ Global Warming Prevention Initiatives at Factories Outside Japan

The Sumitomo Heavy Industries Group's factories outside Japan have been strengthening their activities to reduce CO<sub>2</sub> emissions since 2011.

Activities to reduce energy consumption started with active steps to cut the consumption of electric power for factory illumination, factory air conditioning, air compressors, and so on. We began by turning off worksite lighting and air conditioning during break periods and other such times, and by adjusting the air conditioning to appropriate temperatures. We have been taking steps for the lateral dissemination of energy conservation measures adopted at factories in Japan and related activities.

At our factories in China, factory-wide measures are being taken to cut back on power consumption for lighting in factory work areas. We started by taking on-site measurements of illumination intensity, using the illumination intensity standards adopted for workplaces at factories in Japan as a reference. We are also eliminating the conventional mercury vapor lamps used for factory ceiling lights and switching to energy-saving forms of lighting. In addition to the adoption of light-emitting diodes, which have been adopted in many instances at factories in Japan, these lighting changes have also involved the adoption of energy-saving types of discharge lamps and other forms of lighting with widespread local dissemination.

The Shanghai Factory and the Kunshan Factory buildings have large skylights to admit light, so that the illumination required for work can be adequately supplied by the factory skylights on sunny days with the ceiling lights turned off. The ceiling lights are therefore extinguished in the daytime. This depends also on the nature of the work being done on the shop floor. Precision measurement and other such operations, for example, require greater illumination intensity. The point, however, is to keep from increasing the ceiling lighting in these workplaces, instead making active use of localized illumination. At the Kunshan Factory, the workplaces that require localized illumination have light-emitting diodes installed on the pillars and wall surfaces around the shop floor to ensure that illumination is provided to workplaces more efficiently. In addition, movable lighting equipment is set up so that every measure is in place to provide optimal lighting for day-to-day work. These activities to improve lighting equipment for the purpose of energy conservation are being carried out on a factory-by-factory basis, with individual factories using their own resources to investigate and implement improvement measures. This indicates that the standards for energy-saving activities have risen higher even at the shop floor level in our factories.



Shanghai Factory ceiling



Kunshan Factory ceiling



Kunshan Factory lighting equipment



Kunshan Factory lighting equipment