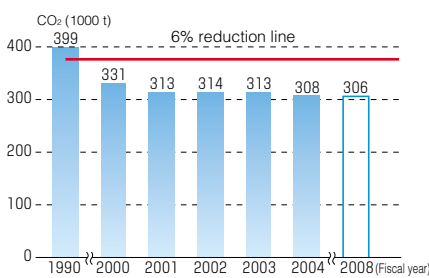


## Environmental impact reduction management—Preventing global warming

We are actively pursuing energy conservation measures, including the incorporation of high efficiency equipment in new and reformed plant facilities, reform of industrial processes in order to deal with energy consumption due to production fluctuations, and preparation of new management standards to promote efficient facility operation. By improving transportation efficiency, we are also striving to achieve earth friendly transportation and delivery.

Transition in CO<sub>2</sub> emission amounts (YKK Group main domestic production sites)



**Achievements of the 2004 fiscal year:** As a result of the effectiveness of our energy conservation activities and the introduction of high efficiency equipment at each of our work places in conjunction with their environmental management systems, we have already cleared our goal of reducing CO<sub>2</sub> emissions by 6% compared to our fiscal 1990 level. In fiscal 2004, we reduced emissions by an additional 1.6% from the previous year's level.

Furthermore, as part of our participation since 2003 in the Ministry of the Environment's Prototype Project of Voluntary Domestic Emissions Trading Scheme, our fiscal 2003 results were examined by an outside party. As a result, our way of measuring the data and our calculation methods were judged to be suitable. In response to this evaluation, we investigated the status of our data at our businesses abroad in order to unify our measurement methods. From now on, we will endeavor to reduce our emissions as a unified global effort.



CDM lamp with reflective plating      400-watt mercury bulb  
175-watt CDM bulb

**Energy conservation by changing light bulbs (Kurobe Makino Plant):** Since our Kurobe Makino Plant usually operates on a three-shift schedule, a large amount of electricity is used for lighting. In fiscal 2003, this plant used 1,734 MWh, about 7% of the total energy consumption.

To reduce this, we changed 450 lights from 400-watt mercury lamps to 175-watt ceramic metal halide (CDM) lamps with reflective plating that are both brighter and more energy efficient. By making this change, we reduced electricity use by 730 MWh in one year and will recover the installation costs in 2.8 years from the savings.



Energy conservation committee and easy-to-reach light switch

**Energy conservation committee (YKK Vietnam Co., Ltd.):** At YKK Vietnam, labor costs were 10% of the total production costs while electricity costs were 12%, making electricity more expensive than labor. In addition, expansion of the building caused fixed electricity costs to increase 30%. In recent years, the number of hard-working Vietnamese women participating in company activities has increased and women make up the majority of the energy conservation committee that we started to promote proactive efforts to save energy and fulfill our corporate duty to society by working to stop global warming.

Since creation of this committee, we have been pursuing a variety of efforts to conserve energy, including the creation of stickers and posters to raise energy conservation awareness, locking air-conditioning units and placing explanatory stickers so that only authorized people can adjust the settings. We have also reconsidered fluorescent lighting placement and promoted turning off unneeded lighting, installed easy-to-reach switches to allow use of lighting only where needed and put in electricity meters for each industrial process to allow careful monitoring of electricity consumption.



Wastewater pump temperature sensor and controller

**Installation of a temperature controller for the wastewater pumps (YKK Singapore Pte. Ltd.):**

In the past, we operated the pump every day, regardless of the temperature, to comply with wastewater temperature standards for sewerage output. In order to reduce energy consumption by the pump cooling blower, we have now installed a sensor so that it operates only when the wastewater temperature exceeds the standard of 44°C. By doing this, we reduced energy consumption to 60% of the previous year. Furthermore, we will recover the cost of the equipment in 1.6 years, making it a very cost effective measure.

## Environmental impact reduction management—Zero emissions

Striving to achieve a zero emissions rate by turning waste materials back into resources

### YKK Group definition of zero emissions

- [1] Waste recycling rate of 97% or more
- [2] Sustained for at least 3 months from the month of achievement
- [3] Clarification of recycling methods and receiving parties

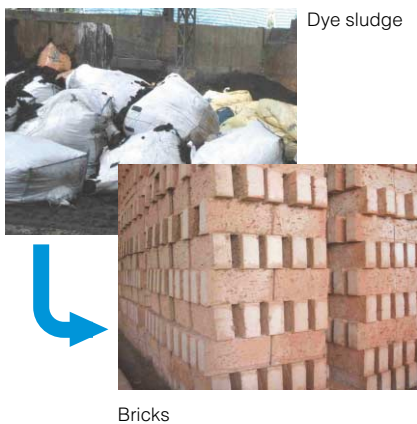
\*Covered: Anything that is no longer needed regardless of value or associated costs

**Our approach to zero emissions:** Eliminating landfill disposal of garbage generated by our business activity is a fundamental policy of the YKK Group. We are continuing our efforts to achieve this goal of zero emissions at our main operations around the world by the end of fiscal 2005.

As a next step, we are seeking to reduce the total amount of waste generated and improve the quality of our recycling methods to further minimize our environmental impacts.

**Achievements of fiscal 2004:** In October 2004, the YKK Group revised our definition of zero emissions and began new efforts to achieve them. In the past, we did not include ordinary wastes handled by local governments, special harmful substances and other wastes that were difficult to recycle, but we have revised our definition of waste to include "anything that is no longer needed regardless of value or associated costs" in order to make it more transparent to outside observers.

In fiscal 2004, our waste generation increased to 88,000 tons, 11.2% more than the previous year. The main causes of this increase were greater production of multilayer glass and the dismantling of structures at the Kurobe Plant.



However, we increased our recycling rate to 97%, 0.4% greater than the previous fiscal year. We raised our recycling rate through various measures, including enhanced in-house recycling of wood chips and scrap by the installation of continuous pulverizing processors, material recycling by separation of plastics and increased handling by existing recycling routes.

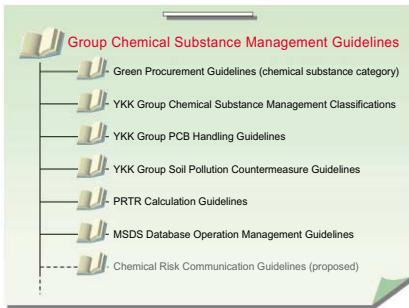
**Recycling of dye sludge (YKK Taiwan Co., Ltd.):** The main waste (500 tons/year) produced by YKK Taiwan is dye sludge that results from processing dye wastewater. In the past this was disposed of as landfill, but as a result of our efforts to develop new recycling routes, in November 2004, we were able to begin recycling all this waste as raw material for the creation of bricks. As a result, YKK Taiwan's total recycling rate grew greatly from 55% to 67%.



Thinner recycling machines

**Reuse of washing thinner (YKK India Pvt. Ltd.):** We use washing thinners in coating equipment to alter colors during the coating process. These used thinners had been disposed of as waste, but, in recent years, the amount of washing thinners used has increased as small lots with multiple colors have become more common. In order to reduce environmental impacts, we installed two thinner recycling machines, which also resulted in reducing costs.

Strict compliance with laws and agreements underlies our efforts, but we are also striving to reduce environmental risks through such efforts as appropriate management of chemical substances, regional environmental preservation of soil, groundwater, the air and entire watersheds as well as by preventing environmental accidents.



Chemical substance management system

**Achievements of fiscal 2004:** We created Group Chemical Substance Management Guidelines in order to handle the chemical substances of the entire group. In addition, we include guidelines for soil inspection and PCB problem countermeasures and other issues to complete our chemical substance management system.

In fiscal 2005, the entire group is adopting this system and will use it to further reduce environmental impacts and risks from chemical substances.



Elimination of chrome in paint  
Before elimination (left) and after (right)

**Eliminating lead and chrome in solder and paint:** The Restriction of Hazardous Substances in Electrical and Electronic Equipment (RoHS) Directive, issued by the European Parliament and the Council of the European Union, prohibits the use of heavy metals and other harmful chemical substances in electrical and electronic equipment sold within EU member countries beginning in July 2006.

The paint and solder materials that our Machinery and Engineering Group purchase include lead and chrome. In order to eliminate these substances, we have been working in cooperation with our suppliers to test alternatives since fiscal 2004.



Storage warehouse for equipment that contains small amounts of PCBs

**PCB Countermeasures:** The Law Concerning Special Measures against PCB Waste established in 2001 requires the appropriate disposal of Polychlorinated biphenyl (PCB) by the end of fiscal 2016. We are managing and storing transformers, condensers and other equipment that contain PCBs in accordance with the law and will handle them appropriately by participating in disposal plans established by local government agencies.

We also created our own guidelines for handling equipment that contains small amounts of PCBs in fiscal 2003.

In fiscal 2004, we conducted inspections on the status of PCBs contained in equipment owned by our YKK Group businesses in Japan. We have established a system of centralized storage for equipment found to contain small amounts of PCBs from all our domestic sites. In fiscal 2005, we are continuing inspections and undertaking careful storage as part of our cautious handling of PCBs.

## Environmental impact reduction management—Environmental risk management



Exhaust gas combustion equipment at YKK Italia

**Installation of exhaust gas processing equipment (YKK Italia S.p.A.):** Air pollution caused by organic chemical substances is both an issue in Japan and a serious problem faced by the entire world.

In order to reduce volatile organic substance emissions, YKK Italia installed exhaust gas processing equipment for its coating equipment in November 2004. This equipment collects the gas emitted from 4 coating machines and burns the organic substances at a high temperature of 800°C. Relative to the laws of the province where it is operated that allow emissions of 20 mg/Nm<sup>3</sup>, our measured value of 9.6 mg/Nm<sup>3</sup> is a good result.



Rainwater harvesting equipment at YKK India

**Installation of rainwater harvesting equipment (YKK India Pvt. Ltd.):** Land subsidence and groundwater depletion caused by the pumping of groundwater are serious problems.

YKK India has installed rainwater harvesting equipment that collects the rainwater that falls on the site and uses it to recharge the groundwater. A tank inside connects to a buried pipe that speeds the permeation of rainwater into the ground. We will continue to sustain groundwater resources by expanding this type of equipment and through other water conservation efforts.



Fire extinguishing equipment for duct fire prevention (center)

**Duct fire prevention:** If oil, paint or other substances adhere to the inside of exhaust ducts, a flame or spark that enters can cause a duct fire.

Our Fastening Products Group has installed disaster prevention equipment that exceeds domestic legal requirements. Dampers and fire extinguishing equipment for ducts prevent duct fires. At our Dalian plant in China, we have also installed exhaust fans for coating equipment to prevent the accumulation of solvents and paint in ducts.

## Environmental impact reduction management—Soil inspections



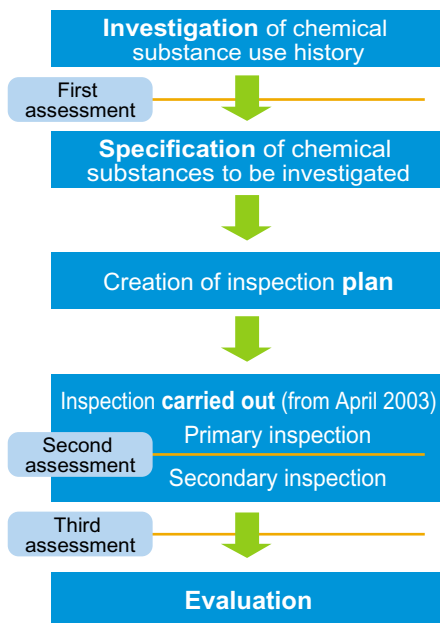
Boring inspection

**Soil Contamination Countermeasures Law:** If soil becomes polluted with harmful substances, direct contact with that soil, drinking groundwater polluted by contaminants leached from the soil and other contact can cause harm to human health.

This type of soil pollution was rarely identified in the past, but in recent years, with redevelopment of business industrial sites and other activities, soil pollution from heavy metals and volatile organic compounds has become apparent.

In response to the growing strength of society's demand to establish countermeasures and worries about the effects of soil pollution on human health, the Soil Contamination Countermeasures Law was established in Japan on May 22, 2002. In order to assure public safety and peace-of-mind, this law specifies implementation of soil contamination countermeasures including investigating soil contamination conditions, and emergency measures related to stopping health damage to people from soil contamination.

### Soil inspection process



**Soil inspection report:** The YKK Group considers soil preservation to be an important business risk management issue from the perspective of both regional environmental preservation and land asset value maintenance.

On February 15, 2003, the Soil Contamination Countermeasures Law came into effect.

At that time, the YKK Group was not immediately made subject to the law, but we created the YKK Group Soil Contamination Countermeasures Guidelines and voluntarily began inspections. We decided to begin with our properties in Toyama Prefecture, the region where our business began. In fiscal 2002, before the Law went into effect, we undertook land overview inspections and land use history investigations. Then, in fiscal 2003 and 2004, we initiated soil analysis inspections (including boring inspections) in accordance with the standards of the Soil Contamination Countermeasures Law.

As of now, none of the sites that we have inspected requires soil decontamination. We have reported these results to the Toyama Prefectural government. (For details, please see p. 38.)

We plan to continue our voluntary efforts on a national level based on our experience of conducting inspections in Toyama.

**Implementation of soil inspections at YKK India (February 2004):** In consideration of the future, we are undertaking voluntary soil inspections. Based on the soil inspection methods that YKK used in Japan, we investigated the history of land use and chemical use at our company, identified substances to be measured and selected inspection locations before beginning. We intend to continue making inspections on a regular basis.

**Groundwater inspection report:** Depending on regional characteristics, some YKK Group plants use groundwater for daily use as well as industrial use. Since 1999, we have been regularly conducting voluntary groundwater inspections at these plants as one aspect of soil contamination assessment.

In our investigations, we measure not only substances that we currently use, but also substances that we used in the past. All items measured have been within environmental standard levels. (For details, please see p. 37.)