

Zero emission (Waste reduction and recycling)

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

Environmental action targets

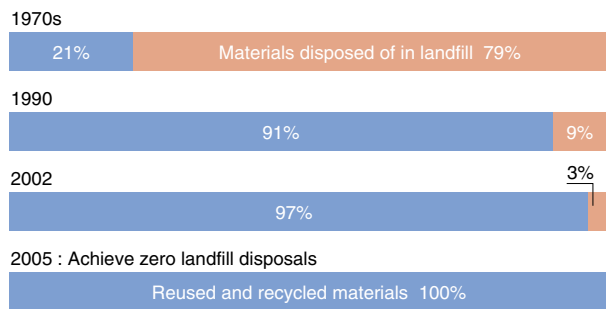
● Seeking to achieve zero emissions* at our major production facilities around the world by the end of fiscal 2005

* YKK Group zero emission definition: eliminate disposal in landfills of waste generated by YKK business activities

○ Reduction of waste volume and recycling by the YKK Group

Our recycling efforts began in the 1970s with the collection of aluminum hydroxide from waste alkali from the anodized aluminum manufacturing process. After that we began recycling sludge and the reduction of waste volume through such actions as recovering and recycling acids.

By the end of fiscal 2005 we seek to achieve a recycling rate of 100% and reach our goal of reducing landfill disposal to zero.



○ Achievements of the 2002 fiscal year

We have begun the valuable recycling of materials from plastic wastes, in addition to past methods such as material recycling and thermal recycling as cement fuel, we are conducting thorough separation, collection and recycling of waste office equipment materials.

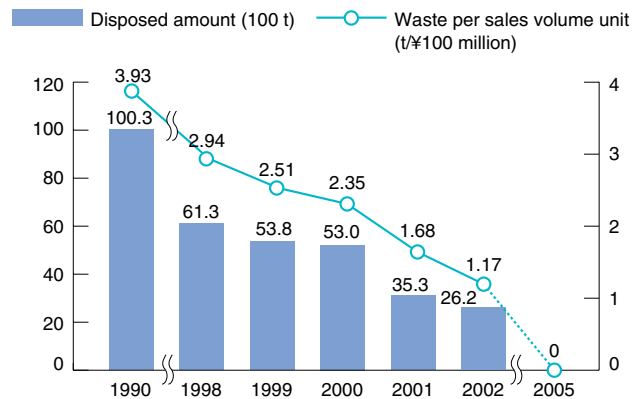
We have also made progress in recycling multi-layer glass and other scraps from factories into glass panes and road materials, as well as recycling fluorescent lights, batteries and wood scraps (MDF).

We have also begun tests toward turning byproducts of factory landscape maintenance, including pruned branches, thinned plants and cut grass, into fertilizer.

The Shikoku Plant and the Kurobe Ogyu Plant have already achieved zero emission of production waste.

With these efforts, we have achieved our goals of reducing production waste level amounts in proportion to sales by 30% from the previous year and 70% less than 1990 levels in fiscal 2002.

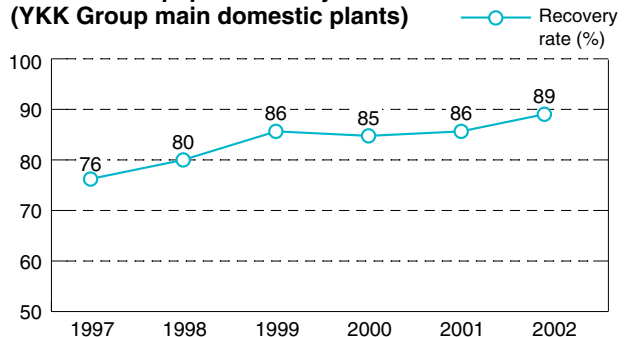
Transition in production waste disposal amounts and waste rates compared to sales (YKK Group main domestic plants)



○ Continuing efforts

Along with further promoting recycling sludge into concrete, recycling the materials of waste plastic and using them for cement fuel, recycling in gasification fusion furnaces, and use of waste oil as fuel, we are seeking to achieve zero emissions by the end of 2005 by recycling previously unrecycled items such as waste alkali, brick scraps, and ceramic scraps, and reusing discarded office equipment.

Transition in paper recovery rate (YKK Group main domestic plants)



○ Kurobe Recycling Center operation

In April 2002, our Kurobe facilities began operation of the Kurobe Recycling Center as a station that all parts of the business there could share for recycling and that would help them achieve the goal of zero emission of waste materials.

The purpose of the Recycling Center was to create an efficient and low-cost way to recycle waste products, and overcome the difficulties faced by each Kurobe facility in trying to find space and dealing with the high costs and inefficiency of transporting small amounts of materials to be recycled.

Collection, reception, sorting, reduction, weighing and storage of items, including wood scraps, pallets, cardboard, plastic waste, polystyrene foam, used florescent lights, discarded office equipment, metal scraps, paper waste, secret documents, and glass beverage bottles is conducted so that recycling businesses can be hired to take these materials for reuse.



Cardboard collection and loading

Accumulated wood scraps and pallets are broken down into smaller volumes and taken away by recycling businesses.



Sending out wood scraps and pallets

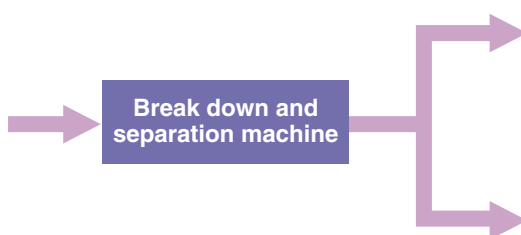
○ Recycling wood doors

In the past wood scraps with steel reinforcements from interior wood doors made at the Tohoku Plant, and those products that were returned, were disposed of in landfill.

At present, however, by making efforts to break them down and separate their materials, wood chips are now reused as boiler fuel and the metal materials are recycled effectively in alloys.



Wood interior door with steel reinforcements



Fuel for boilers



Separated wood scrap chips and metal materials
For making alloys

○ Recycling used grinding stones

In our Machinery and Engineering Group, grinding stones that have been worn down from the process of machine grinding operations.

In the past there was no way to recycle these so they were disposed of as landfill. From May 2002 we have worked with the makers who supply us and have begun a system to return the used products. To make return easier, we have set up special return boxes for the suppliers.

Used grinding stones are recycled by separating them by type and breaking them down and sifting them to make new products, such as grinding materials and fireproofing materials.



Return box for the collection of grinding stones