

Factory Designed to Operate in Harmony with the Environment

Environmental Activities at the Akagi Plant

As part of our initiatives to restructure and inject innovation into production at our plants in Gunma Prefecture, we constructed the Akagi Plant (Sanden Forest) as a 21st century plant and a new home for the vending machine and store systems operations of our Kotobuki Plant in Isezaki, the living and environment systems and electronic devices operations of our Sakai Plant, our parts center, and our distribution center.

True to its name, Sanden Forest is located in the midst of a vast green expanse of nature. In April 2001, this new production site commenced operations based on the concepts of "creation, challenge, and contribution."

At the Akagi Plant, we have brought the parts factory, the assembly factory, and the distribution center together and are working to integrate production functions, carry out uniform production, enhance logistics, and develop products that deliver constant customer satisfaction.



Plant Overview

Name: Akagi Plant, Sanden Corporation
 Location: 7 Nakanosawa, Kusakawa-mura, Seta-gun, Gunma, Japan
 Number of employees: Approximately 1,000
 Products manufactured: Commercial freezers, refrigerated showcases, vending machines, living and environment systems, electronic parts
 Total site area: 641,000m²
 Building floor area: 98,000 m²
 ISO certification: December 1997 (Acquired by the Kotobuki Plant, which became the Akagi Plant in 2003)

Zero Emissions

[An overview of activities]

- * At a number of offices and production plants as well as some affiliates, waste is separated into 72 categories, periodic patrols are conducted to ensure proper separation, and collaborative efforts with waste disposal companies are being pursued to promote proper waste disposal and improvements.
- * Weighing scales have been placed at two recycling centers to enable the monitoring of the volume of waste generated at each department and production line and management programs are being used to establish waste reduction goals and guide efforts to meet these goals.
- * Sanden's food waste processor is being used to process kitchen waste from company cafeterias into compost for use as fertilizer for trees at Sanden Forest.



Food waste processor

Energy Conservation

[An overview of activities]

Introduction of energy saving equipment at the Akagi Plant

*Ventilation and Lighting

We have switched from the use of a central heating and air conditioning system to a system that enables the temperature regulation of individual spaces as required. In addition, we are working to conserve energy used in lighting through employee education and such infrastructure-based measures as the use of highly efficient Hf fluorescent lights and pulse switches, the revision of light fixture placement, and the use of motion sensors in certain areas.

*Introduction of a Central Monitoring Room

We introduced a system to continuously monitor energy use and calculate the volume of energy used by each area and department. This information can be viewed on computers in each department, providing management visibility and facilitating the sharing of measurement data.



Recycling center



Central monitoring room

*Conserving Energy via Production Equipment

Sanden is working to discover energy waste in pumps, inverters for air compressors, and other production equipment and make improvements. For instance, we conducted an analysis of unnecessary metal sheet and press die movement during metal sheet processing with a punch press and saved energy by reducing processing time through proper die placement.



Water quality monitor sensor

Akagi Plant's Environmental Impact (Water quality)

Regulated item	Unit	Regulated value according to prefectural /city ordinances	Actual measurement
pH	-	5.8 - 8.6	7.2
BOD	mg/L	160	1.9
SS	mg/L	200	6
n-hexane	mg/L	-	<1
Total nitrogen	mg/L	120	8.7
Organic phosphorus	mg/L	-	<0.01
Total phosphorus	mg/L	16	0.026
E.coli bacteria	Number/cm ²	3000	<80

(Air: Boiler)

Regulated item	Unit	Regulated value according to prefectural /city ordinances	Actual measurement
Sulfur oxide	Nm ³ /h	(15.7)	<0.0044
Particulate density	g/Nm ³	0.3	<0.007
Nitrogen oxide	mg/L	180	62

Notes:
 1. The Akagi Plant has concluded a pollution prevention and environmental preservation agreement with the village of Kasakawa(JSS).
 2. BOD refers to biochemical oxygen demand.
 3. SS refers to the volume of suspended solids.
 4. Sulfur oxide regulations refer to k value regulations.