

Raising Product Quality Levels and Ensuring Product Safety

Management System

The management philosophy that our founder established states that Panasonic should strive "to contribute to society through its products and services while always placing the customer first". Based on this philosophy, we engage in manufacturing activities while continuously improving our various systems and mechanisms to raise quality and ensure safety for all our products. We have adopted unique Corporate-wide targets that are even more demanding than generally accepted standards and regulations. Panasonic also keeps an eye on evolving social trends while striving to grow our business coverage, including when creating new service lines.

As a part of our fundamental policy regarding product quality, Panasonic has established a unique set of Basic Rules for Quality Administration under the responsibility of the Chief Quality Officer (CQO), who is ultimately accountable for the quality of all Panasonic products and services. We have also created a Panasonic Quality Management System that is implemented in each business division and for each Divisional Company product. This system is part of Panasonic's customer-centric perspective and continuous efforts in improving the quality of our products and constantly reviewing the soundness of each production step. In October 2016, Panasonic enacted unique standards of duty to promote a smoother and higher performance in the manufacturing and sales of medical equipment.

Panasonic acknowledges the profound lessons learned from the accidents involving FF-type kerosene heaters, and views product safety as a top management priority. Specifically, Panasonic applies its unique product safety standards to each product lifecycle phase (from planning and design to service and disposal) for every product to ensure its safety. Furthermore, in line with changes to our businesses or products, we strive to take product safety to the next level by convening our General Product Safety Committee twice a year. We also use our corporate intranet, Panasonic's homepage, and other means to share information related to the product safety of all Panasonic products in as timely a manner as possible to all employees, including quality officers and design officers at each Divisional Company and in each division.

Reference URL

Important news about products

<https://www.panasonic.com/jp/corporate/info.html>

Additionally, we started holding Quality Management Workshops in fiscal 2020, as we consider customer satisfaction to be intimately tied to product quality improvement. These Workshops focus on our business model and examine how to conduct business in a way that reflects the evolutions of customers' expectations.

Quality Management System

To establish self-sufficient quality assurance processes in each Divisional Company and business site, Panasonic published its Product Quality Management System (P-QMS) Guidelines in 2004. These Guidelines supplement the requirements of the ISO 9001 standard with Panasonic's own quality assurance methods and expertise to create a quality management system designed to deliver the level of quality that we aim for. The Guidelines have since been updated to comply with ISO 9001-2015. All of Panasonic's workplaces are expected to adhere to P-QMS.

These Guidelines also serve as the basis for the quality management systems established within each Divisional Company and business sites that are tailored to their own specific business sector. We also conduct quality assessments regularly and internal audits to verify the progress of these systems at every level (Group, Divisional Company, business site, etc.) and formulate corrective action for anything that does not meet those standards as part of the Company's commitment to continuous quality improvement.

Panasonic strives to evolve in keeping with each of its ever-diversifying business sectors. This includes dividing the Guidelines into portions of P-QMS that are focused on shared Corporate-wide guidelines and standards specific to each sector—including consumer electronics, automotive, housing, devices, BtoB solutions, pharmaceuticals, and services.

Policy

Panasonic's Corporate-wide Quality Policy is unique in its statement that the company will "truly serve customers by way of providing products and services that continuously meet and satisfy the needs of customers and society." Panasonic has also established a Basic Policy regarding the Autonomous Code of Conduct for Product Safety. (This basic policy was approved at a meeting of the board of directors in 2007 of what was then called Matsushita Electric Industrial Co., Ltd.) As per this policy, Panasonic actively strives to ensure the safety of its products, while keeping to its principles of "the customer comes first" and of maintaining a "super-honest" attitude.

▶ Basic Policy Regarding the Autonomous Code of Conduct for Product Safety (Japanese only)

<http://www.panasonic.com/jp/corporate/management/code-of-conduct/quality-policy.html>

The Panasonic Code of Conduct also states in its "Product Safety" section that the company will strive to ensure the safety of its products.

▶ Panasonic Code of Conduct, Chapter 2: Implementing the Code in Business Operations; II-2. Product Safety

<http://www.panasonic.com/jp/corporate/management/code-of-conduct/chapter-2.html#section2-2>

Training

Panasonic holds training twice each year (once per half) for all quality managers in each Divisional Company and business sites with the aim of training key quality personnel to become champions innovating our quality management.

In November of each year, Panasonic also holds its Quality Control Circles World Conference to improve the quality control skills of on-site manufacturing employees through the horizontal expansion of Quality Control (QC) activities so that employees can learn methods for solving problems in the workplace from one another. At the 28th conference, held in fiscal 2021, 30 quality control circles (Japan: 18, China: 11, Malaysia: 1) were picked from a total of 4,708 Corporate-wide circles to compete in a quality control grand prix. Due to the coronavirus pandemic the competition was held online this year.

To establish a workplace culture that makes product safety the top priority in manufacturing, Panasonic holds product safety engineer training lectures to train product safety experts. In 2019, we were able to meet the target in our initial plan regarding the number of employees who took part in these product safety training lectures. Going forward, we are having those who have completed this training share their know-how horizontally by holding training sessions in each workplace. Panasonic is working to expand its online meeting systems to make it possible to hold its Product Safety Forums, where employees can consider product safety-related issues through cases seen inside and outside the company, once again in FY2021 in spite of the pandemic. To spread this corporate culture that makes product safety a top priority, in FY 2021 we also began holding a new PCSS practitioner training once annually, with more than 430 participants including business division product quality leaders and individuals from engineering and quality divisions. Panasonic also offers online learning courses such as Product Safety Basics.

Panasonic has also established a Product Safety Learning Square at the Human Resources Development Company in Hirakata, Osaka, with the aim of conveying lessons based on actual business sites and actual products, and of providing instruction to enhance product safety-related skills. The Product Safety Learning Square offers an opportunity to see actual products that were recalled in the past—such as those recalled after the FF-type kerosene heater accidents—as well as the internal recall announcements and other information on the causes of their problems, the steps taken during the recall, and the measures taken to prevent the essentially unsafe phenomena (including tracking or strength degradation).



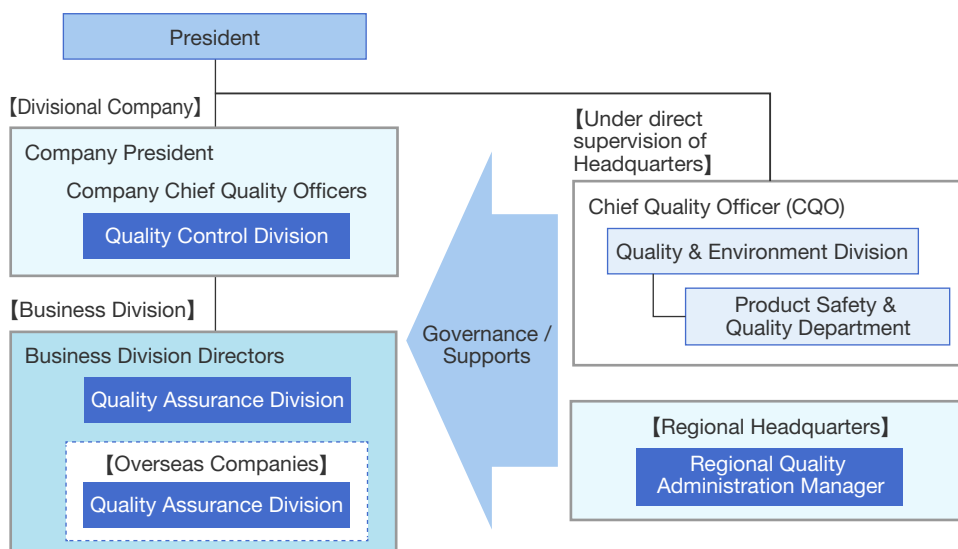
Product Safety Learning Square

Responsible Executive and Framework

As of August 2020, the executive in charge of quality is Tatsuo Ogawa.

With the support and governance of the Panasonic Headquarters, each Divisional Company, business division, and overseas subsidiary has implemented systems for undertaking its business with independent responsibility and self-sufficiency.

Quality Management Structure (as of August 2021)



Since September 2014, regional quality administration managers have been appointed for six regions: North America; Latin America; Europe and CIS; Southeast Asia and the Pacific; India, South Asia, Middle East; and China and Northeast Asia.

Quality administration managers from these six regions and each Divisional Company in Japan meet once a year for a Global Quality Managers’ Meeting. These managers monitor regional quality conditions and promptly share information on product safety-related defects with the various business divisions. They also share information on public safety standards and public safety certifications in their regions, reinforcing the organizational structure of their business divisions.

Committees and Organizations

Activities of Quality Managers Meetings

Panasonic investigates and summarizes Corporate-wide quality improvement efforts and the state of product quality within the Group at its semiannual CQO Meetings. Group CQOs, CQOs from each Divisional Company, and stakeholders in relevant job functions all attend these meetings. Attendees discuss how Panasonic should handle quality over the medium and long terms, and decide on policies and actions meant to further strengthen the foundation of quality for the whole Group.

Panasonic also periodically holds Quality Managers’ Meetings—attended by the quality managers of each Divisional Company—as a place for more practical discussions on the quality policies covered during CQO meetings. These meetings both enhance cooperation within the Group and promote quality improvement efforts. Since fiscal 2016, Panasonic has also been holding an annual Global Quality Managers’ Meeting for quality managers from around the world. It is an opportunity for these managers to share regional issues and annual plans with companies from other regions and to facilitate quality improvement efforts.

Activities of the Corporate Product Safety Committee

To conduct manufacturing activities with safety as top priority, Panasonic established in 2012 a Corporate-wide Product Safety Committee made up of key people in product quality assurance at each Divisional Company and established a Safety Technology Working Group as well as a Safety Standards Working Group under its umbrella. Using these working groups, we began developing safety technologies and upgrade our product safety standards on a regular basis, in response to the 2005 FF-type kerosene heater accidents.

This Committee holds semiannual roundtable discussions for representatives of each Divisional Company to investigate approaches to maintain and improve Panasonic quality, by ensuring the safety and quality of lithium-ion battery and network connectivity products and adapting AI to all types of product quality measures.

Activities of the Safety Technology Working Group

The Safety Technology Working Group takes into account the possibility that customers may use products longer than anticipated at the design stage. The Working Group develops scientific evaluation methods for testing the durability of materials used in products—including accelerated deterioration tests—accumulates data and creates testing databases.

In fiscal 2021, the Working Group looked at an analysis of quality issues extending to the level of management and covering major concerns from fiscal 2019-2020. This analysis was used to consider the adoption of specific measures to prevent recurrences, as well as ways to deploy those measures to other Panasonic divisions.

Activities of the Safety Standards Working Group

To realize an ever higher level of product safety beyond mere compliance with public safety standards, Panasonic has established the Panasonic Corporation Safety Standards (PCSS), consisting of internal design rules that are stricter than official standards.

The Safety Standards Working Group has reflected in the PCSS what it has learned from the activities of the Safety Technology Working Group, and it has strengthened standards related to major safety issues, such as long-term use, flame-retarding measures, and fall prevention. In FY2021, the Working Group continued its work from the previous year by sharing and deliberating on quality issues and the preventive measures that were reported up to senior management, which are reviewed by the CQO Meeting and Safety Technology Working Group.

Furthermore, in order to facilitate inquiries about new technologies at Panasonic sites outside Japan, the Working Group is making efforts to revise in-house product safety standards in each business sector, including the Panasonic Corporation Safety Standards, Edition 9 Ver. 01.

Global Safety Standard Certifications Obtained

1) ISO13482

The international standard relating to the safety of personal care robots issued by the International Organization for Standardization (ISO). Three types of robots are covered: physical assistant robots, mobile servant robots, and person carrier robots.

Panasonic has received this ISO certification for two of our products.

- 2014: Personal care robot Resyone (robotic device for nursing care combining the functionality of a bed and a wheelchair, the first device in the world to receive this ISO certification)
- 2017: Personal care robot Resyone PLUS

See: <https://sumai.panasonic.jp/agefree/products/resyoneplus/> (Japanese only)

2) ISO 26262 certification received

An international standard for road vehicle functional safety that was published in 2011. The standard sets out four Automotive Safety Integrity Levels (ASILs): ASIL A through ASIL D.

- Panasonic acquired certification in the ISO 26262 road vehicle functional safety standard from the German third-party organization TÜV SUD. The body recognized that Panasonic is able to comply with the highest level of safety in the standard (ASIL-D) during the process of developing onboard devices and device software

See https://www.jeita.or.jp/japanese/exhibit/2015/1111/pdf/02_Functional.pdf (Japanese only)

Internal Company Rules Concerning Product Labeling

Panasonic has produced both Operational Standards for the Design of Safety Instructions and Operational Standards for the Design of Operating and Installation Instructions, meant to outline the basic approach and requirements for product manuals and operating and installation manuals. On top of this basic working framework, we have also set a number of more detailed rules. Specifically, Panasonic has created its own unique internal industrial standards, which include methods for warning labels that relate to product safety as laid out in Safety Instructions Design Methods and Operating and Installation Instruction Design Methods as well as legally mandated labeling related to recycling or disposal (recycling laws of the like) in order to avoid misunderstanding or errors on the part of the customer.

Product Security

Various products implement software and provide the ability to connect to networks for convenient usage. This makes it necessary to ensure the security of our products to prevent leaks or alteration of information and to prevent damages that may result from a malicious third-party attempting to cause the product to malfunction.

At Panasonic, we have a specialized department for Corporate-wide product security which develops guidelines to

promote security-conscious design, and we ensure the security of our products by streamlining our internal structure and rules, regularly reviewing these so that customers can safely use our products.

Collection and Distribution of Information and Employees Training

Issues in product security and how to address them change on a daily basis. At Panasonic, we collect the most up to date information on product security by joining various security focused organizations, e.g. FIRST*, a forum to share information on security incidents, and attending various global conferences. This information is shared with any relevant divisions and incorporated into training materials for product security to improve the knowledge and awareness of product security throughout the entire organization.

*FIRST: Forum of Incident Response and Security Teams

Promoting Product Security from Development

During the development phase of a product, we consider what assets and functions that need to be protected, as well as any potential attacks against them. Products are developed while minimizing these risks. In addition, security experts perform tests (that always include up-to-date attack methods) on the product prior to shipment, to ensure that Panasonic products do not contain any “security vulnerabilities” from both a hardware and software standpoint.

Post-shipment Response to ensure product security

As part of Panasonic’s post-shipment monitoring of our products, we have set up a way to contact us in the event that security vulnerabilities are discovered in Panasonic products after purchase.

When we receive information on vulnerabilities, we immediately verify whether they will impact Panasonic products. If we find that our products may have security issues because of those vulnerabilities, we ensure the security of the products through updates or similar means and take action to prevent the issue from recurring by establishing a system for checks and similar other measures. We have systems in place that allow the Product Security Center to monitor progress and provide support until the response of the relevant business divisions are complete.

We also have systems in place that make it possible for Panasonic to take a more active role in obtaining information on vulnerabilities and acting on it (rather than waiting for vulnerabilities to be reported) by continually monitoring the latest threats that might affect our products post sale.

* Panasonic Product Vulnerability Hotline

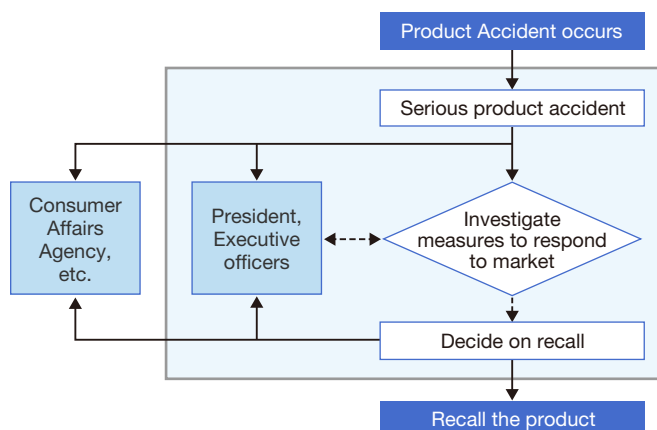
<https://www.panasonic.com/global/corporate/product-security/sec/psirt.html>

Major Accidents and Responses

Responding to Product-Related Incidents

In the event that a product-related accident occurs, Panasonic immediately confirms the facts related to the incident, and analyzes and verifies its causes. If the incident is deemed to be serious, a section at the Group’s Headquarters and each of its Divisional Companies and business sites work together to take appropriate measures to ensure customers’ safety. Specifically, Panasonic’s first response is to notify relevant government bodies such as the Consumer Affairs Agency, as well as the company President and senior management, who then consider the response policies.

Product Accident Response Flowchart



Serious Product-Related Accident Information

In Japan, Panasonic publicly reports serious product accidents^{*1}, including accidents suspected of being caused by products^{*2}, and accidents for which it has been determined that it is unclear whether a product was the cause^{*3}, based on the Consumer Product Safety Act and Panasonic's basic policies per its Autonomous Code of Conduct for Product Safety.

*1. "Serious product accidents" refers to the following accidents specified in the Consumer Product Safety Act:

1. Accidents resulting in death;
2. Accidents resulting in serious injury or illness (injury or illness requiring at least 30 days of treatment), or accidents resulting in permanent injury;
3. Carbon monoxide poisoning;
4. Fires (confirmed as such by firefighting authorities).

*2. Any of the following:

- Accidents relating to gas devices or kerosene devices (including accidents in which it has yet to be determined whether the product was the cause);
- Accidents relating to products other than gas or kerosene devices for which it is suspected that the product was the cause. Panasonic promptly releases information on these types of accidents.

*3. Accidents for which Product Safety Group of the Consumer Affairs Council of the Ministry of Economy, Trade and Industry has determined that it remains unclear whether a product was the cause

List of Information Concerning Serious Product-Related Accidents (Japanese only)

<https://www.panasonic.com/jp/corporate/info/psc.html>

Progress in Response to Incidents Related to FF-Type Kerosene Heaters

In 2005, Panasonic undertook emergency measures as a result of product safety incidents involving FF-type kerosene heaters. Sixteen years have passed since we began the Corporate-wide product recall. We continue to work, led by the Corporate FF Customer Support & Management Division staff, to prevent any new incidents.

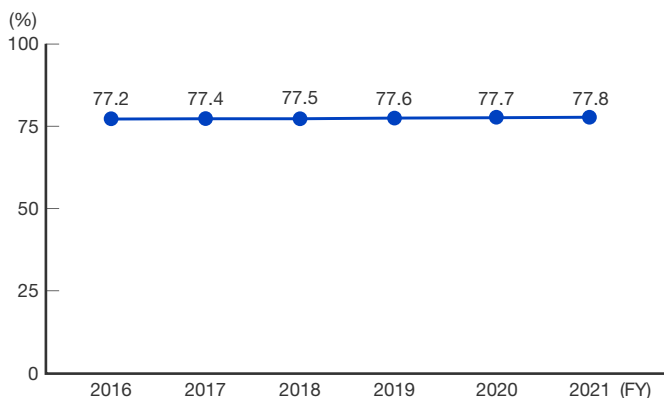
Panasonic would like to sincerely thank those who provided their cooperation and support in our market response.

In fiscal 2021, we conducted a campaign to find yet unidentified target products. As part of these efforts, we visited the homes—mainly in Hokkaido, Tohoku, and Nagano—of our customers who had once owned the recalled products, investigated the nearby supply/exhaust pipes, and conducted surveys of retail customers. We are also continuing all our notification campaigns to promote product recalls among customers who had their units inspected or repaired and to confirm product conditions before the winter arrives.

In fiscal 2021, we added 122 units to our list of products discovered or confirmed to have been discarded. In total, 118,314 units have been recorded, bringing the percentage of units identified to 77.8% of units sold as of March 31, 2021. We were still finding products that our customers had continued using without realizing the heaters' potential harm, meaning that a high degree of risk remains. We will continue our search with the help and cooperation of those involved.

In addition to these market-facing efforts, we are undertaking various internal initiatives. We communicate the progress of these activities through the company intranet in monthly reports. We also pass down the lessons learned from customer safety incidents through lectures given in various training programs and educational materials posted at the Product Safety Learning Square (in Hirakata), the Product Safety Museum (in Kusatsu), and the Learning Center (in Nara), where we educate our employees. We strive to foster a Panasonic Group culture that places product safety first.

Ratio of Identified Units* to Total Units Sold (%)



* Identified units: This figure includes the number of units recalled, the number of units in use after examination and repair, and the number of units we have confirmed that customers have discarded.

List of Awards

1) Product Safety Awards

This awards program was launched by the Ministry of Economy, Trade and Industry in 2007 with the aim of encouraging private enterprises to be more active about improving product safety, as well as to firmly establish the value of product safety in society as a whole.

(For more details, see: https://www.meti.go.jp/product_safety/ps-award/3-consumer/h30_award.html#anc-1-1 (Japanese only))

FY2021

- METI Minister's Award, Large Manufacturer and Importer Category: Laundry and Cleaner Division, Appliance Company, Panasonic Group

2) IAUD Design Award

The awards program was created by the International Association for Universal Design and is meant to recognize groups and individuals who have conducted or proposed particularly noteworthy activities aimed at realizing a UD society in which everyone can live comfortably.

Panasonic's various products and initiatives had been granted the IAUD Gold Award for seven consecutive years until 2018, alongside the recognition given below.

- 2017 Grand Award: Communication of Panasonic Universal Design
- 2020 Silver Award: Panasonic LED Torch Light

Reference: <https://www.panasonic.com/global/corporate/technology-design/ud.html>