

**The Dow Chemical
Company
Quality Management
System Manual**

A Corporate Overview

Condensed edition

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Introduction

This manual describes, in a condensed format, The Quality Management System of The Dow Chemical Company. It includes:

- Company overview
- Dow's Quality Policy
- Resources and Commitment to Quality
- Overview of the Quality Management System Elements

The manual has two purposes:

- It briefly outlines the company's quality standards for use by Dow people.
- It provides an easy-to-follow overview of Dow's quality system for use by customers and other interested audiences.

An Overview of Dow

Dow combines the power of science and technology to passionately innovate what is essential to human progress. The Company is driving innovations that extract value from the intersection of chemical, physical and biological sciences to help address many of the world's most challenging problems such as the need for clean water, clean energy generation and conservation, and increasing agricultural productivity. Dow's integrated, market-driven, industry-leading portfolio of specialty chemical, advanced materials, agrosiences and plastics businesses delivers a broad range of technology-based products and solutions.

Further information may be obtained at [The Dow Chemical Company](#) web page.

Dow's Quality Policy

Quality Performance is a commitment to excellence by each Dow employee. It is achieved through teamwork and continual improvement.

We are dedicated to being a leader in providing quality products and services that meet or exceed the requirements of our customers and all of our key stakeholders.

Quality management plays an important role by ensuring that the company can reliably produce and deliver the quality products and services expected by its customers.

Customer Focus

Dow's product and service quality requirements are defined by its customers. Dow works closely with its customers to understand their businesses and their expectations. This close working relationship helps Dow to better meet its customers' expectations today and to anticipate and meet their future needs.

Global Quality System Corporate Structure

Dow has established an infrastructure and support organization to assist business management in globally implementing the corporate Quality Management System in a consistent and coordinated manner. Under the Director for Manufacturing Support Services, the Product Quality Director leads the

strategy for Dow's Quality Management System throughout the company.

The company has established a global Business Quality Leaders network. These leaders are responsible for developing and implementing quality strategies that address the needs of their markets, whether it is in supplying bulk quantities of basic chemicals or small volumes of highly specialized materials. The Business Quality Leaders are accountable for the implementation of the systems, policies and standards that ensure quality products and services are delivered to Dow's customers. The leaders monitor the performance of the system and use data to drive improvement opportunities.

Continuous Improvement

Dow has embraced a policy of Continuous Improvement and utilizes a number of key processes and tools to ensure that Continuous Improvement is a way of life for its employees.

Dow employs Six Sigma methodology for:

- data-based decision making
- identifying and addressing the root causes of a problem
- tracking results
- sustaining the gains long term

Joining with Six Sigma is LEAN, a Continuous Improvement philosophy and mindset that focuses on value as perceived by the external customer.

Dow's emphasis on reliability is through our Highly Reliable Organization program, focused on driving fewer unplanned events.

Continuous improvement of Dow's manufacturing processes is guided by the business expertise centers and their use of the Technology Implementation for Competitive Advantage (TICA) process for aligning technology improvements with global business strategies.

Quality Measurement Systems

Dow has established quality measurement systems to evaluate its progress in continuous quality improvement. Some of the tools used to monitor progress in each business include external and internal customer surveys, auditing, organizational self-assessments, performance metrics, and statistical tools.

Employee Involvement / Teamwork

All Dow people play important roles in quality. A key value in Dow's strategy is Respect for People, which states that "the employees of Dow are the engine of value creation; our imagination, determination and dedication are essential to growth. We will work to celebrate and reward the unique backgrounds, viewpoints, skills, and talents of everyone at Dow. Respect for people is measured by how we include and treat each other, by the contributions that flow from our diversity, by the productivity of our relationships, and by a job well done, no matter what the job.

- Our customers are our partners in creating value; their loyalty is our greatest reward.

- Our communities are our neighbors; their acceptance of us is vital to our ability to operate.
- Our shareholders are the beneficiaries of our success; their ongoing commitment to us is based on returning to them superior profits over time.
- Our respect for people also includes the consumers whose lives we touch. We will strive to answer people's most vital needs: for food, water, shelter, transportation, communication, health and medicine.”

To foster an environment where involvement, continuous improvement, and teamwork (including cross-functional teamwork) flourish, managers are encouraged to:

- treat employees as valued team members;
- actively solicit ideas on problems and solutions from all people in the work group;
- remove barriers as identified by employees;
- empower people to make decisions and implement solutions;
- push decision making down to the lowest possible level;
- collaborate with the entire work group to develop a mission.

Responsible Care®

Dow has a long-standing commitment to safety, health and the environment. The company is committed to the Responsible Care initiative -- a continuing effort to improve the

chemical industry's health, safety and environmental performance.

The Dow Quality Management System

Purpose

Ensuring quality is a multi-functional effort covering many aspects of Dow's operations. It is a continuous process involving:

- the identification and documentation of customer needs;
- the development, manufacture and delivery of products and services to meet those needs consistently;
- feedback from the customer to assess the company's performance;
- action on the customer's feedback to improve the company's performance.

Developed and endorsed by company management, the Dow Quality Management System is part of an integrated corporate management system, encompassing the requirements of numerous external standards and internal company requirements. Dow's quality management system conforms, at minimum, to specified requirements of international standards, like ISO 9001.

Product quality is maintained through work process and quality architecture standardization, and process control. Service quality covers all aspects of customer transactions and is ensured by the function that is providing the service. Both product and service quality characteristics are agreed upon by Dow and the customer.

Quality Leadership

Dow Leadership takes a visible and leading role in creating and sustaining the quality management system, through

- Establishing core values, policies, directions, performance expectations,
- Communicating quality directions and values
- Obtaining feedback on the quality management system
- Identifying necessary product realization and support processes
- Creating an environment encouraging the growth and involvement of people
- Providing necessary infrastructure and resources
- Focusing on customer satisfaction, and
- Continuous improvement

Dow Quality Leaders review the management system with top management to ensure the overall system's continuing suitability, adequacy and effectiveness, and to initiate and/or leverage changes and improvements.

Resource Management

Dow ensures that the resources to achieve its objectives are identified and made available, in part through Dow's work processes for leading people, planning and allocating resources and managing information.

Training and employee development supports the company's overall strategy to be a learning and continuously improving organization. Required training is provided and documented to

ensure the competence of all employees in their intended roles.

Operation

Dow's product realization and support work processes are fully integrated and organized to provide the capability to meet the needs of our stakeholders. Management of Change is consistently applied by employees to assure changes to our work processes, procedures, specifications have appropriate reviews and approvals. Training is conducted, documentation is updated and appropriate communications, including customer notifications, as appropriate.

Dow's Marketing and Sales organization operates to meet the needs of Dow customers and businesses, through an integrated approach to Sales, Marketing, and Customer Service. Communicating effectively with customers, understanding customer needs and ensuring these expectations are translated into requirements for Dow's product fulfillment processes are essential aspects of what this organization does.

All products and services sold by The Dow Chemical Company, as well as raw materials used in manufacturing and product packaging, are defined by specifications. Specifications reflect Dow's commitment to the requirements needed at each stage of manufacture, distribution and redistribution to meet the customers' overall requirements for the final, delivered products

Dow's Design and Development organization has implemented processes to respond effectively and efficiently to the needs of our customers. Dow's

comprehensive Design and Development process considers many factors and customer inputs in designing products, including life cycle, safe handling practices, and product disposal.

Dow's Purchasing work process ensures that procured services and purchased goods are controlled to conform to specified requirements. Because purchased materials, goods and services directly affect the quality of Dow's products and services, Dow has a process for developing an appropriate supplier evaluation and development process to help ensure that all purchased materials, goods and services conform to Dow-specified requirements. Efforts are made to establish a close working relationship and feedback system with suppliers to ensure the highest value in terms of quality.

Dow's processes for manufacturing product are carried out under controlled conditions. This includes detailed descriptions of the products and process conditions, the means of testing or monitoring the product to ensure that it meets specified requirements at all stages of manufacture, and the conditions to ensure the product maintains its integrity until delivery to the customer. All Dow packaged products are labeled to ensure clear, unambiguous identification of the product and the party responsible for the manufacture of the product. They also identify appropriate health, safety and environmental information in compliance with all regulatory, product stewardship and/or customer requirements.

Performance Evaluation

Measuring performance, analyzing the resulting data through statistical techniques, prioritizing and initiating improvements is a process used by Dow to add value to its organization. Customer input, from a number of collection processes, is an important data source both in understanding how well we are meeting current needs, and in gaining insight into how we can better serve our customers in the future.

In assessing our internal performance, each organization conducts periodic audits and self-assessments to verify that processes are consistent with specified requirements and the intent of our management system.

Processes for the planned monitoring and measuring of products are implemented to ensure that specified requirements are met throughout the realization process. Should products not conform to requirements, actions are taken to ensure that the non-conforming material is dealt with in an appropriate manner.

Dow's process for corrective action is designed to ensure that issues are properly captured, appropriate investigation is conducted - focused on preventing recurrence - and communication of the resolution to interested stakeholders.

Dow has created a culture of empowering individuals to identify opportunities for improvement, a system for capturing and evaluating the opportunities, and a means implementing solutions.

Concluding Remarks

Dow has a comprehensive, integrated quality management system utilizing our major work processes to enhance customer satisfaction by meeting or exceeding their expectations.