



Basic Concepts

Overview

Search Site

My ASQ

- ▶ My Certifications
- ▶ My News
- ▶ My Saved Articles
- ▶ My Communities
- ▶ My Account

Knowledge Center

- ▶ Learn About Quality
- ▶ Hot Topics In Quality
- ▶ Tools & Resources

Areas of Use

- ▶ Education (K-16)
- ▶ Government
- ▶ Healthcare
- ▶ Manufacturing
- ▶ Service

You Need...

- ▶ Membership
- ▶ Training & Certification
- ▶ Publications
- ▶ Standards Central
- ▶ Networking & Events
- ▶ ASQ Store
- ▶ Careers in Quality

About ASQ

- ▶ Media Room

Library

Whether you're looking for a book, article, case study or a journal, our library offers publications tailored to your quality needs.

SEARCH BOOKS & STANDARDS:

by Keywords

BROWSE BY CATEGORY:

Select a Category...

Select another topic:

Glossary

Overview

[A](#) [B](#) [C](#) [D](#) [E](#) [F](#) [G](#) [H](#) [I](#) [J](#) [K](#) [L](#) [M](#) [N](#) [O](#) [P](#) [Q](#) [R](#) [S](#) [T](#) [U](#) [V](#) [W](#) [X](#) [Y](#) [Z](#)

S

SAE International: Professional organization of individual engineers and related disciplines; formerly Society for Automotive Engineers.

Sample: In acceptance sampling, one or more units of product (or a quantity of material) drawn from a lot for purposes of inspection to reach a decision regarding acceptance of the lot.

Sample size [n]: The number of units in a sample.

Sample standard deviation chart (S chart): A control chart in which the subgroup standard deviation, s , is used to evaluate the stability of the variability within a process.

Sampling at random: As commonly used in acceptance sampling theory, the process of selecting sample units so all units under consideration have the same probability of being selected. Note: Equal probabilities are not necessary for random sampling; what is necessary is that the probability of selection be ascertainable. However, the stated properties of published sampling tables are based on the assumption of random sampling with equal probabilities. An acceptable method of random selection with equal probabilities is the use of a table of random numbers in a standard manner.

Sampling, double: Sampling inspection in which the inspection of the first sample leads to a decision to accept a lot, reject it or take a second sample; the inspection of a second sample, when required, then leads to a decision to accept or to reject the lot.

Sampling, multiple: Sampling inspection in which, after each sample is inspected, the decision is made to accept a lot, reject it or take another sample. But there is a prescribed maximum number of samples, after which a decision to accept or reject the lot must be reached. Note: Multiple sampling as defined here has sometimes been called "sequential n sampling" or "truncated sequential e sampling." The term "multiple sampling" is recommended.

Sampling, single: Sampling inspection in which the decision to accept or to reject a lot is based on the inspection of one sample.

Sampling, unit: Sequential sampling inspection in which, after each unit is inspected, the decision is made to accept a lot, reject it or to inspect another unit.

Sanitizing: English translation of seiso, one of the Japanese 5S's used for workplace organization. Sanitizing (also referred to as shining or sweeping) is the act of cleaning the work area. Dirt is often the root cause of premature equipment wear, safety problems and defects.

Satisfier: A term used to describe the quality level received by a customer when a product or service meets expectations.

Scatter diagram: A graphical technique to analyze the relationship between two variables. Two sets of data are plotted on a graph, with the y-axis being used for

the variable to be predicted and the x-axis being used for the variable to make the prediction. The graph will show possible relationships (although two variables might appear to be related, they might not be; those who know most about the variables must make that evaluation). One of the "seven tools of quality" (see listing).

Scientific management/approach: A term referring to the intent to find and use the best way to perform tasks to improve quality, productivity and efficiency.

Scorecard: An evaluation device, usually in the form of a questionnaire, that specifies the criteria customers will use to rate your business' performance in satisfying customer requirements.

Seiban: The name of a Japanese management practice taken from the words sei, which means manufacturing, and ban, which means number. A seiban number is assigned to all parts, materials and purchase orders associated with a particular customer job, project or anything else. This enables a manufacturer to track everything related to a particular product, project or customer, and facilitates setting aside inventory for specific projects or priorities. That makes it an effective practice for project and build-to-order manufacturing.

Self-directed work team (SDWT): A type of team structure in which much of the decision making regarding how to handle the team's activities is controlled by the team members themselves.

Sentinel event: Healthcare term for any event not consistent with the desired, normal or usual operation of the organization; also known as an adverse event.

Service level agreement: A formal agreement between an internal provider and an internal receiver (customer).

Seven tools of quality: Tools that help organizations understand their processes to improve them. The tools are the cause and effect diagram, check sheet, control chart, flowchart, histogram, Pareto chart and scatter diagram (see individual entries).

Seven wastes: See "eight wastes."

Shadow board: A visual management tool painted to indicate where tools belong and which tools are missing.

Shewhart cycle: See "plan-do-check-act cycle."

Sifting: English translation of Japanese seiri, one of the 5S's used for workplace organization. Sifting involves screening through unnecessary materials and simplifying the work environment. Sifting is separating the essential from the nonessential.

Sigma: One standard deviation in a normally distributed process.

Signal to noise ratio (S/N ratio): An equation that indicates the magnitude of an experimental effect above the effect of experimental error due to chance fluctuations.

Simulation: A 3-D technique to balance a line. It involves using cardboard, wood and plastic foam to create full-sized equipment mock-ups that can be easily moved to obtain an optimum layout.

Single-minute exchange of dies: A series of techniques pioneered by Shigeo Shingo for changeovers of production machinery in less than 10 minutes. The long-term objective is always zero setup, in which changeovers are instantaneous and do not interfere in any way with continuous flow. Setup in a single minute is not required, but used as a reference (see "one-touch exchange of dies," "internal setup" and "external setup").

Single-piece flow: A process in which products proceed, one complete product at a time, through various operations in design, order taking and production without interruptions, backflows or scrap.

SIPOC diagram: A tool used by Six Sigma process improvement teams to identify all relevant elements (suppliers, inputs, process, outputs, customers) of a process improvement project before work begins.

Six Sigma: A method that provides organizations tools to improve the capability of their business processes. This increase in performance and decrease in process variation lead to defect reduction and improvement in profits, employee morale and quality of products or services. Six Sigma quality is a term generally used to indicate a process is well controlled ($\pm 6\sigma$ from the centerline in a control chart).

Six Sigma quality: A term generally used to indicate process capability in terms of process spread measured by standard deviations in a normally distributed process.

Software quality assurance (SQA): A systematic approach to evaluating the quality of and adherence to software product standards, processes and procedures. SQA includes ensuring standards and procedures are established and are followed throughout the software acquisition life cycle.

Sort: English translation of the Japanese word seiri, one of the 5S's used for workplace organization. Sorting (also referred to as structuring or sifting) involves organizing essential materials. It helps the operator to find materials when needed.

Special causes: Causes of variation that arise because of special circumstances. They are not an inherent part of a process. Special causes are also referred to as assignable causes. Also see "common causes."

Special characteristic: Automotive ISO TS 16949 term for key product or process characteristics.

Specification: A document that states the requirements to which a given product or service must conform.

Sponsor: The person who supports a team's plans, activities and outcomes.

Stages of team growth: Four stages that teams move through as they develop maturity: forming, storming, norming and performing.

Stakeholder: Any individual, group or organization that will have a significant impact on or will be significantly impacted by the quality of a specific product or service.

Standard: The metric, specification, gauge, statement, category, segment, grouping, behavior, event or physical product sample against which the outputs of a process are compared and declared acceptable or unacceptable.

Standard deviation (statistical): A computed measure of variability indicating the spread of the data set around the mean.

Standard in-process stock: One of the three elements that make up standard work. It is the minimum quantity of parts always on hand for processing during and between subprocesses. It allows workers to do their jobs continuously in a set sequence, repeating the same operation over and over in the same order. Also see "standard work."

Standard work: A precise description of each work activity, specifying cycle time, takt time, the work sequence of specific tasks and the minimum inventory of parts on hand needed to conduct the activity. All jobs are organized around human motion to create an efficient sequence without waste. Work organized in such a way is called standard(ized) work. The three elements that make up standard work are takt time, working sequence and standard in-process stock (see individual listings).

Standard work instructions: A lean manufacturing tool that enables operators to observe a production process with an understanding of how assembly tasks are to be performed. It ensures the quality level is understood and serves as an excellent training aid, enabling replacement or temporary individuals to easily adapt and perform the assembly operation.

Standardization: When policies and common procedures are used to manage processes throughout the system. Also, English translation of the Japanese word seiketsu, one of the Japanese 5S's (see listing) used for workplace organization.

Statistical process control (SPC): The application of statistical techniques to control a process; often used interchangeably with the term "statistical quality control."

Statistical quality control (SQC): The application of statistical techniques to control quality. Often used interchangeably with the term "statistical process control," although statistical quality control includes acceptance sampling, which statistical process control does not.

Statistics: A field that involves tabulating, depicting and describing data sets; a formalized body of techniques characteristically involving attempts to infer the properties of a large collection of data from inspection of a sample of the collection.

Stop the line authority: Power given to workers to stop the process when abnormalities occur, allowing them to prevent the defect or variation from being passed along. **Strategic planning:** The process an organization uses to envision its future and develop the appropriate strategies, goals, objectives and action plans.

Strengths, weaknesses, opportunities, threats (SWOT) analysis: A strategic technique used to assess what an organization is facing.

Stretch goals: A set of goals designed to position an organization to meet future requirements.

Structural variation: Variation caused by regular, systematic changes in output, such as seasonal patterns and long-term trends.

Suboptimization: A condition in which gains made in one activity are offset by losses in another activity or activities that are caused by the same actions that created gains in the first activity.

Supermarket: The storage locations of parts before they go on to the next operation. Supermarkets are managed by predetermined maximum and minimum inventory levels. Each item in the plant is at a designated location.

Supplier: A source of materials, service or information input provided to a process.

Supplier quality assurance: Confidence a supplier's product or service will fulfill its customers' needs. This confidence is achieved by creating a relationship between the customer and supplier that ensures the product will be fit for use with minimal corrective action and inspection. According to Joseph M. Juran, nine primary activities are needed: 1. define product and program quality requirements; 2. evaluate alternative suppliers; 3. select suppliers; 4. conduct joint quality planning; 5. cooperate with the supplier during the execution of the contract; 6. obtain proof of conformance to requirements; 7. certify qualified suppliers; 8. conduct quality improvement programs as required; 9. create and use supplier quality ratings.

Supply chain: The series of suppliers to a given process.

Surveillance: The continual monitoring of a process; a type of periodic assessment or audit conducted to determine whether a process continues to perform to a predetermined standard.

Survey: The act of examining a process or questioning a selected sample of individuals to obtain data about a process, product or service.

Sustain: The English translation of shitsuke, one of the 5S's (see listing) used for workplace organization. Sustaining (also referred to as self-disciplining) is the continuation of sorting, setting in order and sanitizing. It addresses the need to perform the 5S's on an ongoing and systematic basis.

Symptom: An observable phenomenon arising from and accompanying a defect.

System: A group of interdependent processes and people that together perform a common mission.

System kaizen: Improvement aimed at an entire value stream.