α

Greek Symbol Alpha

A_2

1) A multiplier of R used to calculate the control limits for averages. 2) A multiplier of R used to calculate the control limits for medians.

A_3

A multiplier of S used to calculate the control limits for averages.

ACSI

AMERICAN CUSTOMER SATISFACTION INDEX

AIAG

AUTOMOTIVE INDUSTRY ACTION GROUP; responsible for publishing and distributing joint documents and specifications.

ANOVA

ANALYSIS OF VARIANCE

ANSI

AMERICAN NATIONAL STANDARDS INSTITUTE

ANSI Standard

Any of the several thousand standards on many topics which are maintained by and marketed through the AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI).

AOQ

AVERAGE OUTGOING QUALITY

AOQ Curve

AVERAGE OUTGOING QUALITY CURVE

AOQL

AVERAGE OUTGOING QUALITY LIMIT

AQL

ACCEPTABLE QUALITY LEVEL

AQP

Association for Quality and Participation

ASN

AVERAGE SAMPLE NUMBER

ASQ

AMERICAN SOCIETY FOR QUALITY

ASQC

AMERICAN SOCIETY FOR QUALITY CONTROL. Renamed AMERICAN SOCIETY FOR QUALITY in 1997 due to the increasing focus into new fields in addition to statistical quality control.

ASTD

American Society for Training and Development

ASTM

AMERICAN SOCIETY FOR TESTING AND MATERIALS

ATI

AVERAGE TOTAL INSPECTION

AV

APPRAISER VARIATION

A2LA

American Association for Laboratory Accreditation

Absolute Error

ERROR, ABSOLUTE

Abstract Standard

A STANDARD which requires subjective judgment in order to determine whether or not an item complies with it. Contrast with PHYSICAL STANDARD.

Abuse

Use of a product or service which is either inconsistent with, exceeding, or an unintended variation of, the original performance expectations. Includes usage, environment, or application of products or services resulting in an unintended outcome. The result may or may not be catastrophic in nature. Compare with FORESEEABLE ABUSE.

Accept

To decide that a batch, lot or quantity of product, material or service satisfies the requirement criteria based on the information obtained from the sample(s). Contrast with REJECT.

Accept Stamp

INSPECTOR STAMP used to apply a MARK OF CONFORMANCE. Contrast with REJECT STAMP.

Acceptability Constant (k)

A constant that is a function of the specified ACCEPTABLE QUALITY LEVEL (AQL) and the sample size. Used in variables sampling schemes which use an AQL index.

Acceptable

A product meeting or exceeding minimum design standards. Contrast with UNACCEPTABLE.

Acceptable Quality Level (AQL)

1) The maximum percent defective that is a satisfactory process average for sampling inspection, corresponding to a given sampling plan and a specified PRODUCER RISK. 2) The maximum percentage or proportion of variant units, nonconforming units, or defective units, in a lot or batch that can be considered a satisfactory process average in an acceptance sample. Applies to sampling inspection of a continuous series of lots.

Acceptance

1) A decision that the process is operating in a satisfactory manner as shown by the values and randomness of statistical measures being plotted on an acceptance control chart. 2) VALIDATION.

Acceptance Control Chart

1) A CONTROL CHART used to accept a process without TAMPERING when it is IN CONTROL and reject it for corrective action when it is out of control. 2) A graph to evaluate a process in terms of whether or not it:

- can satisfy product or service tolerance for measured characteristic(s)
- is in statistical control within the acceptance control limits for a:
  - sample
  - subgroup

Acceptance Criteria

The criteria that a lot or process must meet to successfully complete a test phase or meet delivery requirements. Compare with ACCEPTANCE SPECIFICATION.

Acceptance Inspection

A buyer's legal right to examine goods when they are delivered before accepting them. This is to determine whether the goods are the same as those the buyer agreed to buy in the contract of sale. By taking title before delivery, the buyer has a reasonable time after delivery to inspect the goods. If not inspected within such time, the buyer is deemed to have consented to the delivery without examining the goods. However, if the buyer does inspect the goods and they are not the same as those agreed to, the buyer can return the goods to the seller.

Acceptance Number (c)

The maximum number of VARIANT UNITS allowed in a sample being inspected by attributes for the inspected lot or batch to be accepted. Contrast with REJECTION NUMBER.

Acceptance Proof Test

To apply a proof load as a prerequisite for customer acceptance.

Acceptance Rate

The percentage of items accepted. Given by:

$$\frac{\text{number accepted} \times 100}{\text{number accepted} + \text{number rejected}}$$

Acceptance Region

In a test of hypothesis the region of values for which the NULL HYPOTHESIS is accepted.

Acceptance Sampling

Methods of SAMPLING INSPECTION in which decisions to accept or reject the lot(s) or process(es) are based on the results of the inspection of samples taken at random from them.

Acceptance Sampling Plan

A specific plan stating risk, sample size(s) to be used, and the associated acceptance and nonacceptance criteria (ASQ). It is used in an ACCEPTANCE SAMPLING SCHEME. Includes DODGE ROMIG SAMPLING PLAN, MIL-STD-105, MIL-STD-414, and UNKNOWN STANDARD DEVIATION PLAN.

Acceptance Sampling Scheme

A specific set of procedures usually consisting of acceptance sampling plans that relate lot sizes, sample sizes and acceptance criteria, or the amount of 100 percent inspection and sampling. Typically includes rules for switching from one plan to another. Acceptance Sampling Schemes are used in ACCEPTANCE SAMPLING SYSTEMS and may be calculated to fit specific requirements as specified in ANSI Z1.4, Z1.9, and others.

Acceptance Sampling System

A collection of sampling schemes and criteria for selecting a scheme.

Acceptance Specification

Criterion or criteria which must be met by a sampled item in order for the sampled item to be judged acceptable. This guiding rule is used to classify individual samples as DEFECTIVE or ACCEPTABLE. Compare with ACCEPTANCE CRITERIA.

Accreditation

For a duly recognized body to certify the facilities, capability, objectivity, competence, and integrity of an agency, service, operational group or individual to provide the specific service(s) or operation(s) which are being accredited.

Accrediting Body

A governmental or non governmental body which administers an accreditation system and grants accreditation.

Accuracy

1) A quality of being error free. 2) A qualitative assessment of the degree of freedom from error. 3) The closeness of a measurement result to a true or "correct" value, rule or standard. 4) A maximum specified amount of error permitted or proven to be present in an arrangement that will perform a physical or performance measurement. 5) A quantitative measure of the magnitude of error, preferably expressed as a function of the relative error. 6) Average deviation of readings from a measurement system from actual known values. 7) The deviation of observed value from true value. Given by:

$$\text{Accuracy} = \frac{\text{true value - maximum measured value}}{\text{full scale of measurement}} \times 100$$

Accuracy/Error Dichotomy

High ACCURACY implies small error.

Accuracy/Precision Confusion

ACCURACY is often confused with, and contrasted with, PRECISION as "on target" may be contrasted with "tightly grouped."

Action Limit

An UPPER CONTROL LIMIT or LOWER CONTROL LIMIT. This peculiar wording is often used when WARNING LIMITS are in use.

Activity Network Diagram (AND)

A management and planning tool. Used to display a process flow and to determine the times required to complete a process.

Adherence to Standards

CONTROL

Adjustable Gage

An go/no go gage shaped like a horseshoe used for measuring thickness, width, diameter, or length. The open end is adjusted within a range and then locked at a predetermined size.

Administrative Expenses Prevention Costs of Quality

Costs and expenses charged to the quality management function and not specifically covered elsewhere in a cost quality system. Includes heat, light, telephone, and others.

Administrative Salaries Prevention Costs of Quality

Compensation costs for all 100% administrative quality function personnel including managers and directors, supervisors, and clerical.

Advanced Statistical Methods

More sophisticated and less widely applicable techniques of statistical process analysis and control than included in BASIC STATISTICAL METHODS. Includes:

- analysis of variance
- advanced problem solving techniques
- correlation analysis
- design of experiments
- more advanced control chart techniques
- regression analysis

Adversarial Assurance

The undesirable relationship, that often evolves or is intentionally created, between the assurance disciplines and the design/production disciplines. Occurs when the assurance function:

- communicates directly to superiors, not with design/production
- distances itself from the design and production disciplines
- does not credibly practice disciplines it judges
- has a charter to:
  - certify
  - check the design
  - stop shipment against the charter of production
  - validate
- is routinely used to contain and screen out defects
- participates after design, not during design

Affinity Diagram

A management and planning tool. Used to arrange large amounts of ideas and issues from multiple sources into logical categories based on the natural relationships of the items.

Aggressive Breakthrough

To create or anticipate a changing environment. Compare with DEFENSIVE BREAKTHROUGH. A form of MANAGERIAL BREAKTHROUGH.

Aliases

CONFOUNDED EFFECTS

Allowance

1) Minimum dimensional clearance allowable between mating parts required for different FITs. Contrast with INTERFERENCE FIT. Compare with CLEARANCE FIT. 2) Intentional difference between mating part dimensions made in order to avoid interference. 3) Condition of largest internal member mated with the smallest external member. This is the tightest permissible fit. 4) Maximum interference or minimum clearance intended between mating or adjacent parts. 5) Twice the CLEARANCE.

Alpha

Greek Symbol α

Alpha Error

1) Erroneously rejecting a good lot. 2) The error of accepting the ALTERNATE HYPOTHESIS when, in reality, the null hypothesis is true. PRODUCER RISK is the probability of committing an Alpha Error. Contrast with BETA ERROR. Also known as TYPE ONE ERROR.

Alpha Risk

1) Probability of committing an ALPHA ERROR. Also called PRODUCER RISK. 2) In a test of hypothesis the probability of accepting the ALTERNATE HYPOTHESIS when, in reality, the NULL HYPOTHESIS is true.