



Standard Practice for Sampling a Stream of Product by Attributes Indexed by AQL¹

This standard is issued under the fixed designation E2234; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This standard establishes lot or batch sampling plans and procedures for inspection by attributes using MIL-STD-105E as a basis for sampling a steady stream of lots indexed by AQL.

1.2 This standard provides the sampling plans of MIL-STD-105E in ASTM format for use by ASTM committees and others. It recognizes the continuing usage of MIL-STD-105 in industries supported by ASTM. Most of the original text in MIL-STD-105E is preserved in Sections 4 - 6 of this standard.

1.3 No system of units is specified in this standard.

1.4 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 ASTM Standards:²

E456 Terminology Relating to Quality and Statistics

E1994 Practice for Use of Process Oriented AOQL and LTPD Sampling Plans

E2586 Practice for Calculating and Using Basic Statistics

2.2 Other Standard:

MIL-STD-105E Sampling Procedures and Tables for Inspection by Attributes³

3. Terminology

3.1 **Definitions:** E1994 Terminology For a more extensive list of terms in E11 standards see Terminology E456.

¹ This practice is under the jurisdiction of ASTM Committee E11 on Quality and Statistics and is the direct responsibility of Subcommittee E11.30 on Statistical Quality Control.

Current edition approved Nov. 1, 2009. Published December 2009. Originally approved in 2005. Last previous edition approved in 2008 as E2234–08. DOI: 10.1520/E2234-09.

² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

³ Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, <http://www.ansi.org>.

3.1.1 *acceptance quality limit (AQL), n*—quality limit that is the worst tolerable process average when a continuing series of lots is submitted for acceptance sampling.

3.1.1.1 *Discussion*—This definition supersedes that given in MIL-STD-105E.

3.1.2 *average outgoing quality (AOQ), n*—the average percent defective of outgoing product including all accepted lots or batches after any defectives found in them are replaced by acceptable units, plus all lots or batches which are not accepted after such lots or batches have been effectively 100 % inspected and all defective units replaced by acceptable units.

E1994

3.1.3 *average outgoing quality limit (AOQL), n*—the AOQL is the maximum of the AOQ's for all possible incoming percentages defective for the process for a given acceptance sampling plan.

E1994

3.1.4 *classification of defects, n*—the enumeration of possible defects of the unit of product classified according to their seriousness, that is, critical, major, or minor defect.

3.1.5 *critical defect, n*—a defect that judgment and experience indicate would result in hazardous or unsafe conditions for individuals using, maintaining, or depending upon the product, or a defect that judgment and experience indicate is likely to prevent performance of the function of a major end item.

3.1.6 *defect, n*—any nonconformance of the unit of product with specified requirements.

3.1.7 *double sampling plan, n*—a multiple sampling plan in which up to two samplings can be taken and evaluated to accept or reject a lot.

3.1.8 *inspection, n*—the process of measuring, examining, testing, or otherwise comparing the unit of product with the requirements.

3.1.9 *inspection by attributes, n*—inspection whereby either the unit of product is classified simply as defective or non-defective, or the number of defects in the unit of product is counted, with respect to a given requirement or set of requirements.

3.1.10 *inspection lot, n*—a collection of units of product produced under conditions that are considered uniform and from which a sample is drawn and inspected.

3.1.11 *major defect, n*—a defect, other than critical, that is likely to result in failure, or to reduce materially the usability of the unit of product for its intended purpose.

3.1.12 *minor defect, n*—a defect that is not likely to reduce materially the usability of the unit of product for its intended purpose, or is a departure from established standards having little bearing on the effective use or operation of the unit.

3.1.13 *multiple sampling plan, n*—a sampling plan in which successive samples from a lot are drawn and after each sample is inspected a decision is made to accept the lot, reject the lot, or to take another sample, based on quality level of the combined samples.

3.1.13.1 *Discussion*—When the quality is much less or much more than the AQL, the decision can be made on the first sample, which is smaller than that of a single sampling plan with equivalent acceptance quality level. For samples that are close to the AQL in quality, additional samples are required and the total sample size will be larger than the corresponding single sampling plan.

3.1.14 *operating characteristic, n*—probability of acceptance using a specified acceptance sampling plan, as a function of parameters describing quality of the lot.

3.1.15 *sample, n*—a group of observations, test results, taken from a large collection of observations, test results, which serves to provide information that may be used as a basis for making a decision concerning the larger collection.

E2586

3.1.15.1 *Discussion*—A sample consists of one or more units of product drawn from an inspection lot, the units of the sample being selected at random without regard to their quality. The number of units of product in the sample is the sample size.

3.2 Definitions of Terms Specific to This Standard:

3.2.1 *batch (in inspection), n*—a collection of units of product produced under conditions that are considered uniform and from which a sample is drawn and inspected, and may differ from a collection of units designated as a batch for other purposes, for example, production, shipment, etc.

3.2.2 *batch size, n*—the number of units of product in a batch.

3.2.3 *critical defective, n*—a unit of product which contains one or more critical defects and may also contain major and/or minor defects.

3.2.4 *defective, n*—a unit of product which contains one or more defects.

3.2.5 *defects per hundred units, n*—any given quantity of units of product is one hundred times the number of defects contained therein (one or more defects being possible in any unit of product) divided by the total number of units of product, that is:

$$\text{Defects per hundred units} = \frac{\text{Number of defects} \times 100}{\text{Number of units inspected}} \quad (1)$$

3.2.6 *lot, n*—see *batch*.

3.2.7 *lot size, n*—see *batch size*.

3.2.8 *major defective, n*—a unit of product which contains one or more major defects, and may also contain minor defects but contains no critical defect.

3.2.9 *minor defective, n*—a unit of product which contains one or more minor defects but contains no critical or major defect.

3.2.10 *percent defective, n*—any given quantity of units of product one hundred times the number of defective units of product contained therein divided by the total number of units of product, that is:

$$\text{Percent Defective} = \frac{\text{Number of defectives} \times 100}{\text{Number of units inspected}} \quad (2)$$

3.2.11 *process average (in inspection), n*—the average percent defective or average number of defects per hundred units (whichever is applicable) of product submitted by the supplier for original inspection.

3.2.11.1 *Discussion*—Original inspection is the first inspection of a particular quantity of product as distinguished from the inspection of product which has been resubmitted after prior rejection.

3.2.12 *sample size code letter, n*—a device used along with the AQL for locating a sampling plan on a table of sampling plans.

3.2.13 *sampling plan (in inspection), n*—a plan that indicates the number of units of product from each lot or batch which are to be inspected (sample size or series of sample sizes) and the criteria for determining the acceptability of the lot or batch (acceptance and rejection numbers).

3.2.14 *unit of product, n*—that which is inspected in order to determine its classification as defective or non-defective or to count the number of defects.

3.2.14.1 *Discussion*—It may be a single article, a pair, a set, a length, an area, an operation, a volume, a component of an end product, or the end product itself. The unit of product may or may not be the same as the unit of purchase, supply, production, or shipment.

4. Significance and Use

4.1 *Purpose*—This publication establishes lot or batch sampling plans and procedures for inspection by attributes. This publication shall not be interpreted to supersede or conflict with any contractual requirements. The words “accept”, “acceptance”, “acceptable”, etc, refer only to the contractor’s use of the sampling plans contained in this standard and do not imply an agreement by the customer (formerly “Government” in original text) to accept any product. Determination of acceptability by the customer shall be as described in contractual documents. The sampling plans described in this standard are applicable to AQL’s of 0.01 percent or higher and are therefore not suitable for applications where quality levels in the range of parts per million levels can be realized.

4.2 *Application*—Sampling plans designated in this publication are applicable, but not limited, to inspection of the following: (1) end items, (2) components and raw materials, (3) operations or services, (4) materials in process, (5) supplies in storage, (6) maintenance operations, (7) data or records, (8) administrative procedures. These plans are intended primarily to be used for a continuing series of lots or batches. The plans may also be used for the inspection of isolated lots or batches, but, in this latter case, the user is cautioned to consult the

operating characteristic curves to find a plan which will yield the desired protection (see 6.11).

5. Definitions

5.1 Acceptable Quality Level (AQL)—When a continuous series of lots is considered, the AQL is the quality level which, for the purposes of sampling inspection, is the limit of a satisfactory process average (See 5.19).

5.1.1 A sampling plan and an AQL are chosen in accordance with the risk assumed. Use of a value of AQL for a certain defect or group of defects indicates that the sampling plan will accept the great majority of the lots or batches provided the process average level of percent defective (or defects per hundred units) in these lots or batches be no greater than the designated value of AQL. Thus, the AQL is a designated value of percent defective (or defects per hundred units) for which lots will be accepted most of the time by the sampling procedure being used.

5.1.2 The sampling plans provided herein are so arranged that the probability of acceptance at the designated AQL value depends upon the sample size, being generally higher for large samples than for small ones, for a given AQL. The AQL alone does not identify the chances of accepting or rejecting individual lots or batches but more directly relates to what might be expected from a series of lots or batches, provided the steps indicated in this publication are taken. It is necessary to refer to the operating characteristic curve of the plan to determine the relative risks.

5.2 Average Outgoing Quality (AOQ)—For a particular process average, the AOQ is the average quality of outgoing product including all accepted lots or batches, plus all rejected lots or batches after the rejected lots or batches have been effectively 100 percent inspected and all defectives replaced by non-defectives.

5.3 Average Outgoing Quality Limit (AOQL)—The AOQL is the maximum AOQ for a given acceptance sampling plan. Factors for computing AOQL values are given in Table V-A for each of the single sampling plans for normal inspection and in Table V-B for each of the single sampling plans for tightened inspection.

5.4 Classification of Defects—A classification of defects is the enumeration of possible defects of the unit of product classified according to their seriousness

5.5 Critical Defect—A critical defect is a defect that judgment and experience indicate would result in hazardous or unsafe conditions for individuals using, maintaining, or depending upon the product, or a defect that judgment and experience indicate is likely to prevent performance of the tactical function of a major end item such as a ship, aircraft, tank, missile, or space vehicle.

5.6 Critical Defective—A critical defective is a unit of product which contains one or more critical defects and may also contain major and/or minor defects.

5.7 Defect—A defect is any nonconformance of the unit of product with specified requirements.

5.8 Defective—A defective is a unit of product which contains one or more defects.

5.9 Defects per Hundred Units—The number of defects per hundred units of any given quantity of units of product is one

hundred times the number of defects contained therein (one or more defects being possible in any unit of product) divided by the total number of units of product, i.e.: $\text{Defects per hundred units} =$

$$\text{Number of defects} \times 100 / \text{Number of units inspected}$$

5.10 Inspection—Inspection is the process of measuring, examining, testing, or otherwise comparing the unit of product with the requirements.

5.11 Inspection by Attributes—Inspection by attributes is inspection whereby either the unit of product is classified simply as defective or non-defective, or the number of defects in the unit of product is counted, with respect to a given requirement or set of requirements.

5.12 Lot or Batch—The term lot or batch shall mean “inspection lot” or “inspection batch”, i.e., a collection of units of product from which a sample is to be drawn and inspected and may differ from a collection of units designated as a lot or batch for other purposes (e.g., production, shipment, etc.).

5.13 Lot or Batch Size—The lot or batch size is the number of units of product in a lot or batch.

5.14 Major Defect—A major defect is a defect, other than critical, that is likely to result in failure, or to reduce materially the usability of the unit of product for its intended purpose.

5.15 Major Defective—A major defective is a unit of product which contains one or more major defects, and may also contain minor defects but contains no critical defect.

5.16 Minor Defect—A minor defect is a defect that is not likely to reduce materially the usability of the unit of product for its intended purpose, or is a departure from established standards having little bearing on the effective use or operation of the unit.

5.17 Minor Defective—A minor defective is a unit of product which contains one or more minor defects but contains no critical or major defect.

5.18 Percent Defective—The percent defective of any given quantity of units of product is one hundred times the number of defective units of product contained therein divided by the total number of units of product, i.e.: $\text{Percent Defective} =$

$$\text{Number of defectives} \times 100 / \text{Number of units inspected}$$

5.19 Process Average—The process average is the average percent defective or average number of defects per hundred units (whichever is applicable) of product submitted by the supplier for original inspection. Original inspection is the first inspection of a particular quantity of product as distinguished from the inspection of product which has been resubmitted after prior rejection.

5.20 Sample—A sample consists of one or more units of product drawn from a lot or batch, the units of the sample being selected at random without regard to their quality. The number of units of product in the sample is the sample size.

5.21 Sample Size Code Letter—The sample size code letter is a device used along with the AQL for locating a sampling plan on a table of sampling plans.

5.22 Sampling Plan—A sampling plan indicates the number of units of product from each lot or batch which are to be inspected (sample size or series of sample sizes) and the criteria for determining the acceptability of the lot or batch (acceptance and rejection numbers).

5.23 Unit of Product. —The unit of product is the thing inspected in order to determine its classification as defective or non-defective or to count the number of defects. It may be a single article, a pair, a set, a length, an area, an operation, a volume, a component of an end product, or the end product itself. The unit of product may or may not be the same as the unit of purchase, supply, production, or shipment.

6. General Requirements

6.1 Written Procedures. Written procedures are ordinarily developed and made available for the customer's review, upon request. When the written procedures indicate use of this standard, they shall comply with the requirements of this standard and reference appropriate parts as necessary.

6.2 Nonconformance. The extent of nonconformance of product shall be expressed either in terms of percent defective or in terms of defects per hundred units.

6.3 Formation and Identification of Lots or Batches. The product shall be assembled into identifiable lots, sublots, batches, or in such other manner as may be prescribed. Each lot or batch shall, as far as is practicable, consist of units of product of a single type, grade, class, size, and composition, manufactured under essentially the same conditions, and at essentially the same time. The lots or batches shall be identified by the contractor and shall be kept intact in adequate and suitable storage space.

6.4 AQL.

6.4.1 AQL Use. The AQL, together with the Sample Size Code Letter, is used for indexing the sampling plans provided herein.

6.4.2 Limitation. The selection or use of an AQL shall not imply that the contractor has the right to supply any defective unit of product.

6.4.3 Choosing AQLs. Different AQLs may be chosen for groups of defects considered collectively, or for individual defects. An AQL for a group of defects may be chosen in addition to AQLs for individual defects, or subgroups, within that group. AQL values of 10.0 or less may be expressed either in percent defective or in defects per hundred units; those over 10.0 shall be expressed in defects per hundred units only.

6.5 Sampling.

6.5.1 Representative (Stratified) Sampling. When appropriate, the number of units in the sample shall be selected in proportion to the size of sublots or sub-batches, or parts of the lot or batch, identified by some rational criterion. When representative sampling is used, the units from each subplot, sub-batch or part of the lot or batch shall be selected at random.

6.5.2 Time of Sampling. A sample may be drawn after all the units comprising the lot or batch have been assembled, or sample units may be drawn during assembly of the lot or batch, in which case the size of the lot or batch will be determined before any sample units are drawn. If the sample units are drawn during assembly of the lot or batch, and if the rejection number is reached before the lot is completed, that portion of the lot already completed shall be rejected. The cause of the defective product shall be determined and corrective action taken, after which a new lot or batch shall be begun.

6.5.3 Double or Multiple Sampling. When double or multiple sampling is to be used, each sample shall be selected over the entire lot or batch.

6.6 Inspection Procedures. Normal inspection will be used at the start of inspection. Normal, tightened or reduced inspection shall continue unchanged for each class of defects or defectives on successive lots or batches except where the switching procedures given below require change. The switching procedures shall be applied to each class of defects or defectives independently.

6.7 Switching Procedures.

6.7.1 Normal to Tightened. When normal inspection is in effect, tightened inspection shall be instituted when 2 out of 2, 3, 4, or 5 consecutive lots or batches have been rejected on original inspection (i.e., ignoring resubmitted lots or batches for this procedure).

6.7.2 Tightened to Normal. When tightened inspection is in effect, normal inspection shall be instituted when 5 consecutive lots or batches have been considered acceptable on original inspection.

6.7.3 Normal to Reduced. When normal inspection is in effect, reduced inspection shall be instituted provided that all of the following conditions are satisfied:

6.7.3.1 The preceding 10 lots or batches (or more, as indicated by the note to Table VIII) have been on normal inspection and all have been accepted on original inspection; and

6.7.3.2 The total number of defectives (or defects) in the samples from the preceding 10 lots or batches (or such other number as was used for condition "a" above) is equal to or less than the applicable number given in Table VIII. If double or multiple sampling is in use, all samples inspected should be included, not "first" samples only; and

6.7.3.3 Production is at a steady rate; and

6.7.3.4 Reduced inspection is considered desirable.

6.7.4 Reduced to Normal. When reduced inspection is in effect, normal inspection shall be instituted if any of the following occur on original inspection:

6.7.4.1 A lot or batch is rejected; or

6.7.4.2 A lot or batch is considered acceptable under the procedures of 6.10.1.4, or

6.7.4.3 Production becomes irregular or delayed; or

6.7.4.4 Other conditions warrant that normal inspection shall be instituted.

6.8 Discontinuation of Inspection. If the cumulative number of lots not accepted in a sequence of consecutive lots on original tightened inspection reaches five, the acceptance procedures of this standard shall be discontinued. Inspection under the provisions of this standard shall not be resumed until corrective action has been taken. Tightened inspection shall then be used as if 6.7.1 had been invoked.

6.9 Sampling Plans:

6.9.1 Inspection Level. The inspection level determines the relationship between the lot or batch size and the sample size. The inspection level to be used for any particular requirement will be as prescribed by the contractor's written procedures. Three inspection levels: I, II, and III, are given in Table I for general use (see 6.1). Normally, Inspection Level II is used.

However, Inspection Level I may be used when less discrimination is needed, or Level III may be used for greater discrimination. Four additional special levels: S-1, S-2, S-3, and S-4, are given in the same table and may be used where relatively small sample sizes are necessary and large sampling risks can or must be tolerated.

6.9.1.1 In the selection of inspection levels S-1 to S-4, care must be exercised to avoid AQLs inconsistent with these inspection levels. In other words, the purpose of the special inspection levels is to keep samples small when necessary. For instance, the code letters under S-1 go no further than D, equivalent to a single sample of size 8, but it is of no use to choose S-1 if the AQL is 0.10 percent for which the minimum sample is 125.

6.9.2 *Code Letters.* Sample sizes are designated by code letters. Table I shall be used to find the applicable code letter for the particular lot or batch size and the prescribed inspection level.

6.9.3 *Obtaining Sampling Plan.* The AQL and the code letter shall be used to obtain the sampling plan from Tables II, III, or IV. When no sampling plan is available for a given combination of AQL and code letter, the tables direct the user to a different letter. The sample size to be used is given by the new code letter, not by the original letter. If this procedure leads to different sample sizes for different classes of defects, the code letter corresponding to the largest sample size derived may be used for all classes of defects. As an alternative to a single sampling plan with an acceptance number of 0, the plan with an acceptance number of 1 with its correspondingly larger sample size for a designated AQL (where available), may be used.

6.9.4 *Types of Sampling Plans.* Three types of sampling plans; Single, Double, and Multiple, are given in Tables II, III, and IV, respectively. When several types of plans are available for a given AQL and code letter, any one may be used. A decision as to type of plan, either single, double, or multiple, when available for a given AQL and code letter, will usually be based upon the comparison between the administrative difficulty and the average sample sizes of the available plans. The average sample size of multiple plans is less than for double (except in the case corresponding to single acceptance number 1) and both of these are always less than a single sample size (see Table IX). Usually the administrative difficulty for single sampling and the cost per unit of the sample are less than for double or multiple.

6.10 *Determination of Acceptability:*

6.10.1 *Percent Defective Inspection.* To determine acceptability of a lot or batch under percent defective inspection, the applicable sampling plan shall be used in accordance with 6.10.1.1, 6.10.1.2, 6.10.1.3, and 6.10.1.4.

6.10.1.1 *Single Sampling Plan*— The number of sample units inspected shall be equal to the sample size given by the plan. If the number of defectives found in the sample is equal to or less than the acceptance number, the lot or batch shall be considered acceptable. If the number of defectives is equal to or greater than the rejection number, the lot or batch shall be rejected.

6.10.1.2 *Double Sampling Plan*—A number of sample units equal to the first sample size given by the plan shall be inspected. If the number of defectives found in the first sample is equal to or less than the first acceptance number, the lot or batch shall be considered acceptable. If the number of defectives found in the first sample is equal to or greater than the first rejection number, the lot or batch shall be rejected. If the number of defectives found in the first sample is between the first acceptance and rejection numbers, a second sample of the same size shall be inspected. The number of defectives found in the first and second samples shall be accumulated. If the cumulative number of defectives is equal to or less than the second acceptance number, the lot or batch shall be considered acceptable. If the cumulative number of defectives is equal to or greater than the second rejection number, the lot or batch shall be rejected.

6.10.1.3 *Multiple Sample Plan*—Under multiple sampling, the procedure shall be similar to that specified in 6.10.1.2, except that the number of successive samples required to reach a decision may be as many as seven.

6.10.1.4 *Special Procedure for Reduced Inspection*—Under reduced inspection, the sampling procedure may terminate without either acceptance or rejection criteria having been met. In these circumstances, the lot or batch will be considered acceptable, but normal inspection will be reinstated starting with the next lot or batch (see 6.7.4.2).

6.10.2 *Defects per Hundred Units Inspection.* To determine the acceptability of a lot or batch under defects per hundred units inspection, the procedure specified for percent defective inspection above shall be used, except that the word “defects” shall be substituted for “defectives”.

6.11 *Limiting Quality Protection.* The sampling plans and associated procedures given in this publication were designed for use where the units of product are produced in a continuing series of lots or batches over a period of time. However, if the lot or batch is of an isolated nature, it is desirable to limit the selection of sampling plans to those, associated with a designated AQL value, that provide not less than a specified limiting quality protection. Sampling plans for this purpose can be selected by choosing a Limiting Quality (LQ) and a consumer’s risk to be associated with it. Tables VI and VII give values of LQ for the commonly used consumer’s risks of 10 percent and 5 percent respectively. If a different value of consumer’s risk is required, the O.C. curves and their tabulated values may be used. The concept of LQ may also be useful in specifying the AQL and Inspection Levels for a series of lots or batches, thus fixing minimum sample size where there is some reason for avoiding (with more than a given consumer’s risk) more than a limiting proportion of defectives (or defects) in any single lot or batch.

6.12 *Curves:*

6.12.1 *Operating Characteristic Curves.* The operating characteristic curves for normal inspection, shown in Table X, indicate the percentage of lots or batches which may be expected to be accepted under the various sampling plans for a given process quality. The curves shown are for single sampling; curves for double and multiple sampling are matched as closely as practicable. The O.C. curves shown for AQLs

greater than 10.0 are based on the Poisson distribution and are applicable for defects per hundred units inspection; those for AQLs of 10.0 or less and sample sizes of 80 or less are based on the binomial distribution and are applicable for percent defective inspection; those for AQLs of 10.0 or less and sample sizes larger than 80 are based the Poisson distribution and are applicable either for defects per hundred units inspection, or for percent defective inspection (the Poisson distribution being an adequate approximation to the binomial distribution under these conditions). Tabulated values, corresponding to selected values or probabilities of acceptance (P_a , in percent) are given for each of the curves shown, and, in addition, for tightened inspection, and for defects per hundred units for AQLs of 10.0 or less and sample sizes of 80 or less.

6.12.2 Average Sample Size Curves. Average sample size curves for double and multiple sampling are in Table IX. These show the average sample sizes which may be expected to occur under the various sampling plans for given levels of process quality. The curves assume no curtailment of inspection and are approximate to the extent that they are based upon the Poisson distribution, and that the sample sizes for double and multiple sampling are assumed to be $0.631n$ and $0.25n$ respectively, where n is the equivalent sample size.

7. Operating Procedure for Use in Sampling Inspection

7.1 Sections 4 - 6 of this standard preserve the structure of MIL-STD-105E for use in applications in which that standard is prescribed, or where its use is desirable, for example, where it is called out as part of the procedure contained in another standard. This section provides additional instruction on use of MIL-STD-105E in sampling inspection.

7.2 This standard is a sampling system primarily intended for use with a stream of lots where an upper limit on the process fraction defective is specified. This is the Acceptance Quality Limit (AQL). Protection against the process levels greater than the AQL is accomplished by switching among prescribed plans so that the rate of rejection of lots becomes more and more intolerable as the process average increases beyond the AQL. It is important to note that a relatively large proportion of lots will be accepted when the process average is less than or equal to the AQL.

7.3 When sampling a stream of lots, the standard is employed as follows:

7.3.1 Determine the lot size and set the AQL (see 6.4).

7.3.2 Determine the inspection level (see 6.9.1). Use Inspection Level II if none is specified.

7.3.3 Decide if single, double, or multiple sampling is to be used (see 6.10).

7.3.4 Enter Table I to determine the sample size code letter (see 6.9.2).

7.3.5 Enter Table II (single), Table III (double), or Table IV (multiple) with the lot size and code letter to determine a set of normal, tightened or reduced sampling plans which will be used in applying this sampling scheme.

7.3.6 Apply the switching rules to determine which of the three plans to apply to the next lot (see 6.6–6.8).

7.3.7 The switching rules must be used in application of the procedure to a stream of lots.

7.4 When an isolated lot, apart from a stream, the standard may be applied as follows:

7.4.1 Determine the AQL as above. A single lot of AQL quality will have a high probability of acceptance very often around 95 % (see 6.4).

7.4.2 Set a limiting quality level (LQ) that will have a low consumer's risk (risk of acceptance) of 10 % or 5 % as desired (see 6.11).

7.4.3 Enter Table VI or Table VII as appropriate to the consumer's risk and defect type. For a particular AQL, go down the column until a value of LQ less than or equal to the desired LQ is found. Read the corresponding code letter and AQL. Using the Normal sampling tables (Tables IIA, IIIA, or IVA) determine the sampling plan for this code letter and AQL.

7.4.4 Apply the sampling plan to the isolated lot.

7.5 Parameters of the sampling plans

7.5.1 The operating characteristic curves for individual plans are given in Table X (see 6.12).

7.5.2 The AOQL values for individual plans are given in Table V (see 5.2 and 5.3).

7.5.3 ASN curves for the double and multiple plans are given in Table IX (see 6.12.2).

7.5.4 Limit Numbers for Reduced Inspection used in the switching rules are given in Table VIII (see 6.10.1.4)

8. Keywords

8.1 acceptance quality level (AQL); average outgoing quality (AOQ); average outgoing quality limit (AOQL); classification of defects; critical defect; critical defective; defect; defective; defects per hundred units; inspection; inspection by attributes; lot or batch; lot or batch size; major defect; major defective; minor defect; minor defective; percent defective; process average; sample; sample size code letter; sampling plan; unit of product



ANNEX

(Mandatory Information)

A1. MASTER TABLES

See Figs. A1.1-A1.10

Table I, Sample Size Code Letters (see 6.2 and 6.3)
Table II-A, Single Sampling Plans for Normal Inspection (see 6.4 and 6.4.1)
Table II-B, Single Sampling Plans for Tightened Inspection (see 6.4 and 6.4.1)
Table II-C, Single Sampling Plans for Reduced Inspection (see 6.4 and 6.4.1)
Table III-A, Double Sampling Plans for Normal Inspection (see 6.4 and 6.4.1)
Table III-B, Double Sampling Plans for Tightened Inspection (see 6.4 and 6.4.1)
Table III-C, Double Sampling Plans for Reduced Inspection (see 6.4 and 6.4.1)
Table IV-A, Multiple Sampling Plans for Normal Inspection (see 6.4 and 6.4.1)
Table IV-B, Multiple Sampling Plans for Tightened Inspection (see 6.4 and 6.4.1)
Table IV-C, **Warning: BAD RID for ELEMENT tblr: fa00013 Multiple Sampling Plans for Reduced Inspection (see 6.4 and 6.4.1)**

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Lot or batch size	Special inspection levels				General inspection levels		
	S-1	S-2	S-3	S-4	I	II	III
2 to 8	A	A	A	A	A	A	B
9 to 15	A	A	A	A	A	B	C
16 to 25	A	A	B	B	B	C	D
26 to 50	A	B	B	C	C	D	E
51 to 90	B	B	C	C	C	E	F
91 to 150	B	B	C	D	D	F	G
151 to 280	B	C	D	B	E	G	H
281 to 500	B	C	D	B	F	H	J
501 to 1200	C	C	E	P	G	J	K
1201 to 3200	C	D	E	G	H	K	L
3201 to 10000	C	D	F	G	J	L	M
10001 to 35000	C	D	F	H	K	M	N
35001 to 150000	D	E	G	J	L	N	P
150001 to 500000	D	E	G	J	M	P	Q
500001 and over	D	E	H	K	N	Q	R

FIG. A1.1 Table I Sample Size Code Letters



Sample size code letter		Sample size	Acceptable Quality Levels (normal inspection)																									Ac	Re
			0.010	0.015	0.025	0.040	0.065	1.0	1.5	2.5	4.0	6.5	10	15	25	40	65	100	150	250	400	650	1000						
A	2		↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓			
B	3		↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓		
C	5		↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓		
D	8		↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓		
E	13		↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓		
F	20		↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓		
G	32		↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓		
H	50		↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓		
J	80		↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓		
K	125		↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓		
L	200		↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓		
M	315		↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓		
N	500		↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓		
P	800		↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓		
Q	1250		↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓		
R	2000		↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓		

Use first sampling plan below arrow.

Use first sampling plan above arrow.

Ac = Acceptance number.

Re = Rejection number.

FIG. A1.2 Table II-A Single Sampling Plans for Normal Inspection

Use first sampling plan below arrow. If sample size equals, or exceeds, lot or batch size, do 100 percent inspection.
 Use first sampling plan above arrow.

Acceptable Quality Levels (tightened inspection)																							
Sample size code letter	Sample size	0.010	0.015	0.025	0.040	0.065	1.0	1.5	2.5	4.0	6.5	10	15	25	40	65	100	150	250	400	650	1000	
		Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	
A	2	↓																					
B	3	↓																					
C	5	↓																					
D	8	↓																					
	13	↓																					
	20	↓																					
G	32	↓																					
	50	↓																					
	80	↓																					
K	125	↓																					
	200	↓																					
	315	↓																					
N	500	↓																					
	800	↓																					
	1250	↓																					
R	2000	↓																					
S	3150	↓																					

☛ = Use first sampling plan below arrow. If sample size equals or exceeds lot or batch size, do 100 percent inspection.

⇒ Use first sampling plan above arrow.

Ac = Acceptance number.

Re = Rejection number.

Ac = Acceptance number.
Re = Rejection number.

- ✕ Use first sampling plan below arrow. If sample size equals or exceeds lot or batch size, do 100 percent inspection
- Use first sampling plan above arrow.
- ✕ If the acceptance number has been exceeded, but the rejection number has not been reached, accept the lot, but reinspect
- ↑

	Use first sampling plan below arrow.
	Use first sampling plan above arrow.
	Acceptance number
	Rejection number
	Use corresponding single sampling plan (or alternatively, use double sampling plan below, where available).

FIG. A1.5 Table III-A Double Sampling Plans for Normal Inspection

Acceptable Quality Levels (tightened inspection)																											
		0.010	0.015	0.025	0.040	0.065	0.10	0.15	0.25	0.40	0.65	1.0	1.5	2.5	4.0	6.5	10	15	25	40	65	100	150	250	400	650	1000
Sample size code letter	Sample size	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re
A																											
B	First Second																										
C	First Second																										
D	First Second																										
E	First Second																										
F	First Second																										
G	First Second																										
H	First Second																										
J	First Second																										
K	First Second																										
L	First Second																										
M	First Second																										
N	First Second																										
P	First Second																										
Q	First Second																										
R	First Second																										
S	First Second																										

FIG. A1.6 Table III-B Double Sampling Plans for Tightened Inspection

- Use first sampling plan below arrow. If sample size equals or exceeds lot or batch size, do 100 percent inspection.
- Use first sampling plan above arrow.
- Acceptance number
- Rejection number
- Use corresponding single sampling plan (or, alternatively, use double sampling plan below, where available).

Sample size code letter	Sample size	Cumulative sample size	Acceptable Quality Levels (reduced inspection) [†]																											
			0.010	0.015	0.025	0.040	0.065	1.0	1.5	2.5	4.0	6.5	10	15	25	40	65	100	150	250	400	650	1000							
A			Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re		
B			Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re		
C			Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re		
D	First Second	2 4	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re		
E	First Second	3 6	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re		
F	First Second	5 10	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re		
G	First Second	8 16	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re		
H	First Second	13 26	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re		
I	First Second	20 40	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re		
J	First Second	32 64	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re		
K	First Second	50 100	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re		
L	First Second	80 160	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re		
M	First Second	125 250	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re		
N	First Second	200 400	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re		
P	First Second	315 630	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re		
Q	First Second	500 1000	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re		

FIG. A1.7 Table III-C Double Sampling Plans for Reduced Inspection

Use first sampling plan below arrow. If sample size equals or exceeds lot or batch size, do 100 percent inspection.

Use first sampling plan above arrow.

Ac = Acceptance number.

Re = Rejection number.

• = Use corresponding single sampling plan (or alternatively, use double sampling plan below, when available.)

† = If, after the second sample, the acceptance number has been exceeded, but the rejection number has not been reached, accept the lot, but reinspect normal inspection (see 10.14).

[illegible]

Use first sampling plan below arrow (refer to continuation of table on following page, when necessary). If sample size equals or exceeds lot or batch size, do 100 percent inspection.


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FIG. A1.8 Table IV-A Multiple Sampling Plans for Normal Inspection

[illegible]

FIG. A1.9 Table IV-B Multiple Sampling Plans for Tightened Inspection

==	Use first sampling plan below error (refer to continuation of table on following page, when necessary). If sample size equals or exceeds lot or batch size, do 100 percent inspection.
v	Use first sampling plan above error.
=	Acceptance number
x	Rejection number
-	Use corresponding single-sampling plan (or alternatively, use multiple sampling plan below, where available).
-	Use corresponding double-sampling plan (or alternatively, use multiple sampling plan below, where available).
-	Acceptance not permitted at this sample size.

		Acceptable Quality Levels (tightened inspection)																											
		0.010	0.015	0.025	0.040	0.065	0.10	0.15	0.25	0.40	0.65	1.0	1.5	2.5	4.0	6.5	10	15	25	40	65	100	150	250	400	650	1000		
Sample size code letter	Sample size	Ac		Re		Ac		Re		Ac		Re		Ac		Re		Ac		Re		Ac		Re		Ac		Re	
		Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re
A	First	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49
	Second	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49
	Third	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49
	Fourth	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49
	Fifth	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49
	Sixth	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49
	Seventh	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49
L	First	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77
	Second	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77
	Third	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77
	Fourth	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77
	Fifth	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77
	Sixth	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77
	Seventh	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77
M	First	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107
	Second	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107
	Third	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107
	Fourth	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107
	Fifth	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107
	Sixth	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107
	Seventh	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107
N	First	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152
	Second	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152
	Third	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152
	Fourth	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152
	Fifth	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152
	Sixth	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152
	Seventh	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152
P	First	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227
	Second	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227
	Third	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227
	Fourth	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227
	Fifth	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227
	Sixth	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227
	Seventh	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227
Q	First	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342
	Second	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342
	Third	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342
	Fourth	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342
	Fifth	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342
	Sixth	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342
	Seventh	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342
R	First	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527
	Second	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527
	Third	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527
	Fourth	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527
	Fifth	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527
	Sixth	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527
	Seventh	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527
S	First	800	801	802	803	804	805	806	807	808	809	810</																	



Sample size code letter	Sample size	Com- muni- cative sample size	Acceptable Quality Levels (reduced inspection) ↑																							
			0.010	0.015	0.025	0.40	0.65	1.0	1.5	2.5	4.0	6.5	10	15	25	40	65	100	150	250	400	650	1000			
A			→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→			
B			→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→			
C			→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→			
D			→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→			
E			→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→			
F	First	2	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→			
	Second	2	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→			
	Third	4	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→			
	Fourth	2	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→			
	Fifth	2	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→			
	Sixth	2	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→			
	Seventh	2	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→			
G	First	3	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→			
	Second	3	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→			
	Third	3	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→			
	Fourth	3	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→			
	Fifth	3	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→			
	Sixth	3	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→			
	Seventh	3	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→			
H	First	5	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→			
	Second	5	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→			
	Third	5	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→			
	Fourth	5	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→			
	Fifth	5	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→			
	Sixth	5	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→			
	Seventh	5	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→			
I	First	8	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→			
	Second	8	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→			
	Third	8	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→			
	Fourth	8	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→			
	Fifth	8	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→			
	Sixth	8	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→			
	Seventh	8	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→			
J	First	13	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→			
	Second	13	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→			
	Third	13	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→			
	Fourth	13	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→			
	Fifth	13	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→			
	Sixth	13	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→			
	Seventh	13	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→			
K	First	20	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→			
	Second	20	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→			
	Third	20	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→			
	Fourth	20	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→			
	Fifth	20	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→			
	Sixth	20	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→			
	Seventh	20	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→			

FIG. A1.10 Table IV-C Multiple Sampling Plans for Reduced Inspection

- Use first sampling plan below arrow (refer to continuation of table on following page, when necessary). If sample size equals or exceeds lot or batch size, do 100 percent inspection.
- Use first sampling plan above arrow.
- Ac Acceptance number
- Re Rejection number
- Use corresponding single sampling plan (or alternatively, use multiple sampling plan below, where available).
- Use corresponding double sampling plan (or alternatively, use multiple sampling plan below, where available).
- Acceptance not permitted at this sample size.
- ↑ If, after the final sample, the acceptance number has been exceeded, but the rejection number has not been reached, accept the lot but reinspect normal inspection (see 10.1.4).

Sample size code letter	Sample size	Current sample size	Acceptable Quality Levels (reduced inspection) [†]																							
			0.010	0.015	0.025	0.040	0.065	1.0	1.5	2.5	4.0	6.5	10	15	25	40	65	100	150	250	400	650	1000			
			Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re		
L	First	20	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→			
	Second	40	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→				
	Third	20	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→				
	Fourth	20	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→				
	Fifth	20	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→				
	Sixth	20	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→				
	Seventh	20	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→				
M	First	32	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→				
	Second	32	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→				
	Third	64	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→				
	Fourth	32	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→				
	Fifth	32	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→				
	Sixth	160	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→				
	Seventh	32	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→				
N	First	50	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→				
	Second	50	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→				
	Third	50	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→				
	Fourth	50	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→				
	Fifth	200	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→				
	Sixth	50	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→				
	Seventh	300	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→				
P	First	80	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→				
	Second	80	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→				
	Third	160	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→				
	Fourth	80	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→				
	Fifth	80	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→				
	Sixth	400	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→				
	Seventh	80	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→				
Q	First	125	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→				
	Second	125	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→				
	Third	250	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→				
	Fourth	125	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→				
	Fifth	125	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→				
	Sixth	625	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→				
	Seventh	125	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→				
H	First	200	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→				
	Second	200	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→				
	Third	200	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→				
	Fourth	200	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→				
	Fifth	200	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→				
	Sixth	200	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→				
	Seventh	200	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→				

Use first sampling plan below arrow. If sample size equals or exceeds, lot or batch size, do 100 percent inspection.
 Use first sampling plan above arrow (refer to preceding page when necessary).
 Ac = Acceptance number
 Re = Rejection number
 * = Acceptance not permitted at this sample size
 † = If, after the final sample, the acceptance number has been exceeded, but the rejection number has not been reached, accept the lot, but resample normal inspection (see 10.1.4).

FIG. Table IV-C Multiple Sampling Plans for Reduced Inspection

APPENDIX

(Nonmandatory Information)

X1. SUPPORTING TABLES

X1.1 Average Outgoing Quality Limit Factors

X1.1.1 Table V-A (Fig. X1.1), Average Outgoing Quality Limit Factors for Normal Inspection (Single Sampling) (see 3.1.11)

X1.1.2 Table V-B (Fig. X1.2), Average Outgoing Quality Limit Factors for Tightened Inspection (Single Sampling) (see 3.1.11)

X1.2 Limiting Quality

X1.2.1 Table VI-A Fig. X1.3 Limiting Quality (in percent nonconforming) for which $P_a = 10$ Percent (for Normal Inspection, Single Sampling) (see 6.7)

X1.2.2 Table VI-B (Fig. X1.4), Limiting Quality (in nonconformities per hundred units) for which $P_a = 10$ Percent (for Normal Inspection, Single Sampling) (see 6.7)

X1.2.3 Table VII-A (Fig. X1.5), Limiting Quality (in percent nonconforming) for which $P_a = 5$ Percent (for Normal Inspection, Single Sampling) (see 6.7)

X1.2.4 Table VII-B (Fig. X1.6), Limiting Quality (in nonconformities per hundred units) for which $P_a = 5$ Percent (For Normal Inspection, Single Sampling) (see 6.7)

X1.2.5 Table VIII (Fig. X1.7), Limit Numbers for Reduced Inspection (see 5.14)

X1.2.6 Table IX (Fig. X1.8), Average Sample Size Curves for Double and Multiple Sampling (normal and tightened inspection) (see 6.7.3)

X1.3 Sampling Plans and Operating Characteristic Curves (and Data)

X1.3.1 See Figs. X1.9-X1.25

X1.3.2 Table X-A, Sample Size Code Letter A (Fig. X1.9)

X1.3.3 Table X-B, Sample Size Code Letter B (Fig. X1.10)

X1.3.4 Table X-C, Sample Size Code Letter C (Fig. X1.11)

X1.3.5 Table X-D, Sample Size Code Letter D (Fig. X1.12)

X1.3.6 Table X-E, Sample Size Code Letter E (Fig. X1.13)

X1.3.7 Table X-F, Sample Size Code Letter F (Fig. X1.14)

X1.3.8 Table X-G, Sample Size Code Letter G (Fig. X1.15)

X1.3.9 Table X-H, Sample Size Code Letter H (Fig. X1.16)

X1.3.10 Table X-I, Sample Size Code Letter I (Fig. X1.17)

X1.3.11 Table X-K, Sample Size Code Letter K (Fig. X1.18)

X1.3.12 Table X-L, Sample Size Code Letter L (Fig. X1.19)

X1.3.13 Table X-M, Sample Size Code Letter M (Fig. X1.20)

X1.3.14 Table X-N, Sample Size Code Letter N (Fig. X1.21)

X1.3.15 Table X-P, Sample Size Code Letter P (Fig. X1.22)

X1.3.16 Table X-Q, Sample Size Code Letter Q (Fig. X1.23)

X1.3.17 Table X-R, Sample Size Code Letter R (Fig. X1.24)

X1.3.18 Table X-S, Sample Size Code Letter S (Fig. X1.25)

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Code Letter	Sample Size	Acceptable Quality Level																									
		0.010	0.015	0.025	0.040	0.065	0.10	0.15	0.25	0.40	0.65	1.0	1.5	2.5	4.0	6.5	10	15	25	40	65	100	150	250	400	650	1000
A	2															18			42	69	97	160	220	330	470	730	1100
B	3														12		28		46	65	110	150	220	310	490	720	1100
C	5													7.4		17	27		39	63	90	130	190	290	430	660	
D	8												4.6			11	17	24	40	56	82	120	180	270	410		
E	13										2.8				6.5	11	24	34	50	72	110	170	250				
F	20									1.8				4.2	6.9	9.7	22	33	47	73							
G	32												2.6	4.3	6.1	9.9	14	21	29	46							
H	50										1.7	2.7	3.9	6.3	9.0	13	19	29									
J	80										1.1	1.7	2.4	4.0	5.6	8.2	12	18									
K	125																										
L	200																										
M	315																										
N	500																										
P	800																										
Q	1250																										
R	2000																										

Note: For the exact AOQL, the above values must be multiplied by $(1 - \frac{\text{Sample size}}{\text{Lot or Batch size}})$

AOQL NORMAL

FIG. X1.1 Table V-A — Average Outgoing Quality Limit Factors for Normal Inspection (Single Sampling)

Code letter	Sample size	Acceptable Quality Level															1000
		0.010	0.015	0.025	0.040	0.065	1.0	1.5	2.5	4.0	6.5	10	15	25	40	65	
A	2																970
B	3																620
C	5																410
D	8																270
E	13																160
F	20																100
G	32																64
H	50																40
I	80																25
K	125																16
L	200																10
M	315																6.4
N	500																4.0
P	800																2.5
Q	1250																1.6
R	2000																1.0
S	3150																0.63

Note: For the exact AOQL, the above values must be multiplied by $(1 - \frac{\text{Sample size}}{\text{Lot or Batch size}})$

AOQL
TIGHTENED

FIG. X1.2 Table V-B-Average Outgoing Limit Factors for Tightened Inspection (Single Sampling)



		Acceptable Quality Level															
		0.010	0.015	0.025	0.040	0.065	1.0	1.5	2.5	4.0	6.5	10					
A B C	2	0.29															
	3																
	5																
D E F	8	0.46															
	13																
	20																
G H J	32	0.73															
	50																
	80																
K L M	125	1.2															
	200																
	315																
N P Q	500	1.8															
	800																
	1250																
R	2000	0.18															

LQ (DEFECTIVES)
10.0%

FIG. X1.3 Table VI-A-Limiting Quality (In percent defective) for which $P_a = 10$ Percent (for Normal Inspection, Single Sampling)



Code letter	Sample size	Acceptable Quality Level																				
		0.010	0.015	0.025	0.040	0.065	1.0	1.5	2.5	4.0	6.5	10	15	25	40	65	100	150	250	400	650	1000
A	2																					
B	3																					
C	5																					
D	8																					
E	13																					
F	20																					
G	32																					
H	50																					
J	80																					
K	125																					
L	200																					
M	315																					
N	500																					
P	800																					
Q	1250																					
R	2000																					

LQ (DEFECTS)
10%

FIG. X1.4 Table VI-B-Limiting Quality (In defects per hundred units) for which $P_a = 10$ Percent (for Normal Inspection, Single Sampling)



		Acceptable Quality Level														
		0.010	0.015	0.025	0.040	0.065	0.10	0.15	0.25	0.40	0.65	1.0	1.5	2.5	4.0	6.5
A B C	2															
	3															
	5															
D E F	8															
	13															
	20															
G H J	32															
	50															
	80															
K L M	125															
	200															
	315															
N P Q	500	0.38														
	800															
	1250															
R	2000	0.24														

LQ (DEFECTIVES)
5.0%

FIG. X1.5 Table VII-A-Limiting Quality (in percent defective) for which $P_a = 5$ Percent (for Normal Inspection, Single Sampling)



Code letter		Sample size	Acceptable Quality Level																				
			0.010	0.015	0.025	0.040	0.065	1.0	1.5	2.5	4.0	6.5	10	15	25	40	65	100	150	250	400	650	1000
A	2																						
B	3																						
C	5																						
D	8																						
E	13																						
F	20																						
G	32																						
H	50																						
J	80																						
K	125																						
L	200																						
M	315																						
N	500																						
P	800																						
Q	1250																						
R	2000																						

LQ (DEFECTS)
5%

FIG. X1.6 Table VII-B-Limiting Quality (in percent per hundred units) for which $P_a = 5$ Percent (for Normal Inspection, Single Sampling)



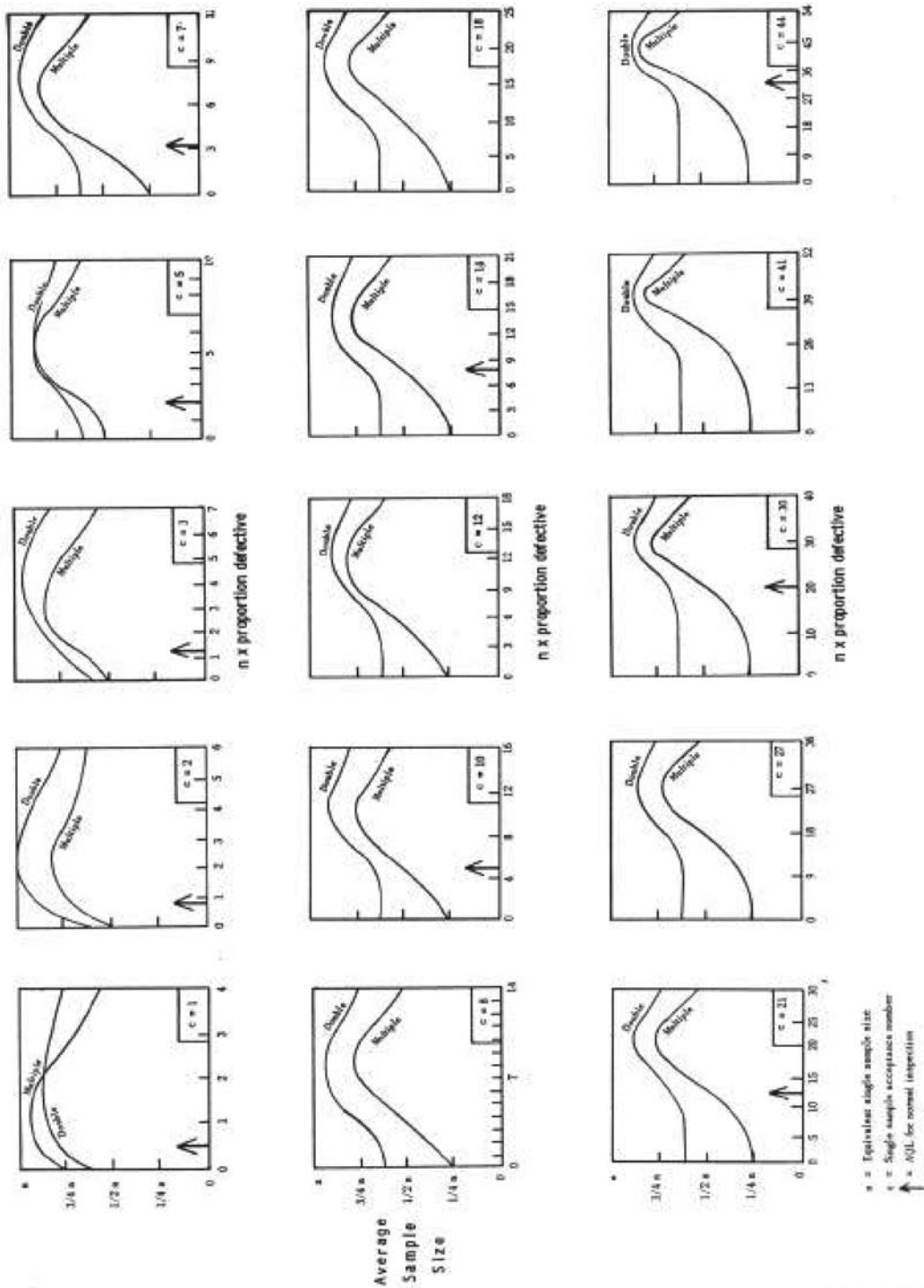
LIMIT NUMBERS

Number of sample units from last 10 lots or batches	Acceptable Quality Level																		
	0.010	0.015	0.025	0.040	0.065	0.10	0.15	0.25	0.40	0.65	1.0	1.5	2.5	4.0	6.5	10	15	25	40
20 - 29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30 - 49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
50 - 79	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
80 - 129	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
130 - 199	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
200 - 319	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
320 - 499	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
500 - 799	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
800 - 1249	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1250 - 1999	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000 - 3149	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3150 - 19999	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5000 - 7999	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8000 - 12499	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12500 - 19999	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20000 - 31099	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31500 - 49999	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
50000 & Over	2	3	7	14	25	40	63	110	181	301	490	777	1249	2000	3150	4900	7770	12490	20000

* Denotes that the number of sample units from the last ten lots or batches is not sufficient for reduced inspection for this AQL. In this instance more than ten lots or batches may be used for the calculation, provided that the lots or batches used are the most recent ones in sequence, that they have all been on normal inspection, and that none has been rejected while on original inspection.

FIG. X1.7 Table VIII-Limit Numbers for Reduced Inspection

TABLE IX—Average sample size curves for double and multiple sampling
(normal and tightened inspection)



AVERAGE
SAMPLE SIZE

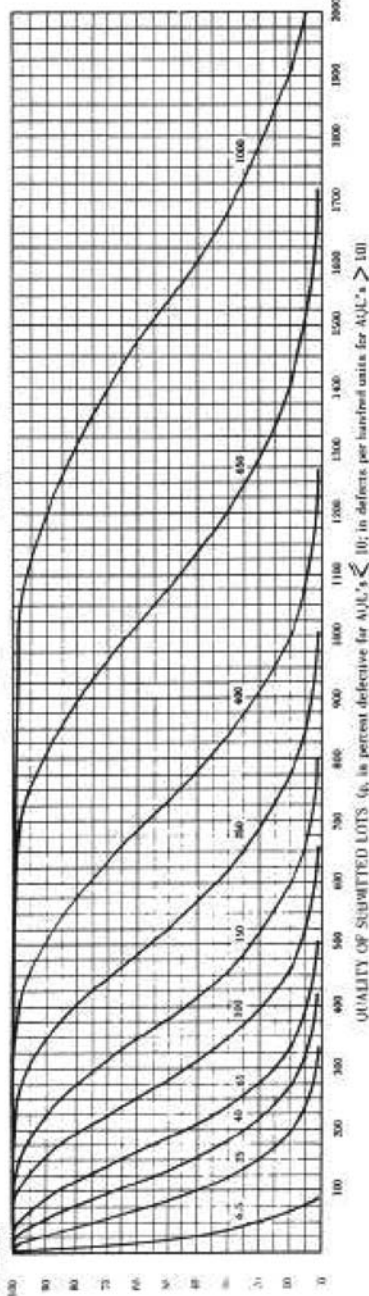
FIG. X1.8 Table XI-Average Sample Size Curves for Double and Multiple Sampling (Normal and Tightened Inspection) (See 6.7.3)



TABLE X-A—Tables for sample size code letter: A

CHART A - OPERATING CHARACTERISTIC CURVES FOR SINGLE SAMPLING PLANS

(Curves for double and multiple sampling are matched as closely as practicable)

PERCENT OF LOTS
ACCEPTED TO THE
ACCEPTED (P_a)

Note: Figures on curves are Acceptable Quality Levels (AQL's) for normal inspection.

TABLE X-A-1 - TABULATED VALUES FOR OPERATING CHARACTERISTIC CURVES FOR SINGLE SAMPLING PLANS

P _a	Acceptable Quality Levels (normal inspection)												
	6.5	6.5	25	40	65	100	150	250	400	650	1000	1500	2000
	p (in defects per hundred units)												
p (in percent defective)	0.501	0.51	7.45	21.6	41.2	89.2	143	175	239	305	374	459	559
	2.53	2.56	17.8	40.9	68.3	131	199	235	308	385	462	545	645
	5.13	5.25	26.6	55.1	87.3	138	233	272	351	432	515	608	708
	13.4	14.4	48.1	86.8	127	211	298	342	431	521	612	709	814
	29.3	34.7	83.9	114	184	284	303	433	533	633	733	833	933
	50.0	69.3	135	196	256	371	494	540	651	761	870	987	1087
	68.4	115	195	266	334	464	589	650	770	889	1006	1126	1248
	77.6	150	237	315	380	526	657	722	848	972	1094	1212	1334
	90.0	220	332	420	502	655	800	870	1007	1141	1272	1408	1548
	99.0	250	350	450	550	700	850	950	1100	1250	1400	1550	1700
Acceptable Quality Levels (tightened inspection)													
99.0	6.5	25	40	65	100	150	250	400	650	1000	1500	2000	2500
95.0	6.5	25	40	65	100	150	250	400	650	1000	1500	2000	2500
90.0	6.5	25	40	65	100	150	250	400	650	1000	1500	2000	2500
85.0	6.5	25	40	65	100	150	250	400	650	1000	1500	2000	2500
80.0	6.5	25	40	65	100	150	250	400	650	1000	1500	2000	2500
75.0	6.5	25	40	65	100	150	250	400	650	1000	1500	2000	2500
70.0	6.5	25	40	65	100	150	250	400	650	1000	1500	2000	2500
65.0	6.5	25	40	65	100	150	250	400	650	1000	1500	2000	2500
60.0	6.5	25	40	65	100	150	250	400	650	1000	1500	2000	2500
55.0	6.5	25	40	65	100	150	250	400	650	1000	1500	2000	2500
50.0	6.5	25	40	65	100	150	250	400	650	1000	1500	2000	2500
45.0	6.5	25	40	65	100	150	250	400	650	1000	1500	2000	2500
40.0	6.5	25	40	65	100	150	250	400	650	1000	1500	2000	2500
35.0	6.5	25	40	65	100	150	250	400	650	1000	1500	2000	2500
30.0	6.5	25	40	65	100	150	250	400	650	1000	1500	2000	2500
25.0	6.5	25	40	65	100	150	250	400	650	1000	1500	2000	2500
20.0	6.5	25	40	65	100	150	250	400	650	1000	1500	2000	2500
15.0	6.5	25	40	65	100	150	250	400	650	1000	1500	2000	2500
10.0	6.5	25	40	65	100	150	250	400	650	1000	1500	2000	2500
5.0	6.5	25	40	65	100	150	250	400	650	1000	1500	2000	2500
1.0	6.5	25	40	65	100	150	250	400	650	1000	1500	2000	2500

Note: Standard distribution used for percent defective computations. Figures for defects per hundred units.

FIG. X1.9 Sample Size Code Letter A

TABLE X-A-2 - SAMPLING PLANS FOR SAMPLE SIZE CODE LETTER: A

Type of sampling plan	Cumulative sample size	Acceptable Quality Levels (normal inspection)																		Cumulative sample size
		Less than 6.5	6.5	10	15	25	40	65	100	150	250	400	650	1000						
		Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re			
Single	2	▽ 0 1			1 2	2 3	3 4	5 6	7 8	8 9	10 11	12 13	14 15	18 19	21 22	27 28	30 31	2		
Double		▽ *	Use Letter D	Use Letter C	Use Letter B	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)			
Multiple		▽ *			*	*	*	*	*	*	*	*	*	*	*	*	*			
		Less than 10	10	15	25	40	65	100	150	250	400	650	1000	X						

▽ = Use next subsequent sample size code letter for which acceptance and rejection numbers are available.

Ac = Acceptance number

Re = Rejection number

* = Use single sampling plan above (or alternatively use letter D)

(*) = Use single sampling (or alternatively use letter B)

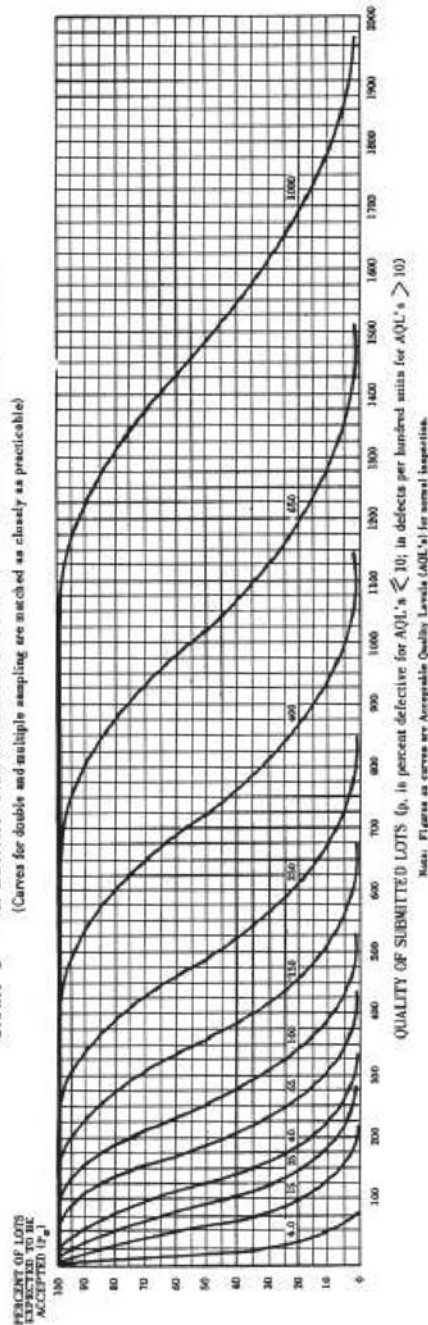
A

FIG. Sample Size Code Letter A

TABLE X-B—Tables for sample size code letter: B

CHART 8 - OPERATING CHARACTERISTIC CURVES FOR SINGLE SAMPLING PLANS

(Curves for double and multiple sampling are matched as closely as practicable)



Note: Figures on curves are Acceptable Quality Levels (AQL's) for normal inspection.

TABLE X-B-1 - TABULATED VALUES FOR OPERATING CHARACTERISTIC CURVES FOR SINGLE SAMPLING PLANS

Pa	Acceptable Quality Levels (normal inspection)															
	p (in defects per hundred units)															
	4.0	4.0	15	25	40	65	100	150	250	400	650	1000	4.0	4.0	15	25
99.0	0.33	0.34	4.97	14.5	27.4	59.5	96.9	117	159	203	249	345	419	573	651	947
95.0	1.70	1.71	11.8	27.3	45.5	87.1	133	157	206	256	308	415	496	663	748	1065
90.0	3.45	3.50	17.7	36.7	58.2	105	155	181	234	288	343	456	541	716	804	1131
75.0	9.14	9.60	32.0	57.6	84.5	141	199	228	287	347	408	530	623	809	903	1249
50.0	20.6	23.1	55.9	89.1	122	189	256	289	356	422	489	622	722	922	1022	1389
25.0	37.0	46.2	89.8	131	170	247	323	360	434	507	580	724	832	1046	1152	1539
10.0	53.6	76.8	130	177	223	309	392	433	514	593	671	825	939	1165	1277	1683
5.0	63.2	99.9	158	210	258	350	438	481	565	648	730	896	1008	1241	1356	1773
1.0	78.4	154	221	280	335	437	513	560	672	761	848	1019	1145	1392	1513	2069
0.5	84.0	164	231	290	345	447	523	570	682	771	858	1029	1155	1402	1523	2079
0.1	90.0	171	236	295	350	452	528	575	687	776	863	1034	1160	1407	1528	2084
0.05	92.0	174	238	297	352	454	530	577	689	778	865	1036	1162	1409	1530	2086
0.01	93.0	175	239	298	353	455	531	578	690	779	866	1037	1163	1410	1531	2087
0.005	93.5	176	240	299	354	456	532	579	691	780	867	1038	1164	1411	1532	2088
0.001	94.0	177	241	300	355	457	533	580	692	781	868	1039	1165	1412	1533	2089
0.0005	94.5	178	242	301	356	458	534	581	693	782	869	1040	1166	1413	1534	2090
0.0001	95.0	179	243	302	357	459	535	582	694	783	870	1041	1167	1414	1535	2091
0.00005	95.5	180	244	303	358	460	536	583	695	784	871	1042	1168	1415	1536	2092
0.00001	96.0	181	245	304	359	461	537	584	696	785	872	1043	1169	1416	1537	2093
0.000005	96.5	182	246	305	360	462	538	585	697	786	873	1044	1170	1417	1538	2094
0.000001	97.0	183	247	306	361	463	539	586	698	787	874	1045	1171	1418	1539	2095
0.0000005	97.5	184	248	307	362	464	540	587	699	788	875	1046	1172	1419	1540	2096
0.0000001	98.0	185	249	308	363	465	541	588	700	789	876	1047	1173	1420	1541	2097
0.00000005	98.5	186	250	309	364	466	542	589	701	790	877	1048	1174	1421	1542	2098
0.00000001	99.0	187	251	310	365	467	543	590	702	791	878	1049	1175	1422	1543	2099
0.000000005	99.5	188	252	311	366	468	544	591	703	792	879	1050	1176	1423	1544	2100
0.000000001	100.0	189	253	312	367	469	545	592	704	793	880	1051	1177	1424	1545	2101

Note: Binomial distribution used for percent defective comparisons; Poisson for defects per hundred units.

FIG. X1.10 Sample Size Code Letter B

TABLE X-B-2 – SAMPLING PLANS FOR SAMPLE SIZE CODE LETTER: B

Type of sampling plan	Cumulative sample size	Acceptable Quality Levels (normal inspection)																	Cumulative sample size	
		Less than 4.0	4.0	6.5	10	15	25	40	65	100	150	250	400	650	1000					
		Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re		
Single	3	▽	0 1		1 2	2 3	3 4	5 6	7 8	9 10	11 12	13 14	15 16	17 18	19 20	21 22	23 24	3		
Double	2 4	▽	*		Use Letter	0 2	3 4	5 6	7 8	9 10	11 12	13 14	15 16	17 18	19 20	21 22	23 24	2		
Multiple		▽	*		A D C													4		
		Less than 6.5	6.5	10	15	25	40	65	100	150	250	400	650	1000	+					
		Acceptable Quality Levels (tightened inspection)																		

- ▽ = Use next subsequent sample size code letter for which acceptance and rejection numbers are available.
 Ac = Acceptance number
 Re = Rejection number
 * = Use single sampling plan above (or alternatively use letter E)
 + = Use double sampling plan above (or alternatively use letter D).

B

FIG. Sample Size Code Letter B

TABLE X-C—Tables for sample size code letter; C

CHART C - OPERATING CHARACTERISTIC CURVES FOR SINGLE SAMPLING PLANS

(Curves for double and multiple sampling are matched as closely as practicable)

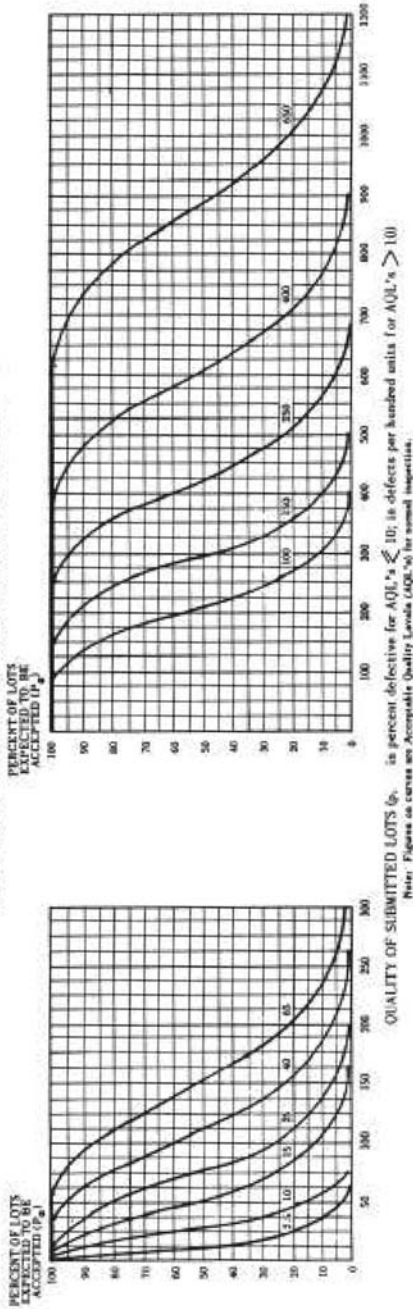


TABLE X-C-1 - TABULATED VALUES FOR OPERATING CHARACTERISTIC CURVES FOR SINGLE SAMPLING PLANS

P*	Acceptable Quality Levels (normal inspection)																	
	2.5	10	2.5	10	15	25	40	65	100	150	250	400	650					
	p (in defects per hundred units)																	
p (in percent defective)																		
99.0	0.20	3.28	0.20	2.89	8.72	16.5	35.7	58.1	70.1	95.4	122	150	207	251	344	391	560	618
95.0	1.02	7.63	1.01	7.10	16.4	27.3	52.3	79.6	93.9	123	154	185	249	290	398	449	639	691
90.0	2.09	11.2	2.10	10.6	22.0	34.9	63.0	93.1	109	140	173	206	273	325	429	482	679	733
75.0	5.59	19.4	5.76	19.2	34.5	50.7	84.4	119	137	172	208	245	318	374	485	542	749	806
50.0	12.9	31.4	13.9	31.6	53.5	73.4	113	153	173	213	253	293	373	433	553	613	833	893
25.0	24.2	45.4	27.7	53.9	78.4	102	148	194	216	260	304	348	435	499	627	691	923	987
10.0	36.9	58.4	46.1	77.8	106	134	186	235	260	308	356	403	495	564	699	766	1010	1076
5.0	45.1	65.8	59.9	94.9	126	155	210	263	289	339	389	438	534	605	745	814	1064	1131
1.0	60.2	77.8	92.1	133	168	201	262	320	348	403	456	509	612	687	835	908	1171	1241
	4.0	×	4.0	15	25	40	65	×	100	×	150	×	250	×	400	×	650	×

Acceptable Quality Levels (tightened inspection)																		
	4.0	×	4.0	15	25	40	65	×	100	×	150	×	250	×	400	×	650	×

Note: Binomial distribution used for percent defective comparisons; Poisson for defects per hundred units.

FIG. X1.11 Sample Size Code Letter C

TABLE X-C-2 - SAMPLING PLANS FOR SAMPLE SIZE CODE LETTER: C

Type of sampling plan	Cumulative sample size	Acceptable Quality Levels (tightened inspection)																Cumulative sample size
		Less than 2.5	2.5	4.0	6.5	10	15	25	40	65	100	150	250	400	650	1000		
Single	5	Ac: Re: 0 1	Ac: Re: 0 1	Ac: Re: 0 1	Ac: Re: 0 1	Ac: Re: 0 1	Ac: Re: 0 1	Ac: Re: 0 1	Ac: Re: 0 1	Ac: Re: 0 1	Ac: Re: 0 1	Ac: Re: 0 1	Ac: Re: 0 1	Ac: Re: 0 1	Ac: Re: 0 1	Ac: Re: 0 1	5	
Double	3 6	Ac: Re: 0 1	Ac: Re: 0 1	Ac: Re: 0 1	Ac: Re: 0 1	Ac: Re: 0 1	Ac: Re: 0 1	Ac: Re: 0 1	Ac: Re: 0 1	Ac: Re: 0 1	Ac: Re: 0 1	Ac: Re: 0 1	Ac: Re: 0 1	Ac: Re: 0 1	Ac: Re: 0 1	Ac: Re: 0 1	3 6	
Multiple		Ac: Re: 0 1	Ac: Re: 0 1	Ac: Re: 0 1	Ac: Re: 0 1	Ac: Re: 0 1	Ac: Re: 0 1	Ac: Re: 0 1	Ac: Re: 0 1	Ac: Re: 0 1	Ac: Re: 0 1	Ac: Re: 0 1	Ac: Re: 0 1	Ac: Re: 0 1	Ac: Re: 0 1	Ac: Re: 0 1		

▽ = Use next subsequent sample size code letter for which acceptance and rejection numbers are available.
 Ac = Acceptance number.
 Re = Rejection number.
 * = Use single sampling plan above (or alternatively use letter F).
 + = Use double sampling plan above (or alternatively use letter D).

FIG. Sample Size Code Letter C

D

CHART D - OPERATING CHARACTERISTIC CURVES FOR SINGLE SAMPLING PLANS

(Curves for double and multiple sampling are matched as closely as practicable)

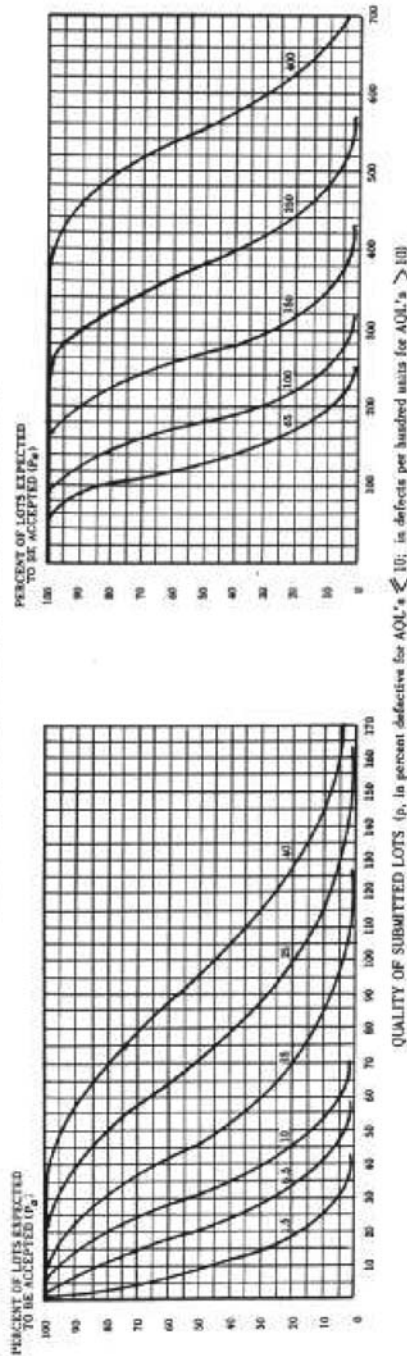


TABLE X-D-1 - TABULATED VALUES FOR OPERATING CHARACTERISTIC CURVES FOR SINGLE SAMPLING PLANS

P _a	Acceptable Quality Levels (normal inspection)																		
	p (in percent defective)																		
	1.5	6.5	10	1.5	6.5	10	15	25	40	65	100	150	250	400					
	p (in defects per hundred units)																		
99.0	0.13	2.00	6.00	0.13	1.86	5.45	10.3	22.3	36.3	43.8	59.6	76.2	93.5	129	157	215	244	355	386
95.0	0.64	4.64	11.1	0.64	4.44	10.2	17.1	32.7	49.8	58.7	77.1	96.1	116	156	186	249	281	399	432
90.0	1.31	6.88	14.7	1.31	6.65	13.8	21.8	39.4	58.2	67.9	87.8	108	129	171	203	268	301	424	458
75.0	3.53	12.1	22.1	3.60	12.0	21.6	31.7	52.7	74.5	85.5	108	130	153	199	234	303	339	468	504
50.0	8.30	20.1	32.1	8.66	21.0	33.4	45.9	70.9	95.9	108	133	158	183	233	271	346	383	521	558
25.0	15.9	30.3	43.3	17.3	33.7	49.0	63.9	92.8	121	135	163	190	218	272	312	392	432	577	617
10.0	25.0	40.6	53.9	28.8	48.6	66.5	83.5	116	147	162	193	222	252	309	352	437	478	631	672
5.0	31.2	47.1	59.9	37.5	59.3	78.7	96.9	131	164	180	212	243	274	334	378	465	509	665	707
1.0	43.8	58.8	70.7	57.6	83.0	105	136	164	200	218	252	285	318	382	429	522	568	732	776
2.5	10	×	×	2.5	10	15	25	40	×	65	×	100	×	150	×	250	×	400	×
	Acceptable Quality Levels (tightened inspection)																		

FIG. X1.12 Sample Size Code Letter D

TABLE X-D-2 - SAMPLING PLANS FOR SAMPLE SIZE CODE LETTER: D

Type of sampling plan	Cumulative sample size	Acceptable Quality Levels (normal inspection)																Cumulative sample size																		
		Less than 1.5	1.5	2.5	4.0	6.5	10	15	25	40	65	100	150	250	400	Higher than 400																				
		Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re																			
Single	8	▽	0	1		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	18	19	21	22	27	28	30	31	41	42	44	45	△	8		
					Use																															
Double	5	▽	*			0	2	0	3	1	4	2	5	3	7	5	9	6	10	7	11	9	14	11	16	15	20	17	22	23	29	25	31	△	5	
	10				Letter	1	2	3	4	5	6	7	8	9	11	12	12	13	15	16	18	19	23	24	26	27	34	35	37	38	52	53	56	57	10	
Multiple	2	▽	*			#	2	#	3	#	4	0	4	0	4	0	5	0	6	1	7	1	8	2	9	3	10	4	12	6	15	6	16	△	2	
	4					#	2	0	3	0	3	1	5	1	6	2	7	3	8	3	9	4	10	6	12	7	14	10	17	11	19	16	25	17	27	4
	6					0	2	0	3	1	4	2	6	3	8	4	9	6	10	7	12	8	13	11	17	13	19	27	26	36	29	39		6		
	8					0	3	1	4	2	5	3	7	5	10	6	11	8	13	10	15	12	17	16	22	19	25	24	31	27	34	37	46	40	49	8
	10					1	3	2	4	3	6	5	8	7	11	9	12	11	15	14	17	17	20	22	25	25	32	37	36	40	49	55	53	58	10	
	12					1	3	3	5	4	6	7	9	10	12	12	14	14	17	18	20	21	23	27	29	31	33	40	43	45	47	61	64	65	68	12
	14					2	3	4	5	6	7	9	10	13	14	15	18	19	21	22	25	26	32	33	37	38	48	49	53	54	72	73	77	78	14	
		Less than 2.5	2.5	4.0	6.5	10	15	25	40	65	100	150	250	400	Higher than 400																					
Acceptable Quality Levels (tightened inspection)																																				

- △ = Use next preceding sample size code letter for which acceptance and rejection numbers are available.
▽ = Use next subsequent sample size code letter for which acceptance and rejection numbers are available.
Ac = Acceptance number
Re = Rejection number
* = Use single sampling plan above (or alternatively use letter G).
r = Acceptance not permitted at this sample size.

D

FIG. Sample Size Code Letter D

E

TABLE X-E—Tables for sample size code letter: E

CHART E – OPERATING CHARACTERISTIC CURVES FOR SINGLE SAMPLING PLANS

(Curves for double and multiple sampling are matched as closely as practicable)*

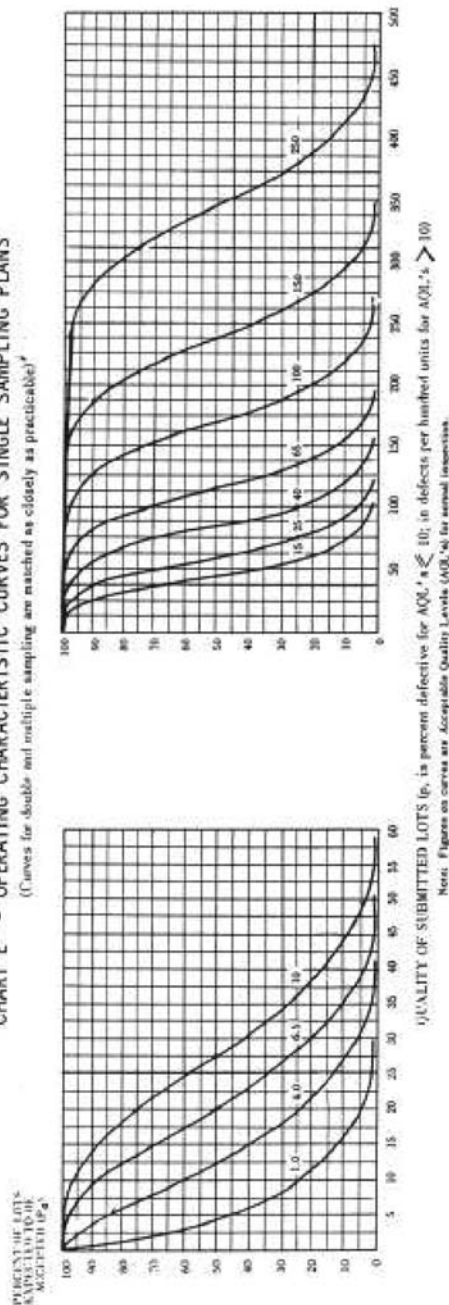


TABLE X-E-1 – TABULATED VALUES FOR OPERATING CHARACTERISTIC CURVES FOR SINGLE SAMPLING PLANS

P_d	Acceptable Quality Levels (normal inspection)											
	1.0	4.0	6.5	10	15	25	40	65	100	150	250	500
	p (in percent defective)											
99.0	0.077	1.19	3.63	7.00	10.7	17.7	29.9	40.9	51.4	61.3	70.0	77.0
95.0	0.394	2.81	6.63	11.3	17.7	29.9	40.9	51.4	61.3	70.0	77.0	83.0
90.0	0.807	4.16	8.80	14.2	22.2	33.9	45.8	57.6	68.3	78.1	86.9	93.0
75.0	2.19	7.41	13.4	19.9	29.9	40.9	51.4	61.3	70.0	77.0	83.0	88.0
50.0	5.19	12.6	20.0	27.5	35.3	43.6	52.0	60.7	69.7	78.1	86.9	93.0
25.0	10.1	19.4	28.0	36.2	45.1	54.6	64.3	74.1	84.1	94.1	104	114
10.0	16.2	26.8	36.0	44.4	53.3	62.7	72.4	82.1	91.9	101	111	121
5.0	20.6	31.6	41.0	49.5	58.3	67.3	76.4	85.6	94.7	103	112	121
1.0	29.8	41.5	50.6	58.7	67.3	76.4	85.6	94.7	103	112	121	130
1.5	6.5	10	15	25	40	65	100	150	250	500	1000	2000
Acceptable Quality Levels (tightened inspection)												
99.0	0.077	1.19	3.63	7.00	10.7	17.7	29.9	40.9	51.4	61.3	70.0	77.0
95.0	0.394	2.81	6.63	11.3	17.7	29.9	40.9	51.4	61.3	70.0	77.0	83.0
90.0	0.807	4.16	8.80	14.2	22.2	33.9	45.8	57.6	68.3	78.1	86.9	93.0
75.0	2.19	7.41	13.4	19.9	29.9	40.9	51.4	61.3	70.0	77.0	83.0	88.0
50.0	5.19	12.6	20.0	27.5	35.3	43.6	52.0	60.7	69.7	78.1	86.9	93.0
25.0	10.1	19.4	28.0	36.2	45.1	54.6	64.3	74.1	84.1	94.1	104	114
10.0	16.2	26.8	36.0	44.4	53.3	62.7	72.4	82.1	91.9	101	111	121
5.0	20.6	31.6	41.0	49.5	58.3	67.3	76.4	85.6	94.7	103	112	121
1.0	29.8	41.5	50.6	58.7	67.3	76.4	85.6	94.7	103	112	121	130
1.5	6.5	10	15	25	40	65	100	150	250	500	1000	2000

Note: Binomial distribution used for percent defective comparisons. Figures for defects per hundred units.

FIG. X1.13 Sample Size Code Letter E

TABLE X-E-2 - SAMPLING PLANS FOR SAMPLE SIZE CODE LETTER: E

Type of sampling plan	Cumulative sample size	Acceptable Quality Levels (normal inspection)																		Cumulative sample size
		Less than 1.0	1.0	1.5	2.5	4.0	6.5	10	15	25	40	65	100	150	250	Higher than 250				
		Ac	Re	Re	Re	Re	Re	Re	Re	Re	Re	Re	Re	Re	Re	Re	Re			
Single	13	▽	0	1															13	
					Use	Use														
Double	8	▽	*																8	
	16			Letter	Letter	Letter													16	
Multiple	3	▽	*	D	G	P													3	
	6																		6	
	9																		9	
	12																		12	
	15																		15	
	18																		18	
	21																		21	
		Less than 1.5	1.5	2.5	4.0	6.5	10	15	25	40	65	100	150	250	Higher than 250					

- △ = Use next preceding sample size code letter for which acceptance and rejection numbers are available.
- ▽ = Use next subsequent sample size code letter for which acceptance and rejection numbers are available.
- Ac = Acceptance number.
- Re = Rejection number.
- * = Use single sampling plan above (or alternatively use letter H).
- Δ = Acceptance not permitted at this sample size.

E

FIG. Sample Size Code Letter E

F

PERCENT OF LOTS
EXPECTED TO BE
ACCEPTED (P_a)



TABLE X-F-1 - TABULATED VALUES FOR OPERATING CHARACTERISTIC CURVES FOR SINGLE SAMPLING PLANS

Acceptable Quality Levels (tightened inspection)

Note: Binomial distribution used for percent defective comparisons; Poisson for defects per hundred units.

TABLE X-F-2 - SAMPLING PLANS FOR SAMPLE SIZE CODE LETTER: F

Type of sampling plan	Cumulative sample size	Acceptable Quality Levels (normal inspection)																												Cumulative sample size				
		Less than 0.65		0.65		1.0		1.5		2.5		4.0		6.5		10		15		25		40		65		Higher than 65								
		Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re					
		Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re					
Single	20	▽	0	1						1	2	2	3	3	4	5	6	7	8	8	9	10	11	12	13	14	15	16	17	18	19	21	22	△
	13 26	▽	*							0	2	0	3	1	4	2	5	3	7	3	7	5	9	6	10	7	11	9	14	11	16	△		
Multiple	5	▽	*							*	2	*	2	*	3	*	4	0	4	0	4	0	5	0	6	1	7	1	8	2	9	△		
	10									*	2	0	3	0	3	1	5	1	6	2	7	3	8	3	9	4	10	6	12	7	14			
	15									0	2	0	3	1	4	2	6	3	8	4	9	6	10	7	12	8	13	11	17	13	19			
	20									0	3	1	4	2	5	3	7	5	10	6	11	8	13	10	15	12	17	16	22	19	25			
	25									1	3	2	4	3	6	5	8	7	11	9	12	11	15	14	17	17	20	22	25	25	29			
	30									1	3	3	5	4	6	7	9	10	12	12	14	14	17	18	20	21	23	27	29	31	33			
	35									2	3	4	5	6	7	9	10	13	14	14	15	18	19	21	22	25	26	32	33	37	38			
		Less than 1.0	1.0																														Higher than 65	
		Acceptable Quality Levels (tightened inspection)																																

△ = Use next preceding sample size code letter for which acceptance and rejection numbers are available.
 ▽ = Use next subsequent sample size code letter for which acceptance and rejection numbers are available.
 Ac = Acceptance number
 Re = Rejection number
 * = Use single sampling plan above (or alternatively use letter J).
 * = Acceptance not permitted at this sample size.

F

FIG. Sample Size Code Letter F



G

TABLE X-G—Tables for sample size code letter: G

CHART G - OPERATING CHARACTERISTIC CURVES FOR SINGLE SAMPLING PLANS
(Curves for double and multiple sampling are matched as closely as practicable)

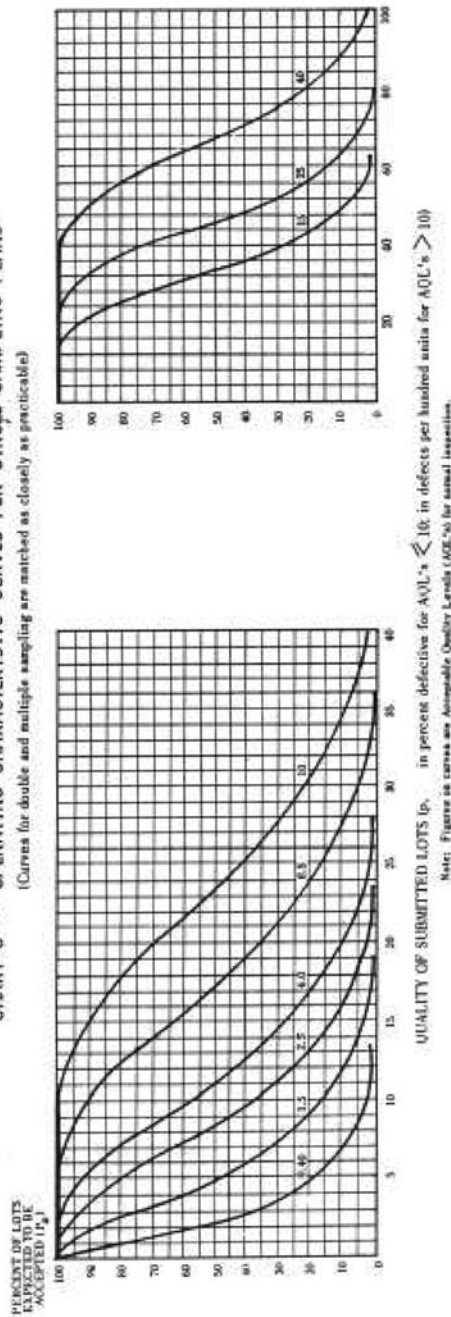


TABLE X-G-1 - TABULATED VALUES FOR OPERATING CHARACTERISTIC CURVES FOR SINGLE SAMPLING PLANS

P_a	Acceptable Quality Levels (normal inspection)														
	p (in percent defective)					p (in defects per hundred units)									
	0.40	1.5	2.5	4.0	6.5	10	15	25	40	65	10	15	25	40	65
99.0	0.032	0.475	1.36	2.63	5.94	9.75	11.0	14.9	19.1	23.4	32.3	39.3	46.5	58.4	67.7
95.0	0.161	1.13	2.59	4.39	8.50	13.1	14.7	19.3	24.0	28.9	38.9	46.5	58.4	67.7	78.0
90.0	0.329	1.67	3.50	5.56	10.2	15.1	17.0	21.9	27.0	32.2	42.7	50.8	62.9	77.4	88.1
75.0	0.895	3.01	5.42	7.98	13.4	19.0	21.4	26.9	32.6	38.2	49.7	58.4	67.7	78.0	88.1
50.0	2.14	5.19	8.27	11.4	17.5	23.7	27.1	33.3	39.6	45.8	58.3	67.7	78.0	88.1	94.5
25.0	4.23	8.19	11.9	15.4	22.3	29.0	33.8	40.7	47.6	54.4	67.9	78.0	88.1	94.5	107
10.0	6.94	11.6	15.0	19.7	27.1	34.1	40.6	48.1	55.6	62.9	77.4	88.1	94.5	107	117
5.0	8.94	14.0	18.4	22.5	30.1	37.2	43.1	50.0	57.3	64.8	80.4	94.5	107	117	127
1.0	13.5	19.0	23.7	28.0	35.9	43.3	50.0	57.3	64.8	71.3	87.9	95.6	107	117	127
0.65	2.5	4.0	6.5	10	15	20	25	30	35	40	45	50	55	60	65

Acceptable Quality Levels (tightened inspection)

Note: Binomial distribution used for percent defective comparisons; Poissons for defects per hundred units.

FIG. X1.15 Sample Size Code Letter G

TABLE X-G-2 - SAMPLING PLANS FOR SAMPLE SIZE CODE LETTER: G

Type of sampling plan	Commu- nitive sample size	Acceptable Quality Levels (normal inspection)																		Commu- nitive sample size								
		Acceptable Quality Levels (normal inspection)																Higher than 40										
		Less than 0.40		0.40	0.65	1.0		1.5	2.5	4.0	6.5	10	15		25		40											
		Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re									
Single	32	▽	0	1																	32							
	20	▽	•	Use Letter	Use Letter	Use Letter	Use Letter	Use Letter	Use Letter	Use Letter	Use Letter	Use Letter	Use Letter	Use Letter	Use Letter	Use Letter	Use Letter	Use Letter										
Multiple	40			F	J	H	1	2	3	4	5	6	7	8	9	10	11	12	13	15	16	18	19	23	24	26	27	40
	8	▽	•																									Δ
	16																											
	24																											
	32																											
	40																											
	48																											
	56																											
		Less than 0.65	0.65		1.0	1.5	2.5	4.0	6.5	10	15	25	40	Higher than 40														
Acceptable Quality Levels (tightened inspection)																25	40	37	38									

^a = The next preceding sample size code letter for which acceptance and rejection numbers are available.

□ = use next preceding sample size code (even for non-acceptance and rejection numbers not available).

Δ = Change in number of
 Ac = Acceptance number.

AL = Accompaniment number.
Re = Relaxation number.

- 14 = rejection answer.
- 15 = the wine is warming (as above) (or alternative is was [letter E]).

- = Acceptance not warranted in this sample size.

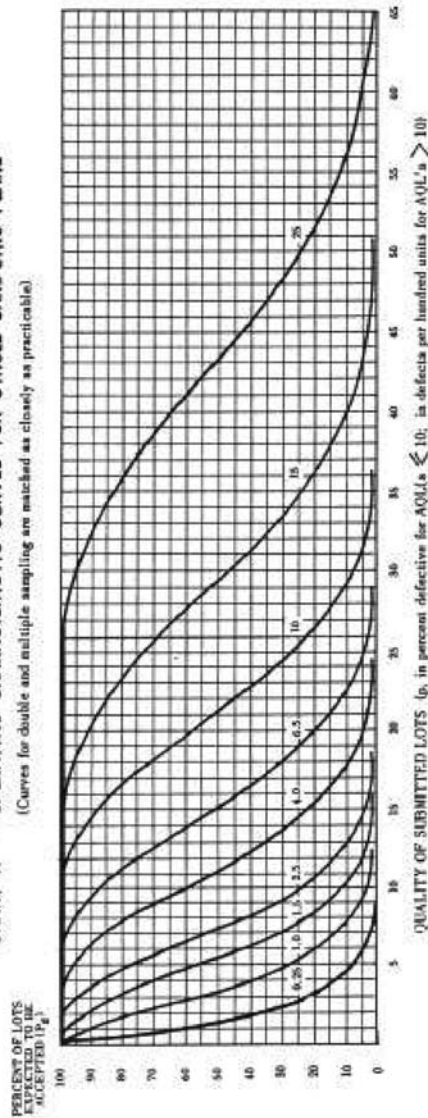
G

FIG. Sample Size Code Letter G

TABLE X-H—Tables for sample size code letter: H

CHART H - OPERATING CHARACTERISTIC CURVES FOR SINGLE SAMPLING PLANS

(Curves for double and multiple sampling are matched as closely as practicable)



Note: Figures on curves are Acceptable Quality Levels (AOQL's) for normal inspection.

TABLE X-H-1 - TABULATED VALUES FOR OPERATING CHARACTERISTIC CURVES FOR SINGLE SAMPLING PLANS

P _d	Acceptable Quality Levels (normal inspection)														Acceptable Quality Levels (tightened inspection)													
	p (in percent defective)														p (in defects per hundred units)													
	0.25	1.0	1.5	2.5	4.0	6.5	10	15	25	40	65	100	150	250	400	650	1000	1500	2500	4000	6500	10000	15000	25000	40000	65000	100000	
99.0	0.020	0.306	0.888	1.69	3.66	6.06	7.41	11.1	0.020	0.298	0.872	1.65	3.57	5.81	7.01	9.54	12.2	15.0	20.7	25.1								
95.0	0.103	0.712	1.66	2.77	5.34	8.29	9.74	12.9	0.103	0.710	1.64	2.73	5.23	7.96	9.39	12.3	15.4	18.5	24.9	29.8								
90.0	0.210	1.07	2.23	3.54	6.42	9.53	11.2	14.5	0.210	1.06	2.20	3.49	6.30	9.31	10.9	14.0	17.3	20.6	27.3	32.5								
75.0	0.574	1.92	3.46	5.09	8.51	12.0	13.8	17.5	0.576	1.92	3.45	5.07	8.44	11.9	13.7	17.2	20.8	24.5	31.8	37.4								
50.0	1.38	3.33	5.31	7.30	11.3	15.2	17.2	21.2	1.39	3.36	5.35	7.34	11.3	15.3	17.3	21.6	25.3	29.3	37.3	43.3								
25.0	2.74	5.30	7.70	10.0	14.5	18.8	21.0	25.2	2.77	5.39	7.84	10.2	14.8	19.4	21.6	26.0	30.4	34.8	43.5	49.9								
10.0	4.50	7.56	10.3	12.9	17.8	22.4	24.7	29.1	4.61	7.78	10.6	13.4	18.6	23.5	26.0	30.8	35.6	40.3	49.5	56.4								
5.0	5.82	9.13	12.1	14.8	19.9	24.7	27.0	31.6	5.99	9.49	12.6	15.5	21.0	26.3	28.9	33.9	38.9	43.8	53.4	60.5								
1.0	8.80	12.5	15.9	18.8	24.3	29.2	31.7	36.3	9.21	13.3	16.8	20.1	26.2	32.0	34.8	40.3	45.6	50.9	61.1	68.7								
0.40	1.5	2.5	4.0	6.5			10		0.40	1.5	2.5	4.0	6.5			10		15		25								

Note: Binomial distribution used for percent defective comparisons; Poisson for defects per hundred units.

FIG. X1.16 Sample Size Code Letter H

TABLE X-H-2 - SAMPLING PLANS FOR SAMPLE SIZE CODE LETTER: H

Type of sampling plan	Cumulative sample size	Acceptable Quality Levels (normal inspection)																												Cumulative sample size					
		Less than 0.25	0.25		0.40		X	0.65		1.0		1.5		2.5		4.0		6.5		X	10		X	15		X	25		X		Higher than 25				
			Ac	Re	Ac	Re		Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re		Ac	Re		Ac	Re		Ac	Re				Ac	Re	Ac	Re
			Ac	Re	Ac	Re		Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re		Ac	Re		Ac	Re		Ac	Re				Ac	Re	Ac	Re
Single	50	▽	0	1																										△	50				
Double	32	▽	*																											△	32				
	64																														64				
Multiple	13	▽	*																											△	13				
	26																														26				
	39																														39				
	52																														52				
	65																														65				
	78																														78				
	91																														91				
		Less than 0.40	0.40				0.65	1.0	1.5	2.5	4.0	6.5																		X	Higher than 25				
Acceptable Quality Levels (tightened inspection)																																			

- △ = Use next preceding sample size code letter for which acceptance and rejection numbers are available.
 ▽ = Use next subsequent sample size code letter for which acceptance and rejection numbers are available.
 Ac = Acceptance number
 Re = Rejection number
 * = Use single sampling plan above (or alternatively use letter L).
 x = Acceptance not permitted at this sample size.

H

FIG. Sample Size Code Letter H

TABLE X-J—Tables for sample size code letter: J

CHART J - OPERATING CHARACTERISTIC CURVES FOR SINGLE SAMPLING PLANS

(Curves for double and multiple sampling are matched as closely as practicable)

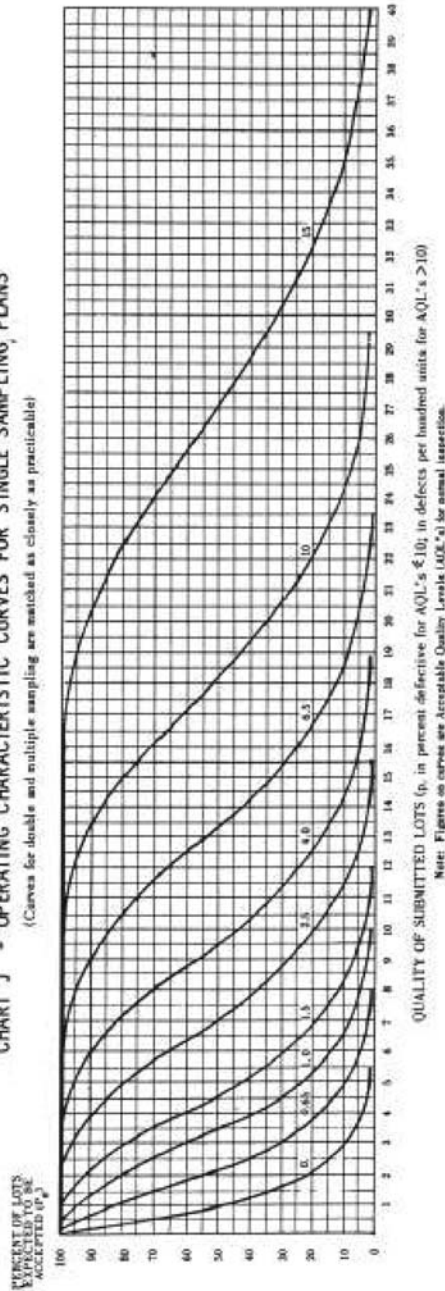


TABLE X-J-1 - TABULATED VALUES FOR OPERATING CHARACTERISTIC CURVES FOR SINGLE SAMPLING PLANS

P _a	Acceptable Quality Levels (normal inspection)														
	p (in percent defective)							p (in defects per hundred units)							
	0.15	0.65	1.0	1.5	2.5	4.0	6.5	10	15	2.5	4.0	6.5	10	15	15
99.0	0.013	0.180	0.550	1.05	2.30	3.72	4.50	6.13	7.88	9.75	11.9	13.2	15.5	18.3	21.3
95.0	0.064	0.444	1.03	1.73	3.32	5.06	5.98	7.91	9.89	11.9	13.2	15.5	18.3	21.3	24.2
90.0	0.132	0.666	1.38	2.20	3.98	5.91	6.91	8.95	11.0	13.2	15.5	18.3	21.3	24.2	26.0
75.0	0.359	1.202	2.16	3.18	5.30	7.50	8.62	10.9	13.2	15.5	18.3	21.3	24.2	26.0	29.5
50.0	0.863	2.09	3.33	4.57	7.06	9.55	10.8	13.3	15.8	18.3	21.3	24.2	26.0	29.5	33.0
25.0	1.72	3.33	4.84	6.31	9.14	11.9	13.3	16.0	18.6	21.3	24.2	26.0	29.5	33.0	37.5
10.0	2.84	4.78	6.52	8.16	11.3	14.2	15.7	18.6	21.4	24.2	26.0	29.5	33.0	37.5	42.9
5.0	3.60	5.80	7.66	9.39	12.7	15.8	17.3	20.3	23.2	26.0	29.5	33.0	37.5	42.9	48.9
1.0	5.59	8.00	10.1	12.0	15.6	18.9	20.5	23.6	26.5	29.5	33.0	37.5	42.9	48.9	55.9
0.25	1.0	1.5	2.5	4.0	6.5	10	15	25	40	65	100	150	250	400	650

Notes: All values given in above table based on Poisson distribution as an approximation to the binomial.

FIG. X1.17 Sample Size Code Letter J

TABLE X-J-2 - SAMPLING PLANS FOR SAMPLE SIZE CODE LETTER: J

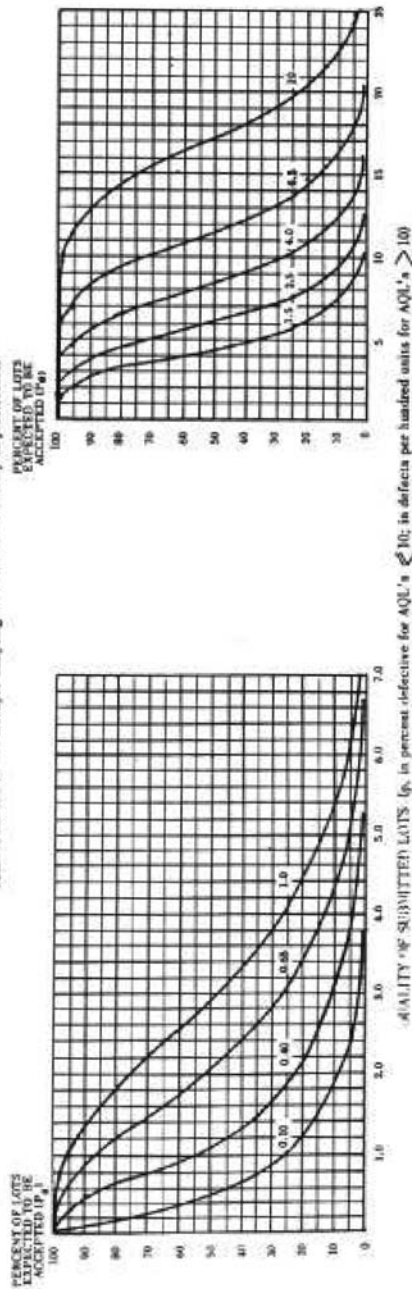
Type of sampling plan	Cumulative sample size	Acceptable Quality Levels (normal inspection)																				Cumulative sample size								
		Less than 0.15	0.15	0.25	0.40	0.65	1.0	1.5	2.5	4.0	6.5	10	15	Higher than 15																
														Ac	Re	Ac	Re	Ac	Re	Ac	Re		Ac	Re	Ac	Re	Ac	Re		
																													Ac	Re
Single	80	▽	0	1		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	△	80	
	50	▽	*		Use	0	2	0	3	1	4	2	5	3	7	3	7	5	9	6	10	7	11	9	14	11	16	△	50	
Double	100				Letter	1	2	3	4	5	6	7	8	9	11	12	13	15	16	18	19	23	24	26	27				100	
	20	▽	*		H	*	2	*	3	*	4	0	4	0	4	0	5	0	6	1	7	1	8	2	9	△			20	
Multiple	40					*	2	0	3	0	3	1	5	1	6	2	7	3	8	3	9	4	10	6	12	7	14		40	
	60					0	2	0	3	1	4	2	6	3	8	4	9	6	10	7	12	8	13	11	17	13	19		60	
	80					0	3	1	4	2	5	3	7	5	10	6	11	8	13	10	15	12	17	16	22	19	25		80	
	100					1	3	2	4	3	6	5	8	7	11	9	12	11	15	14	17	17	20	22	25	29		100		
	120					1	3	3	5	4	6	7	9	10	13	12	14	14	17	18	20	21	23	27	29	31	33		120	
	140					2	3	4	5	6	7	9	10	13	14	15	18	19	21	22	25	26	32	33	37	38			140	
		Less than 0.25	0.25		0.40	0.65	1.0	1.5	2.5	4.0			6.5	10													15			
		Acceptable Quality Levels (tightened inspection)																												

- △ = Use next preceding sample size code letter for which acceptance and rejection numbers are available.
- ▽ = Use next subsequent sample size code letter for which acceptance and rejection numbers are available.
- Ac = Acceptance number
- Re = Rejection number
- * = Use single sampling plan above (or alternatively use letter M)
- H = Acceptance not permitted at this sample size.

FIG. Sample Size Code Letter J

TABLE X-K—Tables for sample size code letter: K

CHART K - OPERATING CHARACTERISTIC CURVES FOR SINGLE SAMPLING PLANS
(Curves for double and multiple sampling are matched as closely as practicable)



Note: Figures on curves are Acceptable Quality Levels (AQL's) for normal inspection.

TABLE X-K-1 - TABULATED VALUES FOR OPERATING CHARACTERISTIC CURVES FOR SINGLE SAMPLING PLANS

P*	Acceptable Quality Levels (normal inspection)										
	0.10	0.40	0.65	1.0	1.5	2.5	4.0	6.5	10	10	
p (in percent defective or defects per hundred units)											
99.0	0.0081	0.119	0.349	0.658	1.43	2.33	2.81	4.88	5.98	8.28	10.1
95.0	0.0410	0.284	0.654	1.09	2.09	3.19	3.76	6.15	7.40	9.95	11.9
90.0	0.0940	0.426	0.882	1.40	2.52	3.73	4.35	6.92	8.24	10.9	13.0
75.0	0.230	0.769	1.382	2.03	3.38	4.77	5.47	8.34	9.79	12.7	14.9
50.0	0.554	1.34	2.14	2.94	4.54	6.14	6.94	10.1	11.7	14.9	17.3
25.0	1.11	2.15	3.14	4.09	5.94	7.75	8.64	12.2	13.9	17.4	20.0
10.0	1.84	3.11	4.26	5.35	7.42	9.42	10.4	14.2	16.1	19.8	22.5
5.0	2.40	3.80	5.04	6.29	8.41	10.5	11.5	15.6	17.5	21.4	24.2
1.0	3.68	5.31	6.73	8.04	10.5	12.0	13.3	18.3	20.4	24.5	27.5

Note: All values given in above table based on Poisson distribution as an approximation to the binomial.

FIG. X1.18 Sample Size Code Letter K

TABLE X-K-2 - SAMPLING PLANS FOR SAMPLE SIZE CODE LETTER: K

Type of sampling plan	Cumulative sample size	Acceptable Quality Levels (normal inspection)																								Cumulative sample size							
		Less than 0.10		0.10		0.15		0.25		0.40		0.65		1.0		1.5		2.5		4.0		6.5		10			Higher than 10						
		Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re		Ac	Re					
		Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re		Ac	Re					
Single	125	▽	0	1						1	2	2	3	3	4	5	6	7	8	9	10	11	12	13	14	15	18	19	21	22	△	125	
Double	80	▽	+							0	2	0	3	1	4	2	5	3	7	3	7	5	9	6	10	7	11	9	14	11	16	△	80
	160									-1	2	3	4	4	5	6	7	8	9	11	12	12	13	15	16	18	19	23	24	26	27		160
Multiple	32	▽	*							*	2	*	2	*	3	*	4	0	4	0	4	0	5	0	6	1	7	1	8	2	9	△	32
	64									*	2	0	3	0	3	1	5	1	6	2	7	3	8	3	9	4	10	6	12	7	14		64
	96									0	2	0	3	1	4	2	6	3	8	4	9	6	10	7	12	8	13	11	17	13	19		96
	128									0	3	1	4	2	5	3	7	5	10	6	11	8	13	10	15	12	17	16	22	19	25		128
	160									1	3	2	4	3	6	5	8	7	11	9	12	11	15	14	17	17	20	22	25	29		160	
	192									1	3	3	5	4	6	7	9	10	12	12	14	14	17	18	20	21	23	27	29	31	33		192
	224									2	3	4	5	6	7	9	10	13	14	14	15	18	19	21	22	25	26	32	33	37	38		224
		Less than 0.15	0.15	△	0.25	0.40	0.65	1.0	1.5	2.5	4.0	6.5	10	△						Higher than 10													
		Acceptable Quality Levels (tightened inspection)																															

- △ Use next preceding sample size code letter for which acceptance and rejection numbers are available.
- ▽ Use next subsequent sample size code letter for which acceptance and rejection numbers are available.
- Ac Acceptance number
- Re Rejection number
- Use single sampling plan above (or alternatively use letter N).
- * Acceptance not permitted at this sample size.

K

FIG. Sample Size Code Letter K

L

(Curves for double and multiple sampling are matched as closely as practicable)



ice

Acceptable Quality Levels (tightened inspection)

50
Licensee=Ohio State University/

TABLE X-L-2 - SAMPLING PLANS FOR SAMPLE SIZE CODE LETTER: L

Type of sampling plan	Cumulative sample size	Acceptable Quality Levels (normal inspection)																	Cumulative sample size
		Acceptable Quality Levels (normal inspection)															Higher than 6.5		
		Acceptable Quality Levels (normal inspection)															Higher than 6.5		
		Less than 0.065	0.065	0.10	0.15	0.25	0.40	0.65	1.0	1.5	2.5	4.0	6.5	Higher than 6.5					
Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re		
Single	200	▽	0 1			1 2 2 3 3 4 5	6 7 8	9 10 11	12 13 14 15 16 18 19 21 22	△									
Double	125 250	▽	*		Use	0 2 0 3 1 4 2 5	3 7 3 7 5 9	6 10 7 11 9 14 11 16	△										
				Letter	Letter	1 2 3 4 4 5 6	7 8 9 11 12 13 15 16 18 19 23 24 26 27												
Multiple	50	▽	*			* 2 * 2 * 3 *	4 0 4 0 4 0 5 0	6 1 7 1 8 2 9	△										
	100					* 2 0 3 0 3 1 5	1 6 2 7 3 8 3 9	4 10 6 12 7 14											
	150					0 2 0 3 1 4 2 6	3 8 4 9 6 10 7 12	8 13 11 17 13 19											
	200					0 3 1 4 2 5 3 7	5 10 6 11 8 13 10 15	12 17 16 22 19 25											
	250					1 3 2 4 3 6 5 8	7 11 9 12 11 15 14 17	20 22 25 29 31 33											
	300					1 3 3 5 4 6 7 9	10 12 12 14 14 17 18	20 21 23 27 29 31 33											
	350					2 3 4 5 6 7 9	10 13 14 14 15 18 19 21	22 25 26 32 33 37 38											
		Less than 0.10	0.10	0.15	0.25	0.40	0.65	1.0	1.5	2.5	4.0	6.5	Higher than 6.5						
Acceptable Quality Levels (tightened inspection)																			

- Δ = Use next preceding sample size code letter for which acceptance and rejection numbers are available.
 ▽ = Use next subsequent sample size code letter for which acceptance and rejection numbers are available.
 Ac = Acceptance number
 Re = Rejection number
 • = Use single sampling plan above for alternatively use letter P1.
 * = Acceptance not permitted at this sample size.

FIG. Sample Size Code Letter L

M

CHART
PERCENT OF LOTS
EXPECTED TO BE
ACCEPTED (P_a)



P _a	Acceptable Quality Levels (normal inspection)									
	0.040	0.15	0.25	0.40	0.65	1.0	1.5	2.5	4.0	
	p (in percent defective or in defects per hundred units)									
99.0	0.0032	0.047	0.138	0.261	0.566	0.922	1.11	1.51	1.94	2.38
95.0	0.0165	0.112	0.259	0.433	0.859	1.26	1.49	1.96	2.44	2.94
90.0	0.0335	0.168	0.349	0.533	1.00	1.48	1.72	2.23	2.75	3.27
75.0	0.0914	0.305	0.548	0.804	1.34	1.89	2.17	2.74	3.31	3.89
50.0	0.220	0.532	0.848	1.17	1.80	2.43	2.75	3.39	4.02	4.66
25.0	0.440	0.854	1.34	1.82	2.36	3.07	3.43	4.13	4.83	5.52
10.0	0.731	1.23	1.69	2.12	2.94	3.74	4.13	4.89	5.65	6.39
5.0	0.951	1.51	2.00	2.46	3.34	4.17	4.58	5.38	6.17	6.95
1.0	1.46	2.11	2.67	3.19	4.16	5.08	5.53	6.40	7.25	8.08
	0.065	0.25	0.40	0.65	1.0	1.5	2.5	4.0	6.0	10.0

Note: All values given in above table based on Poisson distribution as an approximation to the Binomial.

57

TABLE X-W-2 - SAMPLING PLANS FOR SAMPLE SIZE CODE LETTER: M

Type of sampling plan	Cumulative sample size	Acceptable Quality Levels (normal inspection)																		Cumulative sample size
		Acceptable Quality Levels (tightened inspection)																		
		Less than 0.040	0.040	0.065	0.10	0.15	0.25	0.40	0.65	1.0	1.5	2.5	4.0	Higher than 4.0	Re					
Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re			
Single	315	▽	0	1														△	315	
Double	200	▽	*															△	200	
	400																		400	
Multiple	80	▽	*															△	80	
	160																		160	
	240																		240	
	320																		320	
	400																		400	
	480																		480	
	560																		560	
		Less than 0.065	0.065	0.10	0.15	0.25	0.40	0.65	1.0	1.5	2.5	4.0	Higher than 4.0							
Acceptable Quality Levels (tightened inspection)																				

= Use next preceding sample size code letter for which acceptance and rejection numbers are available.
 = Use next subsequent sample size code letter for which acceptance and rejection numbers are available.
 Ac = Acceptance number.
 Re = Rejection number.
 * = Use single sampling plan above (or alternatively use letter Q).
 = Acceptance not permitted at this sample size.

M

FIG. Sample Size Code Letter M

N

TABLE X-N—Tables for sample size code letter: N

CHART N - OPERATING CHARACTERISTIC CURVES FOR SINGLE SAMPLING PLANS

(Curves for double and multiple sampling are matched as closely as practicable)

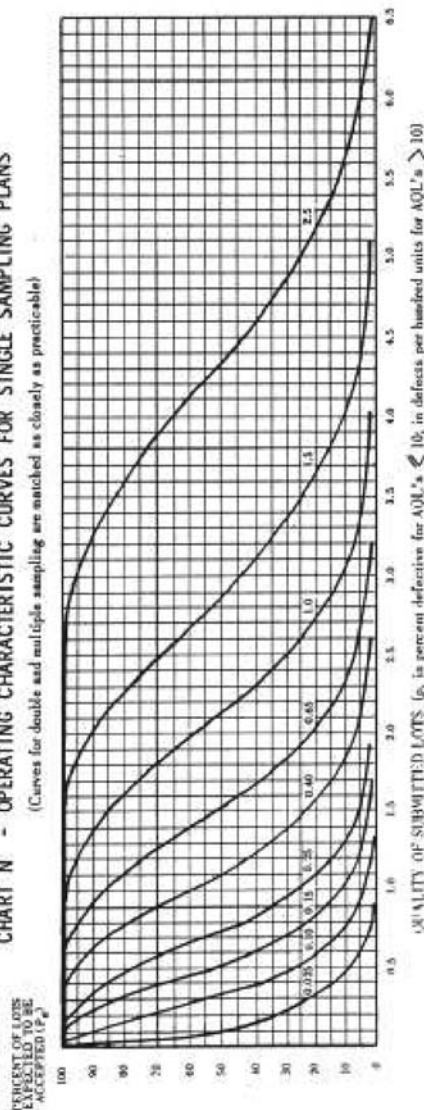


TABLE X-N-1 - TABULATED VALUES FOR OPERATING CHARACTERISTIC CURVES FOR SINGLE SAMPLING PLANS

P _a	Acceptable Quality Levels (normal inspection)										
	0.025	0.10	0.15	0.25	0.40	0.65	1.0	1.5	2.5	4.0	6.5
	p (in percent defective or in defects per hundred units)										
99.0	0.0020	0.030	0.087	0.165	0.357	0.581	0.701	0.954	1.22	1.50	2.07
95.0	0.0103	0.071	0.164	0.273	0.523	0.796	0.939	1.23	1.54	1.85	2.49
90.0	0.0210	0.106	0.220	0.349	0.630	0.931	1.09	1.40	1.73	2.06	2.73
75.0	0.0576	0.192	0.345	0.567	0.844	1.19	1.37	1.72	2.08	2.45	3.18
50.0	0.139	0.336	0.535	0.734	1.13	1.53	1.73	2.13	2.53	2.93	3.73
25.0	0.277	0.539	0.784	1.02	1.48	1.94	2.16	2.60	3.04	3.48	4.35
10.0	0.461	0.778	1.06	1.34	1.86	2.35	2.60	3.08	3.56	4.03	4.95
5.0	0.599	0.949	1.26	1.55	2.10	2.63	2.89	3.39	3.89	4.38	5.34
1.0	0.921	1.328	1.68	2.01	2.62	3.20	3.48	4.03	4.56	5.09	6.12
	0.040	0.15	0.25	0.40	0.65	1.0	1.5	2.5	4.0	6.5	10
Acceptable Quality Levels (tightened inspection)											

Note: All values given in above table based on Poisson distribution as an approximation to the Binomial

FIG. X1.21 Sample Size Code Letter N

TABLE X-N-2 - SAMPLING PLANS FOR SAMPLE SIZE CODE LETTER: N

Type of sampling plan	Cumulative sample size	Acceptable Quality Levels (normal inspection)																				Higher than 2.5
		Less than 0.025	0.025	0.040	0.065	0.10	0.15	0.25	0.40	0.65	1.0	1.5	2.5	Higher than 2.5								
		Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re					
		Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re					
Single	500	▽	0	1																	△	
Double	315	▽	*																		△	
	630																					
Multiple	125	▽	*																		△	
	250																					
	375																					
	500																					
	625																					
	750																					
	875																					
		Less than 0.040	0.040		0.065	0.10	0.15	0.25	0.40	0.65	1.0	1.5	2.5	Higher than 2.5								
Acceptable Quality Levels (tightened inspection)																						

△ = Use next preceding sample size code letter for which acceptance and rejection numbers are available.
▽ = Use next subsequent sample size code letter for which acceptance and rejection numbers are available.

Ac = Acceptance number

Re = Rejection number

* = Use single sampling plan above (or alternatively use letter R).

▽ = Acceptance not permitted at this sample size.

N

FIG. Sample Size Code Letter N

P

TABLE X-P—Tables for sample size code letter: P

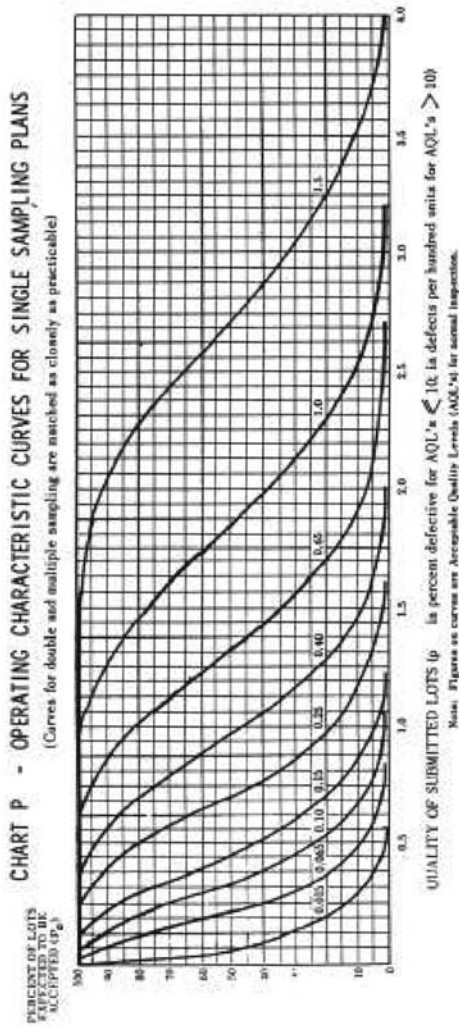


TABLE X-P-1 - TABULATED VALUES FOR OPERATING CHARACTERISTIC CURVES FOR SINGLE SAMPLING PLANS

P _h	Acceptable Quality Levels (normal inspection)										
	0.015	0.065	0.10	0.15	0.25	0.40	0.65	1.0	1.5	2.0	2.5
	p (in percent defective or defects per hundred units)										
99.0	0.0013	0.0186	0.055	0.103	0.223	0.363	0.438	0.596	0.762	0.935	1.09
95.0	0.0064	0.0444	0.102	0.171	0.327	0.498	0.507	0.771	0.961	1.16	1.36
90.0	0.0131	0.0665	0.138	0.218	0.394	0.582	0.679	0.878	1.08	1.29	1.51
75.0	0.0360	0.120	0.216	0.317	0.527	0.745	0.855	1.08	1.30	1.53	1.79
50.0	0.0856	0.210	0.334	0.459	0.709	0.959	1.08	1.33	1.58	1.83	2.11
25.0	0.173	0.337	0.490	0.639	0.928	1.21	1.35	1.63	1.90	2.18	2.52
10.0	0.288	0.486	0.665	0.835	1.16	1.47	1.62	1.93	2.22	2.52	3.09
5.0	0.375	0.593	0.787	0.969	1.31	1.64	1.80	2.12	2.43	2.74	3.34
1.0	0.576	0.830	1.05	1.26	1.64	2.00	2.18	2.52	2.85	3.18	3.82
0.015	0.10	0.15	0.25	0.40	0.65	1.0	1.5	2.0	2.5	3.0	3.5

Acceptable Quality Levels (tightened inspection)

Note: All values given in above table based on Poisson distribution as an approximation to the Binomial.

FIG. X1.22 Sample Size Code Letter P

TABLE X-P-2 - SAMPLING PLANS FOR SAMPLE SIZE CODE LETTER: P

Type of sampling plan	Cumulative sample size	Acceptable Quality Levels (normal inspection)																		Cumulative sample size																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
		0.010	0.015			0.025	X	0.040			0.065	0.10	0.15	0.25	0.40	X	0.65	X	1.0		X	Higher than 1.5																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
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- △ = Use next preceding sample size code letter for which acceptance and rejection numbers are available.
- ▽ = Use next subsequent sample size code letter for which acceptance and rejection numbers are available.
- Ac = Acceptance number.
- Re = Rejection number.
- * = Use single sampling plan above.
- = Acceptance not permitted at this sample size.

P

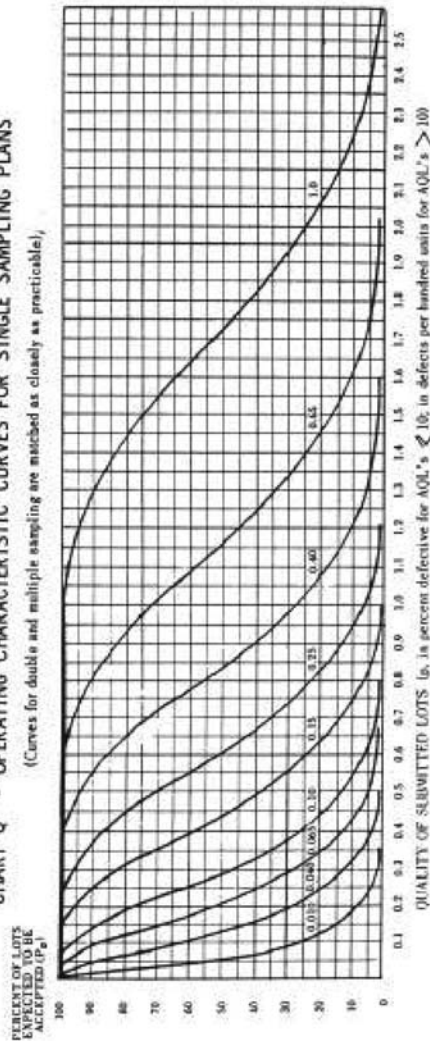
FIG. Sample Size Code Letter P



TABLE X-Q — Tables for sample size code letter: Q

CHART Q - OPERATING CHARACTERISTIC CURVES FOR SINGLE SAMPLING PLANS

(Curves for double and multiple sampling are matched as closely as practicable).



Note: Figures on curves are Acceptable Quality Levels (AQL's) for normal inspection.

TABLE X-Q-1 - TABULATED VALUES FOR OPERATING CHARACTERISTIC CURVES FOR SINGLE SAMPLING PLANS

Pa	Acceptable Quality Levels (normal inspection)										
	0.010	0.040	0.065	0.10	0.15	0.25	0.40	0.65	1.0	1.0	1.0
p (in percent defective or defects per hundred units)											
99.0	0.00081	0.0119	0.0349	0.0656	0.143	0.252	0.281	0.302	0.488	0.828	1.01
95.0	0.00410	0.0284	0.0654	0.109	0.209	0.318	0.376	0.494	0.615	0.995	1.19
90.0	0.00840	0.0426	0.0882	0.140	0.252	0.372	0.435	0.562	0.692	1.09	1.30
75.0	0.0220	0.0769	0.138	0.203	0.338	0.476	0.547	0.690	0.834	1.27	1.49
50.0	0.0554	0.134	0.214	0.294	0.454	0.614	0.694	0.853	1.01	1.49	1.73
25.0	0.111	0.215	0.314	0.409	0.594	0.775	0.864	1.04	1.22	1.39	2.00
10.0	0.184	0.310	0.426	0.534	0.742	0.942	1.04	1.23	1.42	1.98	2.25
5.0	0.240	0.380	0.504	0.620	0.841	1.05	1.15	1.36	1.56	2.14	2.42
1.0	0.368	0.531	0.672	0.804	1.05	1.28	1.83	1.61	1.83	2.45	2.75
0.015	0.065	0.10	0.15	0.25	0.40	0.65	1.0	1.61	2.04	2.45	2.75
Acceptable Quality Levels (tightened inspection)											
										1.0	X

Note: All values given in above table based on Poisson distribution as an approximation to the Binomial.

FIG. X1.23 Sample Size Code Letter Q

TABLE X-Q-2 - SAMPLING PLANS FOR SAMPLE SIZE CODE LETTER: Q

Types of sampling plan	Cumulative sample size	Acceptable Quality Levels (normal inspection)																				Cumulative sample size					
		0.010		0.015		0.025		0.040		0.065		0.10		0.15		0.25		0.40		0.65			1.0		Higher than 1.0		
		Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re		Ac	Re	Ac	Re	Ac
Single	1250	X		0 1		Use		Use		Use		Use		Use		Use		Use		Use		Use		Use		Δ	
		Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re
Double	800	Use		•		Letter		Letter		Letter		Letter		Letter		Letter		Letter		Letter		Letter		Letter		Δ	
	1600	Letter		•		Letter		Letter		Letter		Letter		Letter		Letter		Letter		Letter		Letter		Letter		Δ	
Multiple	315	R		•		P		S		R		P		S		R		P		S		R		P		Δ	
	630																										
	945																										
	1260																										
	1575																										
	1890																										
	2205																										
		0.010		0.015		X		0.025		0.040		0.065		0.10		0.15		0.25		0.40		0.65		1.0		Higher than 1.0	
		Ac		Re		Ac		Re		Ac		Re		Ac		Re		Ac		Re		Ac		Re		Ac	
		0		1		Use		Use		Use		Use		Use		Use		Use		Use		Use		Use		X	
		Use		Use		Use		Use		Use		Use		Use		Use		Use		Use		Use		Use		X	

- Δ = Use next preceding sample size code letter for which acceptance and rejection numbers are available.
 Ac = Acceptance number
 Re = Rejection number
 * = Use single sampling plan above.
 R = Acceptance not permitted at this sample size.

Q

FIG. Sample Size Code Letter Q

R

TABLE X-R—Tables for sample size code letter: R

CHART R - OPERATING CHARACTERISTIC CURVES FOR SINGLE SAMPLING PLANS

(Curves for double and multiple sampling are matched as closely as practicable)

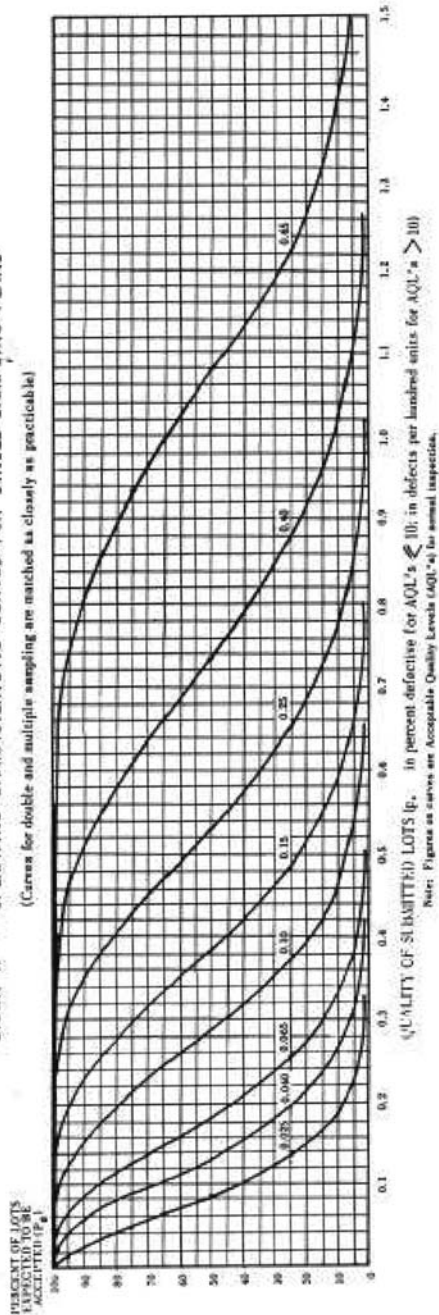


TABLE X-R-1 - TABULATED VALUES FOR OPERATING CHARACTERISTIC CURVES FOR SINGLE SAMPLING PLANS

P_a	Acceptable Quality Levels (normal inspection)										
	0.025	0.040	0.065	0.10	0.15	0.25	0.40	0.65	0.10	0.15	0.25
99.0	0.0074	0.0218	0.0412	0.0892	0.145	0.175	0.259	0.305	0.374	0.517	0.629
95.0	0.0178	0.0409	0.0683	0.131	0.199	0.225	0.309	0.385	0.462	0.622	0.745
90.0	0.0266	0.0551	0.0873	0.158	0.233	0.272	0.351	0.432	0.515	0.684	0.812
75.0	0.0481	0.0868	0.127	0.211	0.298	0.342	0.431	0.521	0.612	0.795	0.934
50.0	0.0839	0.134	0.184	0.284	0.384	0.433	0.533	0.633	0.733	0.933	1.08
25.0	0.115	0.196	0.256	0.371	0.484	0.540	0.651	0.761	0.870	1.09	1.25
10.0	0.195	0.266	0.334	0.464	0.589	0.650	0.770	0.889	1.01	1.24	1.41
5.0	0.237	0.315	0.388	0.526	0.657	0.722	0.848	0.972	1.09	1.33	1.51
1.0	0.332	0.420	0.502	0.655	0.800	0.870	1.02	1.14	1.27	1.53	1.72
0.040	0.065	0.10	0.15	0.25	0.40	0.65	1.0	1.5	2.0	2.5	3.0
Acceptable Quality Levels (tightened inspection)											

Note: All values given in above table based on Poisson distribution as an approximation to the binomial.

FIG. X1.24 Sample Size Code Letter R



TABLE X-R-2 - SAMPLING PLANS FOR SAMPLE SIZE CODE LETTER: R

Type of sampling plan	Cumulative sample size	Acceptable Quality Levels (normal inspection)															Cumulative sample size																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
		X	0.010		0.015		X	0.025		0.040		0.065		0.10		0.15		0.25		0.40		0.65		Higher than 0.65																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
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Δ = Use next preceding sample size code letter for which acceptance and rejection numbers are available.

Ac = Acceptance number.

Re = Rejection number.

* = Use single sampling plan above.

Δ = Acceptance not permitted at this sample size.

R

FIG. Sample Size Code Letter R



TABLE X-3—Tables for sample size code letter: S

Type of sampling plan	Cumulative sample size	Acceptable Quality Level (normal inspection)	
		Ac	Re
Single	3150	1	2
Double	2000	0	2
	4000	1	2
Multiple	800	#	2
	1600	#	2
	2400	0	2
	3200	0	3
	4000	1	3
	4800	1	3
	5600	2	3
		0.025	
		Acceptable Quality Level (tightened inspection)	

Ac = Acceptance number
 Re = Rejection number
 # = Acceptance not permitted at this sample size.

FIG. X1.25 Sample Size Code Letter S

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