



Standard Practice for Sampling and Judging Quality of Solid Electrical Insulating Materials¹

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1. Scope*

1.1 This practice covers procedures for obtaining data pertaining to the quality of a lot of electrical insulating material and for making a judgement whether the lot meets the requirements of a material specification.

1.2 This practice is not intended to define a producer's internal quality control procedures but is designed to determine the acceptability of all, or some portion, of a quantity of electrical insulating material that is available for inspection by the user of the material.

1.3 This practice is intended to be used in conjunction with an existing material specification that specifies property characteristic limits, acceptable quality level (AQL), standard test methods, and specific sampling instructions.

1.4 In the absence of a specification as described in 1.3, use this practice as a guide, after establishment of agreed-upon property characteristics, limits, AQL, standard test methods, and specific sampling instructions.

1.5 It is intended that this be a practice for inspection by attributes.

1.6 *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

E300 Practice for Sampling Industrial Chemicals

2.2 Military Standard:

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

ANSI/ASQ Z1.4, MIL-STD-1916 Department of Defense Preferred Methods for Acceptance of Product

2.3 Other Document:

ANSI/ASQC A2 -1987⁴

3. Terminology

3.1 Definitions:

3.1.1 *acceptance number, n*—the maximum allowable number of nonconformities for a given AQL and sample size (lot-sample size).

3.1.2 *acceptable quality level (AQL), n*—the maximum percent nonconforming which, for purposes of sampling inspection, is considered satisfactory as a process average.

3.1.3 *critical property, n*—a quantitatively measurable characteristic which is absolutely necessary to be met if a material or product is to provide satisfactory performance for the intended use.

3.1.3.1 *Discussion*—In some situations, specification requirements coincide with customer usage requirements. In other situations, they may not coincide, being either more or less stringent. More stringent sampling (for example, smaller AQL values) is usually used for measurement of characteristics which are considered critical. The selection of sampling plans is independent of whether the term *defect* or *nonconformity* is appropriate.

3.1.4 *defect, n*—a departure of a quality characteristic from its intended level, or state, that occurs with a severity sufficient to cause an associated product or service not to satisfy intended normal, or reasonably foreseeable, usage requirements.

3.1.4.1 *Discussion*—The terms *defect* and *nonconformity* and their derivatives are used somewhat interchangeably in the historical and current literature. *Nonconformity* objectively describes the comparison of test results to specification requirements, while the term *defect* has a connotation of

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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 U.S. Government Printing Office Superintendent of Documents, 732 N. Capitol St., NW, Mail Stop: SDE, Washington, DC 20401.

⁴ Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036.

*A Summary of Changes section appears at the end of this standard

predicting the failure of a product or service to perform its intended function in use. Since this latter connotation is often unintended, the term *nonconformity* is preferred in full consensus standards. The selection of any sample plan is independent of whether the term *defect* or *nonconformity* is appropriate.

The term *defect* may be appropriate for specifications mutually agreed upon by a producer and a user where specific use conditions are clearly understood. Even in these cases however, use the term *defect* with caution and consider substituting the term *nonconformity*.

For additional comments, see ANSI/ASQC A2-1987 that also states: “When a quality characteristic of a product or service is “evaluated” in terms of conformance to specification requirements, the use of the term *nonconformity* is appropriate.”

3.1.5 group AQL—the AQL assigned to a group of material properties.

3.1.5.1 Discussion—See 5.2 for additional information about the meaning of AQL.

3.1.6 lot, *n*—an entity of electrical insulating material or product which, insofar as is practicable, consists of a single type, grade, class, size, or composition that was manufactured under essentially the same conditions and is available to the user for sampling at one time.

3.1.7 lot number, *n*—the number used by a producer to identify an entity of electrical insulating material or product.

3.1.8 major property, *n*—a quantitatively measurable characteristic which, if not met, is likely to seriously impair the performance of a material or product for the intended use.

3.1.8.1 Discussion—In some situations, specification requirements coincide with customer usage requirements. In other situations, they may not coincide, being either more or less stringent. More stringent sampling (for example, smaller AQL values) is usually used for measurement of characteristics that are considered important. The selection of sampling plans is independent of whether the term *defect* or *nonconformity* is appropriate.

3.1.9 minor property, *n*—a characteristic which, if not met, is not likely to materially reduce the performance of a material or product for the intended use.

3.1.9.1 Discussion—In some situations, specification requirements coincide with customer usage requirements. In other situations, they may not coincide, being either more or less stringent. More stringent sampling (for example, smaller AQL values) is usually used for measurement of characteristics that are considered important. The selection of sampling plans is independent of whether the term *defect* or *nonconformity* is appropriate.

3.1.10 nonconforming unit, *n*—a unit of product containing at least one nonconformity.

3.1.11 nonconformities per hundred units, *n*—a calculated ratio of nonconforming units to the number of units inspected, the quotient being multiplied by 100 (See 3.1.13.)

3.1.12 nonconformity, *n*—a departure of a quality characteristic from its intended level or state that occurs with a severity sufficient to cause a test result not to meet a specification requirement.

3.1.13 percent nonconforming, *n*—a calculated ratio of nonconforming units to the number of units inspected, the quotient being multiplied by 100.

3.1.14 rejection number, *n*—the minimum number of nonconformities for a given AQL and sample size (lot-sample size) which will subject a lot to rejection.

3.1.15 sample, *n*—one or more units of product taken from a lot without regard to the quality of the unit. (Also often termed lot sample).

3.1.16 sample size, *n*—the number of units of product taken to make up the sample.

3.1.16.1 Discussion—This standard uses only lot sample sizes and not lot sizes since the discriminatory power of any sampling plan is independent essentially of the size of the lot. The sample size selected by the user for a given acceptable quality level (AQL) is optional depending upon the degree of protection desired by the user against the acceptance of nonconforming lots.

3.1.17 test measurement, *n*—a quantitative expression of one value determined for a property of interest by a single application of a specified test procedure.

3.1.18 test result, *n*—the value that expresses the level of a property of the test unit.

3.1.18.1 Discussion—A test result is sometimes a single test measurement but usually a test result is computed from several test measurements.

3.1.19 test specimen, *n*—a portion of a test unit upon which one or more test measurements are made.

3.1.20 test unit, *n*—a fraction of a unit of product from which one or more test specimens are taken for each property.

3.1.20.1 Discussion—If the unit of product is of insufficient size to meet the requirements of a testing method: (1) sample adjacent units of product and aggregate units of product for the test unit or, (2) obtain a test unit of sufficient size, and representative of the unit of product, from the producer.

3.1.21 unit of product, *n*—an entity of electrical insulating material or product for inspection to determine its classification as conforming or non-conforming.

3.1.21.1 Discussion—A unit of product is established by the user and may or may not be the same as a unit of purchase, supply, production, or shipment. Some examples of a unit of product are:

Bag	Case	Reel
Barrel	Container	Roll
Bin	Cop	Sheet
Bobbin	Drum	Skid
Box	Length	Spool
Bundle	Pad	Tank
Car	Pail	Tank compartment
Carton	Pallet	Truckload

4. Summary of Practice

4.1 Instructions are given for obtaining a sample from which specimens are then taken for testing. The test data are compared to the material specification and a judgement is then made as to whether the material meets the requirements of said material specification.

4.2 This practice has been modeled after MIL-STD-105E.

4.3 In those cases where MIL-STD-105E is determined to be unacceptable for a specific application or purpose and a form of C=0 sampling is required instead, it is permissible to alternatively apply ANSI/ASQ Z1.4, MIL-STD-1916, or a similar sampling plan.

5. Procedure

5.1 General Considerations:

5.1.1 Assemble the lot of electrical insulating material so that a lot sample is obtained in a manner that will minimize bias in the selection of the units of product that will be inspected. A scheme that offers a good chance of minimizing bias is the assignment of numbers to each unit of product and then using a table of random numbers to select those units of product from which test units are taken.

5.1.2 For a lot of electrical insulating material that is in bulk form (for example, a tank car of powdered resin) take the lot sample from the unit of product in accordance with Practice E300.

5.1.3 Take the material to be removed from any unit of product in a random manner. When it is impracticable to meet this requirement (for example, in the case of long lengths of material wound onto rolls or large, thick, heavy sheets packed on pallets or skids), economy will dictate the removal of material from the end of a roll, or the top of a pile, etc. in which cases the selection cannot be described as “random.”

5.1.4 Take the necessary amount of material from the test unit so as to meet the specimen requirements of the various test methods that will be used to evaluate the material.

5.1.5 Refer to the material specification for the allowable maximum elapsed time between the assembly of the lot for inspection and the disposition of the lot. If the material specification (or other pertinent document) does not cover this matter, the maximum allowable time is 30 calendar days.

5.1.6 Exercise care to protect the electrical insulating material contained in the test unit from which specimens are to be prepared. An example of this protection is packaging in metal foil or glass containers so as to prevent or minimize contamination of the material from the effects of the environment to which such material is subjected between sampling and testing.

5.1.7 Test units assembled as described above shall be deemed to be representative of the lot of material being inspected. Disposition of the lot, or portions thereof will be based upon the data generated from these test units unless otherwise agreed upon between the user and the producer.

5.2 Establishing Acceptable Quality Levels:

5.2.1 Acceptable quality levels (AQL's) for each critical, major, and minor property shall be as mutually agreed upon by the producer and the user. It is also acceptable to establish group AQL's for given groups of properties. Disclose these AQL's in a purchase order, material specification, or in some other document. This standard is not intended to impose limits upon the risks acceptable to either the user or the producer.

5.2.2 When a user designates some specific value of AQL for a single nonconformity, it indicates that the user's acceptance sampling plan will accept the great majority of the lots submitted by the producer if the process average level of percent nonconforming in the lots is no greater than the

designated value of AQL. The preceding statement is also true for a group AQL value designated for a group of nonconformities.

5.2.2.1 The sampling plans of this standard are so arranged that the probability of acceptance, at the designated AQL value, depends upon the sample size. For a given AQL, the probability of acceptance will be generally higher for large sample sizes than for small sample sizes. The AQL alone does not describe the user protection for individual lots, but more directly relates to what a user might expect from a series of lots. Refer to the operating characteristic curve to determine what protection the user will have for a specific AQL.

5.2.3 The designation of an AQL shall not imply that a producer has the right to knowingly supply any nonconforming unit of product.

5.2.4 The values of AQL listed in the accompanying tables (see Section [Appendix X1](#)) are known as preferred AQL's. If any AQL is designated other than a preferred AQL, these tables are not applicable.

5.3 Sampling Plan Selection:

5.3.1 Use the designated AQL and the sample size code letter from [Table 1](#) to select a sampling plan from [Tables 2-22](#). When no sampling plan is available for a given combination of AQL and code letter, the table directs the user to a different code letter. Use the sample size given by the new code letter, not the original code letter.

5.3.1.1 It is possible this procedure will lead to different sample sizes for different classes of nonconformities. In such cases the user of the electrical insulating material shall designate and authorize, for all classes of nonconformities, the selection and use of the code letter corresponding to the largest sample size derived.

5.3.1.2 As an alternative to a single sampling plan with an acceptance number of 0, use the plan with an acceptance number of 1 with its correspondingly larger sample size for a designated AQL (where available) when designated and approved by the user.

5.3.2 *Types of Sampling Plans*—Three types of sampling plans: single, double, and multiple are given in [Table 2](#), [Table 3](#), and [Table 4](#), respectively. When several types of plans are available for a given AQL and code letter, use any one. 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. Usually the administrative difficulty for single sampling and the cost per unit of the sample are less than for double or multiple.

5.3.3 *Single Sampling Plans*—From any lot, inspect that number of units which equals the sample size given by the plan.

5.3.3.1 Consider any lot acceptable if the number of nonconformities found in the sample is equal to, or less than, the acceptance number.

TABLE 1 Sample Size Code Letters (See 5.4)

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	E	E	G	H
281	to	500	B	C	D	E	F	H	J
501	to	1200	C	C	E	F	G	J	K
1201	to	3200	C	D	E	G	H	K	L
3201	to	10 000	C	D	F	G	J	L	M
10 001	to	35 000	C	D	F	H	K	M	N
35 001	to	150 000	D	E	G	J	L	N	P
150 001	to	500 000	D	E	G	J	M	P	Q
500 001	and over		D	E	H	K	N	Q	R

5.3.3.2 Consider any lot rejectable if the number of nonconformities found in the sample is equal to, or greater than, the rejection number.

5.3.4 *Double Sampling Plans*—From any lot, inspect that number of units which equals the sample size given by the plan.

5.3.4.1 Consider any lot acceptable if the number of nonconformities found in the first sample is equal to, or less than, the first acceptance number.

5.3.4.2 Consider any lot rejectable if the number of nonconformities found in the first sample is equal to, or greater than, the first rejection number.

5.3.4.3 If the number of nonconformities in the first sample lies between the first acceptance and rejection numbers, inspect a second sample of the size given by the plan.

5.3.4.4 Accumulate the number of nonconformities found in the first and the second samples.

5.3.4.5 Consider any lot acceptable if the cumulative number of nonconformities found in the sample is equal to, or less than, the second acceptance number.

5.3.4.6 Consider any lot rejectable if the cumulative number of nonconformities found in the sample is equal to, or greater than, the second rejection number.

5.3.5 *Multiple Sampling Plans*—Use the procedure of 5.3.4 for multiple sampling plans but the number of successive samples required to reach a decision will be more than two.

5.3.6 *Special Procedure for Reduced Inspection*—Under reduced inspection, it is acceptable for the sampling procedure to terminate without either acceptance or rejection criteria having been met. In these circumstances, the lot will be considered acceptable, but normal inspection will be reinstated starting with the next lot which is submitted to the user.

5.4 Inspection Levels:

5.4.1 The inspection level determines the relationship between the lot size and the sample size. The inspection level to be used for any particular requirement will be prescribed by the user. Three inspection levels: I, II, and III, are given in Table 1 for general use. Unless otherwise specified, Inspection Level II shall be used. Use Inspection Level I when less discrimination

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

NOTE 1—In the designation of inspection levels S-1 to S-4, exercise care to avoid AQLs inconsistent with these inspection levels.

5.4.2 *Code Letters*—Sample sizes are designated by code letters. Use Table 1 to find the applicable code letter for the particular lot size and the prescribed inspection level.

5.4.3 *Initiation of Inspection*—Use normal inspection at the start of inspection unless otherwise directed by the user.

5.4.4 *Continuation of Inspection*—Continue normal, tightened, or reduced inspection unchanged for each class of nonconformities on successive lots except where the switching procedures described in 5.4.5 to 5.4.5.4 require change.

5.4.5 *Switching Procedures*—Apply switching procedures in 5.4.5.1 to 5.4.5.4 independently to each class of nonconformity.

5.4.5.1 *Normal to Tightened*—When normal inspection is in effect, institute tightened inspection when two out of five consecutive lots have been rejected after original inspection. Do not count among the five any lots that were resubmitted for inspection (see also 6.4).

5.4.5.2 *Tightened to Normal*—When tightened inspection is in effect, institute normal inspection after five consecutive lots have been considered acceptable after original inspection.

5.4.5.3 *Normal to Reduced*—When normal inspection is in effect, institute reduced inspection only if conformance with each of the four following criteria exists: (1) The preceding 10 lots (or more, as indicated by the note to Table 5) have been on normal inspection and none have been rejected after original inspection. (2) The total number of nonconformities in the samples from the preceding ten lots (or such other number as indicated by 1 > above) is equal to, or less than, the applicable number given in Table 5. If double or multiple sampling is in use, include all samples inspected, not “first” samples only. (3) Production is at a steady rate. (4) Reduced inspection is considered desirable by the user.

TABLE 2 A Single Sampling Plans For Normal Inspection (Master Table) (See 5.3.1 and 5.3.2)

Sample size code letter		Sample size	Acceptable Quality Levels (normal inspection)																										Ac	Re	Acceptance number	Rejection number																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
			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																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
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Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re

 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.

TABLE 2 B Single Sampling Plans for Tightened Inspection (Master Table) (See 8.4 and 8.5) (continued)

Sample size code letter	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
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	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	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	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re	Ac Re
D	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
E	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
F	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
G	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
H	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
J	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
K	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
L	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
M	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
N	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
P	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
Q	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
R	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
S	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

 = 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.

TABLE 2 C Single Sampling Plans for Reduced Inspection (Master Table) (See 5.3.1 and 5.3.2) (continued)

[illegible]

TABLE 3 A Double Sampling Plans for Normal Inspection (Master Table) (See 8.4 and 8.5)

[illegible]

➡ = 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

Rejection number

* Use corresponding single sampling plan (or alternatively, use double sampling plan below, where available).

TABLE 3 B Double Sampling Plans for Tightened Inspection (Master Table) (See 8.4 and 8.5) (continued)

[illegible]

➡ 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

Rejection number

- Use corresponding single sampling plan (or, alternatively, use double sampling plan below, where available).

5.4.5.4 Reduced to Normal—When reduced inspection is in effect institute normal if any one of the following occur after original inspection: (1) Any lot is rejected. (2) Any lot is considered acceptable under the procedures of 5.3.6. (3)

Production becomes irregular or delayed. (4) Other conditions warrant institution of normal inspection.

5.4.6 *Discontinuation of Inspection*—In the event that ten consecutive lots (or other number as designated by the user)

TABLE 3 C Double Sampling Plans for Reduced Inspection (Master Table) (continued)

	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, 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).

remain on tightened inspection, discontinue the inspection and

TABLE 4 A Multiple Sampling Plans for Normal Inspection (Master Table) (See 8.4 and 8.5)

Acceptable Quality Levels (normal inspection)																														
Sample size code letter	Sample size	Con- sum- er sample size																												
			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	First	2	→																											
	Second	2																												
	Third	2																												
B	First	2	→																											
	Second	2																												
	Third	2																												
C	First	2	→																											
	Second	2																												
	Third	2																												
D	First	2	→																											
	Second	2																												
	Third	2																												
E	First	2	→																											
	Second	2																												
	Third	2																												
F	First	2	→																											
	Second	2																												
	Third	2																												
G	First	2	→																											
	Second	2																												
	Third	2																												
H	First	2	→																											
	Second	2																												
	Third	2																												
I	First	2	→																											
	Second	2																												
	Third	2																												

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.

acceptance of material under the provisions of this standard pending action by the producer to improve the quality of submitted material.

6. Judging Lot Quality

6.1 Determine the acceptance (or rejection) of a lot by comparing the requirements set forth in the material specifica-

tion compared to the test results and other information obtained by the use of a sampling plan (or plans) associated with the designated AQL (or AQL's).

6.2 The user reserves the right to reject any unit of product found to be nonconforming during inspection. That rejected unit of product need not be one of the units of product

TABLE 4 A Multiple Sampling Plans for Normal Inspection (Master Table) (Continued) (See 8.4 and 8.5) (continued)

Acceptable Quality Levels (normal inspection)

Sample size code letter	Sample size	Cumulative sample size	Acceptable Quality Levels (normal 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	
K	First	32	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Second	64	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Third	96	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Fourth	128	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Fifth	160	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Sixth	192	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Seventh	224	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
L	First	50	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Second	100	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Third	150	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Fourth	200	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Fifth	250	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Sixth	300	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Seventh	350	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
M	First	80	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Second	160	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Third	240	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Fourth	320	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Fifth	400	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Sixth	480	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Seventh	560	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
N	First	125	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Second	250	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Third	375	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Fourth	500	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Fifth	625	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Sixth	750	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Seventh	875	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
P	First	200	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Second	400	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Third	600	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Fourth	800	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Fifth	1000	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Sixth	1200	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Seventh	1400	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
Q	First	315	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Second	630	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Third	945	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Fourth	1260	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Fifth	1575	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Sixth	1890	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Seventh	2205	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
R	First	500	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Second	1000	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Third	1500	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Fourth	2000	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
S	First	3000	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Second	4000	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Third	5000	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Fourth	6000	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→

→ 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).
→ Acceptance number.
→ Rejection number.
→ Use corresponding single sampling plan for alternatively, use multiple plan below, where available.
→ Acceptance not permitted at this sample size.

comprising the lot sample. The user reserves the right to reject that unit regardless of the disposition of the lot as a whole. It is also acceptable for such rejected units of product to be repaired or corrected and resubmitted for inspection with the approval of, and in the manner specified by, the user.

6.3 For cases of evaluating material or product for critical properties or characteristics, the user is allowed at his discre-

tion to inspect every unit of product for critical properties or characteristics. When a nonconformity is found for any critical property or characteristic, the user shall be permitted to reject the entire lot.

6.4 If a lot has been found unacceptable, it shall not be permitted to be submitted for re-inspection unless all units of product in the lot have been examined and tested and all

TABLE 4 B Multiple Sampling Plans for Tightened Inspection (Master Table) (See 8.4 and 8.5) (continued)

[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.
Use first sampling plan below arrow.
Acceptance number
Injection number
Use corresponding single sampling plan (for alternatively, use multiple sampling plan below, where available).
Use corresponding double sampling plan (for alternatively, use multiple sampling plan below, where available).
Acceptance not permitted at this sample size.

nonconforming units of product have been either removed therefrom or the nonconformities have been corrected. Only the user determines whether: (1) normal or tightened inspection is applied during this reinspection, and whether (2) all, or particular, types and classes of nonconformities are included in the reinspection.

7. Disposition of the Lot

7.1 If the lot-sample fails to meet the requirements for acceptability as set forth in the material specification, the entire lot shall be subject to rejection and the user shall notify the producer immediately.

TABLE 4 B Multiple Sampling Plans for Tightened Inspection (Master Table) (Continued) (See 8.4 and 8.5) (continued)

Sample size code letter	Sample size	Com- plete sample size	Acceptable Quality Levels (tightened inspection)																Ac	Re
			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		
			Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re		
A	First	32	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Second	32	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Third	32	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Fourth	32	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Fifth	32	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Sixth	32	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Seventh	32	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
L	First	50	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Second	50	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Third	50	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Fourth	50	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Fifth	50	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Sixth	50	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Seventh	50	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
M	First	80	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Second	80	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Third	80	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Fourth	80	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Fifth	80	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Sixth	80	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Seventh	80	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
N	First	125	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Second	125	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Third	125	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Fourth	125	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Fifth	125	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Sixth	125	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Seventh	125	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
P	First	200	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Second	200	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Third	200	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Fourth	200	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Fifth	200	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Sixth	200	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Seventh	200	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Q	First	315	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Second	315	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Third	315	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Fourth	315	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Fifth	315	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Sixth	315	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Seventh	315	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
R	First	500	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Second	500	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Third	500	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Fourth	500	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Fifth	500	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Sixth	500	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Seventh	500	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S	First	800	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Second	800	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Third	800	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Fourth	800	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Fifth	800	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Sixth	800	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Seventh	800	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Use first sampling plan below arrow. If sample size equals or exceeds lot or batch size, do 100 percent inspection.
 Use first sampling plan arrow refers to preceding page, when necessary.
 Ac = Acceptance number
 Re = Rejection number
 * = Use corresponding single sampling plan (or alternatively, use multiple sampling plan below, where available).
 * = Acceptance not permitted at this sample size.



TABLE 4 C Multiple Sampling Plans for Reduced Inspection (Master Table) (See 8.4 and 8.5) (continued)

Sample size code letter	Sample size	Cumulative 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 Second Third Fourth Fifth Sixth Seventh	2 2 4 6 8 10 12 14	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
G	First Second Third Fourth Fifth Sixth Seventh	3 3 6 9 12 15 18 21	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
H	First Second Third Fourth Fifth Sixth Seventh	5 5 10 15 20 25 30 35	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
I	First Second Third Fourth Fifth Sixth Seventh	8 8 16 24 32 40 48 56	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
J	First Second Third Fourth Fifth Sixth Seventh	13 13 26 39 52 65 78 91	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→

- 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 reassess normal inspection (see 10.1.4).

TABLE 4 C Multiple Sampling Plans for Reduced Inspection (Master Table) (Continued) (See 8.4 and 8.5) (continued)

Sample size code letter	Sample size	Con- tinued sample size	Acceptable Quality Levels (reduced inspection) ¹																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	100	
			Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	
L	First	20	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Second	40	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Third	60	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Fourth	80	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Fifth	100	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Sixth	120	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Seventh	140	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
M	First	32	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Second	64	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Third	96	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Fourth	128	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Fifth	160	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Sixth	192	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Seventh	224	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
N	First	50	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Second	100	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Third	150	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Fourth	200	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Fifth	250	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Sixth	300	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Seventh	350	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
P	First	80	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Second	160	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Third	240	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Fourth	320	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Fifth	400	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Sixth	480	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Seventh	560	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
Q	First	125	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Second	250	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Third	375	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Fourth	500	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Fifth	625	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Sixth	750	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Seventh	875	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
R	First	200	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Second	400	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Third	600	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Fourth	800	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Fifth	1000	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Sixth	1200	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
	Seventh	1400	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→

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
 If = 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).

TABLE 5 Limit Numbers for Reduced Inspection

NOTE 1—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.

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	65
20–29	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0	0	2	4	8
30–49	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0	0	1	3	7	13
50–79	.	.	.	.	.	.	.	.	.	.	.	.	.	0	0	2	3	7	14	25
80–129	.	.	.	.	.	.	.	.	.	.	.	0	0	2	4	7	14	24	42	68
130–199	.	.	.	.	.	.	.	.	.	.	0	0	2	4	7	13	25	42	72	115
200–319	.	.	.	.	.	.	.	.	.	0	0	2	4	8	14	22	40	68	115	181
320–499	.	.	.	.	.	.	.	.	.	0	0	1	4	8	14	24	39	68	113	189
500–799	.	.	.	.	.	.	.	.	0	0	2	3	7	14	25	40	63	110	181	
800–1249	.	.	.	.	.	.	.	0	0	2	4	7	14	24	42	68	105	181		
1250–1999	.	.	.	.	.	0	0	2	1	7	13	26	40	69	110	169				
2000–3149	.	.	.	.	0	0	2	4	8	14	22	40	68	115	181					
3150–4999	.	.	.	0	0	1	4	8	14	24	38	67	111	186						
5000–7999	.	.	0	0	2	3	7	14	25	40	63	110	181							
8000–12499	.	0	0	2	4	7	13	24	40	69	110	169								
12500–19999	0	0	2	4	8	14	22	40	68	115	181									
20000–31499	0	1	4	8	14	24	38	67	111	186										
31500–49999	2	3	7	14	25	40	63	110	181	301										
50000 & Over																				

7.2 The user shall have the prerogative to waive requirements with respect to the sampling plans, conducting of tests, applicable property specified limits, resampling and lot rejection.

8. Sampling Tables

8.1 These sampling tables have been adapted from MIL-STD-105E. The following discussion and references are provided to supplement the user's knowledge of this standard.

8.2 To choose a sampling plan one must know the lot size, the inspection level, the AQL, and the type of sampling to be used which is either single, double, or multiple sampling.

8.2.1 Lot size is the total number of units of product in a lot.

8.2.2 To define the inspection level, see 5.4.1.

8.2.3 The AQL is found in the material specification, purchase order, or other pertinent document. See also 5.2.2.

8.2.4 Types of sampling are discussed in 5.3.2.

8.3 Given the lot size and inspection level (generally Level II unless noted otherwise) a sample size code letter can be found in Table 1.

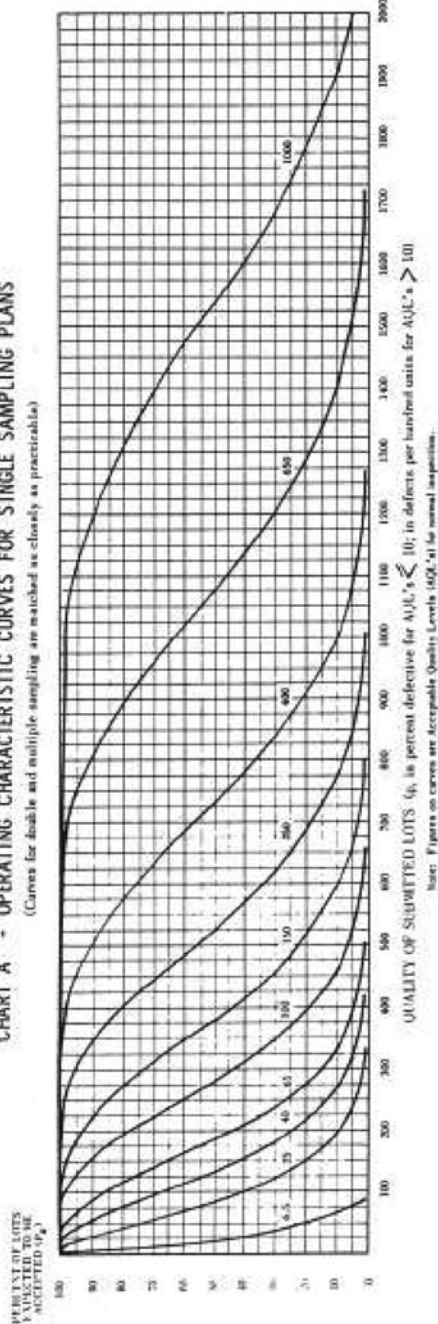
8.4 The AQL and the sample size code letter is then used to obtain the sampling plan from Table 2, Table 3, and Table 4, which are for single, double or multiple plans, respectively. Generally, a single sampling plan would be used. The sub-Tables 2, 3, and 4 denote the severity of inspection depending upon the quality of previously submitted lots. The levels of severity are noted as normal, tightened and reduced and are listed in Tables sub B, C and D, respectively. The initial sampling plan is generally obtained from the A (normal inspection) Tables. Paragraph 5.4.5 contains rules for switching inspection procedures. It is acceptable to reduce the inspection

TABLE 6 Sample Size Code Letter A

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)



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 _h	Acceptable Quality Levels (normal inspection)											
	p (in defects per hundred units)											
	6.5	10	15	20	25	30	40	50	65	80	100	125
99.0	0.501	0.51	7.45	21.6	41.2	69.2	100	143	179	239	305	374
95.0	2.53	2.56	17.8	40.9	68.3	100	143	199	235	308	385	462
90.0	5.13	5.25	26.6	55.1	87.3	138	203	272	351	432	515	604
75.0	13.4	14.4	48.1	86.8	127	211	298	392	431	521	612	704
50.0	29.3	34.7	83.9	134	184	284	303	433	533	653	753	853
25.0	50.0	69.3	135	196	256	371	404	540	651	761	870	987
10.0	68.4	115	195	266	334	464	509	650	770	889	1006	1126
5.0	77.6	150	237	315	380	526	637	722	848	972	1094	1212
1.0	90.0	200	332	420	502	655	800	870	1007	1141	1272	1400
	X	X	40	65	100	150	X	250	X	400	X	650
	Acceptable Quality Levels (tightened inspection)											

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

level when the quality of submitted lots is consistently good, and to tighten it when lots are of poor quality.

8.5 Tables 6-22 portray the sampling plans for each sample size code letter. In addition, each Table includes the respective Operating Characteristic Curves and tabulated values for each

AQL. These curves show the percent of lots likely to be accepted by each sampling plan depending upon the quality of submitted lots. This is also known as the probability of acceptance.



TABLE 6 Sample Size Code Letter A (continued)

Type of Sampling Plan	Cumulative Sample Size	Acceptable Quality Levels (normal inspection)																				Cumulative Sample Size													
		Less than 6.5	6.5		x	10		15	25	40		65		100		150		x	250		x		400	x	650		x	1000							
			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		∇							(.)			(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)		
Multiple		∇							.																										
		Less than 10		x		10	15	25	40	65		100	150	x	250	x	400	x	650	x	1000	x												x	
		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 D).

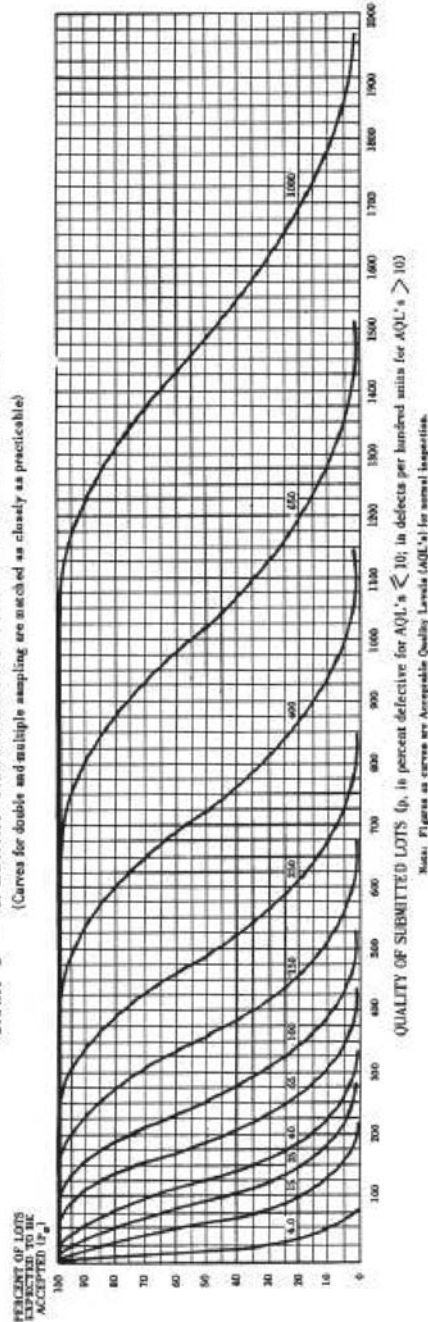
(.) = Use double sampling plan above (or alternatively use letter B).

TABLE 7 Sample Size Code Letter B

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

P _a	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	1500	2500	4000	6500
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	890	1000	1241	1356	1773
1.0	78.4	154	221	280	335	437	513	560	672	761	848	1019	1145	1392	1513	2069
0.5	84.5	165	235	295	350	455	533	580	694	783	870	1041	1167	1414	1535	2091

Acceptable Quality Levels (tightened inspection)

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

8.6 Note that all tabular AQL values less than or equal to 10 are expressed in percent nonconforming whereas AQL values greater than 10 are expressed as nonconformities per hundred units.

8.7 A list of references (1 to 15)⁵ appears at the end of this standard. It is intended to provide the reader with more specific

⁵ The boldface numbers in parentheses refer to a list of references appended to this practice.



TABLE 7 Sample Size Code Letter B (continued) (continued)

Type of Sampling Plan	Cumulative Sample Size	Acceptable Quality Levels (normal inspection)																								Cumulative Sample Size															
		Less than 4.0	4.0	6.5	x	10	15	25	40	65	100	x	150	x	250	x	400	x	650	x	1000																				
		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	8	9	10	11	12	13	14	15	18	19	21	22	27	28	30	31	41	42	44	45	3
				Use																																					
Double	2 4	∇				Letter					0	2	0	3	1	4	2	5	3	7	3	7	5	9	6	10	7	11	9	14	11	16	15	20	17	22	23	29	25	31	2 4
						Letter					1	2	3	4	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	
Multiple		∇																																							
		Less than 6.5		6.5		x		10		15		40		65		100		x		150		x		250		x		400		x		650		x		1000		x			
		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 B).



TABLE 8 Sample Size Code Letter C

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)

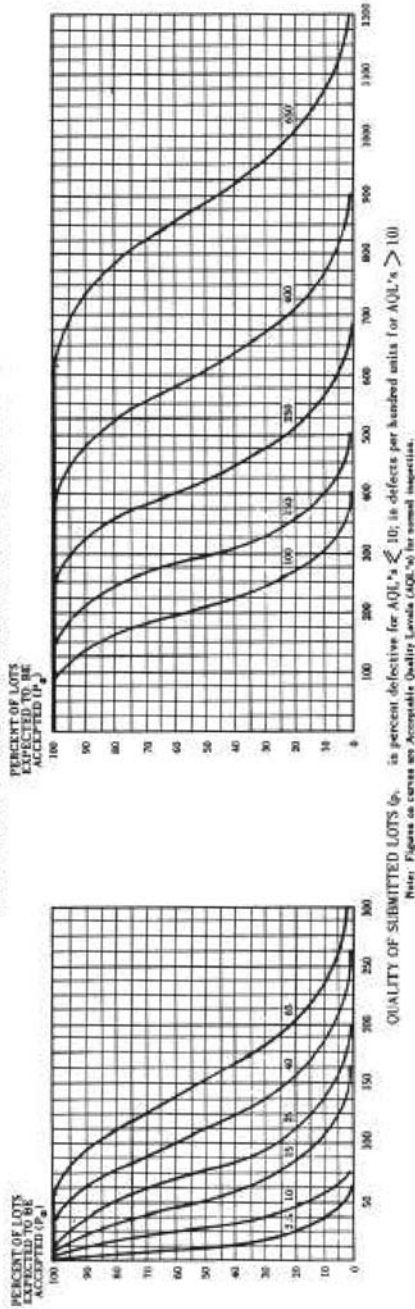


TABLE X-C-1 - TABULATED VALUES FOR OPERATING CHARACTERISTIC CURVES FOR SINGLE SAMPLING PLANS

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)																	
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	568	618
95.0	1.02	7.63	1.03	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	33.6	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	135	168	201	262	320	348	403	456	509	612	687	835	908	1171	1241
0.0	60.2	77.8	92.1	135	168	201	262	320	348	403	456	509	612	687	835	908	1171	1241
0.0	60.2	77.8	92.1	135	168	201	262	320	348	403	456	509	612	687	835	908	1171	1241
0.0	60.2	77.8	92.1	135	168	201	262	320	348	403	456	509	612	687	835	908	1171	1241
0.0	60.2	77.8	92.1	135	168	201	262	320	348	403	456	509	612	687	835	908	1171	1241
0.0	60.2	77.8	92.1	135	168	201	262	320	348	403	456	509	612	687	835	908	1171	1241
0.0	60.2	77.8	92.1	135	168	201	262	320	348	403	456	509	612	687	835	908	1171	1241
0.0	60.2	77.8	92.1	135	168	201	262	320	348	403	456	509	612	687	835	908	1171	1241
0.0	60.2	77.8	92.1	135	168	201	262	320	348	403	456	509	612	687	835	908	1171	1241
0.0	60.2	77.8	92.1	135	168	201	262	320	348	403	456	509	612	687	835	908	1171	1241
0.0	60.2	77.8	92.1	135	168	201	262	320	348	403	456	509	612	687	835	908	1171	1241
0.0	60.2	77.8	92.1	135	168	201	262	320	348	403	456	509	612	687	835	908	1171	1241
0.0	60.2	77.8	92.1	135	168	201	262	320	348	403	456	509	612	687	835	908	1171	1241
0.0	60.2	77.8	92.1	135	168	201	262	320	348	403	456	509	612	687	835	908	1171	1241
0.0	60.2	77.8	92.1	135	168	201	262	320	348	403	456	509	612	687	835	908	1171	1241
0.0	60.2	77.8	92.1	135	168	201	262	320	348	403	456	509	612	687	835	908	1171	1241
0.0	60.2	77.8	92.1	135	168	201	262	320	348	403	456	509	612	687	835	908	1171	1241
0.0	60.2	77.8	92.1	135	168	201	262	320	348	403	456	509	612	687	835	908	1171	1241
0.0	60.2	77.8	92.1	135	168	201	262	320	348	403	456	509	612	687	835	908	1171	1241
0.0	60.2	77.8	92.1	135	168	201	262	320	348	403	456	509	612	687	835	908	1171	1241
0.0	60.2	77.8	92.1	135	168	201	262	320	348	403	456	509	612	687	835	908	1171	1241
0.0	60.2	77.8	92.1	135	168	201	262	320	348	403	456	509	612	687	835	908	1171	1241
0.0	60.2	77.8	92.1	135	168	201	262	320	348	403	456	509	612	687	835	908	1171	1241
0.0	60.2	77.8	92.1	135	168	201	262	320	348	403	456	509	612	687	835	908	1171	1241
0.0	60.2	77.8	92.1	135	168	201	262	320	348	403	456	509	612	687	835	908	1171	1241
0.0	60.2	77.8	92.1	135	168	201	262	320	348	403	456	509	612	687	835	908	1171	1241
0.0	60.2	77.8	92.1	135	168	201	262	320	348	403	456	509	612	687	835	908	1171	1241
0.0	60.2	77.8	92.1	135	168	201	262	320	348	403	456	509	612	687	835	908	1171	1241
0.0	60.2	77.8	92.1	135	168	201	262	320	348	403	456	509	612	687	835	908	1171	1241
0.0	60.2	77.8	92.1	135	168	201	262	320	348	403	456	509	612	687	835	908	1171	1241
0.0	60.2	77.8	92.1	135	168	201	262	320	348	403	456	509	612	687	835	908	1171	1241
0.0	60.2	77.8	92.1	135	168	201	262	320	348	403	456	509	612	687	835	908	1171	1241
0.0	60.2	77.8	92.1	135	168	201	262	320	348	403	456	509	612	687	835	908	1171	1241
0.0	60.2	77.8	92.1	135	168	201	262	320	348	403	456	509	612	687	835	908	1171	1241
0.0	60.2	77.8	92.1	135	168	201	262	320	348	403	456	509	612	687	835	908	1171	1241
0.0	60.2	77.8	92.1	135	168	201	262	320	348	403	456	509	612	687	835	908	1171	1241
0.0	60.2	77.8	92.1	135	168	201	262	320	348	403	456	509	612	687	835	908	1171	1241
0.0	60.2	77.8	92.1	135	168	201	262	320	348	403	456	509	612	687	835	908	1171	1241
0.0	60.2	77.8	92.1	135	168	201	262	320	348	403	456	509	612	687	835	908	1171	1241
0.0	60.2	77.8	92.1	135	168	201	262	320	348	403	456	509	612	687	835	908	1171	1241
0.0	60.2	77.8	92.1	135	168	201	262	320	348	403	456	509	612	687	835	908	1171	1241
0.0	60.2	77.8	92.1	135	168	20												



TABLE 8 Sample Size Code Letter C (continued) (continued)

Type of Sampling Plan	Cumulative Sample Size	Acceptable Quality Levels (normal inspection)																		Cumulative Sample Size			
		Less than 2.5	2.5	4.0	x	6.5	x	100	x	150	x	250	x	400	x	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	5	∇	0 1	Use	Use	Use	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	41 42	44 45	Use	5
Double	3 6	∇	.	Letter	Letter	Letter	0 2 1 2	3 4 3 4	4 5 4 5	5 6 6 7	7 8 8 9	11 12 11 12	5 9 12 13	6 10 15 16	7 11 18 19	9 14 23 24	11 16 26 27	15 20 34 35	17 22 37 38	23 29 52 53	25 31 56 57	Letter	3 6
Multiple		∇	.				#	#	#	#	#	#	#	#	#	#	#	#	#	#	#		
		Less than 4.0	6.5	x	10	15	25	40	65	100	x	150	x	250	x	400	x	650	x	1000		x	
		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 F).

≠ = Use double sampling plan above (or alternatively use letter D).

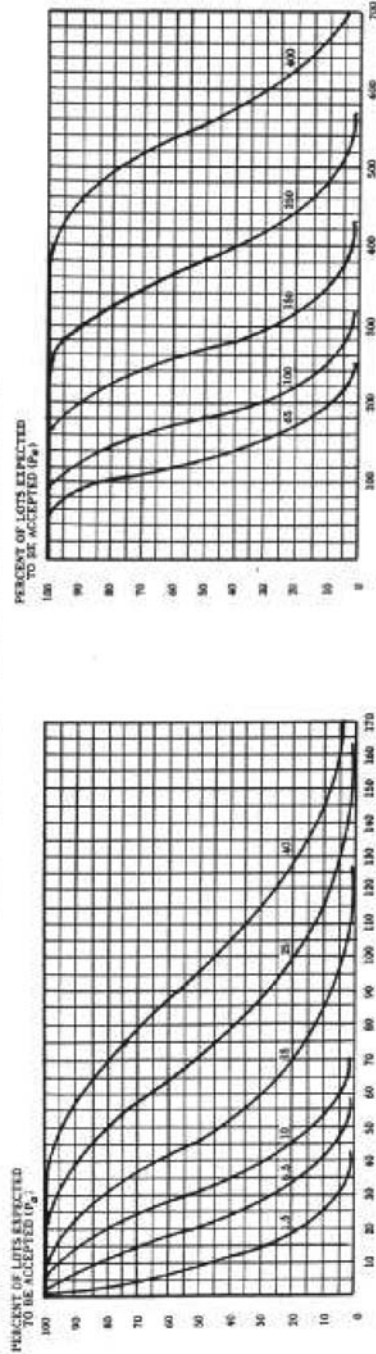


TABLE 9 Sample Size Code Letter D

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

CHART D - OPERATING CHARACTERISTIC CURVES FOR SINGLE SAMPLING PLANS

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

QUALITY OF SUBMITTED LOTS (p , in percent defective for AQL's < 10 ; in defects per hundred units for AQL's > 10)

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

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

P_a	Acceptable Quality Levels (normal inspection)											
	1.5	6.5	10	1.5	6.5	10	15	25	40	65	100	150
	p (in percent defective)											
99.0	0.13	2.00	6.00	0.13	1.96	5.45	10.3	22.3	36.3	43.8	59.6	76.2
	0.64	4.64	11.1	0.64	4.44	10.2	17.1	32.7	49.8	58.7	77.1	96.1
	1.31	6.88	14.7	1.31	6.65	13.8	21.8	39.4	58.2	67.9	87.8	108
	3.53	12.1	22.1	3.60	12.0	21.6	31.7	52.7	74.5	85.5	108	130
	8.30	20.1	32.1	8.66	21.0	33.4	45.9	70.9	95.9	108	133	158
	15.9	30.3	43.3	17.3	33.7	49.0	63.9	92.8	121	135	163	190
	25.0	40.6	53.9	28.8	48.6	66.5	83.5	116	147	162	193	222
	31.2	47.1	59.9	37.5	59.3	78.7	96.9	131	164	180	212	243
	43.8	58.8	70.7	57.6	83.0	105	126	164	200	218	252	285
	2.5	10	2.5	10	15	25	40	65	100	150	250	400
Acceptable Quality Levels (tightened inspection)												
99.0	0.13	2.00	6.00	0.13	1.96	5.45	10.3	22.3	36.3	43.8	59.6	76.2
	0.64	4.64	11.1	0.64	4.44	10.2	17.1	32.7	49.8	58.7	77.1	96.1
	1.31	6.88	14.7	1.31	6.65	13.8	21.8	39.4	58.2	67.9	87.8	108
	3.53	12.1	22.1	3.60	12.0	21.6	31.7	52.7	74.5	85.5	108	130
	8.30	20.1	32.1	8.66	21.0	33.4	45.9	70.9	95.9	108	133	158
	15.9	30.3	43.3	17.3	33.7	49.0	63.9	92.8	121	135	163	190
	25.0	40.6	53.9	28.8	48.6	66.5	83.5	116	147	162	193	222
	31.2	47.1	59.9	37.5	59.3	78.7	96.9	131	164	180	212	243
	43.8	58.8	70.7	57.6	83.0	105	126	164	200	218	252	285
	2.5	10	2.5	10	15	25	40	65	100	150	250	400

D

TABLE 9 Sample Size Code Letter D (continued) (continued)

[illegible]

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.
$\bar{A}c$	Acceptance number
$\bar{R}e$	Rejection number
.	Use single sampling plan above (or alternatively use letter G).
#	Acceptance not permitted at this sample size.

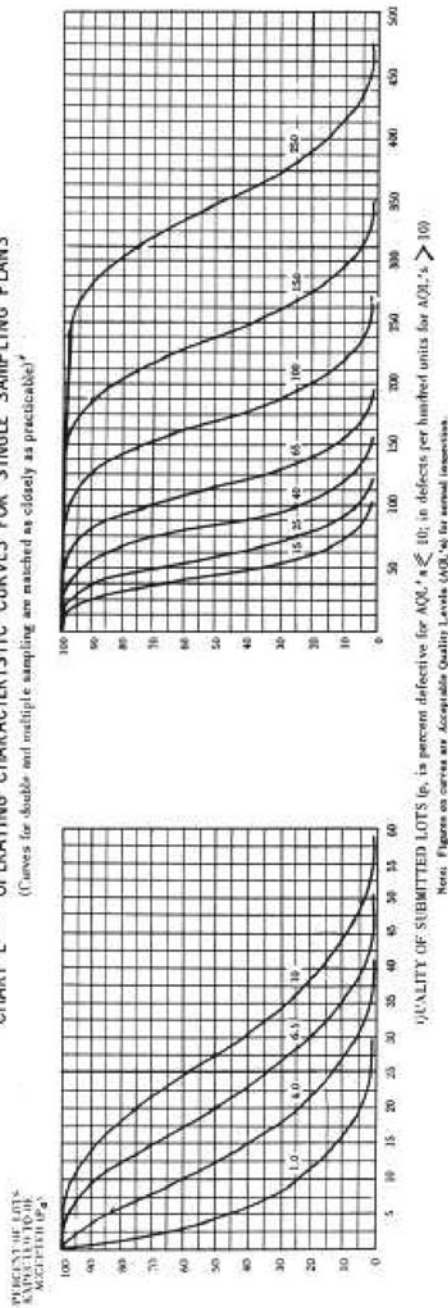


TABLE 10 Sample Size Code Letter E

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)*



QUALITY OF SUBMITTED LOTS p , is percent defective for AQL's ≤ 10 ; in defects per hundred units for AQL's > 10

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

TABLE X-E-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)										p (in defects per hundred units)					p (in defects per hundred units)									
	1.0	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	150000	250000	400000	650000	1000000	
99.0	0.077	1.19	3.63	7.00	13.7	22.4	27.0	36.7	46.9	57.5	79.6	96.7	132	150	219	238														
95.0	0.394	2.81	6.63	11.3	20.1	30.6	36.1	47.5	59.2	71.1	95.7	115	153	173	246	266														
90.0	0.807	4.16	8.80	14.2	24.2	35.8	41.8	54.0	66.5	79.2	105	125	165	185	261	282														
75.0	2.19	7.41	13.4	19.9	32.5	45.8	52.6	66.3	80.2	94.1	122	144	187	208	288	310														
50.0	5.19	12.6	20.6	27.5	43.6	59.0	66.7	82.1	97.5	113	144	168	213	236	321	344														
25.0	10.1	19.4	28.0	36.2	57.1	74.5	83.1	100	117	134	167	192	241	266	355	379														
10.0	16.2	26.8	36.0	44.4	71.3	90.5	100	119	137	155	190	217	269	295	388	414														
5.0	20.6	31.6	41.0	49.5	80.9	101	111	130	150	168	205	233	286	313	409	435														
1.0	29.8	41.5	50.6	58.7	101	123	134	155	176	196	235	264	321	349	450	477														
1.5	6.5	10	15	25	45	75	40	65	100	165	250	400	650	1000	1500	2500	4000	6500	10000	15000	25000	40000	65000	100000	150000	250000	400000	650000	1000000	1500000

Note: Binomial distribution used for percent defective computations. Plans are for defects per hundred units.

TABLE 10 Sample Size Code Letter E (continued) (continued)

[illegible]

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

$$Re = \text{Rejection number}$$

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

= Acceptance not permitted at this sample size.

TABLE 11 Sample Size Code Letter F

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

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

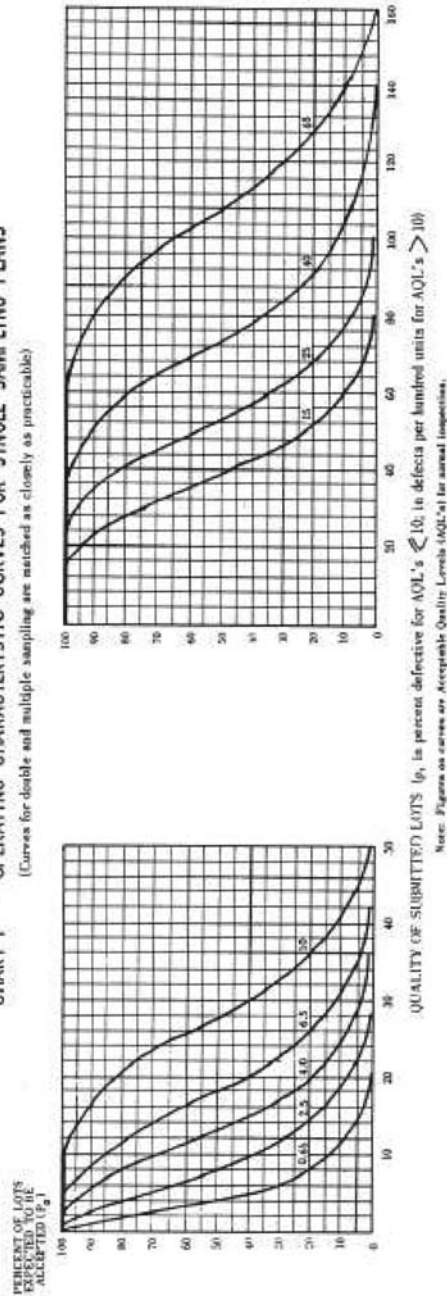


TABLE X-F-1 - TABULATED VALUES FOR OPERATING CHARACTERISTIC CURVES FOR SINGLE SAMPLING PLANS

P ₀	Acceptable Quality Levels (normal inspection)																
	p (in percent defective)					p (in defects per hundred units)											
	0.05	2.5	4.0	6.5	10	0.05	2.5	4.0	6.5	10	15	25	40	65			
99.0	0.050	0.75	2.25	4.31	9.75	0.051	0.75	2.18	4.12	8.92	14.5	17.5	23.9	30.5	37.4	51.7	62.9
95.0	0.256	1.80	4.22	7.13	14.0	0.257	1.78	4.09	6.83	13.1	19.9	23.5	30.8	38.5	46.2	62.2	74.5
90.0	0.525	2.69	5.64	9.03	16.6	0.527	2.66	5.51	8.73	15.8	23.3	27.2	35.1	43.2	51.5	68.4	81.2
75.0	1.43	4.81	8.70	12.8	21.6	1.44	4.81	8.68	12.7	21.1	29.8	34.2	43.1	52.1	61.2	79.5	93.4
50.0	3.41	8.25	13.1	18.1	27.9	3.47	8.39	13.4	18.4	28.4	38.3	43.3	53.3	63.3	73.3	93.3	108
25.0	6.70	12.9	18.7	24.2	34.8	6.93	13.5	19.6	25.5	37.1	48.4	54.0	65.1	76.1	87.0	109	125
10.0	10.9	18.1	24.5	30.4	41.5	11.5	19.5	26.6	33.4	46.4	58.9	65.0	77.0	88.9	101	124	141
5.0	13.9	21.6	28.3	34.4	45.6	15.0	23.7	31.5	38.8	52.6	65.7	72.2	84.8	97.2	109	133	151
1.0	20.6	28.9	35.6	42.0	53.4	23.0	33.2	42.0	50.2	65.5	80.0	87.0	101	114	127	153	172
	1.0	4.0	6.5	10		1.0	4.0	6.5	10	15		25		40		65	

Acceptable Quality Levels (tightened inspection)

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



TABLE 11 Sample Size Code Letter F (continued) (continued)

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		x		2.5		4.0		6.5		10		15		x		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			
Single	20	∇		0	1							1	2	2	3	3	4	5	6	7	8	8	9	10	11	12	13	14	15	18	19	21	22	Δ	20
Double	13 26	∇		.								0	2	0	3	1	4	2	5	3	7	3	7	5	9	6	10	7	11	9	14	11	16	Δ	13 26
												1	2	3	4	4	5	6	7	8	9	11	12	12	13	15	16	18	19	23	24	26	27		
Multiple	5 10 15 20 25 30 35																																		
		∇		.									#	2	#	3	#	4	0	4	0	4	0	5	0	6	1	7	1	8	2	9	Δ	5 10 15 20 25 30 35	
		Less than 1.0		1.0		x		1.5				4.0		6.5		10		15		x		25		x		40		x		65		x		Higher than 65	
		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 (or alternatively use letter J).

= Acceptance not permitted at this sample size.

TABLE 12 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)

PERCENT OF LOTS
EXPECTED TO BE
ACCEPTED (P_a)

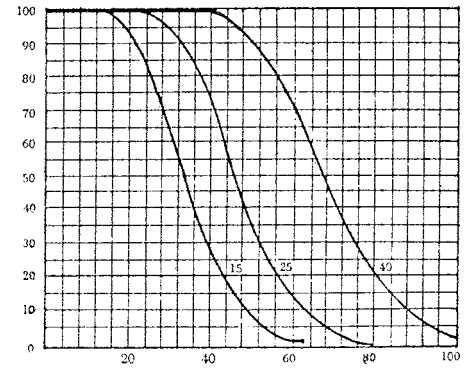
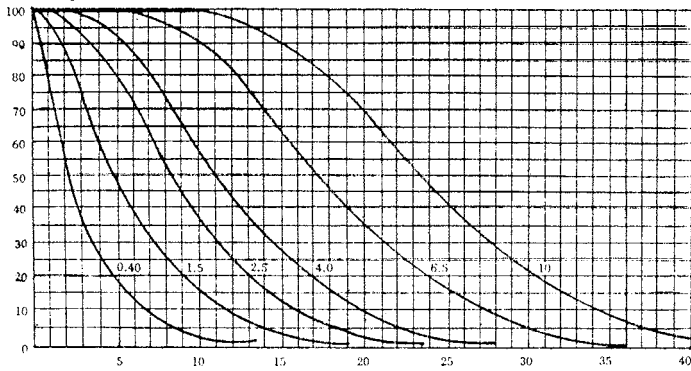




TABLE 12 Sample Size Code Letter G (continued) (continued)

Type of Sampling Plan	Cumulative Sample Size	Acceptable Quality Levels (normal inspection)																												Cumulative Sample Size						
		Less than 0.40		0.40		0.65		x		1.0		1.5		2.5		4.0		6.5		10		x		15		x		25			x		40		Higher than 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	Ac	Re		Ac	Re	Ac	Re		
Single	32	∇	0	1								1	2	2	3	3	4	5	6	7	8	8	9	10	11	12	13	14	15	18	19	21	22	Δ	32	
					Use																															
Double	20 40	∇	.									0	2	0	3	1	4	2	5	3	7	3	7	5	9	6	10	7	11	9	14	11	16	Δ	20 40	
					Use							1	2	3	4	4	5	6	7	8	9	11	12	12	13	15	16	18	19	23	24	26	27			
					Letter																															
					Letter																															
					F																															
					J																															
					H																															

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 (or alternatively use letter K).

= Acceptance not permitted at this sample size.

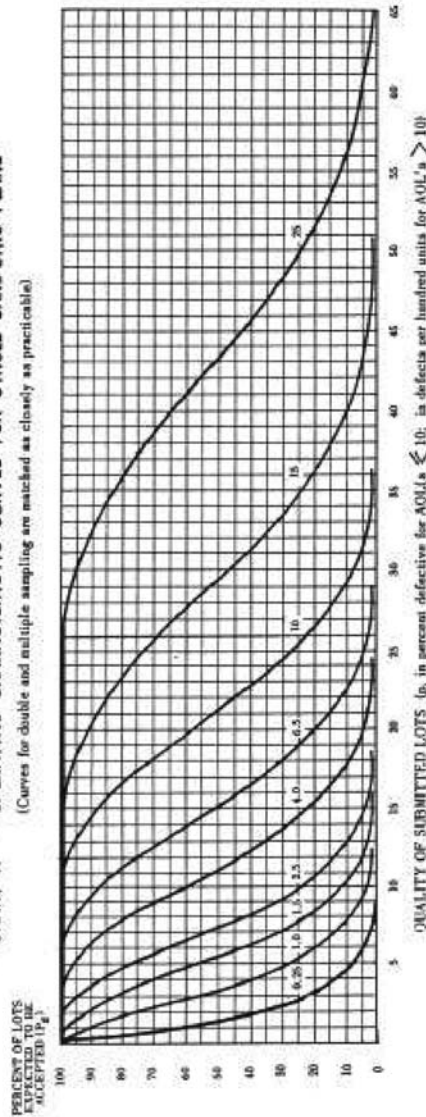


TABLE 13 Sample Size Code Letter H

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)															25				
	0.25	1.0	1.5	2.5	4.0	6.5	10	0.25	1.0	1.5	2.5	4.0	6.5	10	15		20			
	p (in percent defective)							p (in defects per hundred units)												
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	37.9	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	15	0.40	1.5	2.5	4.0	6.5		10	15	20	25	30	35

Acceptable Quality Levels (tightened inspection)

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



TABLE 13 Sample Size Code Letter H (continued) (continued)

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		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		
Single	50	∇		0	1							1	2	2	3	3	4	5	6	7	8	8	9	10	10	11	12	13	14	15	18	19	21	22	Δ	50
Double	32 64	∇		.								0	2	0	3	1	4	2	5	3	7	3	7	5	9	6	10	7	11	9	14	11	16	Δ	32 64	
												1	2	3	4	4	5	6	7	8	9	11	12	12	13	15	16	18	19	23	24	26	27			
Multiple	13 26 39 52 65 78 91	∇		.								#	2	#	2	#	3	#	4	0	4	0	4	0	5	0	6	1	7	1	8	2	9		13 26 39 52 65 78 91	
												#	2	0	3	0	3	1	5	1	6	2	7	3	8	3	9	4	10	6	12	7	14			
												0	2	0	3	1	4	2	6	3	8	4	9	6	10	7	12	8	13	11	17	13	19			
												0	3	1	4	2	5	3	7	5	10	6	11	8	13	10	15	12	17	16	22	19	25			
												1	3	2	4	3	6	5	8	7	11	9	12	11	15	14	17	17	20	22	25	25	29			
												1	3	3	5	4	6	7	9	10	12	12	14	14	17	18	20	21	23	27	29	31	33			
												2	3	4	5	6	7	9	10	13	14	14	15	18	19	21	22	25	26	32	33	37	38			
		Less than 0.40		0.40		x	0.65		1.0		1.5		2.5		4.0		6.5		x		10		x		15		25		x		x		Higher than 25			
		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 (or alternatively use letter L).

= Acceptance not permitted at this sample size.

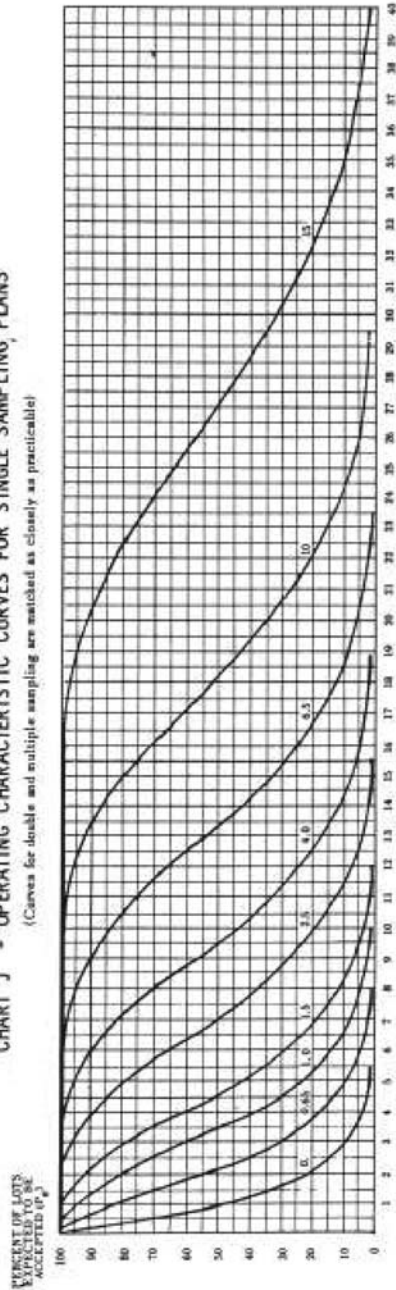


TABLE 14 Sample Size Code Letter J

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)



QUALITY OF SUBMITTED LOTS (p, in percent defective for AQL's ≤ 10; in defects per hundred units for AQL's > 10)

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

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	8.96	11.0	13.2	15.5	18.3	21.3	24.2	26.0
75.0	0.359	1.202	2.16	3.18	5.39	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	3.68	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

Acceptable Quality Levels (tightened inspection)

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



TABLE 14 Sample Size Code Letter J (continued) (continued)

Type of Sampling Plan	Cumulative Sample Size	Acceptable Quality Levels (normal inspection)																				Cumulative Sample Size											
		Less than 0.15		0.15		0.25		x		0.40		1.0		1.5		2.5		4.0		x			6.5		10		x		15		Higher than 15		
		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	80	∇		0	1																											Δ	80
Double	50 100	∇		.																												Δ	50 100
Multiple	20 40 60 80 100 120 140	∇		.																												Δ	20 40 60 80 100 120 140
		Less than 0.25	0.25	x	0.40	0.65	1.0	1.5	2.5	4.0	x	6.5	10	x	15	x	Higher than 15	Acceptable Quality Levels (tightened inspection)										Higher than 15					

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 (or alternatively use letter M).

= Acceptance not permitted at this sample size.



TABLE 15 Sample Size Code Letter K

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)

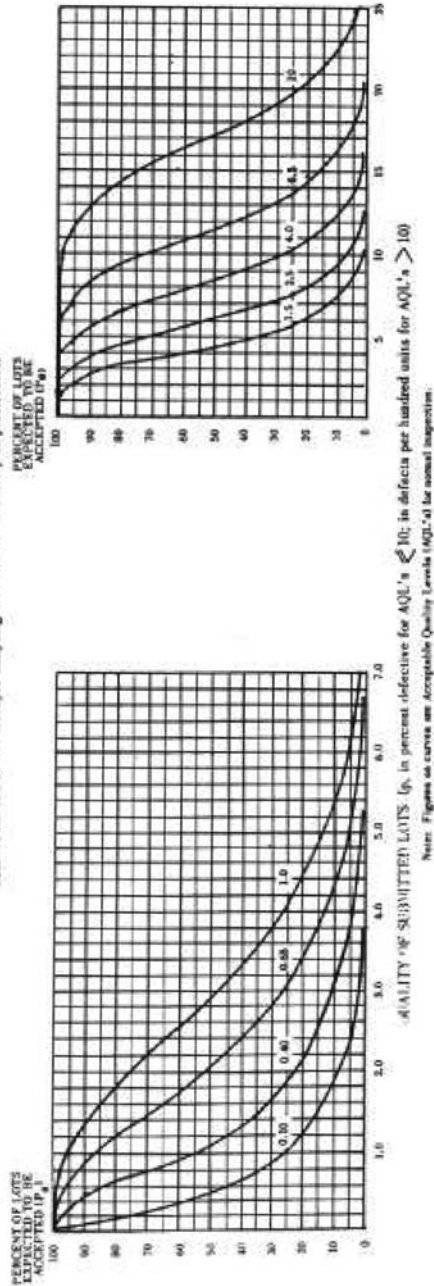


TABLE X-K-1 - TABULATED VALUES FOR OPERATING CHARACTERISTIC CURVES FOR SINGLE SAMPLING PLANS

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	2.30	2.81	4.88	8.28	10.1
95.0	0.0410	0.284	0.654	1.09	2.09	3.19	3.76	6.15	9.95	11.9
90.0	0.0940	0.426	0.882	1.40	2.52	3.73	4.35	6.92	10.9	13.0
75.0	0.230	0.769	1.382	2.03	3.38	4.77	5.47	8.34	12.7	14.9
50.0	0.554	1.34	2.14	2.94	4.54	6.14	6.94	10.1	14.9	17.3
25.0	1.11	2.15	3.14	4.09	5.94	7.25	8.64	12.2	17.4	20.0
10.0	1.84	3.11	4.26	5.35	7.42	9.42	10.4	14.2	19.8	22.5
5.0	2.40	3.80	5.04	6.20	8.41	10.5	11.5	15.6	21.4	24.2
1.0	3.68	5.31	6.73	8.04	10.5	12.8	13.3	18.3	24.5	27.5
0.15	0.85	1.0	1.5	2.5	4.0	6.5	10	10	10	10

Acceptable Quality Levels (tightened inspection)

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

K



TABLE 15 Sample Size Code Letter K (continued) (continued)

Type of Sampling Plan	Cumulative Sample Size	Acceptable Quality Levels (normal inspection)																		Cumulative Sample Size																																					
		Less than 0.10	0.10	0.15	x	0.25	0.40	0.65	1.0	1.5	2.5	x	4.0	x	6.5	x	10	Higher than 10																																							
		Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re																																						
Single	125	∇	0	1	Use	1	2	2	3	3	4	5	6	7	8	8	9	10	11	12	13	14	15	18	19	21	22	Δ	125																												
Double	80 160	∇	.	Letter	Use	Letter	J	M	L	0	2	0	3	4	3	7	3	7	5	9	6	10	7	11	9	14	11	16	Δ	80 160																											
										1	2	3	4	4	5	6	7	8	9	11	12	12	13	15	16	18	19	23	24	26	27																										
Multiple	32 64 96 128 160 192 224	∇	.				#	2	0	3	0	3	1	5	4	0	4	0	5	0	6	1	7	4	10	6	12	7	14	32 64 96 128 160 192 224																											
																															#	2	0	3	0	3	1	4	2	6	3	8	4	9	6	10	7	12	8	13	11	17	13	19			
																															0	3	1	4	2	5	3	7	5	10	6	11	8	13	10	15	12	17	16	22	19	25	16	22	19	25	Δ
																															1	3	2	4	3	6	5	8	7	11	9	12	11	15	14	17	17	20	22	25	25	29	22	25	29	31	33
							2	3	4	5	4	6	7	9	10	12	14	14	17	18	20	21	23	27	29	31	33	37	38																												
		Less than 0.15	0.15	x	0.25	0.40	0.65	1.0	1.5	2.5	x	4.0	x	6.5	x	10	x	Higher than 10																																							
		Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re																																						

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 (or alternatively use letter N).

= Acceptance not permitted at this sample size.



TABLE 16 Sample Size Code Letter L

TABLE X-1—Tables for sample size code letter: L

CHART L - OPERATING CHARACTERISTIC CURVES FOR SINGLE SAMPLING PLANS

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

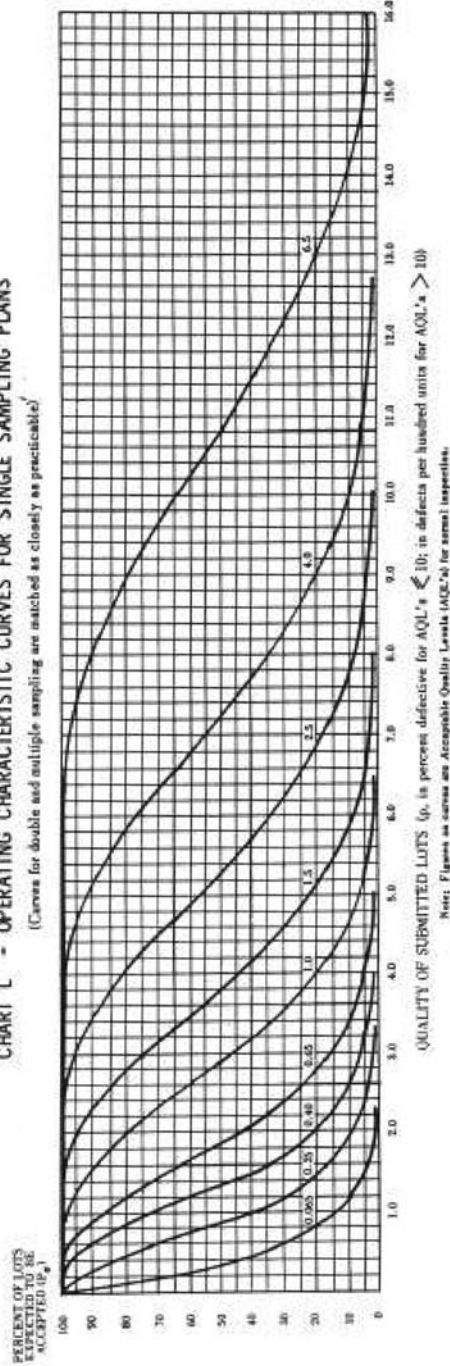


TABLE X-1-1 - TABULATED VALUES FOR OPERATING CHARACTERISTIC CURVES FOR SINGLE SAMPLING PLANS

p_a	Acceptable Quality Levels (normal inspection)											
	0.065	0.25	0.40	0.65	1.0	1.5	2.5	4.0	6.5	10.0	15.0	20.0
p (in percent defective or defects per hundred units)												
99.0	0.0051	0.075	0.218	0.412	0.693	1.45	1.75	2.39	3.05	3.74	5.17	6.29
95.0	0.0256	0.170	0.409	0.683	1.31	1.99	2.35	3.09	3.85	4.62	6.22	7.45
90.0	0.0525	0.266	0.551	0.873	1.58	2.33	2.72	3.51	4.32	5.15	6.84	8.12
75.0	0.144	0.481	0.864	1.27	2.11	2.90	3.42	4.31	5.21	6.12	7.95	9.34
50.0	0.347	0.839	1.34	1.84	2.84	3.84	4.33	5.33	6.33	7.33	9.33	10.8
25.0	0.693	1.35	1.96	2.56	3.71	4.84	5.40	6.51	7.61	8.70	10.9	12.5
10.0	1.15	1.95	2.66	3.34	4.64	5.89	6.50	7.70	8.89	10.1	12.4	14.1
5.0	1.50	2.37	3.15	3.88	5.26	6.57	7.22	8.48	9.72	10.9	13.3	15.1
1.0	2.30	3.32	4.20	5.02	6.55	8.00	8.70	10.1	11.4	12.7	15.3	17.2
0.10	0.40	0.65	1.0	1.5	2.5	4.0	6.5	10.0	15.0	20.0	30.0	40.0
Acceptable Quality Levels (tightened inspection)												
99.0	0.0051	0.075	0.218	0.412	0.693	1.45	1.75	2.39	3.05	3.74	5.17	6.29
95.0	0.0256	0.170	0.409	0.683	1.31	1.99	2.35	3.09	3.85	4.62	6.22	7.45
90.0	0.0525	0.266	0.551	0.873	1.58	2.33	2.72	3.51	4.32	5.15	6.84	8.12
75.0	0.144	0.481	0.864	1.27	2.11	2.90	3.42	4.31	5.21	6.12	7.95	9.34
50.0	0.347	0.839	1.34	1.84	2.84	3.84	4.33	5.33	6.33	7.33	9.33	10.8
25.0	0.693	1.35	1.96	2.56	3.71	4.84	5.40	6.51	7.61	8.70	10.9	12.5
10.0	1.15	1.95	2.66	3.34	4.64	5.89	6.50	7.70	8.89	10.1	12.4	14.1
5.0	1.50	2.37	3.15	3.88	5.26	6.57	7.22	8.48	9.72	10.9	13.3	15.1
1.0	2.30	3.32	4.20	5.02	6.55	8.00	8.70	10.1	11.4	12.7	15.3	17.2
0.10	0.40	0.65	1.0	1.5	2.5	4.0	6.5	10.0	15.0	20.0	30.0	40.0

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

TABLE 16 Sample Size Code Letter L (continued) (continued)

Type of Sampling Plan	Cumulative Sample Size	Acceptable Quality Levels (normal inspection)																				Cumulative Sample Size												
		Less than 0.065		0.065		0.10		x		0.15		0.25		0.40		0.65		1.0		1.5			x		2.5		4.0		x		6.5		Higher than 6.5	
		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		
Single	200	∇	0	1																												200		
Double	125 250	∇	.																													125 250		
Multiple	50 100 150 200 250 300 350	∇	.																													50 100 150 200 250 300 350		
	Less than 0.10	0.10	0.15	0.25	0.40	0.65	1.0	Acceptable Quality Levels (tightened inspection)																		Higher than 6.5								

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

Use next preceding sample size code letter in 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

$$Re = \text{Rejection number}$$

- = Use single sampling plan above (or alternatively use letter P).

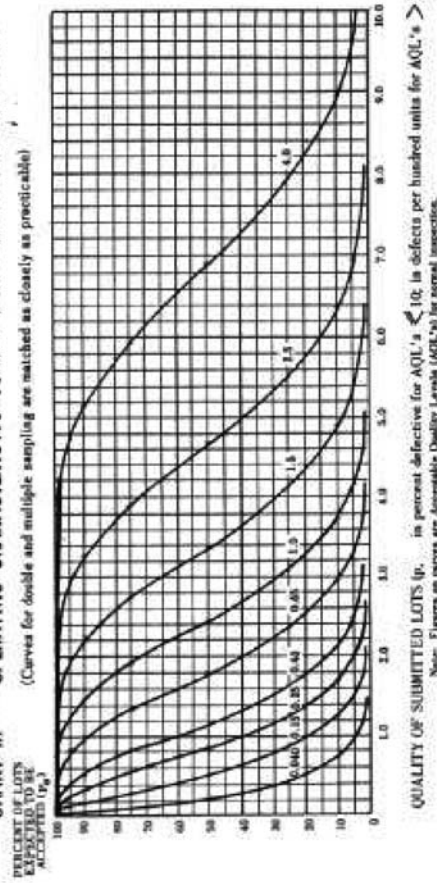
= Acceptance not permitted at this sample size.



TABLE 17 Sample Size Code Letter M

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

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



QUALITY OF SUBMITTED LOTS (p, in percent defective for AQL's < 10; in defects per hundred units for AQL's > 10)
Note: Figures on curves are Acceptable Quality Levels (AQL's) for normal inspection.

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

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	4.0
99.0	0.0032	0.047	0.138	0.261	0.566	0.922	1.11	1.51	1.94	2.38
95.0	0.0163	0.112	0.259	0.433	0.829	1.26	1.49	1.95	2.44	2.94
90.0	0.0333	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	1.24	1.62	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	2.0	2.5	3.0	3.5	4.0
Acceptable Quality Levels (tightened inspection)										
99.0										
95.0										
90.0										
75.0										
50.0										
25.0										
10.0										
5.0										
1.0										

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

M



TABLE 17 Sample Size Code Letter M (continued) (continued)

Type of Sampling Plan	Cumulative Sample Size	Acceptable Quality Levels (normal inspection)																				Cumulative Sample Size											
		Less than 0.040		0.040	0.065		0.10		0.15		0.25		0.40		0.65		1.0		x		1.5		x		2.5		x		4.0		Higher than 4.0		
		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	Re	Ac	Re	Ac	Re	
Single	315	∇	0	1						1	2	2	3	3	4	5	6	7	8	8	9	10	11	12	13	14	15	18	19	21	22	Δ	315
					Use																												
Double	200 400	∇	.							0	2	0	3	1	4	2	5	3	7	3	7	5	9	6	10	7	11	9	14	11	16	Δ	200 400
					Letter					1	2	3	4	4	5	6	7	8	9	11	12	12	13	15	16	18	19	23	24	26	27		
					L																												
Multiple	80 160 240 320 400 480 560	∇	.							#	2	#	2	#	3	#	4	0	4	0	4	0	5	0	6	1	7	1	8	2	9		80 160 240 320 400 480 560
										#	2	0	3	0	3	1	5	1	6	2	7	3	8	3	9	4	10	6	12	7	14		
										0	2	0	3	1	4	2	6	3	8	4	9	6	10	7	12	8	13	11	17	13	19		
										0	3	1	4	2	5	3	7	5	10	6	11	8	13	10	15	12	17	16	22	19	25	Δ	
										1	3	2	4	3	6	5	8	7	11	9	12	11	15	14	17	17	20	22	25	25	29		
										1	3	3	5	4	6	7	9	10	12	12	14	14	17	18	20	21	23	27	29	31	33		
										2	3	4	5	6	7	9	10	13	14	14	15	18	19	21	22	25	26	32	33	37	38		
		Less than 0.065	0.065	x	0.10	0.25	0.40	0.65	1.0	x	1.5	x	2.5	x	4.0	x	Higher than 4.0																
		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	Re	Ac	Re	Ac	Re	Ac	Re
		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 (or alternatively use letter Q).

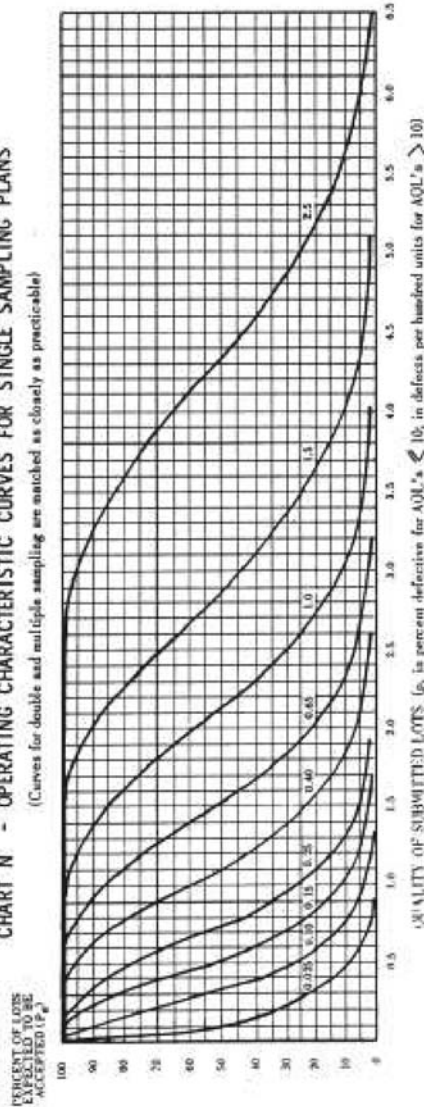
= Acceptance not permitted at this sample size.

TABLE 18 Sample Size Code Letter 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)



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

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	3.10
50.0	0.139	0.306	0.535	0.754	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	5.64
5.0	0.599	0.949	1.26	1.55	2.10	2.63	2.89	3.39	3.89	4.38	6.05
1.0	0.921	1.308	1.68	2.01	2.62	3.20	3.48	4.03	4.56	5.09	6.87
0.040	0.15	0.25	0.40	0.65	1.0	1.5	2.0	2.5	3.0	3.5	4.5

Acceptable Quality Levels (tightened inspection)

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

N



TABLE 18 Sample Size Code Letter N (continued) (continued)

Type of Sampling Plan	Cumulative Sample Size	Acceptable Quality Levels (normal inspection)																				Cumulative Sample Size																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
		Less than 0.025		0.025	0.040		0.065		0.10		0.15		0.25		0.40		0.65		x		1.0		x		1.5		x		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																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
Single	500	∇	0	1					1	2	2	3	3	4	5	6	7	8	8	9	10	11	12	13	14	15	18	19	21	22	Δ	500																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
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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 (or alternatively use letter R).

= Acceptance not permitted at this sample size.

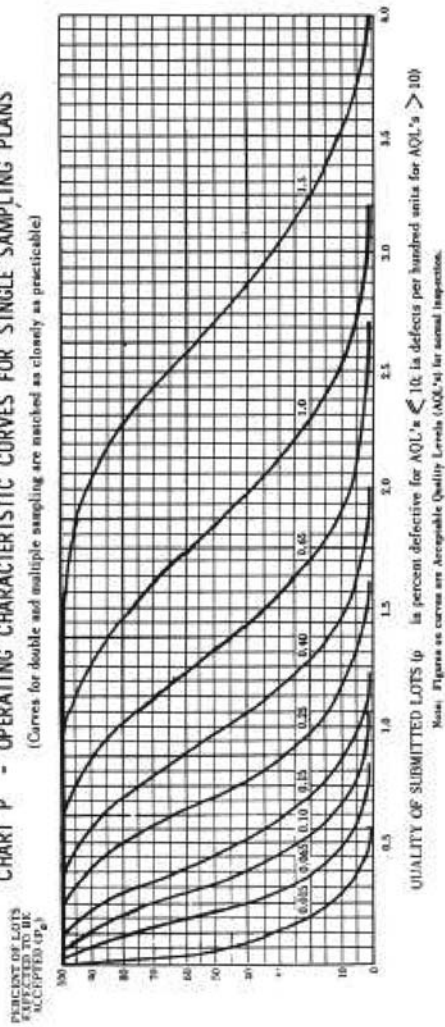


TABLE 19 Sample Size Code Letter P

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

CHART P - OPERATING CHARACTERISTIC CURVES FOR SINGLE SAMPLING PLANS

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



QUALITY OF SUBMITTED LOTS (p) - as percent defective for AQL's ≤ 10 ; as defects per hundred units for AQL's > 10

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

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

P _u	Acceptable Quality Levels (normal inspection)										
	0.015	0.005	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	0.587	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	3.04
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



TABLE 19 Sample Size Code Letter P (continued) (continued)

Type of Sampling Plan	Cumulative Sample Size	Acceptable Quality Levels (normal inspection)																		Cumulative Sample Size														
		Less than 0.010		0.015		0.025		0.040		0.065		0.10		0.15		0.25		0.40			x		0.65		x		1.0		x		1.5		Higher than 1.5	
		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		
Single	800	∇	0	1																											Δ	800		
Double	500 1000	∇	.	M	Q	P																									Δ	500 1000		
Multiple	200 400 600 800 1000 1200 1400	∇	.																													Δ	200 400 600 800 1000 1200 1400	
		Less than 0.025	0.025	x	0.040	0.065	0.10	0.15	0.25	x	0.65	x	1.0	x	1.5	x															Higher than 1.5			
		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.

= Acceptance not permitted at this sample size.

TABLE 20 Sample Size Code Letter Q (continued) (continued)

[illegible]

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.

= Acceptance not permitted at this sample size.

TABLE 21 Sample Size Code Letter 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)

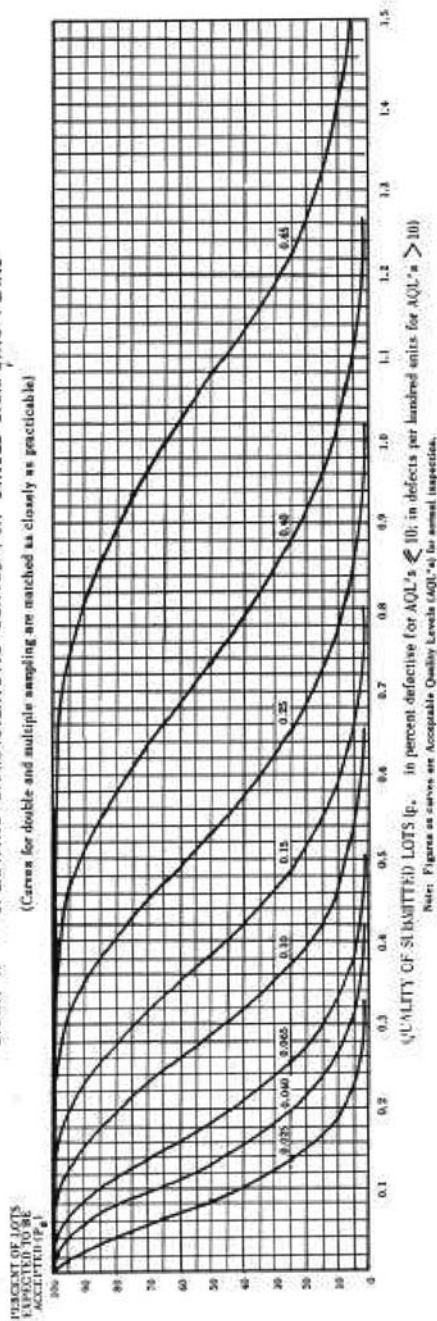


TABLE X-R-1 - TABULATED VALUES FOR OPERATING CHARACTERISTIC CURVES FOR SINGLE SAMPLING PLANS

P _a	Acceptable Quality Levels (normal inspection)										
	0.025	0.040	0.065	0.10	0.15	0.25	0.40	0.65	1.0	1.5	2.0
	p (in percent defective or defects per hundred units)										
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	0.285	0.369	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	0.0968	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	0.525	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
Acceptable Quality Levels (tightened inspection)											

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

R

TABLE 21 Sample Size Code Letter R (continued) (continued)

[illegible]

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

 $Re = \text{Rejection number}$

- = Use single sampling plan above.

= Acceptance not permitted at this sample size.

TABLE 22 Sample Size Code Letter S

Type of sampling plan	Cumulative sample size	Acceptable Quality Level (normal inspection)	
		x	
		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.

APPENDIX

(Nonmandatory Information)

X1. DATA AND INFORMATION GENERATED AS A RESULT OF INSPECTION AND TESTING

X1.1 Inasmuch as the promulgation and dissemination of knowledge is a worthy goal, the data and other pertinent information regarding the quality of any given lot of electrical insulating material should be made available to the producer of the material upon completion of the evaluation of the lot.

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SUMMARY OF CHANGES

Committee D09 has identified the location of selected changes to this practice since the last issue, D3636 – 00, that may impact the use of this practice. (Approved June 1, 2006)

- (1) Revised Sections 1, 3, 5, 6, and 8.
- (2) Moved old Section 8 into **Appendix X1** and renumbered subsequent sections.

Committee D09 has identified the location of selected changes to this practice since the last issue, D3636 – 11, that may impact the use of this practice. (Approved January 1, 2013)

- (1) Tables 1–22 modified.

Committee D09 has identified the location of selected changes to this practice since the last issue, D3636 – 13, that may impact the use of this practice. (Approved March 1, 2013)

- (1) Revised Military Standards in 2.2, 4.2, 8.1, and 8.7.
- (2) Added Section 4.3.

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