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An American National Standard

Standard Practice for Sampling and Judging Quality of Solid Electrical Insulating Materials[1]

This standard is issued under the fixed designation D3636; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope*

1.1 This 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-105D Sampling Procedures and Tables for Inspection by Attributes[3]

2.3 *Other Document:*

ANSI/ASQC A2 -1987[4]

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.

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[1] This practice is under the jurisdiction of ASTM Committee D09 on Electrical and Electronic Insulating Materials and is the direct responsibility of Subcommittee D09.94 on Editorial.

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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.**

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 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-105D.

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. ~~Group~~ It is also acceptable to establish group AQL's for given groups of ~~properties may likewise be established.~~ 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

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 10000	C	D	F	G	J	L	M
10001 to 35000	C	D	F	H	K	M	N
35001 to 150000	D	E	G	J	L	N	P
150001 to 500000	D	E	G	J	M	P	Q
500001 and over	D	E	H	K	N	Q	R

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.

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 ~~may~~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,~~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.

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) remain on tightened inspection, discontinue the inspection and 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 specification 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 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 discretion 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 ~~Lots~~ If a lot has been found ~~unacceptable may~~ unacceptable, it shall not be ~~resubmitted for reinspection only if~~permitted to be submitted for re-inspection unless all units of product in the lot have been examined and tested and all 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.

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-105D. 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 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.

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 information and actual situations of application. Although the referenced works cite MIL-STD-105D, the references are also applicable to this practice.

9. Keywords

9.1 acceptable quality level (AQL); critical property; electrical insulation; inspection; major property; minor property; nonconformity; nonconforming; quality judgment; sampling; test measurement; test result

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

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)																																					
		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	
		Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re
A	2	⇩		⇩		⇩		⇩		⇩		⇩		⇩		⇩		⇩		⇩		⇩		⇩		⇩		⇩		0	1	⇩		1	2	2	3	3	4	5	6	7	8	10	11	14	15	21	22	30	31
B	3																											0	1	⇩		1	2	2	3	3	4	5	6	7	8	10	11	14	15	21	22	30	31	44	45
C	5																													⇩		1	2	2	3	3	4	5	6	7	8	10	11	14	15	21	22	30	31	44	45	⇧	
D	8																							⇩		⇩		⇩		1	2	2	3	3	4	5	6	7	8	10	11	14	15	21	22	30	31	44	45		
E	13																																																		
F	20																																																		
G	32																																																		
H	50																																																		
J	80																																																		
K	125																																																		
L	200																																																		
M	315																																																		
N	500																																																		
P	800																																																		
Q	1250																																																		
R	2000																																																		

⇩ = Use first sampling plan below arrow. 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 B Single Sampling Plans for Tightened Inspection (Master Table) *(See 8.4 and 8.5)*

Sample size code letter	Sample size	Acceptable Quality Levels (tightened inspection)																																					
		0.010		0.015		0.025		0.040		0.065		0.10		0.15		0.25		0.40		0.65		1.0		1.5		2.5		4.0		6.5		10		15		25		40		65		100	
		Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re
A	2	⇩		⇩		⇩		⇩		⇩		⇩		⇩		⇩		⇩		⇩		⇩		⇩		⇩		⇩		⇩		⇩		⇩		1	2	2	3	3	4
B	3																											0	1					1	2	2	3	3	4	5	6
C	5																									0	1					1	2	2	3	3	4	5	6	8	9
D	8																							0	1			1	2	2	3	3	4	5	6	8	9	12	13	18	19
E	13																											2	3	3	4	5	6	8	9	12	13	18	19	27	28
F	20																											3	4	5	6	8	9	12	13	18	19				
G	32																											5	6	8	9	12	13	18	19						
H	50																											8	9	12	13	18	19								
J	80																											12	13	18	19										
K	125																											18	19												
L	200																																								
M	315																																								
N	500																																								
P	800																																								
Q	1250																																								
R	2000																																								
S	3150																																								

⇩ = Use first sampling plan below arrow. If sample size equals or exceeds lot or batch size, do 100 percent inspection.
⇧ = Use first sampling plan above arrow.
Ac = Acceptance number.
Re = Rejection number.

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

Sample size code letter	Sample size	Acceptable Quality Levels (reduced inspection)†																																					
		0.010		0.015		0.025		0.040		0.065		0.10		0.15		0.25		0.40		0.65		1.0		1.5		2.5		4.0		6.5		10		15		25		40		65		100	
		Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re
A	2	⇩		⇩		⇩		⇩		⇩		⇩		⇩		⇩		⇩		⇩		⇩		⇩		⇩		⇩		0 1		⇩		1 2		2 3		3 4		5 6	
B	2	⇩		⇩		⇩		⇩		⇩		⇩		⇩		⇩		⇩		⇩		⇩		⇩		⇩		0 1		⇧		⇩		0 2		1 3		2 4		3 5		5 6	
C	2	⇩		⇩		⇩		⇩		⇩		⇩		⇩		⇩		⇩		⇩		⇩		⇩		0 1		⇧		⇩		0 2		1 3		1 4		2 5		3 6		5 8	
D	3	⇩		⇩		⇩		⇩		⇩		⇩		⇩		⇩		⇩		⇩		⇩		0 1		⇧		⇩		0 2		1 3		1 4		2 5		3 6		5 8	
E	5	⇩		⇩		⇩		⇩		⇩		⇩		⇩		⇩		⇩		⇩		0 1		⇧		⇩		0 2		1 3		1 4		2 5		3 6		5 8		7 10	
F	8	⇩		⇩		⇩		⇩		⇩		⇩		⇩		⇩		⇩		0 1		⇧		⇩		0 2		1 3		1 4		2 5		3 6		5 8		7 10		10 13	
G	13	⇩		⇩		⇩		⇩		⇩		⇩		⇩		⇩		0 1		⇧		⇩		0 2		1 3		1 4		2 5		3 6		5 8		7 10		10 13		⇧	
H	20	⇩		⇩		⇩		⇩		⇩		⇩		⇩		0 1		⇧		⇩		0 2		1 3		1 4		2 5		3 6		5 8		7 10		10 13		⇧		⇧	
J	32	⇩		⇩		⇩		⇩		⇩		⇩		0 1		⇧		⇩		0 2		1 3		1 4		2 5		3 6		5 8		7 10		10 13		⇧		⇧		⇧	
K	50	⇩		⇩		⇩		⇩		⇩		0 1		⇧		⇩		0 2		1 3		1 4		2 5		3 6		5 8		7 10		10 13		⇧		⇧		⇧		⇧	
L	80	⇩		⇩		⇩		⇩		⇩		⇧		⇧		⇩		0 2		1 3		1 4		2 5		3 6		5 8		7 10		⇧		⇧		⇧		⇧		⇧	
M	125	⇩		⇩		⇩		⇩		⇧		⇧		⇧		0 2		1 3		1 4		2 5		3 6		5 8		7 10		10 13		⇧		⇧		⇧		⇧		⇧	
N	200	⇩		⇩		0 1		⇧		⇩		0 2		1 3		1 4		2 5		3 6		5 8		7 10		10 13		⇧		⇧		⇧		⇧		⇧		⇧		⇧	
P	315	⇩		0 1		⇧		⇧		0 2		1 3		1 4		2 5		3 6		5 8		7 10		10 13		⇧		⇧		⇧		⇧		⇧		⇧		⇧		⇧	
Q	500	0 1		⇧		0 2		1 3		1 4		2 5		3 6		5 8		7 10		10 13		⇧		⇧		⇧		⇧		⇧		⇧		⇧		⇧		⇧		⇧	
R	800	⇧		⇧		0 2		1 3		1 4		2 5		3 6		5 8		7 10		10 13		⇧		⇧		⇧		⇧		⇧		⇧		⇧		⇧		⇧		⇧	

Sample size code letter	Sample size	Acceptable Quality Levels (reduced inspection)†																																					
		100		150		250		400		650		1000																													
		Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re	Ac	Re																												
A	2	5	6	7	8	10	11	14	15	21	22	30	31																												
B	2	5	6	7	8	10	11	14	15	21	22	30	31																												
C	2	5	8	7	10	10	13	14	17	21	24	⇧																												
D	3	7	10	10	13	14	17	21	24	⇧																														
E	5	10	13	14	17	21	24	⇧																																
F	8	⇧		⇧		⇧		⇧		⇧																														
G	13	⇧		⇧		⇧		⇧		⇧																														
H	20	⇧		⇧		⇧		⇧		⇧																														
J	32	⇧		⇧		⇧		⇧		⇧																														
K	50	⇧		⇧		⇧		⇧		⇧																														
L	80	⇧		⇧		⇧		⇧		⇧																														
M	125	⇧		⇧		⇧		⇧		⇧																														
N	200	⇧		⇧		⇧		⇧		⇧																														
P	315	⇧		⇧		⇧		⇧		⇧																														
Q	500	⇧		⇧		⇧		⇧		⇧																														
R	800	⇧		⇧		⇧		⇧		⇧																														

⇩ = Use first sampling plan below arrow. If sample size equals or exceeds lot or batch size, do 100 percent inspection.
⇧ = Use first sampling plan above arrow.
† = If the acceptance number has been exceeded, but the rejection number has not been reached, accept the lot, but reinstate normal inspection (see 10.1.4).

Ac = Acceptance number.
Re = Rejection number.

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

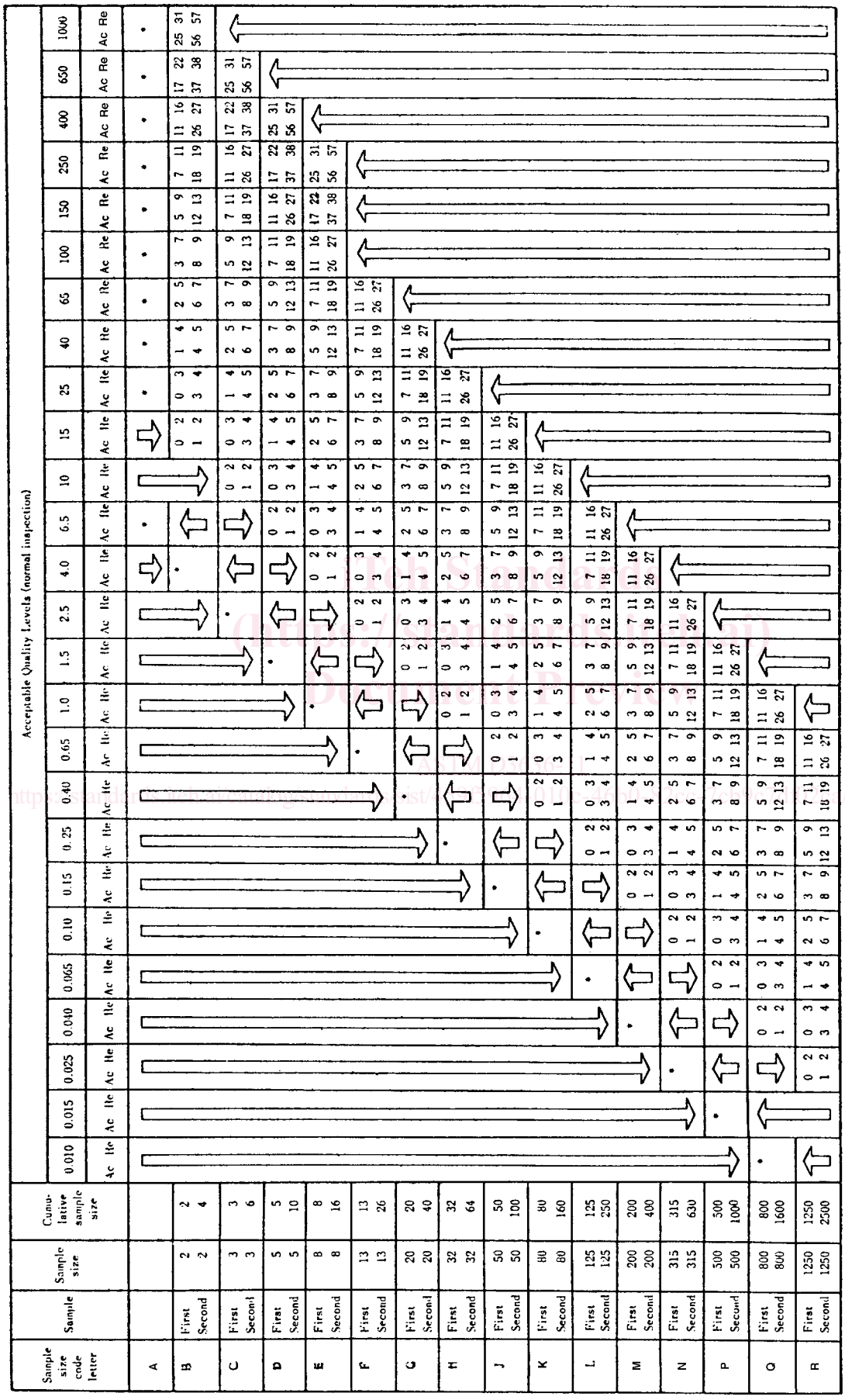

TABLE 3 B Double Sampling Plans for Tightened Inspection (Master Table) *(See 8.4 and 8.5)*

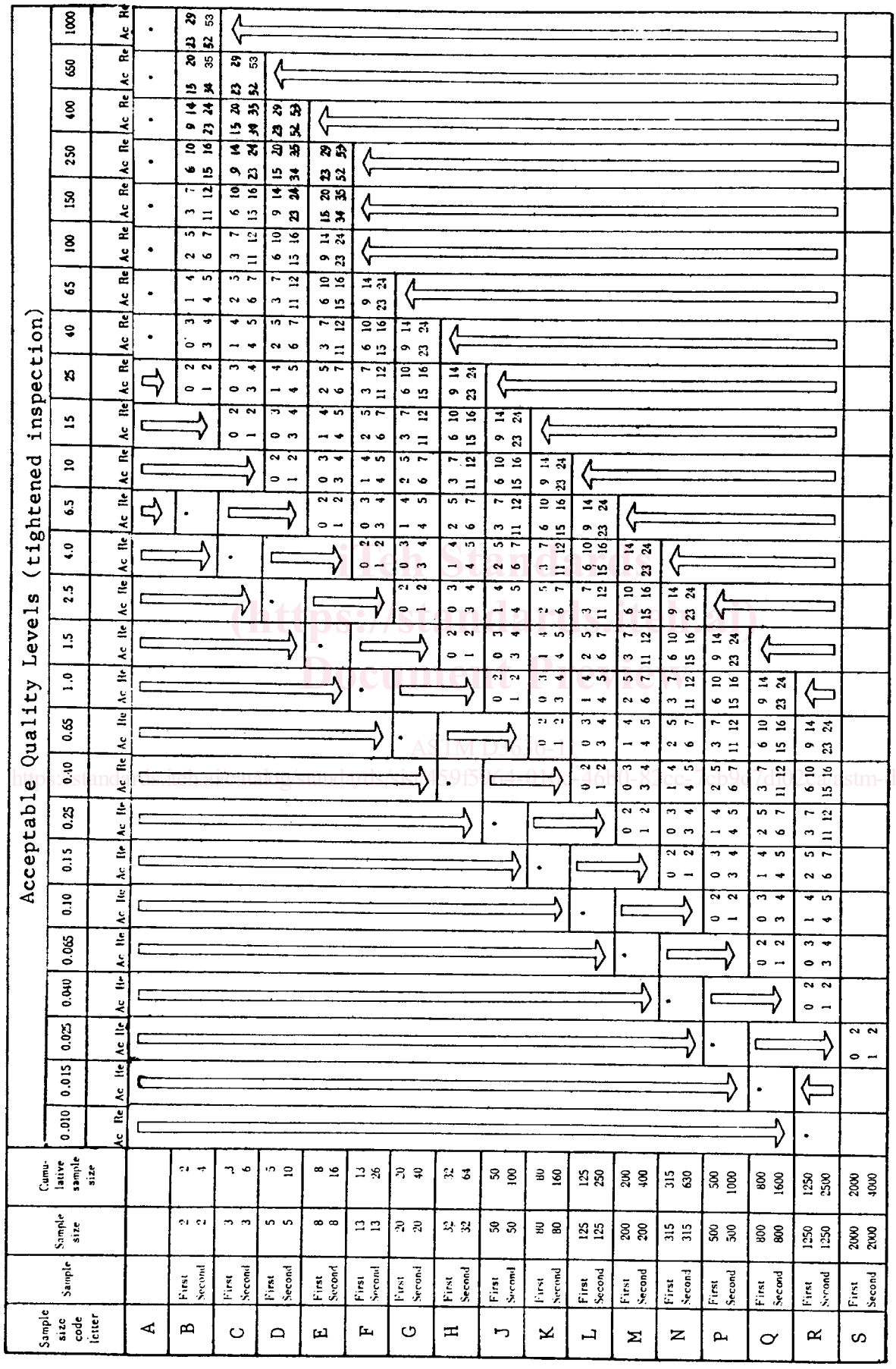

TABLE 3 C Double Sampling Plans for Reduced Inspection (Master Table)

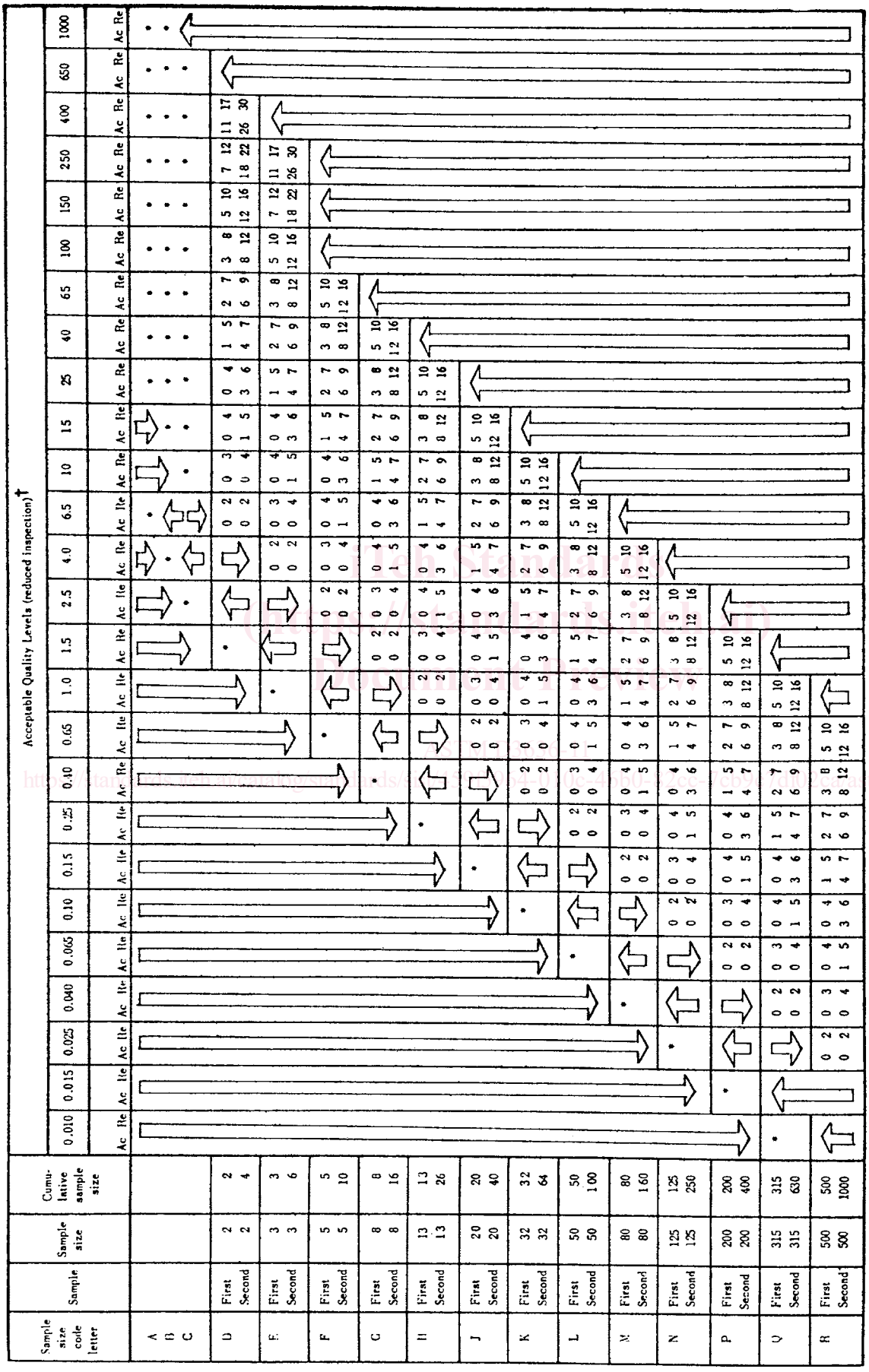

TABLE 4 A Multiple Sampling Plans for Normal Inspection (Master Table) *(See 8.4 and 8.5)*

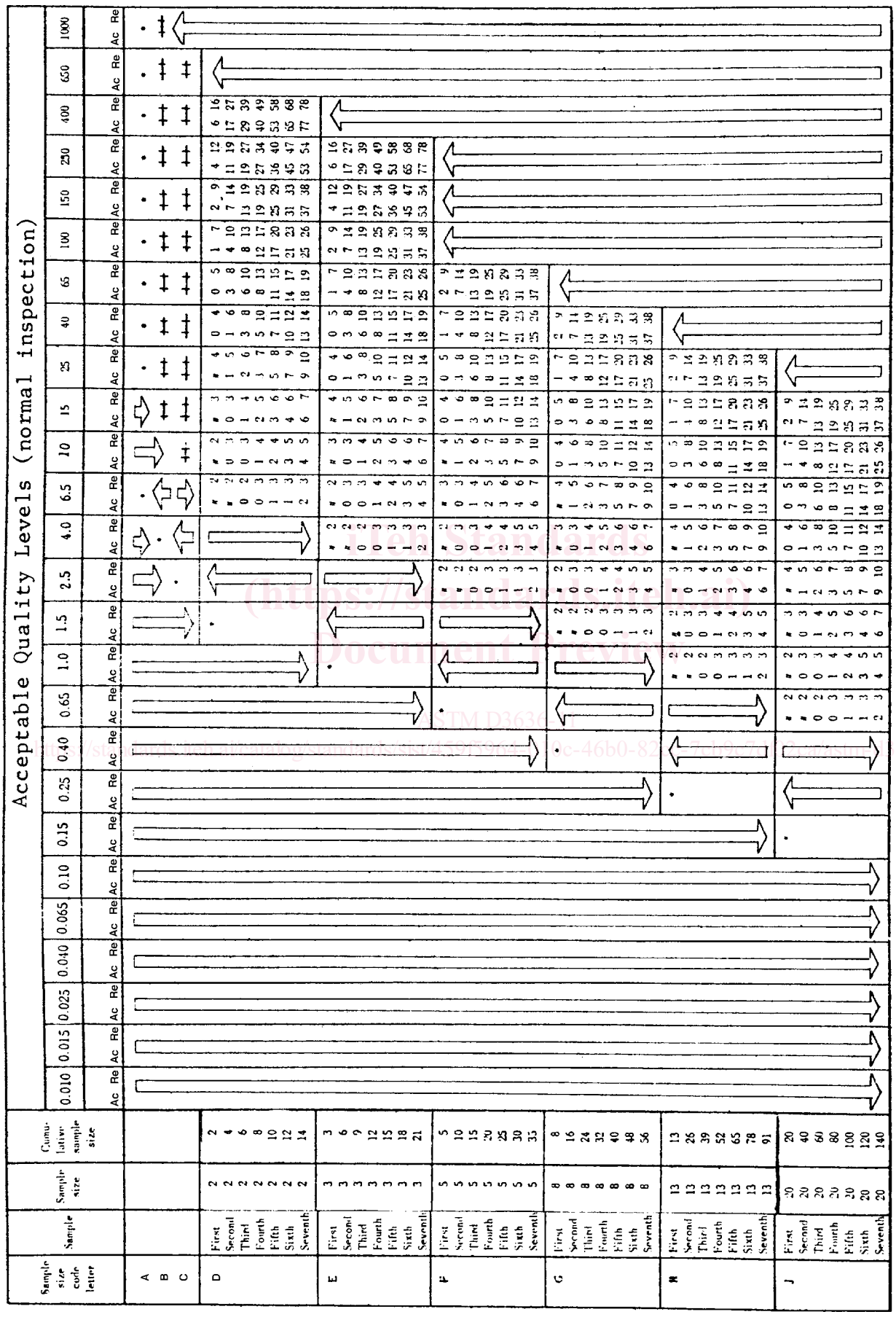

TABLE 4 A Multiple Sampling Plans for Normal Inspection (Master Table) ***(Continued)*** *(See 8.4 and 8.5)*