SOP Reference #: QS017

Operation/Task:	How to perform random sampli	ng using ANSI tal	oles	Equipment:	NA
Owner:	Quality Manager	Date Created: Revision History:	4/4/2022 See last page	Department:	Quality Systems

ALERTS (see below): Critical Step ◆ Quality Check ✓ Tip ☺ Team Safety •

Purpose: This SOP/work instruction describes how to use the ANSI tables to determine sampling requirements

Step #	Alerts	Step Description - "What to Do"	"How to Do it"	"Why to Do it"
1.		Perform Standard Sampling technique	To perform a standard sampling inspection: Pick 4 lifts of 50 pieces from random cartons or pallets and perform 100% inspection of all 200 pieces. If more than 1 piece is found not conforming, expand the sample to an additional 200 pieces from additional random selections. If any additional parts are found nonconforming, perform an enhanced inspection. For lot sizes less than 500, inspect the entire lot (100% inspection).	Standard operating procedure to qualify finished product.
2.		If it is determined that a job or production run will require an Enhanced Inspection, determine lot size.	Use table 1 (attached) to find the lot size for the job requiring the inspection. The lot size is the job quantity	To determine scope of inspection.
3.		Determine inspection level letter.	Once the lot size is determined, find the letter in General Inspection Level II that corresponds to the lot size	To comply with NIST standard for sampling.

4.	Determine the sample quantity.	Compare the result from step 2 to the column in Table 2A (attached) that matches the letter result from step 2. The number in the next column to the right indicates the number of pieces to be sampled.	This reveals the sampling quantity.
5.	Perform the inspection	Draw the number of samples indicated in Table 2A. Perform inspection according to the relevant process quality check requirements.	The inspection technique is the same as the requirements in the individual SOP for each process.
6.	Record the results	Use form CI047 to document the results of the inspection. If any non-conformances are found, pull another equivalent lot of parts and repeat the inspection. If additional non-conformances are found, segregate the lot to the NC material floor and alert your manager or the quality manager.	To determine the level of compliance or non-compliance. To determine the disposition of the material. Solutions may include: 100% inspection, additional sampling and removal of NC parts or reprint.
7.	Complete the record	Fill in all fields, including signature, on the Cl047 form and store in the job ticket	

Notes:

This process may be invoked by customer, sales, customer service or production managers if it is determined production standards must be enhanced due to customer requirement.

Definitions:

ANSI is the American National Standards Institute.

Revision History	Description of Changes	Requested by	Date
Rev 1	First issue	Dean Milinkovich	4/2022

Rev 2	Add instruction for initial inspection	Dean Milinkovich	5/2023

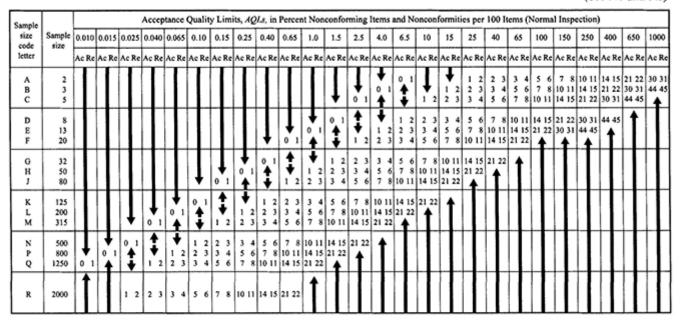
Table I-Sample size code letters

(See 9.2 and 9.3)

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

Table II-A—Single sampling plans for normal inspection (Master table)

(See 9.4 and 9.5)



🖶 = Use the first sampling plan below the arrow. If sample size equals, or exceeds, lot size, carry out 100 percent inspection.

Ac = Acceptance number.

Re = Rejection number.

CI035