COMPARABILITY PROCEDURES FOR ATTRIBUTES REINSPECTION OF UNREWORKED LOTS

I. PURPOSE AND SCOPE. This Subsection provides procedures for determining comparability of original inspection results with reinspection results of unreworked lots and instructions for determining whether or not the lot is conforming based on the comparability determinations and contractual requirements. These procedures apply to veterinary/medical inspection personnel and to all reinspections of unreworked lots meeting the criteria with the exception detailed in paragraph VI.

II. POLICY. These procedures apply only to inspection and reinspection for attributes and to defects having Acceptable Quality Levels (AQLs). If no AQL is specified and the finding of one or more defects is cause for rejection, comparability determinations are not necessary; Government results shall be used as the basis for determining if a lot is conforming. Reinspection sampling plans must be the same as original sampling plans regarding pertinent AQL(s), severity of inspection, and sample size(s). Normally, reinspections are only conducted for AQLs where the number of defects equalled or exceeded the rejection number on original inspection.

III. BACKGROUND. Comparability determinations are intended to resolve the question of whether or the difference(s) between original and reinspection results are due to "luck of the draw" only, or whether they are due to "real" differences in inspection procedures. Examples of the latter include sample selection, scoring and classifying defects and calibration of equipment.

IV. PROCEDURES.

A. Determining Comparability. Whenever a previously inspected unreworked lot is reinspected, the following procedure shall be used to determine if the results of the two inspections are comparable (i.e., statistically the same) or whether they are noncomparable (i.e., statistically different).

1. For each AQL involved in the reinspection, compare the number of defects found on original inspection with the number of defects found on reinspection.

a. If the number of defects found on original inspection is the same as the number of defects found on reinspection, the results are automatically considered comparable; proceed to paragraph V.B.

b. If the number of defects found on original inspection and the reinspection are different, note which is smaller.

This Subsection supersedes Subsection 203.2, April 2010 *
* Denotes change

2. Refer to Enclosure 1, Table I, Critical Values. Find the number in column A that is the same as the smaller number of defects found during the original inspection or the reinspection. Then locate the number in column B which is on the same line as the number in column A.

3. Compare the larger number of defects found during the original inspection or the reinspection to the number found in column B and determine whether or not the reinspection results are comparable to the original inspection results. Refer to Enclosure 2 for examples illustrating comparability determinations.

a. If the larger number of defects found is equal to or larger than the number found in column B, the results are noncomparable.

b. If the larger number of defects found is less than the number found in column B, the results are comparable.

B. **Determining Product Conformance Based On Comparability Determinations.** Once comparability determinations have been made for AQL, it must be decided whether or not the lot is conforming or nonconforming.

1. Based on the comparability determinations already made, determine for each AQL whether the original results or the reinspection results will be applicable for determining conformity (i.e., the applicable results are those used as the basis for determining conformity to contract requirements).

a. If the reinspection results for AQL are comparable to the original inspection results, the original inspection results shall be applicable for determining conformity to contract requirements.

b. If the reinspection results for an AQL are noncomparable to the original inspection results, the reinspection results shall be applicable for determining conformity to contract requirements. In this case the applicable results (i.e., the reinspection results) must be compared to the accept/reject criteria for the AQL involved. If the reinspection results are conforming, the lot is considered conforming for that AQL and vice-versa.

2. Determine lot conformance based on comparability determinations of all AQLs.

a. If the applicable inspection results for all AQLs involved are conforming, the lot is considered conforming to contract requirements.

b. If the applicable inspection results of any of the AQLs involved are nonconforming, the lot is considered nonconforming to contract requirements.

V. EXCEPTION TO THE COMPARABILITY DETERMINATION PROCEDURES. When no AQL is specified and one or more defects is cause for rejection, comparability computations are not performed and the results of the reinspection shall be applicable for determining conformance.

VI. DISTRIBUTION OF REINSPECTION REPORTS. Results of reinspection of unreworked lots including determination of statistically different results, shall be reported in accordance with Subsection 209.3.

VII. REPORTING ADDITIONAL INSPECTION COSTS. Costs incurred in reinspection of unreworked lots, when applicable, shall be reported as detailed in Subsection 231.1.

TABLE I – CRITICAL VALUES 1/

Column A	Column B
0	3
1	5
2	7
3	9
4	11
5	12
6	14
7	15
8	17
9	18
10	19
11	21
12	22
13	23
14	25
15	26
16	27
17	28
18	30
19	31
20	32
21	34
22	35
23	36
24	37
25	39
26	40
27	41
28	42

Table I – CRITICAL VALUES 1/

Column A	Column B
29	43
30	45
31	46
32	47
33	48
34	49
35	51

1/ Values in this Table are taken from Table I of Quality Control and Reliability Handbook H-109, Statistical Procedures for Determining Validity of Suppliers Attributes Inspection, Office of the Assistant Secretary of Defense.
The difference in usage of Table I of H-109 and Table I of this Subsection is that the former is for a one sided test whereas the latter is for a two sided test.

EXAMPLES ILLUSTRATING COMPARABILITY DETERMINATIONS

1. Situation #1 – Only one AQL is involved in the reinspection and the results are comparable.

AQL	ACC/REJ	# DEFECTS FOUND ORIG	REINSP	COL A # (SMALLER # OF DEFECTS)	COL B# TO USE ADJACENT TO COL A#	RESULTS COMPARABLE YES/NO	REASON	APPLICABLE RESULTS	CONFORMING FOR AQL
2.5	1 2	2	6	2	7	YES	1/	ORIG 2/	NO

2. Situation #2 – More than one AQL was involved in the reinspection; all reinspection results were found comparable.

AQL	ACC/REJ	# DEFECTS FOUND ORIG	REINSP	COL A# (SMALLER # OF DEFECTS)	COL B# TO USE # ADJACENT TO COL A#	RESULTS COMPARABLE YES/NO	REASON	APPLICABLE RESULTS	CONFORMING FOR AQL
2.5	2 3	5	8	5	12	YES	1/	ORIG 2/	NO
4.0	3 4	4	8	4	11	YES	1/	ORIG 2/	NO
10.0	7 8	8	6	6	14	YES	1/	ORIG 2/	NO

3. Situation #3 – More than one AQL is involved in the reinspection; the reinspection results for two AQLs were determined noncomparable and the results for one AQL were determined comparable.

AQL	ACC/REJ	# DEFECTS FOUND ORIG	REINSP	COL #A (SMALLER # OF DEFECTS	COL B# TO USE # ADJACENT TO COL A#	RESULTS COMPARABLE YES/NO	REASON	APPLICABLE RESULTS	CONFORMING FOR AQL
2.5	2 3	4	0	0	3	NO	3/	REINSP	YES
4.0	3 4	10	10	10	19	YES	4/	ORIG	NO
\10.0	7 8	8	17	8	17	NO	5/	REINSP	NO

ENCLOSURE 2
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1/ The larger number of defects found was less than the appropriate value in column B of Table I; the results are comparable and the original inspection results shall be used to determine contract compliance. The lot is considered nonconforming because the original results were used to determine contract compliance and those results were nonconforming.

2/ The applicable results are the original results because the inspection and reinspection results were considered comparable.

3/ The larger number of defects noted exceeded the appropriate value in column B of Table I; the reinspection results were noncomparable therefore the reinspection results were used to determine contract compliance for this AQL. The lot is considered conforming for this AQL.

4/ The reinspection results equal the original results; they are automatically considered comparable. The appropriate value from column B is shown for illustration only; it was not necessary to note it because the number of defects found on the two inspections were equal. The original results are applicable and the lot is nonconforming for that AQL.

5/ The larger number of defects noted equal the appropriate value in column B; the results were noncomparable and the reinspection results shall be used to determine contract compliance for this AQL. The lot is considered nonconforming for this.