2.3.3. The Mechanical Department will use ANSI/ASQC Standard Z1.4-1993 to determine if a given batch of products will be accepted or rejected. Appendix "D" is an example of the statistical tables that may be handed out to an employee. The first table in Appendix "D" shows what sample size to use given a batch size. The second table in Appendix "D" is Table II-A in the ANSI/ASQC Standard mentioned above. This table is the one that will most likely be handed out because it shows single sampling plans for normal inspections.

2.3.4. First given a batch size, an employee has to decide what the sampling size should be. Using Table I in Appendix "D", an employee should assume that Metra will use the sample size code letter as specified in General Inspection Level II for the corresponding lot or batch size, unless notified by the Quality Assurance Specialist as otherwise. Now that an employee has the sample size code letter, they need to go to Table II-A of Appendix "D" to find the correct sample size. The sample size code letters are listed in the left most column of Table II-A and the sample size for each sample size code letter is listed in the column directly to the right of the code letter column. After finding the correct sample size, an employee must decide what will be the acceptance or rejection limits. For Metra purposes, since most of our samples will be relatively small, only the rejection number (Re) will be used, unless otherwise specified by the Quality Assurance Specialist. The last number needed to find a rejection number for a given sample size is the Acceptable Quality Level or AQL. Unless otherwise specified, the AQL to use will be 1.5. If in a given sample set, the inspector finds as many or more nonconforming products than the given rejection number, than the inspector should consider the whole batch to be nonconforming product. The batch should then be handled in accordance with Section 9 of this document.

3. ATTACHMENTS

3.1. **Appendix A: M-13-010 Specification For General Tolerance And Welding Requirements**

3.2. **Appendix B: Material Problem Form**

3.3. **Appendix C: Inspection Form**

3.4. **Appendix D: Statistical Methods**

3.5. **Appendix E: Inspection Request Form**

3.6. **Appendix F: Inspection Form and Checklist**

APPENDIX A

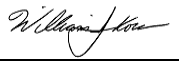
Mechanical Department

SPECIFICATION FOR GENERAL TOLERANCE AND WELDING REQUIREMENTS (THIS SPECIFICATION SHALL NOT BE USED FOR TRUCK PARTS)

SPECIFICATION No. M-13-010

DATE: October 2, 2013

RECORD OF REVISIONS

REVISION	DESCRIPTION	APPROVED BY	DATE
-	First Release of this specification		10/2/13

NOTE: This document is to be considered "uncontrolled" when printed as a hardcopy from the network. The revision level must be verified prior to use.

TABLE OF CONTENTS

General Requirements

1. Material to be used:

Only the material specified in the Metra drawing shall be used. Any deviation must be approved by Metra prior to use.

2. Disposition for Problems, Questions, and Discrepancy:

When problems, questions, and/or discrepancies occur between this documentation, drawing(s), etc., the vendor must inform Metra and the work should be performed in accordance with the instruction for disposition from Metra. Any deviation from the technical drawings or specifications will lead to rejection.

3. Inspections of Material By Vendor:

Prior to shipment to Metra, the vendor must inspect the parts and confirm that they conform to Metra's drawings and specifications including:

A) There are No Sharp Edges: No Sharp Edges are permitted (for all parts, any location).

B) For welded parts:

-Welding must be inspected by CWI Inspector and documentation must be submitted to indicate this. Any deviation from this requirement must be approved by Metra.

-Discoloration should be removed and clean welds for acceptable finish.

An Inspection Report must be provided to Metra prior to shipment.

4. Quality Audit:

Authorized representatives of Metra shall have access, at all reasonable times, to those parts of the plants of the vendor and his subcontractors concerned with supplying material and parts to Metra, for the purpose of inspecting documents, materials, workmanship, and conformity to Metra Specifications during the progress of manufacturing and/or after delivery of shipments to Metra.

5. Disposition of Non-Conformed Items:

When the non-conformance is found after delivery, Metra will notify the vendor for disposition. If re-work is performed, vendor must submit Failure Analysis Report (FAR) and corrective action plan. The vendor must comply with a reasonable turnaround time as determined by Metra.

6. Deviation from the Requirements:

The vendor must submit a written request for approval to Metra detailing the requirement they are proposing to deviate from and their reasoning and justification for requesting the deviation. The vendor may not deviate from any of the requirements unless Metra has granted the vendor written approval. Metra has the sole right to approve or reject the vendor's deviation request.

General tolerance on dimensions without individual indications on the drawing

1. Scope and Purpose

This document defines the dimensional tolerances without individual indications on the drawing. According to the extent of each dimension of metal fabrications and non-metallic fabrications, the dimensional tolerance to be complied with, are detailed in this section.
(These tolerances are based on JIS B 0405, 403 and ISO 2768)

2. Extent of dimensional tolerance

A. General tolerances (included the machining allowance)

General tolerances apply to the products by metal removal and forming from sheet metal, welding. It defines the dimensions as follows.

1) Over 0.02" up to 157.48" Liner dimensions
2) Permissible deviation of Angular dimensions
3) Allowance of Chamfer
These tolerances are referred in Table A-1, A-2, A-2, A-3

B. Radius of bending on formed parts by press working

It defines the bending radius of the parts formed by press working.
These tolerances (**Minimum radius**) are referred in Table B-1, B-2, B-3.
Maximum radius to be adequate with the equivalent to the thickness of sheet.

C. Gauge (thickness) of sheet metal

In case the drawing is in the metric scale, refer to conversion table, Table C-1, C-2, C-3.
Select the material thickness by choosing the applicable gauge of metal.

General tolerance on dimensions without individual indications on the drawing (Continued)

3. Tolerances

A. General Tolerance

Table A-1 Tolerance of Linear dimensions Over 0.02" up to 157.48"

Dimensions						Tolerance			
(Inches)			(mm)			(Inches)		(mm)	
Over		Up to	Over		Up to	Permissive deviation			
0.020"	~	0.118"	0.5	~	3	±	0.008"	±	0.2
0.118"	~	0.236"	3	~	6	±	0.012"	±	0.3
0.236"	~	1.181"	6	~	30	±	0.020"	±	0.5
1.181"	~	4.724"	30	~	120	±	0.031"	±	0.8
4.724"	~	15.748"	120	~	400	±	0.047"	±	1.2
15.748"	~	39.370"	400	~	1000	±	0.079"	±	2
39.370"	~	78.740"	1000	~	2000	±	0.118"	±	3
78.740"	~	157.480"	2000	~	4000	±	0.157"	±	4

Source: ISO 2768-1:1989 (E) Tolerance class: coarse

Table A-2 Permissible deviations of Angular dimensions

Dimension for Length of shorter side						Tolerance (degrees)	
(Inches)			(mm)				
Over		Up to	Over		Up to	Permissible deviation	
Under 0.394"			Under 10			±	1.50°
0.394"	~	1.969"	10	~	50	±	1.00°
1.969"	~	4.724"	50	~	120	±	0.50°
4.274"	~	15.748"	120	~	400	±	0.25°
Over 15.748"			Over 400			±	0.167°

Source: ISO 2768-1:1989 (E) Tolerance class: coarse

Table A-3 Allowance of Chamfer

Dimensions						Tolerance			
(Inches)			(mm)			(Inches)		(mm)	
Over		Up to	Over		Up to	Permissive deviation			
0.020"	~	0.118"	0.5	~	3	±	0.016"	±	0.4
0.118"	~	0.236"	3	~	6	±	0.0394"	±	1
Over 0.236"			Over 6			±	0.0787"	±	2

►The diameter of holes for bolt to be complied with general tolerance "Table A-1".
►It is vendor's responsibility to ensure the hole size is checked and determined to be correct size before threading.

General tolerance on dimensions without individual indications on the drawing (Continued)

B. Minimum Radius of bending by press working

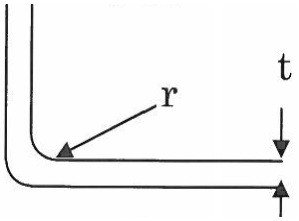


Table B-1 Stainless steel Minimum radius of bending (Inch)

Thickness (t) (Gauge)	(mm)	S.ST.301-DLT S.ST. 301L S.ST.301-LT S.ST. 304	S.ST.301L-1/8H S.ST.301L-ST S.ST.301M-ST	S.ST.301L-1/4H S.ST.301L-MT S.ST.301M-MT	S.ST.301L-1/2H S.ST.301L-HT S.ST.301M-HT
19	1.0	0.042	0.084	0.105	0.126
18	1.2	0.048	0.096	0.120	0.144
16	1.5	0.059	0.119	0.148	0.177
14	2.0	0.075	0.150	0.1875	0.225
13	2.3	0.090	0.180	0.263	0.315
12	2.5	0.105	0.211	0.263	0.315
11	3.0	0.120	0.240	0.300	0.360
10	3.2	0.135	0.270	0.338	0.405
8	4.0	0.165	0.330	0.413	0.495
7	4.5	0.187	0.375	0.468	0.561
1/4"	6.0	0.250	0.500	0.625	0.750

Table B-2 Carbon steel Minimum radius of bending (Inch)

Thickness (t) (Gauge)	(mm)	Std. No ASTM A242 <SPAH> <SPAC>	Std. No ASTM A36, A569, A366 <SS400, SPH, SPC>
Under 16	Under 1.6	Minimum r = t	Minimum r = t
14	2.0	0.113	0.075
13	2.3	0.135	0.090
10	3.2	0.203	0.135
3/16"	4.5	0.270	0.180
1/4"	6.0	0.375	0.250
3/8"	9.0	0.650	0.375
1/2"	12.0	1.00	0.500
5/8"	16.0	1.25	

< >
JIS STANDARD Material Symbol

General tolerance on dimensions without individual indications on the drawing (Continued)

B. Minimum Radius of bending by press working

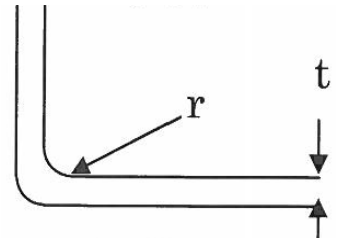


Table B-3 Aluminum Minimum radius of bending (Inch)

Thickness (t) (Inches)	Thickness (t) (mm)	A5005 A5052 A5056 A5083 A6061	A5083-H32	A7N01
0.032	0.8	0.032		
0.040 0.050	1.0 1.2	0.050		
0.063	1.5 1.6	0.063	0.190	
0.080	2.0	0.080	0.240	
0.090	2.3	0.090		
0.100	2.5	0.100		
0.125 (0.120)	3.0	0.125 (0.120)	0.375	
0.125	3.2	0.125		0.313
0.160	4.0	0.240		0.400
0.188	4.5	0.282		0.470
0.190	5.0	0.285		0.475
0.250	6.0	0.500		0.625
0.313 (0.375)	8.0	0.626 (0.750)		0.940
0.500	10.0	1.25		1.50
0.500	12.0	1.25		1.50

Conversion Table (Metric ←→ Gauge/Inch)

C. Conversion Table for Gauge (Thickness)

Table C-1 Stainless Steel

Gauge	Thickness	
	(Inches)	t (mm)
19	0.0420	1.0
18	0.0480	1.2
16	0.0595	1.5
14	0.0751	2.0
13	0.0900	2.3
12	0.1054	2.5
11	0.1200	3.0
10	0.1350	3.2
8	0.1650	4.0
7	0.1874	4.5/5.0
1/4"	0.25	6.0

Table C-2 Carbon Steel

Gauge	Thickness	
	(Inches)	t (mm)
20	0.036	0.8
18	0.048	1.2
16	0.06	1.5/1.6
14	0.0747	2
13	0.0897	2.3
10	0.1345	3.2
3/16"	0.1793	4.5
1/4"	0.250	6
3/8"	0.375	9
1/2"	0.500	12
5/8"	0.625	16

Table C-3 Aluminum

Thickness in Inches	t (mm)
0.032	0.8
0.040 / 0.050	1.0 / 1.2
0.063	1.5 / 1.6
0.080	2.0
0.090	2.3
0.100	2.5
0.125 (0.120 A5052)	3.0
0.125	3.2
0.160	4.0
0.188	4.5
0.190	5.0
0.250	6.0
0.313 (0.375)	8.0
0.500	10.0
0.500	12.0

Requirement for Welding Parts

Only an AWS certified welder shall perform the welding work

A. Welder Certifications and Documentation

Prior to welding work, the following documentation should be submitted and approved by a CWI and documentation must indicate that vendor is qualified to perform the work.

1. AWS Welding Procedure Specification (WPS)
2. AWS Procedure Qualification Record (PQR) -Except those welds Pre-qualified by AWS 15.1
3. AWS Welder, Welding, Operator, or Track Welder Qualification Record

for:

AWS D15.1/D15.1M:2012 (or current revision) RAILROAD WELDING SPECIFICATION FOR CARS AND LOCOMOTIVES

AWS D1.6/D1.6M:2007 (or current revision) STRUCTURAL WELDING CODE STAINLESS STEEL

AWS D1.1/D1.1M:2010 (or current revision) STRUCTURAL WELDING CODE-STEEL

and/or applicable AWS Specification.

An independent CWI must verify the certifications and documentation and submit a letter confirming that the welder the vendor will use is qualified to perform the work.

B. Inspection

Welding must be inspected by CWI Inspector and documentation must be submitted to indicate this and must be included with each shipment of welded parts.

C. Shipping

A detailed Inspection Report should be provided by the vendor for each shipment to Metra.

Welding Visual Inspection Criteria

1. Scope and Purpose

This document defines the visual inspection criteria of welding defects without individual indications on the drawing.
The standard for spot welding (Resistance welding) is based on AWS C1.1M/C1.1:2000

2. Extent of application on criteria

These criteria define metal fabrications for Aluminum and Stainless Steel, Carbon Steel.

A. Arc welding for Aluminum and Aluminum alloy
B. MIG or TIG welding for Stainless Steel
C. Arc welding for Steel and Stainless Steel
D. Semi-automatic gas shielded arc welding
E. Spot welding for stainless steel

3. Qualification Test

Prior to the first article, the following report shall be submitted.

A. Fusion weld

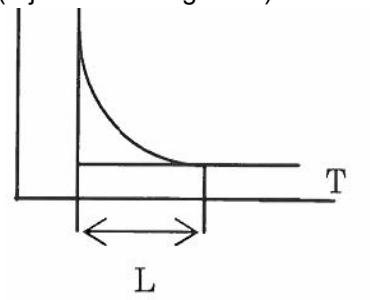
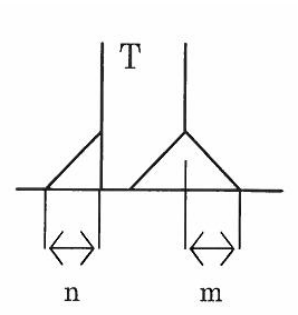
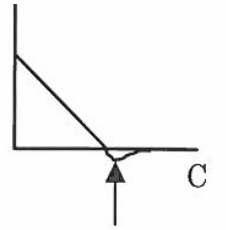
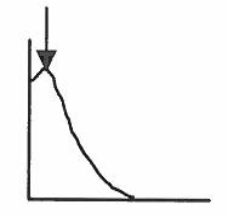
1. Daily Inspection Report for Welding Machine
2. Qualification test report
   Material certification / Filler Material / Gas / Surface / Preparation / Weld machine
   Welding Procedure (Speed / Current / Joint detail / Sheet thickness / Number of layer)
   Welder's name and WPS qualification attachment
3. Macro test Photograph (Test sample to be held for visual inspection at FAI)
4. If requested or necessary, the results of Bent test or Break test and so on.

B. Spot weld (Resistance weld)

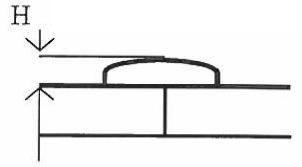
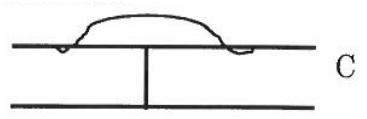
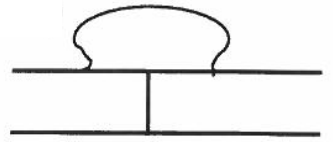
1. Daily inspection report for Spot weld machine
2. Qualification test report
   Material certification / Filler Material / Gas / Preparation / Spot Weld machine
   Procedure of weld (Time / Current, Sheet Thickness, Nugget Diameter)
3. Macro test Photograph (Test sample to be held for visual inspection at FAI)
4. Test Results of shear test

4. Inspection Criteria (Except for Truck Frame and Truck Parts)

A. Fillet welded joint

<table>
<tr><th>No.</th><th>Defect of welding</th><th>Group A (Aluminum)</th><th>Group B, C, D (Stainless steel or Carbon steel)</th></tr>
<tr><td>1</td><td>Crack</td><td colspan="2">Not allowed</td></tr>
<tr><td>2</td><td>Leg on the welding
(T joint of none groove)
 
</td><td>L ≥ 1.0 T
The length on leg of weld to be 100% or more to thickness of thin plate.</td><td>L ≥ 0.8 T
The length on leg of weld to be 80% or more to thickness of thin plate.</td></tr>
<tr><td>3</td><td>Leg on the welding
(Single bezel groove or J type groove)
 
</td><td><table><tr><th>T</th><th>m ≥</th><th>n ≥</th></tr><tr><td>0.250"</td><td>0.20"</td><td>0.20"</td></tr><tr><td>0.313"</td><td>0.20"</td><td>0.24"</td></tr><tr><td>0.375"</td><td>0.20"</td><td>0.28"</td></tr><tr><td>0.500"</td><td>0.20"</td><td>0.315"</td></tr></table>The length of leg 'm', 'n' to be more than the above</td><td>m, n ≥ 0.25 T
The length on leg of weld to be 25% or more to thickness of plate which is made the groove.</td></tr>
<tr><td>4</td><td>Roughness on the bead</td><td colspan="2">The difference of roughness to be 0.08" or less in the range of 1" length</td></tr>
<tr><td>5</td><td>Undercut
 
</td><td colspan="2">1) In the range of 2" length from both edge of weld
Not allowed
2) Except for the above range (T: thickness)
C < 0.1T and C < 0.02"</td></tr>
<tr><td>6</td><td>Overlap
  </td><td colspan="2">Overlap to be 0.04" or less.</td></tr>
</table>

B. Butt joint welding

No.	Defect of welding	Group A (Aluminum)		Group B, C, D (Stainless steel or Carbon steel)	
1	Crack	**Not allowed**			
2	The height of excess weld metal 	Thickness	H	Gauge	H
		Under 0.25"	≤ 0.08"	Under 11	≤ 0.08"
		0.25"~0.60"	1/3 T"	11~1/4	≤ 0.12"
		Over 0.60"	≤ 0.20"	Over 1/4	≤ 0.16"
3	Undercut 	1) In the range of 2" length from both edge of weld **Not allowed** 2) Except for the above range (T: thickness) **C < 0.1T and C < 0.02"**			
4	Overlap 	Overlap to be **0.04" or less.**			
5	The width of weld bead	The difference on width of weld bead to be **0.08" or less** in the range of **1" length**			

C. Defect of Pit (Surface pore) (All welding)

1) In the range of 2" length from both edges of weld Not allowed

2) Except for the above range

In the area of 1/2" X 1/2", the defects to be less than 4 points. (Refer to Table A)

If G finish indicates on the drawing, the defects to be less than 2 points.

Table A Allowance of Pit

Size of pit	Quantity of pit
Under 0.04"	4
0.04" ~ 0.08"	2
0.08" ~ 0.16"	1

D. All other defects such as insufficient weld, porosity, incomplete penetration, lack of fusion, etc., will not be accepted.

E. Spot weld (Resistance Weld) for Stainless Steel

1. Minimum Nugget Diameter and Minimum Shear Strength

Spot welding to meet with the characteristic as follows.

Sheet Thickness			**Nugget Diameter**	**Minimum Shear Strength KN (LB)**		
				Ultimate Tensile Strength of Base Metal		
Gauge	Inches	mm	Inch (mm)	480 MPa Up to 620 MPa	620 MPa Up to 1.03 GPa	1.03 GPa and Higher
19	0.0420	1.0	0.165 (4.2)	4.9 (1100)	6.0 (1360)	6.9 (1550)
18	0.0480	1.2	0.189 (4.8)	6.5 (1450)	7.6 (1700)	8.9 (2000)
17	0.0551	1.4	0.205 (5.2)	7.6 (1700)	8.9 (2000)	10.9 (2450)
16	0.0595	1.5	0.221 (5.6)	8.7 (1950)	10.7 (2400)	12.9 (2900)
14	0.0751	2.0	0.268 (6.8)	12.0 (2700)	16.1 (3400)	17.8 (4000)
13	0.0900	2.3	0.285 (7.3)	15.8 (3550)	18.7 (4200)	23.6 (5300)
12	0.1054	2.5	0.291 (7.4)	18.7 (4200)	22.2 (5000)	28.5 (6400)
11	0.1200	3.0	0.299 (7.6)	22.2 (5000)	26.7 (6000)	33.8 (7600)
10	0.1350	3.2	0.315 (8.0)	22.2 over	26.7 over	33.8 over
9	0.1378	3.5	0.366 (9.3)	22.2 over	26.7 over	33.8 over
8	0.1650	4.0	0.44 (11.2)	44.5 (10000)		
7	0.1874	4.5 5.0	0.47 (12.0)	54.7 (12300)		
1/4"	0.25	6.0	0.60 (15.2)	75.6 (17000)		

F. Discoloration must be removed and the welds cleaned for acceptable finish.

END

APPENDIX B

Project Material Problem Form

Control No. MPF_____

Date:_____ Car Number_____

Your Name:_____ Project:_____

Vendor:_____ Station_____

Part Number:_____ Qauntity_____

Part Description:_____ B/O Tag #_____

Serial Number:_____ Pictures Taken ☐

Code	Cause
1	Metra Damage
2	Metra Lost
3	Warrenty, B/O
4	Metra Request
5	Shipping
6	Other

Description of Problem / Issue:

Materials Team

Has the part been replaced? (circle) **Yes** **No**	Station:_____	Date:_____	

Intials of Materials Person _____

Form Revision B Date 1/9/2013

APPENDIX C

Metra - Mechanical Department

QA/QC

[ ] First Article
[ ] First Article Audit
[ ] Material Inspection

Inspection Report # : _____

Project #: _____ [ ] Capital [ ] Operating

Part #: _____ **Serial # / Lot #:** _____

Description: _____ **Drawing:** _____

Purchase Order / Work Order Number: _____ **Revision:** _____

Supplier: _____ **Reference:** _____

Qty Received: _____ **Date Received:** _____ **Qty Inspected:** _____

Item	Dimension or Specification - IN	Min	Max	Actual	Within Spec	Out of Spec
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						

[ ] **First Article Approved** This is Authorization to Proceed
[ ] **First Article Rejected** Correct Defects & Resubmit Article
[ ] **Inspection Passed** Material Accepted
[ ] **Inspection Failed** Material Rejected

Remarks & Comments:

Inspector Signature: _____ **Date:** _____

rev30707

APPENDIX D

APPENDIX J

CODE LETTERS

TABLE I—Sample size code letters

(See 9.2 and 9.3)

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

APPENDIX J

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

(See 9.4 and 9.5)

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

↓ = 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.

APPENDIX E