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REVISION: CSTI036 MP_SPEC --V

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ORIGINATOR (DRM) LaShelle Brown (APPROVE 09/21/2016 08:57:22)
M&P (SUSTAINING) Chintamani Ketkar (APPROVE 09/21/2016 10:16:49)
M&P_CHECK (ALL) Ali Eftekhari (APPROVE 09/21/2016 10:25:04)
M&P_GROUP (ALL) Bret Vogel (APPROVE 09/21/2016 10:42:41)
CTC (ALL) Brent Anderson (APPROVE 09/21/2016 16:02:21)
ME (SUSTAINING) Terri Goforth (APPROVE 09/27/2016 13:53:02)
for Jason Neal
QUALITY (ALL) Richard Downs (APPROVE 09/21/2016 11:00:06)
SI_MANAGER (ALL) Joe Phillips (APPROVE 09/26/2016 08:29:43)
M&P_EFFECTIVITY (ALL) Amit Tamhane (APPROVE 09/27/2016 15:00:32)
UM_ROLE (UM) Bret Vogel (APPROVE AS UM 09/27/2016 14:38:36)
RELEASE_M&P (ALL) LaShelle Brown (APPROVE 09/28/2016 12:08:40)

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ORIGINATOR (DRM) LaShelle Brown (APPROVE 12/18/2015 10:15:22)
M&P (SUSTAINING) Bret Vogel (APPROVE 12/18/2015 11:02:44)
for Sharan Gopasetty
M&P_CHECK (ALL) Don Snyder (APPROVE 12/18/2015 12:46:08)
M&P_GROUP (ALL) Bret Vogel (APPROVE 12/18/2015 12:46:42)
CTC (ALL) Brent Anderson (APPROVE 12/18/2015 15:18:45)
ME (SUSTAINING) Terri Goforth (APPROVE 12/21/2015 13:11:07)
for Jason Neal
QUALITY (ALL) Richard Downs (APPROVE 12/21/2015 06:44:45)
SI_MANAGER (ALL) Joe Phillips (APPROVE 12/18/2015 13:04:34)
M&P_EFFECTIVITY (ALL) Carolyn Wyatt (APPROVE 12/21/2015 14:45:51)
for Amit Tamhane
UM_ROLE (UM) Bret Vogel (APPROVE AS UM 12/21/2015 14:24:48)
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SI_MANAGER (ALL) Ab Dirkzwager (APPROVE 01/15/2014 09:53:01)

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UM ROLE (UM) Bret Vogel (APPROVE AS UM 01/15/2014 12:53:02)
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ORIGINATOR (DRM) LaShelle Brown (APPROVE 07/17/2012 08:39:49)
M&P (SUSTAINING) Chintamani Ketkar (APPROVE 07/02/2012 23:29:54)
M&P_CHECK (ALL) Paul Oldland (APPROVE 07/05/2012 13:23:23)
M&P_GROUP (ALL) Bret Vogel (APPROVE 07/05/2012 15:58:13)
CTC (ALL) Brent Anderson (APPROVE 07/06/2012 15:32:14)
ME (SUSTAINING) Adam Blackford (APPROVE 07/16/2012 13:32:55)
QUALITY (ALL) Greg Hall (APPROVE 07/09/2012 06:33:49)
SI_MANAGER (ALL) James Krone (APPROVE 07/09/2012 14:52:51)
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M&P_EFFECTIVITY (ALL) Jason Zagula (APPROVE 07/17/2012 10:15:02)
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CESSNA AIRCRAFT COMPANY
AIRCRAFT DIVISION
WICHITA, KANSAS 67277

CESSNA SPECIFICATION

CSTI036

ALUMINUM ALLOY EXTRUSION PROCUREMENT AND INSPECTION

Prepared By: _____ V. Gondhalekar _____

Checked By: _____ K. Patni _____

Approved By: _____ A. Ayala _____
Material & Process Supervisor

Approved By: _____ R.B. Held _____
Product Engineering Manager

Effectivity Date: _____ 3 January 1995 _____

Effectivity Approval: _____ A. Ayala _____
Product Engineering

_____ R. Weddle _____
Manufacturing Engineering

_____ K. Kastner _____
Quality and Reliability

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Revisions

Specification revisions are identified with an alphanumeric identifier (Example A, A1, A2, B, B1, B2, etc.) The letter indicates the revision level. The number indicates the version. For any parts or processes, compliance to the latest revision level of the specification is required. Compliance to the latest version level is desirable, but not required.

To view previous changes made to this specification, please refer to previous revisions.

<u>Letter</u>	<u>Date Written</u>	<u>Description</u>
V	9-2-16	REASON: Removed Taber Metals from the QPL based on recent NADCAP audit failure and repeat findings.

Approvals: See Separate Signature Sheet

Effectivity Date: 11-1-16

[†]UM Signature indicates FAA approval of the type design; this is a minor (Class II) change; and all required substantiating data has been reviewed and found to satisfy applicable 14 CFR requirements. No further approval using FAA Form 8100-9/8110-3 is required.

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1.0 SCOPE

This specification establishes the procurement and inspection requirements for all aluminum alloys in the form of extruded shapes, bar and rod (including, but not limited to rounds, squares, tees, etc.) requiring recrystallized grain limitations. For aluminum extruded products less than 0.25" or Engineering Drawing requirements allowing for recrystallized grain not covered by this specification, reference CSTI020 for procurement and inspection requirements. In case of conflict, the applicable requirements of Cessna Engineering Drawing or Cessna Standard Drawing shall take precedence over the requirements of this specification.

Cessna Material and Process (M&P) Engineering is the final authority on the interpretation of the contents of this specification.

1.1 Definitions

- a. Lot: An extrusion lot shall consist of extrusions, which have the same following conditions:
 1. Part Number
 2. Production run
 3. Heat treat load
- b. W511 Temper: Solution heat treated, stress-relieved by stretching to produce a permanent set of 1 1/2 percent nominal, but not less than 1 percent nor more than 3 percent. Material may receive minor straightening after stretching.
- c. T3511 Temper: It is a modified temper which utilizes 1 to 3 percent permanent stretching for stress relief and minor straightening to comply with the standard tolerances.
- d. Recrystallized grain layer: A layer of larger grains found on and near the surface layers of extrusions. Among other parameters, the extrusion method, process parameters, alloy content and raw material preparation affect the depth of the recrystallized grain layer.

2.0 REFERENCES

Except where a specified issue is indicated, the current issue of the following publications shall form a part of the specification to the extent indicated herein.

2.1 Cessna Specifications

CMMP011	Aluminum Alloy 2024 Extruded Shapes
CMMP012	Aluminum Alloy Shapes, Extruded, 7075-W511
CMMP013	Aluminum Alloy Stepped Extrusions, 7050-T76511 and 7050-T7652
CMMP014	Aluminum Alloy Extrusions, 7050
CMMP024	Aluminum Alloy 2224, Extruded Shapes
CSTI006	Ultrasonic Inspection Procedure and Requirements
CSTI008	Electrical Conductivity Testing of Aluminum Alloys
CSTI020	Aluminum Alloy Extrusion Procurement and Inspection, Unlimited Recrystallized Grain

2.2 Other Specifications

AMS 4345	Aluminum Alloy, Extrusions 6.4Zn - 2.4Mg - 2.2Cu - 0.12Zr (7150-T77511) Solution Heat Treated, Stress Relieved, Straightened, and Overaged UNS A97150
AMS-QQ-A-200/2	Aluminum Alloy 2014, Bar, Rod, Shapes, Tube, and Wire, Extruded UNS A92014
AMS-QQ-A-200/3	Aluminum Alloy 2024, Bar, Rod, Shapes, Tube, and Wire, Extruded UNS A92024
AMS-QQ-A-200/8	Aluminum Alloy 6061, Bar, Rod, Shapes, Tube, and Wire, Extruded UNS A96061
AMS-QQ-A-200/11	Aluminum Alloy 7075, Bar, Rod, Shapes, Tube, and Wire, Extruded UNS A97075
AMS-QQ-A-200/15	Aluminum Alloy Bar, Rod, Shapes, Extruded, 7075-T76 Improved Exfoliation Resistance - UNS A97075
AMS-STD-2154	Inspection, Ultrasonic, Wrought Metals, Process for
ASTM B666/ B666M	Identification marking of Aluminum and Magnesium Products

3.0 MATERIALS / EQUIPMENT

The material shall meet the requirements of the applicable material specification as called out on the Engineering drawing.

4.0 REQUIREMENTS

4.1 General

Production extrusion material shall be manufactured using the same procedure used for the first production run. Any significant manufacturing method or facility change shall require written notification to Cessna Material and Process Engineering along with submission of all requirements of this specification. Producer's die drawings of all Cessna designed extruded shapes shall be submitted to the Cessna Engineering Standards Group for record retention.

The supplier is responsible for furnishing all requirements of the engineering drawing, the applicable material specification, and this specification. It is the supplier's responsibility to ensure that facilities are approved by Cessna Quality before performing any special process, as defined by Cessna Aircraft Company. Cessna Aircraft Company reserves the right to perform any inspection required of the supplier when such inspections are deemed necessary to assure the parts conform to the requirements.

4.2 Prequalification

Preproduction approval will be required if the original producer has not produced the extrusion within five (5) years of the last production extrusion. Qualification shall be per Para.7.0

4.3 Ultrasonic Inspection

All extrusions with 0.5 inch or greater thickness, including bar and rod; shall be inspected per CSTI006 or AMS-STD-2154 to class A requirements.

4.4 Tensile Properties and Electrical Conductivity

Tensile properties and electrical conductivity measured on extrusions supplied in -T temper and capability test results for extrusions supplied in -O or -W511 temper shall meet the requirements of the applicable material specification. The location of the conductivity test will be per the respective material specification or on the tensile test specimen.

The producer shall certify that the electrical conductivity meets the applicable material specifications for each lot of extrusions supplied in the -T temper.

4.5 Chemistry

The producer shall certify that the extrusion material meets the chemistry requirements of the applicable material specification.

4.6 Recrystallized Grain

This requirement is applicable for all aluminum alloys in the form of extruded shapes with any thickness of 0.250 inch or greater. This thickness criterion is applicable to the flange, web, diameter, bar, and other shape thicknesses and is not to be applied to the thickness dimensions of the bulb.

4.6.1 Recrystallized grain limit

The recrystallized grain on the tail section of the extrusion shall not exceed the limits specified on the extrusion standard drawing. When the recrystallized grain limit is not specified on the extrusion drawing, the limits specified in 4.6.3 and 4.6.4 shall apply.

The radius effect on recrystallized grain layer depth measurement applies to extrusions of special shapes such as T's, L's, etc. with 0.250 inch minimum radii. For Standard shapes such as rounds, squares, hexes, etc., recrystallized grain limits shall be defined by depth at surface requirements listed in Tables I and II as stated in 4.6.2. except that Standard shapes are exempt from the radii requirement. Recrystallized grain requirements apply to all alloy extrusions except 2014 and 6063. Tail sections from all extrusions procured in the annealed temper shall be solution heat treated prior to measurement of recrystallized grain layer thickness.

4.6.2 Recrystallized grain depth measurement

The surface of an extrusion for recrystallized grain depth shall be as defined in Figure 1 for extrusions designed prior to 1998 and per Figures 2 and 3 for extrusions designed in 1998 and thereafter.

Outside corners and inside corners of an extrusion for recrystallized grain depth shall be as defined in Figure 1 for extrusions designed prior to 1998.

4.6.3 Recrystallized grain limit for Cessna designed extrusions prior to 1998

The recrystallized grain limits per Table I shall apply. When the extrusion has an inside and/or outside radii of 0.250 inch or greater, the corner effect on recrystallized grain layer per Table I shall apply. For extrusions with inside or outside radii less than 0.250 inch, recrystallized layer depth shall be controlled by the limitations as measured from the surface as per Table I.

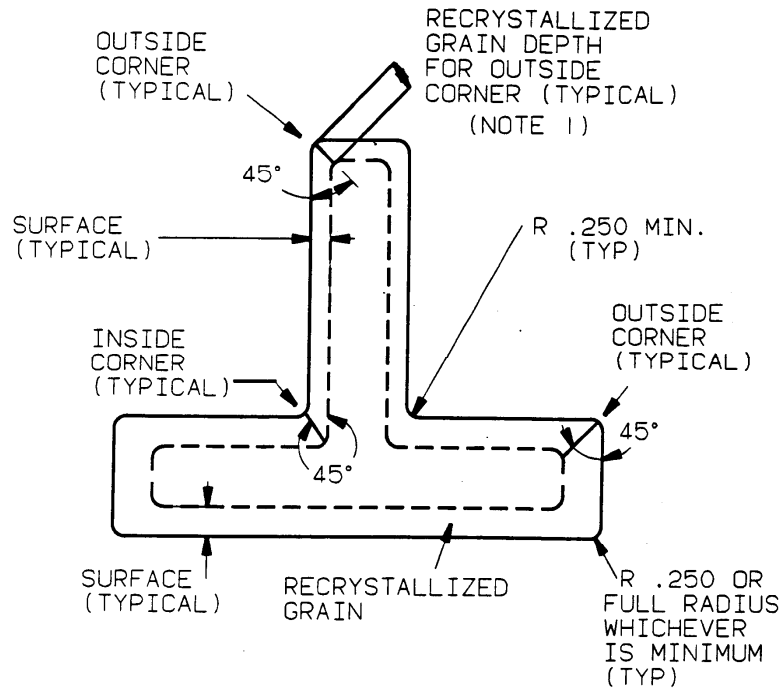


Figure 1
Surfaces and Corners of an Extrusion

NOTES:

1. Similar measurement should be taken at the inside corner and the outside corner of the horizontal leg for the recrystallized grain depth.
2. The requirements of Figure 1 are applicable to extrusions designed prior to 1998. See para. 4.6.3 and Table I for corresponding recrystallized grain limits.

Table I
Recrystallized Grain Limits
Applicable to Extrusions Designed Prior to 1998

Aluminum Alloy	Nominal Section Thickness(in.)	Maximum Recrystallized Grain Layer Depth (Note 1)		
		At Surface For Standard & Special Shapes (in.)	Special shapes with corner radius \geq 0.250 in. (Note 2)	
			At Inside Corners (in.)	At Outside Corners (in.)
All Alloys except 2224 7050 and 7150 (Note 3)	0.250 to 0.500	0.045	0.045	0.090
	0.501 and above	0.060	0.075	0.150
2224 and 7150	0.250 to 0.375	0.045	0.060	0.120
	0.376 to 0.500	0.060	0.075	0.150
	0.501 and above	0.090	0.150	0.300
7050 per CMMP014	As specified on the extrusion DWG	As specified on the extrusion DWG	1.5 times the surface	1.5 times the surface
7050 per all other specs	0.250 to 0.375	0.045	0.060	0.120
	0.376 to 0.500	0.060	0.075	0.150
	0.501 and above	0.090	0.150	0.300

NOTES:

1. If the extrusion has different thicknesses, then the recrystallized grain depths for the respective thickness shall apply.
2. The limits of the corner shall extend equal to the radius at that corner.
3. Recrystallized grain requirements are not applicable to 2014 alloy.

4.6.4 Recrystallized grain limit for Cessna designed extrusions in 1998 and after

Recrystallized grain envelope of extrusions shall not exceed the limits listed in Table II.

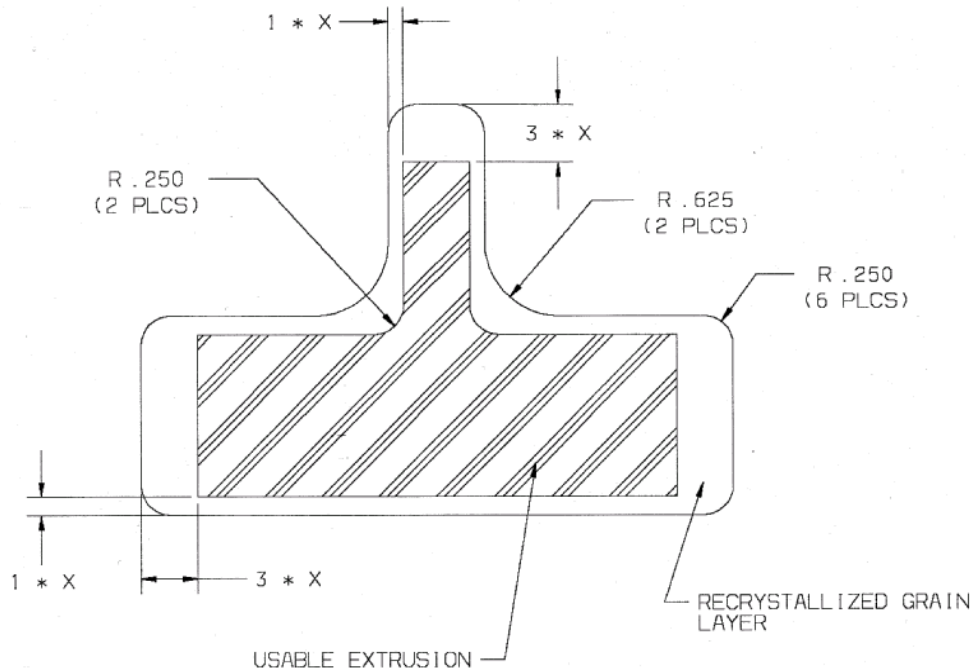


Figure 2
Recrystallized Grain Layer and Usable Cross Section Area of
T-Section Extrusions

NOTE: The requirement of this figure applies to extrusions designed in 1998 and after. See Table II for "X" values.

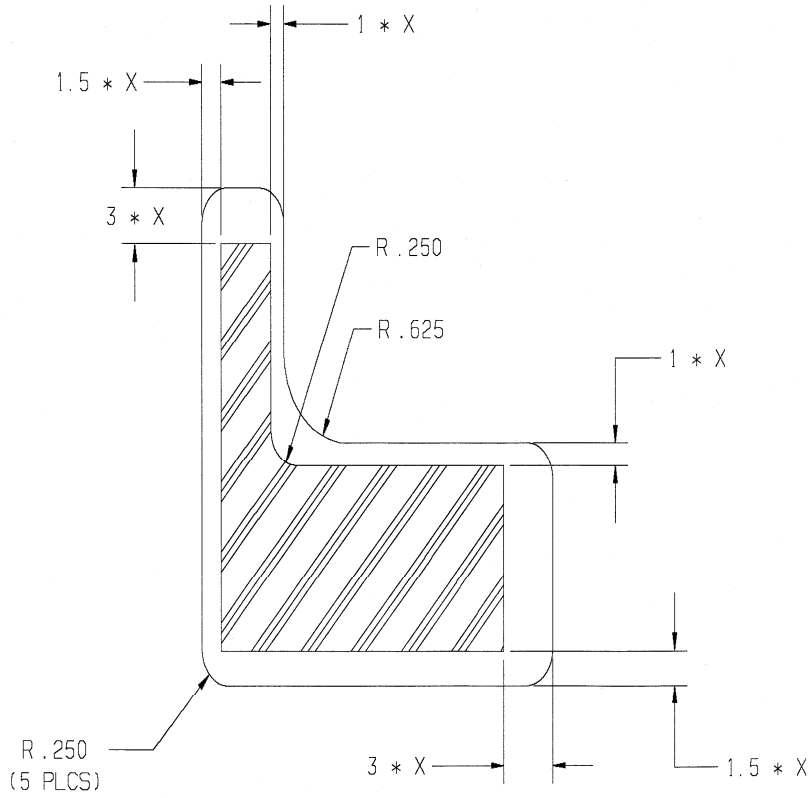


Figure 3
Recrystallized Grain Layer and Usable Cross Section Area of L-Section Extrusions

NOTE: The requirement of this figure applies to extrusions designed in 1998 and after. See Table II for "X" values.

Table II
Recrystallized Grain Limits
Applicable to Extrusions Designed in 1998 and After
(reference Figures 2 and 3 and paragraph 4.6)

Extrusion Thickness (in.)	0.250 to 0.499	0.500 to 0.749	0.750 to 0.999	1.000 and greater
Maximum Recrystallized Grain Layer Depth (in.): (X)	0.080	0.100	0.130	0.160

- NOTES:
1. The requirement of Table II applies to T and L-section extrusions only. For requirements on all other type of sections, contact Cessna M&P.
 2. X represents the permissible recrystallized grain envelop thickness at the surface of a flange. At the flange tip the permissible recrystallized grain thickness is three times that of the surface, 3X. For extrusions with different flange thickness the X value will vary and shall be selected for each thickness from the range given in Table II.
 3. When designing extrusions with inside corner radius, in the usable cross section area, larger than 0.250 inch, the corresponding inside corner radius of the extrusion shall be increased to allow sufficient depth for the recrystallized grain envelope.

4.7 Material Identification

Mark the material in accordance with ASTM B 666/B 666M. The marking shall include the following:

- a. Applicable material specification.
- b. Alloy and temper designations.
- c. Manufacturer's identification.

Additionally, the producer shall identify the tail end of each piece of each lot of material subject to recrystallized grain limits. When the stencil markings are used for front and tail of an extruded piece, certification shall list the method for the identification of the tail.

4.8 Process Control Documents

In certain cases, qualified producers listed in this specification have special process or testing requirements documented in an approved Process Control Document (PCD).

These cases include, but are not limited to:

- a. Material Producers using services such as, but not limited to, heat treatment, ingot production, or other special processes outside their facility that affect the properties of the final product.
- b. Alloys or tempers requiring closer than standard process controls or inspections to ensure consistent properties.
- c. Other special circumstances.

When a PCD is specified, in this specification or referenced specification, material shall be produced to those requirements, and the producing mill shall include the PCD number on their certification. Producers shall submit PCDs to Cessna M&P Engineering for review and approval. Once approved, no deviations from the PCD are allowed without prior Cessna M&P Engineering approval.

5.0 CERTIFICATION

The producer shall submit certification that the extrusions supplied meet the requirements of this specification. Certification shall also include any required PCD number.

The certification shall include the tensile and electrical conductivity test results; and the statement that the extruded material meets the chemistry, ultrasonic inspection and recrystallized grain limits as required by this specification. This report shall include CSTI036 and applicable material specification number. A statement identifying that the extrusion dimensions meet the specified Standard Drawing requirements shall be submitted as applicable.

6.0 QUALITY

6.1 General

Controls shall be established so as to ensure that the requirements of this specification are complied with.

7.0 QUALIFIED PRODUCERS LIST

Material per this specification shall only be procured from the producers listed in Tables III and IV.

7.1 Approval of a Producer Facility

Producers are qualified by facility, the addresses of which are listed in Table V. The facility qualification is not impacted by a producer name change, provided the producer can demonstrate there are no changes to the manufacturing processes, inspection/testing processes, or quality system.

Any changes to the manufacturing and/or inspection/testing processes that may affect material properties must be approved by Cessna M&P before implementation. Qualification of changed processes may require full statistical analysis and/or M&P process audit.

–O- or –W- Temper qualification shall be based on data analysis of capability test results per the applicable material specification.

The QPL is an engineering approval. Additional approval by Supply Chain Quality may be required prior to material procurement.

7.2 Data Requirements for Statistical Analysis

The producer is required to submit sufficient data for each alloy, form and thickness range to establish material properties on a statistical basis. Cessna M&P Engineering will evaluate the data to ensure conformance to design requirements.

7.3 Renewal of Qualifications

Cessna M&P Engineering may request an audit and/or data for assessment for renewal of prior approval. The type and quantity of data needed will be communicated to the producer at the time of such request.

7.4 Process Control Documents

Process Control Documents (PCD) as defined in section 4.8, when applicable, are shown after the producer's name (For example: PCD01) in Tables III & IV.

8.0 QUALIFIED PRODUCERS FOR CESSNA STANDARD EXTRUSIONS

Producers are qualified by facility. Table III shows all facilities qualified for extrusions with limited recrystallized grain layer. In addition, producer facilities listed in Table III are also approved for the requirements of CSTI020 for the respective alloy, temper and thickness ranges. Table IV shows all facilities qualified for controlled extrusions without limited recrystallized grain layer. The approved facility addresses are listed in Table V.

Table III
Qualified Producers List for CSTI036 Controlled Extrusions.
Extrusions with Recrystallized Grain (Rex-Grain) Layer Size Limitations per Paragraph 4.6

Alloy	Temper	Thickness (in)	Qualified Producers	Specifications
2024	O	0.250 - 0.499	Alcoa (Pimalco, Gila River) UAC (Anaheim) UAC (Canton) (PCD06)	AMS-QQ-A-200/3 CMMP011
2024	O	0.500 - 0.749	Alcoa (Pimalco, Gila River) (PCD01) UAC (Anaheim) UAC (Canton) (PCD06)	AMS-QQ-A-200/3
2024	O	0.750 - 1.249	Alcoa (Pimalco, Gila River) (PCD01) UAC (Anaheim) (PCD05) UAC (Canton) (PCD06)	AMS-QQ-A-200/3
2024	O	1.250 - 1.749	UAC (Anaheim) (PCD05) UAC (Canton) (PCD06)	AMS-QQ-A-200/3
2024	O	1.750 - 1.999	UAC (Canton) (PCD06)	AMS-QQ-A-200/3
2024	T3 T4 T6	0.250 - 0.499	Alcoa (Halethorpe Works) Alcoa (Lafayette Works) Alcoa (Massena) (Indirect Presses Only) Alcoa (Pimalco, Gila River) Alcoa (VAW Hannover, AEH) UAC (Anaheim) UAC (Canton)	AMS-QQ-A-200/3 CMMP011
2024	T3 T4 T6	0.500 - 0.749	Alcoa (Halethorpe Works) Alcoa (Lafayette Works) Alcoa (Massena) (Indirect Presses Only) Alcoa (Pimalco, Gila River) UAC (Anaheim)	AMS-QQ-A-200/3
2024	T3 T4 T6	0.750 - 1.249	Alcoa (Halethorpe Works) Alcoa (Lafayette Works) Alcoa (Massena) (Indirect Presses Only) Alcoa (Pimalco, Gila River) UAC (Anaheim)	AMS-QQ-A-200/3

Table III (Continued)
Qualified Producers List for CSTI036 Controlled Extrusions.
Extrusions with Recrystallized Grain (Rex-Grain) Layer Size Limitations per Paragraph 4.6

Alloy	Temper	Thickness (in)	Qualified Producers	Specifications
2024	T3 T4 T6	1.250 - 1.749	Alcoa (Halethorpe Works) Alcoa (Lafayette Works) Alcoa (Massena) (Indirect Presses Only) Alcoa (Pimalco, Gila River) UAC (Anaheim)	AMS-QQ-A-200/3
2024	T3 T4 T6	1.750 - 4.499	Alcoa (Halethorpe Works) Alcoa (Lafayette Works) Alcoa (Massena) (Indirect Presses Only) Alcoa (Pimalco, Gila River) UAC (Anaheim)	AMS-QQ-A-200/3
2024	T3511	0.250 - 0.499	Alcoa (Halethorpe Works) Alcoa (Lafayette Works) Alcoa (Massena) (Indirect Presses Only) Alcoa (Pimalco, Gila River) Alcoa (VAW Hannover, AEH) Kaiser Tentalum UAC (Anaheim) UAC (Canton)	AMS-QQ-A-200/3 CMMP011
2024	T3511	0.500 - 0.749	Alcoa (Halethorpe Works) Alcoa (Lafayette Works) Alcoa (Massena) (Indirect Presses Only) Alcoa (Pimalco, Gila River) Kaiser Tentalum UAC (Anaheim) UAC (Canton)	AMS-QQ-A-200/3 CMMP011

Table III (Continued)
Qualified Producers List for CSTI036 Controlled Extrusions.
Extrusions with Recrystallized Grain (Rex-Grain) Layer Size Limitations per Paragraph 4.6

Alloy	Temper	Thickness (in)	Qualified Producers	Specifications
2024	T3511	0.750 - 1.499	Alcoa (Halethorpe Works) Alcoa (Lafayette Works) Alcoa (Massena) (Indirect Presses Only) Alcoa (Pimalco, Gila River) Kaiser Tennialum Otto Fuchs Metallwerke UAC (Anaheim) UAC (Canton)	AMS-QQ-A-200/3 CMMP011
2024	T3511	1.500 - 2.999	Alcoa (Halethorpe Works) Alcoa (Lafayette Works) Alcoa (Massena) (Indirect Presses Only) Alcoa (Pimalco, Gila River) Kaiser Tennialum UAC (Anaheim) UAC (Canton)	AMS-QQ-A-200/3 CMMP011
2024	T3511	3.000 - 4.499	Alcoa (Halethorpe Works) Alcoa (Lafayette Works) Alcoa (Massena) (Indirect Presses Only) Alcoa (Pimalco, Gila River) Kaiser Tennialum UAC (Anaheim)	AMS-QQ-A-200/3 CMMP011
2024	T3511	4.500 - 6.000	Alcoa (Lafayette Works) (PCD02) Kaiser Tennialum UAC (Canton) (PCD06)	AMS-QQ-A-200/3 CMMP011
2224	T3511	0.250 - 0.499	Alcoa (Lafayette Works) Alcoa (Massena) UAC (Anaheim)	CMMP024
2224	T3511	0.500 - 1.500	Alcoa (Lafayette Works) Alcoa (Massena) UAC (Anaheim) UAC (Canton)	CMMP024

Table III (Continued)
Qualified Producers List for CSTI036 Controlled Extrusions.
Extrusions with Recrystallized Grain (Rex-Grain) Layer Size Limitations per Paragraph 4.6

Alloy	Temper	Thickness (in)	Qualified Producers	Specifications
2224	T3511	1.501 - 2.999	Alcoa (Lafayette Works) Alcoa (Massena) UAC (Canton)	CMMP024
2224	T3511	3.000 - 4.499	Alcoa (Lafayette Works) Alcoa (Massena)	CMMP024
6061	O	0.250 - 0.499	Alcoa (Halethorpe Works) Alcoa (Lafayette Works) Alcoa (Pimalco, Gila River) Alcoa (VAW Hannover, AEH) Kaiser Tennialum Minalex UAC (Anaheim)	AMS-QQ-A-200/8
6061	O	0.500 - 1.000	Alcoa (Halethorpe Works) Alcoa (Lafayette Works) Alcoa (Pimalco, Gila River) Kaiser Tennialum Minalex UAC (Anaheim)	AMS-QQ-A-200/8
6061	O	1.001 - 3.000	Alcoa (Halethorpe Works) Alcoa (Lafayette Works) Alcoa (Pimalco, Gila River) Minalex UAC (Anaheim)	AMS-QQ-A-200/8
6061	T4 T4511	0.250 - 0.499	Alcoa (Halethorpe Works) Alcoa (Lafayette Works) Alcoa (Pimalco, Gila River) Alcoa (VAW Hannover, AEH) Minalex UAC (Anaheim)	AMS-QQ-A-200/8

Table III (Continued)
Qualified Producers List for CSTI036 Controlled Extrusions.
Extrusions with Recrystallized Grain (Rex-Grain) Layer Size Limitations per Paragraph 4.6

Alloy	Temper	Thickness (in)	Qualified Producers	Specifications
6061	T4 T4511	0.500 - 3.000	Alcoa (Halethorpe Works) Alcoa (Lafayette Works) Alcoa (Pimalco, Gila River) Minalex UAC (Anaheim)	AMS-QQ-A-200/8
6061	T6	0.250 - 0.499	Alcoa (Halethorpe Works) Alcoa (Lafayette Works) Alcoa (Pimalco, Gila River) Alcoa (VAW Hannover, AEH) Kaiser Tennialum Minalex UAC (Anaheim)	AMS-QQ-A-200/8
6061	T6	0.500 - 1.000	Alcoa (Halethorpe Works) Alcoa (Lafayette Works) Alcoa (Pimalco, Gila River) Kaiser Tennialum Minalex UAC (Anaheim)	AMS-QQ-A-200/8
6061	T6	1.001 - 3.000	Alcoa (Halethorpe Works) Alcoa (Lafayette Works) Alcoa (Pimalco, Gila River) Minalex UAC (Anaheim)	AMS-QQ-A-200/8
6061	T6511-	0.250 - 0.499	Alcoa (Halethorpe Works) Alcoa (Lafayette Works) Alcoa (Pimalco, Gila River) Alcoa (VAW Hannover, AEH) Kaiser Tennialum Minalex UAC (Anaheim)	AMS-QQ-A-200/8

Table III (Continued)
Qualified Producers List for CSTI036 Controlled Extrusions.
Extrusions with Recrystallized Grain (Rex-Grain) Layer Size Limitations per Paragraph 4.6

Alloy	Temper	Thickness (in)	Qualified Producers	Specifications
6061	T6511	0.500 - 6.500	Alcoa (Halethorpe Works) Alcoa (Lafayette Works) Alcoa (Pimalco, Gila River) Kaiser Tennialum Minalex UAC (Anaheim)	AMS-QQ-A-200/8
6061	T6 (Hinge Only)	0.250 - 1.000	Alarin Hinge (Note 1) LaDeau Mfg. (Note 1) GKN Stellex (Note 1)	AMS-QQ-A-200/8
6061	T6511 (Hinge Only)	0.250 - 1.000	Alarin Hinge (Note 1) Homer Bronson (Note 1) LaDeau Mfg. (Note 1) GKN Stellex (Note 1)	AMS-QQ-A-200/8
7050	O	0.250 - 0.499	Alcoa (Lafayette Works) (PCD02) Alcoa (Pimalco, Gila River) (PCD01) Kaiser Aluminum Alexco UAC (Anaheim) (PCD05)	CMMP014 (Note 4)
7050	O	0.500 - 1.000	Alcoa (Lafayette Works) (PCD02) Alcoa (Pimalco, Gila River) (PCD01) UAC (Anaheim) (PCD05) UAC (Canton) (PCD06)	CMMP014 (Note 4)
7050	O	1.001 - 2.000	Alcoa (Lafayette Works) (PCD02) Alcoa (Pimalco, Gila River) (PCD01) UAC (Anaheim) (PCD05) UAC (Canton) (PCD06)	CMMP014 (Note 4)
7050	O	2.001 - 3.000	Alcoa (Lafayette Works) (PCD02) UAC (Anaheim) (PCD05) UAC (Canton) (PCD06)	CMMP014 (Note 4)
7050	O	3.001 - 5.000	Alcoa (Lafayette Works) (PCD02) UAC (Canton) (PCD06)	CMMP014 (Note 4)

Table III (Continued)
Qualified Producers List for CSTI036 Controlled Extrusions.
Extrusions with Recrystallized Grain (Rex-Grain) Layer Size Limitations per Paragraph 4.6

Alloy	Temper	Thickness (in)	Qualified Producers	Specifications
7050	W511	0.250 - 0.499	Alcoa (Halethorpe Works) Alcoa (Lafayette Works) Alcoa (Pimalco, Gila River) Kaiser Aluminum Alexco UAC (Anaheim)	CMMP014 (Note 4)
7050	W511	0.500 - 1.000	Alcoa (Halethorpe Works) Alcoa (Lafayette Works) Alcoa (Pimalco, Gila River) UAC (Anaheim)	CMMP014 (Note 4)
7050	W511	1.001 - 2.000	Alcoa (Halethorpe Works) Alcoa (Lafayette Works) Alcoa (Pimalco, Gila River) UAC (Anaheim)	CMMP014 (Note 4)
7050	W511	2.001 - 5.000	Alcoa (Halethorpe Works) Alcoa (Lafayette Works) Alcoa (Pimalco, Gila River) UAC (Anaheim)	CMMP014 (Note 4)
7050	T73511	0.250 - 1.000	Alcoa (Lafayette Works) (PCD02) Alcoa (Pimalco, Gila River) (PCD01) UAC (Anaheim) UAC (Canton)	CMMP014 (Note 4)
7050	T73511	1.001 - 2.000	Alcoa (Lafayette Works) (PCD02) UAC (Anaheim) UAC (Canton)	CMMP014 (Note 4)
7050	T73511	2.001-3.000	UAC (Anaheim) (PCD05) Alcoa (Halethorpe Works)	CMMP014 (Note 4)
7050	T73511	3.001 - 5.000	Alcoa (Halethorpe Works)	CMMP014 (Note 4)

Table III (Continued)
Qualified Producers List for CSTI036 Controlled Extrusions.
Extrusions with Recrystallized Grain (Rex-Grain) Layer Size Limitations per Paragraph 4.6

Alloy	Temper	Thickness (in)	Qualified Producers	Specifications
7050	T74511	0.250-1.000	Alcoa (Pimalco, Gila River) (PCD01) UAC (Anaheim)	CMMP014 (Note 4)
7050	T74511	4.001-5.000	Alcoa (Lafayette Works) (PCD002)	CMMP014 (Note 4)
7050	T76511	0.250 - 0.499	Alcoa (Halethorpe Works) Alcoa (Lafayette Works) Alcoa (Pimalco, Gila River) Kaiser Aluminum Alexco UAC (Anaheim) UAC (Canton)	CMMP014 (Note 4)
7050	T76511	0.500 - 1.000	Alcoa (Lafayette Works) Alcoa (Pimalco, Gila River) Kaiser Aluminum Alexco Otto Fuchs Metallwerke UAC (Anaheim) UAC (Canton)	CMMP014 (Note 4)
7050	T76511	1.001 - 2.000	Alcoa (Pimalco, Gila River) Kaiser Aluminum Alexco UAC (Anaheim) (PCD05) UAC (Canton)	CMMP014 (Note 4)
7050	T76511	2.001 - 3.000	Alcoa (Halethorpe Works) Alcoa (Lafayette Works) Kaiser Tennialum UAC (Anaheim) (PCD05) UAC (Canton)	CMMP014 (Note 4)
7050	T76511	3.001-4.000	Alcoa (Lafayette Works)	CMMP014 (Note 4)
7050 Stepped Extrusion	T76511/ T7652	All	Alcoa (Halethorpe Works) Alcoa (Lafayette Works)	CMMP013 (Note 3)

Table III (Continued)
Qualified Producers List for CSTI036 Controlled Extrusions.
Extrusions with Recrystallized Grain (Rex-Grain) Layer Size Limitations per Paragraph 4.6

Alloy	Temper	Thickness (in)	Qualified Producers	Specifications
7075	O	0.250-0.499	Alcoa (Halethorpe Works) Alcoa (Lafayette Works) Alcoa (Pimalco, Gila River) Alcoa (VAW Hannover, AEH) Kaiser Aluminum Alexco UAC (Anaheim) UAC (Canton)	AMS-QQ-A-200/11
7075	O	0.500 - 1.499	Alcoa (Halethorpe Works) Alcoa (Lafayette Works) Alcoa (Pimalco, Gila River) Kaiser Aluminum Alexco UAC (Anaheim) UAC (Canton)	AMS-QQ-A-200/11
7075	O	1.500 - 8.000	Alcoa (Halethorpe Works) Alcoa (Lafayette Works) Alcoa (Pimalco, Gila River) UAC (Anaheim)	AMS-QQ-A-200/11
7075	T6 T73	0.250 - 0.499	Alcoa (Halethorpe Works) Alcoa (Lafayette Works) Alcoa (Pimalco, Gila River) Alcoa (VAW Hannover, AEH) Kaiser Aluminum Alexco UAC (Anaheim) UAC (Canton)	AMS-QQ-A-200/11
7075	T6 T73	0.500 - 1.499	Alcoa (Halethorpe Works) Alcoa (Lafayette Works) Alcoa (Pimalco, Gila River) Kaiser Aluminum Alexco UAC (Anaheim) UAC (Canton)	AMS-QQ-A-200/11

Table III (Continued)
Qualified Producers List for CSTI036 Controlled Extrusions.
Extrusions with Recrystallized Grain (Rex-Grain) Layer Size Limitations per Paragraph 4.6

Alloy	Temper	Thickness (in)	Qualified Producers	Specifications
7075	T6 T73	1.500 - 5.000	Alcoa (Halethorpe Works) Alcoa (Lafayette Works) Alcoa (Pimalco, Gila River) UAC (Anaheim)	AMS-QQ-A-200/11
7075	T6511	0.250 - 0.499	Alcoa (Halethorpe Works) Alcoa (Lafayette Works) Alcoa (Pimalco, Gila River) Alcoa (VAW Hannover, AEH) Kaiser Aluminum Alexco Kaiser Tennialum UAC (Anaheim) UAC (Canton)	AMS-QQ-A-200/11
7075	T6511	0.500 - 1.499	Alcoa (Halethorpe Works) Alcoa (Lafayette Works) Alcoa (Pimalco, Gila River) Kaiser Aluminum Alexco Kaiser Tennialum UAC (Anaheim)	AMS-QQ-A-200/11
7075	T6511	1.500 - 4.500	Alcoa (Halethorpe Works) Alcoa (Lafayette Works) Alcoa (Pimalco, Gila River) Kaiser Tennialum UAC (Anaheim)	AMS-QQ-A-200/11
7075	T6511	4.501 - 5.000	Alcoa (Halethorpe Works) Alcoa (Lafayette Works) Alcoa (Pimalco, Gila River) UAC (Anaheim)	AMS-QQ-A-200/11

Table III (Continued)
Qualified Producers List for CSTI036 Controlled Extrusions.
Extrusions with Recrystallized Grain (Rex-Grain) Layer Size Limitations per Paragraph 4.6

Alloy	Temper	Thickness (in)	Qualified Producers	Specifications
7075	T73511	0.250 - 0.499	Alcoa (Halethorpe Works) Alcoa (Lafayette Works) Alcoa (Pimalco, Gila River) Alcoa (VAW Hannover, AEH) Kaiser Aluminum Alexco Kaiser Tennialum UAC (Anaheim) UAC (Canton)	AMS-QQ-A-200/11
7075	T73511	0.500 - 1.499	Alcoa (Halethorpe Works) Alcoa (Lafayette Works) Alcoa (Pimalco, Gila River) Kaiser Aluminum Alexco Kaiser Tennialum UAC (Anaheim) UAC (Canton)	AMS-QQ-A-200/11
7075	T73511	1.500 - 2.999	Alcoa (Halethorpe Works) Alcoa (Lafayette Works) Alcoa (Pimalco, Gila River) Kaiser Tennialum UAC (Anaheim) UAC (Canton) (PCD06)	AMS-QQ-A-200/11
7075	T73511	3.000 - 4.499	Alcoa (Halethorpe Works) Alcoa (Lafayette Works) Alcoa (Pimalco, Gila River) Kaiser Tennialum UAC (Anaheim)	AMS-QQ-A-200/11
7075	T76511	0.250 - 0.499	Alcoa (Lafayette Works) (PCD02) Alcoa (Pimalco, Gila River) (PCD01) UAC (Anaheim) (PCD05) UAC (Canton) (PCD06)	AMS-QQ-A-200/15

Table III (Continued)
Qualified Producers List for CSTI036 Controlled Extrusions.
Extrusions with Recrystallized Grain (Rex-Grain) Layer Size Limitations per Paragraph 4.6

Alloy	Temper	Thickness (in)	Qualified Producers	Specifications
7075	T76511	0.500 - 0.749	Alcoa (Halethorpe Works) Alcoa (Lafayette Works) Alcoa (Pimalco, Gila River) Kaiser Aluminum Alexco UAC (Anaheim) UAC (Canton) (PCD06)	AMS-QQ-A-200/15
7075	T76511	0.750 - 1.000	Alcoa (Halethorpe Works) Alcoa (Lafayette Works) Alcoa (Pimalco, Gila River) UAC (Anaheim) UAC (Canton) (PCD06)	AMS-QQ-A-200/15
7075	T76511	1.001 - 2.000	Alcoa (Lafayette Works) Alcoa (Pimalco, Gila River) (PCD01) Kaiser Tentalum	AMS-QQ-A-200/15
7075	T76511	2.001 - 3.000	Alcoa (Lafayette Works) (PCD02) Alcoa (Pimalco, Gila River) (PCD01)	AMS-QQ-A-200/15
7075	T76511	3.001 - 4.000	Alcoa (Lafayette Works) (PCD02)	AMS-QQ-A-200/15
7075	W511	0.250 - 0.499	Alcoa (Halethorpe Works) Alcoa (Lafayette Works) Alcoa (Pimalco, Gila River) UAC (Anaheim) UAC (Canton)	CMMP012 (Note 2)
7075	W511	0.500 - 4.499	Alcoa (Halethorpe Works) Alcoa (Lafayette Works) Alcoa (Pimalco, Gila River) UAC (Anaheim)	CMMP012 (Note 2)
7150	T77511	0.250 - 0.499	Alcoa (Lafayette Works) Alcoa (Pimalco, Gila River) UAC (Anaheim)	AMS 4345

Table III (Continued)
Qualified Producers List for CSTI036 Controlled Extrusions.
Extrusions with Recrystallized Grain (Rex-Grain) Layer Size Limitations per Paragraph 4.6

Alloy	Temper	Thickness (in)	Qualified Producers	Specifications
7150	T77511	0.500 - 0.749	Alcoa (Lafayette Works) Alcoa (Pimalco, Gila River) UAC (Anaheim) UAC (Canton)	AMS 4345
7150	T77511	0.750 - 1.000	Alcoa (Lafayette Works) UAC (Canton) UAC (Anaheim)	AMS 4345
7150	T77511	1.000 - 2.000	Alcoa (Lafayette Works) UAC (Canton)	AMS 4345

- NOTES:
1. Qualified for Hinge Extrusions only.
 2. WMS20-3 and WMS20-6 are obsolete Cessna Specifications that were superseded by CMMP012.
 3. WMS20-4 is an obsolete Cessna Specification that was superseded by CMMP013.
 - 4 WMS20-5 is an obsolete Cessna Specification that was superseded by CMMP014.

Table IV
Qualified Producers List for CSTI036 <0.250" and CSTI020 Controlled Extrusions.
Extrusions without Recrystallized Grain (Rex-Grain) Layer Size.

Alloy	Temper	Thickness (in)	Qualified Producers	Specifications
2014	T6 T6511	<0.250	Alcoa (Halethorpe Works) Alcoa (Lafayette Works) Alcoa (Pimalco, Gila River) Alcoa (VAW Hannover, AEH) Kaiser Aluminum Alexco (SP00-04) Otto Fuchs Metallwerke Pechiney Extrusion UAC (Anaheim)	AMS-QQ-A-200/2
2014	T6 T6511	0.250 - 0.499	Alcoa (Halethorpe Works) Alcoa (Lafayette Works) Alcoa (Pimalco, Gila River) Alcoa (VAW Hannover, AEH) UAC (Anaheim)	AMS-QQ-A-200/2
2014	T6 T6511	0.500 - 4.499	Alcoa (Halethorpe Works) Alcoa (Lafayette Works) Alcoa (Pimalco, Gila River) UAC (Anaheim)	AMS-QQ-A-200/2
2024	O	<0.250	Alcoa (Pimalco, Gila River) (PCD01) Kaiser Aluminum Alexco UAC (Anaheim) UAC (Canton)	AMS-QQ-A-200/3 CMMP011

Table IV (Continued)
Qualified Producers List for CSTI036 <0.250" and CSTI020 Controlled Extrusions.
Extrusions without Recrystallized Grain (Rex-Grain) Layer Size.

Alloy	Temper	Thickness (in)	Qualified Producers	Specifications
2024	T3 T4 T6	<0.250	Alcoa (Halethorpe Works) Alcoa (Lafayette Works) Alcoa (Massena) (Indirect Presses Only) Alcoa (Pimalco, Gila River) Alcoa (VAW Hannover, AEH) Kaiser Aluminum Alexco Otto Fuchs Metallwerke Pechiney Extrusion UAC (Anaheim) UAC (Canton)	AMS-QQ-A-200/3 CMMP011
2024	T3511	<0.250	Alcoa (Halethorpe Works) Alcoa (Lafayette Works) Alcoa (Massena) (Indirect Presses Only) Alcoa (Pimalco, Gila River) Alcoa (VAW Hannover, AEH) Kaiser Aluminum Alexco Kaiser Tennialum Otto Fuchs Metallwerke Pechiney Extrusion UAC (Anaheim) UAC (Canton)	AMS-QQ-A-200/3 CMMP011
2024	T3511 (Hinge Only)	<0.250	Alarin Hinge (Note 1) LaDeau Mfg. (Note 1) GKN Stellex (Note 1) UAC (Anaheim) (Note 1)	AMS-QQ-A-200/3 CMMP011
2224	T3511	<0.250	Alcoa (Lafayette Works) Alcoa (Massena)	CMMP024
6060	T5	< 0.125	Futura Minalex	ASTM B221

Table IV (Continued)
Qualified Producers List for CSTI036 <0.250" and CSTI020 Controlled Extrusions.
Extrusions without Recrystallized Grain (Rex-Grain) Layer Size.

Alloy	Temper	Thickness (in)	Qualified Producers	Specifications
6061	O T4 T4511 T6	≤0.125	Alcoa (Halethorpe Works) Alcoa (Lafayette Works) Alcoa (Pimalco, Gila River) Alcoa (VAW Hannover, AEH) Minalex Otto Fuchs Metallwerke Pechiney Extrusion UAC (Anaheim)	AMS-QQ-A-200/8
6061	O T4 T4511 T6	0.126 - 0.249	Alcoa (Halethorpe Works) Alcoa (Lafayette Works) Alcoa (Pimalco, Gila River) Alcoa (VAW Hannover, AEH) Minalex Otto Fuchs Metallwerke Pechiney Extrusion UAC (Anaheim)	AMS-QQ-A-200/8
6061	O, T6	<0.250	Kaiser Tentalum	AMS-QQ-A-200/8
6061	T6511	≤0.125	Alcoa (Halethorpe Works) Alcoa (Lafayette Works) Alcoa (Pimalco, Gila River) Alcoa (VAW Hannover, AEH) Kaiser Tentalum Minalex Otto Fuchs Metallwerke Pechiney Extrusion UAC (Anaheim)	AMS-QQ-A-200/8

Table IV (Continued)
Qualified Producers List for CSTI036 <0.250" and CSTI020 Controlled Extrusions.
Extrusions without Recrystallized Grain (Rex-Grain) Layer Size.

Alloy	Temper	Thickness (in)	Qualified Producers	Specifications
6061	T6511	0.126 - 0.249	Alcoa (Halethorpe Works) Alcoa (Lafayette Works) Alcoa (Pimalco, Gila River) Alcoa (VAW Hannover, AEH) Kaiser Tennialum Minalex Otto Fuchs Metallwerke Pechiney Extrusion UAC (Anaheim)	AMS-QQ-A-200/8
6061	T6 (Hinge Only)	<0.250	Alarin Hinge (Note 1) LaDeau Mfg. (Note 1) GKN Stellex (Note 1)	AMS-QQ-A-200/8
6061	T6511 (Hinge Only)	<0.250	Alarin Hinge (Note 1) Homer Bronson (Note 1) LaDeau Mfg. (Note 1) GKN Stellex (Note 1)	AMS-QQ-A-200/8
6063	T5	<0.250	Alcoa (Halethorpe Works) Alcoa (Lafayette Works) Alcoa (Pimalco, Gila River) Alcoa (VAW Hannover, AEH) Futura Otto Fuchs Metallwerke Pechiney Extrusion UAC (Anaheim)	AMS-QQ-A-200/9
6063	T5	0.250 - 0.499	Alcoa (Halethorpe Works) Alcoa (Lafayette Works) Alcoa (Pimalco, Gila River) Alcoa (VAW Hannover, AEH) Futura UAC (Anaheim)	AMS-QQ-A-200/9

Table IV (Continued)
Qualified Producers List for CSTI036 <0.250" and CSTI020 Controlled Extrusions.
Extrusions without Recrystallized Grain (Rex-Grain) Layer Size.

Alloy	Temper	Thickness (in)	Qualified Producers	Specifications
6063	T5	0.500 - 4.499	Alcoa (Halethorpe Works) Alcoa (Lafayette Works) Alcoa (Pimalco, Gila River) Futura UAC (Anaheim)	AMS-QQ-A-200/9
7050	O	<0.250	Alcoa (Lafayette Works) (PCD02) Alcoa (Pimalco, Gila River) (PCD01) Kaiser Aluminum Alexco	CMMP014 (Note 3)
7050	W511	<0.250	Alcoa (Halethorpe Works) Alcoa (Lafayette Works) Alcoa (Pimalco, Gila River) Kaiser Aluminum Alexco UAC (Anaheim)	CMMP014 (Note 3)
7050	T73511	<0.250	Alcoa (Lafayette Works) (PCD02) Alcoa (Pimalco, Gila River) (PCD01) UAC (Anaheim) UAC (Canton)	CMMP014 (Note 3)
7050	T76511	<0.250	Alcoa (Halethorpe Works) Alcoa (Lafayette Works) Alcoa (Pimalco, Gila River) Kaiser Aluminum Alexco UAC (Anaheim) UAC (Canton)	CMMP014 (Note 3)

Table IV (Continued)
Qualified Producers List for CSTI036 <0.250" and CSTI020 Controlled Extrusions.
Extrusions without Recrystallized Grain (Rex-Grain) Layer Size.

Alloy	Temper	Thickness (in)	Qualified Producers	Specifications
7075	O	<0.250	Alcoa (Halethorpe Works) Alcoa (Lafayette Works) Alcoa (Pimalco, Gila River) Alcoa (VAW Hannover, AEH) Kaiser Aluminum Alexco Otto Fuchs Metallwerke Pechiney Extrusion UAC (Anaheim) UAC (Canton)	AMS-QQ-A-200/11
7075	T6 T73	<0.250	Alcoa (Halethorpe Works) Alcoa (Lafayette Works) Alcoa (Pimalco, Gila River) Alcoa (VAW Hannover, AEH) Kaiser Aluminum Alexco Otto Fuchs Metallwerke Pechiney Extrusion UAC (Anaheim) UAC (Canton)	AMS-QQ-A-200/11
7075	T6511	<0.250	Alcoa (Halethorpe Works) Alcoa (Lafayette Works) Alcoa (Pimalco, Gila River) Alcoa (VAW Hannover, AEH) Kaiser Aluminum Alexco Kaiser Tennialum Otto Fuchs Metallwerke Pechiney Extrusion UAC (Anaheim) UAC (Canton)	AMS-QQ-A-200/11

Table IV (Continued)
Qualified Producers List for CSTI036 <0.250" and CSTI020 Controlled Extrusions.
Extrusions without Recrystallized Grain (Rex-Grain) Layer Size.

Alloy	Temper	Thickness (in)	Qualified Producers	Specifications
7075	T73511	<0.250	Alcoa (Halethorpe Works) Alcoa (Lafayette Works) Alcoa (Pimalco, Gila River) Alcoa (VAW Hannover, AEH) Kaiser Aluminum Alexco Kaiser Tennialum Otto Fuchs Metallwerke Pechiney Extrusion UAC (Anaheim) UAC (Canton)	AMS-QQ-A-200/11
7075	T73511 (Hinge Only)	0.062 - 0.249	Alcoa (Lafayette Works) (Note 1) UAC (Anaheim) (Note 1)	AMS-QQ-A-200/11
7075	T76511	≤0.062	Alcoa (Halethorpe Works) Alcoa (Lafayette Works) Alcoa (Pimalco, Gila River) Alcoa (VAW Hannover, AEH) Kaiser Aluminum Alexco Pechiney Extrusion UAC (Anaheim) (PCD05) UAC (Canton)	AMS-QQ-A-200/15
7075	T76511	0.062-0.250	Alcoa (Halethorpe Works) Alcoa (Lafayette Works) Alcoa (Pimalco, Gila River) Alcoa (VAW Hannover, AEH) Kaiser Aluminum Alexco Pechiney Extrusion UAC (Anaheim) UAC (Canton)	AMS-QQ-A-200/15

Table IV (Continued)
Qualified Producers List for CSTI036 <0.250" and CSTI020 Controlled Extrusions.
Extrusions without Recrystallized Grain (Rex-Grain) Layer Size.

Alloy	Temper	Thickness (in)	Qualified Producers	Specifications
7075	W511	<0.250	Alcoa (Halethorpe Works) Alcoa (Lafayette Works) Alcoa (Pimalco, Gila River) UAC (Anaheim) UAC (Canton)	CMMP012 (Note 2)
7150	T77511	<0.250	Alcoa (Lafayette Works) Alcoa (Pimalco, Gila River) UAC (Anaheim)	AMS 4345

- NOTES:
1. Qualified for Hinge Extrusions only.
 2. WMS20-3 and WMS20-6 are obsolete Cessna Specification that was superseded by CMMP012.
 3. WMS20-5 is an obsolete Cessna Specification that was superseded by CMMP014.

Table V
Qualified Producer Facility Addresses

- | | | | |
|-----|---|-----|---|
| 1. | ALCOA (Lafayette Works)
3131 East Main St
Lafayette, IN 47905 | 12. | Minalex Corporation
25 Coddington Road
PO Box 247
Whitehouse Station, NJ 08889 |
| 2. | ALCOA (Pimalco, Gila River Operations)
6833 West Willis Road
Chandler, AZ 85226 | 13. | Alarin Hinge Company
6231 Randolph St.
City of Commerce, CA 90040 |
| 3. | ALCOA (Halethorpe Works)
1954 Halethorpe Farms Rd, Suite 800
Baltimore, MD 21227 | 14. | GKN Stellex Machining
3420 N San Fernando Blvd.
PO Box 7716
Burbank, CA 91510 |
| 4. | ALCOA (Massena Works)
Wire and Rods Division
Park Avenue East
P.O. Box 150,
Massena, NY 13662 | 15. | LaDeau Manufacturing
637 W. Colorado Blvd.
Glendale, CA 91204 |
| 5. | ALCOA VAW Hannover (AEH)
Presswerk GmbH & Co KG
Gottinger Chaussee 12-14
30453 Hannoverl | 16. | Homer Bronson Co
150 Price Rd.
Winsted, CT 06098 |
| 6. | UAC (Anaheim)
Anaheim Facility
2871 John Ball Way
Anaheim, CA 92816 | 17. | Kaiser Aluminum Alexco
6520 W. Allison Road
Chandler, AZ 85226 |
| 7. | UAC (Canton)
Canton Facility
180 Lamar Haley Parkway
Canton, GA 30114 | | |
| 8. | Otto Fuchs Metallwerke
Postfach 1261
D 58528 Meinerzhagen | | |
| 9. | Pechiney Extrusion
Zone Industrielle Des Listes -
BP 42 - 63502
Issoire, France | | |
| 10. | Kaiser Tennialum
309 Industrial Drive
Jackson, TN 38301 | | |
| 11. | Futura Industries
Freeport Industrial Pkwy, Building J-8
Clearfield, UT 84016 | | |