Rev. **B**

SPECIFICATION 9-9318

Amphenol Corporation
Sidney, New York

FSCM NO. 77820

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TITLE
MATERIAL

DESCRIPTION
EQUIVALENT SPECIFICATIONS

Revisions

REV. LETTER	ISSUE NUMBER	ORIGINATOR	DATE	APPROVAL
B	B3203	BARBARA RITCHEY	2-17-12	

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APPROVALS:	SIGNATURES
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DATE:	FEBRUARY 17, 2012

1.0 SCOPE:

1.1 This document identifies Engineering-approved specifications for chemical and physical equivalents. See paragraph 4.0 for Quality Assurance provision. Where the following specifications are denoted on Engineering documents, the latest revision of the associated specifications are recognized as equivalent.

2.0 APPLICABLE DOCUMENTS: The following specifications of the latest issue in effect on date of issuance of purchase order forms a part of this specification to the extent specified herein:

2.1 Society of Automotive Engineers (SAE):

SAE AMS 4150	Aluminum Alloy, Extrusions and Rings 1.0Mg 0.60Si 0.28Cu 0.20Cr (6061-T6) Solution and Precipitation Heat Treated
SAE AMS-QQ-A-200/8	Aluminum Alloy 6061, Bar, Rod, Shapes, Tube and Wire, Extruded

2.2 American Society for Testing and Materials (ASTM):

ASTM B221/B221M	Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles and Tubes
ASTM B241/B241M	Specification for Aluminum and Aluminum-Alloy Seamless Pipe and Seamless Extruded Tube
ASTM B660	Practices for Packaging/Packing of Aluminum and Magnesium Products
ASTM B666/B666M	Marking of Aluminum and Magnesium Products Practice for Identification
ASTM B807B807M	Practice for Extrusion Press Solution Heat Treatment for Aluminum Alloys
ASTM B918/B918M	Practice for Heat Treatment of Wrought Aluminum Alloys

2.3 International Organization for Standardization (ISO):

ISO 9001	Quality Management Systems - Requirements

3.0 TECHNICAL REQUIREMENTS:

3.1 Metals:

3.1.1 Aluminum Alloys-

Specification	Description	Equivalent Specification
SAE AMS 4150	Alloy 6061-T6 Extruded Bar, Rods, Shapes, Wire and Tubing	SAE AMS QQ A-200/8* Aluminum Alloy 6061 Bar, Rod, Shape, Tube and Wire Extruded
**Notice 2 of QQ-A-200 (April 21, 1995) denotes equivalent ASTM specification. The basic temper requirement shall meet T6 minimum, but not exclude "stress relieved" tempers, i.e. T6XXX. QQ-A-200/8 was superseded by SAE AMS QQA-200 but /8 information is the same.*		
SAE AMS 4150	Alloy 6061-T6 Extruded Bar, Rods, Shapes, Wire and Tubing	ASTM B221 6061-T6/ T6XXX Aluminum and Aluminum-Alloy Extruded Bar, Rod, Wire, Profile, Tubing
SAE AMS 4150	Alloy 6061-T6 Extruded Bar, Rods, Shapes, Wire and Tubing	ASTM B241 6061-T6/ T6XXX Aluminum and Aluminum Alloy Seamless Pipe and Seamless Tubing

3.1.1.1 Procurement of aluminum requires alloy, temper, dimensions with tolerances as well as the following ordering technical requirements:

3.1.1.1.1 6061-T6 may also include tempers for stress relieved T6510 and T6511. Manufacturer shall be capable of providing stress relieved tempers as required for larger diameter dimensional controls and tolerances.

3.1.1.1.2 Extrusion Press Solution Heat Treatment shall comply with ASTM B807/B807M.

3.1.1.1.3 Heat treatment of wrought aluminum shall comply with ASTM B918/B918M.

3.1.1.1.4 Variable data Material Test Reports must be certified and signed by responsible individual containing manufacture's letterhead and certify all technical requirements.

3.1.1.1.5 Material shall be identified and marked per ASTM B666/B666M with manufacturer, alloy, temper and heat number.

3.0 TECHNICAL REQUIREMENTS: (continued)

3.1.1 Aluminum Alloys- Continued

3.1.1.1.6 When tubing in accordance with ASTM B221/B221M or ASTM B241/B241M is provided, manufacturer is responsible for good seam integrity for connector products where delamination or voids are unacceptable. Applications for Space, hermeticity and other high reliability product require ASTM B241/B241M seamless tubing.

4.0 QUALITY ASSURANCE PROVISIONS:

4.1 Applicable equivalent specifications may vary in the imposed quality requirement. Quality Assurance and Procurement provisions must impose appropriate requirements on suppliers.

4.2 Manufacturer's Quality System must be in accordance with ISO 9001.

5.0 PACKAGING, HANDLING AND STORAGE REQUIREMENTS:

5.1 Material shall be wrapped or adequately protected against damage during transit.

5.2 Aluminum material shall be packaged in accordance with ASTM B660.

6.0 SAFETY: Not Applicable to this Specification.