

<b>CIRCOR</b>					Rev
Welding Quality Plan Requirements					1
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<b>Quality Plan No. / Revision</b>	<b>QP10 / Rev 0</b>
<b>Purchase Order No.</b>	<b>Standard Plan- See Purchase Order</b>
<b>Material Specification No. / Revision</b>	<b>N/A</b>

The following Quality Plans are mandatory and are required to be followed with this Quality Plan:

- ✓ MSF 1.8-5, Heat Treatment
- ✓ MSF 1.8-1, Calibration Service Quality Plan Requirements

**Identify Applicability**  
(place an X in the appropriate box)

<input checked="" type="checkbox"/>	Required procedures are submitted for review by the applicable <b>CIRCOR</b> API Manufacturing Location Engineering and/or Quality Departments or by a Subject Matter Expert (SME)
<input type="checkbox"/>	Required procedures are reviewed Onsite by competent <b>CIRCOR</b> Supply Chain location personnel
<input type="checkbox"/>	Technical audit
<input type="checkbox"/>	API Specification 6A is applicable
<input checked="" type="checkbox"/>	API Specification 6D is applicable

Purchasing agreements shall include the following provisions identified by this Quality Plan.

Only vendors that are in good standing in the Approved Vendors List shall be used. Refer to **MSPM 1.8, Purchasing Control** for other purchasing order requirements that may be required.

1. The vendor is required to submit to **CIRCOR** for review:
  - a. A copy approved welding procedure specifications for all welding to be performed
    - i. Welding Repair Procedures, if not included in the WPS
    - ii. Post Weld Heat Treatment requirements, if not included in the WPS
  - b. The names and Welder Qualification Records of the welders who will be welding on **CIRCOR** product
  - c. Welder Continuity Logs for all welders and processes used for **CIRCOR**
  - d. Electrode Control procedure for the types of electrodes to be used
  - e. Visual welding inspection criteria
  - f. Qualification requirements for all visual welding inspectors to the requirements of ASNT-TC-1A including:

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- i. Near distance acuity
  - ii. Color contrast
- g. Copies of calibration records for inspection, test, monitoring and measurement equipment used in the performance of welding activities. Including but not limited to:
  - i. Welding tools
  - ii. Welding machine volt/amp meters
  - iii. Volt/amp meters used for monitoring welding
  - iv. Thermometers used for electrode storage
  - v. Contact thermometers or optical pyrometers used to monitor welding.
2. The vendor shall submit any proposed changes WPSs to for **CIRCOR** review prior to using it on **CIRCOR** orders when changes are proposed.
3. The vendor shall provide a Certificate of Conformance(s) to document:
  - a. The vendor's welding procedure number and revision level;
  - b. Welding operator and evidence of meeting experience requirements
  - c. Inspection equipment current calibration (traceable to NIST or equivalent national or international standard).
4. The following welding records are required:
  - a. Temperature charts showing the times and temperatures, including cooling speed and period
  - b. Testing results (e.g., hardness inspection, physical testing), if and when specified
5. Conformance to the requirements stated herein provides sufficient evidence of equipment approval.
6. The vendor shall not subcontract the performance of any welding activities to a sub-vendor without **CIRCOR** approval.
7. The vendor shall notify **CIRCOR** if any portions of the activities covered by this PO are going to be subcontracted, including mechanical or chemical testing.

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Quality Plan Required Documentation - WELDING			
Quality Plan Reference Requirement	What is required?	Circor Review Required	
		Yes	No
1a	Welding Procedures	X	
1b	Welder Qualification Records	X	
1c	Welder Continuity Logs	X	
1d	Electrode Control Procedure	X	
1e	Visual Weld Inspection Criteria	X	
1f	Visual Acuity and Color Contrast Eye Exams for Welding Inspectors	X	
1g	Calibration records for the equipment used in the performance of welding activities	X	
3	Certificate of Conformance	X	
4a	Temperature Charts	X	
4b	Testing results	X	
Attachment I	Including records specified by MSF 2.3.1-1, Supplier Documentation Requirements for this Quality Plan	X	

CIRCOR Supply Chain Location Approval Mike Evans 2/28/18  
 Signature Date

CIRCOR API Manufacturing Site Approval Carlos Castillo 2/28/2018  
 Signature Date

CIRCOR API Manufacturing Site Approval [Signature] 2/28/18  
 Signature Date