

## Findings Welding Procedure Specification per ASME Section IX.

WPS NASA-A572-SMAW Rev 1  
PQR NASA-A572-SMAW -PQR  
Client Sample  
Welding document owner NASA  
Project: Sample Review  
Date of review 10/8/2025

Client has final deposition responsibility.

Accepted as submitted ☐

Accepted with verbal confirmation ☐

Accepted with written confirmation ☐

Correction or addenda required prior to next submission ☐

Correction or addenda recommended ☐

Rejected ☐

Correction/addenda or additional testing required and recertification required

Red line item	Paragraph	Discrepancy	WPS Services ranking
1	QG-106.1	PQR certified by Jacobs, WPS issued by S3 (b) Production of qualification test joints under the supervision and control of another organization is not permitted, except as permitted in QG-106.4.	Severe- potential code violation Relationship between companies should be described (note- confirmed not related)
2	<b>QW/QB-422</b>	A572 grade 50 is defined as Gr#1, not Gr#2	Moderate- could be understood to allow other materials
3	QW-402.1	WPS proper limits groove designs to single V and single bevel. Attachment shows other joints	Moderate- could be understood to allow other joint types
3	QW-402.4	WPS proper does not allow backing. Attachment shows other joints	Moderate- could be understood to allow other joint types
4	QW-402.11	Nonessential variable is not addressed The addition or deletion of nonmetallic retainers or nonfusing metal retainers.	Minor- code violation

5	none	WPS limits total deposit to 5/16 max on 8" material	Major- unlikely to be usable for allowed material
6	Fig QW-461..1 through 461.6	WPS limits position to test position 1G which is not synonymous with flat production position. 1G only applies to groove welds and not fillet welds.	minor
7	QG-109.2	WPS requires weldment to be maintained at 330-460F after welding is complete but does not list time. <i>preheat maintenance:</i> practice of maintaining the minimum specified preheat temperature, or some specified higher temperature for some required time interval after welding or thermal spraying is finished or until post weld heat treatment is initiated.	moderate
8	QW-410.5	Initial cleaning method is described A change in the method of <b>initial</b> and interpass <b>cleaning</b>	minor
9	QW-402.4, QW-310.2	WPS proper does not allow backing Partial penetration groove welds and <b>fillet</b> welds are <b>considered welding with backing</b>	inconsequential
A	QW-403.9	PQR does not record and certify maximum pass thickness. As t pass >1/2" may have been made T should be limited to 1.625 (1.1 times coupon thickness)	Severe- potential code violation
B	QW-407.1	PQR does not certify if as welded or PWHT	Severe- potential code violation

**QG-101 PROCEDURE SPECIFICATION** Procedure specifications address the conditions (including ranges, if any) under which the material joining process **must be performed**.

**QW-101 PROCEDURE SPECIFICATION** Both WPSs and SWPSs specify the variables (including ranges, if any) under which welding **must be performed**.

**Auditing of Welding Under ASME Section IX** It should be noted that Interpretation IX-83-03 says that omission of an essential or nonessential variable from a WPS (for example, by leaving a space on a form blank or simply not addressing the variable) does not meet the Section IX requirement to address the variable.... Leaving a **blank** or "N/A" on the PQR **would not document** whether or not PWHT had been performed on the test piece, and leaving a blank or "N/A" on the WPS would not prohibit PWHT from being done.

**Interpretation Number :** IX-78-62 Question (4): Could a procedure that specifies grinding and air-arc use only grinding (or vice-versa)?

Reply (4): Yes, if the WPS specifies grinding or air-arc. If the WPS specifies grinding **and** air-arc, then **both must** be used.

Question (5): Could a procedure that prescribes two types of electrodes use only one type of electrode?

Reply (5): Yes, if directions are provided for each type electrode and the WPS specifies one electrode or the other. If **both are specified in a specific sequence, then both must be used**.

Jacobs Technology, Inc., (Jacobs) located in Tullahoma, Tennessee, protests the award of a contract to Syncom Space Services, LLC (S3), located in Fort Worth, Texas, under request for proposals (RFP) No. NNS14478585R, issued by the National Aeronautics and Space Administration (NASA), for synergy-achieving consolidated operations and maintenance at Stennis Space Center and Michoud Assembly Facility. <https://www.gao.gov/products/b-411784%2Cb-411784.2>