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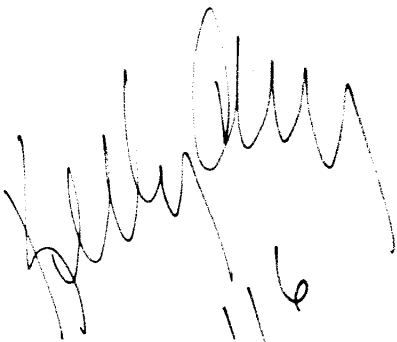
John C. Stennis Space Center
Stennis Space Center, MS 39529-6000

SSTD-8070-0123-WELD Rev. C-1
FEBRUARY 2016

COMPLIANCE IS MANDATORY

John C. Stennis Space Center FLUX CORED ARC WELDING (FCAW) OF STRUCTURAL CARBON STEEL

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Document History Log

Revision	Date	Originator/ Phone	Description
Basic	10/16/03	D. Dike Ext. 8-2803	Initial Release
A	10/30/03	W. St. Cyr Ext. 8-1134	<u>Administrative Changes:</u> Title, and throughout, change 'core' to 'cored' per AWS terminology; change page headers 'of page' from 14 to 16; on all Form E-1: change WPS Id. # (front) & PQR number (back); change all SA516/GR70 to AWS D1.1, Table 3.1, Group I&II; add Root Face Dimension 'zero'; and change the following: Pipe Diameter N/A to ≥ 24", Base Metal thickness Groove 1.00" to $\geq 1/8$" (add Fillet $\geq 1/8$"), Filler Metal AWS Class E71T-1 to AWS D1.1, Table 3.1, Grp I & II materials; 6.1-b add ref to Appendix A for qualifications of welder; 6.1-c add "acceptance criteria" and change STD 34-004 to AWS D1.1. <u>Other changes:</u> 1.0 delete ASTM MA516, add AWS D1.1 Table 3.1, and change P1 Carbon Steel to Group 1 and Group II materials; 3.0 delete ASTM A516, ASME Boiler Code, and SSC Standard 34-004, and add AWS A5.29; 6.2 delete ASTM A516, add AWS D1.1 Table 3.1 Grp I&II; 6.3 add 'Procedure' to title, change para ref from 4.0 to 4.1.1; 6.5 add AWS A5.29, and change D1.1 refs from Paragraphs to Table 3.1 Groups I and II; 6.6 delete ref to para C5.3.1.3; 6.7 add Flat 1-G position; 6.14 change Appendix A to "approved SSC engineering" and add ref to AWS D1.1; 6.15 add 'Post Weld' to title, and change text to "none." 6.16 add ref to AWS D1.1 and change "approved" to "appropriate".

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B		W. St. Cyr Ext. 8-1134	Updated references throughout document. Updated format in accordance with SPR 1400.1 requirements. Moved requirement in Document Control (Section 4.0) to Responsibilities (Section 5.0), added responsible organization for this task, and renumbered the sections that followed. Added section for acronyms and abbreviations. Removed references to FOSC Safety data requirement document and AWS Welding Handbook. Revised Section 5.10 for clarity. Edited requirements in Sections 5.13.a and 5.13.b.
C	11/3/14	Doug Dike Ext. 8-2803	Five-year revision. Updated references and acronyms. Section 2.0: Added AWS A5.36 and noted AWS A5.20 and AWS A5.29 are superseded by AWS A5.36. Sections 7.1, 7.3 and 7.5: Replaced A 5.20 or A5.29 to A 5.36 in "Filler Material" section; changed Rev. A to Rev B, and resigned.
C-1	02.12.16	R. Carol Wolfram Ext. 8-1164	Administrative change. Replaced "FOS" with "SACOM" throughout document.

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1.0 SCOPE

This John C. Stennis Space Center (SSC) standard (SSTD) provides a qualified American Welding Society (AWS) D1.1 weld procedure for Flux Cored Arc Welding (FCAW) of AWS D1.1 Table 3.1 Group I and Group II carbon steel for structural use at SSC.

2.0 REFERENCES

Referenced documents shall be the latest version unless otherwise specified.

AWS D1.1, *Structural Welding Code - Steel*
 AWS A5.20, *Specification for Carbon Steel Electrodes for Flux Cored Arc Welding**
 AWS A5.29, *Specification for Low-Alloy Steel Electrodes for Flex Cored Arc Welding**
 AWS A5.36, *Specification for Carbon and Low-Alloy Steel Flux Cored Electrodes for Flux Cored Arc Welding and Metal Cored Electrodes for Gas Metal Arc Welding*
 SPR 1440.1, *Records Management Program Requirements*
 SPR 8715.1, *SSC Safety and Health Program Requirements*
 SSTD-8070-0005-CONFIG, *Preparation, Review, Approval and Release of SSC Standards*
 SSTD-8070-0014-WELD, *Qualifying Welders and Welding Procedures*

*AWS A5.20 and AWS A5.29 are obsolete as of Dec. 31, 2014, and have been superseded by AWS A5.36.

3.0 RESPONSIBILITIES

- Responsibilities for the qualification of welders and the performance of the welding procedures are defined in Section 5.0.
- SSC Center Operations Directorate, Operations and Maintenance Division (OMD) shall maintain this SSTD in accordance with the control, review, approval, and release requirements of SSTD-8070-0005-CONFIG and the documents referenced therein.

4.0 REQUIREMENTS AND PROCEDURES

4.1 General

- All procedures shall be performed in compliance with applicable requirements in John C. Stennis Space Center Procedural Requirement (SPR) 8715.1. If ever there is a conflict between this SSTD and SPR 8715.1, the SPR shall take precedence.
- Welders shall be qualified in accordance with SSTD-8070-0014-WELD (e.g., Radiographic Reports in Appendix A are for qualification of welder).

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- c. Inspection methods and acceptance criteria shall be in accordance with AWS D1.1.

4.2 Specification Compliances

The carbon steel base metal to be welded shall meet the American Society for Testing and Materials (ASTM) specification(s) for one or more Group I or Group II materials listed in Table 3.1 of AWS D1.1.

4.3 Procedure Qualification

Qualification shall be in accordance with Paragraph 4.1 of AWS D1.1.

4.4 Base Metal

The carbon steel base metal to be welded shall meet the ASTM specification(s) for one or more Group I or Group II materials listed in Table 3.1 of AWS D1.1.

4.5 Electrodes

Electrodes shall conform to the requirements of AWS A5.20 or AWS A5.29, and in accordance with Table 3.1 of AWS D1.1.

4.6 Shielding Gas

- Shielding gas shall be Argon/CO₂ with a 75%/25% composition.
- Shielding gas shall meet the requirements of AWS D1.1, Paragraph 5.3.1.3.

4.7 Positions

Flat - 1G
Horizontal - 2G
Vertical - 3G
Overhead - 4G

4.8 Root Purge

None required.