



National Aeronautics and
Space Administration

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

SSTD-8070-0042-WELD
Rev. B
NOVEMBER 2022

COMPLIANCE IS MANDATORY

John C. Stennis Space Center **BRAZING PROCEDURE FOR THE** **REPLACEMENT OR REPAIR OF** **STAINLESS STEEL WIRE CLOTH**

Approved in DDMS by:

<u>Brennan Sanders</u> NASA SSC Center Operations Directorate Facilities Engineering Test Complex Support	<u>12-5-2022</u> Date
--	--------------------------

Concurrence by:

<u>Todd Mannion</u> NASA SSC Center Operations Directorate Facility Services	<u>11-16-2022</u> Date
--	---------------------------

<u>Harry Ryan</u> NASA SSC Engineering & Test Directorate	<u>11-15-2022</u> Date
--	---------------------------

<u>Son Le</u> NASA SSC Safety & Mission Assurance	<u>11-15-2022</u> Date
--	---------------------------

Issued by

<u>ISSUED CEF</u> Central Engineering Files	<u>12-5-2022</u> Date
--	--------------------------

This is an uncontrolled document when printed. Verify that the document is current before use.

RELEASED - Printed documents may be obsolete; validate prior to use.

Stennis Standard	SSTD-8070-0042-WELD	B
	<i>Number</i>	<i>Rev.</i>
	Effective Date: November 16, 2022	
	Review Date: November 16, 2027	
Page 2 of 6		
Responsible Office: NASA SSC Center Operations Directorate		
SUBJECT: REPLACEMENT OR REPAIR OF STAINLESS STEEL WIRE CLOTH		

Document History Log

Change/ Revision	Change Date	Originator/ Phone	Description
Basic	11.16.12	D. Dike/8-2803	Initial release, supersedes SSC 34-007.
A	11.16.17	Stephen Koch 8-3915	5-year review. Administrative changes throughout document. Revised cover sheet to reflect approval by CO PMD, and concurrence by OMD, E&TD and SMA. Updated references and acronyms.
B	11.16.22	J. Trigg 8-3058	5-year review. Revised cover sheet to update Directorate titles. Updated references and acronyms.

This is an uncontrolled document when printed. Verify that the document is current before use.

RELEASED - Printed documents may be obsolete; validate prior to use.

Stennis Standard	SSTD-8070-0042-WELD	B
	<i>Number</i>	<i>Rev.</i>
	Effective Date: November 16, 2022	
	Review Date: November 16, 2027	
Page 3 of 6		
Responsible Office: NASA SSC Center Operations Directorate		
SUBJECT: REPLACEMENT OR REPAIR OF STAINLESS STEEL WIRE CLOTH		

Table of Contents

1.0	PURPOSE	4
2.0	APPLICABILITY.....	4
3.0	REFERENCES.....	4
4.0	RESPONSIBILITIES.....	4
5.0	BASE METAL	4
6.0	FLUX.....	4
7.0	POSITION	5
8.0	BRAZING CAUTIONS.....	5
9.0	BRAZING TEMPERATURES.....	5
10.0	PRE-CLEANING.....	5
11.0	POST-CLEANING	5
12.0	QUALIFICATION	6
13.0	RECORDS AND FORMS.....	6
14.0	ACRONYMS AND ABBREVIATIONS.....	6

This is an uncontrolled document when printed. Verify that the document is current before use.

RELEASED - Printed documents may be obsolete; validate prior to use.

Stennis Standard	SSTD-8070-0042-WELD	B
	<i>Number</i>	<i>Rev.</i>
	Effective Date: November 16, 2022	
	Review Date: November 16, 2027	
Page 4 of 6		
Responsible Office: NASA SSC Center Operations Directorate		
SUBJECT: REPLACEMENT OR REPAIR OF STAINLESS STEEL WIRE CLOTH		

1.0 PURPOSE

This John C. Stennis Space Center (SSC) standard (SSTD) provides the requirements for replacement or repair of silver brazing of stainless steel wire cloth, which will use a combination of oxygen-acetylene with Tescon Model 11-1101 and consumable wire.

2.0 APPLICABILITY

This SSTD applies to all resident agencies, contractors, and/or subcontractors involved with welding at SSC.

3.0 REFERENCES

All references are assumed to be the latest version unless otherwise indicated.

ASME Boiler and Pressure Vessel Code, Section IX, *Welding and Brazing Qualifications*
 SPR 1440.1, *SSC Records Management Program Requirements*
 SSTD-8070-0005-CONFIG, *SSC Preparation, Review, Approval, and Release of SSC Standards*

4.0 RESPONSIBILITIES

- a. Users of this SSTD shall comply with its requirements, ensure use of the correct version of this SSTD and the documents it references, and inform the appropriate organization of needed changes in accordance with SSTD-8070-0005-CONFIG.
- b. Responsibilities for the use and control of this SSTD and for the review and approval of revisions or cancellation of this SSTD shall be as specified in SSTD-8070-0005-CONFIG and the applicable documents referenced therein.

5.0 BASE METAL

The base metal may consist of sheet and/or mesh, and conform to ASME Material Group P-No. 102, which includes Type 304 and 310.

6.0 FLUX

Braze flux shall be American Welding Society (AWS) Flux Classification FB3-A.

Stennis Standard	SSTD-8070-0042-WELD	B
	<i>Number</i>	<i>Rev.</i>
	Effective Date: November 16, 2022	
	Review Date: November 16, 2027	
Page 5 of 6		
Responsible Office: NASA SSC Center Operations Directorate		
SUBJECT: REPLACEMENT OR REPAIR OF STAINLESS STEEL WIRE CLOTH		

7.0 POSITION

- a. This procedure may be performed in the flat flow position, horizontal flow position, or vertical position.
- b. Filler metal shall be face fed in all positions.

8.0 BRAZING CAUTIONS

- a. When brazing stainless steel that may be subjected to a corrosive atmosphere, care should be taken to apply heat to the area being brazed for the shortest time possible.
- b. Parts to be brazed under this procedure must be assembled, supported, or otherwise located in such a manner that unnecessary stresses are not placed within the parts during the brazing cycle.
- c. Caution must be used to ensure that no area is overheated in attempting to heat other portions of the assembly.

9.0 BRAZING TEMPERATURES

To ensure flow filler metal into a joint, the temperature range must be maintained with respect to the type of filler metal used.

For BAg-7	1205 degrees to 1400 degrees
For BAg-8	1435 degrees to 1650 degrees

10.0 PRE-CLEANING

- a. The need for adequately cleaned surfaces is important when using stainless steel.
- b. If final cleaning is performed other than just prior to brazing, the area should be protected by polyethylene covering.

11.0 POST-CLEANING

Post-cleaning may be performed by whatever means necessary to obtain the level of cleanliness stipulated to meet component or system requirements.

Stennis Standard	SSTD-8070-0042-WELD	B
	<i>Number</i>	<i>Rev.</i>
	Effective Date: November 16, 2022	
	Review Date: November 16, 2027	
Page 6 of 6		
Responsible Office: NASA SSC Center Operations Directorate		
SUBJECT: REPLACEMENT OR REPAIR OF STAINLESS STEEL WIRE CLOTH		

12.0 QUALIFICATION

- a. Qualification for this procedure will be to apply a small quantity of specified filler metal to a test sample of wire cloth.
- b. Bonding of the filler metal to the cloth will qualify welder for this procedure.

13.0 RECORDS AND FORMS

- a. Records and forms required by the procedures of this standard shall be maintained in accordance with SPR 1440.1.
- b. All records and forms are assumed to be the latest edition unless otherwise indicated.
- c. Forms may be obtained from the SSC Electronic Forms repository or from the NASA SSC Forms Management Officer. Quality Records are identified in the SSC Master Records Index.

14.0 ACRONYMS AND ABBREVIATIONS

ASME	American Society of Mechanical Engineer
AWS	American Welding Society
NASA	National Aeronautics and Space Administration
SSC	John C. Stennis Space Center
SSTD	John C. Stennis Space Center Standard
SPR	Stennis Procedural Requirements