Coded Note Number: **Y1780**
Revision: **C001**
Date: **April 26, 2013**
Title: **WELDING WIRE TESTING REQUIREMENTS**

The following procedure shall be used for testing each lot of MIL-EN60, MIL-EN67, MIL-EN82H, and MIL-EN625 using the GTAW-AU process.

1. A 1/2" test plate shall be prepared in accordance with MIL-E-21562E Figure 1.

2. Base material shall conform to MIL-E-21562E Paragraph 4.6.3.1.

3. Welding shall be in accordance with MIL-E-21562E Paragraphs 4.6.1 and 4.6.2 with modifications specified herein.

4. Wire shall be tested in the final drawn condition.

5. Shielding gas shall be 100% Argon.

6. Parameters used shall be as follows:

   Polarity: DCSP

EN60		LAYER 1	LAYERS 2 AND UP
AMPS		180-200	220-240
VOLTS		8-10	8-10
TRAVEL SPEED			
(IPM)		3.5-4	4-4.5
WIRE FEED SPEED			
(IPM)	.035”	50-58	58-66
	.045”	30-35	35-40

EN67		LAYER 1 & 2	LAYERS 3 AND UP
AMPS		180-200	220-240
VOLTS		8-10	9-11
TRAVEL SPEED			
(IPM)		3.5-4	4-4.5
WIRE FEED SPEED			
(IPM)	.035”	33-40	50-58
	.045”	20-24	30-35

EN82H		LAYER 1	LAYERS 2 AND UP
AMPS		180-200	220-240
VOLTS		8-10	9-11
TRAVEL SPEED			
(IPM)		3.5-4	4-4.5
WIRE FEED SPEED			
(IPM)	.035”	50-58	58-66
	.045”	30-35	35-40

EN625		LAYER 1	LAYERS 2 AND UP
AMPS		180-200	220-240
VOLTS		8-10	9-11
TRAVEL SPEED			
(IPM)		3.5-4	4-4.5
WIRE FEED SPEED			
(IPM)	.035”	50-58	58-66
	.045”	30-35	35-40

7. Welding shall be done in the flat position.

8. The joint shall be Radiographed (RT) in accordance with MIL-STD-271 with acceptance to NAVSHIPS 0900-003-9000 Class I.

9. Failure of Radiographic testing rejects the lot, except as follows: If a test plate fails other than for porosity, the plate may either be repaired and re-inspected, or another test plate may be welded and inspected. If a test plate fails for porosity it may not be repaired. If the cause of the porosity can be identified as other than wire related, additional welding and testing may be performed. In this case, two more test plates shall be welded and tested, both of which must pass RT.

All test results, pass and fail, including rationale for retesting failed lots, shall be submitted to NNS for information.

10. Spools shall be constructed of hardboard flanges and cardboard barrels. Plastic spools may be used provided they are made of a material that is self-extinguishing by the test of ASTM-D635. Flange and barrel material shall be nonconductive, and of such construction to carry the net weight of specified electrode and retain stability under handling, shipment, storage, and use. The wire shall be securely anchored at the spool hub by threading it through a hole in the spool and bending the wire to prevent slippage. If the wire end is exposed beyond the plane of the spool, it shall be coated or taped to prevent arcing of the wire against wire feeder components.