

MIL-E-22200/5C
 1 March 1984
 SUPERSEDING
 MIL-E-0022200/5B(SHIPS)
 11 June 1971 and
 MIL-E-22200/5A
 29 June 1962
 (See 6.5)

MILITARY SPECIFICATION

ELECTRODES, WELDING, MINERAL COVERED, IRON-POWDER, LOW-HYDROGEN, LOW-ALLOY STEEL FOR HARDENING AND TEMPERING HEAT TREATMENT APPLICATIONS ONLY

This specification is approved for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This specification covers low-alloy, low-hydrogen, iron-powder type of covered electrodes for shielded metal-arc welding of HY-80 steel to be hardened and tempered after welding, but not for as-welded applications.

1.2 Classification. Electrodes shall be furnished in the type, classes, and sizes shown in table I, as specified (see 6.2).

TABLE I. Type, classes and sizes.

Type ^{1/}	Class	Position of welding	Sizes (diameter) (Inch)
MIL-10018-N1	1	All	1/8, 5/32
	2	Horizontal fillets and flat	3/16, 7/32, 1/4

^{1/} Type classification of electrodes will be determined according to the capability of the electrode to meet the tests specified herein, when used in the positions of welding specified in table I and in section 4. An electrode will be approved under one type classification. An electrode will not be approved if it differs in type from that stated in the manufacturer's request for test. The position description indicates the maximum size qualified under this specification. However, reference should be made to the Qualified Products List (QPL) for the selection of electrodes for all positions of welding.

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Commander, Naval Sea Systems Command, SEA 5523, Department of the Navy, Washington, DC 20362 by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

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2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications and standards. Unless otherwise specified, the following specifications and standards of the issue listed in that issue of the Department of Defense Index of Specifications and Standards (DoDISS) specified in the solicitation form a part of this specification to the extent specified herein.

SPECIFICATIONS

MILITARY

- MIL-W-10430 - Welding Rods and Electrodes; Preparation for Delivery of.
- MIL-E-22200 - Electrodes, Welding, Covered; General Specification for.
- MIL-S-16216 - Steel Plate, Alloy, Structural, High Yield Strength (HY-80 and HY-100).

STANDARDS

MILITARY

- MIL-STD-147 - Palletized Unit Loads.
- MIL-STD-271 - Nondestructive Testing Requirements for Metals.

2.1.2 Other Government documents and publications. The following other Government documents and publications form a part of this specification to the extent specified herein.

DEPARTMENT OF LABOR

- Code of Federal Regulations, Title 29,
Part 1910 - Occupational Safety and Health Standards.

PUBLICATION

- NAVSEA 0900-LP-003-9000 - Radiographic Standards for Production and Repair Welds.

(Copies of specifications, standards and publications required by contractors in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting officer.)

2.2 Other publications. The following documents form a part of this specification to the extent specified herein. The issues of the documents which are indicated as DoD adopted shall be the issue listed in the current DoDISS and the supplement thereto, if applicable.

UNIFORM CLASSIFICATION COMMITTEE AGENT

- Uniform Freight Classification Ratings, Rules and Regulations

(Application for copies should be addressed to the Uniform Classification Committee Agent, Tariff Publication Officer, Room 1106, 222 South Riverside Plaza, Chicago, IL 60606.)

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ASTM

E 604 - Dynamic Tear Energy of Metallic Materials.

(Application for copies should be addressed to the ASTM, 1916 Race Street, Philadelphia, PA 19103.)

AMERICAN WELDING SOCIETY (AWS)

B4.0 - Standard Methods for Mechanical Testing of Welds.
(DoD adopted)

Z49.1 - Safety in Welding and Cutting.

(Application for copies should be addressed to the American Welding Society, Inc., 550 NW LeJeune Road, P.O. Box 351040, Miami, FL 33125.)

(Industry association specifications and standards are generally available for reference from libraries. They are also distributed among technical groups and using Federal agencies.)

2.3 Order of precedence. In the event of a conflict between the text of this specification and the references cited herein, the text of this specification shall take precedence.

3. REQUIREMENTS

3.1 Electrodes furnished under this specification shall conform to the requirements of MIL-E-22200, and as specified herein.

3.2 Composition and iron content.

3.2.1 Composition. Except as specified in 3.2.2, the chemical composition of the electrode covering is optional with the manufacturer. The water content of the covering shall not exceed the percent-by-weight values as follows:

- (a) 0.10 when removed from sealed manufacturer's container.
- (b) 0.20 after 9 hours exposure to 80 percent relative humidity and 80 degrees Fahrenheit (°F) in accordance with 4.5.2.1.

3.2.2 Total iron content. The total iron content of the covering, including any combined iron in addition to metallic iron powder, shall be not less than 15 percent.

3.3 Mechanical properties. Mechanical properties of weld metal shall be as specified in table II.

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TABLE II. Mechanical properties of deposited weld metal after heat-treating^{1/2/3/}.

Yield strength ^{4/} (lb/in ²)	Elongation percent in 2 inches	Impact requirements			
		Charpy V-notch		Dynamic tear ^{6/}	
		Energy (ft-lb, min average)	Temper- ature ^{5/} (°F)	Energy (ft-lb min)	Temper- ature ^{5/} (°F)
82,000 to 94,000	20	35 60	- 60 0	300 450	- 20 30

- 1/ Heat-treated as specified in notes to figure 1.
- 2/ The ultimate tensile strength and percent reduction of area shall be recorded for information only.
- 3/ The convex surface of the specimen after bending shall have no visual cracks exceeding 1/8 inch. The corners of the specimen shall have no visual cracks exceeding 3/16 inch. The bend radius shall be two times the plate thickness (2t), and the tests conducted in accordance with AWS B4.0.
- 4/ Yield strength shall be determined by the offset method (offset = 0.2 percent).
- 5/ For each testing temperature, the average values of five tests shall be greater than the minimum average value specified. No two specimens shall have values below the minimum average specified. One specimen can have a value of 10 foot-pounds (ft-lb) below the minimum average specified.
- 6/ Requirement for 5/8 inch dynamic tear test shall be in accordance with ASTM E 604. For each testing temperature, the value of each of two tests shall be greater than the minimum value specified.

3.4 Chemical composition of deposited weld metal. The chemical composition of deposited weld metal shall be as specified in table III.

TABLE III. Chemical composition of deposited weld metal.

Elements	Percent
Carbon	0.15 max
Manganese	.80 to 1.15
Silicon	.30 to .60
Phosphorous	.030 max
Sulphur	.030 max
Chromium	.90 to 1.20
Nickel	1.50 to 2.00
Molybdenum	.45 to .75
Vanadium	.02 max

3.5 Electrode identification. Electrodes shall be identified as specified in MIL-E-22200.

3.5.1 Heat and lot identification. When specified (see 6.2), each electrode shall be marked with heat or lot identification as specified in MIL-E-22200.

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3.6 Nominal electrode lengths. Electrodes shall be end-grip style and nominal length shall be as specified in table IV.

TABLE IV. Nominal electrode lengths.

Sizes	Electrode lengths end-grip
Inch 1/8, 5/32, 3/16	Inches 14
7/32, 1/4	18

3.7 Core wire alloy identity. The core wire alloy identity requirements shall be as specified in MIL-E-22200.

3.8 Covered electrode alloy identity. When specified (see 6.2), the covered electrode alloy identity requirements shall be as specified in MIL-E-22200.

3.9 Groove weld soundness. The soundness of groove welds shall meet the requirements of grade I of NAVSEA 0900-LP-003-9000 as specified in MIL-E-22200.

4. QUALITY ASSURANCE PROVISIONS

4.1 The quality assurance provisions shall be in accordance with MIL-E-22200 and as specified herein.

4.2 Qualification tests. Qualification tests shall be as specified in MIL-E-22200 and 4.5.1 and 4.5.2 herein.

4.3 Comparison inspection. In addition to the examination and tests required in MIL-E-22200, tests specified in table V shall be conducted as specified in MIL-E-22200, when required by the command or agency concerned (see 6.2).

TABLE V. Comparison inspection.

Sizes	Tests	Requirements
All	Weld test No. 3 (table IX herein) Flaking and cracking of covering (MIL-E-22200) Chemical analysis (MIL-E-22200)	3.3 herein MIL-E-22200 3.4 herein

4.4 Quality conformance inspection.

4.4.1 Lot. A lot of electrodes shall be as specified in MIL-E-22200 for inspection level B.

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4.4.2 Sampling for quality conformance inspection. Sampling for quality conformance inspection shall be in accordance with MIL-E-22200 for tests specified in MIL-E-22200 where required and as specified in 4.4.3 herein for quality conformance weld tests.

4.4.3 Quality conformance inspection. Quality conformance tests shall be conducted on samples selected as specified in 4.4.2 herein from electrodes produced from each wet mix of covering mixture in each lot as defined in MIL-E-22200 for inspection level B. One sample shall be subjected to all the tests specified in table VI herein. The samples representing each of the remaining wet mixes of covering mixture in each lot shall be subjected to equivalency tests as specified in tables VII and VIII herein.

TABLE VI. Tests required for quality conformance inspection.

Required tests	Procedures
Test No. 3 Tests listed in table X Chemical analysis	Table IX herein Table X herein See test No. 3; table IX herein

TABLE VII. Wet mix equivalency tests for quality conformance inspection.

Required tests	Procedures
Chemical analysis <u>1/2/</u>	Table IX herein

- 1/ Required chemical analysis of the deposited weld metal is for selected elements only as specified in table VIII herein.
- 2/ Equivalency chemical analysis tests are not required when the lot is as defined in MIL-E-22200, inspection level B, for one continuous 24-hour working period where manufacturing processes are such that identification by controlled covering mixture chemical composition is employed with core wire.

TABLE VIII. Wet mix equivalency weld deposit chemical analysis.

Elements	MIL-10018-N1
Manganese	X
Chromium	X
Nickel	X
Molybdenum	X

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4.4.4 Unsatisfactory test results. If the results of the first tests are determined to be unsatisfactory, two retests shall be permitted. The results of both retests shall be satisfactory for quality conformance inspection.

4.5 Test procedures.

4.5.1 Weld tests. Table IX herein summarizes the weld tests required under this specification for qualification testing of electrodes and for the inspection as specified in tables V, VI, VII and VIII herein. HY-80 steel base material in accordance with MIL-S-16216 shall be used for all electrode tests.

TABLE IX. Summary of required weld tests.

Weld test No.	Electrode type	Weld joint design procedure	X-ray	Tests tensile	Impacts ^{1/}	Chemical metal-lurgical ^{2/}	Requirements
3	All	Figure 1 and notes	X	X	X	Chemical analysis	Soundness requirements of MIL-E-22200 and tables II and II herein

^{1/} Both the Charpy V-notch and the dynamic tear tests shall be conducted for qualification. The Charpy V-notch test shall be conducted for quality conformance.

^{2/} May be determined from milling sample taken from ruptured ends of tensile specimens or drillings. In event of variance with composition requirements or conflicting results by testing activities, analysis shall be verified by procedures specified in MIL-E-22200.

4.5.2 Other tests. Table X summarizes tests, in addition to those specified in table IX required for qualification testing of electrodes for the QPL and for quality conformance inspection, as applicable.

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TABLE X. Summary of other tests.

Tests ^{1/}	Requirements
Visual and dimensional	MIL-E-22200 and 3.6 herein
Concentricity	MIL-E-22200
Dielectric strength ^{2/}	MIL-E-22200
Covering, flaking and cracking ^{2/}	MIL-E-22200
Covering moisture	3.2.1 herein
Total iron content in covering ^{2/}	3.2.2 herein
Alloy identity - core wire	MIL-E-22200
Alloy identity - finished electrode ^{3/}	MIL-E-22200

^{1/} These tests shall be conducted in accordance with applicable test of MIL-E-22200.

^{2/} Required for qualification (QPL) only.

^{3/} Required when specified (see 6.2).

4.5.2.1 Temperature and humidity environmental exposure pressures. The electrode sample shall be exposed in a blue M environmental chamber model FR 251-1 or equivalent for 9 hours minimum at 80°F minus 0, plus 5°F and 80 percent RH minus 0, plus 5 percent. The chamber shall have a two-pen recorder with the first pen for dry bulb temperature and the second pen for the differential between wet bulb and dry bulb temperatures. The chamber is available in all standard voltages for the various power supplies. The procedure shall be as follows:

- (a) The electrode sample in unopened packages shall be heated to a temperature minus 0, plus 10°F above the dew point of the chamber at the time of loading.
- (b) The electrode sample shall be loaded into the chamber without delay after the packages are opened.
- (c) The electrodes shall be placed in the chamber in a vertical position on 1-inch centers.
- (d) Time, temperature and humidity shall be continuously recorded for the period that the electrodes are in the chamber.
- (e) Counting of exposure time shall start when the required temperature and humidity in the chamber are established.
- (f) At the end of the exposure time, the electrodes shall be removed from the chamber and a sample of the coating taken for moisture determination.

4.6 Alloy identity certification. When specified (see 6.2), the Government representative shall affix his stamp and date on the container, containing covered electrodes conforming to MIL-E-22200. The letters "AT" shall be affixed to the container adjacent to the date to indicate "Alloy Tested".

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4.7 Certificate of test. A certificate of quality conformance of the weld tests specified in 4.4.3 (that is, X-ray, mechanical, and chemical analysis), containing actual quantitative test and inspection results including the range of amperage employed in making the required welds for quality conformance inspection for each accepted lot, heat, and wet mix, as applicable, included in a particular shipment shall be furnished to the consignee with the shipment. The certification shall include test results from the quality conformance test and the wet mix equivalency test as applicable for the shipment. The minimum quality conformance test result data and wet mix equivalency test result data required shall be as listed on figures 2 and 3 and may be submitted on the forms shown.

5. PACKAGING

(The preparation for delivery requirements specified herein apply only for direct Government acquisitions. For the extent of applicability of the preparation for delivery requirements of referenced documents listed in section 2, see 6.4.)

5.1 Packaging. Packaging of electrodes shall be level A or C, as specified (see 6.2).

5.1.1 Level A. All electrodes shall be packaged in class 1a unit containers (12 pounds and under) in accordance with MIL-W-10430, except that when the large containers are specified by the contract or order (see 6.2), 14 and 18-inch electrodes may be supplied in 1b unit containers (50 pounds and under).

5.1.2 Level C. Packaging shall be sufficient to afford adequate protection against deterioration and physical damage during shipment from the supply source to the using activity and for the time periods as specified in the stability requirements of MIL-E-22200.

5.1.2.1 Electrodes shall be packaged in class 1 or 2 containers of MIL-W-10430. Unit container weight shall be in accordance with the manufacturer's commercial practice.

5.2 Packing. Packing of electrodes shall be level A, B or C, as specified (see 6.2).

5.2.1 Levels A and B. Electrodes shall be packed level A or B in accordance with MIL-W-10430, except that for levels A and B packing, palletization for other than cylindrical cans shall be in accordance with MIL-STD-147.

5.2.2 Level C. Packing shall be accomplished in a manner which will insure acceptance by common carrier and will afford protection against physical or mechanical damage during direct shipment from the supply source to the using activity. The shipping containers or method of packing shall conform to the Uniform Freight Classification Rules or other carrier regulations as applicable to the mode of transportation.

5.3 Marking.

5.3.1 Interior packages. Shipment marking information shall be provided on interior packages in accordance with the manufacturer's commercial practice.

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In addition to the lot identification required by MIL-E-22200, the information shall include MIL type, size, specification number, manufacturer's or distributor's name, date of manufacture (month/year), and manufacturer's or distributor's brand or type designation. All packages, or the smallest integral unit within a shipping container, shall carry the following warning label, or equivalent, prominently displayed in legible type on the package:

"DO NOT REMOVE THIS LABEL

WARNING: Protect yourself and others. Read and understand this label.

FUMES AND GASES can be dangerous to your health. ARC RAYS can injure eyes and burn skin. ELECTRIC SHOCK can kill.

Read and understand the manufacturer's instructions and your employer's safety practices.

Keep your head out of the fumes.

Use enough general ventilation or exhaust at the arc or both to keep fumes and gases from your breathing zone, and the general area.

Wear correct eye, ear and body protection.

Do not touch live electrical parts.

See American National Standard Z49.1 "Safety in Welding and Cutting" published by the American Welding Society, 550 NW LeJeune Road, P.O. Box 351040, Miami, FL 33125; OSHA Safety and Health Standards, 29 CFR 1910 are for sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402."

5.3.2 Exterior shipping containers and palletized unit loads. Shipment marking information shall be provided on exterior shipping containers and palletized unit loads in accordance with the manufacturer's commercial practice. In addition to the information required for interior packages as specified in 5.3.1, the information shall include shipping destination, stock number as listed by contract, and customer's order number, customer's item number, and customer's name.

5.3.3 All containers shall be marked "ASBESTOS FREE".

6. NOTES

6.1 Intended use. Type MIL-10018-N1 electrode is intended for the shielded metal-arc welding of HY-80 steel to be hardened and tempered after welding or after welding and hot forming. It is not intended for as-welded applications.

6.2 Ordering data. Acquisition documents should specify the following:

- (a) Title, number and date of this specification.
- (b) Class and size required (see 1.2).
- (c) If electrode is to be marked with heat and lot identification (see 3.5.1).
- (d) Whether alloy identity testing of the core wire of each covered electrode is required (see 3.8).
- (e) Whether comparison inspections are required (see 4.3).

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- (f) Whether alloy identity testing and certification is required for each finished electrode (see table X, note 3, and 4.6).
- (g) Levels of packaging and packing required (see 5.1 and 5.2).
- (h) When large containers are required (see 5.1.1).

6.2.1 Electrodes should be ordered by the pound.

6.3 Inspection after delivery. Post delivery inspection of electrodes to determine conformity to this specification and for acceptance there of is the responsibility of the consignee.

6.4 Sub-contracted material and parts. The preparation for delivery requirements of referenced documents listed in section 2 do not apply when material and parts are acquired by the contractor for incorporation into the equipment and lose their separate identity when the equipment is shipped.

6.5 Changes from previous issue. Asterisks are not used in this revision to identify changes with respect to the previous issue due to the extensiveness of the changes.

Custodians:

Army - AR
Navy - SH
Air Force - 20

Preparing activity:

Navy - SH
(Project 3439-0424)

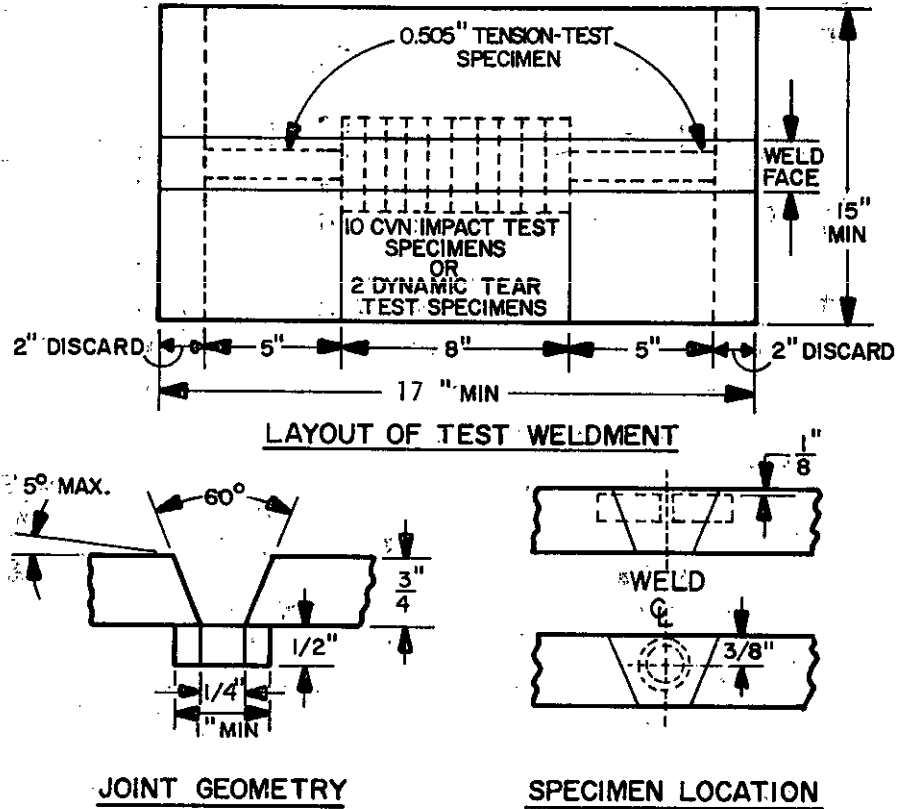
Review activity:

DLA - GS

User activity:

Army - AT

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SH 12319

FIGURE 1. Welded joint for all-weld-metal tension test and impact test (test No. 3).

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Notes to figure 1:

1. Figure 1 shows the weldment size for quality conformance testing to provide one tensile specimen and 10 Charpy V-notch specimens. The weldment size shall be increased 8-inches along the 17-inch dimension for qualification testing to provide for the additional impact specimens (4 dynamic tear specimens).
2. The base metal for the weldment shall be in accordance with 4.5.1 herein.
3. Electrode sizes 3/16-inch and larger shall be deposited in the flat position and electrode sizes 5/32-inch and smaller shall be deposited in the vertical position.
4. Direct current reverse polarity shall be used for welding.
5. The welding preheat and interpass temperature shall be maintained at $225 \pm 25^{\circ}\text{F}$.
6. The welding heat input shall be 40,000 to 50,000 joules per inch.
7. Welding current shall be in accordance with the manufacturer's recommendations and the actual values used shall be recorded and reported.
8. Peening of weld beads is not permitted.
9. Welding shall be continuous except for interpass cooling, all time delay per pass beyond that necessary for interpass cooling shall be reported.
10. When weldments have cooled to room temperature after welding, weld reinforcement and backing strip shall be removed flush with the test plate surface.
11. The weldment shall be heat-treated as follows:
 - (a) Heat to 1650 to 1700°F, hold for 1 hour at temperature and water quench.
 - (b) Reheat to 1200 to 125°F, hold for 1 hour at temperature and water quench.
12. The weld, except the discard ends, shall be inspected radiographically according to level 2-2T as specified in MIL-STD-271 for compliance with the soundness requirements of MIL-E-22200.
13. The weldment shall be cut as shown to remove the mechanical properties test coupons. No flame cutting shall be used within 1/2-inch of the weld metal. Only sawing or machining shall be used for cutting through or near weld metal.
14. Tension test specimens shall be machined and tested in accordance with AWS B4.0. Tension testing shall be conducted at room temperature.
15. For Charpy V-notch testing, specimens shall be machined and tested in accordance with AWS B4.0. Five specimens shall be required for each Charpy testing temperature shown in table II.
16. Dynamic tear testing, if selected, shall have specimens machined and tested in accordance with ASTM E 604. Two specimens shall be required for each dynamic tear testing temperature specified in table II.

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CERTIFICATION OF QUALITY CONFORMANCE TESTS

Manufacturer or distributor _____	Customer's name _____
Address _____	Customer's order no. _____
Date _____	Core wire heat no. _____
Specification MIL- _____	Lot identification MIL-E-22200 _____
Type MIL- _____	Para. _____
Diameter and length _____	Wet mix no. _____
Lot no. _____	
	<u>Mechanical test</u>
<u>Chemical analysis</u> (complete)	Heat treated
Carbon _____	Yield strength (0.2 percent offset method) _____
Manganese _____	Elongation (percent) _____
Silicon _____	Reduction of area (percent) _____
Phosphorus _____	<u>Charpy Impacts</u>
Sulfur _____	1. _____ 1. _____
Chromium _____	2. _____ 2. _____
Nickel _____	3. _____ 3. _____
Molybdenum _____	4. _____ 4. _____
Vanadium _____	5. _____ 5. _____
Chemistry was taken from _____ Chem pad	<u>Groove weld test</u>
_____ Groove weld	Test no. 3 Chem pad
	Amperage _____

FIGURE 2. Certification of quality conformance tests.

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X-ray results _____ Grinding during 3a test plate preparation
 Operator error (layer(s)) _____
 Concentricity (percent) _____
 Covering moisture _____
 Covering iron content _____

We hereby certify that the above material has been tested in accordance with the listed specification and is in conformance with all requirements.

 Authorized contractor representative

NOTES:

1. Items exempted by the acquisition document shall be marked N/A.
2. This form is applicable to the quality conformance tests required for each lot. Figure 3 forms shall be employed to report and certify the wet mix equivalency tests where applicable for each wet mix of covering mixture in the lot. One copy of figure 3 form shall be employed for certifying equivalency of each wet mix in a lot where applicable. One copy of the quality conformance certificate (figure 2) for the lot shall be forwarded with copies of the batch equivalency certificates for each additional mix from that lot that is included in the shipment.

FIGURE 2. Certification of quality conformance tests. - Continued

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CERTIFICATION OF WET MIX EQUIVALENCY TESTS

Manufacturer or distributor _____ Customer's name _____
 Address _____ Customer's order no. _____
 Date _____
 Specification MIL- _____
 Type MIL- _____
 Diameter size _____ Core wire heat no. _____
 Lot no. _____ Wet mix no. _____
Sampling chemical analysis Chemistry was taken from:
 Manganese _____ Chem pad _____
 Chromium _____ Groove weld _____
 Nickel _____ Test no. _____
 Molybdenum _____ Chem pad _____
 X-ray results _____ Amperage _____

We hereby certify that the above material has been tested in accordance with the listed specification and is in conformance with all requirements.

 Authorized contractor representative

NOTES:

1. Items exempted by the acquisition document shall be marked N/A.
2. One copy of this form shall be employed for certifying equivalency of each wet mix in a lot where applicable. One copy of the quality conformance certificate (see figure 2) for the lot shall be forwarded with copies of the mix equivalency certificates for each additional mix from that lot that is included in the shipment.

FIGURE 3. Certification of wet mix equivalency tests.

STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

(See Instructions - Reverse Side)

1. DOCUMENT NUMBER MIL-E-22200/5C	2. DOCUMENT TITLE
3a. NAME OF SUBMITTING ORGANIZATION	4. TYPE OF ORGANIZATION <i>(Mark one)</i> <input type="checkbox"/> VENDOR <input type="checkbox"/> USER <input type="checkbox"/> MANUFACTURER <input type="checkbox"/> OTHER <i>(Specify):</i> _____
b. ADDRESS <i>(Street, City, State, ZIP Code)</i>	
5. PROBLEM AREAS	
a. Paragraph Number and Wording:	
b. Recommended Wording:	
c. Reason/Rationale for Recommendation:	
6. REMARKS	
7a. NAME OF SUBMITTER <i>(Last, First, MI)</i> - Optional	b. WORK TELEPHONE NUMBER <i>(Include Area Code)</i> - Optional
c. MAILING ADDRESS <i>(Street, City, State, ZIP Code)</i> - Optional	8. DATE OF SUBMISSION <i>(YYMMDD)</i>

(TO DETACH THIS FORM, CUT ALONG THIS LINE.)