

NOT MEASUREMENT SENSITIVE
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MIL-PRF-8516G

31 July 1997

SUPERSEDING

MIL-S-8516F

31 May 1992

## PERFORMANCE SPECIFICATION

SEALING COMPOUND, SYNTHETIC RUBBER, ELECTRIC CONNECTORS  
AND ELECTRIC SYSTEMS, CHEMICALLY CURED

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

## 1. SCOPE

1.1 Scope. This specification covers a two-component, chemically cured synthetic rubber compound for insulating, sealing, reinforcing, and corrosion protection of electric connectors, wiring, and other electric apparatus. This specification has provisions for shelf-life extension (see 3.2.4).

1.2 Classification. The sealing compound is furnished in the following types, classes, and categories (see 6.2).

1.2.1 Types. The types of sealing compound are as follows:

Type I - Low viscosity (100 to 400 poises, initial mixed viscosity)

Type II - High viscosity (401 to 1,200 poises, initial mixed viscosity)

1.2.2 Classes. The classes of sealing compound are as follows:

Class 1 - 24-hour cure at 77°F

Class 2 - 48-hour cure at 77°F

Class 3 - 72-hour cure at 77°F

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Commander, Naval Air Warfare Center Aircraft Division, Code 414100B120-3, Highway 547, Lakehurst, NJ 08733-5100, by using the Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.
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AMSC N/A

FSC 8030

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1.2.3 Categories. The sealing compound is categorized as follows:

Category A - Two-component kit

Category B - Premixed, degassed, frozen kit

## 2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in sections 3 and 4 of this specification. This section does not include documents cited in other sections of this specification or recommended for additional information or as examples. While every effort has been made to ensure the completeness of this list, document users are cautioned that they must meet all specified requirements documents cited in sections 3 and 4 of this specification, whether or not they are listed.

### 2.2 Government documents.

2.2.1 Specifications and standards. The following specifications and standards form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the issue of the Department of Defense Index of Specifications and Standards (DoDISS) and supplement thereto, cited in the solicitation (see 6.2).

## SPECIFICATIONS

### FEDERAL

- J-C-30 - Cable and Wire, Electrical (Power, Fixed Installation).
- QQ-A-250/13 - Aluminum Alloy Alclad 7075, Plate and Sheet.
- QQ-P-416 - Plating, Cadmium (Electrodeposited).
- TT-I-735 - Isopropyl Alcohol.
- TT-S-735 - Standard Test Fluids, Hydrocarbon.
- CCC-C-419 - Cloth, Duck, Unbleached, Plied-Yarns, Army and Numbered.

### DEPARTMENT OF DEFENSE

- MIL-P-5315 - Packing, Preformed, Hydrocarbon Fuel Resistant.
- MIL-H-5606 - Hydraulic Fluid, Petroleum Base, Aircraft, Missile and Ordnance.
- MIL-PRF-5624 - Turbine Fuel, Aviation, Grades JP-4, JP-5, and JP-5/JP-8 ST.
- MIL-PRF-7808 - Lubricating Oil, Aircraft Turbine Engine, Synthetic Base.
- MIL-S-8660 - Silicone Compound, NATO Code Number S-736.
- MIL-W-22759/9 - Wire, Electrical, Fluoropolymer-Insulated, Extruded TFE, Silver-Coated Copper Conductor, 1000-Volt.
- MIL-PRF-23699 - Lubricating Oil, Aircraft Turbine Engine, Synthetic Base, NATO Code Number 0-156.

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- MIL-S-38714 - Sealant Cartridge for Two-Component Materials.
- MIL-C-38736 - Cleaning Compound, Solvent Mixtures.

## STANDARDS

## DEPARTMENT OF DEFENSE

- MS3100 - Connector, Receptacle, Electric, Wall Mounting, Solder Contacts, AN Type.
- MS3103 - Connector, Receptacle, Electric, Potting Seal, Solder Contacts, AN Type.
- MS3106 - Connector, Plug, Electric, Straight, Solder Contacts, AN Type.
- MS25183 - Connector, Plug, Electric, Potting Seal, Solder Contacts, AN Type.

(Unless otherwise indicated, copies of the above specifications and standards are available from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.)

2.3 Non-Government publications. The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of the documents which are DoD adopted are those listed in the issue of the DoDISS cited in the solicitation. Unless otherwise specified, the issues of the documents not listed in the DoDISS are the issues of the documents cited in the solicitation (see 6.2).

## AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

- ASTM-D149 - Dielectric Breakdown Voltage and Dielectric Strength of Solid Electrical Insulating Materials of Commercial Power Frequencies, Standard Test Method for (DoD adopted)
- ASTM-D150 - A-C Loss Characteristics and Permittivity (Dielectric Constant) of Solid Electrical Insulating Material, Standard Test Method for (DoD adopted)
- ASTM-D257 - Materials, Insulating, D-C Resistance or Conductance of, Standard Test Method for (DoD adopted)
- ASTM-D495 - High-Voltage, Low-Current, Arc Resistance of Solid Electrical Insulation, Standard Test Method for (DoD adopted)
- ASTM-D1141 - Substitute Ocean Water, Standard Specification for (DoD adopted)
- ASTM-D1457 - Polytetrafluoroethylene (PTFE) Molding and Extrusion Materials, Standard Specification for (DoD adopted)
- ASTM-D2240 - Rubber Property - Durometer Hardness, Standard Test Method for (DoD adopted)
- ASTM-D4066 - Nylon Injection and Extrusion Materials, Standard Specification for (DoD adopted)

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ASTM-D5948 - Compounds, Molding, Thermosetting, Standard Specification for  
(DoD adopted)

(Application for copies should be addressed to the American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.)

2.4 Order of precedence. In the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

### 3. REQUIREMENTS

3.1 Qualification. The sealing compound furnished under this specification shall be a product that is authorized by the qualifying activity for listing on the applicable Qualified Products List (QPL) before contract award (see 4.3 and 6.3).

3.2 Material. The sealing compound shall consist of a synthetic rubber base compound and a curing agent supplied as a kit (see 3.2.2). Each component shall be homogeneous and free of lumps and foreign matter. The sealing compound shall not contain elemental sulfur (see 4.3.2).

3.2.1 Primer. The use of a primer to promote adhesion is permitted. The primer shall be recommended by the manufacturer and shall be included in the tests of this specification. The primer shall be identified on the applicable QPL. The use and application of a primer shall be in accordance with the manufacturer's instructions.

3.2.2 Kit categories. The category A sealing compound shall be furnished as a two-component kit. Category B sealing compound shall be furnished as a premixed, degassed, frozen kit.

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3.2.2.1 Unit of issue. To interface with existing equipment and meet the required storage characteristics, the unit of issue for each category of sealing compound kit shall be as follows:

Unit of issue (kit) identifier	Unit of issue	Category <u>1/</u>
1	1 gallon	A
2	1/2 gallon	A
3	1 quart	A
4	1/2 pint	A
5	6 fluid ounces	A
6	2-1/2 fluid ounces	A
7	12-fluid ounce frozen cartridge	B
8	6-fluid ounce frozen cartridge	B
9	2-1/2-fluid ounce frozen cartridge	B

1/ The ratio of the quantity contained in the base compound container to the quantity contained in the accompanying curing agent container for category A shall be the same as the manufacturer's recommended mixing ratio of the base compound and curing agent.

3.2.2.1.1 Kits 1, 2, 3, and 4. The base compound and the curing agent shall be packaged in individual containers. The base compound shall be furnished in 1/2-pint, 1-quart, 1/2-gallon, or 1-gallon multiple friction top, metal containers filled to 75 percent by volume. The required amount of curing agent shall be furnished in either glass or plastic jars having smooth, vertical inside walls with screw caps (to facilitate removal of the curing agent). Each curing agent container shall be packaged with each base compound container with a divider between the two in a manner that prevents them from coming apart but permits their separation for mixing purposes.

3.2.2.1.2 Kits 5 and 6. The base compound and curing agent shall be furnished in sectional-type 2-1/2- or 6-fluid ounce nonmetal containers, conforming to type I or II of MIL-S-38714, as specified by the procuring activity. The total amount of base compound and curing agent in each container shall be as follows:

Container Size	Base Compound and Curing Agent	Volume Tolerance
6 fluid ounces	3-1/2 fluid ounces	±1/8 fluid ounce
2-1/2 fluid ounces	2 fluid ounces	±1/8 fluid ounce

3.2.2.1.3 Kits 7, 8, and 9. The premixed, degassed, frozen sealing compound and curing agent shall be supplied in 2-1/2-, 6-, or 12-fluid ounce nonmetal containers conforming to MIL-S-38714.

3.2.2.2 Marking of component containers. In addition to the markings required by the contracting officer, all component containers shall be marked with the date of manufacture and the date of packaging.

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3.2.3 Toxicity. The sealing compound, when used for its intended purpose, shall have no adverse effect on the health of personnel.

3.2.4 Shelf life. The shelf life of the sealing compound shall be not less than 9 months. Sealing compound which has exceeded its shelf life may be retested to extend storage (see 6.5).

### 3.3 Performance characteristics.

#### 3.3.1 Properties before cure.

3.3.1.1 Color. Unless otherwise specified in the contract or order, the base compound shall be supplied in the manufactured color and shall contrast with the curing agent to facilitate mixing (see 6.2). The material shall not be red in color.

3.3.1.2 Consistency during electrical connector sealing (potting) operations. The mixed sealing compound shall be pourable at normal temperatures, but shall not flow through connectors during electrical connector sealing (potting) operations (see 4.6.1.3).

3.3.1.3 Application life. When tested in accordance with 4.9.2.1, the mixed category A sealing compound shall meet the requirements of initial viscosity (see 3.3.1.3.1) and application time (see 3.3.1.3.2).

3.3.1.3.1 Initial viscosity. The initial viscosity of the mixed compound shall be:

Type	Initial viscosity
I	100 to 400 poises
II	401 to 1,200 poises

3.3.1.3.2 Application time. The application time (minimum time to reach 1,000 poises for type I and 2,500 poises for type II) of the mixed compound shall be:

Class	Minimum time
1	30 minutes
2	60 minutes
3	120 minutes

3.3.1.4 Nonvolatile content. When tested in accordance with 4.9.2.2, the nonvolatile content of the mixed sealing compound shall be not less than 94 percent.

3.3.1.5 Accelerated storage. When tested in accordance with 4.9.2.11, the mixed compound shall not deviate from the initial viscosity (see 3.3.1.3.1) by more than plus 35, minus 5 percent

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and shall meet the application time requirements (see 3.3.1.3.2), the set time requirements (see table I), and cure A hardness requirements (see table I).

3.3.1.6 Long-term storage. When tested in accordance with 4.9.2.12, the mixed category A sealing compound shall meet the requirements of application life (see 3.3.1.3) and cure A and B hardness (see table I).

3.3.2 Properties after cure. Unless otherwise specified in the test method, all test specimens shall be cured as specified in 4.7.

3.3.2.1 Nonelectric properties. The nonelectric properties of the cured sealing compound shall be as specified in table I.

TABLE I. Nonelectric properties of cured compound.

Property	Requirement <sup>1/</sup>		Test paragraph
	Cure A (4.7.1)	Cure B (4.7.2)	
Set time	No sag or flow	No sag or flow	4.9.2.3
Shrinkage, percent, maximum	10	10	4.9.2.4
Hardness, Shore A-2 initial, points	Type I - 20, minimum Type II - 25, minimum	Type I - 30 to 60 Type II - 30 to 60	4.9.2.5
Adhesion, (piw), minimum			4.9.2.6
Aluminum alloy	2	15	
Chromated cadmium plated steel	2	15	
Diallyl phthalate plastic	—	15	
Nylon plastic	2	15	
Polytetrafluoroethylene (PTFE), treated	2	—	
Fluid resistance			4.9.2.7
Adhesion after immersion, pounds, minimum	—	10	
Change in hardness, points, maximum	—	±10	
Low temperature flexibility	—	No checking, cracking, or separation from test panel	4.9.2.8
Corrosion	No greater corrosion than control wire	—	4.9.2.9
Hydrolytic stability, physical	—	+15	4.9.2.10
Change in hardness after exposure, points		-5	

<sup>1/</sup> Unless otherwise specified, the given value is for all types and classes. "—" indicates no requirement.

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3.3.2.2 Electric properties. The electric properties of the cured sealing compound shall be as specified in table II.

TABLE II. Electric properties of cured compound.

Property	Requirement <u>3/</u>		Test paragraph
	Cure A (4.7.1)	Cure B (4.7.2)	
Arc resistance, seconds, minimum <u>1/</u>	25	50	4.9.3.1
Dielectric strength, volts/mil, minimum	200	200	4.9.3.2
Dielectric constant, maximum			4.9.3.3
1 kHz at 77°F (25°C)	9.5	9.5	
1 MHz at 77°F (25°C)	9.5	9.5	
1 kHz at 185°F (85°C)	—	9.0	
1 MHz at 185°F (85°C)	—	9.0	
Dissipation factor, maximum			4.9.3.3
1 kHz at 77°F (25°C)	0.03	0.01	
1 MHz at 77°F (25°C)	0.03	0.03	
1 kHz at 185°F (85°C)			
Type I	—	0.090	
Type II	—	0.030	
1 MHz at 185°F (85°C)			
Type I	—	0.095	
Type II	—	0.030	
Resistivity, minimum			4.9.3.4
Volume at 77°F (25°C), ohm-cm	$1 \times 10^{10}$	$1 \times 10^{10}$	
Surface at 77°F (25°C), ohm	$1 \times 10^{11}$	$1 \times 10^{11}$	
Volume at 185°F (85°C), ohm-cm	—		
Type I		$5 \times 10^9$	
Type II		$2 \times 10^{10}$	
Surface at 185°F (85°C), ohm	—	$2 \times 10^{11}$	
Insulation resistance, megohm, minimum, as received <u>2/</u>			4.9.3.5
Plastic inserts	4,000	10,000	
Resilient inserts	4,000	8,000	
Insulation resistance, megohm, minimum, after thermal shock			4.9.3.6
Plastic inserts	—	10,000	
Resilient inserts	—	8,000	



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TABLE II. Electric properties of cured compound - Continued.

Property	Requirement <u>3/</u>		Test paragraph
	Cure A (4.7.1)	Cure B (4.7.2)	
Insulation resistance, megohm, minimum, after hydrolytic stability, electrical			4.9.3.7
Plastic inserts	—	4,000	
Resilient inserts	—	4,000	
High potential resistance	—	No breakdown	4.9.3.8
Air leakage, maximum/hour	—	1 cubic inch	4.9.3.9
Overload	—	Shall not ignite	4.9.3.10

- 1/ The arc resistance shall be the number of seconds required to cause continuous burning or the formation of a conducting path in the specimen, whichever occurs first.
- 2/ When unpotted connectors having an insulation resistance of 5,000 to 10,000 megohms (as determined in 4.9.3.5) are used, the value 4,000 megohms, minimum, shall be substituted for all insulation resistance values listed.
- 3/ Unless otherwise specified, the given value is for all types and classes. "—" indicates no requirement.

## 4. VERIFICATION

4.1 Classification of inspections. The inspection requirements specified herein are classified as follows:

- a. Qualification inspection (see 4.3).
- b. Conformance inspection (see 4.4).

4.2 Inspection conditions. Unless otherwise specified, all inspections shall be performed in accordance with the test conditions specified in the applicable test method or test paragraph in this specification.

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4.3 Qualification inspection. Qualification inspection shall consist of all the tests specified in table III.

TABLE III. Qualification inspection.

Characteristic	Requirement paragraph	Test paragraph
Material	3.2	4.9.1
Color	3.3.1.1	4.9.1
Consistency during potting operations	3.3.1.2	4.6.1.3
Application life, initial viscosity	3.3.1.3.1	4.9.2.1
Application life, application time	3.3.1.3.2	4.9.2.1
Nonvolatile content	3.3.1.4	4.9.2.2
Set time	Table I	4.9.2.3
Shrinkage	Table I	4.9.2.4
Hardness	Table I	4.9.2.5
Adhesion	Table I	4.9.2.6
Fluid resistance	Table I	4.9.2.7
Low temperature flexibility	Table I	4.9.2.8
Corrosion	Table I	4.9.2.9
Hydrolytic stability, physical	Table I	4.9.2.10
Accelerated storage	3.3.1.5	4.9.2.11
Long-term storage	3.3.1.6	4.9.2.12
Arc resistance	Table II	4.9.3.1
Dielectric strength	Table II	4.9.3.2
Dielectric constant	Table II	4.9.3.3
Dissipation factor	Table II	4.9.3.3
Volume resistivity	Table II	4.9.3.4
Surface resistivity	Table II	4.9.3.4
Insulation resistance, as received	Table II	4.9.3.5
Insulation resistance, after thermal shock	Table II	4.9.3.6
Insulation resistance, after hydrolytic stability	Table II	4.9.3.7
High potential resistance	Table II	4.9.3.8
Air leakage	Table II	4.9.3.9
Overload	Table II	4.9.3.10

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4.3.1 Qualification inspection samples. Qualification test samples shall consist of 6 quarts of the base compound, together with the required quantity of curing agent, of the type and class for which qualification inspection is desired. The samples shall be furnished in units of issue as specified in 3.2.2.1 and forwarded to the test facility identified in the letter of authorization to submit samples (see 6.3). The samples shall be plainly and durably marked with the following information:

- Sample for Qualification Test
- SEALING COMPOUND, SYNTHETIC RUBBER, ELECTRIC CONNECTORS AND ELECTRIC SYSTEMS, CHEMICALLY CURED
- Specification MIL-PRF-8516G
- Type, Class, and Category
- Date of manufacture
- Name and address of manufacturer
- Plant address which produced the compound
- Manufacturer's product identification
- Submitted by (name and date) for qualification in accordance with the requirements of MIL-PRF-8516G under authorization (reference authorizing letter).

4.3.2 Other information. The contractor will be required to submit other information pertaining to the qualification sample as directed by the qualifying activity (see 6.3.1).

4.4 Conformance inspection. Materials acquired by the Government under this specification shall be source inspected to ensure the material meets the conformance inspection prior to shipment from the manufacturer's plant. When required (see 6.2), conformance test samples shall be packaged and mixed in the units of issue as specified in 3.2.2.

4.4.1 Lot formation. Unless otherwise specified by the procuring activity (see 6.2), a lot shall consist of sealing compound of the same type and class, produced at one time from one batch, forming a part of one contract or order, and submitted for inspection at one time.

4.4.2. Sampling. A sufficient amount of sealing compound and curing agent to allow the preparation of test specimens required in 4.4.3 shall be randomly selected from each lot and tested as specified in 4.4.3.

4.4.3 Examination. Two specimens for each test shall be prepared from the material selected in accordance with 4.4.2 and tested in accordance with table IV. The samples may also be subjected to any other test specified herein when required by the procuring activity (see 6.2). Nonconformance with any specified requirement shall be cause for rejection of the lot represented by the sample.

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TABLE IV. Conformance inspection.

Characteristic	Requirement paragraph	Test paragraph
Material	3.2	4.9.1
Consistency during electrical connector sealing (potting) operations	3.3.1.2	4.6.1.3
Application life, initial viscosity	3.3.1.3.1	4.9.2.1
Application life, application time	3.3.1.3.2	4.9.2.1
Nonvolatile content	3.3.1.4	4.9.2.2
Set time	Table I	4.9.2.3
Shrinkage	Table I	4.9.2.4
Hardness (cure A and B)	Table I	4.9.2.5
Adhesion (to PTFE, treated and aluminum)	Table I	4.9.2.6
Surface	Table II	4.9.3.4
Volume resistivity	Table II	4.9.3.4

4.5 Test conditions.

4.5.1 Standard conditions. Unless otherwise specified in the test method or paragraph, all mixing, conditioning, curing, and testing shall be conducted at a temperature of  $77 \pm 2^{\circ}\text{F}$  ( $25 \pm 1^{\circ}\text{C}$ ) and a relative humidity of  $50 \pm 5$  percent.

4.5.2 Mixing. The base compound and its curing agent, both in their original unopened containers, and all required mixing equipment shall be held at standard conditions for a minimum of 16 hours. The base compound and curing agent shall then be thoroughly mixed in the proportions recommended by the manufacturer. Proper care should be taken to avoid incorporation of air by excessive stirring or folding action. Deaeration by centrifuge (1800 rpm for a maximum of 3 minutes) shall be used.

4.5.3 Thawing of category B cartridges. Premixed, frozen cartridges shall be thawed in accordance with the manufacturer's instructions.

4.6 Preparation of test specimens.

4.6.1 Preparation of parts. All molds, test panels, and electric connectors shall be thoroughly cleaned with solvent conforming to MIL-C-38736 and wiped dry prior to any operation. When required, mold interiors and test panels shall be brush coated with the mixed sealing compound to ensure subsequent contact of the test compound with all surfaces.

4.6.1.1 Disc molds. Disc and other specially-shaped molds shall be constructed of metal coated with a silicone-type varnish, polyethylene, or any composition that has a surface which will not transfer to the specimen. The mold shall be constructed in a manner which will permit

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easy release of the specimen. The mold shall be filled by slowly pouring or extruding the mixed sealing compound into the cavity until a slight excess is obtained. The mold shall then be covered with a flat, smooth-surfaced metal plate and a pressure of approximately 2 pounds per square inch applied. Curing time shall be as specified in 4.7 and the applicable test method.

4.6.1.2 Panels. Test panels coated with sealing compound are required for the tests specified in table V, and shall be prepared and cured as specified in 4.7 and the applicable test method.

4.6.1.3 Electric connector assemblies. Four connector assemblies for each insert type shall be constructed by equipping two of each assembly listed below with resilient inserts and two of each assembly listed below with diallyl phthalate inserts.

Assembly #1	Assembly #2
MS3103 Connector, receptacle	MS3100 A22-19P Connector, receptacle
MS25183 Connector, plug	MS3106 A22-19S Connector, plug

Twelve-inch lengths of polytetrafluoroethylene (PTFE) insulated wire conforming to MIL-W-22759/9 shall be chemically treated to provide a bondable surface, then soldered to each pin of the connector. Insulation resistance determinations shall be made before potting the wired assemblies (see 4.9.3.5). The mixed sealing compound shall be poured or extruded slowly into the connector until a slight excess is obtained. The consistency of the compound during all potting operations shall be as specified in 3.3.1.2. Assembly #1 with each insert type and Assembly #2 with each insert type shall be subjected to cure A (see 4.7.1); the remaining assemblies shall be subjected to cure B (see 4.7.2). The cured potted connector assemblies shall be tested as specified in 4.9.3.5.

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TABLE V. Test panels.

Property	Test paragraph	Test panel composition	Test panel size, inch	Sealant thickness, inch <u>1</u> /	Number of test panels and cure procedure (see 4.7)
Adhesion	4.9.2.6	Alclad aluminum alloy (QQ-A-250/13)	3.0 x 6.0 x 0.0625	0.125 ±0.030	1 panel - Cure A 1 panel - Cure B
		Chromated cadmium plated steel (QQ-P-416, type II, class 3)	3.0 x 6.0 x 0.0625	0.125 ±0.030	1 panel - Cure A 1 panel - Cure B
		Diallyl phthalate (ASTM-D5948)	3.0 x 6.0 x 0.125	0.125 ±0.030	1 panel - Cure B
		Nylon (ASTM-D4066)	1.0 x 6.0 x 0.125	0.125 ±0.030	1 panel - Cure B
		Polytetrafluoroethylene(PTFE) (ASTM-D1457) <u>3</u> /	1.0 x 12.0 x 0.010	0.125 ±0.030	1 panel - Cure A 1 panel - Cure B
Fluid resistance	4.9.2.7	Alclad aluminum alloy (QQ-A-250/13)	3.0 x 6.0 x 0.0625	0.250 ±0.050	8 panels - Cure B
Low temperature flexibility <u>2</u> /	4.9.2.8	Alclad aluminum alloy (QQ-A-250/13)	1.0 x 6.0 x 0.032	0.058 ±0.008	3 panels - Cure B

1/ Sealant thickness after cure.

2/ One inch at each lengthwise end of the panel shall not be coated.

3/ Prior to coating, the surface of the 0.010 skived PTFE tape shall be chemically treated to provide a bondable surface.

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4.7 Cure procedure.4.7.1 Cure A. Curing time for all specimens shall be as follows:Class 1 - 24 hours  $\pm 1/2$  hourClass 2 - 48 hours  $\pm 1/2$  hourClass 3 - 72 hours  $\pm 1/2$  hour

Class 1 molded specimens shall be removed from the mold after 6 hours of cure; class 2 and class 3 specimens shall be removed from the mold after 24 hours. The polyethylene molds used in potting connectors shall also be removed at these times. The specified tests shall be initiated no later than one hour after completion of the applicable cure time.

4.7.2 Cure B. Specimens shall first be subjected to the procedure of 4.7.1. Immediately following completion of cure A, the specimens shall be transferred to an air-circulating oven maintained at  $158 \pm 2^\circ\text{F}$  ( $70 \pm 1^\circ\text{C}$ ) for a period of 48 hours  $\pm 1/2$  hour. Specimens from molds shall be placed on a flat plate. Mated connector assemblies and panels shall be placed on a metal screen. Upon completion of cure B, the specimens shall be removed from the oven and maintained at standard conditions (see 4.5.1) for at least two hours, but not more than seven days before testing begins.

4.8 Finished specimens. The surfaces of molded and potted specimens shall be clean, smooth, and free from holes and bubbles; all corners and edges shall be well-defined.

4.9 Test methods.

4.9.1 Examination of product. The base compound and curing agent shall be examined for conformance to 3.2, 3.3.1.1, and to requirements for which no test methods are specified herein.

4.9.2 Nonelectric tests.

4.9.2.1 Application life. Initial viscosity and application time for type I shall be determined using a viscometer (Brookfield Model RVF or equivalent) equipped with a No. 6 spindle and operated at 10 rpm. For type II, the viscometer shall be equipped with a No. 7 spindle operated at 10 rpm.

4.9.2.1.1 Procedure. Mix the base compound and the curing agent in the ratio specified by the manufacturer's for 5 minutes in a 1/2-pint container (approximately 2-3/4 inches in diameter). The volume of the mixed compound shall allow immersion of the spindle to its depth mark. Initial viscosity shall be determined immediately following the mixing period. Application time determinations for class 1 shall commence 20 minutes after the initial viscosity reading; for classes 2 and 3, the viscosity shall be determined after 50 and 110 minutes respectively (time counted from start of mixing). Subsequent readings shall be made at 10-

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minute intervals until a value of 1,000 poises is obtained for type I and 2,500 poises for type II. The spindle shall remain immersed in the test compound for the duration of the test. Readings shall be taken after a minimum of three revolutions of the spindle.

4.9.2.2 Nonvolatile content. Five to ten grams of the mixed sealing compound shall be transferred to a dish (approximately 2-1/2 inches in diameter) and weighed to the nearest milligram. The compound shall be heated at  $158 \pm 2^\circ\text{F}$  ( $70 \pm 1^\circ\text{C}$ ) for 24 +2, -0 hours, transferred to a desiccator, cooled to standard conditions (4.5.1), and weighed to the nearest milligram. The percent nonvolatile content shall be calculated as follows:

$$\text{Percent nonvolatile content} = \left( \frac{\text{Final weight of base compound}}{\text{Initial weight of base compound}} \right) \times 100$$

4.9.2.3 Set time. A flow-test fixture, as shown on figure 1, shall be placed on a horizontal surface with the front face upward and the plunger depressed to the limit of its travel. A silicone mold release agent should be applied to the cavity side wall. Fifty grams of base compound and an appropriate amount of curing agent shall be thoroughly mixed for 5 minutes. The mixed compound shall immediately be transferred to the cavity, leveled off to the face of the test fixture, and covered with 0.002 to 0.008 inch thick polyethylene film. Curing time shall be as follows:

Class 1 - 10 hours  $\pm 10$  minutes

Class 2 - 16 hours  $\pm 10$  minutes

Class 3 - 32 hours  $\pm 10$  minutes

After curing, the polyethylene film shall be removed, the test fixture placed on its end, and the plunger advanced to the limit of its forward travel. Flow observations shall be made 5 minutes after the advancement of the plunger.

4.9.2.4 Shrinkage. A cubical mold, approximately one inch on each side, and a cover shall be constructed (see 4.6.1.1). The volume of the mold shall be determined at standard conditions (see 4.5.1). The mixed compound shall be poured into the cavity as specified in 4.6.1.1, covered, and subjected to cure A (4.7.1). Extreme care should be taken when mixing to ensure air-free specimens. Immediately following the cure period, the specimen shall be placed in an air-circulating oven at  $185 \pm 2^\circ\text{F}$  ( $85 \pm 1^\circ\text{C}$ ) for 48 hours. The specimen shall then be removed from the oven, cooled, and examined. Volume shall be determined by water displacement using an analytical or a Jolly balance. The percent shrinkage shall be calculated as follows:

$$\text{Percent shrinkage} = \left( \frac{V_2}{V_1} \right) \times 100$$

where:  $V_1$  = volume of mold  
 $V_2$  = final volume of cured specimen



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4.9.2.5 Hardness. Two disc specimens, 3 inches in diameter by approximately 1/4 inch thick, shall be prepared as specified in 4.6.1.1. One specimen shall be subjected to cure A (see 4.7.1) and the other to cure B (see 4.7.2). After cure, the specimens shall be tested for 3-second hardness as specified in ASTM-D2240 using a Type A-2 Shore Durometer.

4.9.2.6 Adhesion.

4.9.2.6.1 Preparation of test panels. The number and composition of panels to be coated shall be as specified in table V. One- by six-inch sections of two strips of 1- by 12-inch cotton cloth conforming to CCC-C-419, type III, or 30 mesh aluminum or Monel screening shall be coated with the mixed sealing compound and placed coated side down on the freshly prepared panel. The strips shall be placed so they are 1/4 inch from each lengthwise edge of the panel while allowing a 6-inch uncoated cloth tail. When testing PTFE (see table V), the cotton cloth shall be replaced by the PTFE. An aluminum panel conforming to QQ-A-250/13 shall be used as the backing. The panels, with the cloth or PTFE strips in place, shall then be subjected to the cure specified in table V.

4.9.2.6.2 Test of panels. The panels shall be individually tested in an autographic testing machine whose capacity shall be such that the tension at failure is not greater than 85 percent nor less than 15 percent of the full scale load. If the machine is of the pendulum type, the weight shall swing as a free pendulum without engagement of the pawls. The rate of separation of the jaws shall be 2 inches per minute. Specimens shall be mounted in the machine so that the loose end of the cotton cloth strip folds 180° as it is pulled from the panel. Each strip shall be pulled by making a cut through the sealant to the panel at the junction of separation at an angle of 45° in the direction of separation. If the sealant separates from the cotton cloth, similar 45°-angle cuts shall be made to promote separation of the sealant from the panel. A minimum of five cuts shall be made. The adhesion, in pounds, shall be automatically recorded on a chart as a continuous curve. The adhesion value shall be calculated by averaging the maximum forces required to separate the sealant from the panel. If cohesive failure occurs, the adhesion value shall be reported as greater than the observed value.

4.9.2.7 Fluid resistance. Eight panels shall be prepared and cured in accordance with table V and 4.9.2.6.1. One panel shall be immersed in each of the fluids in table VI. The duration of immersion in each fluid shall be  $48 \pm 1$  hours. The test temperature for fluid number 8 shall be at standard conditions (see 4.5.1); all other fluids shall be maintained at  $140 \pm 2^\circ\text{F}$  ( $60 \pm 1^\circ\text{C}$ ). At the end of the test period, each fluid shall be cooled to standard conditions (see 4.5.1) and then, within 10 minutes of removal from the fluid, each test panel shall be tested for hardness (see 4.9.2.5) and adhesion (see 4.9.2.6.2).

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TABLE VI. Test fluids.

Fluid number	Immersion fluids
1	Hydrocarbon test fluid, TT-S-735, type III
2	Hydraulic fluid, MIL-H-5606
3	Lubricating oil, MIL-PRF-7808
4	Lubricating oil, MIL-PRF-23699
5	Synthetic sea water, ASTM-D1141
6	Distilled water
7	Isopropyl alcohol, TT-I-735
8	JP-4 fuel, MIL-PRF-5624

4.9.2.8 Low temperature flexibility. Three test panels shall be prepared in accordance with table V. The panels shall be placed in a flexibility fixture as shown on figures 2 and 3 so that the uncoated side of each panel touches the contour block and the weight touches only the uncoated end of the panel. The entire assembly shall be conditioned at  $-60 \pm 2^{\circ}\text{F}$  ( $-51 \pm 1^{\circ}\text{C}$ ) for 4 hours. After this period, and while still at the low temperature, the fastening hook on the fixture shall be released to permit the weighted portion to fall on the panels causing them to bend around the curved portion of the assembly. The panels shall immediately be removed from the assembly and examined for conformance to the requirements specified in table I.

4.9.2.9 Corrosion. Three 1-1/2-inch lengths of American Wire Gage (AWG) size 10 copper wire conforming to J-C-30 shall be prepared by removing all insulation and cleaning with a degreasing agent. Two wire specimens shall be encapsulated centrally into a 1- by 2- by 1/2-inch thick mold. A previously cured section of the same sealing compound undergoing test shall be placed in the mold as a support for the wires (see figure 4). The mixed compound, prepared as specified in 4.5.2, shall be subjected to cure A (see 4.7.1). The third wire (control) shall also be subjected to the cure A condition. The test specimens shall be placed on end, in a humidity chamber, so that the encapsulated wires are in a vertical position. The control wire shall also be held in a vertical position by inserting one end into a pre-drilled PTFE or polyethylene slab. The wires shall then be subjected to a relative humidity of 95 to 98 percent at  $120 \pm 2^{\circ}\text{F}$  ( $49 \pm 1^{\circ}\text{C}$ ) for 28 days. At the end of this period, the mold shall be slit open and the encapsulated wire compared to the control wire for conformance to the requirements specified in table I.

4.9.2.10 Hydrolytic stability, physical.

4.9.2.10.1 Specimen preparation. Sufficient base compound and curing agent shall be mixed (see 4.5.2) to prepare three test specimens measuring 2-1/2 inches in diameter by 1/2-inch thick. Each specimen shall be subjected to cure B (see 4.7.2). Hardness shall be determined using a Type A-2 Shore Durometer as specified in ASTM-D2240 after a 3-second application time. Hardness shall be determined at the same locations, before and after exposure.

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4.9.2.10.2 Procedure. After determining hardness before exposure, the specimens shall be placed vertically on a tray in a glass desiccator. The bottom of the desiccator shall contain a glycerin (2 percent by weight) in water solution which shall produce a relative humidity of 95 percent at the test temperature. The desiccator, containing the specimens, shall then be closed and inserted into an air-circulating oven maintained at  $160 \pm 2^{\circ}\text{F}$  ( $71 \pm 1^{\circ}\text{C}$ ) for a period of 120 days  $\pm 4$  hours. At the end of the exposure period, the desiccator shall be removed from the oven and cooled to standard conditions (4.5.1) for 16 to 24 hours. Hardness shall be determined in accordance with 4.9.2.10.1. The values obtained for each specimen shall conform to the requirement specified in table I.

4.9.2.11 Accelerated storage. A 1-quart sample of the base compound and the required amount of curing agent, in units of issue specified in 3.2.2.1, shall be conditioned at  $120 \pm 2^{\circ}\text{F}$  ( $49 \pm 1^{\circ}\text{C}$ ) for 14 days. The curing agent shall then be stirred to a smooth, workable consistency. The admixed compound shall conform to 3.3.1.5.

4.9.2.12 Long-term storage. Category A sealing compound and curing agent, in units of issue specified in 3.2.2.1, shall be stored at standard conditions (see 4.5.1) for a period of 9 months 1 day. At the end of this period, the base compound and curing agent shall be mixed together and tested to the application life and cure A and B hardness requirements specified in 3.3.1.6.

#### 4.9.3 Electric tests.

4.9.3.1 Arc resistance. Test specimens shall be prepared as specified in table VII and 4.6.1.1 and shall be smooth and free from dust. Arc resistance shall be determined as specified in ASTM-D495.

TABLE VII. Disc specimens.

Property	Test paragraph	Disc Size, inch		Disc number	Cure procedure (see 4.7)
		Diameter	Thickness		
Arc resistance	4.9.3.1	4	0.125	1	Cure A
		4	0.125	1	Cure B
Dielectric strength	4.9.3.2	4	0.125	1	Cure A
		4	0.125	1	Cure B
Dielectric constant and dissipation factor	4.9.3.3	4	0.125	3	Cure A
		4	0.125	3	Cure B
Volume and surface resistivity	4.9.3.4	4	0.125	3	Cure A
		4	0.125	3	Cure B

4.9.3.2 Dielectric strength. Test specimens shall be prepared as specified in table VI and 4.6.1.1. Dielectric strength determinations shall be made as specified in ASTM-D149. Electrodes that are 1/4 inch in diameter shall be used and the tests shall be made under oil at a

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frequency not exceeding 100 hertz per second. The voltage shall be increased uniformly at a rate of 500 volts per second.

4.9.3.3 Dielectric constant and dissipation factor. Test specimens shall be prepared and cured as specified in table VII and 4.6.1.1. Tests shall be conducted as specified in ASTM-D150. Lead or tin foil electrodes shall be used and applied to the specimen with a thin film of silicone conforming to MIL-S-8660 or equivalent. The electrodes shall consist of two lead or tin foil discs, one of the same diameter as the specimen and the other 2 inches in diameter, centrally located on the opposite side of the specimen. The test current shall be introduced to the foil through two brass discs. The upper disc shall be 2 inches in diameter. Cure A specimens shall be tested at frequencies of 1 kilohertz and 1 megahertz at a temperature of  $77 \pm 2^\circ\text{F}$  ( $25 \pm 1^\circ\text{C}$ ). Cure B specimens shall be tested at frequencies of 1 kilohertz and 1 megahertz at temperatures of  $77 \pm 2^\circ\text{F}$  ( $25 \pm 1^\circ\text{C}$ ) and  $185 \pm 2^\circ\text{F}$  ( $85 \pm 1^\circ\text{C}$ ). Calculations shall include corrections for edge and ground capacitance.

4.9.3.4 Volume and surface resistivity. Disc specimens shall be prepared as specified in table VII and 4.6.1.1. Resistivity tests shall be conducted as specified in ASTM-D257 using a bridge (General Radio Type 544B or equivalent) with a test voltage of 500 volts. Readings shall be made 1 minute after application of current. The lead or tin foil electrode shall be a disc, 2 inches in diameter, centrally located on one face of the specimen. The guard electrode shall be a concentric ring with an inside diameter of 2.281 inches and an outside diameter equal to that of the specimen. The unguarded electrode shall be a foil disc, 4 inches in diameter, applied to the opposite side of the specimen. The test current shall be introduced to the guarded electrode, the guard electrode, and the unguarded electrode by means of a brass disc 2 inches in diameter by 1 inch thick, a brass ring 2.313 inches inside diameter by 4 inches outside diameter by 1/8 inch thick, and a brass disc 4 inches in diameter, respectively. Calculations necessary for volume and surface resistivity shall be made as specified in ASTM-D257. Each specimen shall conform to the requirement specified in table II.

4.9.3.5 Insulation resistance. Insulation resistance shall be determined on the wired, unpotted assemblies. Unpotted assemblies which exhibit less than 10,000 megohms resistance shall be discarded. If this is not practicable, table II, footnote 2/ shall apply. All connector assemblies potted in accordance with 4.6.1.3, regardless of cure procedure, shall undergo insulation resistance testing as received, after thermal shock (see 4.9.3.6), and after hydrolytic stability (see 4.9.3.7).

4.9.3.5.1 Procedure. Insulation resistance of each assembly shall be determined by a megohm bridge using a potential of approximately 500 volts. Electrification time shall not exceed 1 minute. Two sets of readings shall be taken as follows: the first set shall be between the shell and contacts A, E, and G; the second set shall be between contacts L to P and M to N. The average value of each set of readings shall be reported independently. No single value within each set shall be less than the minimum value specified in table II. When a single value deviates from the average value by more than 20 percent, additional determinations shall be

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taken for each set as follows: the first set shall be between the shell and contacts B, C, D, H, J, and K; the second set shall be between contacts B to C, D to E, G to H, and J to K. The average of all values within each set shall then be reported.

4.9.3.6 Thermal shock. Connector assemblies, used for insulation resistance with an "O" ring seal conforming to MIL-P-5315, placed over the barrel of the plug to seal the void between insert surfaces, shall be thermally cycled in a temperature chamber. A cycle shall consist of starting in a chamber at  $185 \pm 2^{\circ}\text{F}$  ( $85 \pm 1^{\circ}\text{C}$ ) for 45 minutes and ending in a chamber at  $-67 \pm 2^{\circ}\text{F}$  ( $-55 \pm 1^{\circ}\text{C}$ ) for 45 minutes. One chamber for each temperature shall be used. The time required to transfer the assemblies shall be no more than 2 minutes. This procedure shall be repeated a total of 5 cycles. After the last cycle, insulation resistance shall be determined in accordance with 4.9.3.5.1.

4.9.3.7 Hydrolytic stability, electrical. The mated connector assemblies tested in accordance with 4.9.3.6 shall be tested for hydrolytic stability. The assemblies shall be placed in a humidity test chamber of the type described in 4.9.2.10.2. The ends of the wire leads shall be sealed by wrapping with a glass filament-polyester insulation tape. The assemblies shall be exposed to a relative humidity of 95 percent at  $160 \pm 2^{\circ}\text{F}$  ( $71 \pm 1^{\circ}\text{C}$ ) for 120 days  $\pm$  4 hours. After exposure, the entire test chamber shall be removed from the heat source and cooled to room temperature for 16 to 24 hours before testing for insulation resistance as specified in 4.9.3.5.1.

4.9.3.8 High potential resistance. Connector assemblies tested as specified in 4.9.3.7 shall be tested for high potential resistance. A potential of 1500 volts, 60 hertz, shall be applied between all contacts and the shell for a period of 1 minute. The test voltage shall be applied at the rate of approximately 500 volts per second until the specified voltage is reached.

4.9.3.9 Air leakage. Diallyl phthalate insert potted plugs, tested as specified in 4.9.3.8, shall be subjected to a pressure differential of 30 pounds per square inch while totally submerged in water for the temperature and time specified below.

Temperature	Time
Room temperature	1 hour
$185 \pm 2^{\circ}\text{F}$ ( $85 \pm 1^{\circ}\text{C}$ )	1 hour

Air leakage shall be measured after 1 hour by fluid displacement method.

4.9.3.10 Overload of wire. A cylindrical test specimen, 1/2 inch in diameter by 1-1/2 inches in length, shall be prepared. Centered within and along the lengthwise axis of the specimen shall be a 12-inch length of insulated wire (size 16) conforming to MIL-W-22759/9. The lengthwise axis of the specimen shall be centered on the wire. The test specimen shall be held taut in a horizontal position and 55 amperes of direct current shall be applied for a period of 2-1/2 minutes. The specimen shall conform to the requirement specified in table II.

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## 5. PACKAGING

5.1 Packaging. For acquisition purposes, the packaging requirements shall be as specified in the contract or order (see 6.2). When actual packaging of materiel is to be performed by DoD personnel, these personnel need to contact the responsible packaging activity to ascertain requisite packaging requirements. Packaging requirements are maintained by the Inventory Control Point's packaging activity within the Military Department or Defense Agency, or within the Military Department's System Command. Packaging data retrieval is available from the managing Military Department's or Defense Agency's automated packaging files, CD-ROM products, or by contacting the responsible packaging activity.

## 6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Intended use. The cured synthetic rubber sealing compound is intended for use as a reinforcing and protecting medium for electric connectors, wiring, and other electric apparatus by sealing and insulating against moisture, solvents, dirt, and other foreign materials without corroding or otherwise adversely affecting the operating capabilities of the electric system. Used within its operating temperature range (−60 to +200°F), the cured compound acts as a deterrent to fatigue, corrosion, and contamination, and aids in reducing arc-over between pins of an electric connector.

6.1.1 Type I. Type I material is intended for use with electrical connectors, relays, and switches and should not be used in coaxial cable potting operations.

6.2 Acquisition requirements. Acquisition documents must specify the following:

- a. Title, number, and date of this specification.
- b. Type, class, and category required (see 1.2).
- c. Issue of DoDISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.2.1 and 2.3).
- d. Unit of issue required (see 3.2.2.1 and 4.4).
- e. Quantity required.
- f. Special markings required (see 3.2.2.2).
- g. Color, other than as manufactured (see 3.3.1.1).
- h. If a lot is to be alternately defined (see 4.4.1).
- i. If additional conformance inspection tests are required (see 4.4.3).
- j. Packaging requirements (see 5.1).

6.3 Qualification. With respect to products requiring qualification, awards will be made only for products which are, at the time of award of contract, qualified for inclusion on Qualified

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Products List QPL-8516 whether or not such products have actually been so listed by that date. The attention of the contractors is called to these requirements, and manufacturers are urged to arrange to have the products that they propose to offer to the Federal Government tested for qualification in order that they may be eligible to be awarded contracts or purchase orders for products covered by this specification. Information pertaining to qualification of products may be obtained from the Naval Air Warfare Center, Aircraft Division, Code 4.3.4.1, Building 2188, 22347 Cedar Point Road, Unit 6, Patuxent River, MD 20670-1161.

6.3.1 Inspection report and other data. When forwarding a letter of authorizing to qualification samples, the qualifying activity will require two copies of the manufacturer's test report showing that the material submitted for qualification conforms to the specification, the certification required by 3.2, and two copies of the manufacturer's instructions for use of the compound.

6.3.2 Retention of qualification. To retain qualification of the product(s) approved for listing on the QPL, the manufacturer will verify by certification to the qualifying activity that the manufacturer's product complies with the requirements of this specification. The time of periodic verification by certification will be every two years from the date of the qualification certification and will be initiated by the Government. The Government reserves the right to re-examine the qualified product whenever deemed necessary to determine that the product continues to meet any or all of the specification requirements.

6.4 Curing time. The time and temperature specified as the cure time in 1.2.2 and 4.7 are for laboratory preparations. These conditions may be considered as the optimum for curing each class of sealing compound. In actual field use, the curing cycle will be affected by changes in temperature and humidity.

6.5 Shelf-life extension. The shelf life of the sealing compound may be extended after being stored for nine months, provided that it passes the testing specified in 4.9.2.12 for conformance to 3.3.1.6. The shelf life of the sealing compound may be extended twice in increments of three months, for a total extended shelf life of six months, by repeating the sampling (see 6.5.1) and test at the end of the first extension.

6.5.1 Sampling. Sampling of the stored sealing compound will be as described below.

Remaining units	Randomly select and test
Up to 100	3
101 to 500	5
Over 500	7



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6.6 Part or Identifying Number (PIN). The PIN to be used for sealing compound acquired under this specification is created as follows:

M8516	-	X	-	X	-	X	-	X
Specification identifier		Type I = 1 Type II = 2		Class 1 = 1 Class 2 = 2 Class 3 = 3		Category A = A Category B = B		Unit of issue identifier (see 3.2.2.1)

Example: A type I, class 2, two-component system supplied in a 1-gallon kit is described as M8516-1-2-A-1.

6.7 Metric conversion. Dimensional metric conversion can be accomplished by multiplying the given inch dimension by 25.4 to obtain millimeters.

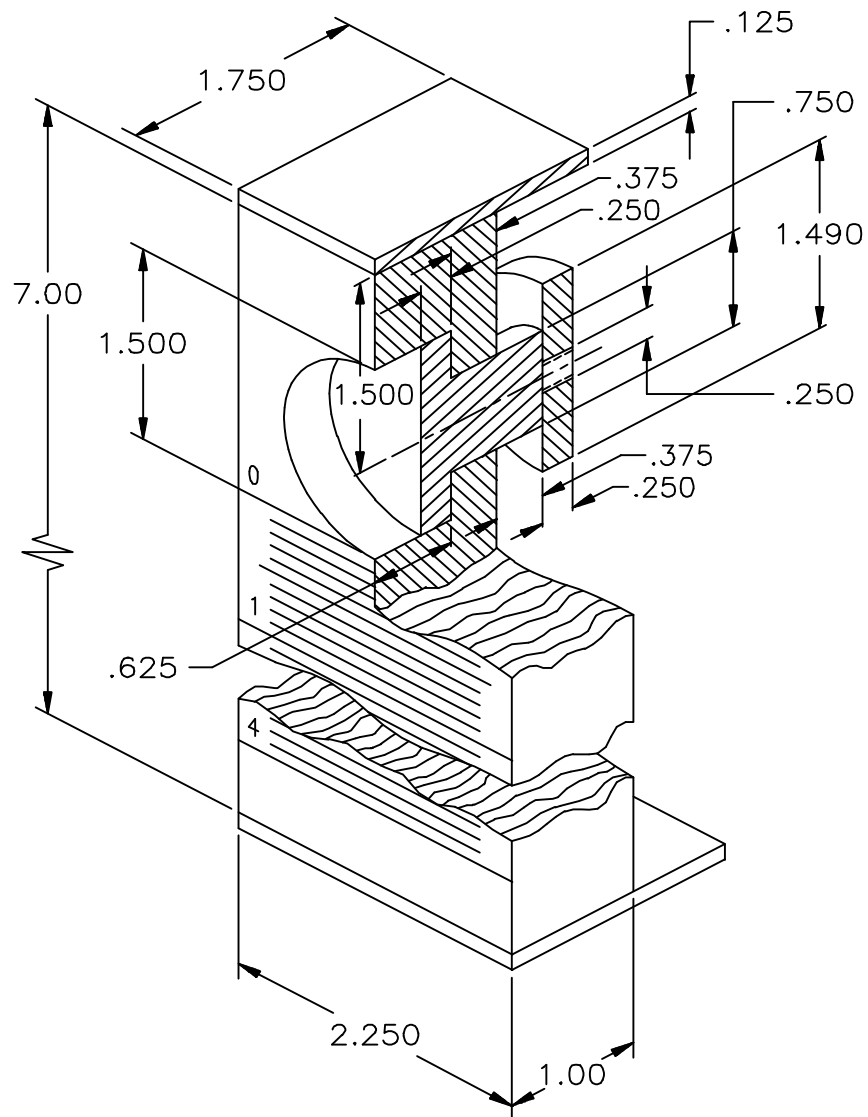
6.8 Subject term (key word) listing.

Base compound  
Curing agent  
Organic rubber  
Primer  
Viscosity

6.9 Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extent of the changes.



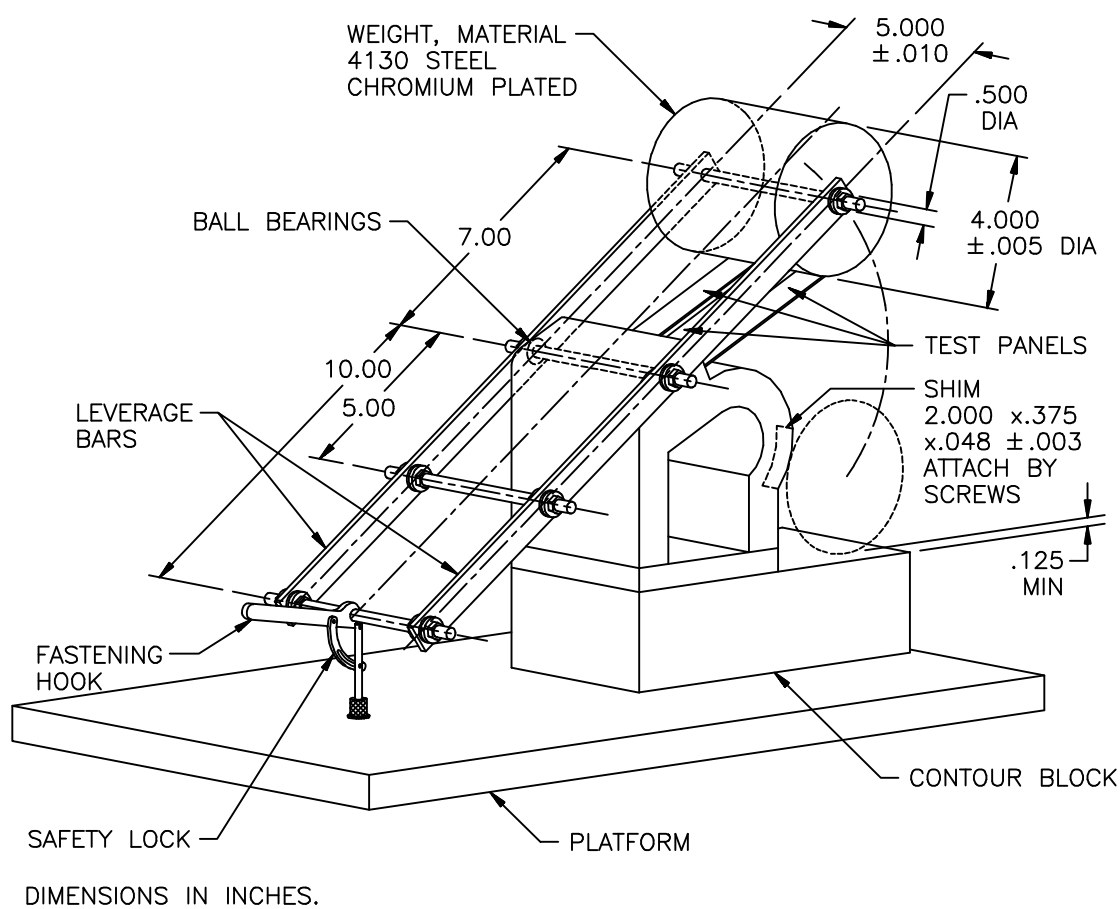
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MATERIALS: 4130 STEEL, CHROMIUM PLATED  
DIMENSIONS IN INCHES  
TOLERANCES: DECIMALS  $\pm .016$

FIGURE 1. Flow-test jig.

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FIGURE 2. Low temperature flexibility apparatus.

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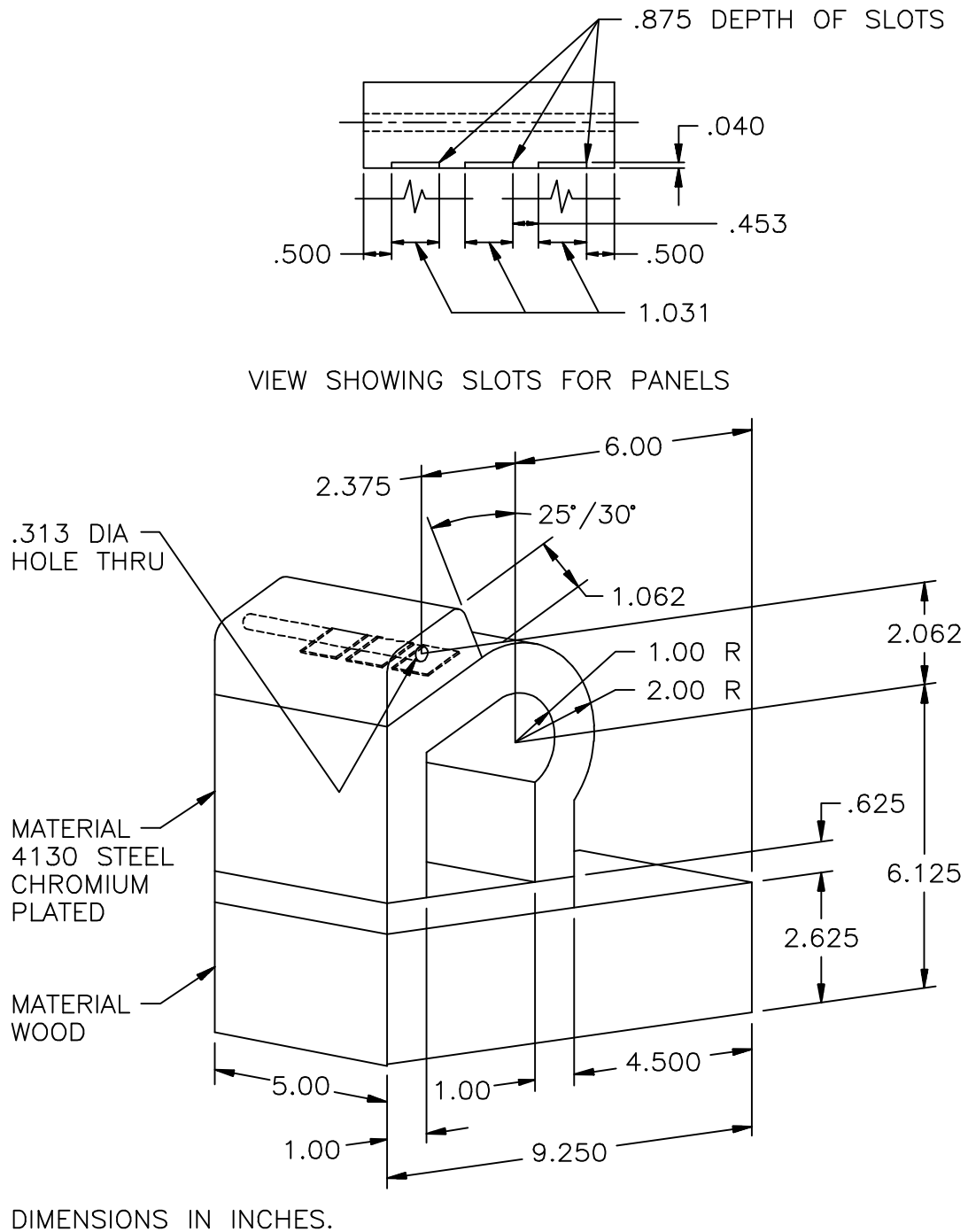
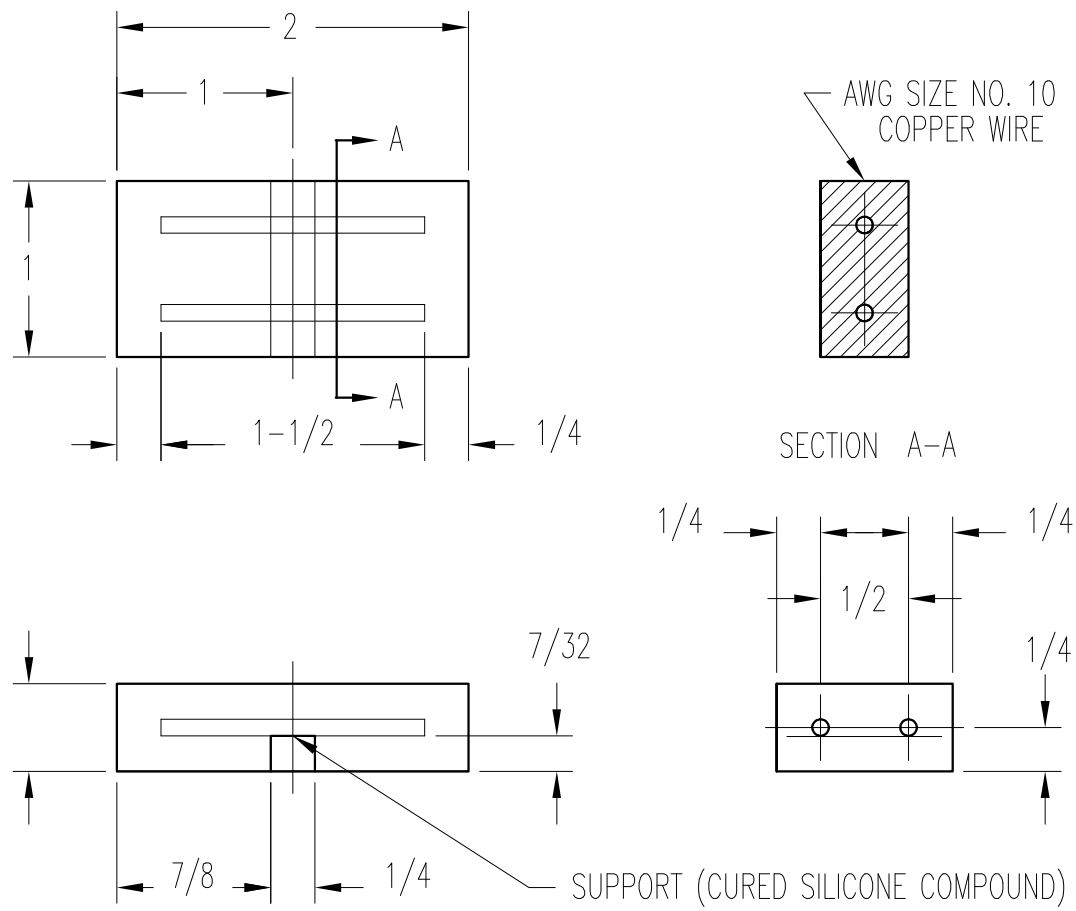


FIGURE 3. Contour block.

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FIGURE 4. Location of wire specimen in the silicone coating.

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CONCLUDING MATERIAL

Custodians:

Army - MR  
Navy - AS  
Air Force - 99

Preparing activity:

Navy - AS  
(Project 8030-0720)

Review activities:

Army - AR, AV, MI  
Navy - MC, OS  
Air Force - 11

# STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

## INSTRUCTIONS

1. The preparing activity must complete blocks 1, 2, 3, and 8. In block 1, both the document number and revision letter should be given.
2. The submitter of this form must complete blocks 4, 5, 6, and 7.
3. The preparing activity must provide a reply within 30 days from receipt of the form.  
NOTE: This form may not be used to request copies of documents, nor to request waivers, or clarification of requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements.

### I RECOMMEND A CHANGE:

1. DOCUMENT NUMBER

MIL-PRF-8516G

2. DOCUMENT DATE (YYMMDD)

970731

3. DOCUMENT TITLE

SEALING COMPOUND, SYNTHETIC RUBBER, ELECTRIC CONNECTORS AND ELECTRIC  
SYSTEMS CHEMICALLY CURED

4. NATURE OF CHANGE (Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.)

5. REASON FOR RECOMMENDATION

6. SUBMITTER

a. NAME (Last, First, Middle Initial)

b. ORGANIZATION

c. ADDRESS (Include Zip Code)

d. TELEPHONE  
(Include Area Code)  
(1) Commercial:

7. DATE SUBMITTED  
(YYMMDD)

(2) DSN:  
(If Applicable)

8. PREPARING ACTIVITY

a. NAME  
COMMANDER  
NAVAL AIR WARFARE CENTER  
AIRCRAFT DIVISION

b. TELEPHONE NUMBER (Include Area Code)  
(1) Commercial (908) 323-7488 (2) DSN 624-7488

c. ADDRESS (Include Zip Code)  
CODE 414100B120-3  
HIGHWAY 547  
LAKEHURST, NJ 08733-5100

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Suite 1403, Falls Church, VA 22041-3466  
Telephone (703) 756-2340 DSN 289-2340