NOT MEASUREMENT SENSITIVE

MMM-A-1617B
10 February 1995
SUPERSEDING
MMM-A-1617A
24 March 1987

FEDERAL SPECIFICATION

ADHESIVE, RUBBER BASE, GENERAL PURPOSE

The General Services Administration has authorized the use of this federal specification by all Federal agencies.

1. SCOPE

1.1 Scope. This specification covers natural and synthetic rubber base adhesives (see 6.1).

1.2 Classification. The elastomeric adhesives shall be of the following types as specified (see 6.2b):

Type I	-	Natural rubber base, synthetic natural (polyisoprene), styrene butadiene (SBR), reclaim, or combinations thereof; non-oil resistant
Type II	-	Polychloroprene rubber base; oil-resistant
Type III	-	Butadiene acrylonitrile (Nitrile) rubber base, fuel resistant

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Commander, Systems Standardization, Code 4.1.11B120-3, Naval Air Warfare Center Aircraft Division, 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.

AMSC N/A FSC 8040

2. APPLICABLE DOCUMENTS

2.1 Government documents.

* 2.1.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issue of these documents shall be those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited

in the solicitation (see 6.2c).

SPECIFICATIONS

FEDERAL

QQ-A-250/13	-	Aluminum Alloy Alclad 7075, Plate and Sheet
CCC-C-419	-	Cloth, Duck, Cotton, Unbleached, Plied-Yarns, Army and Numbered
PPP-B-601	-	Boxes, Wood, Cleated-Plywood
PPP-B-665	-	Boxes, Paperboard, Metal Edged and components
PPP-B-676	-	Boxes, Setup
PPP-C-96	-	Cans, Metal, 28 Gauge and Lighter

MILITARY

MIL-C-5646	-	Cloth, Airplane
MIL-C-38736	-	Compound, Solvent, for use in Integral Fuel Tanks

STANDARDS

FEDERAL

FED-STD-123	-	Marking for Shipment (Civil Agencies)
FED-STD-313	-	Material Safety Data, Transportation Data and Disposal Data for Hazardous Materials Furnished to Government Activities

MILITARY

MIL-STD-105	-	Sampling Procedures and Tables for inspection by Attributes
MIL-STD-129	-	Marking for Shipment and Storage

* (Unless otherwise indicated, copies of federal and military specifications, standards, and handbooks are available from: DODSSP - Customer Service, the Standardization Documents Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.)

* 2.1.2 Other Government documents, and publications. The following other Government documents and publications form a part of this document to the extent specified herein. Unless otherwise specified, the issues are those cited in the solicitation (see 6.2c).

DEPARTMENT OF TRANSPORTATION

Code of Federal Regulations (CFR)

Title 49-Transportation

(Application for copies should be addressed to the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20370).

* 2.2 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 documents not listed in the DODISS are the issues of the documents cited in the solicitation (see 6.2c).

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM-D471	-	Rubber Property - Effect of Liquids
ASTM-D1974	-	Methods of Closing, Sealing, and Reinforcing Fiberboard Shipping Containers, Standard Practice for
ASTM-D5118	-	Fabrication of Fiberboard Shipping Boxes, Standard Practice for
ASTM-D5168	-	Fabrication and Closure of Triple Wall Corrugated Fiberboard Containers, Standard Practice for

(Application for copies should be addressed to the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103-1187.)

SOCIETY OF AUTOMOTIVE ENGINEERS (SAE)

SAE-AMS-3166	-	Solvents, Cleaning, Cleaning Prior to Application of Sealing Compound

(Application for copies should be addressed to the Customer Service Department, Publications Group, SAE, 400 Commonwealth Drive, Warrendale, PA 15096.)

(Non-Government standards and other publications are normally available from the organizations that prepare or distribute the documents. These documents also may be available in or through libraries or other informational services.)

* 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. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

* 3.1 Qualification. The adhesives furnished under this specification shall be products which are authorized by the qualifying activity for listing on the applicable qualified products list at the time of award of contract (see 4.3 and 6.3). In addition, the retention of the qualification for the adhesive on the applicable qualified products list shall be dependent on periodic verification of continued compliance with the requirements of this specification (see 4.3.3).

* 3.2 Material. The ingredients used to manufacture these adhesives shall be suitable in all respects for the purpose intended. The adhesive shall not cause deterioration of the test substrates.

3.2.1 Characteristics. The material, a one-part solvent dispersed adhesive, shall be air curing without the use of heat or pressure, and shall be suitable as received, for application by use of a brush of natural or synthetic fibers. A flexible continuous film having tackiness, strength, stretch, adhesion, and aging properties suitable for the intended purpose shall remain after the evaporation of the solvent. The film shall show no pock marks or visible evidence of porosity.

3.2.2 Formulation changes. New qualification tests shall be required if any changes are made to the qualified product or its method or place of

manufacture, unless approved by the activity responsible for qualification (see 6.3).

3.2.3 Toxicity. The adhesive shall have no adverse effect on the health of personnel when used for its intended purpose. Questions pertinent to this effect shall be referred by the contracting activity to the appropriate departmental medical service who will act as adviser to the contracting agency. The manufacturer at time of qualification shall certify that the adhesive contains no substance known to be toxic to the user under normal conditions of use. Material safety data sheets shall be prepared and submitted in accordance with FED-STD-313, one copy of which shall be forwarded to the preparing activity of the specification and one copy to the qualifying laboratory.

3.3 Physical properties.

3.3.1 Strip adhesion strength. The strip adhesion strength of the adhesives shall conform to table I when tested as specified in 4.6.2.

3.3.2 Dead load (Type II only). Type II adhesives, when tested as specified in 4.6.3, shall be capable of supporting a dead load of 0.9 kg (2 lbs) with no more than 1.27 cm (0.5 inch) creep or separation along the adhesive layer. Only a cohesive mode creep within the adhesive layer shall be acceptable.

TABLE I. Strip adhesion strength.

Test	Requirement		
	Type I	Type II	Type III
As received kg. (lb.) min.			
Aluminum to duck	5.4 (12)	6.8 (15)	4.5 (10)
Aluminum to polychloroprene	---	6.8 (15)	---
Aluminum to vinyl	---	---	3.6 (8)
After immersion kg. (lb.) min.			
Aluminum to duck (water)	2.7 (6)	5.4 (12)	2.3 (5)
Aluminum to duck (oil)	---	5.4 (12)	3.6 (8)
Aluminum to duck (fuel)	---	---	3.6 (8)
After bond aging kg. (lb.) min.			
Aluminum to duck	5.4 (12)	6.8 (15)	4.5 (10)
After accelerated storage kg. (lb) min.			
Aluminum to duck	4.5 (10)	5.4 (12)	3.6 (8)

3.3.3 Brushability. Adhesives shall be readily brushable. They shall flow easily, spread evenly, and cover the surface adequately when applied as specified in 4.6.4.

3.3.4 Accelerated storage. Adhesives stored as specified in 4.6.5 shall show no deterioration, gelling, settling, or separation of phases which cannot be readily dispersed by manual stirring. After storage, they shall meet the brushability requirements of 3.3.3 and strength requirements of "after accelerated storage" in table I.

3.4 Shelf life. The adhesives as furnished by the manufacturer shall

exhibit no hardening, settling, or gelling of the material (which cannot be readily dispersed by manual stirring) in the container when stored as specified in 4.6.6. After the storage period, the adhesives shall meet the requirement for brushability (3.3.3), and the "as received" strip adhesion strength shall be not less than 80 percent of the values specified in table I.

3.4.1 Extension of shelf life. This specification makes provisions for extending field shelf life of these adhesives (see 6.1.3.1). The shelf life for types I and III may be extended 6 months and the type II shelf life 3 months when the stored material is in conformance with the requirements of 3.4 after the field storage periods.

3.5 Instruction sheet. For each adhesive submitted for qualification, the manufacturer shall forward the qualifying activity two copies of an instruction sheet. The instruction sheet shall contain the following information:

a. Cleaning procedures
b. Number of coats
c. Drying time between coats
d. Minimum and maximum open assembly time
e. Curing time
f. Recommended thinner and method of thinning
g. Precautions to be used
h. Adhesive covered by this specification shall not be used for structural purpose, or for life raft, inflatable boats, radome covers, pontoons, airship, or deicer boot manufacture, or repair

3.6 Workmanship. The adhesive shall be manufactured by such processes as to conform to this specification.

4. QUALITY ASSURANCE PROVISIONS

* 4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection requirements (examinations and tests) as specified herein. Except as otherwise specified in the contract or purchase order, the contractor may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in this specification where such inspections are deemed necessary to ensure supplies and services conform to prescribed requirements.

* 4.1.1 Responsibility for compliance. All items must meet all requirements of sections 3 and 5. The inspection set forth in this specification shall become a part of the contractor’s overall inspection system or quality program. The absence of any inspection requirements in the specification shall not relieve the contractor of the responsibility of ensuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling inspection, as part of manufacturing operations, is an acceptable practice to ascertain conformance to requirements, however, this does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to accept defective material.

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

a. Qualification inspection (see 4.3)
b. Quality conformance inspection (see 4.4)

4.3 Qualification inspection. Qualification inspection shall consist of all the tests and examinations specified in this specification.

4.3.1 Qualification sample. Qualification test samples shall consist of 4 quarts of each type of adhesive. The adhesive shall be furnished in containers of the type to be used in filling contracts or orders. Samples shall be forwarded to the Qualifying Laboratory: Commanding Officer, Naval Air Warfare Center Aircraft Division, Code 4.3.4.1, P.O. Box 5152, Warminster, PA 18974-0591. The samples shall be plainly and durably marked with the following information:

Samples for qualification tests
ADHESIVE, RUBBER BASE, GENERAL PURPOSE
Name and address of the manufacture
Manufacturer's Code No.
Type
Date of manufacture (month and year)
Submitted by (name) (date) for qualification tests in accordance with MMM-A-1617B under authorization (reference authorizing letter) (see 6.3)

4.3.2 Manufacturer's data.

4.3.2.1 Test report. Two copies of the manufacturer's test report, containing complete test data certifying that material submitted for qualification conforms to this specification, shall be submitted with qualification test samples. Location and identity of the plant which produced the samples tested shall also be stated. The contractor shall also furnish toxicological data (see 3.2.3) necessary to evaluate the adhesive for proposed use.

4.3.2.2 Instruction sheet. Duplicate copies of the manufacturer's instructions for use of the adhesive shall be furnished with the qualification samples (see 3.5).

4.3.3 Retention of qualification. In order to retain qualification of an adhesive approved for listing on the Qualified Products List (QPL), the manufacturer shall 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 shall be in two year intervals and shall 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.

4.4 Quality conformance.

4.4.1 Lot formation. A lot shall consist of all adhesive of the same type manufactured from the same ingredients, processed at the same time, and packaged as specified in the contract or order. No lot of adhesive will be considered for acceptance if more than 30 days have elapsed from the date on which the actual manufacturing process is completed to the date on which the lot is made available for selection of samples.

4.4.1.1 Source inspection. Unless otherwise specified, all materials (each lot) furnished to this specification shall be source inspected before shipping to the Government.

4.4.2 Sampling and inspection.

4.4.2.1 Physical properties. Two samples, taken from two different containers, of not less than 2 pints each or an amount sufficient for all testing shall be taken at random from each lot and tested to the requirements in 4.4.3.1.

* 4.4.2.2 Packaging. The sample unit shall be one shipping container fully prepared for delivery except that it shall not be palletized and need not be sealed. Samples for packaging inspection shall be selected in accordance with MIL-STD-105, Inspection Level S-2.

4.4.3 Quality conformance tests and examinations.

* 4.4.3.1 Physical properties. Each sample selected in accordance with 4.4.2.1 shall be tested for strip adhesion, as received (aluminum to duck) (4.6.2.3.1) and brushability, as received (4.6.4). In addition, Type II adhesive shall be subjected to the dead load test (4.6.3). The lot shall be rejected if a specimen fails any of the above tests.

* 4.4.3.2 Packaging inspection. Samples selected in accordance with 4.4.2.2 shall be visually examined to all the requirements in section 5 of this specification. Defects shall be defined in accordance with table II. The lot size shall be the number of shipping containers in the lot. There shall be no defects.

TABLE II. Packaging inspection.

Examine	Defect
Packaging	Container not as specified, closures not accomplished by specified or required methods or materials. Puncture, break, leakage or seepage of contents. Nonconforming component, component missing, damaged or otherwise defective. Bulged or distorted container. Fill not as specified.
Marking	Date omitted, illegible, incorrect, incomplete, or not in accordance with contract requirements.

* 4.4.3.3 Report. Upon completion of the quality conformance inspection, the Government activity responsible for conducting the inspection program shall report the results of tests, with recommendations, to the contracting officer.

4.5 Test conditions.

4.5.1 Specimen conditioning. Unless otherwise specified in the detailed test method, all specimens and adhesives shall be conditioned at 25°± 3°C
(77°± 5°F) and 50 ± 4 percent relative humidity for a period of 7 days followed by testing at these conditions.

* 4.5.2 Application instructions. The adhesive shall be applied in accordance with the following instructions:

a. Clean metal panels with solvent MIL-C-38736, SAE AMS3166 or equivalent. Dry with clean, lint free cloth. Discard any panel whose surface is

pitted, scratched or discolored.

b. Stir adhesive thoroughly. Follow the manufacturer's instructions for number of coats (not to exceed three on each surface); drying time between coats and drying time between application of final coat, and assembly shall be followed without deviation. Unless otherwise stated, the final coating shall be applied to each surface at as nearly the same time as possible.

c. Roll out bonded areas with a roller having a diameter and a width of approximately 5 cm (2 inches).

4.6 Test methods.

* 4.6.1 Visual examination. Every adhesive test specimen shall be visually examined after testing for deterioration of the test substrates which may be attributed solely to contact with the adhesive. There shall be no visible deterioration of the test substrates.

4.6.2 Strip adhesion strength.

4.6.2.1 Panel preparation.

4.6.2.1.1 Panel materials. Materials used in the preparation of test panels shall be as follows:

a. Aluminum in accordance with QQ-A-250/13
b. Cotton duck in accordance with CCC-C-419, Type I, olive drab QM shade 7, hard texture No. 10, 14.35 ounces.
c. Polychloroprene formulated and prepared in accordance with table III.
d. Vinyl plastic formulated and prepared in accordance with table III.

TABLE III. Polychloroprene and vinyl sheet composition.

Material		Quantity (parts by weight)	
Polychloroprene 1/ 3/	Vinyl plastic 2/ 3/	Polychloroprene	Vinyl plastic
Neoprene WRT	Geon 101	100.0	100.0
Stearic acid	Diocytl Phthalate	1.0	15.0
Magnesia (X.L.C)	Tri-Butoxy-ethyl-phosphate	4.0	10.0
Zinc oxide	TP-90-B	5.0	15.0
Neozone A	Stabelan "E"	2.0	4.0
Permalux	Stearic acid	0.5	0.5
SRF black		45.0	

1/ 0.19 ± 0.03 cm (0.75 ± 0.010-inch)-thick sheet
2/ 0.064 ± 0.013 cm (0.025 ± 0.005-inch) - thick sheet
3/ Cure for 20 minutes at 154 ± 2°C (310 ± 3°F) with lightweight cotton cloth conforming to MIL-C-5646 as reinforcement-backing to prevent elongation.

4.6.2.1.2 Specimen preparation. All specimens except those used for

"after accelerated" storage tests shall be prepared with fresh adhesive. For the "after accelerated" storage tests, adhesive conditioned as specified in 4.6.5 shall be used. A rectangle of vinyl plastic, polychloroprene or duck as applicable, measuring 17.8 cm by 31.8 cm (7 inch by 12.5 inch) shall be covered on one surface at one time with adhesive to form a coated area 11.3 cm by 17.8 cm (4.5 inch by 7 inch) running the full width of the material. The top edge of strips of aluminum measuring 2.5 by 15.2 by .161 cm (1 by 6 by 0.064 inch) shall be placed in firm contact with the top edge of the adhesive-coated material in such a manner that a bonded area on each strip of 2.5 by 11.3 cm (1 by 4.5 inch) shall be produced. Approximately .64 cm (.25 inch) separation between strips shall be maintained (see figure 1). Strips of tape may be used to secure the aluminum panels during preparation of the test specimens. Cleaning, drying time between coats, number of coats on each material and conditioning shall be accomplished in accordance with 4.5.1 and 4.5.2. After conditioning, the sheet shall be cut to separate the strips, leaving a loose, unbonded tail approximately 20 cm (8 inches) in length on each specimen. This procedure prepares 5 specimens for test.

4.6.2.2 Apparatus. Strip adhesion strength tests shall be performed on an autographic power-driven inclination pendulum, or strainage type testing machine. If an inclination or pendulum type is used, it shall be of such capacity that the tension during test shall not exceed 85 percent nor be less than 15 percent of the rated capacity.

4.6.2.3 Procedure.

4.6.2.3.1 As received. Specimens shall be prepared in accordance with 4.6.2 and conditioned in accordance with 4.5.1. Tests shall be conducted within 24 hours after completion of the conditioning period. The specimens shall be mounted in the machine specified in 4.6.2.2 and the adhered material peeled from the aluminum strip at an angle of 180° at the rate of 5 cm/min (2 inches per minute) at standard conditions. Strength values for the first and last inch of the specimen shall not be used. The strip adhesion strength for each specimen shall be the numerical average of the loads. Five specimens shall be tested for each determination. Strip adhesion strength shall be reported as the numerical average of the five specimens tested and shall pass the requirements specified in table I.

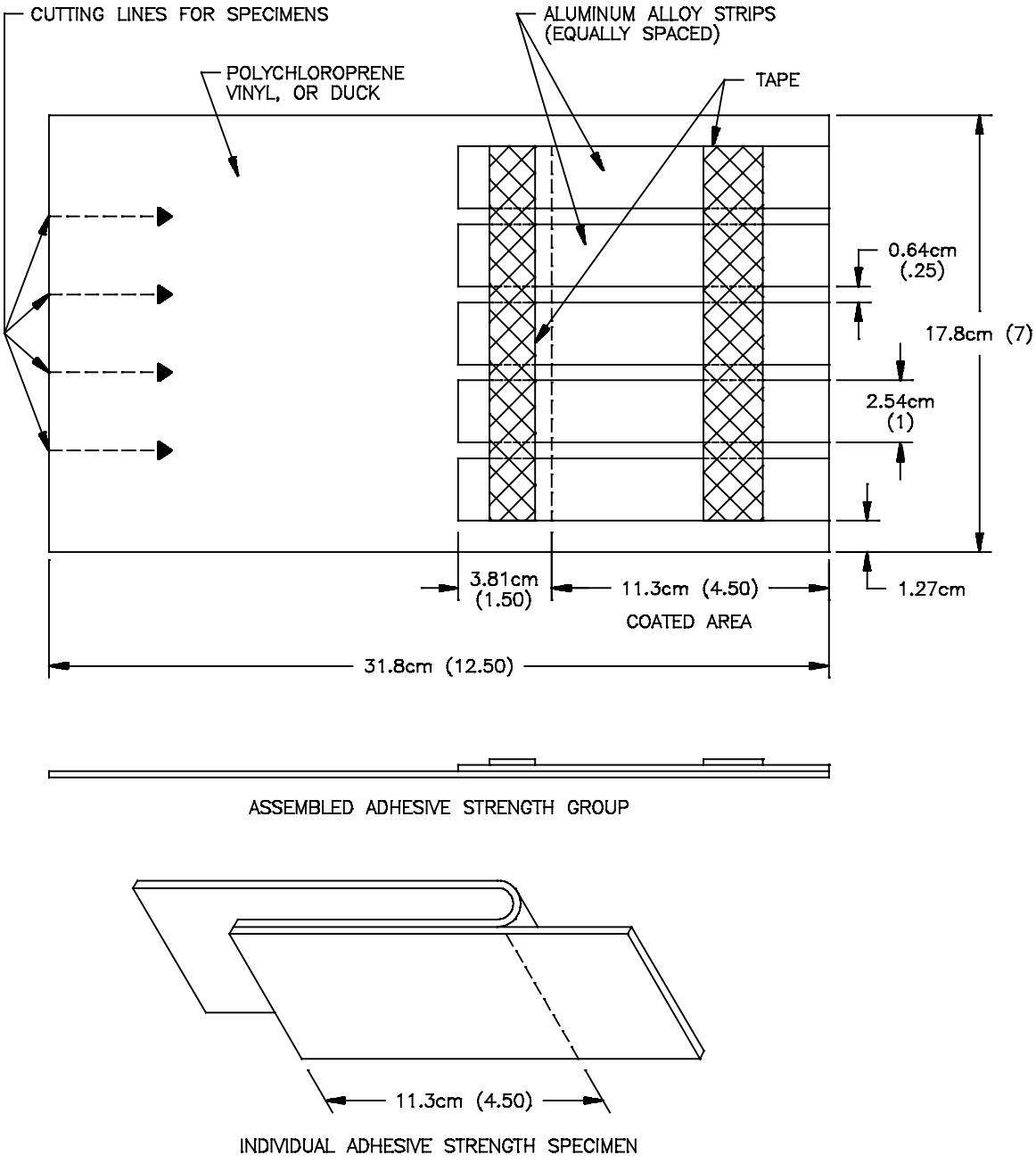
4.6.2.3.2 After immersion. Specimens shall be prepared in accordance with 4.6.2 and conditioned as specified in 4.5.1. Within 24 hours after completion of the conditioning period, the specimens shall be immersed for 22 hours in distilled water, petroleum oil (oil No. 1 of ASTM D471) or aromatic fuel (Reference Fuel B of ASTM D471) as applicable. Water and fuel immersions shall be at standard conditions. Oil immersions shall be at 71°± 1°C (160°± 2°F); specimens shall be cooled in a fresh sample of oil at standard conditions for approximately 30 minutes. All specimens shall be tested in accordance with 4.6.2.3.1 within 5 minutes after removal from the fluid and shall pass the requirements specified in table I.

4.6.2.3.3 After bond aging. Specimens shall be prepared in accordance with 4.6.2 and conditioned as specified in 4.5.1. Within 24 hours after completion of the conditioning period, the specimens shall be placed in a circulating air oven at 70°± 1°C (158°± 2°F) for a period of 7 days, then removed, and held at standard conditions for 24 hours prior to testing in accordance with 4.6.2.3.1.

4.6.2.3.4 After accelerated storage. Adhesive aged in accordance with 4.6.5 shall be used to prepare specimens as specified in 4.6.2 followed by conditioning in accordance with 4.5.1. Tests shall be conducted as specified in 4.6.2.3.1 within 24 hours after completion of the conditioning period.

4.6.3 Dead load (Type II). Three specimens shall be prepared in accordance with 4.6.2.1.2, and conditioned as specified in 4.5.1. Within 24 hours after completion of conditioning, the samples shall be placed in a circulating air oven at a temperature of 70°± 1°C (158°± 2°F). A 0.9 kg (2 lbs.) weight shall be suspended from the loose end of the duck, in a manner which will apply the load at an angle of 90° to the aluminum strip. The specimens shall be maintained at the above temperature for 24 hours, after which they shall be removed from the oven and examined for compliance with 3.3.2.

4.6.4 Brushability. Brushability shall be evaluated during the preparation of the strip adhesion specimens (see 4.6.2) and shall comply with the requirements of 3.3.3.



NOTES:

1. TOLERANCES ARE IN CENTIMETERS (INCHES).
2. TOLERANCES: ±0.15cm (±.06) UNLESS OTHERWISE SPECIFIED

FIGURE 1. Method of assembling and cutting adhesive strength specimens.

4.6.5 Accelerated storage. A full 1-quart container of the type adhesive used in filling contracts or orders shall be placed unopened in a circulating air oven for 15 days at 60°± 1°C (140°± 2°F). At the end of the storage period, the adhesive shall be removed from the oven and cooled overnight at standard conditions. The container shall then be opened and the material examined for gelling or other evidence of deterioration, and tested for conformance with the brushability requirements of 3.3.3 and the adhesive strength after accelerated storage requirements of table I.

4.6.6 Shelf storage life. A 1-quart sample of adhesive shall be stored by the qualifying laboratory in its "as received" container for 1 year for types I and III, or 6 months for type II. The storage temperature range shall be 29°± 3°C (85°± 5°F). At the end of the storage period the adhesive shall be tested for conformance to 3.4.

5. PACKAGING

5.1 Preservation. Preservation shall be Level A, B, or Commercial, as specified.

5.1.1 Level A.

5.1.1.1 Unit packaging. Adhesives shall be packaged in cans conforming to requirements of PPP-C-96, type V, class 2. Cans shall be the U.S. standard pint, quart, or gallon size, as specified (see 6.2g).

5.1.1.2 Intermediate packaging. Adhesives packaged as specified in 5.1.1.1 shall be intermediate packaged in accordance with requirements in the appendix of PPP-C-96, with containers conforming to the requirements of ASTM D5118, grade V3c and shall be within the weight limitations specified for the container.

5.1.2 Level B. Packaging for level B shall be as in 5.1.1 except that boxes conforming to PPP-B-665 or PPP-B-676 may also be used, and the boxes conforming to ASTM D5118 shall be class domestic (see 6.2e).

5.1.3 Commercial. The adhesive shall be preserved in accordance with normal commercial practice. The package shall offer protection against deterioration and physical damage from the supplier to initial destination. Containers shall conform to the requirements of CFR Title 49.

5.2 Packing. Packing shall be level A, B, or Commercial, as specified in 6.2e.

5.2.1 Level A. Adhesives, intermediate packaged as specified in 5.1.1.2 shall be packed in wood cleated plywood boxes conforming to requirements of PPP-B-601, overseas type, style optional in quantities not to exceed the weight limitation of the container. Box closure and strapping shall be in accordance with the appendix to the box specification. Strapping shall be zinc coated.

5.2.2 Level B. Adhesive shall be packed in containers conforming to PPP-B-601, domestic type, or ASTM D5168, class weather resistant. Adhesive, intermediate packaged as specified in 5.1.1.2 shall not require any additional packing. Boxes shall be strapped in accordance with the requirements in ASTM D1974.

5.2.3 Commercial. Adhesives packaged as specified in 5.1 shall be packed to assure carrier acceptance and safe delivery to destination at lowest rating in conformance to the rules and regulations of the mode of

transportation utilized.

5.3 Marking.

5.3.1 Civil agencies. In addition to markings required by the contract or order, the packages and shipping containers shall be marked in accordance with Fed. Std. No. 123 and shall include the labeling specified in 5.3.3, except that the exterior container shall not contain "Instructions for Use" (see 3.5).

5.3.2 Military agencies. In addition to markings required by the contract or order, the packages and shipping containers shall be marked in accordance with MIL-STD-129 and shall include the labeling specified in 5.3.3, except that the exterior container shall not contain "Instructions for Use" (see 3.5).

5.3.3 Product labeling. The product shall be clearly and legibly labeled to include the following information:

ADHESIVE, RUBBER BASE, GENERAL PURPOSE
Specification MMM-A-1617B
Type
Manufacturer’s name and address
Volume contained
Contract No. (order number, if contract number is not assigned)
Manufacturer’s designation
Instructions for use (see 3.5)
Date of manufacture
Store in a cool, dark place

6. NOTES

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

6.1 Intended use. Adhesives covered by this specification are intended for noncritical uses in application where the unit stress on the adhesive is not appreciable. Under no circumstances will adhesive covered by this specification be used for structural purposes, or for life rafts, inflatable boats, radome covers, pontoons, deicer boot manufacture, or repair.

6.1.1 Adhesive characteristics. These adhesives will bond duck, leather, felt, cork and similar relatively porous materials to themselves or each other or to relatively non-porous materials such as wood, aluminum, steel, rubber, and plastics.

6.1.2 Bonding of natural and synthetic rubber or rubber coated fabrics. Natural rubber can best be bonded with type I and type II adhesive. Type III adhesive has relatively poor adhesion to natural rubber. Type II is definitely superior for bonding polychloroprene, and type III is superior for bonding Buna-N and vinyl compounds. Preliminary check tests should be made in case of doubt as to which type should be employed, or in those situations when the highest bond possible is desired.

6.1.3 Storage characteristics. The adhesives covered by this specification show gelling upon aging, but will remain stable for the time specified for storage shelf life (see 4.6.6). Elevated storage temperatures shorten the usable life of these adhesives.

6.1.3.1 Extension of storage life. Upon the expiration of field

storage, the adhesive may be tested as specified in 3.4, the shelf life requirement. Successful completion of these tests will permit extending the shelf life. Types I and III adhesives may be extended an additional 6 months. Type II adhesives may be extended 3 months.

6.1.4 Thinning of adhesive. In the event the viscosity of types I and III adhesives at any time after date of manufacture has increased beyond the point of ready brush application, because of solvent evaporation, the adhesive may be thinned in accordance with directions for use appearing on the label of each can of adhesive. Type II adhesive cannot usually be thinned.

6.2 Acquisition requirements. Acquisition documents should specify the following:

a. Title, number and date of this specification, including amendments.
b. Type 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 2.1.1 and 2.1.2).
d. Level of packaging and packing required (see 5.1 and 5.2).
e. Amounts and unit quantity required (see 5.1.1.1).
f. Any special marking required (see 5.3).
g. Items of data required (see 6.4).

* 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 in Qualified Products List QPL-MMM-A-1617 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 the products covered by this specification. The activity responsible for the Qualified Products List is the Naval Air Systems Command, Code 4.3.4, 1421 Jefferson Davis Highway, Arlington, VA 22243-5120; however, information pertaining to qualification of products may be obtained from the Commander, Naval Air Warfare Center Aircraft Division, Code 4.3.4.1, P.O. Box 5152, Warminster, PA 18974-0591.

* 6.4 Consideration of data requirements. The following data requirements should be considered when this specification is applied on a contract. The applicable Data Item Descriptions (DID's) should be reviewed in conjunction with the specific acquisition to ensure that only essential data are requested/provided and that the DID's are tailored to reflect the requirements of the specific acquisition. To ensure correct contractual application of the data requirements, a Contract Data Requirements List (DD Form 1423) must be prepared to obtain the data, except where DOD FAR Supplement 27.475-1 exempts the requirement for a DD Form 1423.

Reference Paragraph	DID Number	DID Title	Suggested Tailoring
4.4.3.3	DI-NDTI-80809	Test/Inspection Reports	Use Contractor Format

The above DID's were those cleared as of the date of this specification. The current issue of DOD 5010.12L, Acquisition Management Systems and Data Requirements Control List (AMSDL), must be researched to ensure that only current, cleared DID's are cited on the DD Form 1423.

* 6.5 Subject term (key word) listing.

Adherent
Butadiene acrylonitrile rubber
Cement
Glue
Natural rubber
Polychloroprene

* 6.8 Changes from previous issue. The margins of this specification are marked with asterisks to indicate where changes (additions, modifications, corrections, deletions) from the previous issue were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationship to the past previous issue.

MILITARY INTERESTS:

Custodians
Army - MR
Navy - AS
Air Force - 99

Review Activities:

Army - GL, ME, MI, SM, AT
Navy - EC, MC, YD, OS
Air Force - ll
Misc - DS

CIVIL AGENCY COORDINATING ACTIVITIES:

GSA - FSS

Preparing Activity:
Navy - AS
(DoD Proj. No. 8040-0534

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 **MMM-A-1617A**	2. DOCUMENT DATE (*YYMMDD*) **950210**

3. DOCUMENT TITLE
ADHESIVE, RUBBER BASE, GENERAL PURPOSE

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:** **(2) DSN:** (*If Applicable*)	7. DATE SUBMITTED (*YYMMDD*)

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 4.1.11.2B120-3 HIGHWAY 547 LAKEHURST, NJ 08733-5100	**IF YOU DO NOT RECEIVE A REPLY WITHIN 45 DAYS, CONTACT:** Defense Quality and Standardization Office, 5203 Leesburg Pike, Suite 1403, Falls Church, VA 22041-3466 Telephone (703) 756-2340 DSN 289-2340