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L-T-1512A
June 9, 1985
SUPERSEDING
Int. Fed. Spec. L-T-001512
October 22, 1968

FEDERAL SPECIFICATION

TAPE, PRESSURE SENSITIVE ADHESIVE, PIPE WRAPPING

This specification was approved by the Commissioner, Federal Supply Service, General Services Administration, for the use of all Federal agencies.

1. SCOPE AND CLASSIFICATION

1.1 Scope. This specification establishes the requirements for a pressure sensitive adhesive tape, suitable for corrosion prevention of exterior surfaces of metal pipe.

1.2 Classification. The pressure sensitive adhesive tape covered by this specification shall be of the following types, as specified (see 6.2):

Type I - Standard thickness.
Type II - Heavy duty thickness.
Type III - Standard thickness for low temperature application.

2. APPLICABLE DOCUMENTS

2.1 The following documents, of the issues in effect on date of invitation for bids or request for proposal, form a part of this specification to the extent specified herein.

Federal Specification:

PPP-T-680 - Tape, Pressure-Sensitive Adhesive; Packaging and Packing of.

Federal Standard:

Federal Test Method Std. No. 147 - Tapes, Pressure-Sensitive and Gummed; Methods of Inspection, Sampling, and Testing.

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(Activities outside the Federal Government may obtain copies of Federal Specifications, Standards, and Handbooks as outlined under General Information in the Index of Federal Specifications and Standards and at the prices indicated in the Index. The Index, which includes cumulative monthly supplements as issued, is for sale on a subscription basis by the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

(Single copies of this specification and other Federal Specifications required by activities outside the Federal Government for bidding purposes are available without charge from Business Service Centers at the General Services Administration Regional Offices in Boston, New York, Washington, DC, Atlanta, Chicago, Kansas City, MO, Fort Worth, Denver, San Francisco, Los Angeles, and Seattle, WA.

(Federal Government activities may obtain copies of Federal Specifications, Standards, and Handbooks and the Index of Federal Specifications and Standards from established distribution points in their agencies.)

2.2 Other publications. The following documents form a part of this specification to the extent specified herein. Unless a specific issue is identified, the issue in effect on date of invitation for bids or request for proposal shall apply.

American Society for Testing and Materials (ASTM) Standards:

D-1000 - Testing Pressure-Sensitive Adhesive Coated Tapes Used for Electrical Insulation.

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

3. REQUIREMENTS

3.1 Material. The tape shall consist of an elastomeric film backing of either polyethylene or plasticized polyvinyl chloride, coated on one side with a homogenous pressure-sensitive adhesive.

3.2 Rolls. The tape shall be wound in rolls, adhesive side inward on a core of sufficient rigidity to prevent distortion of the roll under conditions of testing, transportation, storage, and application. The rolls shall be furnished in the core diameter, width, and length, as specified (see 6.2 and 6.3).

3.3 Quantitative requirements. The tape shall meet the following requirements as specified in table 1 when tested as specified in table II:

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TABLE I. Physical and electrical properties.

Characteristics	Type I	Type II	Type III
Thickness, mils	10 +/- 1	20 +/- 1	min. 8.5 max. 11.0
Width, deviation, inch, max	0.1	0.1	0.1
Tensile Strength, Lb./in. width, min.	20	40	20
Elongation, percent, min.	150	150	150
Adhesion,oz./in. width, min.	20	20	15
Water-vapor transmission rate, gm./100 sq. inches/24 hrs., max.	1.3	1.0	2.6
Dielectric breakdown after standard conditioning, volts	7000	11,000	7,000
after conditioning for 24 hrs. water immersion, at 73.4 +/- 2F., percent of original	90	90	90
Conformance factor 0 deg. C. lbs./in. width, max.	50	75	30
Resistance to impact, cm., min.	60	145	60
Puncture resistance, lbs., min.	10	20	8

3.4 Resistance to weathering. When tested for 100 hours as specified in table II, the tape shall show no visual evidence of lifting, curling, buckling, component separation, or other degradation that would make it unfit for an external sealing medium.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the supplier is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or order, the supplier 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 the specification where such inspections are deemed necessary to assure that supplies and services conform to prescribed requirements.

4.2 Sampling and inspection. Sampling and inspection shall be in accordance with section 7 of Fed. Test Method Std. No. 147.

4.3 Examination of preparation for delivery. An examination shall be made to determine that the packaging, packing, and marking comply with the requirements of section 4 of PPP-T-680.

4.4 Test procedure. The tape shall be tested in accordance with the following applicable methods of Fed. Test Method Std. No. 147 except as otherwise specified in table II. Failure to pass any test and non-compliance to the requirements shall be cause for rejection of the lot.

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TABLE II. Test procedures

Characteristics	Applicable Test Method Fed. Test Method Std. No. 147 [1]
Thickness	36
Width	ASTM Standard D-1000
Tensile Strength	34
Elongation	34
Adhesion	10
Water-vapor transmission rate	70
Dielectric breakdown	ASTM Standard D-1000
Weathering resistance	63
Conformance factor	4.4.1
Resistance to impact	4.4.2
Puncture resistance	4.4.3

[1] Except as otherwise indicated.

4.4.1 Conformance factor. The conformance factor shall be determined at 0 deg. C. The testing machine shall be the power driven weight pendulum type or the cross-head type described in ASTM D-1000. The samples shall be conditioned in the holding fixture for one minute at 0 deg. C. prior to testing. The test shall be run in accordance with the procedures for Breaking Strength and Elongation applying to Class 1 tapes in ASTM Standard D-1000, except that the force required to elongate the sample 20 percent shall be reported in lbs./in. width. At least ten determinations shall be made and the results averaged.

4.4.2 Resistance to impact. Apparatus. The following apparatus shall be required:

a. A steel ball bearing with a diameter of 1-3/8 inches weighing 173 .5 +/- 1.0 grams.
b. A suitable device to release the ball in free-fall.
c. A solid steel plate at least 2 inches by 2 inches by 1/2 inch on which the specimen is placed.
d. A steel roller (See ASTM Standard D-1000, Section 35 (c)).
e. An ohmmeter.
f. An electrolytic (saturated) solution of cupric chloride in butyl-cellosolve.

Test Procedure and Results. A 2 inch by 2 inch specimen shall be placed, adhesive side down, on the steel plate, and the roller passed over it once in each direction at a rate of approximately 2 inches per second. The steel ball shall be dropped from 60 mm. Four drops of the electrolytic solution shall be applied to the indentation and one of the probes of the ohmmeter placed in the solution and the other probe on the steel plate. A puncture occurs if the ohmmeter reads 50 megohms or less. Six of 10 ball drops must not puncture at specified drop heights in order to pass this test.

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4.4.3 Puncture resistance. Apparatus. The following apparatus shall be required:

a. A cross-head type testing machine which conforms to Section 35a of ASTM Standard D-1000 and is capable of a speed of 2 inches per minute.
b. A test fixture shown in Figure 1.

Test Procedure and Results. Five 1 inch by 3 inch specimens shall be prepared from 1 inch roll. The testing machine shall be zeroed to compensate for the weight and frictional drag of the test fixture. The specimen shall be placed, adhesive side down, over the hole in the lower fixture and securely clamped with the clamping device provided. The driven jaw shall move a a rate of 2 inches per minute. The force required to puncture the specimen shall be recorded in pounds. The average of the five tests shall be reported as the puncture resistance.

5. PREPARATION FOR DELIVERY

5.1 Packaging, packing and marking. Unless otherwise specified (see 6.2), the rolls of tape shall be provided in multiple roll packaging and packing, and the packages marked in accordance with PPP-T-680 at the level specified (see 6.2) in the contract or order, except table I of PPP-T-680 shall be modified as follows:

TABLE III. Packaging and packing quantities

	Rolls per carton	
Width of Tape (inches)	100 ft. length	300 ft. length
1	48	12
2	24	6
4	12	3
6	8	2
8	12	1
12	8	1

6. NOTES

6.1 Intended use. This tape is intended for use primarily in preventing corrosion of exterior surfaces of pipe subjected to underground or underwater exposure. The tape is considered capable of providing long term corrosion protection against all naturally occurring soils and waters. The tape is normally applied in spiral fashion by hand-operated or motorized pipe wrapping machines. Pipe primer as recommended by the tape manufacturer shall be applied whenever clean, dry pipe cannot be assured.

6.2 Ordering data. Purchasers should select the preferred options permitted herein, and include the following information in procurement documents:

(a) Title, number, and date of this specification.

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(b) Type required (see 1.2).
(c) Width,length, and core diameter of roll required (see 3.2).
(d) When packaging, packing, and marking other than in accordance with PPP-T-680 is required (see 5.1).
(e) Level of packaging and packing required (see 5.1).

6.3 The tape covered by this specification is available commercially in the following sizes:

Core diameter (inside) - 1-1/2 inches.
Width - 1, 2, 4, 6, and 8 inches.
Length - 100 and 300 feet.

Core diameter (inside) - 3 inches.
Width - 2, 4, 6, 8, and 12 inches.
Length - 300, 400, 600, 800, and 1,000 feet.

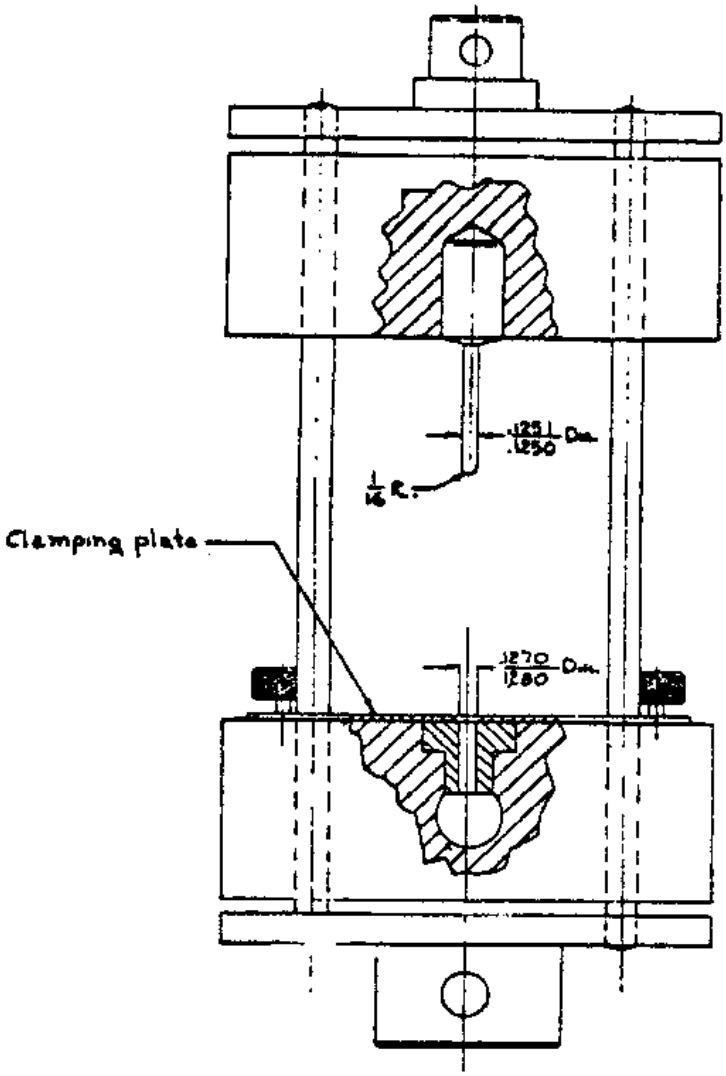

Figure 1
Puncture Resistant Test Unit

Preparing Activity

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Administration, acting as an agent for the Superintendent of Documents. See Section 2 of this specification to obtain extra copies and other documents referenced herein.

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L-T-1512A
REINSTATEMENT
October 11, 1979
SUPERSEDING
CANCELLATION NOTICE
June 30, 1978

FEDERAL SPECIFICATION

TAPE, PRESSURE SENSITIVE ADHESIVE, PIPE WRAPPING

This notice was approved by the Commissioner, Federal Supply Service, General Services Administration.

This notice is issued to reinstate Federal Specification L-T-1512A, dated June 9, 1975.

Cancellation notice dated June 30, 1978, on Federal Specification L-T-1512A, is hereby canceled.

FSC 8030