

ScotchrapTM 50,51 and Pipe Primer

ScotchfilTM Electrical Insulation Putty

All Weather Corrosion Protection

1. Wrap Your Job Up Right with ScotchrapTM Tapes

ScotchrapTM 50 and 51 Tapes are tough, polyvinyl chloride based tapes with special high tack adhesives formulated to resist corrosion of metal piping systems above and below ground, fittings and joints on all mil-coated pipe and electrical conduit systems. ScotchrapTM 50 and 51 tapes are:

- Resistant to corrosive salt water, soil acids, alkalies and salts, common chemicals, chemical vapors, and exposure to outdoor weathering and sunlight.
- Resistant to impact, abrasions, punctures, and tears.

ScotchrapTM 50 is a highly conformable, all-weather 0.254 mm thick tape designed for application over a wide temperature range. ScotchrapTM 51 provides similar qualities in a thicker, 0.508 mm tape. Both tapes have high electric strength, excellent insulating properties.

Start your job off right with ScotchrapTM Pipe Primer and ScotchfilTM Electrical Insulation Putty

ScotchrapTM Pipe Primer

A quick-dry, non-sag rubber base primer that permeates metal surface pits and irregularities, preparing the surface for tape application. Compatible with the special adhesives on ScotchrapTM Tapes, it enhances adhesion.

ScotchfilTM Electrical Insulation Putty

Use as a build-up compound on highly irregular surfaces such as fittings and valves, providing a

smooth, waterproof taping surface. ScotchfilTM Putty is soft and pliable—simply press putty into place on irregular surface, mold with finger pressure and over tape using standard methods.

Application of primer, putty and tape

ScotchrapTM tapes are easy to apply without special tools or dangerous flame. However, a few general application procedures should be followed to obtain performance. Surfaces to be wrapped should be clean, dry and free of oil, grease and other contaminants. Welding slag and spatter, sharp edges or burrs should be chipped, grinded or filed.

Apply a uniform, continuous coating of ScotchrapTM Pipe Primer to the prepared surface and let dry. Fill in irregular surfaces with ScotchfilTM Electrical Insulation Putty. Cover weld beads with one wrap of tape over the entire surface.

Straight pipe and conduit are normally spirally wrapped using tape width listed in coverage table. Field joints on mill-coated pipe can be wrapped spirally or with a cigarette wrap of wide tape. Unusually severe construction or soil conditions may require additional tape thickness or protective overwraps.

For below ground installation adequate provisions should be taken to protect the coating from physical damage during pipe handling, lowering or backfilling operations.

The pipeline ditch should be free of rock or other sharp objects so the coated pipe rests on a smooth bed of soil. Backfill materials should also be free of rock or other sharp objects to avoid damage of the coating. After layer of debris-free soil has covered the pipe, general backfill may be used.

Scotch 50, 51 - Data Sheet

2. Typical Properties*

Scotchrap™ Pipe Primer

Color	Black
% Solids	30
Weight	0.84 kg/l
Coverage	
0.025 mm dry film thickness	17.5 m ² /l
Drying time 24°C and 50% RH	
0.025 mm dry film thickness	15 min
Flash Point	-26°C

Scotchfil™ Electrical Insulation Putty

Color	Black
Thickness ¹	3.175 mm
Elongation ¹	1000%
Electrical Strength ²	22.6kV/mm
Insulation Resistance ³	10 ⁶ MΩ

Scotchrap™ All-Weather Corrosion Protection Tapes

Typical Property*	50 Tape	51 Tape
Classification ⁴	Type III	Type II
Color-Backing	Black	Black
Color-Adhesive	Black	Black
Thickness ¹	0.254 mm	0.508 mm
Elongation@ Break ¹		
-12°C	100%	100%
23°C	200%	150%
Breaking Strength ¹	35 N/cm	70 N/cm
Adhesion to Steel ¹		
-12°C	3.28 N/cm	3.28 N/cm
23°C	2.19 N/cm	2.19 N/cm
Adhesion to Backing ¹		
-12°C	3.28 N/cm	3.28 N/cm
23°C	2.19 N/cm	2.19 N/cm
Roll Unwind ¹		
-12°C	1.75 N/cm	1.75 N/cm
23°C	1.75 N/cm	1.75 N/cm
Water Vapor Transmission Rate ⁵ g/645 cm ² in 24 h	1.0	1.0
Moisture Absorption ⁶	0.30%	0.35%
Resistance to Weathering ⁷ Weatherometer	100 h	100 h
Electric Breakdown ⁸	12 kV	20 kV
Normal Application Temperature Range	-12°C to 65.6°C	-12°C to 65.6°C
Normal Service Temperature Range	-48°C to 80°C	-48°C to 80°C

*There are typical properties and should not be used for specification purposes.

NOTE: For the Scotchrap™ tapes to work properly, all metal surfaces must be coated with 3M Scotchrap™ Pipe Primer before wrapping with the tape.

¹ IEC 60454-2

² IEC 60243

³ IEC 60093

⁴ Federal Specification L-T-1512A

⁵ ASTM D-3833

⁶ ASTM D-570

⁷ 3M

⁸ IEC 60243

Scotch 50, 51 - Data Sheet

Scotchrap™ All-Weather Corrosion Protection Tape

Tape Width	# Rolls per Square
25.4 mm	12
50.8 mm	6
101.6 mm	3
152.4 mm	2
304.8 mm	1

All widths are in 30.5 m rolls. 1 square = 9.3 m² (i.e., a roll 30.5 cm wide x 30.5 m long)

To convert to rolls, multiply the number of squares by the number of rolls/square from the above tables.

Scotchrap™ All-Weather Corrosion Protection Tape – Pipe Coverage Table

Pipe Size	Squares of Tape for 30.5 m Pipe			
Normal I.D. (mm)	O.D. (mm)	Suggested Tape Width	Minimum Overlap 12.7 mm	Half-Lapped
12.7	21.3	25.4	11.2	11.2
19.1	26.7	50.8	9.4	14.0
25.4	33.5	50.8	11.7	17.5
31.8	42.2	50.8	14.7	22.1
38.1	48.3	50.8	16.8	25.1
50.8	60.4	50.8	21.1	31.7
63.5	73.2	50.8	25.4	38.4
76.2	88.9	101.6	26.7	46.5
88.9	101.6	101.6	30.5	53.1
102	114.3	101.6	34.3	59.9
127	141.5	101.6	40.4	74.2
152	168.4	152.4	48.0	88.1
178	193.8	152.4	55.4	101.3
203	219.2	152.4	62.5	114.8
254	273.1	152.4	78.0	143.0
305	323.8	152.4	92.5	169.4
356	355.6	152.4	101.6	186.2
406	406.4	152.4	116.1	212.6
457	457.2	152.4	130.6	239.3
508	508.0	152.4	145.0	265.9
559	558.8	152.4	159.5	292.4
610	609.6	152.4	174.0	319.0
660	660.4	152.4	188.5	345.7
711	711.2	152.4	203.2	372.1
762	762.0	152.4	217.4	398.8
914	914.4	152.4	261.1	478.5

While the chart given coverage data for most common sizes, the following formula may be helpful for non-standard items:

$$\text{Squares of Tape} = \frac{\pi (LP) (DP) TW}{9290 (TW-OV)}$$

Where $\pi = 3.14$

LP = length of pipe (m)

DP = outside diameter of pipe (mm)

TW = tape width (mm)

OV = overlap of tape (mm)

3.785 l of Scotchrap™ Pipe Primer will cover up to 65 m² depending on the surface condition of the pipe to calculate area of pipe for primer coverage:

$$0.092 \text{ m}^2 \text{ of pipe} = \pi (DP TW 12) (LP)$$

3. Shelf Life

Scotchrap[™] Pipe Primer, Scotchfil[™] Electrical Insulation Putty and Scotchrap[™] Tapes have a 5 year shelf life (from date of manufacturer) when stored under the following recommended storage conditions. Store behind present stock in a clean dry place at a temperature of 21°C and 40 to 50%

relative humidity. Good stock rotation is recommended. Scotchrap 50 and 51 are available in the following standard roll sizes:

25.4 mm x 30.5 m

50.8 mm x 30.5 m

101.6 mm x 30.5 m

152.4 mm x 30.5 m

Other lengths and widths available upon request.

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