



Standard Specification for General-Purpose Ethylene-Propylene Rubber Jacket for Wire and Cable¹

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1. Scope

1.1 This specification covers a weather and ozone-resisting crosslinked compound for use as the outer covering or jacket on insulated wires and cables. The polymer component of this material consists substantially of ethylenepropylene copolymer (EPM) or ethylene-propylene terpolymer (EPDM).

1.2 The values stated in inch-pound units are the standard, except in cases where SI units are more appropriate. The values in parentheses are for information only.

2. Referenced Documents

2.1 ASTM Standards:

D 257 Test Methods for DC Resistance or Conductance of Insulating Materials²

D 470 Test Methods for Crosslinked Insulations and Jackets for Wire and Cable²

D 1499 Practice for Filtered Open-Flame Carbon-Arc Exposures of Plastics³

G 23 Practice for Operating Light-Exposure Apparatus (Carbon-Arc Type) With and Without Water for Exposure of Nonmetallic Materials⁴

3. Electrical Requirements

3.1 When used on single conductor nonshielded cables rated 2001 through 5000 V phase to phase, the jacket shall meet the following requirements of Test Methods D 470:

3.1.1 *Surface Resistivity*—The jacket shall have a surface resistivity equal to or greater than 200 000 M Ω .

3.1.2 *U-Bend Discharge*—There shall be no cable failure nor cracks in the jacket when a sample of completed cable is subjected to the U-bend discharge test at 150 V/mil (6 kV/mm) for at least 6 h.

4. Test Applicable for Sunlight and Weather Resistant Materials

4.1 The jacket shall retain a minimum of 80 % of its unaged tensile strength and elongation after 720 h of exposure in a dual carbon-arc apparatus. Prepare the specimens in accordance with Test Methods D 470 for physical tests of insulations and jackets. Perform the test in accordance with Practice D 1499 using Method 1 of Practice G 23.

5. Physical Requirements

5.1 The crosslinked jacket shall conform to the physical properties specified in Table 1.

6. Sampling

6.1 Sample the jacket in accordance with Test Methods D 470.

7. Test Methods

7.1 Unless otherwise instructed, test the jacket in accordance with Test Methods D 470.

8. Keywords

8.1 ethylene-propylene rubber; sunlight resistant; surface resistivity; U-bend discharge; weather resistant

¹ This specification is under the jurisdiction of ASTM Committee D09 on Electrical and Electronic Insulating Materials and is the direct responsibility of Subcommittee D09.18 on Solid Insulations, Non-Metallic Shieldings and Coverings for Electrical and Telecommunication Wires and Cables.

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² *Annual Book of ASTM Standards*, Vol 10.01.

³ *Annual Book of ASTM Standards*, Vol 08.01.

⁴ Discontinued; see 1996 *Annual Book of ASTM Standards*, Vol 14.02.

TABLE 1 Physical Properties for General-Purpose EPM or EPDM Jacket^A

Unexposed (Unaged) Requirements:	
Tensile strength, min, psi	1500
(MPa)	(10.3)
Elongation at rupture, min, %	200
Exposed (Aged) Requirements:	
After air oven test at $121 \pm 1^\circ\text{C}$ for 168 h:	
Tensile strength, min, psi	1200
(MPa)	(8.3)
Elongation at rupture, min, %	175

^A The values specified are applicable only to jackets having a nominal thickness of .030 in. (0.76 mm) or more.

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