Designation: D 4313 – ~~98~~03

An American National Standard

Standard Specification for General-Purpose, Heavy-Duty, and Extra-Heavy-Duty Crosslinked Chlorinated Polyethylene (CM) Jackets For Wire and Cable[1]

This standard is issued under the fixed designation D 4313; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This specification covers crosslinked chlorinated polyethylene (CM) compounds suitable for use as outer coverings or jackets on electrical cables for general-purpose, heavy-duty, and extra-heavy-duty service.

1.2 These jacket materials are not recommended for use on cables which are to be installed at a temperature less than − 25°C.

1.3 Whenever two sets of values are presented, in different units, the values in the first set are the standard, while those in parentheses are for information only.

[1] This specification is under the jurisdiction of ASTM Committee ~~D-9~~ 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.

Current edition approved ~~July 15, 1993.~~ Oct. 1, 2003. Published ~~October 1993.~~ November 2003. Originally ~~published~~ approved in 1987. Last previous edition approved in 1998 as D 4313 – 9~~8~~7.

2. Referenced Documents

2.1 *ASTM Standards:* [2]

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

D 1499 Practice for ~~Operating Light- and Water-Exposure Apparatus (Carbon-Arc Type) for Exposure~~ Filtered Open-Flame Carbon-Arc Exposures of Plastics

D 1711 Terminology Relating to Electrical Insulation

G 153 Practice for Operating Enclosed Carbon Arc Light Apparatus for Exposure of Nonmetallic Materials

3. Terminology

3.1 *Definitions:* For definitions of terms used in this specification refer to Terminology D 1711.

3.2 *Definition of Term Specific to This Standard:*

3.2.1 *aging (act of), n*—exposure of materials to air at a temperature of 121°C for 168 h and oil at 121°C for 18 h.

4. Physical Properties

4.1 Crosslinked jackets shall conform to the requirements for physical properties specified in Table 1~~.~~.

TABLE 1 Physical Properties for CM Jacket

	General-Purpose	Heavy-Duty	Extra-Heavy-Duty
Physical Requirements (Original):			
~~Tensile strength, min, psi (MPa)~~	~~1500 (10.3)~~	~~1800 (12.4)~~	~~2400 (16.5)~~
Tensile strength, min, psi (MPa)	1200 (8.3)	1800 (12.4)	2400 (16.5)
Tensile stress at 200 % elongation, min, psi (MPa)	...	500 (3.4)	700 (4.8)
Elongation at rupture, min, %	300	300	300
Tension set, max, %	35	30	30
Physical Requirements [After aging in an air oven at 121 ± 1°C for 168 h]:			
Tensile strength, min, % of original	55	85	70
Elongation at rupture, min, % of original	55	55	55
Physical Requirements [After oil immersion at 121°C for 18 h]:			
Tensile strength, min, % of original	60	60	60
Elongation at rupture, min, % of original	60	60	60

5. Sunlight and Weather Resistance Requirements

5.1 If sunlight and weather resistance are required of the crosslinked jackets, the jackets shall conform to the requirements specified in Table 2.

6. Sampling

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

7. Test Methods

7.1 Test the jacket in accordance with Test Methods D 470. If the sunlight and weather resistance test is required, perform it in accordance with Practice D 1499 and Practice G 153.

8. Keywords

8.1 chlorinated polyethylene; crosslinked; oil immersion; sunlight resistance; tear; tensile strength; tensile stress; tension test; weather resistance

[2] For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards,* ~~Vol 10.01.~~ volume information, refer to the standard's Document Summary page on the ASTM website.

TABLE 2 Sunlight and Weather Resistance Requirements

	min,% Original Value
After 720 h in a dual carbon-arc apparatus:	
Tensile Strength	80
Elongation	80