



# Standard Specification for General-Purpose, Heavy-Duty, and Extra-Heavy-Duty Crosslinked Chlorosulfonated Polyethylene (CSM) Jackets For Wire and Cable<sup>1</sup>

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## 1. Scope

1.1 This specification covers crosslinked chlorosulfonated polyethylene<sup>2</sup> 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 cables installed at a temperature lower than  $-25^{\circ}\text{C}$ .

1.3 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

## 2. Referenced Documents

2.1 *ASTM Standards*:<sup>3</sup>

[D470 Test Methods for Crosslinked Insulations and Jackets for Wire and Cable](#)

[D1248 Specification for Polyethylene Plastics Extrusion Materials for Wire and Cable](#)

[D1711 Terminology Relating to Electrical Insulation](#)

<sup>1</sup> 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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<sup>2</sup> The term CSPE, as an abbreviation for Chlorosulfonated Polyethylene (CSM), is commonly used in the Wire and Cable industry.

<sup>3</sup> For referenced ASTM standards, visit the ASTM website, [www.astm.org](http://www.astm.org), or contact ASTM Customer Service at [service@astm.org](mailto:service@astm.org). For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

## 3. Terminology

3.1 *Definitions*:

3.1.1 For definitions of terms used in this specification refer to Terminology [D1711](#).

3.2 *Definitions of Terms Specific to This Standard*:

3.2.1 *aging (act of), n*—exposure of materials to air at  $100^{\circ}\text{C}$  for 168 h or oil at  $121^{\circ}\text{C}$  for 18 h.

## 4. Test Applicable for Sunlight and Weather- Resistant Materials

4.1 For jackets requiring sunlight- and weather-resistance testing, test in accordance with “Weatherability for Colored Materials” in Specification [D1248](#). Prepare the specimens in accordance with Test Methods [D470](#) for physical tests of insulations and jackets.

## 5. Physical Properties

5.1 The jacket shall conform to the requirements for physical properties prescribed in [Table 1](#).

## 6. Sampling

6.1 Sample the jacket in accordance with Test Methods [D470](#).

## 7. Test Methods

7.1 Unless otherwise instructed, test the jacket in accordance with Test Methods [D470](#).

## 8. Keywords

8.1 crosslinked chlorosulfonated polyethylene jacket; cross-linked jacket; CSM; CSPE; extra-heavy-duty jacket; general-purpose jacket; heavy-duty jacket; rubber jacket

**TABLE 1 Physical Properties<sup>A</sup>**

Physical Property	General-Purpose	Heavy-Duty	Extra-Heavy-Duty
<i>Unaged Requirements:</i>			
Tensile strength, min, psi (MPa)	1500 (10.3)	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 <sup>B</sup> , max, %	30	30	30
Tear, min, lb/in. (kN/m)	...	...	40 (7)
<i>Aged Requirements:</i>			
After Air Oven Test at 100 ± 1°C for 168 h:			
Tensile strength, min, % of unaged value	60	85	70
Elongation at rupture, min, % of unaged value	50	65	60
After Oil Immersion Test at 121 ± 1°C for 18 h			
Tensile strength, min, % of unaged value	60	60	60
Elongation at rupture, min, % of unaged value	60	60	60

<sup>A</sup> Values specified are applicable only to jackets having a nominal wall thickness of 0.030 in. (0.76 mm) or greater.

<sup>B</sup> Set in 2-in. (50-mm) gage length.

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