



Designation: ~~D4363 – 21~~ D4363 – 22

Standard Specification for Thermoplastic Chlorinated Polyethylene (CPE) Jacket for Wire and Cable¹

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1. Scope*

1.1 This specification covers thermoplastic chlorinated polyethylene (CPE) compounds suitable for use as an outer covering or jacket on electrical cables.

1.2 These jacket materials are suitable for use on cables which will be installed at temperatures above -35°C .

1.3 The values stated in inch-pound units are 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.

1.4 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 ASTM Standards:²

- [D1499 Practice for Filtered Open-Flame Carbon-Arc Exposures of Plastics](#)
- [D1711 Terminology Relating to Electrical Insulation](#)
- [D2633 Test Methods for Thermoplastic Insulations and Jackets for Wire and Cable](#)
- [G153 Practice for Operating Enclosed Carbon Arc Light Apparatus for Exposure of Nonmetallic Materials](#)

3. Terminology

3.1 Definitions:

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

3.1.2 *aging, (act of), n*—exposure of material to air or oil at a temperature and time as specified in the relevant material specification for that material. **D1711**

~~3.2 Definitions of Terms 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 100°C for 18 h.~~

¹ This specification is under the jurisdiction of ASTM Committee [D09](#) on Electrical and Electronic Insulating Materials and is the direct responsibility of Subcommittee [D09.07](#) on Electrical Insulating Materials.

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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* volume information, refer to the standard's Document Summary page on the ASTM website.

*A Summary of Changes section appears at the end of this standard

4. Physical Properties

4.1 Thermoplastic jackets shall conform to the requirements for physical properties specified in [Table 1](#).

4.2 When used on single-conductor non-shielded cable rated 2001 to 5000 V phase to phase, the jacket shall also conform to the requirements for surface resistivity and U-bend discharge prescribed in [Table 2](#).

5. Sunlight and Weather Resistance Requirements

5.1 If sunlight and weather resistance are required of the jackets, the jackets shall conform to the requirements specified in [Table 3](#).

6. Sampling

6.1 Sample the jacket in accordance with Test Methods [D2633](#).

7. Test Methods

7.1 Test the jacket in accordance with Test Methods [D2633](#). If the sunlight and weather resistance test is required, perform it in accordance with Practices [D1499](#) and [G153](#).

8. Keywords

8.1 chlorinated polyethylene (CPE); heat distortion; oil immersion; sunlight resistance; tensile strength; tensile stress; thermoplastic; weather resistance


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TABLE 1 Physical Properties for CPE Jacket

<i>Physical Requirement (Original):</i>	
Tensile strength, min, psi (MPa)	1400 (9.6)
Tensile stress at 100 % elongation, min, psi (MPa)	1000 (6.9)
Elongation at rupture, min, %	150
Cold bend, ^A -35 ± 1 °C	No Cracks
<i>Physical Requirements:</i>	
(after aging in an air-oven at 121 ± 1 °C for 168 h):	
Tensile strength, min, % of original	85
Elongation at rupture, min, % of original	50
<i>Physical Requirements:</i>	
(after oil immersion for 18 h at 100 ± 1 °C):	
Tensile strength, min, % of original	60
Elongation at rupture, min, % of original	60
Heat distortion, 121 ± 1 °C, max, %	25

^A Refer to Test Methods [D2633](#), Table 8, Mandrel Requirements for Poly (Vinyl Chloride) Jacket.