DOW™ Electrical & Telecommunications HFDA-9217 BK
Black Crosslinkable Power Cable Insulation Compound

Overview

HFDA-9217 Black, with a density of 0.92, is a is a low-density, crosslinkable, black colored polyethylene compound with 0.5% carbon black designed for area power distribution wires covering up to 35 kV. It has the following important advantages:

- Good thermal stability and weather resistivity
- Excellent tracking resistance
- High curing speed

Physical	Nominal Value	(English)	Nominal Value	(SI)	Test Method
Density	0.923	g/cm³	0.923	g/cm³	ASTM D1505
Melt Mass-Flow Rate (190°C/2.16 kg)	2.0	g/10 min	2.0	g/10 min	ASTM D1238
Environmental Stress-Cracking Resistance (ESCR)	> 2000	hr	> 2000	hr	ASTM D1693
Degree of Crosslinking - Extractables	18.0		18.0		ASTM D2765A
Mechanical	**Nominal Value**	**(English)**	**Nominal Value**	**(SI)**	**Test Method**
Tensile Strength	3630	psi	25.0	MPa	ASTM D638
Tensile Elongation (Break)	500	%	500	%	ASTM D638
Hardness	**Nominal Value**	**(English)**	**Nominal Value**	**(SI)**	**Test Method**
Durometer Hardness (Shore D)	47		47		ASTM D2240
Thermal	**Nominal Value**	**(English)**	**Nominal Value**	**(SI)**	**Test Method**
Brittleness Temperature [1]	-105	°F	-76.0	°C	ASTM D746
Hot Set - Cracking Resistance	80.0		80.0		IEC 60502
Aging	**Nominal Value**	**(English)**	**Nominal Value**	**(SI)**	**Test Method**
Retention of Tensile Elongation [2]					ASTM D638
302°F (150°C)	> 85	%	> 85	%	
Retention of Tensile Strength [2]					ASTM D638
302°F (150°C)	> 85	%	> 85	%	
Electrical	**Nominal Value**	**(English)**	**Nominal Value**	**(SI)**	**Test Method**
Volume Resistivity	> 1.0E+17	ohms·cm	> 1.0E+17	ohms·cm	ASTM D257
Dielectric Constant (1 MHz)	2.32		2.32		ASTM D1531
Dissipation Factor (1 MHz)	3.0E-4		3.0E-4		ASTM D1531

Additional Information

Nominal property values above represent tests on molded stress-relieved slabs. Cure times were 15 minutes at 175°C.

Extrusion	Nominal Value	(English)	Nominal Value	(SI)
Melt Temperature	241 to 280	°F	116 to 138	°C

Extrusion Notes

HFDA-9217 Black provides excellent surface finish and outstanding output rates over a broad range of conditions. Temperature settings for the extruder barrel of 90 to 115°C along with crosshead temperatures of 110 to 120°C and die temperatures of 120 to 130°C are suggested. For optimum results, extrusion processing conditions adjusted to result in melt extrusion temperatures in the range of 116 to 138°C are recommended, although higher melt temperatures are possible on certain equipment with due care. Generally, a 60-40-20 mesh screenpack is recommended. However, specific recommendations for processing conditions can be determined only when the application and type of processing equipment are known.

Notes

These are typical properties only and are not to be construed as specifications. Users should confirm results by their own tests.

[1] F50

[2] 168 hrs