



## Dow ENDURANCE™ HFDB-4201 VC

### Overview

DOW ENDURANCE™ HFDB-4201 VC is a long-life, unfilled, crosslinkable, low density polyethylene insulation compound designed for distribution and transmission power cable insulation applications. It has a very low level of contamination and bears the designation Very Clean (VC). DOW ENDURANCE™ HFDB-4201 VC has been designed to have a low level of additive bloom for a long storage life, low dusting and an enhanced degree of scorch retardance for long production run lengths during cable manufacture.

DOW ENDURANCE™ HFDB-4201 VC is recommended for the insulation of power distribution and transmission cables rated at less than 150 kV with stresses less than 7 kV/mm.

#### Specifications

DOW ENDURANCE™ HFDB-4201 VC is designed for use in power distribution and transmission cables. Cables insulated with DOW ENDURANCE™ HFDB-4201VC, using sound commercial manufacturing practice, would be expected to meet the latest editions of the following specifications and regulations:

- IEC 60502, 60840
- GB/T 12706
- ANSI/ICEA\*: S-94-649, S-97-682, S-93-639/NEMA WC74
- CENELEC HD 620 S2
- BSI BS 6622, 7870-4

\*Applicable to USA manufactured product only.

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Density	0.920 g/cm <sup>3</sup>	0.920 g/cm <sup>3</sup>	ASTM D792
Moisture	< 200 ppm	< 200 ppm	Dow Method
Mechanical	Nominal Value (English)	Nominal Value (SI)	Test Method
Tensile Strength	2900 psi	20.0 MPa	ASTM D638
Tensile Elongation (Break)	500 %	500 %	ASTM D638
Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Hot Set			IEC 60811-2-1
Under Load : 392°F (200°C)	< 100 %	< 100 %	
Without Load : 392°F (200°C)	< 5.0 %	< 5.0 %	
Aging	Nominal Value (English)	Nominal Value (SI)	Test Method
Change in Tensile Properties - (7 days@320°F/150°C)	< 25 %	< 25 %	ASTM D638
Electrical	Nominal Value (English)	Nominal Value (SI)	Test Method
Volume Resistivity (73°F (23°C))	> 1.0E+16 ohms·cm	> 1.0E+16 ohms·cm	ASTM D257
Dielectric Strength			ASTM D149
0.125 in (3.18 mm), Method A (Short-Time)	> 760 V/mil	> 30 kV/mm	
0.125 in (3.18 mm), Method B (Step-by-Step)	> 580 V/mil	> 23 kV/mm	
0.125 in (3.18 mm), Method C (Slow Rate-of-Rise)	> 990 V/mil	> 39 kV/mm	
Dielectric Constant (73°F (23°C))	2.30	2.30	ASTM D150
Dissipation Factor (73°F (23°C))	3.0E-4	3.0E-4	ASTM D150



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## Additional Information

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### Cleanliness Requirements:

DOW ENDURANCE™ HFDB-4201VC meet high standards for cleanliness (very clean) established for an unfilled, crosslinkable cable insulation compound. Throughout the production process, the product is tested to ensure a high level of cleanliness. Extruded tapes are scanned by an automatic inspection system in a clean room. The purity data is managed using an acceptance sampling procedure, which ensures that the product meets or exceeds Dow very-clean standards.

### Processing Techniques:

DOW ENDURANCE™ HFDB-4201 VC provides excellent performance and outstanding output rates over a range of extrusion conditions. For optimum results, melt extrusion temperatures in the range of 115°C to 140°C (240°F to 285°F) are recommended, although higher melt temperatures may be possible on certain extrusion lines with due care. In general the use of a minimum 60 mesh screenpack system is recommended. However, specific processing recommendations can only be made when information about the application and actual extrusion and processing equipment types are known.

### Storage:

The environment or conditions of storage greatly influences the recommended storage time. Storage under extreme conditions may affect the quality, processing, or performance of the product. Storage should be in accordance with good manufacturing practices. The recommended storage conditions, in the original unopened packages, are dry conditions with temperatures between 50°F and 86°F (10°C and 30°C). When stored between 50°F and 86°F (10°C and 30°C), the product may be used for up to one year from the date of sale or two years from the date of manufacture, whichever comes first. The recommended maximum storage time is 1 year at 104°F (40°C). It is recommended that the practice of using the product on a first-in / first-out basis be established.

### Packaging:

DOW ENDURANCE™ HFDB-4201VC can be delivered in different packaging types dependent on the specific materials handling needs. This includes 1300lb/590 kg UNICLEAN™ octabins, 1300lb/590 kg top unloading octabins or 1000kg bottom unloading octabins. Please consult with your local Dow sales representative to discuss your packaging needs.

## Notes

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

