



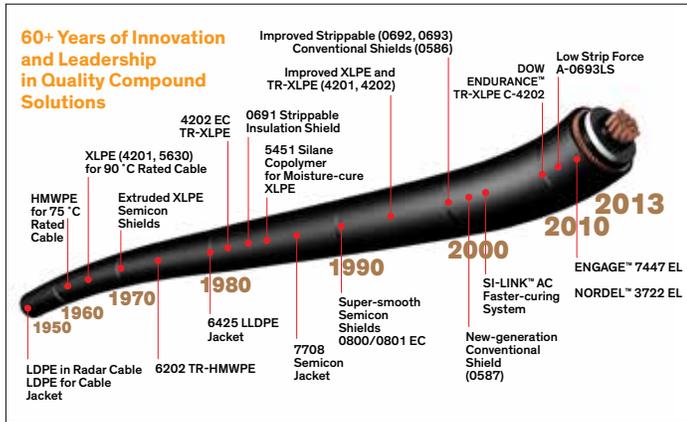
Dow Electrical & Telecommunications

System Solutions for Underground MV Electrical Infrastructure

Depend on one source for polymeric components

From tried and true cable compounds that have withstood the test of time, to ongoing developmental activity for new cable and accessory applications, Dow Electrical & Telecommunications (Dow E&T) is directly involved in nearly all phases of medium-voltage (MV) underground (UG) systems.

Working together with our customers, Dow E&T has proven that using an engineered system of materials results in superior performance and reliability and can result in a lower total cost over the life of the system.



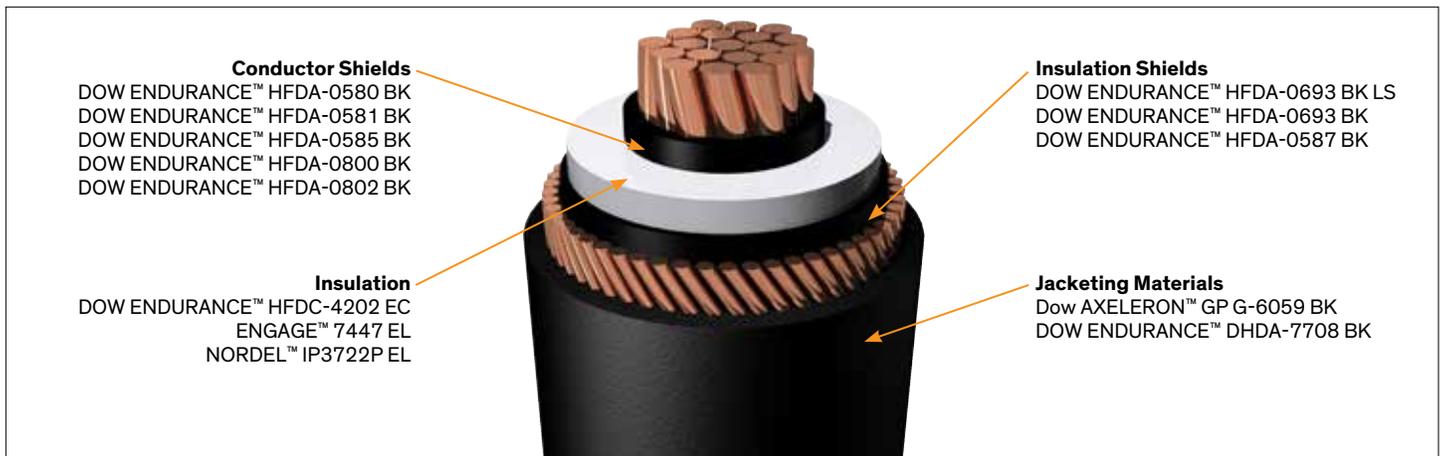
Why consider a system provider?

Mixing and matching materials used to construct cables may not yield optimum overall performance. Dow E&T products are engineered to work best when combined together as a system. In cable applications, our insulation, jacketing and semiconductive shield compounds can be purchased as a complete system. Each of these materials has been engineered, tested and validated to meet and exceed industry standards.

Combining our latest TR-XLPE insulation, DOW ENDURANCE™ HFDC-4202 EC, with our super-smooth semiconducting conductor shield, low-strip insulation shield and multiple options for jacketing compounds, Dow E&T offers a complete system that demonstrates excellent moisture tolerance, enables simpler cable designs and enhances processing performance for more robust cable manufacturing. This enables production of cables to exacting standards by cable makers committed to providing high-quality, long-life and reliable cables for existing and growing UG distribution infrastructure.

Known primarily as the inventor of water tree-retardant crosslinked polyethylene (TR-XLPE) insulation, that was introduced to the market in 1983, Dow E&T also provides fully formulated compounds for semiconductive shields and jacketing materials. **In addition, Dow now provides elastomeric resins for ethylene alkene copolymer (EAM) and ethylene propylene rubber (EPR) cable constructions. These same elastomers also are used in a range of MV accessories that include separable connectors, splices and terminations.**

Ask your Dow representative about what goes into the construction of the cables you need to trust for long service life and reliability. Quality materials, from a consistent and reliable source, matter.



Typical MV cable construction using Dow E&T complete system.

Product advantages

Polyethylene-based MV cable compounds come from the DOW ENDURANCE™ family of products. The complete system is comprised of:

- DOW ENDURANCE™ HFDC-4202 EC TR-XLPE insulation
- DOW ENDURANCE™ HFDA-0800/0802 BK super-smooth semiconductive shield compound
- DOW ENDURANCE™ HFDA-0693 BK and HFDA-0693 BK LS insulation shield compounds
- Dow AXELERON™ GP G-6059 BK jacket compound

Used together, these compounds can help construct the ultimate MV UG distribution cable.

While cables created using Dow E&T's TR-XLPE deliver the best performance, we understand that alternate constructions are a necessity and can be accommodated through our growing portfolio of solutions.

For installations requiring increased cable flexibility or filled-insulation alternatives, Dow E&T offers ENGAGE™ polyolefin elastomers for EAM insulation and NORDEL™ EPDM (ethylene propylene diene monomer) for EPR insulation, as well as for accessories.

Trust an industry leader

From polymerization through compounding, Dow E&T delivers system solutions that meet or exceed the highest international standards. By specifying UG system

components made with Dow materials, you can count on reliability, longevity and lower expected lifetime system costs.

For materials science-based system

solutions for cables and accessories, trust an industry leader as a consistent and reliable source – trust Dow E&T.

<p>Insulation material comparison</p> <p>DOW ENDURANCE™ HFDC-4202 EC TR-XLPE insulation offers:</p> <ul style="list-style-type: none"> - Enhanced electrical performance (projected longer life) - Higher water tree retardance - Lower and consistent insulation shield strip force for ease of installation - Improved heat resistance – MV 105 °C rating - Robust cable manufacturing <p>DOW ENDURANCE™ HFDA-0800/0802 BK super-smooth semiconductive shield compound outperforms conventional shields with:</p> <ul style="list-style-type: none"> - Cleanliness and smoothness - Better performance - Improved breakdown strength - Longer service life <p>DOW ENDURANCE™ HFDA-0693 BK/0693 BK LS shield demonstrates:</p> <ul style="list-style-type: none"> - Lower strip capability - Ease of installation - Likelihood of higher-quality accessory installation 	<p>Dow AXELERON™ GP G-6059 BK LLDPE jacket compound enables:</p> <ul style="list-style-type: none"> - Excellent mechanical and physical properties - Better stress-crack resistance - Good processability <p>ENGAGE™ polyolefin elastomers for EAM-insulated LV and MV cables exhibit:</p> <ul style="list-style-type: none"> - Improved flexibility, trainability and less spring back for ease of installation - Thermal, wet and dry electrical stability - Improved environmental sustainability and recyclability <p>NORDEL™ EPDM for EPR cable constructions and accessories provide:</p> <ul style="list-style-type: none"> - Flexibility for constrained space applications - EPR history of reliability - Cost-efficient, well-designed accessories
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Cable Benefits	Insulation Type		
	TR-XLPE	EPR	EAM
Greater flexibility for ease of installation and use in constrained space	C	B	A
Environmental sustainability	A	C	A
Recyclability	B	C	B
105/140 °C insulation rating	A	A	A
Lower dielectric losses for longer service life	A	C	B
Highest retained breakdown strength (AWTT)	A	C	B
<p>A=Best, B=Better, C=Good</p> <p>Information represents a generalized view based on widely available formulations.</p>			
			

Dow Electrical & Telecommunications

Houston Dow Center
1254 Enclave Parkway
Houston, TX 77077
USA

North America

Toll Free 800 441 4369

International

Latin America + 55 11 5184 8722
Europe + 800 3 694 63 67
+ 31 115 67 2626
Italy + 800 783 825
Pacific + 800 7776 7776
+ 60 3 7965 5392
China + 400 889 0789
+ 86 21 3851 4988

dow.com

dow.com/electrical
dowhvpower.com

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