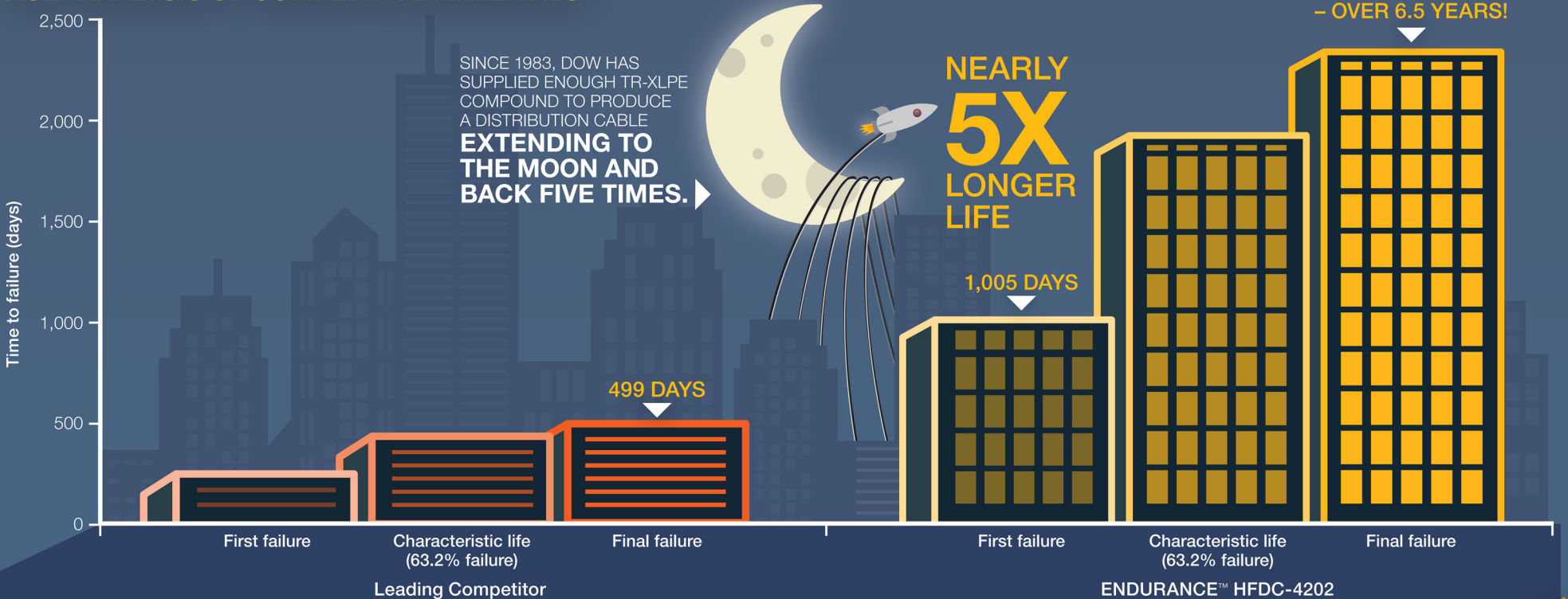




# Making a wise investment

ENDURANCE™ HFDC-4202 Insulation Compound: TR-XLPE technology enabling cable systems with lower total life cycle cost

## ACLT ANALYSIS OF COMPETITIVE MATERIALS<sup>(1)</sup>



## ADVANCING TREE-RETARDANT TECHNOLOGY FOR MORE THAN THREE DECADES

**1983**  
**First commercial TR-XLPE**  
 Dow introduces tree-retardant crosslinked polyethylene (TR-XLPE) technology<sup>(2)</sup> with demonstrated long life performance  
**4X longer life than XLPE insulation**

**1998**  
**ENDURANCE™ HFDB-4202**  
 The excellent electrical performance of first generation plus more robust cable manufacturing  
**Improved processing**

**2012**  
**ENDURANCE™ HFDC-4202**  
 Enabling next-generation cable systems with significantly longer performance life than competitive materials<sup>(3)</sup>  
**Nearly 5X longer life**



<sup>(1)</sup> Data per tests conducted at the Marshall Technology Center under contract to Dow. Properties shown are typical, not to be construed as specifications. Users should confirm results by their own tests.

<sup>(2)</sup> This technology was acquired with Union Carbide Corporation (UCC). <sup>(3)</sup> Based on accelerated cable life test (ACLT) under 4,4 conditions.

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# Protect the power of your investment

Since 1983, Dow's proprietary water-tree-retardant technology for crosslinked polyethylene (TR-XLPE) has been the common platform for continuous improvement through three generations of high quality cable insulation solutions.

## Innovative progress

Cable makers and utilities asked for an even better cable compound—and Dow responded. ENDURANCE™ HFDC-4202 Insulation Compound is tested for voltages from 5-150 kV and enables lower total life cycle cost through:

- Significantly longer life than other TR-XLPE products
- Improved electrical performance in wet environments
- Excellent high stress electrical performance and low dissipation factor at stresses up to 10 kV/mm
- Improved manufacturing
  - Superior scorch retardance for improved cable quality
  - Optimized cure performance/consistent processing
  - Compatibility with existing extrusion equipment

## Proven performance

As shown on the previous page, ENDURANCE™ HFDC-4202 demonstrates excellent wet aging under accelerated cable life test (ACLT) protocols. In fact, Dow's next-generation TR-XLPE can help power cables last nearly five times longer than competitive materials.<sup>(1)</sup>

Figure 1 shows the excellent performance of ENDURANCE™ HFDC-4202 in the ICEA accelerated water treeing test (AWTT) – with results more than double the minimum industry standard.<sup>(2)</sup>

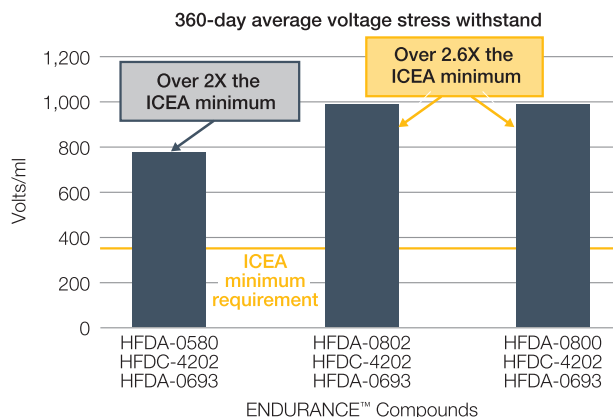
<sup>(1)</sup> Based on ACLT under 4,4 conditions.

<sup>(2)</sup> Source: Southwire

## Capabilities and commitment

All TR-XLPE is not created equal. ENDURANCE™ Compounds for cable systems offer cable makers and utilities exceptional mechanical strength, electrical properties and aging stability. By working side-by-side with customers, we're able to align Dow technology and experience with specific application needs. Intensive testing and validation help ensure that our materials exceed the processing and performance requirements of current and next-generation wire and cable products. This passionate focus on quality not only exemplifies Dow's commitment to producing high class solutions – but also drives our pursuit of innovative ideas.

Figure 1: ICEA AWTT qualification performance<sup>(2)</sup>



## Global testing

Cables insulated with ENDURANCE™ HFDC-4202 meet or exceed qualification requirements in a vast number of regions, including:

- Association of Edison Illuminating Companies (AEIC) CS-8, CS-9
- Insulated Cable Engineers Association (ICEA) ICEA S-94-649, S-97-682, S-93-639, S-108-720
- Underwriters Laboratories (UL) 1072
- Canadian Standards Association (CSA) C68.5, C68.10
- IEC 60502, 60840
- Normas Mexicanas (NMX)
- Russian GOST R 55025
- CENELEC HD 620 S2
- German VDE 0276-620:2010-11
- Chinese Standard GB/T 12706

Contact your Dow representative or visit [www.dowendurance.com](http://www.dowendurance.com) for more information.



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