## Jacket Thickness and Test Voltage

The standard jacket on Nexans ENERGEX<sup>®</sup> concentric neutral cables is an extruded-to-fill (encapsulating) jacket composed of black insulating linear low density polyethylene (LLDPE), which meets, or exceeds the CSA, AEIC, and ICEA requirements shown below.

The following alternate jackets are available on request:

- a) Encapsulating jackets:
  - Medium density polyethylene (MDPE).
  - Semi-conducting polyethylene.
- b) Overlaying:
  - Linear low density polyethylene (LLDPE).
  - Medium density polyethylene (MDPE).
  - Polyvinyl chloride (PVC).

For identification of power cables in shared underground systems, three extruded red stripes can be provided on cable jackets.

 Note: ICEA advises that jacket materials colored other than black may be subject to fading as a result of chemical change due to ultra-violet light and/or reaction with chemical components of various soils.

Sequential length markings can be provided on all types of ENERGEX® concentric neutral cables.

## **Requirements for LLDPE Jackets**

Unaged tensile strength 11.7 MPa min. Elongation at rupture 350% min.

Aged 48 hr. at 100°C

Tensile strength 75% of unaged value min. Elongation 75% of unaged value min.

Heat distortion at 100°C 30% max.

Environmental stress cracking

48 hrs. at 50° C in 100% Igepal CO-630 no cracks

## Requirements for 75° C PVC Jackets

Unaged tensile strength 10.3 Mpa min. Elongation at rupture 100% min.

Aged 168 hr. at 121°C

Tensile strength 85% of unaged value min. Elongation 60% of unaged value min.

Immersed in oil for 4 hr. at 70°C

Tensile strength 75% of unaged value min.

Heat distortion at 121°C 50% max.
Heat shock at 121°C no cracks
Cold bend at -40°C no cracks

Cold impact at -40°C no cracks on 8 of 10

specimens

Extruded-to-fill Jacket Thickness and Test Voltage					
Calculated minimum for diameter over the	Thickness		AC spark test non-conducting		
concentric neutral	Min. Avg.	Min pt.	jackets		
mm	mm	mm	kV		
0 - 38.0	1.3	1.0	7.5		
Over 38.0	2.0	1.6	12		

Overlaying Jacket Thickness and Test Voltage					
Calculated minimum			AC spark test		
for diameter over the			non-conducting		
for metallic shield /	Thickness		jackets		
concentric neutral	Min. Avg.	Min. pt			
mm	mm	mm	kV		
Up to 10.80	1.1	0.9	10		
10.81 - 17.8	1.5	1.2	12		
17.9 - 38.0	2.0	1.6	12		
38.1 - 64.0	2.8	2.2	14		
64.1 and larger	3.6	2.9	14		