



Power Industry

Technical bulletin

TD1150 bushing gasket material



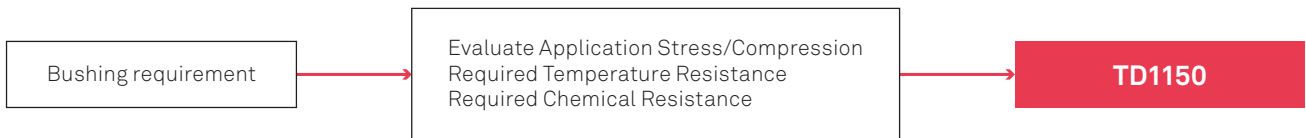
AMORIM
CORK COMPOSITES

TD1150 bushing gasket material

TD1150 is a material developed for bushing applications.



The necessity to improve sealing characteristics in GEO areas that require particularly rigorous performance has led to the development of TD1150 bushing sealing material.



To select TD1150 Amorim T&D material please refer to the MDS, where you will find the materials' operating conditions (Stress Range, Temperature Range and Chemical Resistance).

Physical properties (view below) alone may not be sufficient to guarantee trouble-free transition.

Amorim T&D materials offer:

- Proven long term ageing performance.
- Tested for chemical compatibility.
- Tolerance to extreme surface finish conditions and high out-of-flatness flanges.
- Extended technical support.

General physical properties are as follows (Typical Values)

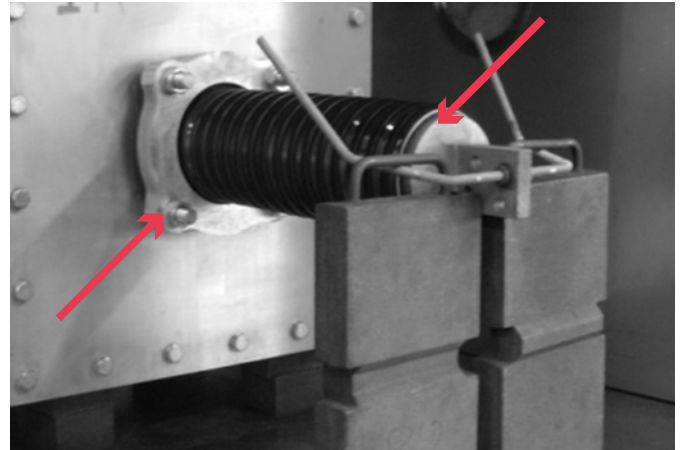
| | | TD1150 |
|---|-------------------|-----------------------------|
| Hardness (Shore A) | ASTM D2240 | 70 |
| Compressibility, 400 psi (%) | ASTM F36 | 20 % |
| Recovery, 400 psi (%) | ASTM F36 | 90 % |
| Density (Kg/m ³) | ASTM D297 | 1100 |
| Tensile Strength (MPa) | ASTM D 412, Die C | 2.5 |
| Glass Transition Temperature - T _g | ASTM E1640 | -30°C |
| Volume Resistance | ASTM D 257 | 3 x 10 ⁸ Ω |
| Volume Resistivity | ASTM D 257 | 2,1 x 10 ¹⁰ Ω.cm |

Tested for success

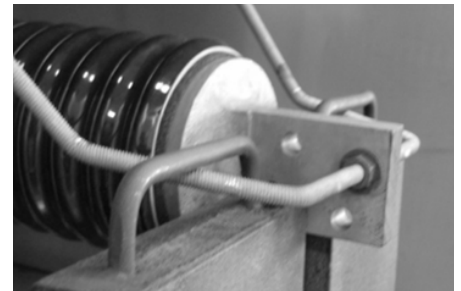
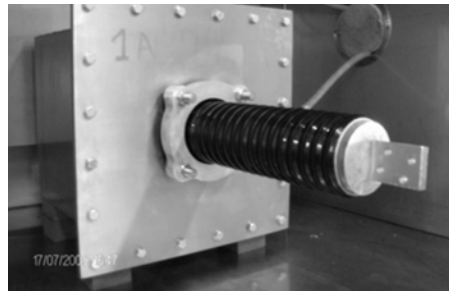
A cable box bushing in a cantilever position assembly, filled with Nynas Lybra insulation oil, immersing the bushing's active part in the reservoir, with internal pressure.

Masses (2 x 10kg) applied to the end of the bushing to simulate a cantilever effect exerted by the cable fixing to the bushing's terminal.

Two gaskets on the base of the bushing and one gasket on the bushing terminal were applied.



Gaskets



Thermal cycle of +5°C for 8h to 110°C for 14h; 14 days

Bushing disassembly

TD1150 Assembly after thermal cycle;
No leakage verified after 336h

Torque retention test

4 x M16 studs
58% Retained Torque

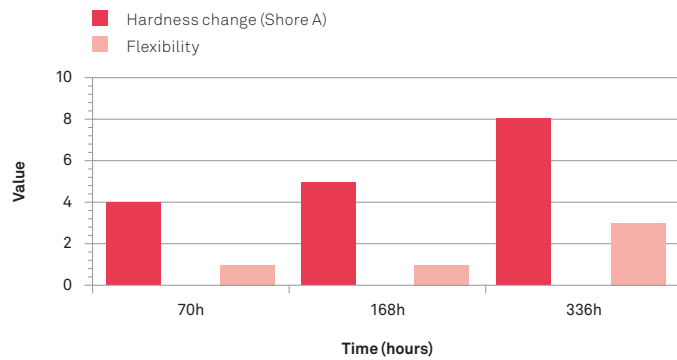
1 x M20 stem
56% Retained Torque



Ageing performance

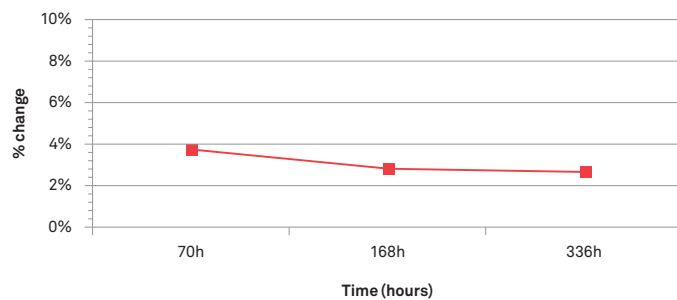
Heat Ageing @ 125°C

At 336h heat ageing testing TD1150, T&D material presents less property change (flex & hardness)



Volume Change @ 125°C

Volume change in mineral insulation oil shows a very stable behaviour for the TD1150 material.



As a whole Amorim T&D materials have been designed and tested to perform in T&D applications.

These applications have a life cycle that is much higher than any other common static sealing system (20 – 30 years) and therefore ageing characteristics are extremely important.

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