

ANNEXURE VII – Technical specification for Fire Sealing Material

Scope of Supply

Supply of fire sealing material [fire stop (passive fire protection) / fire barrier coating system]. The product shall be suitable for interleaf and overall covering of all types of HT & LT power, control and instrumentation cables, It shall cover all horizontal and vertical openings of cable trays, metal pipes etc. passing or coming on cable gallery.

Code and Standards

All equipment and materials shall be designed, manufactured and tested in accordance with the latest applicable IEC/IS except where modified and/or supplemented by this specification, as mentioned below:

UL 1479	Standard for safety for fire test through penetration firestop
UL "W rating"	Test for Water Leakage
IEC 60331	Tests for electric cables under fire conditions - Circuit integrity - Part 21: Procedures and requirements
IEC 60332	Tests on electric cables under fire conditions - Part 3-24: Test for vertical flame spread of vertically-mounted bunched wires or cables
ISO 4589-3:1996	Plastics -- Determination of burning behavior by oxygen index -- Part 3: Elevated-temperature test

DESIGN CRITERIA

The product shall be designed and manufactured to meet the minimum mentioned below requirements:-

- a) The fire rating shall not be less than two (2) hours.
- b) The product shall be tested to determine whether the firestopping system withstands an earthquake when tested in accordance with **acceleration time history waveform VERTEQII as per IEC 60068 and**

Telcordia Technologies GR-63-Core 2006-03 Earthquake seismic Zone 4.

- c) The product shall be age tested for 30 years.
- d) The products used shall be free from shrinkage or cracking or asbestos in composition and should achieve smoke and gas tightness during fire and should be modifiable.
- e) The products used should not generate toxic gas and harms to the personnel handling the system.
- f) Prohibition of production of acid or alkali during gas generation.
- g) Repellant to paste / rodent / termite.
- h) Not soluble / reactive to acid, water, alkali.
- i) Thermal conductivity – low
- j) The material in contact with the cables in the fire-proof sealing system shall be compatible with the material used for outer sheath of cables.
- k) It should not have any adverse effect on the cables and should not alter the current carrying capacity of the cables.
- l) Capable of withstanding vibrations, drop-loads, foot traffics, mechanical loads, etc.
- m) Non-hygroscopic, non-inflammable and shall not get affected over a period of time due to humidity, moisture and ozone etc. and should not contain volatile solvents which may cause a fire hazard during application.

TESTS

All the products to be applied shall be certified by third party accreditation bodies such as LPCB, FM, UL or any other acceptable accredited lab etc.

PACKING AND TRANSPORTATION

The fire sealing material shall be properly transported to site to avoid any mechanical damage.