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Technical standard for application of firestop in buildings

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1 General

1.0.1 This standard is formulated to prevent flames and smoke from spreading in buildings through building gaps and through openings, ensure the integrity and effectiveness of building fire protection and smoke-proof separation, ensure personal safety, and reduce fire losses.

1.0.2 This standard is applicable to the design, construction and acceptance of fireproof plugging of building gaps and through openings in construction projects.

1.0.3 The design, construction and acceptance of building fireproof sealing shall implement the relevant national policies and regulations, comply with the relevant laws and regulations of engineering construction, and be safe and applicable, economical and reasonable, environmentally friendly and healthy, and advanced in technology.

1.0.4 The design, construction and acceptance of building fireproof sealing shall not only comply with the provisions of this standard, but also comply with the relevant current national standards.

2.0.1 firestop

Use materials with certain fireproof, smokeproof, and heat insulation properties to seal or fill building gaps, through holes, etc., and can work with corresponding building structures or components within the designed fire resistance time to prevent heat, flames, and smoke. A fire-resistant construction measure that passes through.

2.0.2 Construction joint

Gaps between building structures or components, gaps between other fireproof partitions and building structures or components, and gaps between equipment pipelines and structures or components when they pass through fire-resistant structures or components.

2.0.3 Penetrated item

Building structures or components that need to pass through pipelines and other objects due to technological and functional requirements.

2.0.4 Penetration item

An object passing through the penetrated body.

2.0.5 penetration opening

The opening formed when the penetrating object passes through the penetrated body.

2.0.6 blank opening

In order to meet the requirements of technology, function, etc., the openings reserved on the fire separation components or building structures.

2.0.7 Penetration firestop system

4.Building gap sealing design 4.0.1 The fireproof sealing of building gaps should be based on the location, expansion ratio, width and depth of the building gaps, as well as the ambient temperature and humidity conditions and waterproof requirements of the fireproof sealing materials or components, etc., and the appropriate fireproof sealing materials or components should be selected..

4.0.2 The fireproof sealing of building gaps between floors, between floors and fire separation walls, and between fire separation walls shall meet the following requirements.

1 For gaps without vibration or expansion during use, backing materials such as mineral wool should be used to fill, and organic fireproof sealing materials should be covered outside the backing material;

2 For gaps that vibrate or expand during use, they should be filled with backing materials such as mineral wool, and the backing materials should be covered with elastic organic fireproof sealing materials.

4.0.3 The interlayer sealing of building curtain walls shall meet the following requirements.

1 The cavity between the curtain wall and the building window sill wall shall be filled with backing materials such as mineral wool at the upper and lower edges of the building gap respectively, and the filling height shall not be less than.200mm; the top of the backing material such as mineral wool shall be covered Elastic fireproof sealing material, under

which the mineral wool should be provided with a supporting plate.

2 The cavity between the curtain wall and the firewall or fire partition wall shall be filled with backing materials such as mineral wool. The thickness of the filling shall not be less than that of the firewall or fire partition wall. Fire blocking material.

3 The supporting plate shall adopt steel supporting plate, and the thickness of the supporting plate shall not be less than 1.5mm. The gap between the supporting plate and the curtain wall, the building exterior wall and between the supporting plates shall be sealed with elastic fireproof sealing materials.

4 The structure of the fireproof seal shall be self-supporting and capable of adapting to the deformation of the gap.

4.0.4 The interlayer fireproof sealing of the cavity between the external thermal insulation system of the building's exterior wall and the base wall and decorative layer shall meet the following requirements.

1 The backing material such as mineral wool shall be used to fill completely at the level with the floor slab, and the filling height of the backing material shall not be less than.200mm;

2 The backing material such as mineral wool shall be covered with elastic fireproof sealing material;

3 The structure of the fireproof seal shall be self-supporting and capable of adapting to the deformation of the gap.

4.0.5 The fireproof sealing of settlement joints, expansion joints, seismic joints and other building deformation joints in fire separation parts shall meet the following requirements.

1 Backing materials such as mineral wool shall be used for packing;

2 The packing thickness of the backing material shall not be less than.200mm, and the lower part of the backing material shall be provided with a steel supporting plate, and the thickness of the supporting plate shall not be less than 1.5mm;

3 The gaps between the supporting plates and between the supporting plates and the main structure shall be filled with elastic fireproof sealing materials;

4 The backing material shall be covered with elastic fireproof sealing material.

5 Through hole plugging design

1 For metal conduits, it shall meet the provisions of Article 5.2.1 or Article 5.2.3 of this standard;

2 For plastic conduits, it shall meet the provisions of Article 5.2.4 of this standard.

5.3.2 The fireproof plugging of cable penetration openings shall meet the following requirements.

1 When the annular gap of the through hole is small, it shall be sealed with expansive organic fireproof sealing material.

2 When the annular gap of the through hole is large, it shall be sealed with inorganic fireproof sealing material; or backing material such as mineral wool shall be used to fill and cover expansive organic fireproof The fire module is sealed, and the gap between the cable and the fireproof sealing plate or the fireproof module is filled with expansive fireproof sealing material.

4 For high-voltage cables, elastic fireproof sealing materials should be used.

5.3.3 In addition to complying with the provisions of Article 5.2.1 of this standard, the fireproof plugging of the opening of the busway through the busway shall be sealed with expansive fireproof sealing material for the gap between the busbars in the busway.

5.3.4 The through hole of the non-enclosed cable trough box shall comply with the provisions of Article 5.3.2 of this standard.

5.3.5 The fireproof plugging of the penetration hole of the closed cable trough box shall comply with the following regulations.

1 For metal tank boxes, it shall comply with the provisions of Article 5.2.1 of this standard;

2 For plastic tank boxes, it shall comply with the provisions of Article 5.2.4 of this standard;

3.Expansive fire-proof sealing materials shall be used to seal the cable trough box at the penetrating part;

4 Places with vibration during use or high-voltage cable tray boxes should be sealed with elastic fireproof sealing materials.

5.3.6 The horizontal fire separation of each layer of the cable shaft shall be sealed with inorganic or expansive fireproof sealing materials; or filled with backing materials such as mineral wool and covered with expansive fireproof sealing materials; For plate sealing, the gap between the cable and the fireproof sealing plate shall be filled with expansive fireproof sealing material, which shall comply with the provisions of Article 5.3.1 and Article 5.3.2 of this standard.

5.4 Plugging of other through holes

5.4.1 When a variety of penetrations pass through the penetrated body mixedly, the fire protection seal shall comply with the relevant fire protection seal requirements of corresponding types of penetration openings in this standard.

5.4.2 Empty openings should choose a suitable fireproof sealing method according to the size of the opening, and should meet the following requirements.