

## Electrical Passive Fire Protection for Exhibition Centers

*Substations · Hall Floor Distribution · Smoke Extract Plant · Catering & Storage · Safety-Critical Circuits*

### Section A | Electrical Zone-Wise Fire Risk Map

#### A1. Substations, MCC Rooms & Cable Galleries

*Large-volume exhibition halls and convention centers including the substation, DG yard, hall floor-box distribution, central smoke extract plant, conference rooms, catering kitchens, AV / control rooms and the fire pump house.*

Area	Fire Scenario	Stanvac PFP Product Application	Rating / Priority
Main substation	Transformer + cable fire	Cable coatings, firestops, panel FP	Critical
DG yard	Diesel pool fire	Cable coatings, firestops, panel FP	Critical
UPS room	Battery thermal event	Cable coatings, firestops, panel FP, FR doors	Critical
Hall floor-box distribution / exhibition MCC	Transient booth electrical fire	Cable coatings, panel FP	Critical
Smoke extract fan plant MCC	Must run during fire	Cable coatings, fire-survival cabling, panel FP	Critical
Catering kitchen MCC	Cooking oil + LPG fire	Panel FP, cable coatings	Critical
Conference / banquet hall electrical	Cable + AV equipment fire	Cable coatings, panel FP	High
AV / control room	Equipment + cable fire	Cable coatings, panel FP	Critical
Central HVAC plant	Motor + filter media fire	Cable coatings, panel FP	High
Loading dock electrical	Vehicle + packaging fire	Cable coatings, panel FP	High
Storage / back-of-house electrical	Class A fire load	Cable coatings, firestops, panel FP	High
Cable galleries (substation → hall)	Propagating cable fire	Cable coatings + transverse firestops every 30 m	Critical
Fire water pump house electrical	Must survive the fire	Structural intumescent, fire-survival cable	Non-negotiable

#### A2. Safety-Critical Electrical Systems

Area	Fire Scenario	Stanvac PFP Product Application	Rating / Priority
Fire water pump house	Must survive the fire it fights	Fireproofed structure, FR cables	Non-negotiable
Hall smoke extract fan power	Must run minimum 2 hours during fire	Fire-survival cable	Non-negotiable

Area	Fire Scenario	Stanvac PFP Product Application	Rating / Priority
Sprinkler pump power	Switchgear to motor	Fire-survival cable	Non-negotiable
PA / Voice evacuation	Hall-wide announcement	Fire-survival cable, panel FP	Non-negotiable
Stairwell pressurization fan power	Egress shaft pressurization	Fire-survival cable	Non-negotiable
Emergency lighting + exit signage	Hall and circulation egress	Fire-survival cable	Critical
Kitchen hood suppression release	Hood detector to wet-chemical release	Fire-survival cable	Critical
Emergency DG start & transfer	Battery to engine panel	Fire-survival cable	Critical

## Section B | Product-to-Application Matrix

This section maps each of the four priority Stanvac product lines to the specific exhibition centers locations and circuits where they must be specified. Use these tables to build the bill of quantities (BOQ) for any exhibition centers opportunity.

### B1. Cable Coatings — Fire Propagation Prevention

*Minimum 240 minutes protection, thickness ≤ 1.6 mm DFT.*

Purpose: prevent the spread of fire along cable trays, risers and bunches. The “Browns Ferry” scenario — one cable igniting an entire cable gallery — is the design basis.

**Applicable standards: IEC 60332-3 (FM 3971 has limited use — it provides only short-duration protection against arcs and sparks)**

Zone	Specific Application	Priority
Substation cable galleries	All HT/LT trays + transverse firestops every 30 m	Critical
Hall floor-box and overhead trays	All exhibition LT cabling	Critical
Smoke extract fan cable routes	Switchgear to fan motor	Critical
Conference and banquet hall cable routes	AV, lighting, PA	High
Catering kitchen cable routes	Hood, oven, refrigeration	Critical
Central HVAC plant cable routes	Chiller, AHU, pump	High
AV / control room cable routes	Power, signal, control	Critical
Loading dock cable routes	Lighting + signage	High
Storage area cable routes	Lighting + sprinkler	High
DG yard cable entries	Start, alternator, control	Critical

### B2. Cable Coatings — Fire Survivability

*240-minute circuit integrity, thickness ≤ 1.6 mm DFT.*

Purpose: keep the cable electrically functional while burning, so the safety circuit continues to operate through the fire event. Fire-survival coatings are specified where loss of the circuit would defeat the fire-fighting or shutdown system itself.

**Applicable standards: IEC 60331-21 and IS 17505-1**

Circuit Type	Where Applied	Priority
Fire water pump power (electric + diesel)	Switchgear to motor	Non-negotiable
Sprinkler pump power	Switchgear to motor	Non-negotiable
Hall smoke extract fan power	Switchgear to fan motor	Non-negotiable
Stairwell pressurization fan power	Switchgear to fan motor	Non-negotiable
PA / Voice evacuation system	Amplifier to speaker circuits	Non-negotiable
Emergency lighting + exit signage	Hall and circulation egress	Critical
Kitchen hood suppression release	Detector to suppression actuator	Critical
Fire alarm panel feeders	Panel to repeaters and field devices	Critical
Emergency DG start & transfer	Battery to engine panel	Critical

### B3. Electrical Panel Fireproofing

Purpose: protect field control panels, junction boxes, MCC panels and logic cabinets from external fire and internal electrical fire. Stanvac offers three complementary solutions under this product line.

Option	Stanvac Solution	Description & Typical Use
A	Two-hour rated firestop sealant	For sealing cable gland openings, panel cut-outs, conduit entries and small penetrations at the panel boundary. Silicone / acrylic intumescent sealant certified to UL 1479 / IS 12458 at 2-hour rating.
B	Non-combustible intumescent paint	For external coating of panel enclosures, cable glands and junction boxes exposed to radiant heat or hydrocarbon fire. Non-combustible base with intumescent top-coat.
C	Two-hour rated intumescent translucent coating for small-dia. cables (aerosol spray)	Aerosol-delivered translucent intumescent coating for small-diameter instrumentation, control and signal cables entering panels. Clean application in congested panel interiors; 2-hour rated.

### B4. Two-Hour Rated Firestop Barriers

*Hybrid combination of mineral wool and firestop mortar.*

Purpose: seal every penetration through a fire-rated wall, floor or cable tunnel so compartmentation is maintained. Stanvac's hybrid system combines high-density mineral wool (for bulk void filling and thermal insulation) with firestop mortar (for load-bearing, smoke-tight surface seal). This dual-material approach delivers superior 2-hour rating performance across a wider range of penetration sizes than single-material systems.

**Applicable standards: UL 1479 · ASTM E814 · IS 12458**

Location	Specific Application	Priority
Substation room boundary	Cable, pipe, duct penetrations	Critical
DG yard / room boundary	Fuel and cable penetrations	Critical
Hall to back-of-house compartment walls	Cable, pipe, duct penetrations	Critical
Catering kitchen boundary	Hood ducting, gas, cable	Critical
AV / control room boundary	Cable and HVAC penetrations	Critical
Smoke extract shaft penetrations	Floor and wall seals	Critical
Storage / back-of-house compartment walls	Cable and HVAC penetrations	Critical

Location	Specific Application	Priority
Cable tunnel transverse barriers	Every 30–50 m	Critical
Stairwell and lift shaft penetrations	Cable and pipe penetrations	Critical
Fire water pump house entries	Power and control cable penetrations	Non-negotiable
HVAC duct penetrations through fire walls	Fire dampers + collar seals	Critical

*Detailed product data sheets, certifications, specimen specifications and project BOQ support are available on request.*

**For more information, please connect with us.**