

Electrical Passive Fire Protection for Office Complexes

Substations · Server Halls & UPS · Floor Distribution · HVAC Plant · Safety-Critical Circuits

Section A | Electrical Zone-Wise Fire Risk Map

A1. Substations, MCC Rooms & Cable Galleries

Multi-tenant and corporate office buildings including the main substation, DG and UPS rooms, server / data hall, floor MCCs, central HVAC plant, cable risers, pantry / cafeteria, lift machine 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 room	Diesel pool fire	Cable coatings, firestops, panel FP	Critical
UPS room	Battery thermal event	Cable coatings, firestops, panel FP, FR doors	Critical
Server / data hall	Cable + PDU fire under raised floor	Cable coatings, firestops, panel FP	Critical
Floor MCC / electrical room (each floor)	Floor distribution fire	Cable coatings, firestops, panel FP	High
Central HVAC plant	Motor + lubricant fire	Cable coatings, panel FP	High
Cable risers (substation → floors)	Vertical fire propagation	Cable coatings + firestops at every floor	Critical
Pantry / cafeteria MCC	Cooking + signage fire	Panel FP, cable coatings	High
Records / file storage room	Class A paper fire load	Cable coatings, panel FP	High
Lift machine rooms	Drive + cable fire	Cable coatings, firestops, panel FP	High
Underground parking MCC	Vehicle fire + smoke build-up	Cable coatings, fire-survival cabling for jet fans	Critical
BMS / security control room	Cable + server fire	Cable coatings, panel FP	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
Stairwell pressurization fan power	Egress shaft pressurization	Fire-survival cable	Non-negotiable
Sprinkler pump power	Switchgear to motor	Fire-survival cable	Non-negotiable

Area	Fire Scenario	Stanvac PFP Product Application	Rating / Priority
Lift homing circuit	Fire-floor recall	Fire-survival cable	Non-negotiable
PA / Voice evacuation system	Building-wide announcement	Fire-survival cable, panel FP	Non-negotiable
VESDA + clean agent release (server hall)	Detection to suppression actuator	Fire-survival cable	Critical
Underground parking jet-fan power	Smoke clearance from car-park fires	Fire-survival cable	Critical
Emergency lighting + exit signage	Building-wide egress	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 office complexes locations and circuits where they must be specified. Use these tables to build the bill of quantities (BOQ) for any office complexes 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 and DG cable galleries	All HT/LT trays + transverse firestops every 30 m	Critical
Vertical cable risers (every floor)	All floor-to-floor power and data	Critical
Server / data hall under-floor and overhead trays	Power and data	Critical
UPS to PDU cable runs	Battery feeders	Critical
Floor MCC and tenant cable routes	All tenant LT cabling	High
Central HVAC plant cable routes	Drive and control	High
Pantry / cafeteria cable routes	Hood, oven, signage	High
Records storage cable routes	Lighting, sprinkler	High
Underground parking cable routes	Lighting + jet-fan + sprinkler	Critical
Lift machine room cable routes	Drive, brake, signalling	High
DG room 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
Stairwell pressurization fan power	Switchgear to fan motor	Non-negotiable
Underground parking jet-fan power	Switchgear to jet-fan motor	Non-negotiable
Lift homing circuit	Lift control to landing call	Non-negotiable
PA / Voice evacuation system	Amplifier to speaker circuits	Non-negotiable
VESDA + clean agent release (server hall)	Detection to suppression panel	Critical
Emergency lighting + exit signage	Building-wide egress	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 room boundary	Fuel and cable penetrations	Critical
UPS room boundary	Cable and HVAC penetrations	Critical
Server / data hall boundary	Cable and pipe penetrations	Critical
Vertical cable riser shafts (every floor)	Floor-to-floor seal	Critical

Location	Specific Application	Priority
Floor MCC / electrical room boundary	Cable and HVAC penetrations	High
Records storage compartment walls	Every wall, floor, duct penetration	High
Underground parking compartment walls	Cable, pipe, duct penetrations	Critical
Stairwell and lift shaft penetrations	Cable and pipe penetrations	Critical
Lift machine room boundary	Cable and shaft penetrations	High
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.