Electrical Passive Fire Protection for Telecom Networks and Sites

Substations · Cable Galleries · Control Rooms · Safety-Critical Circuits

Section A | Electrical Zone-Wise Fire Risk Map

A1. Substations, MCC Rooms & Cable Galleries

BTS / core equipment rooms, DC rectifier / power plant rooms, battery banks, cable risers in tall buildings, and the meet-me room at building entry.

Area	Fire Scenario	Stanvac PFP Product Application	Rating / Priority
BTS equipment shelter	Cable + rectifier fire	Panel FP, cable coatings, firestops	**High**
Core MSC / BSC / MGW room	Cable + panel fire	Firestops, cable coatings, panel FP	**Critical**
Rectifier / DC power plant room	Cable + panel fire	Panel FP, cable coatings, firestops	**Critical**
AC distribution room	Cable + panel fire	Panel FP, cable coatings	**Critical**
Battery banks (VRLA)	Cable + terminal fire, H_2 build-up	Firestops, FR doors, panel FP	**Critical**
Battery banks (Li-ion)	Thermal runaway, electrolyte fire	Firestops, FR doors, panel FP	**Critical**
Cable risers / fibre shafts	Propagating cable fire between floors	Cable coatings + slab firestops at each floor	**Critical**
Meet-me room (MMR) / cross-connect	Cable propagation into building	Firestops at entry, cable coatings	**Critical**
Generator / DG room	Fuel + lube oil fire	Panel FP, firestops, cable coatings	**Critical**
Network operations centre (NOC)	Cable + panel fire	Panel FP, firestops, FR doors	**Critical**

A2. Safety-Critical Electrical Systems

Area	Fire Scenario	Stanvac PFP Product Application	Rating / Priority
Fire water pump power (large sites)	Switchgear to motor	Fire-survival cable	**Critical**
Li-ion thermal runaway detection + isolation	BMS to central alarm + discharge	Fire-survival cable	**Non-negotiable**
DG start & load transfer	Battery to engine panel	Fire-survival cable	**Non-negotiable**
Emergency lighting + PA	Egress routes	Fire-survival cable	**Non-negotiable**

Section B | Product-to-Application Matrix

This section maps each of the four priority Stanvac product lines to the specific telecom networks and sites locations and circuits where they must be specified. Use these tables to build the bill of quantities (BOQ) for any telecom networks and sites 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
DC electrical room cable galleries	All HT and LT trays	**Critical**
Rectifier / DC power plant cable routes	All DC distribution cables	**Critical**
MSC / BSC core room cable routes	All telecom cable bunches	**Critical**
Battery room cable entries	Cell interconnect and DC distribution	**Critical**
Cable risers in tall buildings	Vertical trays + slab firestops at each floor	**Critical**
MMR / meet-me room cable routes	Cross-connect bundles	**Critical**

Zone	Specific Application	Priority
DG room cable entries	Start, alternator, control	**Critical**
NOC cable routes	Monitoring and marshalling	**Critical**
Rooftop BTS cable routes	Feeder and power	**High**
Server hall cable trays (co-located)	All cable trays	**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 (large DC sites)	Switchgear to motor	**Non-negotiable**
DG start & load transfer	Battery to engine panel	**Non-negotiable**
DC gas suppression system controls	FM-200 / Novec actuation	**Non-negotiable**
Smoke / VESDA detection circuits	Detector to panel	**Non-negotiable**
Emergency lighting + PA	Egress routes	**Non-negotiable**
UPS feeders to critical IT loads	UPS to server racks	**Non-negotiable**
Li-ion thermal runaway detection	BMS to central alarm	**Critical**
NOC UPS & backup	Must operate during fire	**Critical**
Access control (security)	Post-fire building access	**High**
BMS critical parameter monitoring	Temperature, humidity, leak	**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
Server / equipment hall compartment walls	Cable, duct, pipe penetrations (2-hr minimum)	**Critical**
Every floor slab in cable risers	Slab firestops at each floor	**Critical**
UPS / battery room boundary	Cable and ventilation duct penetrations	**Critical**
DG room boundary	Fuel line, cable, exhaust penetrations	**Critical**
MSC / BSC room boundary	Cable and HVAC penetrations	**Critical**
MMR entry to building	Cable entry penetrations	**Critical**
NOC boundary	Cable and HVAC penetrations	**Critical**
HVAC duct penetrations between fire zones	Fire dampers + collar seals	**Critical**
BTS shelter perimeter	Cable entry penetrations	**High**
Rooftop telecom cable entry to building	Slab + wall penetrations	**Critical**

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

For more information, please connect with us.

Stanvac Chemicals India Ltd · Passive Fire Protection Division