

Electrical Passive Fire Protection for Snack Food Plants

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

Section A | Electrical Zone-Wise Fire Risk Map

A1. Substations, MCC Rooms & Cable Galleries

Main substation, fryer-area MCC (highest-risk electrical zone), warehouse distribution panels, and the plant control room.

Area	Fire Scenario	Stanvac PFP Product Application	Rating / Priority
Main substation	Transformer + cable fire	Cable coatings, firestops, panel FP	Critical
Fryer-area MCC & control panels	Hot oil fire exposure	Panel FP, cable coatings, firestops	Critical
Oil heating / pumping electrical	Hot oil + cable fire	Panel FP, firestops	Critical
Extruder / oven area MCC	Motor + heater fire	Panel FP, cable coatings	High
Packaging line MCC	Motor / cable fire	Panel FP, cable coatings	Medium
Warehouse electrical distribution	Class A fire load adjacent	Panel FP, firestops	Critical
Boiler / thermic fluid heater electrical	Fuel fire	Panel FP, firestops	High
Compressor / chiller MCC	Lube oil + refrigerant fire	Panel FP, cable coatings	High
DG room	Fuel + lube oil fire	Panel FP, firestops, cable coatings	Critical
CCR / SCADA room	Panel + cable fire	Panel FP, firestops, FR doors	High

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
Fryer overheat / oil dump trip circuits	Oil drain valve actuation	Fire-survival cable, panel FP	Non-negotiable
Kitchen hood deluge / Ansul controls	Hood suppression actuation	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 snack food plants locations and circuits where they must be specified. Use these tables to build the bill of quantities (BOQ) for any snack food plants 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
Main substation cable gallery	All HT and LT trays	Critical
MCC cable trenches	Bottom-entry cable bunches	Critical
Fryer area cable trays	Above fryer oil zone	Critical
Oil heating room cable routes	Hot oil exposure	Critical
Oven / extruder cable routes	Motor and controls	High
Packaging line cable routes	Motor and controls	Medium
Warehouse perimeter cable routes	Lighting and sprinkler	High

Zone	Specific Application	Priority
Boiler / TF heater cable routes	Fuel and process	High
DG room cable entries	Start, alternator, control	Critical
Chiller / compressor cable routes	Motor and control	High

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
Fryer emergency oil dump circuits	Oil drain valve actuation	Non-negotiable
Fryer overheat / high-temp trip	Oil temperature to DCS	Non-negotiable
Fire water pump power (electric + diesel)	Switchgear to motor	Non-negotiable
Kitchen exhaust hood deluge / Ansul	Hood suppression actuation	Non-negotiable
Emergency DG start & transfer	Battery to engine panel	Critical
Emergency lighting + PA / GA	Plant-wide egress	Critical
Heat / smoke detection circuits	Detector to F&G panel	Critical
Sprinkler system supervisory	Flow switch, tamper switch	Critical
UPS feeders to DCS / SCADA	UPS to marshalling	Critical
Dust collection emergency trip	ID / ED fan trip	High

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
Fryer / kitchen area compartment walls	Cable, duct, pipe penetrations	Critical
Exhaust duct penetrations	Fire dampers + collar seals at every floor/wall	Critical
Oil heating room boundary	Cable and pipe penetrations	Critical
Raw material silo base	Cable + instrumentation penetrations	High
Warehouse compartment walls	Cable and conveyor penetrations	Critical
Main substation cable trench to building	Sand-seal + firestop pillows + mortar	Critical
MCC room cable entries	Trench and wall penetrations	Critical
Boiler / TF heater room boundary	Fuel and cable penetrations	High
DG room boundary	Fuel and cable penetrations	Critical
Fire water pump house entries	Power and control cable penetrations	Non-negotiable

Location	Specific Application	Priority
HVAC duct penetrations	Fire dampers + collar seals	High

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

For more information, please connect with us.

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