STANVAC CHEMICALS INDIA LTD

PASSIVE FIRE PROTECTION DIVISION

THE WORLD'S ONLY COMPLETE ELECTRICAL FIRE DEFENCE

For Your Plant, People and Production

1. The reality

A spark in a panel. A small fire on a wire. A large fire on the cables. The result: lives lost, cables and panels replaced, plant shut for months. Each stage can be stopped.

2. Why electrical fire destroys property

The cable tray is the highway. One cable ignites, fire travels the full plant, every circuit dies. **Production stops.**

3. Why electrical fire kills

Smoke kills before flame. Toxic PVC smoke spreads through openings. Lifts, lights, fire pumps stop. **Escape and rescue impossible.**

4. Reasons for electrical fires

- Short circuits in cables and panel wiring
- Loose terminations — arcing and local heating
- Overloaded circuits, undersized conductors
- Insulation ageing and breakdown
- Rodents, dust, insects, moisture in panels
- Non-FRLS (Flame Retardant Low Smoke) panel wiring — the hidden ignition source
- Cable tray congestion — heat cannot escape
- External fire exposure to cable galleries
- Lightning and switching surges

5. Active fire suppression

Active fire detects and reacts — sprinklers, gas, hydrants, alarms. Needs power, water and human action to work.

6. Shortcomings of active fire

- Reacts to fire — does not prevent it
- Fails when power goes — first to die in an electrical fire
- Every link can fail — detection, valves, pumps, humans
- Sprinklers cannot be used over live panels
- Gas systems discharge once, only in sealed rooms
- Cannot stop cable tray fire once started
- Cannot keep critical circuits alive
- Cannot stop smoke
- Cannot seal openings
- AMCs (Annual Maintenance Contracts) and audits lapse — false sense of safety

7. "We already have active fire — why do we need passive?"

The most common customer objection — and the most dangerous misunderstanding.

- **Active fire reacts. Passive fire prevents.** Active is called only after fire starts. Passive stops fire from starting and spreading.
- **Active fire needs power. Passive fire needs nothing.** When cables burn, power dies — pumps, valves, detectors all stop. Passive keeps working.
- **Active fire cannot save the cable tray.** Sprinklers cannot be used on live panels. Gas systems discharge once and only in sealed rooms.
- **Active fire buys minutes. Passive fire buys hours.** Passive gives active fire the time it needs to actually work.
- **The two are partners, not alternatives.** Active without passive is a fire alarm without a fire wall. Passive makes active effective.

8. Browns Ferry — and the killer fact

A candle and uncoated cables at a US nuclear plant in 1975 burned for 7 hours and shut the plant for 18 months **— proof that the cable tray, not the spark, destroys the plant.**

The killer fact: FRLS cables fail in **7 minutes**. Stanvac EC 43 Survival lasts **240 minutes**. **34× longer.** This gap kills plants and people.

9. Passive fire protection

Passive fire is built into the structure — coatings, sealants, barriers — that prevent ignition, contain fire, keep circuits alive.

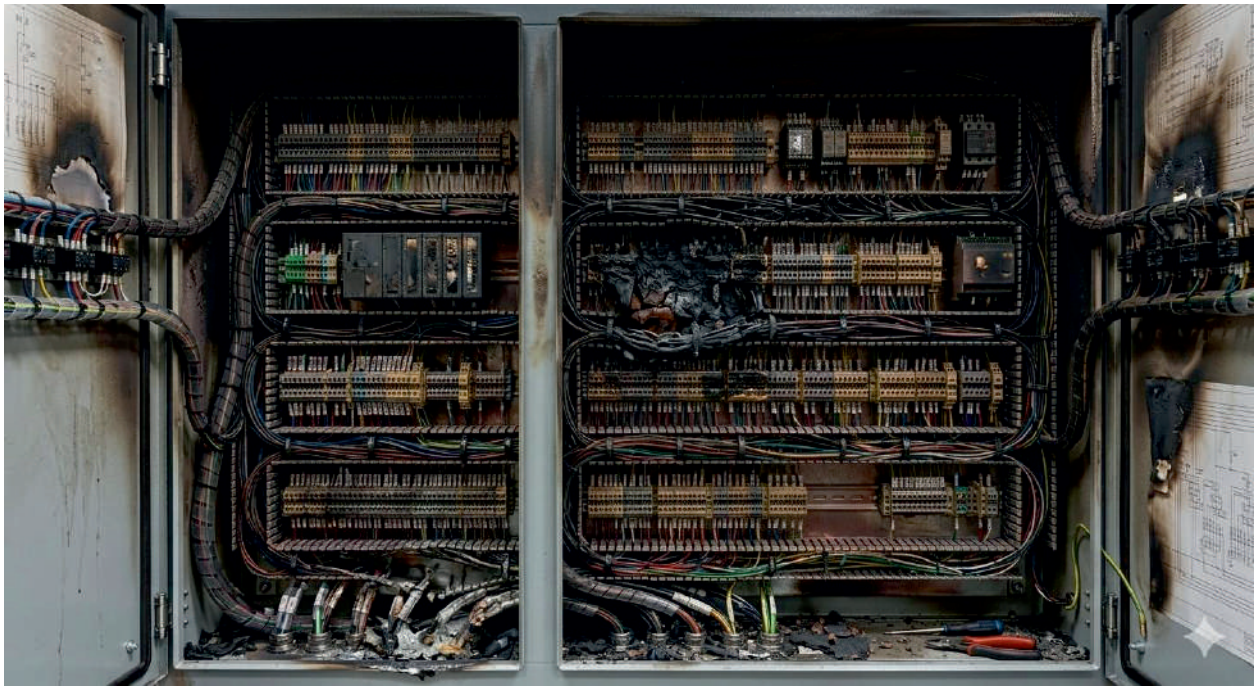
10. Small cables inside panels — why their protection is the key

Small PVC wires catch fire easily — sparks and overheating become small fires, the starting point of large fires. **Plug here.**

11. The Stanvac PCO architecture — Panels, Cables, Openings

★ *Stanvac proprietary product*

P — PANELS



- **FBS 73 ★ — limits oxygen entry into panels.**
  India's first and only oxygen-limiting panel sealant. Without oxygen, sparks and shorts cannot become large fires. Also blocks dust, moisture, insects, rodents — the causes of flashover.
- **DC 52 ★ — prevents panel paint from fuelling fire.**
  India's first and only fire-barrier coating for panel surfaces. Standard paint burns and accelerates fire. DC 52 forms a thermal barrier, protecting internal components.

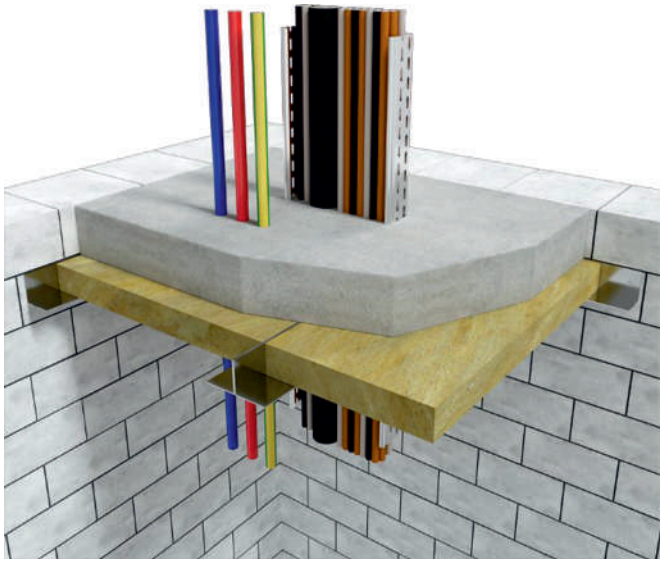
- **Firex EC 7034 ★ — bulk sprayable, translucent and flexible suppressant for small wires inside panels.**
  World's first and only bulk-sprayable coating to pass IEC 60332-3, 120 min. Translucent — colour-coding stays visible. Flexible — moves with wires, no cracking. Saves the heart of the electrical supply mechanism.

C — CABLES — flame, smoke, survival

Stop the flame travelling. Stop the smoke. Keep the critical circuits alive. All three matter.

- **Firex EC 43 General ★ —IEC 60332-3, 240 min flame propagation + smoke control at 1.6 mm DFT (Dry Film Thickness).**
  6× the maximum test requirement. Stops the cable tray cascade.
- **Firex EC 43 Survival ★ — IEC 60331-21 240 min @ 750°C + IS 17505-1 180 min @ 950°C, plus flame and smoke control. 1.6 mm DFT, no derating.**
  World's only coating to pass both. Critical circuits keep running — fire pumps, critical production machinery, Building Management System (BMS), Diesel Generator–Automatic Transfer Switch (DG-ATS), Operation Theatre / Intensive Care Unit (OT/ICU) feeders.

O — OPENINGS



#	Barrier	Spec	Rating	Level
a	**Firex FM 71** (mortar)★	75 mm / 2 hr	2 hr	**L1**
b	**FM 71**	100 mm + EC 43 (1 m)	2 hr + 4 hr	—
c	**Firex FB 250** (mineral wool)	100 mm + EC 43 (1 m)	2 hr + 4 hr	—
d	**FM 71 + FB 250 Hybrid** ★	100 mm + EC 43 (1 m)	2 hr + 4 hr	**H1**

- **FM 71**
  India's most advanced CBRI-developed firestop mortar. 2 hr at only 75 mm. Light, fits all structures, faster install.
- **FB 250**
  Light, flexible mineral wool barrier for retrofit and irregular openings.
- **FM 71 + FB 250 Hybrid**
  India's first hybrid firestop. Mortar strength + mineral wool flexibility. Universal for walls and floors.
- **Flexible putty stick**
  2 hr per IS 12458 / BS 476-20. For small gaps and retrofit entries on shop-floor panels.

12. Standards and certifications — the test language explained

Standard	What it tests	What it means
IEC 60332-3	Flame propagation	How long the cable stops fire spreading along a tray
IEC 60331-21	Circuit integrity @ 750°C	How long the circuit keeps working in fire
IS 17505-1 / BS 7846	Circuit integrity @ 950°C	Same, at higher temperature — long-duration real fire
IS 12458	Firestop barrier	2-hour fire-rated wall and floor sealing
ASTM E 814 / UL 1479	Firestop barrier (US)	International equivalent
CBRI	Indian government test lab	Where Stanvac products are certified

13. Sectors where Stanvac PCO matters

Heavy industry: refineries, petrochemical, thermal/hydel/nuclear power, integrated steel, aluminium smelters, cement, paper mills, coal and iron ore mines, gas storage, ports, power transmission and distribution.

Pharma, food and beverage: pharma units, distilleries, breweries, beverage bottling, snack food, dairy.

Infrastructure and institutions: data centres, airports, telecom, electronics manufacturing, hospitals, educational institutions, metros.

Commercial: shopping malls, commercial complexes, hotels, offices, exhibition centres, multiplexes, public buildings.

14. Why Stanvac is best in the world — and the three-step summary

Only Stanvac offers complete PCO — panels, cables, openings. Only Stanvac has the world's only 240-minute IEC 60331-21 survival coating, and the world's only bulk sprayable, translucent and flexible coating to pass IEC 60332 3, 120 min — for small wires inside panels.

#	Where fire acts	What Stanvac does	Products
1	**Fire BEGINS in panels** — small PVC wires ignite first from sparks and overheating	Seal the panel. Starve the spark. Suppress the small-wire fire.	**FBS 73 + DC 52 + EC 7034**
2	**Fire TRAVELS through cables** — FRLS lasts only 7 minutes; tray becomes the highway (Browns Ferry); smoke spreads with flame	Stop flame. Stop smoke. Keep critical circuits alive.	**EC 43 General + EC 43 Survival**

#	Where fire acts	What Stanvac does	Products
3	**Fire KILLS through smoke and openings** — smoke kills first; one fire becomes building-wide	Seal every opening. Compartment the building. Buy time.	**FM 71 / FB 250 / Hybrid (H1) + Putty**

15. Next step for the customer

We request permission for an **urgent site survey** of your critical areas — where fire would cause loss of life, regulatory consequence, and major shutdown.

16. The Gulf War effect — why fire risk is highest, and fire cost worst

Gulf War lifted input costs and squeezed margins. Plants now run 24x7 without rest — fire risk highest in 20 years, fire cost worst ever.