



# Passive Fire Protection Solutions in Data Centre

By

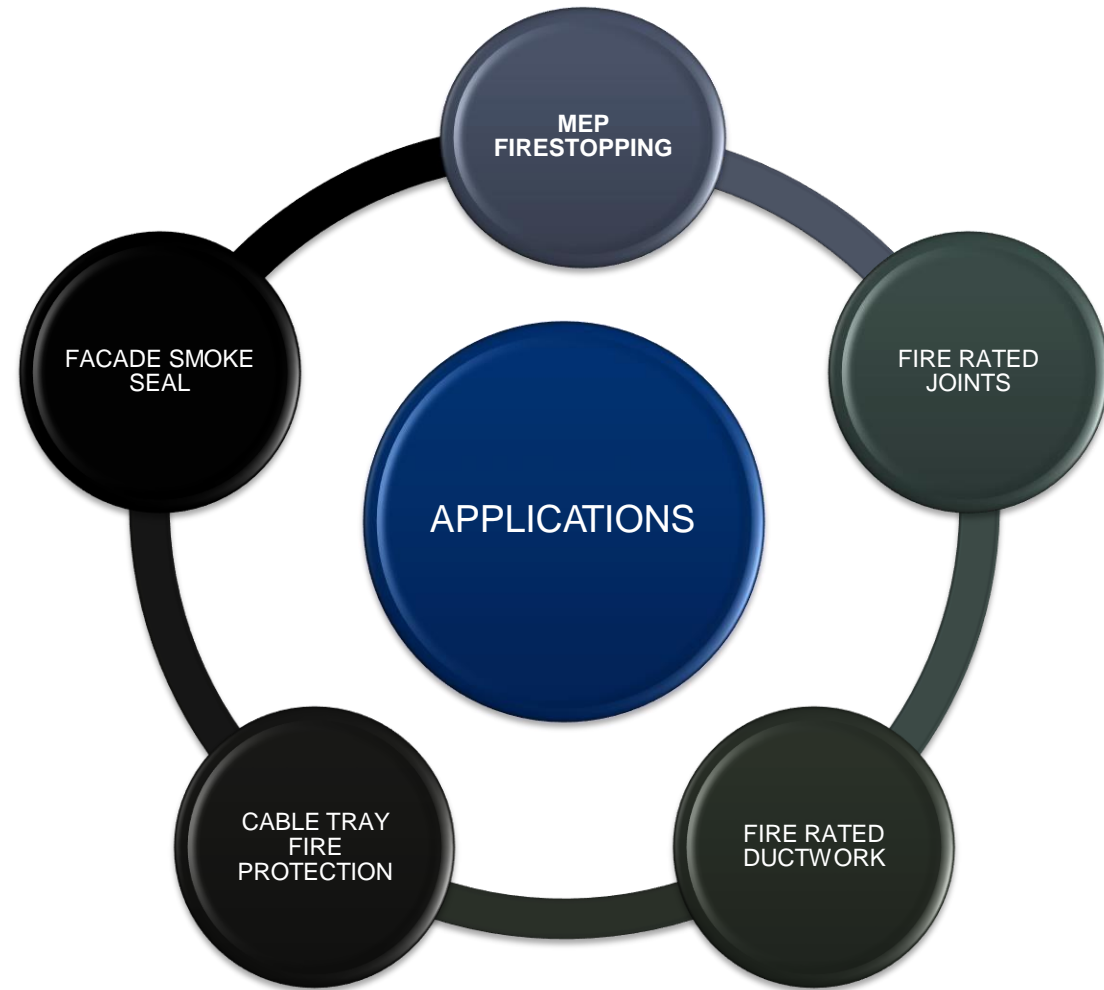
**Murugappa Morgan Thermal  
Ceramics Ltd. (India)**

**System Integrator - Refractory**

**Application & Solution Pune**

**MEP FIRESTOPPING & JOINTS PASSIVE FIRE  
PROTECTION SYSTEM**

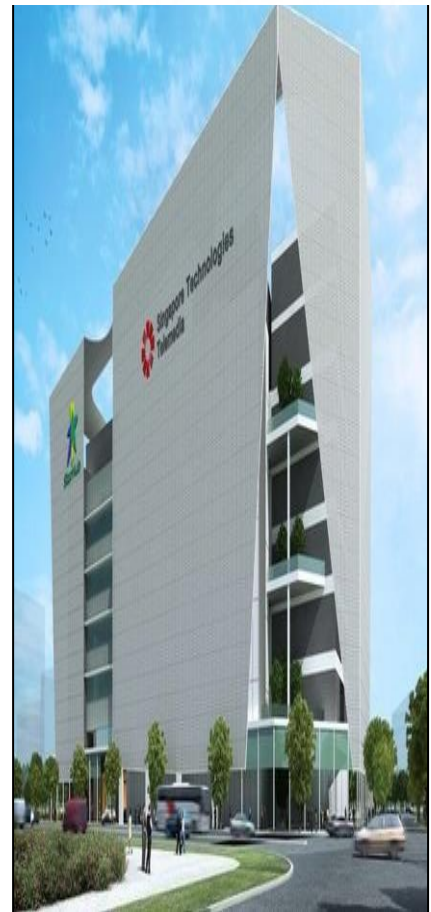
# Passive Fire Protection in Building & Construction - India





# KEY DATA CENTRE PROJECTS

 **STTelemedia**  
Global Data Centres



**Chennai**

 **STTelemedia**  
Global Data Centres



**Pune**

**BHAMASHAH STATE DATA CENTRE**



**Jaipur**

**CtrlS™**



**Mumbai**

 **netmagic®**



**Mumbai**

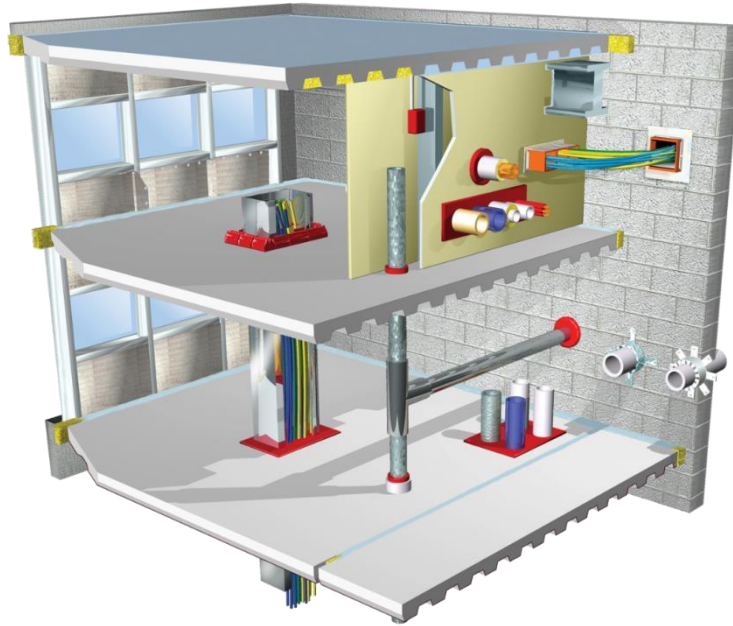
 **NTT**

# MEP FIRESTOPPING & JOINTS PASSIVE FIRE PROTECTION SYSTEM

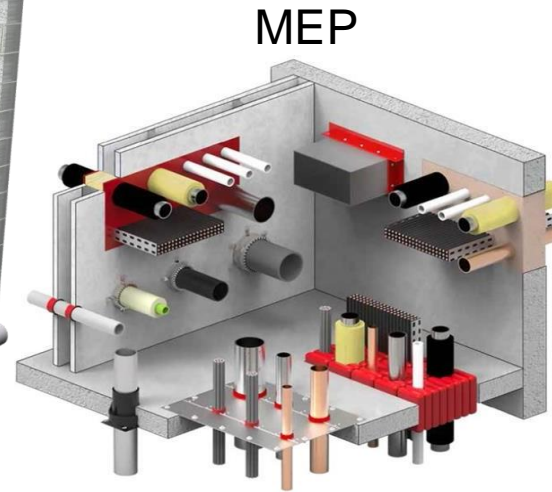




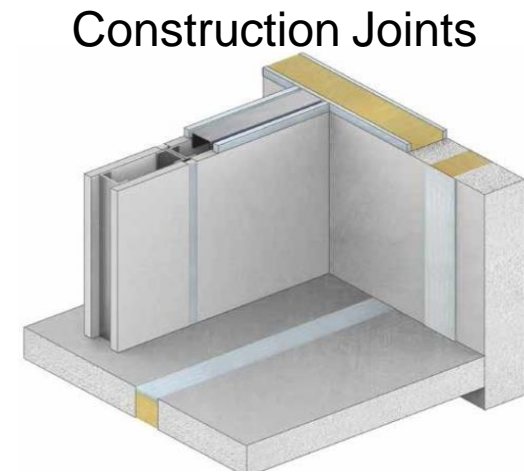
# PFP in Construction



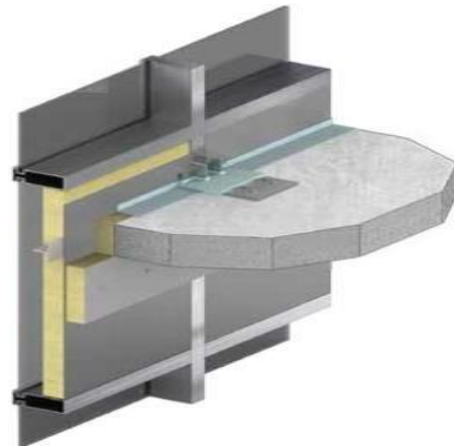
Perimeter protection



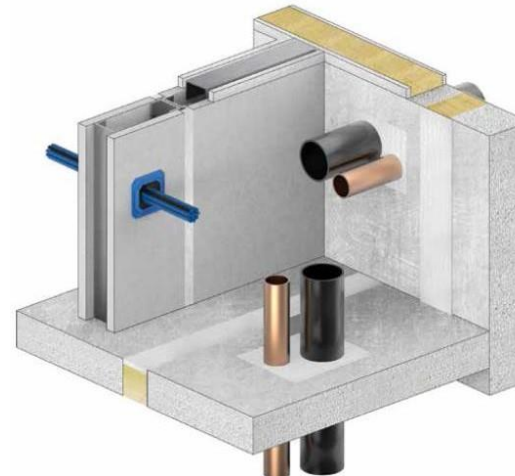
MEP



Construction Joints



Smoke & Acoustical



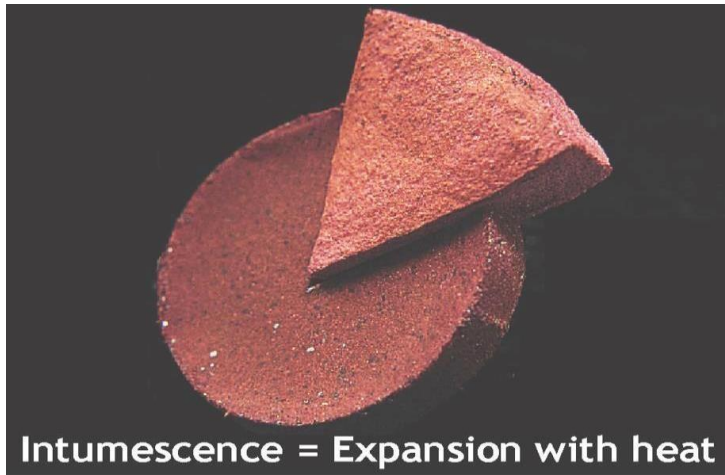
Cable Management



# How Firestopping Works

## ***Intumescent:***

- *Expands with heat*
- Form an insulating char
- Fills voids
- Replace materials burning away
- Crush burning or melting penetrants



## ***Endothermic/Heat Sink:***

- *Absorbs Heat*
- Insulates against spread of heat
- Accommodates for the expanding materials
- Releases water vapour
- Crush burning or melting penetrants



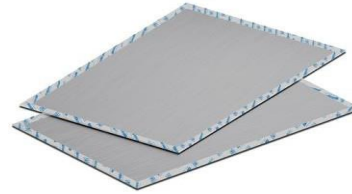
# Product Selection – Multiple Penetrants, Re penetrable

## SSM Mortar



- Can be poured, pumped, or troweled in place
- Partners with other SpecSeal Firestop Products
- Durable permanent seal
- Re-penetrable allowing for future penetrants

## CS Composite Sheet



- Profession Fit and Finish
- Partners with other SpecSeal Firestop Products
- Easily cut with hand sheers
- Tested for up to 4 Hours of fire resistance when tested to ASTM E814/UL1479

## SSB Intumescent Pillows



- Re-enterable. For Complex Openings
- Future Access for walls & floors.
- Thin & Light Weight. Easy to cut
- Versatile. Useful for HTO
- Intumescent. Expands 15x



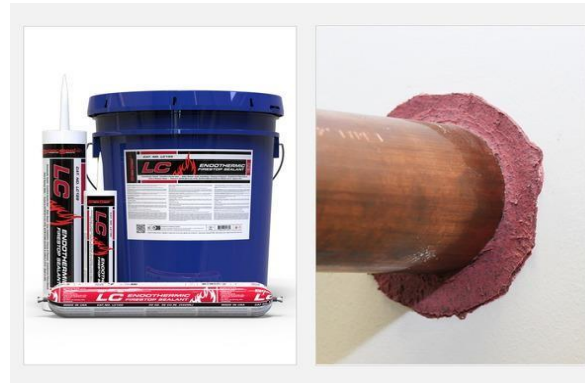
# Product Selection **Metallic Penetrants**

## LCI Intumescent sealant



- Gun Grade material available in caulk tubes, sausages and pails
- Tested for use in through-penetration and construction joint configurations
- Compatible with CPVC Piping
- Can be sanded and painted to match its surroundings
- Used in over 500 UL Tested Systems

## LC Endothermic Sealant



- Installer Friendly, easily applied with standard caulking gun
- Can be troweled on for larger applications
- Tested for up to 4 Hours of fire resistance when tested to ASTM E1966/UL2079, ASTM E814/UL1479, and CAN/ULC-S115
- Listed in over 80 UL Tested Firestop Systems!

## Fyreflange HVAC Firestop Angle

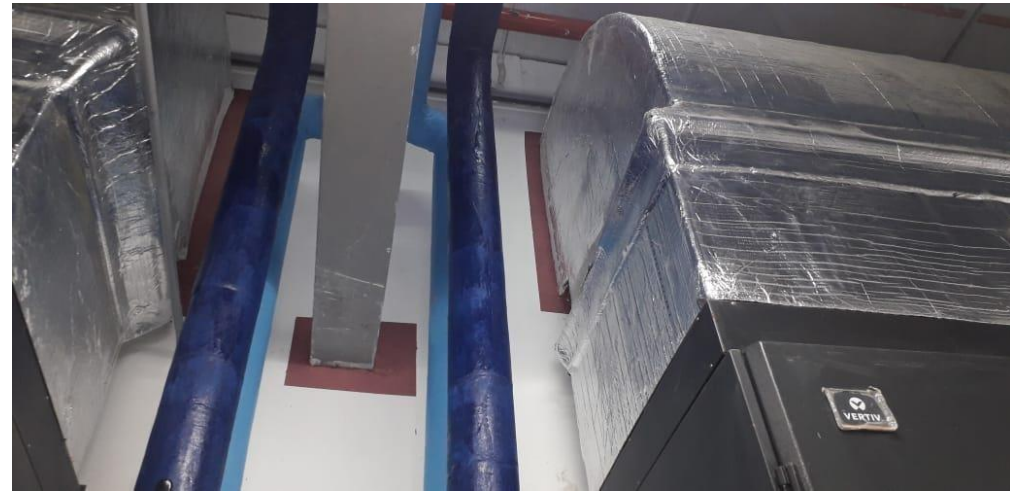


- Intumescent metallic angles steel reinforcement angles for HVAC duct with intumescent, fire-rated gasket.
- Eliminates installation of firestop caulk and backing material to create a one-step solution.
- Eliminates the need for sealants



# HVAC Penetrations Firestop

Insulated Ducts Requires Intumescent Sealant



# Electrical Penetrations Firestop





# Plumbing Firestop





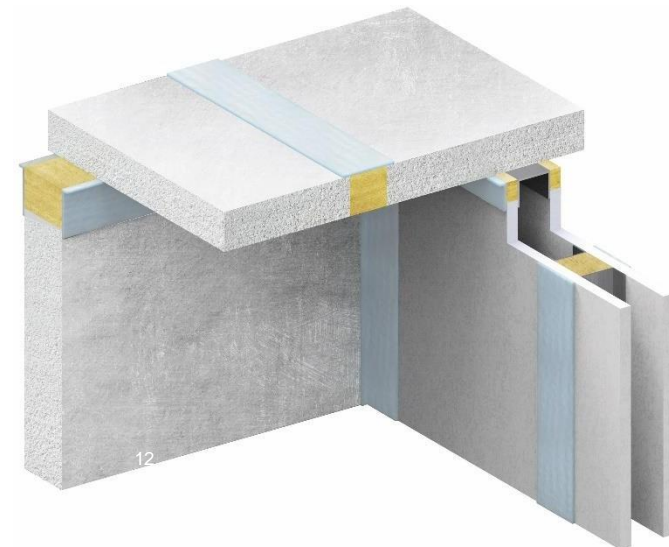
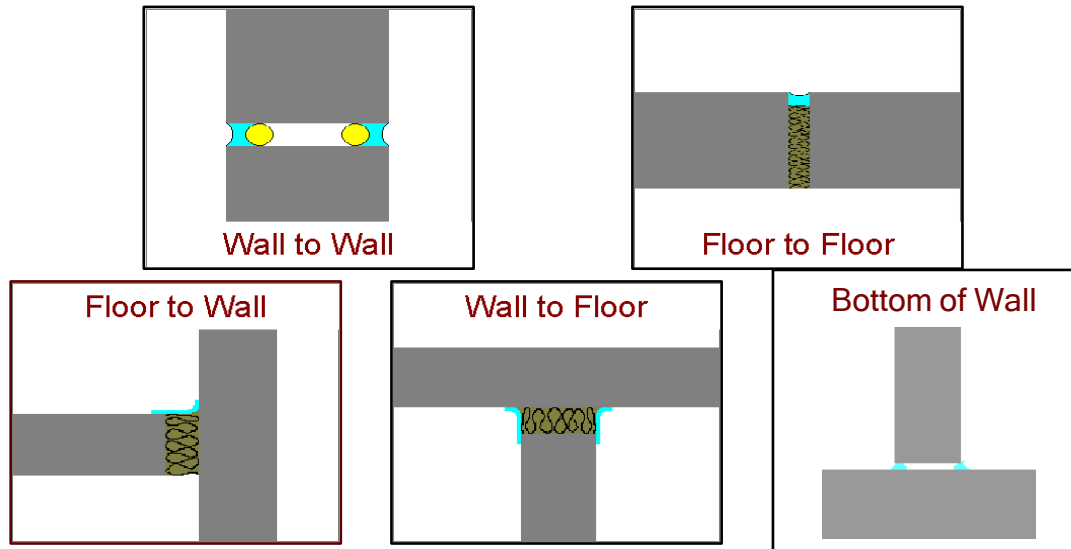
# Dynamic Joints

## Head of Wall/Soffit joints:

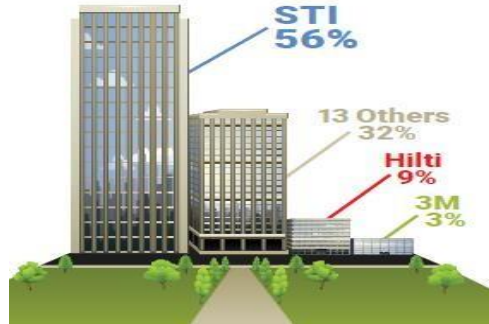
Head of wall joint is located between top side of wall and bottom side of floor



## Five types of construction joints:



# ST TELEMEDIA DATA CENTRE, PUNE



- **Why STI ?** – Largest Number of UL Systems in the world for Firstopping applications
- Lowest Thickness of Firestop System for MEP Penetrations (6mm & 13mm Thick)
- Lowest Thickness of Fire Barrier System for Joints (6mm Thick)
- For Ease in Application, One Sealant for all MEP Penetrations
- One Sealant for all Combustible & Non-Combustible Penetrations



## Challenges in Data Centre Project



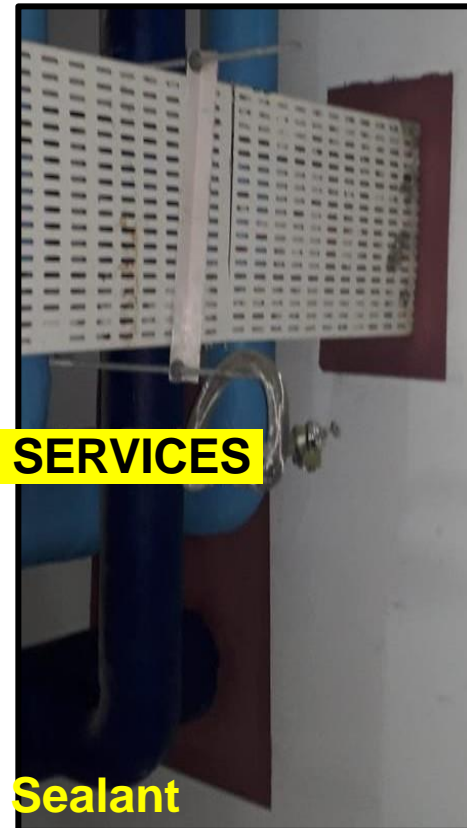
LARGE OPENINGS



MULTIPLE MEP SERVICES



Intumescent Sealant



# ELECTRICAL CABLES/CABLE TRAYS PASSIVE FIRE PROTECTION SYSTEM



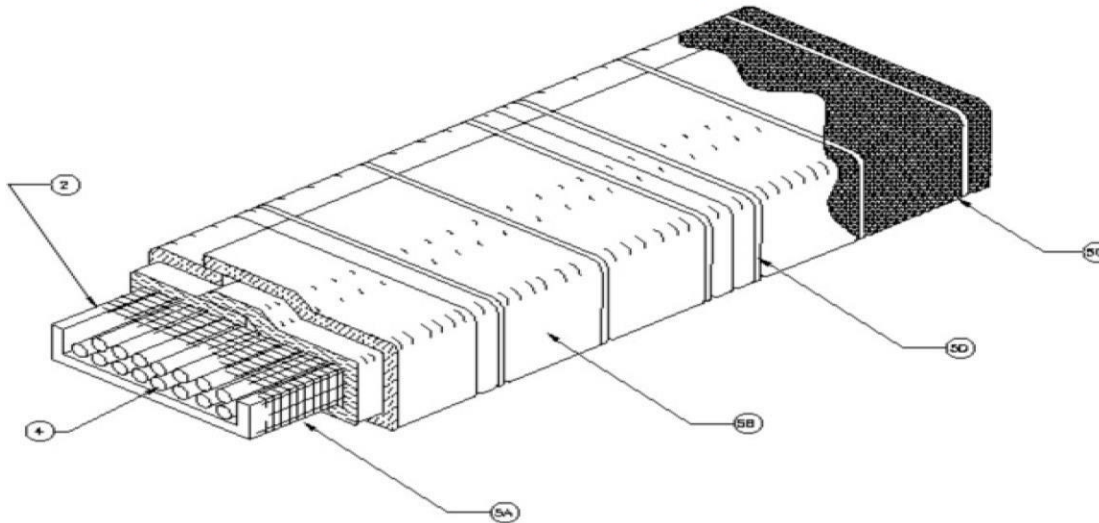


# Fire Protection of Cables/Cable Trays – Circuit Integrity

## Firemaster Fastwrap XL (Selected)

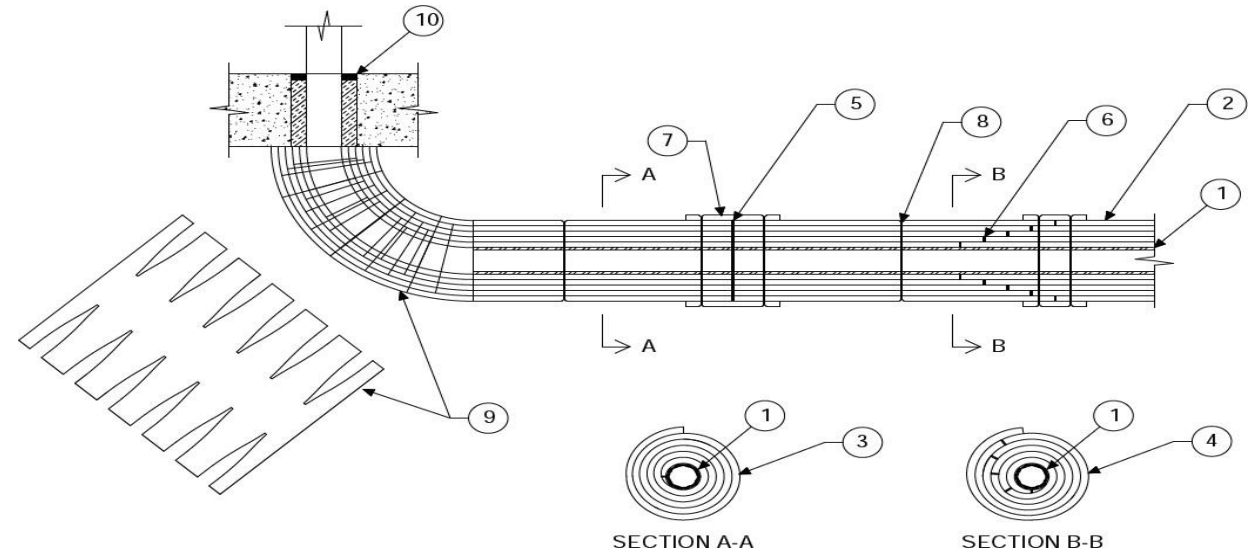
- 1 hour electrical circuit integrity
- Tested as per FHIT.5
- Tested at UL Lab
- 2 layers of 38mm X 96kg/m<sup>3</sup> density system
- Thermal Ceramics patented Superwool fiber
- Fully encapsulated in durable glass fiber reinforced foil facing

FHIT.5 - Electrical Circuit Integrity Systems



## Firemaster UI-T-Wrap (Proposed)

- 1 & 2 Hours of circuit integrity
- Tested as per FHIT-38 and XCLF-TB-8
- Tested as per ASTM E 1725, ASTM E 119, ASTM E 814, UL 1724 testing standards.
- 10mm Thick X 5 Layers X 256kg/m<sup>3</sup> density
- 3 ply aluminum foil scrim reinforced polypropylene facing



# Fire Protection of Cables/Cable Trays – Circuit Integrity

- Customized solution for space constrain areas
- Zero Clearance concept



# HVAC DUCTS PASSIVE FIRE PROTECTION SYSTEM





# Fire Rated Ductwork Insulation – Data Centre



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Application: Fire Rated Duct – Smoke Extraction and Ventilation

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Areas: Data Centres

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Industry: Construction and Building industry.

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Testing Lab: Applus Laborites, Spain & Under Writers Laborites (UL), USA

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Product: Firemaster FastWrap XL 25mm / 38mm x 96kg/m<sup>3</sup>.

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Value Proposition: Bespoke - 400Deg C, Dual purpose, space saving, time saving and economic solutions for fire rated smoke duct work.

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Tested systems: Tested to BS476 part 24 & ISO 6944.

# FireMaster FastWrap XL

**FIREMASTER**<sup>®</sup>



# Firemaster FastWrap XL System - Components



Fully encapsulated  
FireMaster Plus Blanket



Self adhesive Aluminium  
foil tape



Stainless Steel  
Band(304) 0.40 X 12 mm





# Firemaster Fastwrap XL - Complex shapes & sizes



# Project - ST Telemedia Global Data Centre, Chennai



- ❑ **Contractor** – *Sterling & Wilson*
- ❑ **Smoke Duct Qty** – *2500 SQM*
- ❑ **Fire Rating** – *120 minutes*
- ❑ **System Thickness** – *25mm of Firemaster Fastwrap XL*
- ❑ **Application Duration** – *Within 30 days with team of 6 members & 1 Supervisor*

# **PERIMETER FIRE BARRIER/CURTAIN WALL FIRESTOP PASSIVE FIRE PROTECTION SYSTEM**

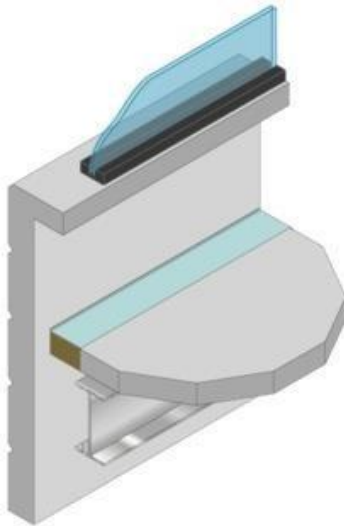




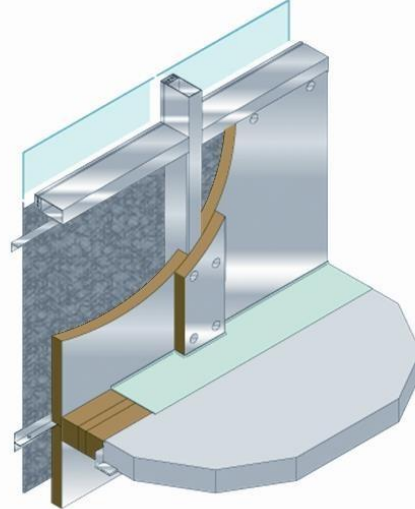
# Perimeter Fire Barrier

## Type of curtain wall systems

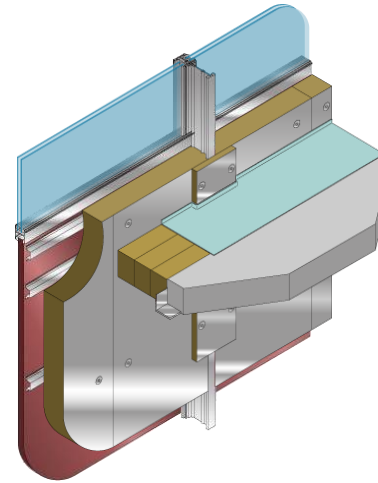
Precast concrete panels



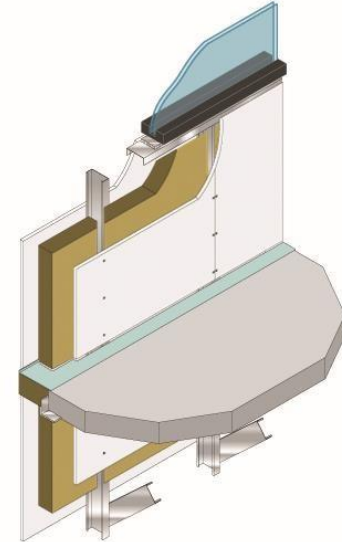
Aluminum Tube - Mullion shape



Aluminum I - Mullion shape



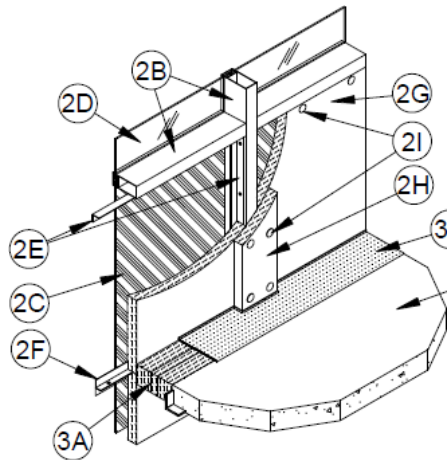
Gypsum sheathed/steel stud wall



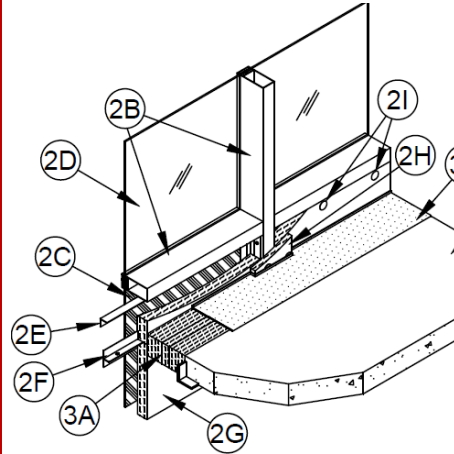
# Perimeter Fire Barrier

**CW-D-2031**

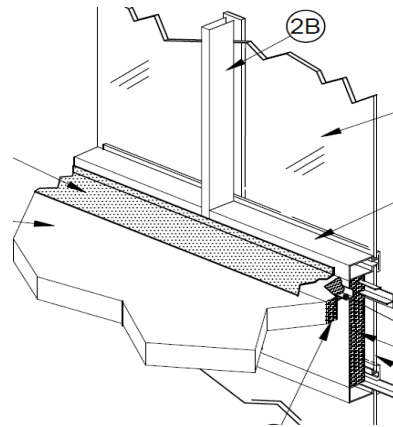
**Standard curtain wall**



**CW-D-2042 : Lower transom**

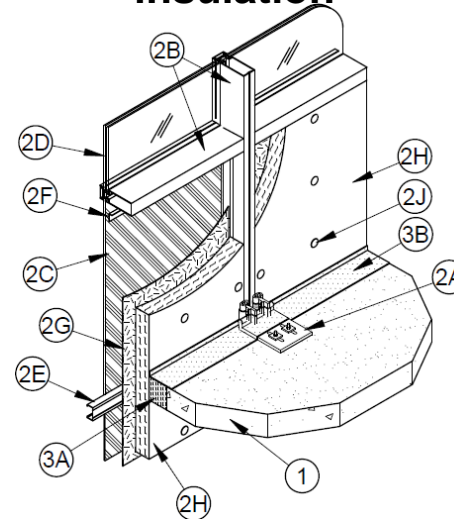


**C-EJ-322P : Lower transom**



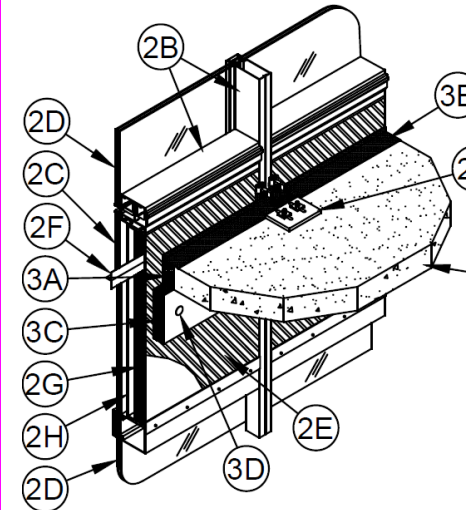
**CW-D-1004**

**Back pan exterior  
face of curtain wall  
insulation**



**CW-S-0002**

**Back pan exterior  
face of curtain wall  
insulation**



# Our Solutions – Value Proposition & You Appeal

## Value Proposition

- **One stop solution for all their PFP Needs**
- Compliance to specifications
- **Third Party Approvals**
- Test Certificates
- **Installation Support**
- Inspection & Supervision
- Engineering and Design Support
- Comprehensive testing to international standards
- Ease in obtaining clearance from local fire authority
- Lower Weight Solution
- **Faster Handover**
- **Space Saving**

## YOU Appeal

- **For Buyer**
  - **Association with Reliable Brand**
  - Assurance of Project Completion
  - International Approval from renowned Third Party Lab
  - **One Stop Solution**
  - **Faster Delivery**
  - Indigenization of System
  - No Legal Liability
  - **Commercial Attractive Package**
  - Global Project List
- **For Project Team**
  - **Health & Safety**
  - Faster Installation
  - **Less Manpower**
  - **Ease in documentation**
  - Space Saving
  - Customized Solution
  - **One Stop Solution**
  - EHS Compliance

