

FIRESTOPPING

1. GENERAL

1.1 Quality Assurance

- .1 Firestopping and smoke sealing shall be by competent installers having minimum five (5) years experience in application of materials and systems being used, approved and trained by material or system manufacturer.

1.2 Submittals

- .1 Submit Shop Drawings and samples in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Shop Drawings to indicate ULC assembly number for each condition, required temperature rise and flame rating, hose stream rating, thickness, installation methods and materials of firestopping and smoke seals, damming materials, reinforcements, anchorages and fastenings, size of opening, adjacent materials and number of penetrations. Submit copies of current ULC listings for each system and certified copies of test reports verifying that firestopping and smoke seals meet or exceed specified requirements.

1.3 Environmental Requirements

- .1 Comply with requirements of WHMIS regarding use, handling, storage, and disposal of hazardous materials; and material safety data sheets acceptable to Ministry of Labour.

2. PRODUCTS

2.1 Materials

- .1 Certified and listed by ULC or WH in accordance with CAN4 – S115 and bearing ULC or WH label, products shall be heat resistant, flexible, durable and compatible with adjacent materials and finishes. System shall be self-supporting at penetration capable to adhere and yet maintain its integrity while providing effective barrier against passage of flame, smoke and gases. Product shall provide flame and temperature rating in accordance with requirements of NBC for openings in respective fire resistance rated floor, wall or other assembly.
- .2 Asbestos free firestopping and smoke seal materials and/or systems to provide closures to fire and smoke at openings around penetrations, and at openings and joints within fire separations and assemblies having a fire-resistance rating, including openings and spaces at perimeter edge conditions. System shall provide draft tight barriers to retard passage of flame and smoke, and firefighter's hose stream and passage of liquids. Provide firestopping and smoke seals within mechanical (i.e. inside ducts, dampers) and electrical assemblies (i.e. inside bus ducts) respectively and around outside of such mechanical and electrical assemblies where they penetrate rated fire separations.
- .3 Firestop Systems: Certified by ULC, WH and listed in ULC Guide No. 40 U19.
- .4 Firestop System Components: Certified by ULC, WH and listed in ULC Guide No. 40 U19.13 under the Label Service of ULC.

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- .5 Cementitious Matrices: Minimum 2758 kPa (400 psi) compressive strength when cured, to retard cable tray warping within the firestop seal.
- .6 Firestopping and Smoke Seals at Openings Where Reinstallation Occurs: An elastomeric or re-useable cementitious matrix or putty seal; do not use a permanent cementitious seal at such locations.
 - .1 Firestopping and smoke seals at openings around penetrations for electrical bus ducts, pipes, ductwork and other electrical and mechanical items requiring sound and vibration control or allowance for expansion, contraction and other movement: An elastomeric seal; do not use a cementitious or rigid seal at such locations.
 - .2 Firestopping and smoke seals at joints and spaces designed and required to allow movement such as building movement joints, deflection spaces, control joints, expansion joints, and similar locations shall be flexible, elastomeric seal suitable to withstand the required movement and capable of returning to original configuration without damage to seal and without adhesive or cohesive failure; do not use a cementitious or rigid seal at such locations.
 - .3 Primers: To Manufacturer's recommendation for specific material, substrate, and end use.
 - .4 Water (if applicable): Potable, clean and free from injurious amounts of deleterious substances.
 - .5 Damming and Back-up Materials, Supports and Anchoring Devices: To Manufacturer's recommendations, and in accordance with tested assembly being installed as acceptable to authorities having jurisdiction.
 - .6 Pipe and Duct Insulation and Wrappings: Compatible with firestopping systems.
 - .7 Intumescent Pads: Permanently pliable type.
 - .8 Intumescent Composite Sheet: Composite sheet, strip or precut shapes.
 - .9 Sealants and Putty for Vertical and Overhead Joints: Non-sagging.
 - .10 Materials and products shall not cause stress, chemical or physical reaction, or other damage to penetrating items or adjacent materials.

3. EXECUTION

3.1 Installation

- .1 Ensure materials and products are compatible with abutting materials, coatings and finishes. Remove applied coatings and finishes as required to permit proper installation and adhesion.
- .2 Ensure that pipe and duct insulation and wrappings occurring within openings to receive firestopping and smoke seal are installed prior to work of this Section and that insulation and wrapping within fire seals is a ULC listed component of the system to be installed, unless ULC certified assembly permits such other insulation and wrapping to remain within the assembly. Otherwise, precede installation of mechanical insulations or remove insulation

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from area of insulated pipe or duct where such pipes or ducts penetrate a fire separation. Ensure the continuity and integrity of thermal and vapour barriers where such are removed, altered, or replaced, acceptable to the Contract Administrator.

- .3 Apply firestopping and smoke seals in accordance with Manufacturer's instructions and tested designs acceptable to authorities having jurisdiction to provide required temperature and flame rated seal, and to prevent passage of smoke and liquids.
- .4 Provide temporary forming as required and remove forming only after materials have gained sufficient strength and after initial curing. Completely fill and seal voids with firestopping and smoke seal materials. Do not cover up materials until full curing has taken place. Notify when completed installations are ready for inspection and prior to concealing or enclosing firestopping and smoke seals.

3.2 Cleaning

- .1 Remove excess materials and debris and clean adjacent surfaces immediately after application. Remove temporary dams after initial set of firestopping and smoke seal materials.

END OF SECTION

JOINT SEALANTS

1. GENERAL

1.1 Work Included

- .1 Supply and install of all sealant and backing materials as required and not listed under Section 03 10 00 - Concrete Accessories.

1.2 Quality Assurance and Regulatory Requirements

- .1 Installation of sealant work shall be carried out by a recognized specialized applicator having skilled mechanics, thoroughly trained and competent in all phases of sealant work, with at least five (5) years experience.

1.3 Environmental Conditions

- .1 Sealant and substrate materials to be minimum 5°C.
- .2 Should it become necessary to apply sealants below 5°C, consult sealant Manufacturer and follow their recommendations.

1.4 Submittals

- .1 Submit Samples in accordance with Section 01 33 00 - Submittal Procedures.

1.5 Maintenance Data

- .1 Provide operation and maintenance data for each Sealant and Caulking for incorporation into maintenance manual specified in Section 01 78 00 - Closeout Submittals.

2. PRODUCTS

2.1 Materials

- .1 Primers: type recommended by sealant manufacturer.
- .2 Joint Fillers:
 - .1 General: compatible with primers and sealants, oversized 30 to 50%.
 - .2 Polyethylene, urethane, neoprene or vinyl: extruded closed cell foam, Shore A hardness 20, tensile strength 140 to 200 kPa.
- .3 Bond Beaker: pressure sensitive plastic tape, which will not bond to sealants.
- .4 Sealants:
 - .1 Colour of sealants: to match adjacent surface. Colours to be selected by the Contract Administrator from standard and custom colour ranges.
- .5 Joint Cleaner: non-corrosive type recommended by sealant manufacturer and compatible with sealant.

JOINT SEALANTS

- .6 Sealants – Exterior:
 - .1 Dow Corning 795 Silicone Building Sealant, colours to be selected by Contract Administrator to match substrate colour. Colours are to be custom.
- .7 Sealants – Interior Dry Areas above Main Floor Elevation:
 - .1 DAP Alex Plus Acrylic Latex Caulk Plus Silicone (paintable).
- .8 Cleaning material for surfaces to receive sealant as recommended by the Manufacturer of sealant.

3. EXECUTION

3.1 Preparation

- .1 Remove dust, paint, loose mortar and other foreign matter. Dry joint surfaces.
- .2 Remove rust, mill scale and coatings from ferrous metals by wire brush, grinding or sandblasting.
- .3 Remove oil, grease, and other coatings from nonferrous metals with joint cleaner.
- .4 Prepare concrete, glazed, and vitreous surfaces to sealant Manufacturer's instructions.
- .5 Examine sealant joint sizes and correct to achieve depth ratio 1/2 of joint width with minimum width and depth of 6 mm, maximum width 25 mm.
- .6 Install joint filler to achieve correct joint depth.
- .7 Where necessary to prevent staining, mask adjacent surfaces prior to priming and sealant.
- .8 Apply bond breaker tape where required to Manufacturer's instructions.
- .9 Prime sides of joints in accordance with sealant Manufacturer's instructions immediately prior to application of sealant.

3.2 Application

- .1 Apply sealants, primers, joint fillers, bond breakers, to Manufacturer's instructions. Apply sealant using gun with proper size nozzle. Use sufficient pressure to fill voids and joints solid. Superficial pointing with skin bead is not acceptable.
- .2 Apply sealant to joints between access frames to adjacent building components, around perimeter of every external opening, to control joints in concrete slabs.
- .3 Hand tool all sealant.

JOINT SEALANTS

3.3 Warranty

- .1 Provide a three (3) year warranty against delamination of the sealant. Warranty will include coverage of installed sealants and accessories which fail to achieve air tight and watertight seal, exhibit loss of adhesion or cohesion, or do not cure.

END OF SECTION