

## SECTION 07200 - INSULATION

### PART 1 - GENERAL

#### RELATED DOCUMENTS:

Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.

#### DESCRIPTION OF WORK:

Extent of insulation work is shown on drawings and indicated by provisions of this section.

Applications of insulation specified in this section include the following:

Blanket-type building insulation.

Typical faced mineral fiber blanket / batt insulation.

General Usage at throughout perimeter wall/roof intersection as air/light gap filler.

Fire Safing Insulation.

Acoustical insulation.

Sound attenuation blankets installed as part of metal-framed gypsum drywall assemblies are specified in Division-9 section "Gypsum Drywall".

#### QUALITY ASSURANCE:

Thermal Resistivity: Where thermal resistivity properties of insulation materials are designated by r-values they represent the rate of heat flow through a homogenous material exactly 1" thick, measured by test method included in referenced material standard or otherwise indicated. They are expressed by the temperature difference in degrees F between the two exposed faces required to cause one BTU to flow through one square foot per hour at mean temperatures indicated.

Fire Performance Characteristics: Provide insulation materials which are identical to those whose fire performance characteristics, as listed for each material or assembly of which insulation is a part, have been determined by testing, per methods indicated below, by UL or other testing and inspecting agency acceptable to authorities having jurisdiction.

Surface Burning Characteristics: ASTM E 84.

Fire Resistance Ratings: ASTM E 119.

Combustion Characteristics: ASTM E 136.

SUBMITTALS:

Product Data: Submit manufacturer's product literature and installation instructions for each type of insulation and vapor retarder material required.

DELIVERY, STORAGE, AND HANDLING:

General Protection: Protect insulations from physical damage and from becoming wet, soiled, or covered with ice or snow. Comply with manufacturer's recommendations for handling, storage and protection during installation.

Do not expose to sunlight, except to extent necessary for period of installation and concealment.

Protect against ignition at all times. Do not deliver plastic insulating materials to project site ahead of installation time.

Complete installation and concealment of plastic materials as rapidly as possible in each area of work.

PART 2 - PRODUCTS

ACCEPTABLE MANUFACTURERS:

Available Manufacturers: Subject to compliance with requirements, manufacturers offering products which may be incorporated in the work include, but are not limited to, the following:

Manufacturers of Extruded Polystyrene Board Insulation:

Amoco Foam Products Co.  
Dow Chemical U.S.A.  
Minnesota Diversified Products, Inc.  
UC Industries.

Manufacturers of Glass Fiber Insulation:

BPB  
CertainTeed Corp.  
Johns Manville  
Knauf Fiber Glass GbmH.  
McCormick Corp.  
Owens-Corning Fiberglas Corp.

INSULATING MATERIALS:

General: Provide insulating materials which comply with requirements indicated for materials, compliance with referenced standards, and other characteristics.

Preformed Units: Sizes to fit applications indicated, selected from manufacturer's standard thicknesses, widths and lengths.

UNFACED MINERAL FIBER BLANKET/BATT INSULATION: Thermal insulation produced by combining mineral fibers of type described below with thermosetting resins to comply with ASTM C 665 for Type II, CLASS C, Category 1, and ASTM E 84 for surface Burning Characteristics and as follows:

Mineral Fiber Type: Fibers manufactured from glass.

Thickness: Fiber blanket/batt insulation shall completely fill framing space of wall receiving insulation. Provide batts with slide resistance to ensure they stay in place within stud cavity or provide clips to secure in place along top edge.

Interior Wall Metal wall studs: R-13/19 typical sound insulation where indicated on wall types.

Combustion Characteristics: unfaced blanket/batt passes ASTM E 136 test.

Surface Burning Characteristics: Maximum flame spread and smoke developed values of 25 and 50, respectively.

Uses: Typical building insulation fitted in exterior metal studs or other locations not otherwise specified  
Typical building crevice “stuffing” to eliminate light and air leaks around building perimeter.

#### SAFING INSULATION AND ACCESSORIES

Semi-refractory Fiber Board Safing Insulation: Semi-rigid boards designed for use as a fire stop at openings between edge of slab and exterior panel walls, or where tops of rated walls are held within an 1" of the structural deck, produced by combining semi-refractory mineral fiber manufactured from slag with thermosetting resin binders to comply with ASTM C 612, Class 1 and 2; nominal density of 4.0 pcf; passing ASTM E 136 for combustion characteristics; r-value of 4.0 at 75 deg. F (23.9 deg C).

Caulking Compound: Material approved by manufacturer of safing insulation for sealing joint between foil backing of safing insulation and edge of concrete floor slab against penetration of smoke.

Safing Clips: Galvanized steel safing clips approved by manufacturer of safing insulation for holding safing insulation in place.

Uses: Typical building safing insulation. (Used also typically to seal up light and air gaps where top of exterior wall meets roof deck structure at rated walls.

#### AUXILIARY INSULATING MATERIALS:

Adhesive for Bonding Insulation: Type recommended by insulation manufacturer, and complying with requirements for fire performance characteristics.

Mechanical Anchors: Type and size indicated or, if not indicated, as recommended by insulation manufacturer for type of application and condition of substrate.

Mastic Sealer: Type recommended by insulation manufacturer for bonding edge joints between units and filling voids in work.

Polypropylene Netting: Type recommended by insulation manufacturer for suspending insulation between structural members.

Vinyl Tape: Type recommended by insulation manufacturer for sealing plastic vapor barrier seams.

### PART 3 - EXECUTION

#### INSPECTION AND PREPARATION:

Require Installer to examine substrates and conditions under which insulation work is to be performed. A satisfactory substrate is one that complies with requirements of the section in which substrate and related work is specified. Obtain Installer's written report listing conditions detrimental to performance of work in this section. Do not proceed with installation of insulation until unsatisfactory conditions have been corrected.

Clean substrates of substances harmful to insulations or vapor retarders, including removal of projections which might puncture vapor retarders.

#### INSTALLATION, GENERAL:

Comply with manufacturer's instructions for particular conditions of installation in each case. If printed instructions are not available or do not apply to project conditions, consult manufacturer's technical representative for specific recommendations before proceeding with work.

Extend insulation full thickness as shown over entire area to be insulated. Cut and fit tightly around obstructions, and fill voids with insulation. Remove projections which interfere with placement.

#### INSTALLATION OF GENERAL BUILDING INSULATION:

Apply insulation units to substrate by method indicated, complying with manufacturer's recommendations. If no specific method is indicated, bond units to substrate with adhesive or use mechanical anchorage to provide permanent placement and support of units.

Set vapor retarder faced units with vapor retarder to warm side of construction, except as otherwise indicated. Do not obstruct ventilation spaces, except for firestopping.

Staple or tape flanges of insulation to interior face of wall studs.

Tape joints and ruptures in vapor retarder, and seal each continuous area of insulation to surrounding construction to ensure air-tight installation.

Stuff loose glass fiber insulation into miscellaneous voids and cavity spaces around building's exterior walls systems. Compact 40% above normal maximum volume (to a density of approximately 2.5 lbs. per cu. ft.)

#### PROTECTION:

General: Protect installed insulation and vapor retarders from harmful weather exposures and from possible physical abuses, where possible by nondelayed installation of concealing work or, where that is not possible, by temporary covering or enclosure.

END OF SECTION 07200

## SECTION 07270 - FIRESTOPPING

### PART 1 - GENERAL

#### RELATED DOCUMENTS:

Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.

#### DESCRIPTION OF WORK:

This Section includes firestopping for the following:

Penetrations through fire-resistance-rated floor and roof construction including both empty openings and openings containing cables, pipes, ducts, conduits, and other penetrating items.

Penetrations through fire-resistance-rated walls and partitions including both empty openings and openings containing cables, pipes, ducts, conduits, and other penetrating items.

Sealant joints in fire-resistance-rated construction.

Related Sections: The following Sections contain requirements that relate to this Section:

Division 3 Section "Cast-In-Place Concrete" for construction of openings in concrete slabs.

Division 4 Section "Unit Masonry" for joint fillers for non-fire-resistive-rated masonry construction.

Division 7 Section "Joint Sealants" for non-fire-resistive-rated joint sealants.

#### SYSTEM PERFORMANCES:

General: Provide firestopping systems that are produced and installed to reduce the spread of fire, according to the requirements indicated, and the passage of smoke and other gases.

F-Rated Through Penetration-Firestop systems: Provide through-penetration firestop systems with F-ratings indicated, as determined per ASTM E814, but not less than that equaling or exceeding the fire-resistance rating of the constructions penetrated.

Fire-Resistive Joint Sealants: Provide joint sealants with fire-resistance ratings indicated, as determined per ASTM E119, but not less than that equaling or exceeding the fire-resistance rating of the construction in which the joint occurs.

#### QUALITY ASSURANCE:

Provide firestopping products containing no asbestos as determined by the method specified in 40 cfr Part 763, Subpart F, Appendix A, Section 1, "Polarized Light Microscopy."

Firestopping for penetrations shall be the provided by the contractor responsible for the penetration.

SUBMITTALS:

General: Submit the following according to Conditions of Contract and Division 1 Specification Sections:

Product Data: for each type of product specified.

Product certificates signed by manufacturers of firestopping products by certifying that their products comply with specified requirements.

DELIVERY, STORAGE, AND HANDLING:

Deliver firestopping products to project site in original unopened containers or packages with intact and legible manufacturers' labels identifying product and manufacturer, date of manufacture; lot number; shelf life, if applicable; qualified testing and inspecting agency's classification marking applicable to project; curing time and mixing instructions for multi-component materials.

Store and handle materials to prevent their deterioration or damage due to moisture, temperature change, contaminants, or other causes.

PROJECT CONDITIONS:

Environmental Conditions: Do not install firestopping:

When ambient and substrate temperature conditions are outside the limits permitted by firestopping manufacturer or below 40 degrees F.

When joint substrates are wet due to rain, frost, condensation or other causes.

PART 2 - PRODUCTS

FIRESTOPPING, GENERAL:

Compatibility: Provide firestopping composed of components that are compatible with each another, the substrates forming openings, and the items, if any, penetrating the firestopping under condition of service and application, as demonstrated by firestopping manufacturer based on testing and field experience.

Accessories: Provide components for each firestopping system that are needed to install fill materials. Use only components specified by the firestopping manufacturer for the designated fire-resistance-rated systems. Accessories include but are not limited to the following items:

Permanent forming/damming/backing materials including the following:

Semi-refractory fiber (mineral wool) insulation.

Sealants used in combination with other forming/damming materials to prevent leakage of fill material in liquid state.

Fire-rated foamboard.

Joint fillers for joint sealants.

Collars.

Steel sleeves.

## FILL MATERIALS FOR THROUGH-PENETRATION FIRESTOP SYSTEMS

Job-Mixed Vinyl Compound: Prepackaged vinyl-based powder product for mixing with water at Project site to produce paintable compound, passing ASTM E 136, with flame spread and smoke-developed ratings of zero per ASTM E 84.

Mortar: Prepackaged dry mix composed of a blend of inorganic binders, fillers, and lightweight aggregate formulated for mixing with water at Project site to form a non-shrinking, homogeneous mortar.

Pillows/Bags: Re-usable, heat-expanding pillow/bags composed of glass-fiber cloth cases filled with a combination of mineral fiber, water-insoluble expansion agents and fire retardant additives.

Silicone Foam: Two component, silicone-based liquid elastomer that, when mixed, expands and cures in place to produce a flexible, non-shrinking foam.

Silicone Sealant: Moisture curing, single component, silicone based, neutral-curing elastometric sealant of grade indicated below:

Grade for horizontal surfaces: Pourable (self-leveling) grade for openings in floors and other horizontal surfaces.

Grade for Vertical Surfaces: Nonsag grade for openings in vertical and other surfaces.

Available Products: Subject to compliance with requirements, products that may be incorporated in the work include, but are not limited to the following:

### Job-mixed Vinyl Compound:

USG Firecode Compound, United States Gypsum Company

### Mortar:

K-2 Firestop Mortar, Bio Fireshield, Inc.

Novasit K-10 Firestop Mortar, Bio Fireshield, Inc.

KBS-Mortar Seal, International Protective Coatings Corp.

### Pillows/Bags:

Firestop Pillows, Bio Fireshield Inc.

KBS Sealbags, International Protective Coatings Corp.

### Silicone Sealants:

Dow Corning Firestop Sealant 2000, Dow Corning Corp.

Dow Corning Firestop Sealant SL 2003, Dow Corning Corp.

Pensil 100 Firestop Sealant, General Electric Co.

CS240 Firestop Sealant, Hilti Construction Chemicals, Inc.

FIRE-RESISTANT ELASTOMERIC JOINT SEALANTS:

Elastomeric Sealant Standard: Provide manufacturer's standard chemically curing, elastomeric sealants of base polymer indicated which complies with ASTM C 920 requirements, including those referenced for Type, Grade, Class and Uses, and requirements specified in this section applicable to fire-resistive joint sealants.

Sealant colors: Provide color of exposed joint sealants to comply with the following:

Provide selections made by Architect from manufacturer's full range of standard colors for products of type indicated.

Single Component, Neutral-Curing Silicone Sealant: Type S, Grade NS, Class 25, exposure related Use NT, and joint substrate related uses M, G, A and (as applicable to joint substrates indicated) O.

Single Component, Nonsag, Urethane Sealant: Type S, Grade NS, Class 25, and uses NT, M, A, and (as applicable to joint substrates indicated) O.

Single Component, Neutral-Curing, Silicone Sealant:

Dow Corning 790, Dow Corning Corp.  
Dow Corning 795, Dow Corning Corp.  
864, Pecora Corp.

Single Component, Nonsag, Urethane Sealant:

Isoflex 880 GB, Harry S. Peterson Co., Inc.  
Isoflex 881, Harry S. Peterson Co., Inc.  
Vulkem 921, Mameco International Inc.  
Sikaflex - 15LM, Sika Corp.

MIXING

For those products requiring mixing prior to application, comply with firestopping manufacturer's directions for accurate proportional materials, water (if required), type of mixing equipment, selection of mixer speeds, mixing containers, mixing time, and other procedures needed to produce firestopping products of uniform quality with optimum performance characteristics for application indicated.

PART 3 - EXECUTION

INSPECTION:

Require installer to inspect penetrations indicated to receive firestopping for compliance with requirements, installation tolerances and other conditions affecting firestopping performance. Obtain Installer's written report listing any conditions detrimental to performance of firestopping work. Do not allow firestopper to proceed until unsatisfactory conditions have been corrected.



## PREPARATION:

Surface Cleaning: Clean out openings and joints immediately before installing firestopping to comply with recommendations of firestopping manufacturers and the following requirements:

Remove all foreign material from all openings and joint substrates which could interfere with adhesion of firestopping, including dust; paints, except for permanent, protective coatings tested and approved for firestopping adhesion and compatibility by firestopping manufacturer; oil; grease; waterproofing; water repellents; water; surface dirt and frost.

Clean opening and joint substrates and penetrating items to produce clean, sound surfaces capable of developing optimum bond with firestopping. Remove loose particles remaining from cleaning operation.

Clean concrete, masonry, unglazed surfaces of ceramic tile and similar porous opening and joint substrate surfaces, by brushing, grinding, blast cleaning, mechanical abrading, acid washing or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with firestopping. Remove loose particles remaining from above cleaning operations by vacuuming or blowing out joints with oil-free compressed air.

Remove laitance and form release agents from concrete.

Joint Priming: Prime opening and joint substrates where recommended by firestopping manufacturer based on prior experience. Apply primer to comply with firestopping manufacturer's recommendations. Confine primers to areas of firestopping bond, do not allow spillage or migration onto adjoining surfaces.

Masking Tape: Use masking tape where required to prevent contact of firestopping with adjoining surfaces which otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove firestopping smears. Remove tape immediately after tooling without disturbing firestopping seal.

## INSTALLING THROUGH-PENETRATION FIRESTOPS

General: comply with the through-penetration firestop manufacturer's installation instructions and drawings pertaining to products and applications indicated.

Install forming/damming materials and other accessories of types required to support fill materials during their application and in the position needed to produce the cross sectional shapes and depths required to achieve fire ratings of designated through-penetration firestop systems. After installing fill materials, remove combustible forming materials and other accessories not indicated as permanent components of firestop systems.

Install fill materials for through-penetration firestop systems by proven techniques to produce the following results:

Completely fill voids and cavities formed by openings, forming materials, accessories, and penetrating items.

Apply materials so they contact and adhere to substrates formed by openings and penetrating items.

For fill materials that will remain exposed after completing work, finish to produce smooth, uniform surfaces that are flush with adjoining fixtures.

### INSTALLATION OF FIRE RESISTIVE JOINT SEALANTS:

General: Comply with ASTM C 1993 and with firestopping manufacturers' printed installation instructions applicable to products and applications indicated, except where more stringent requirements apply.

Install Joint-fillers of type indicated to provide support of sealants during application and at position required to produce the cross-sectional shapes and depths of installed sealants relative to joint widths which allow optimum sealant movement capability and develop fire-resistant rating required.

Installation of Sealants: Install sealants by proven techniques that result in sealants directly contacting and fully wetting joint substrates, completely filling recesses provided for each joint configuration and providing uniform, cross-sectional shapes and depths relative to joint widths which allow optimum sealant movement capability. Install sealants at the same time joint fillers are installed.

Tooling of Nonsag Sealants: Immediately after sealant application and prior to time skinning or curing begins, tool sealants to form smooth, uniform beads of concave configuration indicated or as required to produce fire-resistive ratings, as well as to eliminate air pockets and to ensure contact and adhesion of sealant with sides of joint. Remove excess sealants from surfaces adjacent to joint. Do not use tooling agents that discolor sealants or adjacent surfaces or are not approved by sealant manufacturer.

### CLEANING

Clean off excess fill materials and sealants adjacent to openings and joints as work progresses by methods and with cleaning materials approved by manufacturers of firestopping products and of products in which opening and joints occur.

Protect firestopping during and after curing period from contact with contaminating substances or from damage resulting from construction operations or other causes so that they are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated firestopping immediately and install new materials to produce firestopping complying with special requirements.

End of SECTION 07270

## SECTION 07900 - JOINT SEALERS

### PART 1 - GENERAL

#### RELATED DOCUMENTS:

Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.

#### DESCRIPTION OF WORK:

Extent of each form and type of joint sealer is indicated on drawings and described in this section.

Refer to Division-8 Section "Tile" for joint sealers in tile work; not work of this section.

Refer to Division-8 sections for glazing requirements; not work of this section.

Refer to Division-15 and 16 sections for joint sealers in mechanical and electrical work; not work of this section.

#### SYSTEM PERFORMANCES:

Provide joints sealers that have been produced and installed to establish and maintain watertight and airtight continuous seals.

#### QUALITY ASSURANCE:

Single Source Responsibility for Joint Sealer Materials: Obtain joint sealer materials from a single manufacturer for each different product required.

#### SUBMITTALS:

Product Data: Submit manufacturer's technical data for each joint sealer product required, including instructions for joint preparation and joint sealer application and range of manufacturer's standard color selection.

#### DELIVERY, STORAGE, AND HANDLING:

Deliver materials to project site in original unopened containers or bundles with labels informing about manufacturer, product name and designation, color, expiration period for use, pot life, curing time and mixing instructions for multicomponent materials.

Store and handle materials to prevent their deterioration or damage due to moisture, temperature change, contaminants, or other causes.

PROJECT CONDITIONS:

Environmental Conditions: Do not proceed with installation of joint sealers under the following conditions:

When ambient and substrate temperature conditions are outside the limits permitted by joint sealer manufacturer or below 40 degrees F (4.4 degrees C).

When joint substrates are wet due to rain, frost, condensation or other causes.

Joint Width Conditions: Do not proceed with installation of joint sealers when joint widths are less than allowed by joint sealer manufacturer for application indicated.

PART 2 - PRODUCTS

MATERIALS, GENERAL:

Compatibility: Provide joint sealers, joint fillers and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by testing and field experience.

Colors: Provide color of exposed joint sealer indicated or, if not otherwise indicated, as selected by Architect from manufacturer's standard colors.

ELASTOMERIC JOINT SEALANTS:

Elastomeric Sealant Standard: Provide manufacturer's standard chemically curing, elastomeric sealant of base polymer indicated which complies with ASTM C 920 requirements, including those for Type, Grade, Class and Uses.

Multi-Part Nonsag Urethane Sealant: Type M, Grade NS, Class 25, and complying with the following requirements for uses:

Uses NT, M, G, A and, as applicable to joint substrates indicated, O.

Applications: Typical exterior building joints horizontal and vertical between similar and dissimilar materials closing all potential water, air and light leaks.

One-Part Pourable Urethane Sealant: Type S, Grade P; Class 25; Uses T, M, and, as applicable to joint substrates indicated, O.

Applications: Typical all exterior building joints over expansion joints in concrete walkways.

One-Part Mildew-Resistant Silicone Sealant: Type S; Grade NS; Class 25; Uses NT, G, A, and, as applicable to nonporous joint substrates indicated, O; formulated with fungicide for sealing interior joints with nonporous substrates around ceramic tile, showers, sinks and plumbing fixtures.

Applications: Typical all caulking in toilets, kitchens, shower rooms, labs and similar wet areas. Apply as required to seal all light and air leaks, between counter backsplashes and walls, around door frames, around perimeter of fixtures at walls, etc. whether or not specifically shown on drawings.

Available Products: Subject to compliance with requirements, products which may be incorporated in the work include, but are not limited to, the following:

Multi-Part Nonsag Urethane Sealant for Uses NT, M, G, A, and O:

"Chem-Calk 500"; Bostik Construction Products Div.  
"Dynatrol II"; Pecora Corp.  
"Sikaflex 2c NS"; Sika Corp.  
"Sonolastic NP 2"; Sonneborn Building Products Div., Rexnord Chem. Prod. Inc.

One-Part, Pourable, Urethane Sealant:

"Vulkem 45"; Mameco International, Inc.  
"NR-201 Urexpam"; Pecora Corp.  
"Sonolastic SL-1"; Sonneborn B.P.Div., Rexnord Chem Prod. Inc.

One-Part Mildew-Resistant Silicone Sealant:

"Dow-Corning 786"; Dow Corning Corp.  
"SCS 1702"; General Electric Co.  
"863 #345 White"; Pecora Corp.  
"Proglaze White"; Tremco Corp.

LATEX JOINT SEALANTS:

Acrylic-Emulsion Sealant: Manufacturer's standard, one part, nonsag, acrylic, mildew-resistant, acrylic-emulsion sealant complying with ASTM C 834, formulated to be painted and recommended for exposed applications on interior and on protected exterior exposures involving joint movement of not more than  $\pm 7.5$  percent.

Applications: Typical interior building joints horizontal and vertical between similar and dissimilar materials closing all potential water, air and light leaks.

Available Products: Subject to compliance with requirements, products which may be incorporated in the work include, but are not limited to, the following:

"Chem-Calk 600"; Bostik Construction Products Div.  
"AC-20"; Pecora Corp.  
"Sonolac"; Sonneborne Building Products Div.; Rexnord Chem. Prod., Inc.  
"Tremco Acrylic Latex Caulk"; Tremco Inc.

JOINT SEALANT BACKING:

General: Provide sealant backings of material and type which are non-staining; are compatible with joint substrates, sealants, primers and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.

Plastic Foam Joint Fillers: Preformed, compressible, resilient, non-waxing, non-extruding strips of plastic foam of material indicated below, and of size, shape and density to control sealant depth and otherwise contribute to producing optimum sealant performance.

Elastomeric Tubing Joint-Fillers: Neoprene, butyl or EPDM tubing complying with ASTM D 1056, non absorbent to water and gas, capable of remaining resilient at temperatures down to -26 degrees F (-15 degrees C). Provide products with low compression set and of size and shape to provide a secondary seal, to control sealant depth and otherwise contribute to optimum sealant performance.

Expanding Foam Sealant Backing: (to provide secondary seal at exterior masonry joints) 100 percent acrylic, water based impregnated expanding foam sealant. MAterials to be supplied in rolls.

Product similar to: Backerseal by Emseal Corp. (or approved equal)

Bond-Breaker Tape: Polyethylene tape or other plastic tape as recommended by sealant manufacturer for preventing bond between sealant and joint filler or other materials at back (3rd) surface of joint. Provide self-adhesive tape where applicable.

#### MISCELLANEOUS MATERIALS:

Primer: Provide type recommended by joint sealer manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint sealer substrate and field tests.

Cleaners for Nonporous Surfaces: Provide non-staining, chemical cleaner of type acceptable to manufacturer of sealant and sealant backing materials which are not harmful to substrates and adjacent nonporous materials.

### PART 3 - EXECUTION

#### INSPECTION:

Require installer to inspect joints indicated to receive joint sealers for compliance with requirements for joint configurations, installation tolerances and other conditions affecting joint sealer performance. Obtain Installer's written report listing any conditions detrimental to performance of joint sealer work. Do not allow joint sealer to proceed until unsatisfactory conditions have been corrected.

#### PREPARATION:

Surface Cleaning of Joints: Clean out joints immediately before installing joint sealers to comply with recommendations of joint sealer manufacturers and the following requirements:

Remove all foreign material from joint substrates which could interfere with adhesion of joint sealer, including dust; paints, except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer; oil; grease; waterproofing; water repellants; water; surface dirt and frost.

Clean concrete, masonry, unglazed surfaces of ceramic tile and similar porous joint substrate surfaces, by brushing, grinding, blast cleaning, mechanical abrading, acid washing or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealers. Remove loose particles remaining from above cleaning operations by vacuuming or blowing out joints with oil-free compressed air.

Remove laitance and form release agents from concrete.

Clean metal, glass, porcelain enamel, glazed surfaces of ceramic tile and other non-porous surfaces by chemical cleaners or other means which are not harmful to substrates or leave residues capable of interfering with adhesion of joint sealers.

Joint Priming: Prime joint substrates where recommended by joint sealer manufacturer based on prior experience. Apply primer to comply with joint sealer manufacturer's recommendations. Confine primers to areas of joint sealer bond, do not allow spillage or migration onto adjoining surfaces.

Masking Tape: Use masking tape where required to prevent contact of sealant with adjoining surfaces which otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

INSTALLATION OF JOINT SEALERS:

General: Comply with joint sealer manufacturers' printed installation instructions applicable to products and applications indicated, except where more stringent requirements apply.

Elastomeric Sealant Installation Standard: Comply with recommendations of ASTM C 962 for use of joint sealants as applicable to materials, applications and conditions indicated.

Latex Sealant Installation Standard: Comply with requirements of ASTM C 790 for use of latex sealants.

Installation of Sealant Backings: Install sealant backings to comply with the following requirements:

Install Joint-fillers of type indicated to provide support of sealants during application and at position required to produce the cross-sectional shapes and depths of installed sealants relative to joint widths which allow optimum sealant movement capability.

Do not leave gaps between ends of joint-fillers.

Do not stretch, twist, puncture or tear joint fillers.

Remove absorbent joint-fillers which have become wet prior to sealant application and replace with dry material.

Install bond breaker tape between sealants and joint-fillers, compression seals or back of joints where required to prevent third side adhesion of sealant to back of joint.

Installation of Sealants: Install sealants by proven techniques that result in sealants directly contacting and fully wetting joint substrates, completely filling recesses provided for each joint configuration and providing uniform, cross-sectional shapes and depths relative to joint widths which allow optimum sealant movement capability.

Tooling of Nonsag Sealants: Immediately after sealant application and prior to time skinning or curing begins, tool sealants to form smooth, uniform beads of concave configuration, to eliminate air pockets and to ensure contact and adhesion of sealant with sides of joint. Remove excess sealants from surfaces adjacent to joint. Do not use tooling agents during and after curing period from contact with contaminating substances or from damage resulting from construction operations or other causes so that they are without deterioration or damage at time of substantial completion.

Clean off excess sealants or sealant smears adjacent to joints as work progresses by methods and with cleaning materials approved by manufacturers of joint sealers and of products in which joints occur.

END OF SECTION 07900

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