



Specified Technologies, Inc.

Firestop Products for Construction Joints Applications



The industry's most complete line of firestop products and systems for head-of-wall, curtain wall, and general construction joints applications



Firestopping Construction Joints

Virtually all linear openings in buildings are referred to as joints. Although joints are found in many areas of construction, clearly they are not all alike. Additionally, test methods, test apparatus, and codes can confuse even experienced specifiers, installers, or inspectors. As a recognized leader in this area, STI offers more than just products. We are the knowledge resource. This Product and Application Guide provides complete solutions to seal these critical areas safely and economically.

Static vs Dynamic

The word joint often implies movement. Accordingly, some gaps are created to allow expansion and contraction, or compression and deflection of structural members. Events such as seismic, wind sway and vertical shear, as well as temperature changes are also factors that dictate dynamic joint systems. Conversely, static joint systems are designed for openings that will see little to no appreciable movement. In most cases, these openings simply represent a line of demarcation between two building surfaces or conditions.

Construction Joints – Three Basic Types:

- Head-of-Wall or Top of Wall (HOW)
- Curtain Wall (CW)
- General Construction Joints such as Floor to Floor (FF), Floor to Wall (FW) and Wall to Wall (WW)

Choosing the Right Construction Joint Firestop Product

Joint Type	Construction Joint Width	
	Narrow	Wide
HOW	ES Sealant PENSIL® Sealant	AS Spray
CW	ES Sealant PENSIL® Self-Leveling Sealant	AS Spray Fast Tack™ Spray PENSIL® Self-Leveling Sealant
FF FW WW	ES Sealant PENSIL® Sealant	AS Spray

Applies to both static and dynamic joints.



Specified Technologies, Inc.

Innovative Solutions for Firestopping Construction Joints

Knowledge, Technology, Systems

STI has the most UL® Classified head-of-wall, curtain wall, and general construction joints systems for static and dynamic applications. User driven products and designs provide the correct tested system for your application. While some manufacturers rely on risky engineering judgments, STI offers tested solutions!

Head-of-Wall

STI's head-of-wall package is second to none! From routine to "out of the ordinary" conditions that seem to appear on almost every project, STI has you covered. Fireproofed beams, fireproofing in flutes and conduits through the head-of-wall are just a few of the exceptional systems in our extensive head-of-wall package.

SpecSeal® AS Spray

SpecSeal® ES Sealant

Curtain Wall

The industry's most complete curtain wall UL Classified system base, featuring tubular mullion, I-mullion, steel stud, and pre-cast configurations. Our systems provide specifiers and installers with the most choices, such as multiple mineral wool manufacturers and several SpecSeal® firestop sealants to choose from depending on the application and field condition.

SpecSeal® AS Spray

PENSIL® Sealant

SpecSeal® Fast Tack™ Firestop Spray

General Construction Joints

STI offers sealant, spray and self-leveling sealant systems to accommodate the many variations found in floor-to-floor, floor-to-wall, and wall-to-wall joints. Our efficient spray systems save labor and are the installers' choice for larger and hard-to-access joints.

SpecSeal® ES Sealant

SpecSeal® AS Spray

PENSIL® Sealant

Engineering Support

STI firestop products and systems are backed by our renowned engineering and technical support teams. It's your assurance of a cost-effective, code compliant, correct solution.

Firestop Products and Systems

Engineered in the industry's most intensive, research, development, and testing program.



SpecSeal® AS Spray



SpecSeal® ES Sealant



Fast Tack™ Spray



PENSIL® Sealant



SpecSeal® Series AS Elastomeric Spray



SpecSeal® Series AS Elastomeric Spray

The Professional's Choice For Spray-Applied Firestop Protection of Joints and Penetrations

The Firestop Spray that Hangs Tough!

SpecSeal® Series AS elastomeric spray is a non-halogenated, latex-based, highly elastomeric spray coating designed to provide passive smoke and fire protection in curtain wall, head of wall, and general construction joint applications. Its unique user driven formulation provides exceptional non-sag characteristics for head of wall and overhead spray applications.

Highly Flexible, Acoustically Tested

AS elastomeric spray has been tested in both static and dynamic applications. AS spray is also engineered to restore sound attenuation properties to acoustically rated ceilings and partitions. Please contact the factory for individual designs and application requirements.

Large System Base

SpecSeal® Series AS Elastomeric Spray is tested and approved for use on a broad range of construction joint systems. A wide variety of curtain wall, head of wall, and general construction joint systems addressing both common and unique specialty applications feature all major mineral wool manufacturers and have been successfully tested in one, two, three, and four hour joints.

Water Based for Easy Installation, Touch Ups and Cleanup

SpecSeal® Series AS Elastomeric Spray is engineered to adhere to virtually all construction surfaces and may be applied using standard industrial spray equipment. It has excellent auto bonding characteristics for easy touch ups using a brush or spray, and is fully compatible with ES caulk. Cleanup is simple using soap and water.

UL® Classified and FM Approved

A wide variety of user driven systems have been UL® Classified and FM Approved.

Product

AS205



Refer to product data sheet for physical properties.

Features

- Acoustically tested: reduces sound transmission.
- ES sealant compatible for versatility in application or repair.
- Auto bonding.
- Water-resistant: will not re-emulsify when dry.
- Low abrasion: longer pump life with less maintenance.
- Low VOCs: safe. No solvents. Non-halogenated.
- UL® Classified and FM Approved.
- Tested with direct applied fireproofing.

SpecSeal® Series ES Elastomeric Sealant

A Great Firestop Caulking Product that Remains Flexible, and Reduces Sound Transfer

SpecSeal® Series ES elastomeric sealant is a non-halogenated, highly elastomeric caulk designed to provide passive smoke and fire protection in construction joints while maintaining acoustical properties.

Highly Flexible, Acoustically Tested

All tested systems have been cycled 500 times with total movement of up to 50%. ES sealant is also engineered to restore sound attenuation properties to acoustically rated ceilings and partitions. Please contact the factory for individual designs and application requirements.

Large System Base

SpecSeal® Series ES Elastomeric Sealant is tested and approved for use on a broad range of construction joint systems. It has been successfully tested in one, two, three and four hour joints when tested in accordance with UL 2079 (ASTM E1966).

Water Based for Easy Installation, Touch Ups and Cleanup

SpecSeal® Series ES Elastomeric Sealant is engineered to adhere to virtually all construction surfaces and may be applied using standard caulking equipment or by troweling. It has excellent auto bonding characteristics for easy touch ups and is fully compatible with SpecSeal® Series AS Spray. Cleanup is simple using soap and water.

UL® Classified and FM Approved

A wide variety of user driven systems have been UL® Classified and FM Approved.

Products

ES100, ES105, ES120, ES129.

Features

- Water-based for easy installation and cleanup.
- Acoustically tested: reduces sound transmission.
- AS Spray compatible for versatility in application or repair.
- Auto bonding: good retro-fit adhesion
- Water-resistant: will not re-emulsify when dry.
- Low VOCs: safe. No solvents. Non-halogenated.
- UL® Classified.



SpecSeal® Series ES Elastomeric Sealant



Refer to product data sheet for physical properties.



SpecSeal® Series FT Fast Tack™
Firestop Spray

SpecSeal® Series FT Fast Tack™ Firestop Spray

The Curtain Wall Firestop Spray That Does What Others Cannot!

Tough, Water-Resistant, Flexible Shield Against Fire and Smoke

SpecSeal® Fast Tack™ Firestop Spray is an elastomeric single component silicone/urethane hybrid spray coating designed to provide passive smoke and fire protection in construction joints.

Skins Over Quickly to Resist Water

Traditional water-based sprays can take days to dry. SpecSeal® Fast Tack™ Firestop Spray skins over and is capable of direct water contact within 45 minutes of installation.

Cures in Cold Temperatures

Unlike water-based sprays, SpecSeal® Fast Tack™ Firestop Spray cures at temperatures as low as 20°F(-10°C). Fast Tack™ cures in the presence of atmospheric moisture to form a durable, flexible, water-resistant shield against the propagation of fire, smoke and combustion byproducts. Excessive water or extreme cold may affect cure times. Contact STI Application Engineering for additional information.

Can be Top Coated

Like AS205 spray, Fast Tack™ has excellent auto bonding characteristics for easy touch-ups!

UL® Classified

SpecSeal® Fast Tack™ Spray has been successfully tested to the exacting criteria of ASTM E 1966, ANSI/UL2079, ASTM E 1399 and to the time-temperature requirements of ASTM E 119 (ANSI/UL 263) in one, two and three hour rated joint and perimeter fire containment systems.

Applications

SpecSeal® Fast Tack™ Firestop Spray is designed primarily for the protection of construction joints and excels in curtain wall safing gap conditions.

Product

FT305



Features

- All weather formula
- Tack Free in 2-4 hours
- Skins over quickly to resist water
- Apply in low temperatures
- Unique spray or self leveling formula
- Auto Bonds for easy, economical touch ups

PENSIL® Series PEN300 Silicone Sealant

A Highly Elastomeric Silicone Product

PENSIL® 300 Silicone Sealants are one-part neutral curing sealants that provide outstanding performance controlling the spread of fire, smoke, and water during fire conditions.

Highly Flexible, Excellent Adhesion and Aging

PENSIL® 300 Silicone Sealants are premium silicones that provide excellent adhesion characteristics while allowing up to $\pm 50\%$ movement. These sealants also offer exceptional aging performance.

Applications

PENSIL® 300 Silicone Sealants are used to seal general construction, curtain wall and head of wall joints in both static and dynamic applications. PENSIL® 300 Silicone Sealant is available in spray (PEN300) and self leveling (PEN300SL) grades.

UL® Classified

A wide variety of user driven systems have been UL® Classified and tested to UL2079 (ASTM E1966) in one, two, three, and four hour joints.

Products

PEN300, PEN305, PEN305SL.

Features

- Premium silicone: excellent long-term aging.
- Neutral cure: odorless application.
- Excellent adhesion: positive, long lasting bond.
- Auto bonding: allows repairs and modifications.
- Highly elastomeric: allows $\pm 50\%$ movement.
- Also approved for a variety of through-penetration firestop applications.



PENSIL® Series PEN300 Silicone Sealant



Refer to product data sheet for physical properties.

Products and Specs At a Glance...

Product	Application						Performance	
	Application Method	Material Type	Application Temperature	Tack-Free Time*	Clean Up	Application Productivity	UL® 2079 Tested	% Movement
Series ES	Caulk Gun	Acrylic	40-95°F	2 Hours	Water	Better	Yes	±15%
Series AS	Spray	Acrylic	60-90°F	2 Hours	Water	Best	Yes	±18.75%
Fast Tack	Spray or Self Leveling	Silicone Co-Polymer	0-90°F	30 Minutes	Low VOC Min. Spirits	Best	Yes	±50%
Series Pen	Caulk Gun or Self Leveling	Silicone	(35)-140°F	5-9 Hours	Min. Spirits	Good	Yes	±50%

*Tack Free time dependent upon temperature and humidity. Consult appropriate product data sheet for more information.

Joint Estimation Table*

Joint Width	Per 1/8" Installed Depth			Per 1/4" installed Depth			Per 1/2" Installed Depth			Per 1" Installed Depth		
	Cu. In. Per Ft.	Ft./Gal.	Gal./100 Ft.	Cu.In. Per Ft.	Ft./Gal.	Gal./100 Ft.	Cu.In. Per Ft.	Ft./Gal.	Gal./100 Ft.	Cu.In. Per Ft.	Ft./Gal.	Gal./100 Ft.
0.5	0.8	308.0	0.3	1.5	154.0	0.6	3.0	77.0	1.3	6.0	38.5	2.6
0.75	1.1	205.3	0.5	2.2	102.7	1.0	4.5	51.3	1.9	9.0	25.7	3.9
1.0	1.5	154.0	0.6	3.0	77.0	1.3	6.0	38.5	2.6	12.0	19.3	5.2
1.5	2.2	102.7	1.0	4.5	51.0	2.0	9.0	25.7	3.9	18.0	12.8	7.8
2.0	3.0	77.0	1.3	6.0	38.0	2.6	12.0	19.3	5.2	24.0	9.6	10.4
2.5	3.8	61.6	1.6	8.0	31.0	3.3	15.0	15.4	6.5	30.0	7.7	13.0
3.0	4.5	51.3	1.9	9.0	25.0	3.9	18.0	12.8	7.8	36.0	6.4	15.6
3.5	5.2	44.0	2.3	11.0	22.0	4.6	21.0	11.0	9.1	42.0	5.5	18.2
4.0	6.0	38.5	2.6	12.0	19.0	5.2	24.0	9.6	10.4	48.0	4.8	20.8
5.0	7.5	30.8	3.2	15.0	15.0	6.5	30.0	7.7	13.0	60.0	3.9	26.0
6.0	9.0	25.7	3.9	18.0	12.0	7.8	36.0	6.4	15.6	72.0	3.2	31.2

Look up the joint width in left hand column. Calculations for depths ranging from 1/8" (0.125") to 1" are provided. Stated values are for caulking. To calculate spray requirements, add actual joint width + overspray to determine JOINT WIDTH. For example: actual joint width = 4", overspray = 1" on both sides. JOINT WIDTH in table would be 6". For wider joints such as 8" joints, double the values shown in the 4" JOINT WIDTH estimation.

* Metric conversions are available. Please contact Tech Support at 800-992-1180.

Product Estimation and Installation

Series AS Spray Equipment and Estimation

SpecSeal® Series AS200 Elastomeric Spray, as compared to paint, is a heavier architectural coating. It is designed to be applied at a wet coating thickness of 1/8 in. (0.125 in., 125 mils). At this coating thickness, the pump will consume one gallon of coating for every 12.8 sq. ft. Thus, the equipment used to apply it must be properly sized and matched in order to provide the required production rate. A few factors are critical in the selection of the right spray equipment.

Pump: The spray pump must be capable of supplying sufficient material to the gun to properly atomize the coating when sprayed through a 0.026 in. spray tip (orifice) and provide a continuous spray without excessive surging or pausing. The pump will need to be capable of developing 3000 PSI (or more). The flow rate must be one gallon per minute (G.P.M.) *minimum*.

We recommend a 1 G.P.M. pump or higher in order to satisfy higher production requirements and to allow for larger hoses or tip sizes at the higher end of the range.

A SPRAY UNIT CAPABLE OF SPRAYING BLOCK FILLERS OR OTHER HEAVIER ARCHITECTURAL COATINGS SHOULD BE ADEQUATE.

Tip Size: The tip size may vary from approximately 0.023 in. to 0.026 in. The smaller tip will allow for spraying at a lower delivery rate which may afford the applicator better control in certain applications. Moving to the larger size will increase delivery rates but may also require a larger pump or shorter fluid lines. Keep in mind that the tip will gradually wear and become larger. A reversible tip will help clear the occasional clog.

We recommend that the applicator use a new 0.023 in. to 0.026 in. spray tip. If higher production rates are required and the pump can support it, the larger tip size may be used. Consult the spray gun manufacturer for tips that will produce the desired spray pattern.

Fluid Lines: The diameter and length of the fluid lines will also effect the ability of the pump to supply the tip at an adequate rate. Longer hoses and the need to raise the material up from floor level to high ceilings will also be a factor in the pump's ability to supply the gun.

We Recommend a minimum of 3/8 in. I.D. hose for up to 50 ft. runs and 1/2 in. to 3/4 in. for longer runs. NOTE: Pump discharge ports and all fittings must be minimally as large as the hose in order to benefit from increasing the hose size.

SAFETY NOTE: AIRLESS SPRAY EQUIPMENT OPERATES AT VERY HIGH PRESSURE. PROTECTIVE CLOTHING, GLOVES, AND EYE PROTECTION ARE REQUIRED. CONSULT SPRAY EQUIPMENT MANUFACTURER FOR RECOMMENDATIONS CONCERNING THE SAFE USE AND HANDLING OF THIS EQUIPMENT. THOROUGHLY REVIEW MSDS AND PRODUCT DATA SHEETS PRIOR TO USE.

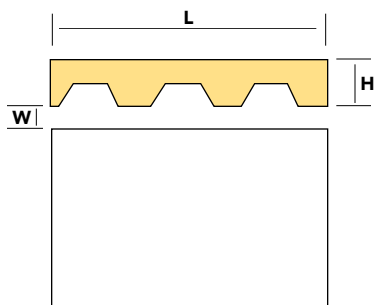
The following equipment is manufactured by Titan Tool, Inc., Franklin Lakes, NJ.



PowrTwin Model 3500 Sprayer

Electric or gas powered airless sprayer

Elastomeric Spray Estimation for Fluted Deck



- L** = Length of Joint (ft)
- W** = Width of Joint (in)
- H** = Height of Joint (in)
- Area of Flutes** (sq. in.) = $(L \times 12 \times H) / 2$
- Area of Joint** (sq. in.) = $L \times 12 \times W$
- Area of Overspray** (sq. in.) = $L \times 12$
- Volume** (cu. in.) = (Area of Flutes + Area of Joint + Area of Overspray) $\times .125^*$

Multiply by 2 for both sides.

One 5-gallon pail of Series AS Elastomeric Spray contains 1,155 cubic inches

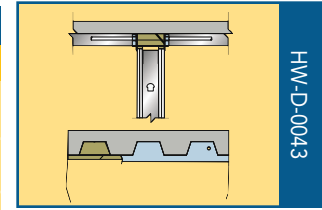
*Based on 1/8 in. wet coating thickness

Important Note: This information is provided for estimational purposes only. No waste or excess overspray has been included and applicator skill may affect requirements.

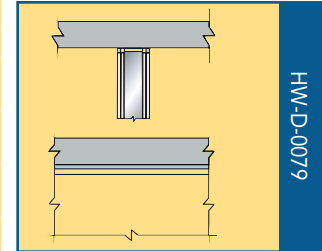
Head-of-Wall Systems

Gypsum Wall Construction

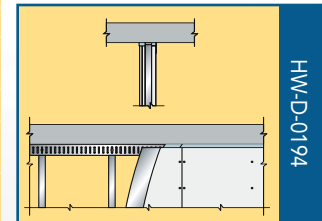
System No.	Description	Floor/Roof	Hourly Rating	Product(s)
HW-D-0034	Max. 1" joint. Caulk and backing. 1/4" sealant depth.	Steel Deck	1 or 2 Hrs	ES
✓ HW-D-0043	Max. 1 to 2" joint. Optional metal or plastic conduit. Perpendicular wall.	Steel deck	1,2,3 or 4 Hrs	AS200
HW-D-0044	Max. 1 to 2" joint.	Concrete slab	1,2,3 or 4 Hrs	AS200
✓ HW-D-0054	Max. 2" joint. Parallel wall.	Steel deck	2 Hrs	ES/LCI*
HW-D-0079	Max. 3/4" joint. Caulk only.	Concrete slab	1 or 2 Hrs	ES
HW-D-0137	Max. 1" joint. Parallel wall.	Steel deck	1 or 2 Hrs	AS200
HW-D-0194	Max. 3/4" joint. Shaft wall system. Caulk only.	Concrete slab	1 or 2 Hrs	ES
HW-D-0210	Max. 3/4" joint. Parallel wall. Caulk only.	Steel deck	1 or 2 Hrs	ES
HW-D-0241	Max. 3/4" joint. Castle cut gypsum board. Caulk only.	Steel deck	1 or 2 Hrs	LCI*
HW-D-0242	Max. 3/4" joint. Caulk only.	Concrete slab	1 or 2 Hrs	LCI*
HW-D-0243	Max. 3/4" joint. Parallel wall. Caulk only.	Steel deck	1 or 2 Hrs	LCI*
✓ HW-D-0363	Max. 3/4" joint. Perpendicular wall.	Steel deck	1 or 2 Hrs	AS200
HW-D-0365	Max. 1" joint. Parallel wall offset on valley of flute.	Steel deck	1 or 2 Hrs	AS200
✓ HW-D-0371	Max. 3/4" joint.	Concrete slab	1 or 2 Hrs	AS200
✓ HW-S-0043	Max. 3/4" joint. Caulk only. Allows point contact.	Concrete slab	1 or 2 Hrs	ES
HW-S-0044	Max. 3/4" joint. Castle cut gypsum. Caulk only. Allows point contact.	Steel deck	1 or 2 Hrs	ES



HW-D-0043



HW-D-0079



HW-D-0194

Please reference individual UL® Classified Systems for movement.
*See LCI Product Data Sheet for further information.

Concrete/Block Wall Construction

System No.	Description	Floor/Roof	Hourly Rating	Product(s)
HW-D-0039	Max. 1" joint. Caulk and backing. 1/4" sealant depth. Perpendicular wall.	Steel Deck	1 or 2 Hrs	ES
HW-D-0041	Max. 1" joint. Caulk over backer rod.	Concrete slab	1,2 or 3 Hrs	ES
✓ HW-D-0055	Max. 1" joint. Parallel wall.	Steel deck	1 or 2 Hrs	AS200
✓ HW-D-0086	Max. 1 to 2" joint. Optional metal or plastic conduit. Perpendicular wall.	Steel deck	1,2,3 or 4 Hrs	AS200
HW-D-0156	Max. 2" joint. Caulk and backing.	Concrete slab	1,2,3 or 4 Hrs	ES
HW-D-0157	Max. 2" joint. Caulk and backing.	Concrete slab	1,2,3 or 4 Hrs	PEN300
HW-D-0236	Max. 3/4" joint. Parallel wall. Caulk only.	Steel deck	1 or 2 Hrs	ES
HW-D-0244	Max. 3/4" joint. Caulk only.	Concrete slab	1 or 2 Hrs	LCI*
HW-D-0245	Max. 3/4" joint. Parallel wall. Caulk only.	Steel deck	1 or 2 Hrs	LCI*
HW-D-0312	Max. 1" joint. Caulk over backer rod.	Concrete slab	1,2 or 3 Hrs	PEN300
HW-D-0366	Max. 1" joint. Parallel wall offset on valley of flute.	Steel deck	1 or 2 Hrs	AS200
HW-D-1001	Max. 4" joint. Caulk and backing.	Concrete slab	1,2, or 3 Hrs	PEN300
HW-D-1004	Max. 4" joint. Silicone foam.	Concrete slab	1 or 2 Hrs	PEN200
HW-D-1005	Max. 4" joint. Spray and backing.	Concrete slab	1 or 2 Hrs	AS200
HW-D-1006	Max. 4" joint. Caulk and backing.	Concrete slab	1,2, or 3 Hrs	ES
HW-D-1018	Max. 4" joint. Caulk and backing. 1/4" sealant system.	Concrete slab	1 or 2 Hrs	PEN300
HW-D-1034	Max. 4" joint. Spray and backing.	Concrete slab	1,2, or 3 Hrs	AS200

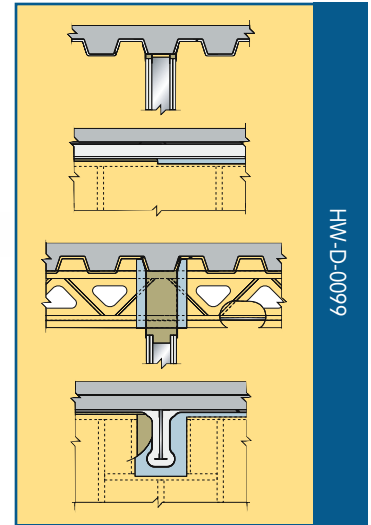
Please reference individual UL® Classified Systems for movement.
*See LCI Product Data Sheet for further information.

✓ = optimum system

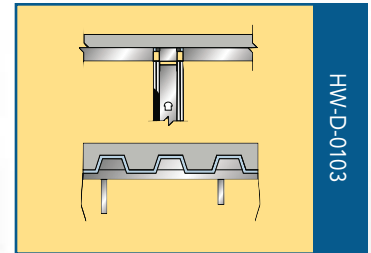
Head of Wall Systems for Fireproofing and Special Conditions

System No.	Description	Floor/Roof	Hourly Rating	Product(s)
HW-D-0088	Max. 1" joint. Perpendicular wall. Fireproofed deck. Cafco® or Monokote® Fireproofing.	Steel deck	1 or 2 Hrs	AS200
✓ HW-D-0099	Max. 1" joint. Parallel gypsum wall. Fireproofed deck and beam/joist penetration. Cafco® or Monokote® Fireproofing.	Steel deck	1 or 2 Hrs	AS200
HW-D-0102	Max. 1 to 2" joint. Perpendicular wall. Fireproofing in the flutes. Cafco® or Monokote® Fireproofing	Steel deck	1,2,3 or 4 Hrs	AS200
✓ HW-D-0103	Max. 3/4" joint. Castle cut gypsum board. Caulk only. Optional Cafco® or Monokote® Fireproofing	Steel deck	1 or 2 Hrs	ES
HW-D-0136	Max. 1" joint. Perpendicular gypsum wall. Fireproofing in the flutes. Cafco® or Monokote® Fireproofing	Steel deck	1 or 2 Hrs	AS200
HW-D-0139	Max. 1" joint. Perpendicular concrete wall. Fireproofed deck. Cafco® or Monokote® Fireproofing.	Steel deck	1, 2 or 3 Hrs	AS200
HW-D-0140	Max. 1" joint. Parallel concrete wall. Fireproofed deck and beam/joist penetration. Cafco® or Monokote® Fireproofing.	Steel deck	1, 2 or 3 Hrs	AS200
HW-D-0152	Max. 1 to 2" joint. Perpendicular gypsum wall. Fireproofing in the flutes. Cafco® or Monokote® Fireproofing	Steel deck	1,2,3 or 4 Hrs	AS200
HW-D-0153	Max. 1" joint. Parallel gypsum wall. Fireproofed deck and beam/joist penetration. Cafco® or Monokote® Fireproofing.	Steel deck	1 or 2 Hrs	AS200
HW-D-0252	Max. 1" joint. Gypsum wall to bottom of beam. Cafco® or Monokote® Fireproofing	Floor supported by beam.	1 or 2 Hrs	AS200
HW-D-0253	Max. 1" joint. Concrete wall to bottom of beam. Cafco® or Monokote® Fireproofing	Floor supported by beam.	1,2 or 3 Hrs	AS200
✓ HW-D-0260	Max. 3/4" joint. Flutes and joint filled with fireproofing. Cafco® or Monokote® Fireproofing	Steel deck	1 or 2 Hrs	AS200
✓ HW-D-0377	Fireproofed Beam Parallel to Gypsum Wall with Gap Between Wall and Beam Sealed.	Fireproofed steel deck	1 and 2 hr	AS200
HW-D-0378	Fireproofed Beam Parallel to Concrete Wall with Gap Between Wall and Beam Sealed.	Fireproofed steel deck	1 and 2 hr	AS200

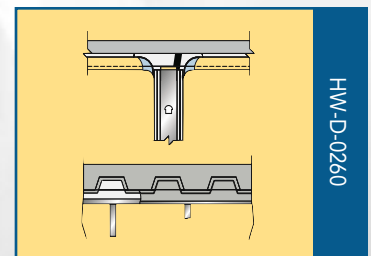
Please reference individual UL® Classified Systems for movement.



HW-D-0099



HW-D-0103



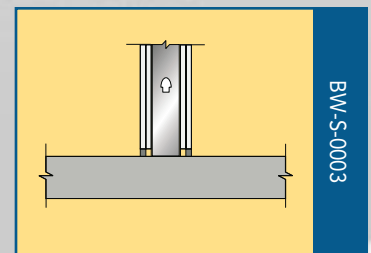
HW-D-0260

Bottom of Wall Systems

System No.	Description	Floor/Roof	Hourly Rating	Product(s)
BW-S-0003	Max. 3/4" joint. Caulk only.	Concrete floor	1 or 2 Hrs	ES, LCI*

Please reference individual UL® Classified Systems for movement.

*See LCI Product Data Sheet for further information.



BW-S-0003

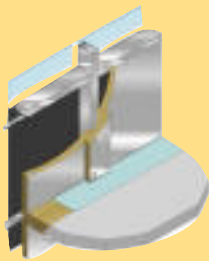
✓ = optimum system

Curtain Wall Systems

CW-S-1002



CW-S-2003



Steel Stud Curtain Walls

System No.	Description	Product(s)
CW-S-1002	Gyp.sheathing/steel studs, min. wool insulation. Exterior surfaces opt.	AS200/Fast Tack™ (T)
CW-S-1003	Gyp.sheathing/steel studs, fiberglass insulation. Exterior surfaces opt.	AS200/Fast Tack™ (T)
CW-S-1006	Gyp.sheathing/steel studs, min. wool insulation. Exterior surfaces opt.	AS200/Fast Tack™ (I)
✓ CW-S-1010	Gyp.sheathing/steel studs, min. wool. Ext. opt. No Int. Gyp. Below slab.	AS200/Fast Tack™ (T)
✓ CW-S-1012	Gyp.sheathing/steel studs, min. wool insulation. Exterior surfaces opt.	AS200/Fast Tack™ (R)
✓ CW-S-1013	Gyp.sheathing/steel studs, fiberglass insulation. Exterior surfaces opt.	AS200/Fast Tack™ (R)
✓ CW-S-1014	Gyp.sheathing/steel studs, min. wool. Ext. opt. No Int. Gyp. Below slab.	AS200/Fast Tack™ (R)

Insulation Key: T=Thermafiber, I=IIG, R=Roxul

Aluminum Tubular Mullion Curtain Walls - Glass Spandrel

System No.	Description	Product(s)
CW-D-2008	2-in. 8 pcf CW insulation, max. 8-in. wide safing slot. 5% vertical shear.	AS200/Fast Tack™ (T)
CW-D-2011	4-in. 4 pcf CW insulation, max. 8-in. wide safing slot. 5% vertical shear.	AS200/Fast Tack™ (T)
CW-D-2022	2-in. 8 pcf CW insulation, max. 8-in. wide safing slot. 5% vertical shear.	AS200/Fast Tack™ (I)
✓ CW-D-2031	2-in. 8 pcf CW insulation, max. 8-in. wide safing slot. 5% vertical shear.	AS200/Fast Tack™ (R)
✓ CW-D-2039	Thermafiber™ Light Gauge Framing Components, max. 4-in. wide safing slot. 5% vertical shear.	AS200/Fast Tack™ (T)
CW-S-2003	2-in. 8 pcf CW insulation, max. 8-in. wide safing slot.	AS200/Fast Tack™ (T)
CW-S-2009	2-in. 8 pcf CW insulation, max. 8-in. wide safing slot.	AS200/Fast Tack™ (R)
CW-S-2034	4-in. 4 pcf CW insulation, max. 8-in. wide safing slot.	AS200/Fast Tack™ (T)
CW-S-2039	2-in. 8 pcf CW insulation, max. 8-in. wide safing slot.	AS200/Fast Tack™ (F)
CW-S-2044	2-in. 8 pcf CW insulation, max. 8-in. wide safing slot.	AS200/Fast Tack™ (I)
CW-S-2050	2-in. 8pcf CW insulation, max. 8-in. wide safing slot.	AS200/Fast Tack™ (I) 3 Hr System!
✓ CW-S-2055	2-in. 8 pcf CW insulation, max. 8-in. wide safing slot.	AS200/Fast Tack™ (R)
CW-S-2058	Thermafiber™ Light Gauge Framing Components, max. 4-in. wide safing slot.	AS200/Fast Tack™ (T)

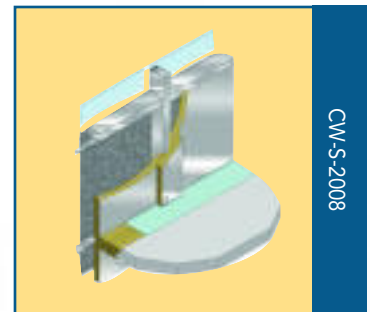
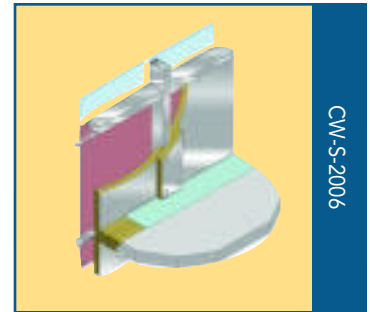
Insulation Key: T = Thermafiber, I = IIG, R = Roxul, F = Fibrex

NOTE: Unless otherwise noted, STI Curtain Wall Systems are all 2-hour systems. The "D" suffix systems are dynamic; the "S" suffix systems are static.

✓ = optimum system

Aluminum Tubular Mullion Curtain Walls - Aluminum Spandrel

System No.	Description	Product(s)
CW-D-2009	2-in. 8 pcf CW insulation, max. 8-in. wide safing slot. 5% vertical shear.	AS200/Fast Tack™ (T)
CW-D-2012	4-in. 4 pcf CW insulation, max. 8-in. wide safing slot. 5% vertical shear.	AS200/Fast Tack™ (T)
CW-D-2023	2-in. 8 pcf CW insulation, max. 8-in. wide safing slot. 5% vertical shear.	AS200/Fast Tack™ (I)
CW-D-2032	2-in. 8 pcf CW insulation, max. 8-in. wide safing slot. 5% vertical shear.	AS200/Fast Tack™ (R)
CW-D-2040	Thermafiber™ Light Gauge Framing Components, max. 4-in. wide safing slot. 5% vertical shear.	AS200/Fast Tack™ (T)
CW-S-2006	2-in. 8 pcf CW insulation, max. 8-in. wide safing slot.	AS200/Fast Tack™ (T)
CW-S-2010	2-in. 8 pcf CW insulation, max. 8-in. wide safing slot.	AS200/Fast Tack™ (R)
CW-S-2035	4-in. 4 pcf CW insulation, max. 8-in. wide safing slot.	AS200/Fast Tack™ (T)
CW-S-2040	2-in. 8 pcf CW insulation, max. 8-in. wide safing slot.	AS200/Fast Tack™ (F)
CW-S-2045	2-in. 8 pcf CW insulation, max. 8-in. wide safing slot.	AS200/Fast Tack™ (I)
CW-S-2051	2-in. 8 pcf CW insulation, max. 8-in. wide safing slot.	AS200/Fast Tack™ (I) 3 Hr System!
CW-S-2056	2-in. 8 pcf CW insulation, max. 8-in. wide safing slot.	AS200/Fast Tack™ (R)
CW-S-2059	Thermafiber™ Light Gauge Framing Components, max. 4-in. wide safing slot.	AS200/Fast Tack™ (T)



Insulation Key: T = Thermafiber, I = IIG, R = Roxul, F = Fibrex

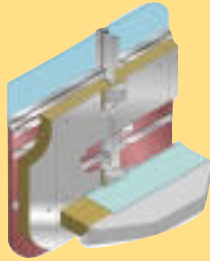
Aluminum Tubular Mullion Curtain Walls - Stone Spandrel

System No.	Description	Product(s)
CW-D-2010	2-in. 8 pcf CW insulation, max. 8-in. wide safing slot. 5% vertical shear.	AS200/Fast Tack™ (T)
CW-D-2013	4-in. 4 pcf CW insulation, max. 8-in. wide safing slot. 5% vertical shear.	AS200/Fast Tack™ (T)
CW-D-2024	2-in. 8 pcf CW insulation, max. 8-in. wide safing slot. 5% vertical shear.	AS200/Fast Tack™ (I)
✓ CW-D-2033	2-in. 8 pcf CW insulation, max. 8-in. wide safing slot. 5% vertical shear.	AS200/Fast Tack™ (R)
CW-D-2041	Thermafiber™ Light Gauge Framing Components, max. 4-in. wide safing slot. 5% vertical shear.	AS200/Fast Tack™ (T)
CW-S-2008	2-in. 8 pcf CW insulation, max. 8-in. wide safing slot.	AS200/Fast Tack™ (T)
CW-S-2011	2-in. 8 pcf CW insulation, max. 8-in. wide safing slot.	AS200/Fast Tack™ (R)
CW-S-2036	4-in. 4 pcf CW insulation, max. 8-in. wide safing slot.	AS200/Fast Tack™ (T)
CW-S-2041	2-in. 8 pcf CW insulation, max. 8-in. wide safing slot.	AS200/Fast Tack™ (F)
CW-S-2046	2-in. 8 pcf CW insulation, max. 8-in. wide safing slot.	AS200/Fast Tack™ (I)
CW-S-2052	2-in. 8 pcf CW insulation, max. 8-in. wide safing slot.	AS200/Fast Tack™ (I) 3 Hr System!
✓ CW-S-2057	2-in. 8 pcf CW insulation, max. 8-in. wide safing slot.	AS200/Fast Tack™ (R)
CW-S-2060	Thermafiber™ Light Gauge Framing Components, max. 4-in. wide safing slot.	AS200/Fast Tack™ (T)

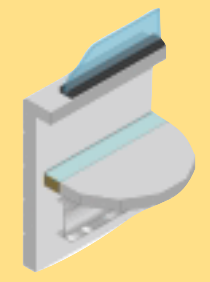
Insulation Key: T = Thermafiber, I = IIG, R = Roxul, F = Fibrex

✓ = optimum system

CW-S-2021



CW-S-2014



Curtain Wall Systems (Continued)

Aluminum I Mullion Curtain Walls - Glass Spandrel		
System No.	Description	Product(s)
CW-D-2001	4-in. 4 pcf CW insulation, max. 10-in. wide safing slot. 5% vertical shear.	AS200/Fast Tack™ (T)
CW-S-2021	4-in. 4 pcf CW insulation, max. 10-in. wide safing slot.	AS200/Fast Tack™ (T)
CW-S-2049	3-in. 8 pcf CW insulation, max. 4-in. wide safing slot.	AS200/Fast Tack™ (I) 3 Hr System!

Insulation Key: T = Thermafiber, I = IIG

Aluminum I Mullion Curtain Walls - Aluminum Spandrel		
System No.	Description	Product(s)
CW-D-2002	4-in. 4 pcf CW insulation, max. 10-in. wide safing slot. 5% vertical shear.	AS200/Fast Tack™ (T)
CW-S-2022	4-in. 4 pcf CW insulation, max. 10-in. wide safing slot.	AS200/Fast Tack™ (T)

Insulation Key: T = Thermafiber

Aluminum I Mullion Curtain Walls - Stone Spandrel		
System No.	Description	Product(s)
CW-D-2003	4-in. 4 pcf CW insulation, max. 10-in. wide safing slot. 5% vertical shear.	AS200/Fast Tack™ (T)
CW-S-2023	4-in. 4 pcf CW insulation, max. 10-in. wide safing slot.	AS200/Fast Tack™ (T)

Insulation Key: T = Thermafiber

Pre-Cast Concrete Curtain Walls - Non Insulated		
System No.	Description	Product(s)
CW-D-2004	Non-insulated panels, max. 8-in. wide safing slot. 5% vertical shear.	AS200/Fast Tack™ (R)
CW-D-2005	Non-insulated panels, max. 8-in. wide safing slot. 5% vertical shear.	AS200/Fast Tack™ (T)
CW-D-2020	Non-insulated panels, max. 8-in. wide safing slot. 5% vertical shear.	AS200/Fast Tack™ (I)
CW-S-2013	Non-insulated panels, max. 8-in. wide safing slot.	AS200/Fast Tack™ (R)
CW-S-2014	Non-insulated panels, max. 8-in. wide safing slot.	AS200/Fast Tack™ (T)
CW-S-2047	Non-insulated panels, max. 8-in. wide safing slot.	AS200/Fast Tack™ (I)

Insulation Key: T = Thermafiber, I = IIG, R = Roxul

Pre-Cast Concrete Curtain Walls - Insulated		
System No.	Description	Product(s)
CW-D-2006	2-in. 8 pcf CW insulation, max. 8-in. wide safing slot. 5% vertical shear.	AS200/Fast Tack™ (T)
CW-D-2007	2-in. 8 pcf CW insulation, max. 8-in. wide safing slot. 5% vertical shear.	AS200/Fast Tack™ (R)
CW-D-2021	2-in. 8 pcf CW insulation, max. 8-in. wide safing slot. 5% vertical shear.	AS200/Fast Tack™ (I)
CW-S-2025	2-in. 8 pcf CW insulation, max. 8-in. wide safing slot.	AS200/Fast Tack™ (T)
CW-S-2026	2-in. 8 pcf CW insulation, max. 8-in. wide safing slot.	AS200/Fast Tack™ (R)
CW-S-2048	2-in. 8 pcf CW insulation, max. 8-in. wide safing slot.	AS200/Fast Tack™ (I) 3 Hr System!

Insulation Key: T = Thermafiber, I = IIG, R = Roxul

Anatomy of a Curtain Wall

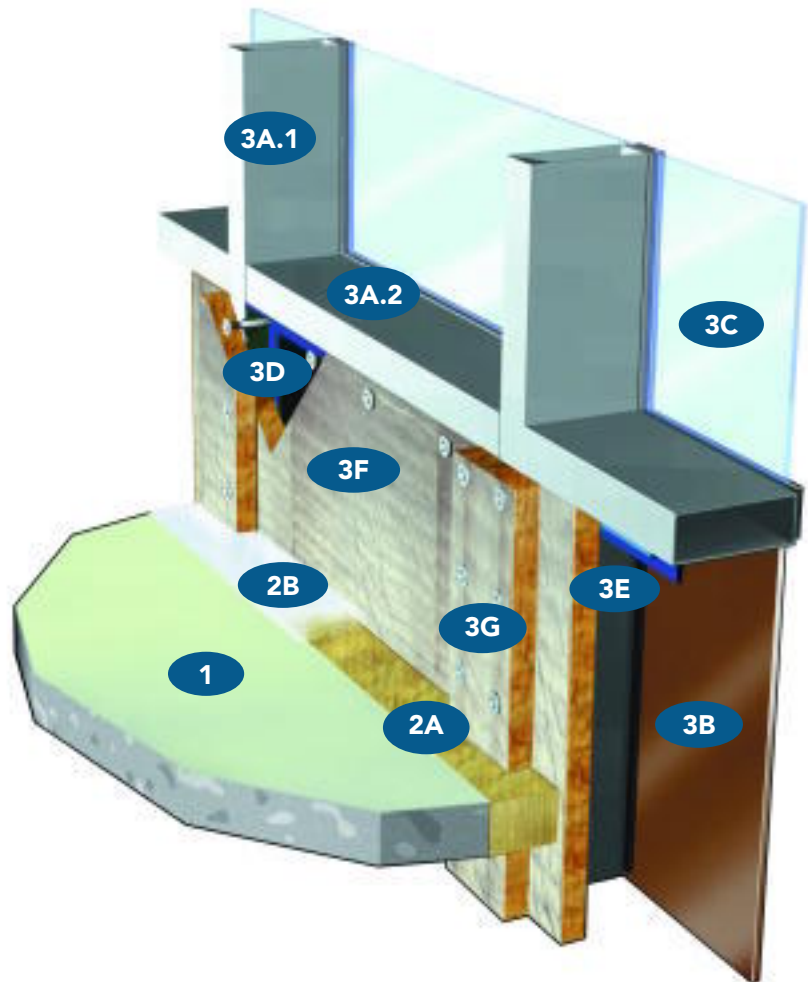
1. Concrete Floor

2. Safing System

- 2A. Forming Material
- 2B. Fill, Void, or Cavity Material

3. Curtain Wall Assembly

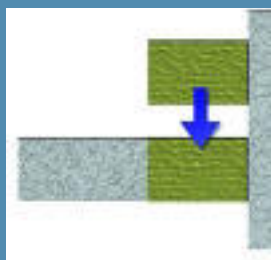
- 3A. Framing
 - 3A.1. Aluminum Mullions
 - 3A.2. Aluminum Transoms
- 3B. Spandrel Panels
- 3C. Vision Panels
- 3D. Stiffener Tees
- 3E. Spandrel Panel Perimeter Angles
- 3F. Curtain Wall Insulation
- 3G. Framing Covers-Curtainwall Insulation



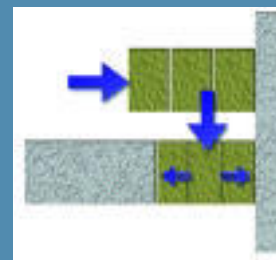
Mineral Wool Orientation... Sometimes It Pays To Go Against The Grain!

Mineral wool orientation can be critical in rated designs. The ability to compress and rebound allows joints to move and assures a fit that starts and stays tight!

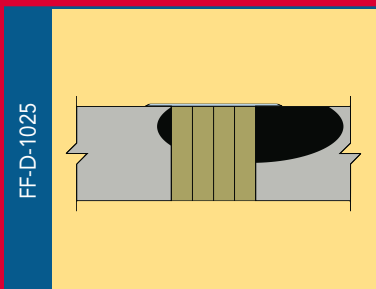
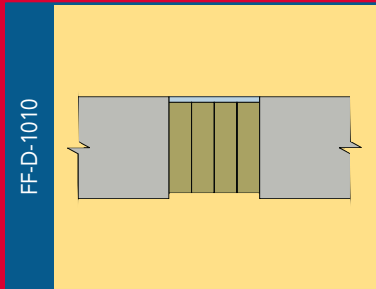
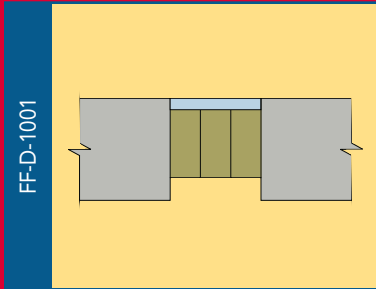
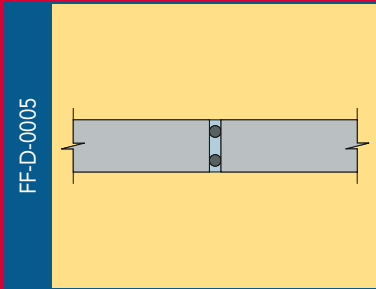
Oriented parallel to the floor, mineral wool is hard to compress and has no rebound.



Oriented perpendicular to the floor, mineral wool can be compressed for a tight fit and rebounds to keep the seal tightly closed.



General Construction Joints

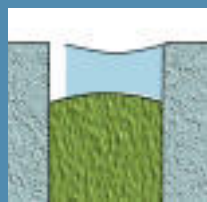


Floor-to-Floor Concrete Systems			
System No.	Description	Hourly Rating	Product(s)
✓ FF-D-0001	Max. 1" joint. Caulk over backer rod (both sides).	1,2 or 3 Hrs	PEN300 or PEN300SL (top)
✓ FF-D-0005	Max. 1" joint. Caulk over backer rod (both sides).	1,2 or 3 Hrs	ES
FF-D-0015	Max. 2" joint. Caulk and backing.	1,2,3 or 4 Hrs	ES
FF-D-0016	Max. 2" joint. Caulk and backing.	1,2,3 or 4 Hrs	PEN300 or PEN300SL
FF-D-0019	Max. 1" joint. Caulk and backing. Precast, autoclaved, aerated concrete.	1 or 1-1/2 Hrs	PEN300 or PEN300SL
FF-D-0028	Max. 2" joint. Spray and backing.	1,2,3 or 4 Hrs	AS200
FF-D-0035	Max. 1/2" joint. Caulk only.	1 or 2 Hrs	ES
FF-D-0036	Max. 1/2" joint. Caulk only.	1 or 2 Hrs	PEN300 or PEN300SL
FF-D-1001	Max. 4" joint. Caulk and backing.	1,2 or 3 Hrs	PEN300 or PEN300SL
FF-D-1006	Max. 4" joint. Silicone foam.	1 or 2 Hrs	PEN200
FF-D-1007	Max. 4" joint. Spray and backing.	1 or 2 Hrs	AS200
FF-D-1008	Max. 4" joint. Caulk and backing.	1, 2 or 3 Hrs	ES
FF-D-1010	Max. 4" joint. Caulk and backing. 1/4" of sealant.	1 or 2 Hrs	PEN300 or PEN300SL
✓ FF-D-1025	Max. 4" joint. Spray and backing.	1, 2 or 3 Hrs	AS200
FF-S-0013	Max. 3/4" joint. Caulk and ULTRA BLOCK® forming.	1 or 2 Hrs	PEN300 or PEN300SL
FF-S-0020	Max. 2" joint. Caulk and ULTRA BLOCK® forming.	1,2, 3 or 4 Hrs	PEN300 or PEN300SL
FF-S-1009	Max. 4" joint. Caulk and ULTRA BLOCK® forming.	1 or 2 Hrs	PEN300 or PEN300SL

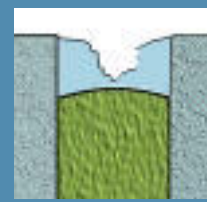
✓ = optimum system

Typical Modes of Joint Failure

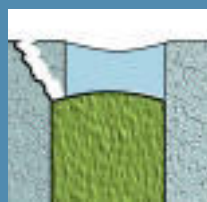
Know and avoid the pitfalls by careful **PLANNING, PREPARATION, and APPLICATION!**



Adhesive Failure
Problem: Sealant pulls away from substrate.
Solution: Improve bond by cleaning all contact areas



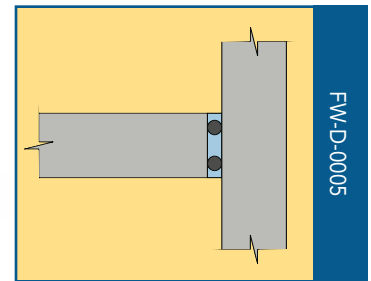
Cohesive Failure
Problem: Sealant tears when extended.
Solution: Choose a more flexible joint design.



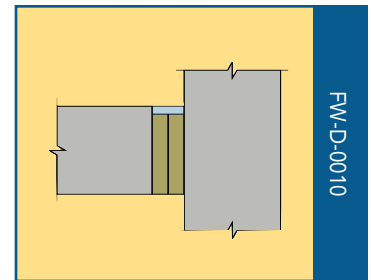
Substrate Failure
Problem: Contact surfaces fail due to stress applied by sealant.
Solution: Repair substrate and/or choose a more flexible joint design.

Floor-to-Wall Concrete Systems			
System No.	Description	Hourly Rating	Product(s)
✓ FW-D-0005	Max. 1" joint. Caulk over backer rod (both sides).	1,2 or 3 Hrs	ES
FW-D-0009	Max. 2" joint. Caulk and backing.	1,2,3 or 4 Hrs	ES
FW-D-0010	Max. 2" joint. Caulk and backing.	1,2,3 or 4 Hrs	PEN300 or PEN300SL
FW-D-0014	Max. 1" joint. Caulk and backing. Precast autoclaved, aerated concrete.	1 or 1-1/2 Hrs	PEN300 or PEN300SL
FW-D-0023	Max. 2" joint. Spray and backing.	1,2,3 or 4 Hrs	AS200
FW-D-0030	Max. 1/2" joint. Caulk only.	1 or 2 Hrs	ES
FW-D-0031	Max. 1/2" joint. Caulk only.	1 or 2 Hrs	PEN300 or PEN300SL
✓ FW-D-0032	Max. 1" joint. Caulk over backer rod (both sides).	1,2 or 3 Hrs	PEN300 or PEN300SL (top)
FW-D-1001	Max. 4" joint. Caulk and backing.	1,2 or 3 Hrs	PEN300 or PEN300SL
FW-D-1005	Max. 4" joint. Silicone foam.	1 or 2 Hrs	PEN200
FW-D-1006	Max. 4" joint. Spray and backing.	1 or 2 Hrs	AS200
FW-D-1007	Max. 4" joint. Caulk and backing.	1, 2 or 3 Hrs	ES
✓ FW-D-1010	Max. 4" joint. Caulk and backing. 1/4" of sealant.	1 or 2 Hrs	PEN300 or PEN300SL
FW-D-1035	Max. 4" joint. Spray and backing.	1, 2 or 3 Hrs	AS200

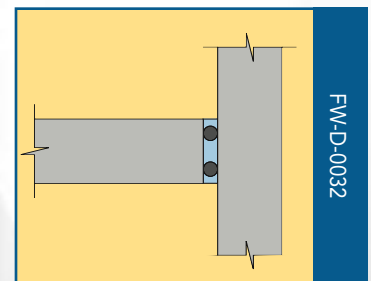
✓ = optimum system



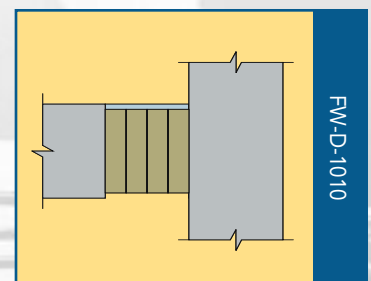
FW-D-0005



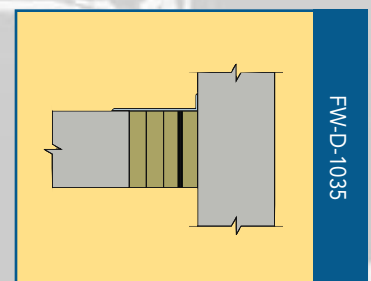
FW-D-0010



FW-D-0032



FW-D-1010

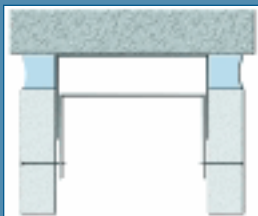


FW-D-1035

Beware of Three Sided Adhesion

Bond breaker tapes, foam backer rods, even mineral wool used properly can prevent cohesive failures!

WRONG!

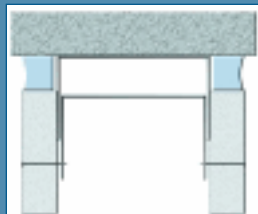


Sealant bonds to the deflection track. The wall may become load bearing.



Flexing the joint either tears the sealant when extended or damages the substrate when compressed.

RIGHT!



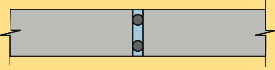
Bond breaker prevents adhesion to the track.



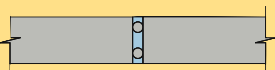
Sealant stretches freely as the joint is flexed.

General Construction Joints (Continued)

WW-D-0001



WW-D-0004



WW-D-1006



Wall-to-Wall Concrete Systems

System No.	Description	Hourly Rating	Product(s)
✓ WW-D-0001	Max. 1" joint. Caulk over backer rod	1,2 or 3 Hrs	PEN300
WW-D-0004	Max. 1" joint. Caulk over backer rod	1,2 or 3 Hrs	ES
WW-D-0018	Max. 2" joint. Caulk and backing.	1,2,3 or 4 Hrs	ES
WW-D-0019	Max. 2" joint. Caulk and backing.	1,2,3 or 4 Hrs	PEN300
WW-D-0020	One side seal. Max. 2" joint. Caulk and backing.	1,2,3 or 4 Hrs	PEN300
WW-D-1001	Max. 4" joint. Caulk and backing.	1,2, or 3 Hrs	PEN300
WW-D-1002	One side seal. Max. 4" joint. Caulk and backing.	1,2, or 3 Hrs	PEN300
WW-D-1005	Max. 4" joint. Silicone foam.	1 or 2 Hrs	PEN200
WW-D-1006	Max. 4" joint. Spray and backing.	1 or 2 Hrs	AS200
WW-D-1007	Max. 4" joint. Caulk and backing.	1,2, or 3 Hrs	ES
WW-D-1027	Max. 4" joint. Caulk and backing. 1/4" sealant system.	1 or 2 Hrs	PEN300
WW-D-1037	Max. 4" joint. Spray and backing.	1,2, or 3 Hrs	AS200
WW-S-0017	One side seal. Max. 3/4" joint. Caulk and ULTRA BLOCK® forming.	1 or 2 Hrs	PEN300
WW-S-0023	Max. 2" joint. Caulk and ULTRA BLOCK® forming.	1,2,3, or 4 Hrs	PEN300
WW-S-0029	Max. 2" joint. Caulk and ULTRA BLOCK® forming.	1,2,3, or 4 Hrs	PEN300
WW-S-0038	Max. 1" joint for precast panels. Various exterior sealants.	1 or 2 Hrs	ES on Interior
WW-S-1009	Max. 4" joint. Caulk and ULTRA BLOCK® forming.	1 or 2 Hrs	PEN300
WW-S-1010	Max. 4" joint. Caulk and ULTRA BLOCK® forming.	1 or 2 Hrs	PEN300

✓ = optimum system

Ordering Information

Construction Joints Products

Catalog Number	UPC 730573	Description	Unit Package Quantity	Standard Package Quantity	Weight Each
SpecSeal® ES Elastomeric Sealant					
ES100	08100	Elastomeric Sealant 10.1 oz. Tube, 18.2 cu. in. (300 ml)	1	12	1.12 lbs. (0.51 kg.)
ES129	08129	Elastomeric Sealant 29 oz. Tube, 52 cu. in. (858 ml)	1	10	3.04 lbs. (1.38 kg.)
ES120	08103	Elastomeric Sealant 20 oz. Sausage, 36 cu. in. (592 ml)	1	12	1.96 lbs. (0.89 kg.)
ES105	08105	Elastomeric Sealant 5 gal. Pail, 1,155 cu. in. (19.0 liters)	1	1	62.00 lbs. (28.12 kg.)
SpecSeal® Spray Products					
AS205	07107	Elastomeric Spray (Construction Joints) 5 gal. Pail, 1,155 cu. in. (19.0 liters)	1	1	50.00 lbs. (22.68 kg.)
FT305	01190	Fast Tack Firestop Spray, 5 gal. Pail, 1,155 cu. in. (19.0 liters)	1	1	49.00 lbs. (22.23 kg.)
PENSIL® Silicone Joint Sealant					
PEN300	01120	Silicone 10.3 oz. Tube, 18.6 cu. in. (305 ml)	1	24	1.10 lbs. (0.50 kg.)
PEN305	01125	Silicone 5 gal. Pail, 1,155 cu. in. (19.0 liters)	1	1	56.00 lbs. (25.40 kg.)
PEN305SL	01126	Self-Leveling Silicone 5 gal. Pail, 1,155 cu. in. (19.0 liters)	1	1	56.00 lbs. (25.40 kg.)
Accessories					
SSAMW	05001	Mineral Wool Boards (2) - 2'x4'x1.5" Per Box	1	1	12.00 lbs (5.44 kg.)
SSACG	05020	Caulk Gun (11 oz.)	1	4	1.49 lbs. (0.68 kg.)
SSAQCG	05021	Caulk Gun (Quart Size)	1	1	2.50 lbs. (1.13 kg.)
SSASCG	05022	Caulk Gun (Sausage Size)	1	1	2.90 lbs. (1.32 kg.)

STI Rep./Distributor



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