

# EMSEAL PRODUCT CATALOG

*Watertight / Fire Rated / Sound Dampening  
Energy Efficient / Seismic / Trafficable*



Structural and Architectural  
Expansion Joint and  
Sealant Products



BUILDING TRUST





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# Structural & Architectural Expansion Joint & Preformed Sealant Products

## The EMSEAL® Solution

EMSEAL® contributes to the preservation, durability and sustainability of the built environment.

We do so by delivering high value, lowest total cost of ownership, structural expansion joints and precompressed sealants that work.

Innovation has driven breakthrough new materials that ensure continuity-of-seal against water, fire, heat, cold, air movement, and sound in single product, single installation solutions.

We are a team of highly trained, motivated, and personable customer and technical service professionals.

We deliver ready-to-go as well as custom solutions to structural expansion joint and other sealing applications.

Our products are the result of market-driven innovation and decades of experience born of total dedication to the field of expansion joint sealing and component gasketing.

EMSEAL's track record of successfully completed projects is equally attributable to its approach to expansion joint treatment. Anybody can make an expansion joint appear watertight in cross-section. However, joints leak at changes in plane, direction and where dissimilar joint materials meet.

Successful projects with expansion joints that don't leak are characterized by a collaborative commitment by the A/E team, the general contractor, the joint manufacturer, and the waterproofing sub-contractor to detail, construct, fabricate, and install three-dimensional solutions. EMSEAL uniquely facilitates this process through a needs analysis and communication process that anticipates and addresses problems before they literally become cast in concrete. This collaborative approach has resulted in the successful execution of watertight expansion joints on new and retrofit projects on structures of every type. Owners, architects, engineers, general contractors, EMSEAL, and like-minded waterproofing sub-contractors are proving this approach possible and practical.

## Applications

EMSEAL products are designed and manufactured to meet the demands of both the remediation of existing buildings and the maintenance of new structures.

EMSEAL products address the application demands of modern construction. From small details such as traffic point loads to larger concerns such as LEED certification and seismic design, EMSEAL is meeting the evolving demands of modern architecture and engineering. This catalog displays EMSEAL's architectural product line of joint sealant technologies.

## EMSEAL Product Features

### Breakthroughs in Foam Impregnations

The backpressure resulting from impregnated foam technology eliminates the need for mechanical anchoring methods. Screws and other hardware, which traditionally have been the only means to anchor to a substrate, are eliminated. Non-invasive anchoring allows for a secure hold with simpler installation in a much shorter time.

EMSEAL's microsphere-modified, 100% acrylic impregnation is unique in enhancing the desirable characteristics of the foam base such as resilience, while imparting water and temperature resistance. This formulation outperforms imitation products and avoids shortcomings such as low temperature brittleness and high temperature instability.

### First in Fire-Rated, Watertight, Multi-Purpose Joint Seals

Certified by Underwriters Laboratories to the rigors of UL-2079, EMSEAL's Emshield® series of products is changing the expansion joint sealing game. It is no longer necessary to have to choose between watertightness and fire rating. Because the fire rating is now built into the expansion joint it is no longer necessary to specify two installations of separate joint sealant and fire-resistant joint fillers in either decks or walls. EMSEAL also offers a pick-resistant, fire-rated expansion joint when vandalism and tampering are an important concern.

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### Enhanced R-Value

EMSEAL's foam-based, wall-joint systems are excellent insulators. They contain no metal and attach to substrates without invasive metal anchors avoiding any conductive thermal bridge in wall components. Whether for small joints in façade panels or at window perimeters, or in the backup walls of cavity-wall construction, or even in structural walls of block or precast, EMSEAL joint sealants provide continuity of insulation at all penetrations.

### Sound Barrier

Walls sealed with our preformed sealants have sound absorption properties that approximate those of a solid wall. Independent laboratory STC and OITC tests prove that filling a structural joint with an EMSEAL product can restore the original sound transmission coefficient of the wall itself. Choose a fire-rated EMSEAL product and the wall is sound-proofed, fire-rated, insulated, color-coordinated and able to move – all in a single product installation.

### Commitment to Service and Quality Assurance

At EMSEAL service begins from the first contact and continues throughout the design, procurement and installation process. A comprehensive EMSEAL representation network throughout the US, Canada, and increasingly throughout the world is serviced locally by Regional Managers and/or representatives and is backed up at our corporate headquarters by dedicated Regional Inside Technical Support staff.

Using project-specific application checklists and web and phone-based collaboration to address job requirements, the support staff will work with you to understand and meet your needs. The result is a working relationship with EMSEAL that produces the best product choice and solution for your specific project.

### Ecologically Sound (LEED)

EMSEAL's hybrid impregnated materials use water-based emulsions and contain no chlorinated wax, isobutylene or other deleterious chemicals. The unique features of these products are synchronous with LEED design principles and can contribute toward achieving LEED points. And EMSEAL foam products have an industry-leading lifecycle advantage. Recent LEED projects include sealing all 6,514 windows on the Empire State Building LEED Gold Retrofit.

### Corporate Sustainability

EMSEAL is certified and recognized by SBLP as a leader in sustainable business. The corporate mission of EMSEAL embraces the commitment to ecological sustainability.



### EMSEAL Track Record

The list of successful EMSEAL expansion joint installations is growing every day. We are the basis of design in original construction and are the industry leader for retrofitting existing structures. A small sample of recent work includes:

*Fenway Park / Empire State Building / Mercedes-Benz Stadium  
Microsoft Campus / Yankee Stadium / Pentagon  
Museum of Modern Art (NY) / Honolulu Airport ConRAC  
Mall of America / University of Michigan / Basra Stadium  
Louis Armstrong Airport / Seattle Tunnel / Gateway Arch  
CN Tower / Texas A&M / Citi Field / Childrens Hospital (PA)  
Hudson Yards / CNN Plaza / Manchester Airport / Dell HQ  
Petco Park / Walmart Distribution Centers / Lambeau Field  
Cal Poly Pomona / Bogota El Dorado International Airport  
Bole International Airport / Smithsonian Museum / Target Field  
Metro de Panama / Art Institute of Chicago / Clorox Plaza  
Foxwoods Casino / US Air Force Academy / Metro Qatar  
Abu Dhabi Financial Center / Planet Godrej - India  
United States Mint / Lincoln Center / The World Bank  
Berlin Federal Prison / Bryant Denny Stadium (U. of Alabama)  
Port Allen River Lock / Atlanta International Airport ConRAC  
and hundreds of other stadiums, museums, corporate buildings,  
residences, schools, airports, hospitals, municipal buildings,  
parking garages, bridges and other structures worldwide.*

### Our Commitment is Unparalleled

Beyond offering the industry's most innovative and successful line of expansion joints, **we are committed to partnering with you at every phase of the construction process.** From the person answering the phone to the regionally dedicated inside and in-field technical support of our Tech Team and Regional Sales Managers, to our online chat and **gotomeeting** collaboration, EMSEAL is **completely dedicated** to your satisfaction and the success of your project.

EMSEAL offers SWRI and AIA certified training in all facets of expansion joint application and installation. Accredited courses are offered locally and at EMSEAL's corporate headquarters in Westborough, MA.

Comprehensive information is available on the web at **www.emseal.com**. If you would like to discuss a specific application's demands please call us at **508-836-0280**.



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## Wall Selector Guide



## Wall Joints Above-Grade – Product Selection Guide

<b>Application</b>	<b>Standard Joint Size (at Mean T°)</b>	<b>EMSEAL Product</b>	<b>Cat. Page</b>
Secondary Seal to Field Applied Liquid Sealant, 50% Movement	1/4" to 6" (6 - 150mm)	Backerseal	13
Structural Joints in Exterior Walls Lowest Cost, Primary Seal, Reel Package Quick Installation, 80% Movement	1/2" to 1 1/4" (12 - 30mm)	Colorseal-On-A-Reel	9
Structural Joints in Exterior and Interior Walls 1, 2 or 3-Hour Fire-Rated, Watertight WFR1, WFR2 100% / WFR3 50% Movement	1/2" to 6" (12 - 150mm)	Emshield WFR1 / WFR2 / WFR3	14
Structural Joints in Exterior and Interior Walls Pick-Resistant/Tamper-Resistant 2-Hour Fire-Rated, Watertight SSW2 100% / SSW3 50% Movement	1/2" to 6" (12 - 150mm)	Emshield SecuritySeal SSW	15
Structural Joints in Exterior Walls Primary Seal, 100% Movement	1/2" to 10" * (12 - 250mm)	Colorseal/Seismic Colorseal	10
Curved Expansion Joints New to Old Additions	1/2" to 10" * (12 - 250mm)	Colorseal/Seismic Colorseal	10
Dual Sealing One Install 100% Movement	1/2" to 10" * (12 - 250mm)	Seismic Colorseal DS	12
Color Switching to Match Substrate Changes	1/2" to 10" * (12 - 250mm)	Colorseal/Seismic Colorseal	10
Size Switching to Accommodate Joint Gap Variations	1/8" to 8" * (3 - 200mm)	Backerseal Colorseal/Seismic Colorseal	13 10

\* EMSEAL has provided seals up to 20" (500mm) wide in specific applications. Please consult with EMSEAL about your specific needs.

## Usage Guide

## Typical Substrates

Brick  
Stone  
EIFS  
Concrete Blocks  
Gypsum Board  
Pre-cast Panels  
Metal Panelized Systems  
Curtain Walls  
Fire-Rated Walls  
Tamper-Resistant Walls  
Window Walls  
Parapet Walls  
Cavity Walls  
Interior Acoustic  
Sky Bridges  
Window Perimeters

## Wall Joints Below-Grade – Product Selection Guide

<b>Application</b>	<b>Standard Joint Size (at Mean T°)</b>	<b>EMSEAL Product</b>	<b>Cat. Page</b>
Positive Side Accessible	1/2" to 4" * (12 - 100mm)	DSM / DSM-DS	32
	2" to 5" (50 - 125mm)	BG System	33
Blind or Positive Side	2" to 5" (50 - 125mm)	BG SYSTEM	33

\* EMSEAL has provided seals up to 20" (500mm) wide in specific applications. Please consult with EMSEAL about your specific needs.

## Usage Guide

## Typical Substrates

Foundation Walls  
Tunnel Walls & Floors  
Planter Walls & Floors

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## Deck Selector Guide



## Decks Solid Slab / Precast – Product Selection Guide

<b>Application</b>	<b>Standard Joint Size (at Mean T°)</b>	<b>EMSEAL Product</b>	<b>Cat. Page</b>
Protected or Non-Traffic Deck Applications 100% Movement	1/2" to 10"* (12 - 250mm)	<b>Horizontal Colorseal</b>	20
Top and Intermediate Decks 100% Movement	1/2" to 4"* (12 - 100mm)	<b>DSM System</b>	16
Tee-to-Tee and Other Control Joints Ideal for Correcting Pour Problems.	1/2" to 4"* (12 - 100mm)	<b>DSM System</b>	16
Perimeter Joints	1/2" to 4"* (12 - 100mm)	<b>DSM System</b>	16
	1/2" to 8"* (12 - 200mm)	<b>Horizontal Colorseal</b>	20
2-Hour Fire-Rated, Top & Intermediate Decks, Watertight, Trafficable, Single Installation DFR2 100% Movement	1/2" to 4" (12 - 100mm)	<b>Emshield DFR2</b>	18
3-Hour Fire-Rated, Top & Intermediate Decks, Watertight, Trafficable, Single Installation DFR3 50% Movement	1/2" to 4" (12 - 100mm)	<b>Emshield DFR3</b>	18
2-Hour Fire-Rated, Pick and Tamper Resistant, Watertight, Trafficable, Single Installation SSF2 100% Movement	1/2" to 4" (12 - 100mm)	<b>Emshield SecuritySeal SSF2</b>	19
3-Hour Fire-Rated, Pick and Tamper Resistant, Watertight, Trafficable, Single Installation SSF3 50% Movement	1/2" to 4" (12 - 100mm)	<b>Emshield SecuritySeal SSF3</b>	19
Top and Intermediate Decks, Blockout Mounted	1" to 5-1/2" max (25 - 140mm)	<b>Thermaflex Series</b>	25
Large or Seismic Top and Intermediate Decks Joint-Face Adhered with Integral Coverplate SJS 100% Movement	2" to 24" (50 - 600mm)	<b>SJS System</b>	22
1-Hour Fire-Rated, Large or Seismic Top and Intermediate Decks Joint-Face Adhered with Integral Coverplate, 100% Movement	2" to 10" (50 - 250mm)	<b>SJS-FR1 System</b>	24
2-Hour Fire-Rated, Large or Seismic Top and Intermediate Decks Joint-Face Adhered with Integral Coverplate, 100% Movement	2" to 10" (50 - 250mm)	<b>SJS-FR2 System</b>	24

## Usage Guide

## Typical Substrates

Parking Decks  
 Roof Joints  
 Ice Rink Perimeters  
 Stair/Elevator Tower Perimeters  
 Stadium Tread and Risers  
 Sidewalks  
 Fire-Rated Applications  
 Airport Aprons  
 Roadways  
 Parking Decks  
 Stadium/Arena Treads & Risers  
 Concourses  
 Floors

\* EMSEAL has provided seals up to 20" (500mm) wide in specific applications. Please consult with EMSEAL about your specific needs.

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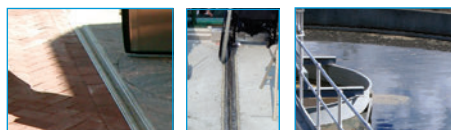
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## Decks / Roofs / Submerged Selector Guides



## Decks Split Slab / Plaza – Product Selection Guide

<b>Application</b>	<b>Standard Joint Size (at Mean T°)</b>	<b>EMSEAL Product</b>	<b>Cat. Page</b>
Integrally Tied into Split Slab Construction	Up to 3" max (75mm) max	<b>Migutan FP 110</b>	26
Integrally Tied into Split Slab Construction	Up to 4 3/4" max (120mm)	<b>Migutan FP 155</b>	26
For Expansion Joints that Tie into Split Slab Construction, also Solid Slab to Split Slab Construction	1/2" to 4" (12 - 100mm)	<b>DSM-FP System</b>	28
For Expansion Joints that Tie into Split Slab Construction, also Solid Slab to Split Slab Construction, 2-Hour or 3-Hour Fire-Rated	1/2" to 4" (12 - 100mm)	<b>DFR-FP System</b>	29
For Large or Seismic Designed Joints that Tie into Split Slab Construction with Integral Coverplate	2" to 24" (50 - 600mm)	<b>SJS-FP System</b>	30
For Large or Seismic Designed Joints that Tie into Split Slab Construction 1-Hour or 2-Hour Fire-Rated	2" to 10" (50 - 250mm)	<b>SJS-FP-FR System</b>	31

## Usage Guide

## Typical Substrates

Podium Decks  
Split Slab Plaza Decks  
Garden Roofs  
Roadways  
Stadium Concourses

## Roof / Submerged / NSF – Product Selection Guide

<b>Application</b>	<b>Standard Joint Size (at Mean T°)</b>	<b>EMSEAL Product</b>	<b>Cat. Page</b>
Roofs as part of an integrated waterproofing system.	2" to 8" + (50 - 200mm +)	<b>RoofJoint</b>	34
Transitions from roof to wall.		<b>Roof Joint Wall Closure</b>	35
Chlorine and Chemical Resistant Continuous Submersion Joint-Face Adhered 50% Movement	1/2" to 4" * (12 - 100mm)	<b>Submerseal</b>	36
Chemical Resistant Joint Face-Adhered 50% Movement	1/2" to 4" * (12 - 100mm)	<b>Submerseal/Chemseal**</b>	36
Non-Contaminating Joint-Face Adhered NSF/ANSI-Certified 50% Movement	1/2" to 8" * (12 - 200mm)	<b>Submerseal/DSF**</b>	36

## Usage Guide

## Typical Uses

Roofs  
Roof to Wall Transitions  
  
Water Treatment Facilities  
Water Parks  
Swimming Pools  
Fountains  
Spill Containment  
Chemical Environments  
Potable Water

\* For head-pressure limitations please consult with EMSEAL about your specific needs.

\*\* Consult EMSEAL for Submerseal / Chemseal / DSF performance specifications.

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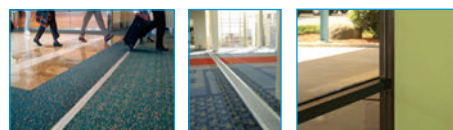
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## Interior Selector Guide



## Interior Floors &amp; Walls – Product Selection Guide

<i><b>Application</b></i>	<i><b>Standard Joint Size (at Mean T°)</b></i>	<i><b>EMSEAL Product</b></i>	<i><b>Cat. Page</b></i>
Interior Floors and Interior Walls	Up to 24" max (600mm) max	Various Products	39-42
Interior Walls 1, 2, or 3-Hour Fire-Rated Single Product	1/2" to 6" (12 - 150mm)	Emshield WFR1 / WFR2 / WFR3	14
Interior Walls Pick-Resistant/Tamper-Resistant 2-Hour Fire-Rated Single Product	1/2" to 6" (12 - 150mm)	Emshield SecuritySeal SSW2	15
Interior Floors 2-Hour Fire-Rated Single Product	1/2" to 4" (2 - 100mm)	Emshield DFR2	18
Interior Floors 3-Hour Fire-Rated Single Product	1/2" to 4" (2 - 100mm)	Emshield DFR3	18
Interior Floors Pick-Resistant/Tamper-Resistant 2-Hour Fire-Rated Single Product	1/2" to 4" (2 - 100mm)	Emshield SecuritySeal SSF2	19
Interior Floors Pick-Resistant/Tamper-Resistant 3-Hour Fire-Rated Single Product	1/2" to 4" (2 - 100mm)	Emshield SecuritySeal SSF3	19
Interior Floors Rapid Installation Trafficable with Coverplate	1" to 4" (25 - 100mm)	QuickCover	38
Interior Walls and Ceilings Acoustic and Thermal Joint and Gap Filler for Non-Moving Joints and Gaps	1" to 6" (25 - 150mm)	QuietJoint	37

## Usage Guide

## Typical Uses

Convention Centers

Stadiums

Arenas

Hospitals

Warehouses

Schools

Office Buildings

Condos

Airports

Shopping Malls

Casinos

Fire-Rated Locations

Prisons &amp; Secure Facilities

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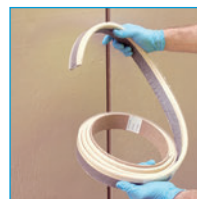
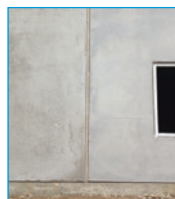


# Colorseal-on-a-Reel

WALLS Above Grade

Watertight by design®

WALLS – Above Grade



Colorseal-on-a-Reel offers a quicker and simpler installation making it highly suited for tilt-up walls, precast concrete, masonry, sidewalks, driveways and other smaller gap applications.

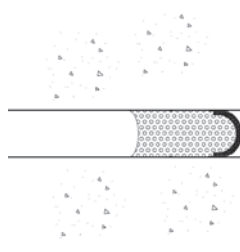
**Colorseal-on-a-Reel** is a silicone-coated, pre-compressed, primary seal for rapid installation into small joints in vertical and horizontal planes. It is a cost-effective version of EMSEAL's industry-standard Seismic Colorseal® product shipped on a reel for rapid installation into small joints — 1/2 to 1 1/4-inches wide (12 - 30mm). Reel-packaging, in contrast to 'stick' packaging: reduces waste, lowers production costs, makes handling easier, and installs rapidly. COR is a fraction of the price of similarly sized stick Colorseal. Its installed-cost makes COR a cost-effective alternate to 'caulk and backer rod'.

- Rapid installation – new or retrofit
- Watertight
- Airtight
- Thermally insulating
- Sound dampening
- Cost-effective
- Ships on 10-foot reels
- Wide range of standard and custom colors
- Conforms to joint gap irregularities
- Size switching accommodates joint gap variations
- Bellows remain tension-free during joint movement
- Easily handles changes in plane and direction
- Conforms to substrate irregularities
- Resists hurricane force wind & water
- ABAA Compliant
- Movement of + 30% /- 50% (Total 80%) of nominal size

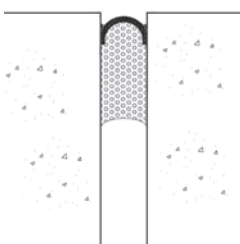
## Colorseal-on-a-Reel Sizing

Joint Size at Mean T°F	Depth of Seal
Inches (mm)	Inches (mm)
1/2 (12)	1 3/4 (45)
3/4 (20)	1 3/4 (45)
1 (25)	1 3/4 (45)
1 1/4 (30)	1 3/4 (45)

## Typical Colorseal-on-a-Reel Usage



Colorseal-on-a-Reel is held in place by a combination of pressure-sensitive adhesive impregnation and back-pressure of the expanding foam in conjunction with a field-installed band of silicone caulk.



Colorseal-on-a-Reel can be installed in horizontal surfaces as well as vertical applications.

Colorseal-on-a-Reel can also be applied in horizontal decks, slabs, and walkways.



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Standard CAD details are available online at [www.emseal.com](http://www.emseal.com). For application specific CAD details contact EMSEAL directly.

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**Seismic Colorseal (Colorseal®)** is a silicone-coated, precompressed, primary seal that is used in structural, high-movement joints in virtually any substrate. It is ideally suited for watertightness in vertical or horizontal structural, seismic and abutment joints in the vertical plane.

- Watertight
- Non-invasive anchoring
- Primary seal
- Wide range of standard and custom colors
- Conforms to joint gap irregularities
- Size switching accommodates joint gap variations
- Supplied on 10-foot reel for sizes under 1 1/2" (40mm)
- Thermally insulating
- Acoustic dampening –  
STC rated 52 (in a STC 56 wall)  
OITC rated 38 (in a OITC 38 wall)
- Bellows remain tension-free during joint movement
- Won't suffer from compression set
- Movement of +/- 50% (Total 100%) of nominal size

*\*Product Update: Decades of successful performance have proved "Seismic Colorseal" to provide functionally equivalent performance to "Colorseal" while offering more movement capability and better price value. Both products are now built the same, feature the same movement capability and are priced the same. All shipments are marked "Seismic Colorseal".*

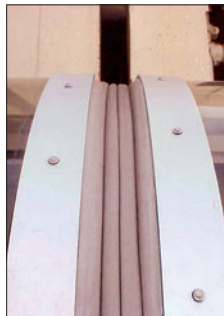
Sound Attenuation STC 52 / OITC 38



Seismic Colorseal installed in a building facade between dissimilar materials maintains the R-Value in the building envelope. Because Seismic Colorseal uses no fasteners it is especially suited to filling joints at inside corners.



Notching and bending the foam backing permits the silicone facing of the bellows to remain seamless at directional changes which are historically difficult to make watertight. For warranted CAD details between dissimilar EMSEAL joint technologies please call EMSEAL or go to [www.emseal.com](http://www.emseal.com).



Non-invasive anchoring and sealing is achieved through a combination of the pressure-sensitive adhesive acrylic impregnation, the inherent back pressure of the foam and a field-applied corner bead of silicone.

Curves in building elements are easily accommodated through the material's omni-directional flexibility.



Seismic Colorseal is an ideal solution for textured or rough substrates. The product's pliant nature combined with its inherent backpressure allows it to conform to the textured wall surface.

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### Seismic Colorseal Sizing

Joint Size at Mean T°F	Depth of Seal
Inches (mm)	Inches (mm)
1/2 * (12)	1 3/4 (45)
3/4* (20)	1 3/4 (45)
1* (25)	1 3/4 (45)
1 1/4 * (35)	1 3/4 (45)
2 (50)	2 1/2 (65)
3 (75)	3 1/2 (90)
4 (100)	4 1/2 (115)
5 (125)	5 1/2 (140)
6 (150)	6 (150)
7 (175)	7 (175)
8 (200)	8 (200)
9 (225)	8 (200)
10 (250)	8 (200)

Seismic Colorseal sizes are available in 1/4" increments in nominal sizes from 1" to 6"; and 1/2" increments from 6" to 10". Consult EMSEAL for larger sizes. Nominal size is equivalent to joint gap size at mean temperature.  
\* Supplied on 10-foot Reels

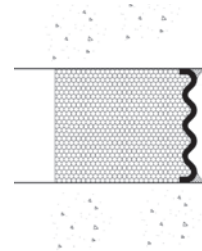
**Seismic Colorseal (Colorseal\*)** silicone bellows are available in many industry standard colors to match leading construction silicone sealants.. Contact EMSEAL for matching availability.



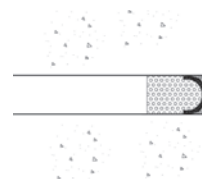
Now Available  
**Seismic Colorseal  
UNIVERSAL-90's**  
Factory-Fabricated  
Transitions & Terminations

See page 21

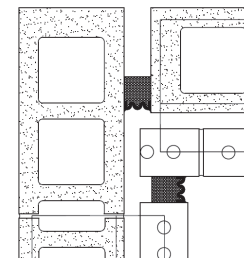
### Typical Seismic Colorseal Usage



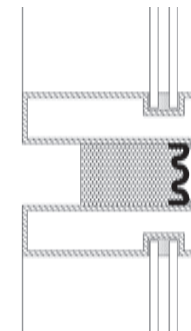
Seismic Colorseal is held in place by the back-pressure of the expanding foam in conjunction with a field-installed bead of silicone caulk at the substrate-to-bellows interface.



Sizes from 1/2-inch (12mm) to 1 1/4 (30mm) are manufactured with a single bellows silicone face. Larger sizes up to 8-inches (200mm) are manufactured with multiple bellows.



Seismic Colorseal is an excellent, simple sealing solution at inside corner conditions where it is impossible to install mechanically fastened 'strip-seal' systems. In cavity-wall conditions, installation of Seismic Colorseal in the structural backup maintains integrity of thermal insulation as well as the air barrier while preventing passage of cavity moisture into the structure.



Seismic Colorseal is uniquely suited to sealing structural joints in curtainwalls. Non-invasive anchoring means that mullions are not violated by screwing through them as occurs with "strip-seal" systems.

Standard CAD details are available online at [www.emseal.com](http://www.emseal.com). For application specific CAD details contact EMSEAL directly.

EMSEAL JOINT SYSTEMS, LTD 25 Bridle Lane, Westborough, MA 01581 USA  
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FX: 508-836-0281  
FX: 416-740-0233



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# Seismic Colorseal-DS

WALLS Above Grade

Watertight by design®



Seismic Colorseal-DS seals interior and exterior sides of curtain wall joints in a single installation step. Each side can have its own color to match interior and exterior color schemes. For parapets it can provide a top, front, and back sealed surface addressing all three exposed planes.

Sound Attenuation STC 54 / OITC 38

**Seismic Colorseal-DS** is a unique, highly innovative, double-side coated variation of EMSEAL's acclaimed Seismic Colorseal material. Ideally suited for shallow substrates where sealing or finishing of both sides of the structure is desired in one installation.

- Watertight
- Rapid installation to seal two surfaces (front and back) in a single installation
- Non-invasive anchoring
- Wide range of standard and custom colors
- Conforms to joint gap irregularities
- Size switching accommodates joint gap variations
- Thermally insulating
- Acoustic dampening –  
STC rated 54 (in a STC 56 wall)  
OITC rated 38 (in a OITC 38 wall)
- Bellows remain tension-free during joint movement
- Movement of +/- 50% (Total 100%) of nominal size in any direction

## Seismic Colorseal-DS Sizing

Joint Size at Mean T°F	Depth of Seal
Inches (mm)	Inches(mm)
1/2 (12)	2 3/4 (70)
3/4 (20)	2 3/4 (70)
1 (25)	2 3/4 (70)
2 (50)	2 1/2 (65)
3 (75)	3 1/2 (90)
4 (100)	4 1/2 (115)
5 (125)	5 1/2 (140)
6 (150)	6 (150)
7 (175)	7 (175)
8 (200)	8 (200)
9 (225)	8 (200)
10 (250)	8 (200)

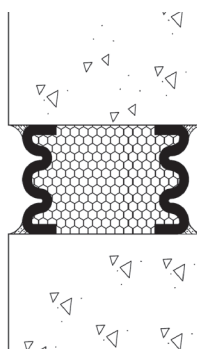
Seismic Colorseal-DS sizes are available in 1/4" increments in nominal sizes from 1" to 6", and 1/2" increments from 6" to 10". Consult EMSEAL for larger sizes. Nominal size is equivalent to joint gap size at mean temperature.



Now Available  
**Seismic Colorseal-DS  
UNIVERSAL-90's**  
Factory-Fabricated  
Transitions & Terminations

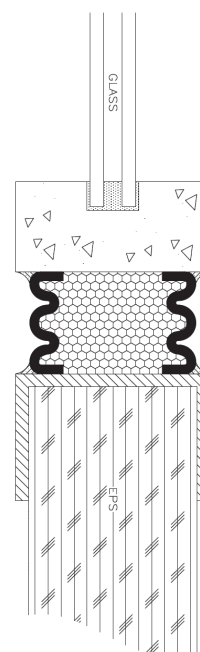
See page 21

## Typical Seismic Colorseal-DS Usage



Seismic Colorseal-DS can be made in custom depths to seal both sides of shallow substrates.

Seismic Colorseal-DS is ideal for sealing both the exterior and interior faces of window and curtainwall systems. Colors on each face can be chosen to coordinate with interior and exterior finishes. Non-invasive anchoring preserves the integrity of the substrates while the product's inherent R-value ensures continuity of insulation.



Standard CAD details are available online at [www.emseal.com](http://www.emseal.com). For application specific CAD details contact EMSEAL directly.

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**Backerseal** (Greyflex) is an economical preformed expanding foam sealant that provides watertight secondary sealing in applications behind conventionally installed liquid sealant and backer rod or directly behind field-applied low modulus liquid sealants.

- Watertight
- Featuring EMSEAL's exclusive, breakthrough, microsphere-modified acrylic impregnation technology
- Watertight, odorless, clean handling, non-staining, low-temperature flexible, high-temperature stable
- Thermally insulating
- Acoustic dampening –  
STC rated 53 (in a STC 68 wall)  
OITC rated 49 (in a OITC 52 wall)
- Conforms to joint gap irregularities
- Also available in sticks
- Movement of +/- 25% (Total 50%) of nominal size

### Backerseal Sizing

Joint Size at Mean T°F		Depth of Seal	
Inches	(mm)	Inches	(mm)
1/4	(6)	3/4	(20)
3/8	(10)	3/4	(20)
1/2	(12)	3/4	(20)
5/8	(15)	1	(25)
3/4	(20)	1	(25)
1	(25)	1 1/4	(30)
2	(50)	2 1/2	(65)
3	(75)	3 1/8	(80)
4	(100)	4	(100)
5	(125)	5	(125)
6	(150)	6	(160)



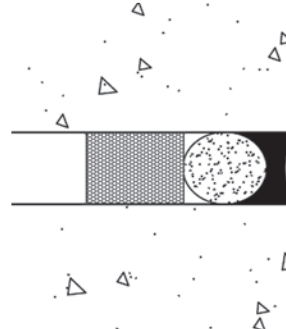
Structures of all sizes can benefit from the sealing of thermal and sound conditions as well as the ease-of-installation offered by Backerseal



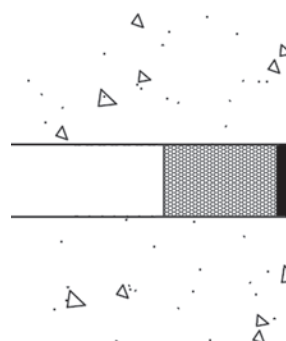
Backerseal behind field-applied liquid sealant provides true "belts and suspenders" sealing – 2 systems working on different principles to guarantee performance of the same function.

Sound Attenuation STC 53 / OITC 49

### Typical Backerseal Usage



Backerseal in place as a secondary seal to liquid sealant and backer rod. This double system ensures a redundant seal to water and insulates against energy loss while preserving the liquid sealant manufacturer's geometry for optimal performance.



Backerseal with directly-applied, low modulus liquid sealant provides redundant sealing in shallow-depth substrates.

Standard CAD details are available online at [www.emseal.com](http://www.emseal.com). For application specific CAD details contact EMSEAL directly.

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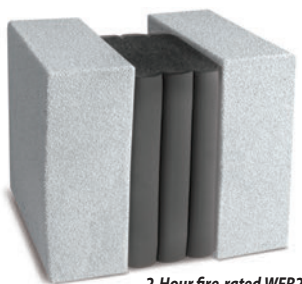
**FX:** 508-836-0281  
**FX:** 416-740-0233



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# Emshield® WFR1 / WFR2 / WFR3

WFR1 and WFR2: US Patents 9,670,666 9,644,368 9,637,915 9,068,297, 9,528,262 8,739,495 C1 Patent Pending  
WFR3: US Patents 9,670,666 9,644,368 9,637,915 9,068,297, 9,528,262 8,365,495 C1 8,739,495 C1 Patent Pending



2-Hour fire-rated WFR2

## Watertight, Energy-Efficient 1-hour, 2-hour and 3-hour Fire-Rated Wall Expansion Joint

Emshield® WFR1, WFR2 and WFR3 are single-unit, fire-rated expansion joints which provide water protection, sound attenuation, thermal insulation, color coordination, and accommodate structural joint movement. WFR1 (Wall, Fire-Rated 1-Hour), WFR2 (Wall, Fire-Rated 2-Hours) and WFR3\* (3-Hours) continue the line of breakthrough, multi-function, structural expansion joint materials from EMSEAL. Both have been tested and certified by Underwriters Laboratories (UL) to the rigors of UL and ULC 2079.

Fire-retardant impregnated foam is factory pre-coated on both faces with a waterproof silicone coating which is available in a wide choice of colors (*contact EMSEAL*) for each side. \*WFR3 is also pre-coated on both faces with an intumescent fire-proofing material.

Providing an excellent barrier to sound transfer, WFR1, WFR2 and WFR3 have an STC rating of 62 (in a STC 68 wall) and an OITC rating of 52 (in a OITC 52 wall). They have also been tested to ASTM E330, ASTM E331, and ASTM E283 standards maintaining air pressure and stopping water and wind penetration at 200 mph.

Emshield WFR1, WFR2 and WFR3 provide a watertight, clean handling, UV stable, non-staining, low-temperature-flexible, high-temperature-stable, energy-efficient, sound attenuating and fire-rated joint seal in a single installation process. For interior and exterior walls. WFR1 and WFR2 movements of +/- 50% (100% total). WFR3 movements of +/- 25% (50% total).

### Emshield WFR1 / WFR2 / WFR3 Sizing

Joint Size at Mean T°F	WFR1 / WFR2 Depth of Seal	WFR3 Depth of Seal
Inches (mm)	Inches (mm)	Inches (mm)
1/2 (12)	4 (100)	5 (125)
3/4 (20)	4 (100)	5 (125)
1 (25)	4 (100)	5 (125)
1 1/4 (30)	4 (100)	5 (125)
1 1/2 (40)	4 (100)	5 (125)
1 3/4 (45)	4 (100)	5 (125)
2 (50)	4 (100)	5 (125)
3 (75)	4 (100)	5 (125)
4 (100)	4 (100)	5 (125)
5 (125)	4 (100)	5 (125)
6 (150)	4 (100)	5 (125)

WFR sizes are available in 1/4" increments of nominal sizes from 1" to 6". Nominal size is equivalent to joint gap size at mean temperature.



Now Available  
**Emshield WFR  
UNIVERSAL-90's**  
Factory-Fabricated  
Transitions & Terminations

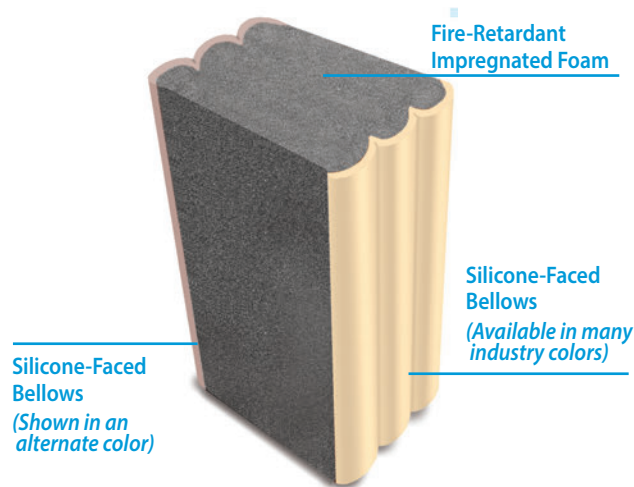
See page 21



Water / Fire / Energy / Sound / Movement

Sound Attenuation STC 62 / OITC 52

### Emshield WFR1 and WFR2



One Install Does It All



UL Systems  
WW-D-0091, WW-D-0092, WW-D-1079  
WW-D-1081, HW-D-0615, HW-D-1090  
WW-D-1158, WW-D-1159  
WW-D-0099, WW-D-1087

ULC Systems  
JF131, JF132, HW77, JF145



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FX: 416-740-0233

# SecuritySeal® SSW

US Patents 9,670,666 9,644,368 9,637,915 9,068,297 9,528,262 8,739,495 C1 Patent Pending



## Pick-Resistant, 2-hour Fire-Rated, Watertight, Wall Expansion Joint

EMSHIELD® SecuritySeal® SSW2 is a pick-resistant, watertight, 2-hour fire-rated, expansion joint for vertical locations requiring a hardened tamper-resistant surface. Institutional walls found in prisons, detention centers, mental and psychiatric hospitals, school facilities, and day-care centers are some of the many venues where SecuritySeal SSW is preferred.

- Watertight
- Hardened pick-resistant surface
- 2-hour built-in fire rating (UL/ULC-certified)
- Warranted for watertightness
- Non-invasive anchoring
- Size switching accommodates joint gap variations
- Thermally insulating
- Acoustic dampening –  
STC rated 62 (in a STC 68 wall)  
OITC rated 52 (in a OITC 52 wall)
- Won't suffer from compression set
- Movement of +/- 50% (Total 100%) of nominal size

### SecuritySeal SSW2 Sizing

Joint Size at Mean T°F	Depth of Seal
Inches (mm)	Inches (mm)
1/2 (12)	4 (100)
3/4 (20)	4 (100)
1 (25)	4 (100)
1 1/4 (30)	4 (100)
1 1/2 (40)	4 (100)
1 3/4 (45)	4 (100)
2 (50)	4 (100)
3 (75)	4 (100)
4 (100)	4 (100)
5 (125)	4 (100)
6 (150)	4 (100)

SSW2 sizes are available in 1/4" increments of nominal sizes from 1" to 6". Nominal size is equivalent to joint gap size at mean temperature.



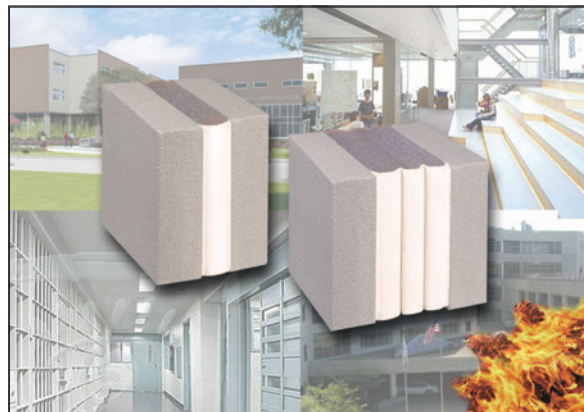
Now Available  
**SecuritySeal  
UNIVERSAL-90's**  
Factory-Fabricated  
Transitions & Terminations

See page 21

▼ FIRE-RATED

WALLS Above Grade

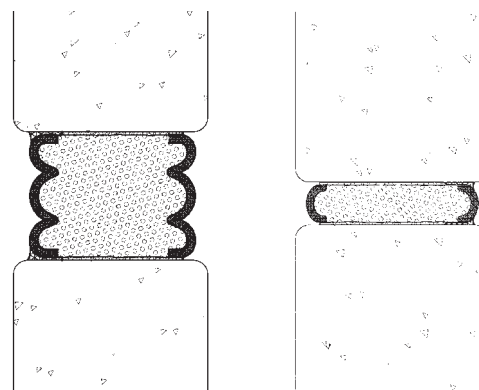
Watertight by design®



Vandalism / Water / Fire / Movement / Sound

Sound Attenuation STC 62 / OITC 52

### Typical SecuritySeal SSW Usage



Topview of SecuritySeal SSW. Installed in a fire-rated wall, the front face is sealed with a polyurethane corner bead for watertightness.

SecuritySeal SSW is manufactured with a single bellow polyurethane face on both sides when used in a gap from 1/2-inch (12mm) to 1 1/4-inch (30mm). (Topview)



UL Systems  
WW-D-0093, WW-D-1083,  
HW-D-0616, HW-D-1091

ULC Systems  
JF134, HW78



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# DSM System

DECKS Solid Slab

Watertight by design®

DECKS – Solid Slab / Precast



The **DSM System** is a traffic durable, joint-face adhered, precompressed primary seal. Using a microsphere-modified acrylic impregnation and factory pre-coated with highway-grade silicone, this system builds on EMSEAL's track record of over 30 years of sealing horizontal plane joints with impregnated foam sealants.

- Traffic durable
- Watertight
- UV stable
- Non-invasive anchoring
- Non-staining
- ADA compliant
- Rapid installation – new or retrofit
- Low-temperature flexible, high-temperature stable
- Conforms to joint gap irregularities
- Size switching accommodates joint gap variations
- Movement of +50% and -50% (Total 100%) of nominal size \*



*DSM features easy installation. After epoxy has been applied to the substrate the DSM foam sticks are pushed into the joint. Adjoining sticks are aligned into the face of the already installed stick and held above the surface until the adjoining stick is seated into the joint.*



*The waterproofing of stadium expansion joints seen here in the precast seating bowl. DSM offers continuity of seal through changes in plane and direction.*



*DSM is uniquely suited to retrofitting existing joints and readily replaces failed caulk, compression seals, inflated seal, and closed-cell joint fillers.*



*The DSM System is a traffic-durable, lasting solution to high movement and heavy load traffic found in today's parking structures. New construction and retrofit applications are a perfect fit for DSM.*

Standard CAD details are available online at [www.emseal.com](http://www.emseal.com). For application specific CAD details contact EMSEAL directly.

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## DSM Sizing

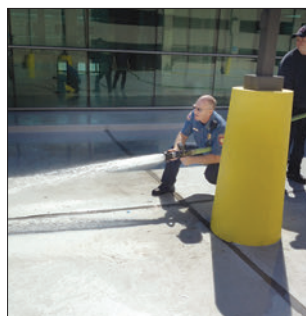
Joint Size at Mean T°F		Depth of Seal	
Inches	(mm)	Inches	(mm)
1/2	(12)	1 3/4	(45)
3/4	(20)	1 3/4	(45)
1	(25)	2	(50)
2	(50)	2 1/2	(65)
3*	(75)	3 1/4	(80)
4*	(100)	4	(100)

DSM sizes are available in 1/4" increments in nominal sizes from 1" to 4". Consult EMSEAL for larger sizes. Nominal size is equivalent to joint gap size at mean temperature.

\* Note: For sizes of 3" and greater consult EMSEAL for application-specific DSM performance specifications.



DSM System technology provides a structural joint sealant solution. Here DSM is installed at the top of a ramp where a driveline transitions from on-grade to supported slab and from deck-to-deck to deck-to-wall.



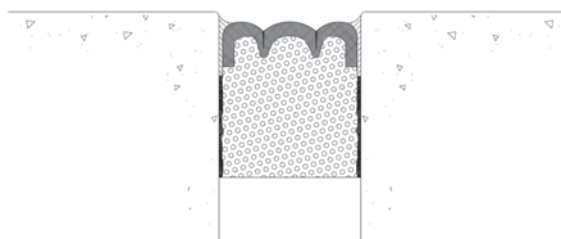
120 gallon per minute fire-hose water test proves DSM SYSTEM is watertight along its length, at joints and even at cross intersections of multiple sizes. Size switching ensures correct size product is in place despite joint size variation.



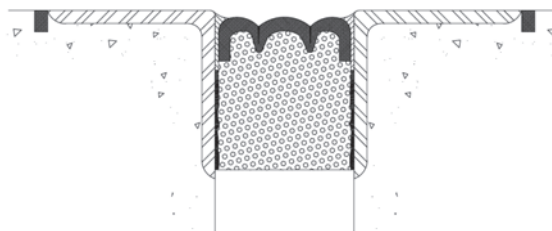
Now Available  
**DSM System  
UNIVERSAL-90's**  
Factory-Fabricated  
Transitions & Terminations

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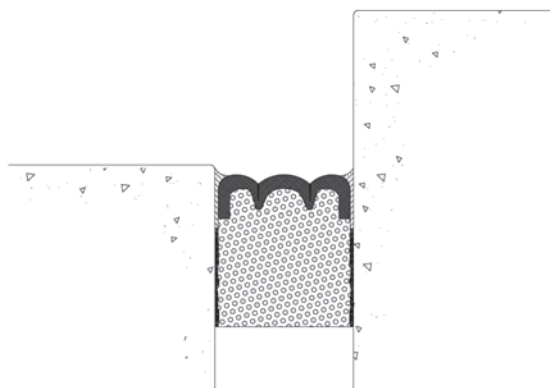
## Typical DSM Usage



DSM is an ideal solution for deck to deck light and heavy traffic. This watertight product is easily installed and provides a low service cost during its life span.



Where metal angles exist and cannot be removed DSM can be installed into the existing metal angles.



The non-invasive anchoring method makes DSM a great choice for deck-to-wall applications.

Standard CAD details are available online at [www.emseal.com](http://www.emseal.com). For application specific CAD details contact EMSEAL directly.



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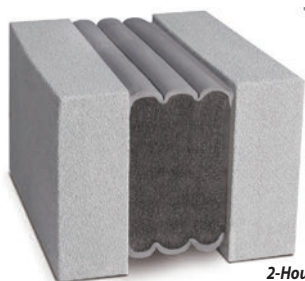
# Emshield® DFR2 / DFR3

▼ FIRE-RATED

DECKS Solid Slab

Watertight by design®

DFR2: US Patents 9,670,666 9,644,368 9,637,915 9,068,297, 9,528,262 8,739,495 C1 Patent Pending  
DFR3: US Patents 9,670,666 9,644,368 9,637,915 9,068,297, 9,528,262 8,365,495 C1 8,739,495 C1 Patent Pending



2-Hour fire-rated DFR2

## Traffic Durable, Watertight, 2-hour & 3-hour Fire-Rated Deck/Floor Expansion Joint

Emshield® DFR2 and DFR3 are single unit fire-rated, traffic durable, high movement and watertight expansion joints. Emshield DFR2 (Deck, Fire-Rated 2-Hours) and Emshield DFR3 (Deck, Fire-Rated 3-Hours) have been tested and certified by Underwriters Laboratories (UL) to the rigors of UL and ULC 2079.

Installed entirely from floor/deck surface above allowing for easier installation without compromising continuity of the fire-barrier from obstructions (e.g. columns, HVAC, electrical, plumbing, etc.)

Emshield DFR2 and DFR3 provide a watertight, clean handling, UV stable, non-staining, low-temperature-flexible, high-temperature-stable, traffic durable and fire-rated joint seal in a single installation process.

- Watertight
- Built-in fire-rating
- Conforms to joint gap irregularities
- Installed from above floor/deck  
No lifts or holding labor needed
- Eliminates traditional need for fire-blankets or gutters
- Acoustic dampening – STC rated 62 / OITC rated 52
- Non-invasive anchoring
- DFR2 Movement of +/- 50% (Total 100%)  
DFR3 Movement of +/- 25% (Total 50%)

### Emshield DFR2/3 Sizing

Joint Size at Mean T°F		Depth of Seal	
Inches (mm)	Inches (mm)	Inches (mm)	Inches (mm)
1/2 (12)	4 (100)	4 (100)	4 (100)
1 (25)	4 (100)	4 (100)	4 (100)
2 (50)	4 (100)	4 (100)	4 (100)
3 (75)	4 (100)	4 (100)	4 (100)
4 (100)	4 (100)	4 (100)	4 (100)

DFR2 and DFR3 nominal material size is equivalent to joint gap size at mean temperature. Also available in 1/4 inch increments from 1/2-inch to 4-inches.



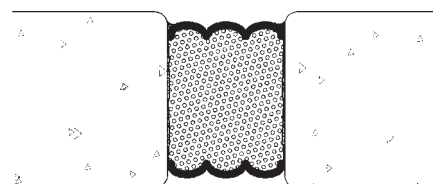
Now Available  
**Emshield DFR  
UNIVERSAL-90's**  
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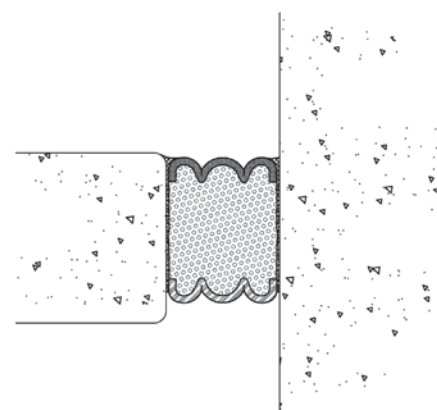


Sound Attenuation STC 62 / OITC 52

### Typical DFR2/DFR3 Usage



Emshield DFR2 and DFR3 can be installed in interior and exterior horizontal locations needing a UL/ULC certified fire rating. Its non-invasive anchoring design allows it to be easily installed in deck-to-deck (floor-to-floor) or deck-to-wall locations. Parking garages, mechanical rooms, stadiums, retail stores, and other locations with trafficable floor/deck conditions will benefit from the installation of this watertight, sound-suppressing, thermally insulating fire-rated expansion joint. (DFR2 shown above / DFR3 shown below)



UL Systems  
FF-D-0075, FF-D-1086, FW-D-0052  
FW-D-1073, FF-D-0078, FF-D-1090  
FW-D-0053, FW-D-1075

ULC Systems  
JF130, JF133, JF137, JF138



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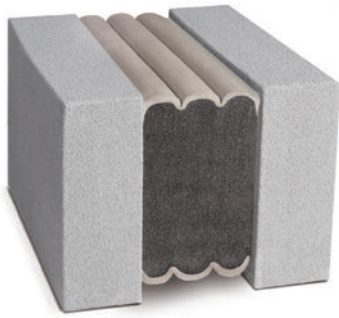
# SecuritySeal® SSF2 / SSF3

▼ FIRE-RATED

DECKS Solid Slab

Watertight by design®

SSF2: US Patents 9,670,666 9,644,368 9,637,915 9,068,297, 9,528,262 8,739,495 C1 Patent Pending  
SSF3: US Patents 9,670,666 9,644,368 9,637,915 9,068,297, 9,528,262 8,365,495 C1 8,739,495 C1 Patent Pending



## Pick-Resistant, 2-hour and 3-hour Fire-Rated, Watertight, Floor/Deck Expansion Joint

Emshield® SecuritySeal® SSF2 and SecuritySeal® SSF3 are pick-resistant, watertight, 2-hour (SSF2) and 3-hour (SSF3) fire-rated expansion joints for horizontal locations requiring a hardened tamper-resistant surface.

Installed entirely from floor/deck surface above allowing for easier installation without compromising continuity of the fire-barrier from obstructions (e.g. columns, HVAC, electrical, plumbing, etc.)

Floors and decks found in prisons, detention centers, public parking garages, mental and psychiatric hospitals, and school facilities are some of the many venues where SecuritySeal SSF is the perfect choice. Floor joints which join fire-rated walls in common rooms, mechanical rooms, and stairwells are typical locations of use.

- Hardened pick-resistant surface
- 2-hour and 3-hour built-in fire-rated (UL/ULC-certified)
- Watertight
- Non-invasive anchoring
- Installed from above floor/deck  
No lifts or holding labor needed
- Acoustic dampening – STC rated 62 / OITC rated 52
- SSF2 Movement of +/- 50% (Total 100%) of nominal size  
SSF3 Movement of +/- 25% (Total 50%) of nominal size

## SecuritySeal SSF2 / SSF3 Sizing

Joint Size at Mean T°F	Depth of Seal
Inches (mm)	Inches (mm)
1/2 (12)	4 (100)
1 (25)	4 (100)
2 (50)	4 (100)
3 (75)	4 (100)
4 (100)	4 (100)

SSF2 and SSF3 nominal material size is equivalent to joint gap size at mean temperature. Also available in 1/4 inch increments from 1/2-inch to 4-inches.



Now Available  
**SecuritySeal  
UNIVERSAL-90's**  
Factory-Fabricated  
Transitions & Terminations

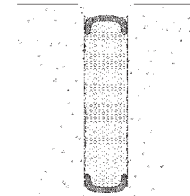
See page 21



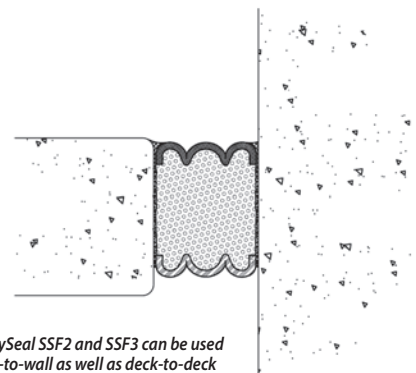
Vandalism / Water / Fire / Traffic / Sound

Sound Attenuation STC 62 / OITC 52

## Typical SecuritySeal SSF Usage



SecuritySeal SSF2 and SSF3 are manufactured with a single bellow face when used in a gap from 1/2-inch (12mm) to 1 1/2-inch (40mm). (SSF2 shown above)



SecuritySeal SSF2 and SSF3 can be used in deck-to-wall as well as deck-to-deck applications. (SSF3 shown above)



UL Systems  
FF-D-0077, FF-D-1089, FW-D-0055  
FW-D-1077, FF-D-0076, FF-D-1088  
FW-D-0054, FW-D-1076

ULC Systems  
JF135, JF136, JF139, JF141



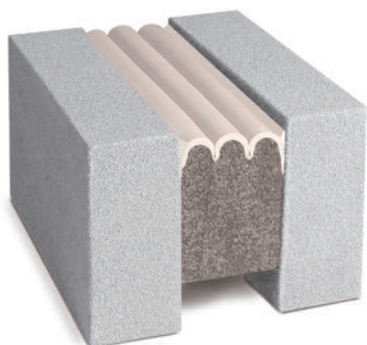
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Standard CAD details are available online at [www.emseal.com](http://www.emseal.com). For application specific CAD details contact EMSEAL directly.

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EMSEAL, LLC 111 Royal Group Crescent, Woodbridge, ON L4H1X9 Canada

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PH: 416-740-2090

FX: 508-836-0281  
FX: 416-740-0233



Horizontal Colorseal is selected to blend with the color of the surrounding substrate. It is an ideal solution in non-traffic situations and has the unique ability to handle curved joints large and small.

**Horizontal Colorseal** is a high-movement silicone bellows system for deck applications used as a primary seal typically without a coverplate in non-traffic areas such as perimeters in decks or roofs. It can be used under a coverplate when pedestrian or vehicular traffic is expected.

- Watertight
- Non-invasive anchoring
- Supplied on 10-foot reel for sizes under 1 1/2" (40mm)
- Wide range of standard and custom colors
- Conforms to joint gap irregularities
- Size switching accommodates joint gap variations
- Thermally insulating and acoustic dampening
- Bellows are never under tension during joint movement
- No blockout required
- Movement of +/- 50% (Total 100%) of nominal size

## Horizontal Colorseal Sizing

Joint Size at Mean T°F	Depth of Seal
Inches (mm)	Inches (mm)
1/2* (12)	1 3/4 (45)
3/4* (20)	1 3/4 (45)
1* (25)	1 3/4 (45)
1 1/4* (35)	1 3/4 (45)
2 (50)	2 1/2 (65)
3 (75)	3 1/2 (90)
4 (100)	4 1/2 (115)
5 (125)	5 1/2 (140)
6 (150)	6 (150)
7 (175)	7 (175)
8 (200)	8 (200)

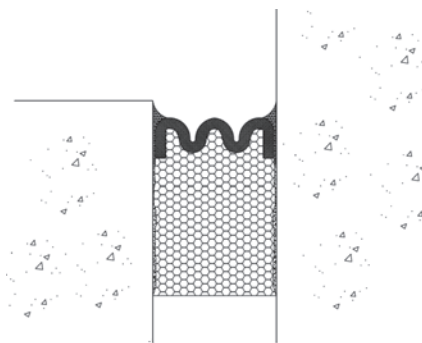
Horizontal Colorseal sizes are available in 1/4" increments in nominal sizes from 1" to 6", and 1/2" increments from 6" to 8". Nominal size is equivalent to joint gap size at mean temperature. \* Supplied on 10-foot Reels



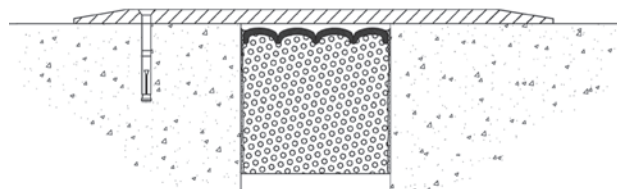
Now Available  
**Horizontal Colorseal  
UNIVERSAL-90's**  
Factory-Fabricated  
Transitions & Terminations

See page 21

## Typical Horizontal Colorseal Usage



Horizontal Colorseal is often installed at the junction of a deck and wall.



Horizontal Colorseal is typically installed in an area where vehicular or pedestrian traffic does not come in direct contact with the seal. In required vehicular situations it can be installed in conjunction with a metal coverplate.



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## Continuity of Seal at Upturns, Downturns and Termination Points

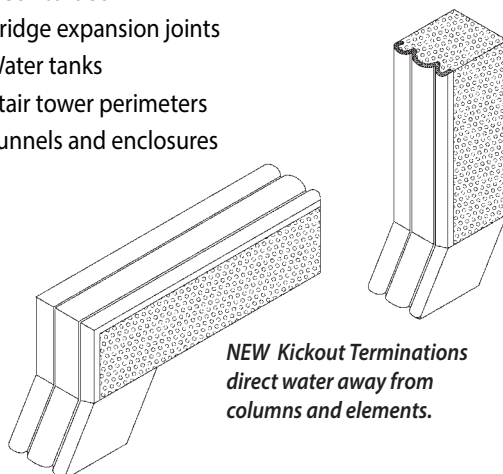
Universal-90's Transitions and Terminations are patented, factory-fabricated, single-piece 90° units constructed from the same materials as the connecting precompressed expansion joint system. Bellows are constructed on both sides allowing a waterseal in an inner or outer 90° corner. This single unit achieves the greatest possible continuity of seal in transitions in planes, avoiding the limitations of field-made joins.

Using Universal 90's in your expansion joint design ensures continuity of seal. Installation time is reduced and the integrity of the seal is maintained.

Universal-90's are available for all coated EMSEAL products.

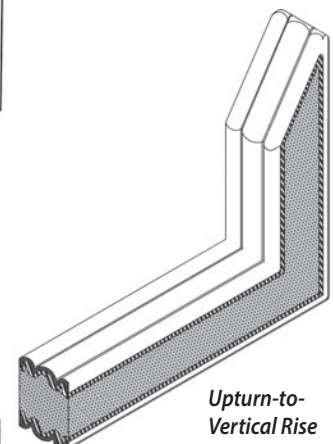
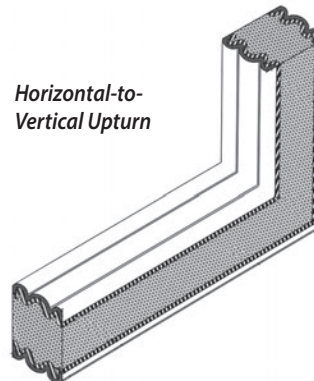
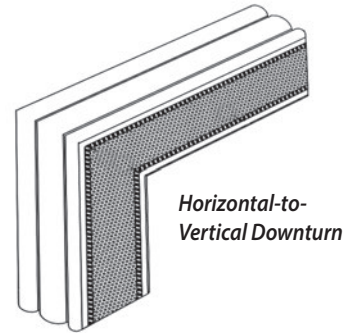
Some of the many applications:

- Stadiums
- Arenas
- Parking decks
- Floors
- Deck-to-wall
- Elevator tower perimeters
- Deck-to-deck
- Bridge expansion joints
- Water tanks
- Stair tower perimeters
- Tunnels and enclosures

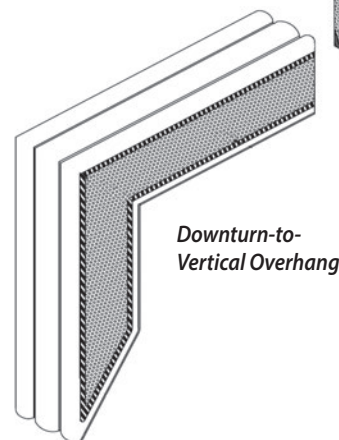


## Universal-90 Configurations

### Transitions



### Terminations



Standard CAD details are available online at [www.emseal.com](http://www.emseal.com). For application specific CAD details contact EMSEAL directly.

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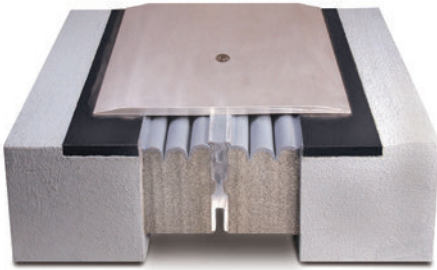


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# SJS – Seismic Joint System

DECK Solid Slab

Watertight by design®



**SJS** is a watertight, high-movement, sound-dampened coverplate system for large and seismic expansion joint gaps. SJS is constructed from two horizontal joints pre-assembled in parallel adjacent to a heavy-duty extruded aluminum spline. The system contains no metal embeds, self-centering bars, or other unnecessary metal components. The spline acts as a receptor for attaching the surface-mounted traffic plates that bear vehicle and other loads.

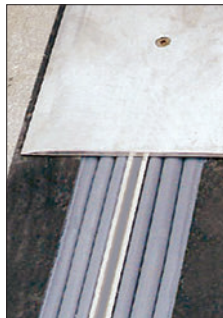
- Watertight
- Easy installation with non-invasive anchoring
- No hard metal-to-concrete connections
- Factory fabricated changes in plane and direction
- Aluminum or stainless steel coverplates available
- Field-adjustable plate support
- The quietest coverplate system available when installed with EMSEAL-supplied elastomeric nosing material
- Coverplate is easy to install with self-locating, vibration-dampening screws
- Does not depend on a gutter
- Designed for gaps of 2-inches (50mm) or larger
- Movement of +/- 50% (Total 100%) of nominal size
- Fire-Rated version also available. *See Page 24*
  - \*SJS-FR1 1-hour UL/ULC-certified
  - \*SJS-FR2 2-hour UL/ULC-certified



*The back pressure of the SJS foam and an epoxy adhesive provides watertightness with non-invasive anchoring without relying on a gutter. Installation is faster than other more complicated systems.*



*EMSEAL offers pre-fabricated factory transitions for treads and risers which allow for ease of installation and which also ensure watertightness in changes of plane.*



*Installation is completed with aluminum or stainless steel coverplates. The center spline functions as a continuous receptor for the self-locating coverplate screws allowing for greater ease of installation. The coverplate edge-chamfer is available in standard or optional low-slope configurations.*



*Watertightness is assured at the traffic surface negating the need for ineffective moisture barriers and secondary gutters.*

*Standard CAD details are available online at [www.emseal.com](http://www.emseal.com). For application specific CAD details contact EMSEAL directly.*

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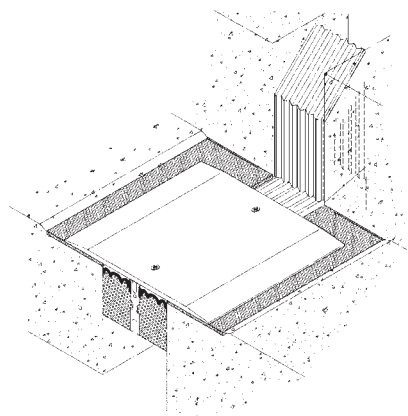


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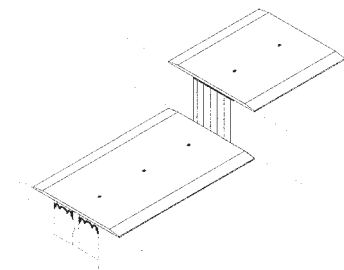
## SJS Sizing

Joint Size at Mean T°F	Depth of Seal
Inches (mm)	Inches (mm)
2 (50)	3 (75)
2 1/2 (65)	3 (75)
3 (75)	3 (75)
3 1/2 (90)	3 (75)
4 (100)	4 (100)
5 (125)	4 (100)
6 (150)	4 (100)
7 (175)	4 (100)
8 (200)	4 (100)
9 (225)	5 (125)
10 (250)	5 (125)
11 (275)	5 (125)
12 (300)	5 (125)
13 (325)	5 (125)
14 (350)	5 (125)
15 (372)	5 (125)
16 (400)	5 (125)
17 (425)	5 (125)
18 (450)	5 (125)

SJS sizes are available in nominal sizes from 2" to 24". Consult EMSEAL for larger sizes. Nominal size is equivalent to joint gap size at mean temperature.

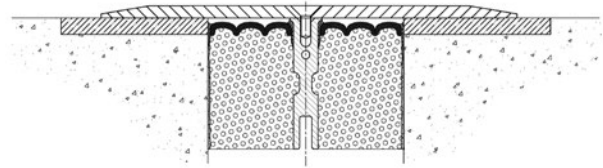


The SJS Seismic Joint System provides an effective large-gap waterproofing solution. It can also transition to other EMSEAL foam products in the vertical plane as seen in this SJS-to-COLORSEAL transition.

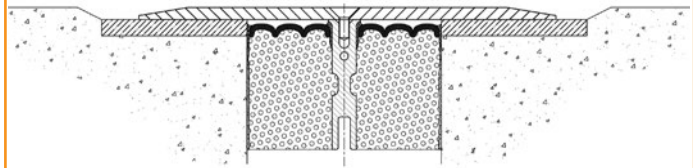


SJS provides a solid trafficable solution to transitions along and over curbs.

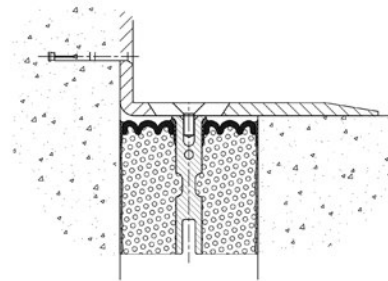
## Typical SJS Usage



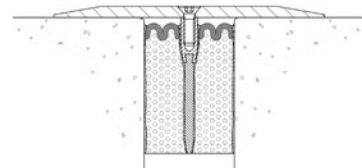
The SJS Seismic Joint System installed flush with the joint surface.



SJS installed recessed from the deck or road surface lowering the coverplate to the traffic surface height. The EMCRETE elastomeric nosing material works to level the coverplate as well as to absorb and attenuate sound.



Installation can also be made at deck-to-wall conditions.



SJS is now available for joint sizes as small as 2" (50mm).

Standard CAD details are available online at [www.emseal.com](http://www.emseal.com). For application specific CAD details contact EMSEAL directly.

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# SJS-FR Fire-Rated Seismic Joint System

▼ FIRE-RATED

DECKS Solid Slab

Watertight by design®

US Patents: 9,689,157 9,689,158 8,813,450 C1 8,813,449 C1 8,341,908 Patent Pending



SJS-FR1 and SJS-FR2 are fire-rated, watertight expansion seals which are designed for larger gaps. Their topping coverplate makes them the best solution for applications such as parking decks, stadium concourses and seating levels, interior and exterior floors, and other locations where larger or seismic gaps need a fire-rated, watertight, traffic-bearing expansion joint.

**SJS-FR1** and **SJS-FR2** are UL/ULC certified (2079) fire-rated, watertight, high-movement, sound-dampened systems for large and seismic expansion joint gaps. Designed for use in fire-rated concrete decks/floors, interior or open air slabs, treads and risers, in both new or retrofit construction.

Installed from floor/deck surface above allowing for easier installation without compromising continuity of the fire-barrier from obstructions (columns, HVAC, electrical, plumbing, etc.)

SJS-FR1 and SJS-FR2 have all of the performance advantages of the SJS System with the addition of a built-in UL-certified 1-hour (SJS-FR1) or 2-hour (SJS-FR2) fire rating. They are constructed of fire-retardant foam with an intumescent coating on the non-traffic underside. The top provides a warranted watertight seal. The topping coverplate provides a durable trafficable surface.

- 1-hour or 2-hour UL/ULC-certified fire-rated
- Built-in fire-rating
- Eliminates the need for fire-blankets or gutters
- Watertight
- Installed from above floor/deck  
No lifts or holding labor needed
- Easy installation with non-invasive anchoring
- No hard metal-to-concrete connections
- Aluminum or stainless steel coverplates available
- Coverplate is easy to install with  
self-locating, vibration-dampening screws
- Movement of +/- 50% (Total 100%) of nominal size

## SJS-FR Sizing\*

Joint Size at Mean T°F	Depth of Seal
Inches (mm)	Inches (mm)
4 (100)	6 (150)
5 (125)	6 (150)
6 (150)	6 (150)
7 (175)	6 (150)
8 (200)	6 (150)
9 (225)	6 (150)
10 (250)	6 (150)

Sizes are available in nominal sizes from 2" to 10". Nominal size is equivalent to joint at mean temperature.

**SJS-FR1 1-hour fire-rated**  
**SJS-FR2 2-hour fire-rated**

\*Joint sizing of 2" (50mm) through 31/2" (90mm) are also available. For performance specifications please consult EMSEAL.



SJS-FR1  
UL Systems  
FF-D-1091, FF-D-2014, FW-D-1079, FW-D-2007  
FF-D-1092, FF-D-2015, FW-D-1080, FW-D-2008  
ULC System  
JF140, JF149, JF142, JF150



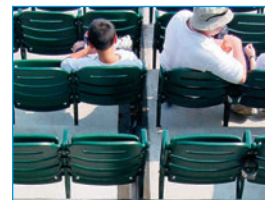
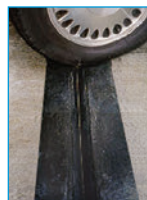
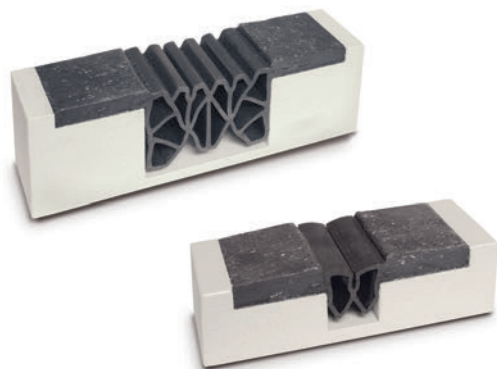
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Thermaflex provides a durable expansion joint which will stand up to direct traffic pressure. Factory-welded transitions are engineered to accommodate changes in plane over curbs, and in treads and risers on stadiums.

**Thermaflex®** is a traffic-durable membrane/nosing system. The gland used in the system becomes integral with the deck as the nosing material penetrates the perforations in the gland, encapsulates the flanges, and bonds to the concrete.

- Watertight
- Double-cell or multi-cell glands
- Heat weldable Santoprene gland
- Factory-fabricated transitions and terminations
- Cold-applied nosing is self-curing
- Nosing material is a two-part polyurethane reinforced with silica-free aggregate
- Aggregate loading is conservatively maintained not to exceed two parts aggregate to one part resin by weight
- Nosing material is easily troweled
- Durable under vehicular traffic and extreme weather conditions

### Thermaflex Sizing

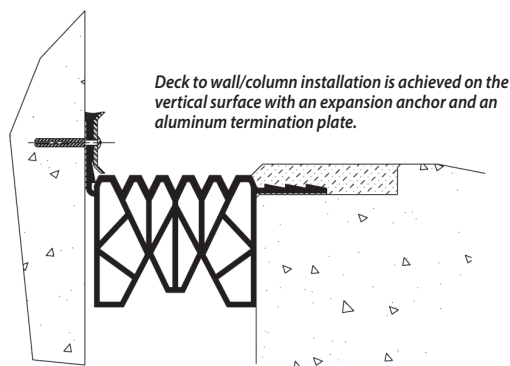
Model No.	Installation Width			Blockout Dimensions (Each side of joint gap)
	Min	Preferred	Max	
<b>TM 1.5</b>	1 in (25mm)	1 1/4 in (30mm)	2 in (50mm)	3/4 in x 3 in (19mm x 75mm)
<b>TM 2.5</b>	1 1/4 (30)	2 1/4 (55)	2 3/4 (70)	3/4 x 3 (19 x 75)
<b>TCR 300</b>	1 7/8 (47)	2 1/8 (53)	2 3/4 (70)	3/4 x 3 1/2 (19 x 90)
<b>TCR 400</b>	2 1/4 (55)	2 3/4 (70)	3 3/4 (95)	3/4 x 3 1/2 (19 x 90)
<b>TCR 500</b>	3 (75)	3 1/2 (90)	4 3/4 (120)	3/4 x 3 1/2 (19 x 90)
<b>TCR 600</b>	4 1/2 (115)	4 3/4 (120)	5 1/2 (140)	3/4 x 3 1/2 (19 x 90)

For size variations or information please consult EMSEAL technical services

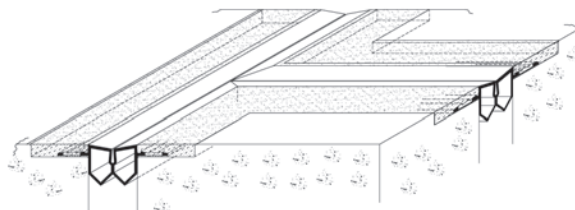
### Typical Thermaflex Usage



Thermaflex is constructed of extruded thermoplastic Santoprene® rubber sealing glands with punched flanges embedded in a high-strength, flexible, impact-absorbing elastomeric nosing.



Deck to wall/column installation is achieved on the vertical surface with an expansion anchor and an aluminum termination plate.



Sealing glands are heat-weldable allowing for changes in direction or plane while maintaining watertightness. Factory-fabricated transitions allow for ease of installation. EMSEAL warrants its transitions both within the technology and transitions made in the vertical plane between dissimilar EMSEAL technologies to be watertight.

Standard CAD details are available online at [www.emseal.com](http://www.emseal.com). For application specific CAD details contact EMSEAL directly.



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# Migutan FP110 / FP155

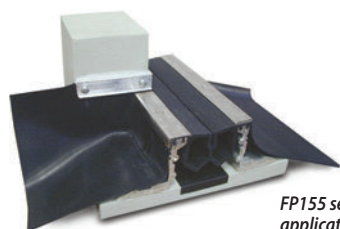
DECKS Split Slab

Watertight by design®



**Migutan FP110** and **FP155** are unique designs incorporating side membrane sheets which integrate with the deck waterproofing system to form a continuous, completely watertight system. MIGUTAN is the only system of its kind with a 20-year track record and tens of thousands of feet installed and functioning. MIGUTAN is the most configurable, warranted, split-slab expansion joint in the industry.

- Watertight
- Exceptional durability under vehicular traffic and extreme weather conditions
- Can be used below grade or on decks
- Heavy-duty positive interlocking aluminum side rails
- Steel side legs available
- Stainless steel gland-retaining capping strips
- Sealing insert and side flashing sheet are heat-weldable thermoplastic rubber (TPR)
- Factory fabricated tees, crosses, directional changes, column details, terminations and changes in plane
- Leg heights from 1" (25mm) to 12" (300mm) as well as low leg height versions
- Available with integrated coverplate



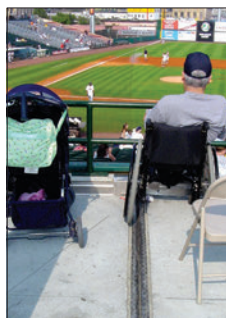
FP155 seen in deck-to-wall application at a column transition.



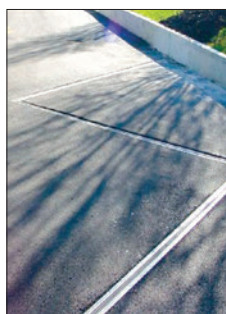
Leg heights from 1" (25mm) to 12" (300mm) accommodate pavers, asphalt, concrete and other wear-course toppings allowing for exceptional durability under vehicular traffic and extreme weather and temperature conditions.



The Migutan sealing insert and side flashing sheets are made of heat-weldable thermoplastic rubber. This ensures continuity of seal through transitions in plane and direction as well as at terminations. The flashing sheets are embedded in and encapsulated by the deck waterproofing membrane. The result is a static integration of the joint and the waterproofing that will not fail from cyclical movement across the joint.



The Migutan design provides watertight joints over occupied spaces below such as stadiums. It also provides for a pedestrian-friendly and accessible surface.



Positive interlocking metal rails (or alternative stainless steel pins) eliminate misalignment between adjoining sections. This method has proven successful with tens of thousands of feet installed and functioning over the past 20 years. Factory-fabricated direction changes ensure continuity of seal.



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Standard CAD details are available online at [www.emseal.com](http://www.emseal.com). For application specific CAD details contact EMSEAL directly.

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## Migutan FP110

Model No.	Leg Height	Max. Joint Gap at Mean T°F	Movement Range	Total Movement	Overall Width System at Mean Temp	Exposed Width System at Mean Temp
FP110/25	1 in (25mm)	2 3/8 in (65mm)	See Below	See Below	9 in (225mm)	See Below
FP110/45	1 3/4 (45)	3 in (75mm)	+1 1/4 in (+30mm) -1 1/4 in (-30mm)	2 1/2 in (60mm)	9 3/8 in (237mm)	4 3/8 in (112mm)
FP110/60	2 3/8 (60)					
FP110/80	3 1/8 (80)					
FP110/95	3 3/4 (95)					
FP110/115	4 1/2 (115)					
FP110/130	5 1/8 (130)					
FP110/150	5 7/8 (150)					
FP110/165	6 1/2 (165)					
FP110/185	7 1/4 (185)					
FP110/200	7 7/8 (200)					
FP110/220	8 5/8 (220)					
FP110/235	9 1/4 (235)					
FP110/255	10 (255)					
FP110/270	10 5/8 (270)					
FP110/290	11 1/2 (290)					
FP110/305	12 (305)					

For size variations or information please consult EMSEAL technical services. Visit [www.emseal.com](http://www.emseal.com)

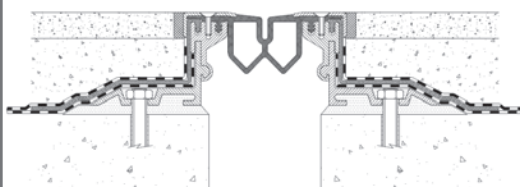
For sizes above 150mm: Intended for non-vehicular-traffic plaza decks. Extra-high leg heights accommodate thick overlay systems and topping slabs. These models are supplied with extra-long (double-width) side sheets to ensure proper integration with deck waterproofing.

## Migutan FP155

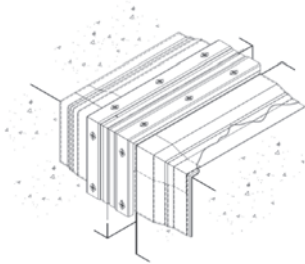
### Model No.

**FP155** Available in same leg heights as the FP110 (see chart above)  
Migutan FP155 is engineered for wider joint gaps.  
Contact EMSEAL for joint gap and performance specifications.

## Typical Migutan Usage

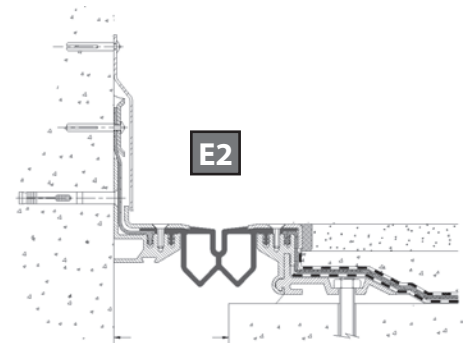


In deck-to-deck applications, Migutan is ideal for plaza and podium decks, stadium concourses, arrival roadways, and anywhere water-proofed split slabs are designed.

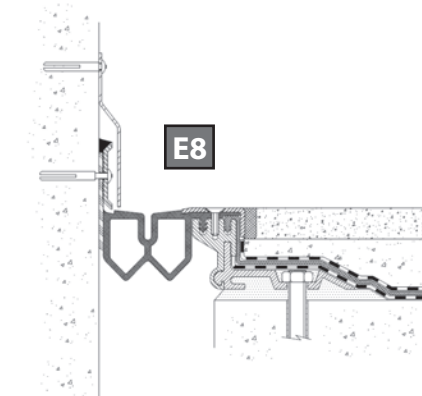
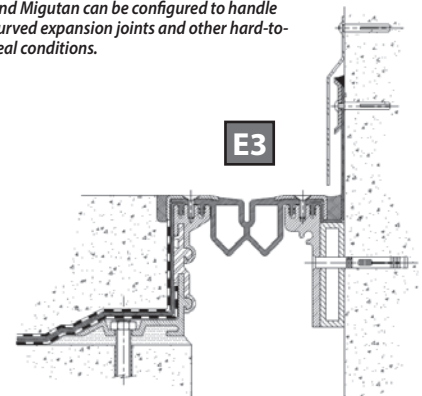


Factory-fabricated corners and transitions are part of the Migutan system. Each change in plane or direction is constructed from field-supplied measurements to create a custom, watertight transition within the Migutan system or where the joint requirement changes to other EMSEAL technologies.

## Typical Migutan Usage



EMSEAL offers numerous options for Migutan applications at deck-to-wall conditions as shown here in E2, E3 and E8 configurations. The EMSEAL technical service team can help you map a Migutan solution to integrate deck-to-deck models to deck-to-wall models, and Migutan can be configured to handle curved expansion joints and other hard-to-seal conditions.



Standard CAD details are available online at [www.emseal.com](http://www.emseal.com). For application specific CAD details contact EMSEAL directly.

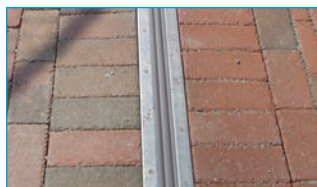
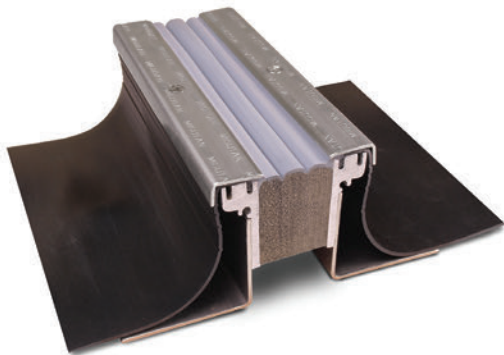
EMSEAL JOINT SYSTEMS, LTD 25 Bridle Lane, Westborough, MA 01581 USA  
EMSEAL, LLC 111 Royal Group Crescent, Woodbridge, ON L4H 1X9 Canada

PH: 508-836-0280  
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DSM-FP is a versatile expansion joint for split-slab construction as well as split slab-to-solid slab applications. Fabricated transitions from deck to wall, at curbs, sidewalks, parapets, tees, and crosses are available with the DSM-FP.

DSM-FP is a trafficable joint system for plaza decks & split slabs designed to straddle joint gaps up to 4-inches (100mm). DSM-FP expands the use of the DSM System to waterproofed split-slab deck designs through the use of side flashing sheets that integrate with the deck waterproofing membrane.

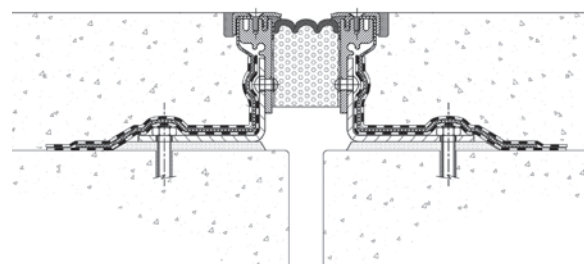
- Watertight
- Ideally suited to parking decks, stadium concourse, plazas, and other smaller-joint, waterproofed split-slab applications
- Exceptional durability under pedestrian traffic and extreme weather conditions
- Stainless steel flashing sheet capping strips
- Side flashing sheets are heat-weldable thermoplastic rubber (TPR)
- Factory fabricated changes in plane and direction
- Steel side legs available in many heights
- Aluminum or stainless steel coverplates available
- New construction or retrofit of failed older construction
- Movement of +50% and -50% (Total 100%) of nominal size

### DSM-FP Sizing

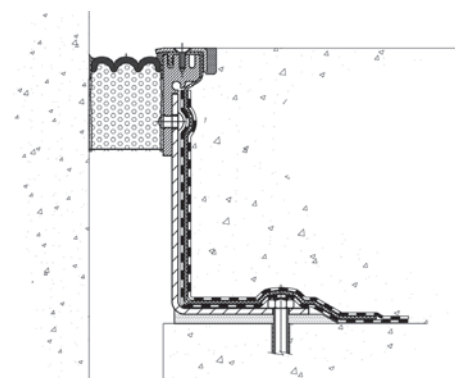
Joint Size at Mean T°F		Depth of Seal	
Inches	(mm)	Inches	(mm)
1/2	(12)	1 3/4	(45)
3/4	(20)	1 3/4	(45)
1	(25)	2	(50)
2	(50)	2 1/2	(65)
3	(75)	3 1/4	(80)
4	(100)	4	(100)

DSM-FP sizes are available in 1/4" increments in nominal sizes from 1" to 4". Consult EMSEAL for larger sizes. Nominal size is equivalent to joint gap size at mean temperature.

### Typical DSM-FP Usage



DSM-FP is an effective watertight expansion joint for deck-to-deck expansion gaps in split-slab construction. The topping slab connections are made to the DSM-FP mounting leg. The split-slab connection incorporates an integral waterproofing flashing sidesheet embedded between layers of the deck waterproofing membrane on the structural slab and beneath the topping slab.



DSM-FP is also an effective watertight expansion joint which can bridge split-slab and solid-slab construction. The connection to solid-slab construction is made directly to the slab substrate. The split-slab connection is made to the DSM-FP mounting leg. An effective solution in deck-to-deck and (as shown here) in deck-to-wall.

Standard CAD details are available online at [www.emseal.com](http://www.emseal.com). For application specific CAD details contact EMSEAL directly.

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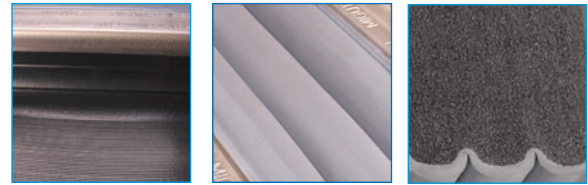
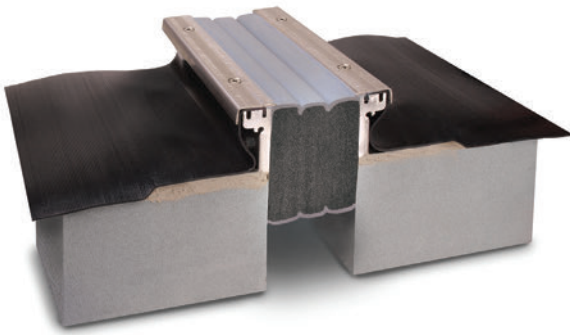
# Emshield® DFR-FP

▼ FIRE-RATED

DECKS Split Slab

Watertight by design®

US Patents: 9,670,666 9,644,368 9,637,915 9,068,297 9,528,262 8,739,495 C1 Patent Pending



Heat-weldable TPR sidesheets (left) integrate with the deck waterproofing system. Silicone bellows provide a watertight top surface (center) of Emshield UL/ULC fire-rated foam. The top and bottom of each foam stick is coated with traffic-grade silicone (right).

**Emshield® DFR-FP** is a single unit fire-rated trafficable joint system for plaza decks & split slabs designed to straddle joint gaps up to 4-inches (100mm). DFR-FP expands the use of Emshield DFR to waterproofed split-slab deck designs through the use of side flashing sheets that integrate with the deck waterproofing membrane. Emshield DFR-FP has been certified by Underwriters Laboratories (UL) to the rigors of UL and ULC 2079.

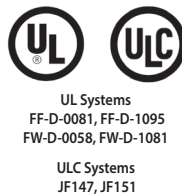
Installed entirely from the deck surface above -- allowing for easier installation without compromising continuity of the fire-barrier from obstructions (e.g. columns, HVAC, electrical, plumbing, etc.) DFR-FP provides a watertight, clean handling, UV stable, low-temperature-flexible, high-temperature-stable, traffic durable fire-rated joint seal.

- Watertight
- Ideally suited to parking decks, plazas, stadium concourses, and other smaller-joint, fire-rated waterproofed split-slab applications
- Built-in UL-certified fire-rating
- Exceptional durability under pedestrian traffic and extreme weather conditions
- Eliminates traditional need for fire-blankets or gutters
- Stainless steel flashing sheet capping strips
- Side flashing sheets are heat-weldable thermoplastic rubber (TPR)
- Factory fabricated changes in plane and direction
- Steel side legs available in many heights
- New construction or retrofit of failed older construction
- Movement of +/- 50% (Total 100%) of nominal size

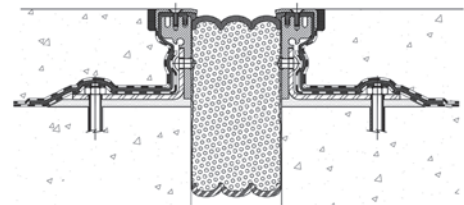
## DFR-FP Sizing

Joint Size at Mean T°F	Depth of Seal
Inches (mm)	Inches (mm)
1/2 (12)	5 (125)
3/4 (20)	5 (125)
1 (25)	5 (125)
2 (50)	5 (125)
3 (75)	5 (125)
4 (100)	5 (125)

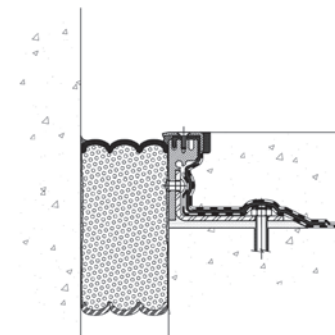
DFR-FP sizes are available in 1/4" increments in nominal sizes from 1" to 4". Nominal size is equivalent to joint gap size at mean temperature. Leg heights are available from 1-inch (25mm) to 3-inches (75mm).



## Typical DFR-FP Usage



DFR-FP offers a fire-rated waterproof solution to split-slab deck-to-deck situations. Shown here in a 4-inch expansion gap bridged with a fire-rated expansion joint system. The split-slab connection incorporates an integral waterproofing flashing sidesheet embedded between layers of the deck waterproofing membrane on the structural slab and beneath the topping slab.



DFR-FP is an effective fire-rated watertight expansion joint which can bridge split-slab to solid-slab construction. The connection to solid-slab construction is made directly to the slab substrate. The split-slab connection is made to the DFR-FP mounting leg.

DECKS - Split Slab / Plaza  
UL / ULC FIRE-RATED



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# SJS-FP Seismic Joint System

DECKS Split Slab

Watertight by design®



SJS-FP installation consists of the two sub-assemblies which make up the system. The mounting leg assembly and integral waterproof sidesheets are installed onto the structural slab and integrated with the deck waterproofing system. The watertight, precompressed SJS assembly is installed between the rails of the mounting leg assembly and then capped with an aluminum or stainless steel coverplate.

SJS-FP expands the use of the SJS System to waterproofed split-slab deck designs through the use of side flashing sheets that integrate with the deck waterproofing membrane. The system is made up of two sub-assemblies which include the structural-slab mounted supporting legs with integral waterproofing side sheets and the joint sealing and coverplate assembly.

- Watertight
- Ideally suited to stadium concourse, roadway, plaza, and other large-joint, waterproofed split-slab applications
- Exceptional durability under vehicular traffic and extreme weather conditions
- Stainless steel flashing sheet capping strips
- Side flashing sheets are heat-weldable thermoplastic rubber (TPR)
- Factory fabricated changes in plane and direction
- Steel side leg available in many heights
- Aluminum or stainless steel coverplates available
- No hard connection between coverplate and concrete substrate
- The quietest coverplate system available
- Self-locking, vibration dampened screws
- Movement of +50% and -50% (Total 100%) of nominal size

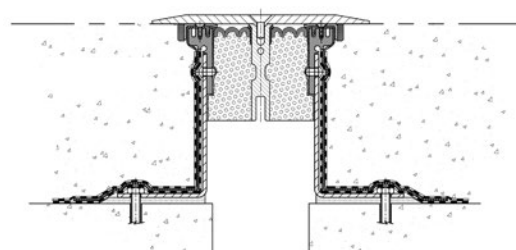
## SJS-FP Sizing

Joint Size at Mean T°F	Depth of Seal
Inches (mm)	Inches (mm)
2 (50)	3 (75)
2 1/2 (65)	3 (75)
3 (75)	3 (75)
3 1/2 (90)	3 (75)
4 (100)	4 (100)
5 (125)	4 (100)
6 (150)	4 (100)
7 (175)	4 (100)
8 (200)	4 (100)
9 (225)	5 (125)
10 (250)	5 (125)
11 (275)	5 (125)
12 (300)	5 (125)
13 (325)	5 (125)
14 (350)	5 (125)
15 (372)	5 (125)
16 (400)	5 (125)
17 (425)	5 (125)
18 (450)	5 (125)

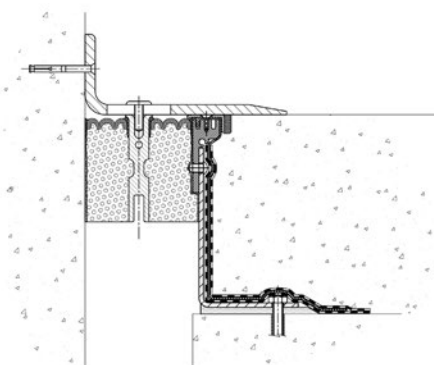
SJS-FP can straddle structural slab gaps from 1" to 24". In the topping slab, sizes are available in nominal sizes from 2" to 24". Consult EMSEAL for larger sizes. Nominal size is equivalent to joint gap size at mean temperature.

Standard CAD details are available online at [www.emseal.com](http://www.emseal.com). For application specific CAD details contact EMSEAL directly.

## Typical SJS-FP Usage



The SJS-FP system features the addition of side flashing sheets which are fully encapsulated in a static, watertight integration with the deck's buried waterproofing membrane.



Watertight configurations and factory-fabricated transitions and terminations are available for deck-to-wall and other conditions.



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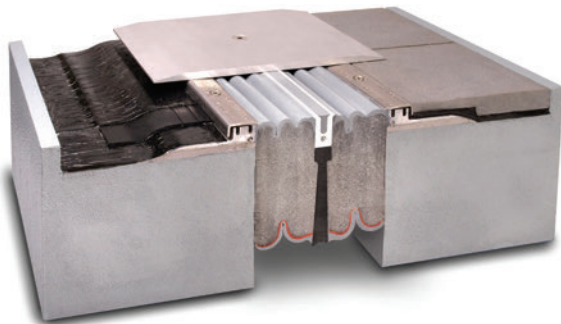
# SJS-FP-FR

▼ FIRE-RATED

DECKS Split Slab

Watertight by design®

US Patents: 9,689,157 9,689,158 8,813,450 C1 8,341,908 8,813,449 C1 Patent Pending



Heat-weldable TPR sidesheets (left) integrate with the deck waterproofing system. Watertight silicone bellows (center) sit under the trafficable coverplate. Spline (right) continues down through fire-retardant intumescent coating and silicone outer coating which line the SJS-FP-FR underside.

The **SJS-FP-FR System** is designed to provide a UL/ULC-certified fire-rated, watertight, trafficable joint system for use in seismic and large joint openings in decks of split-slab design. SJS-FP-FR expands the use of the SJS-FR SYSTEM through side flashing sheets that integrate with the deck waterproofing membrane.

The primary use is for plaza decks & split slabs designed to straddle joint gaps from 4-inches (100mm) to 10-inches (250mm). SJS-FP-FR has been certified by Underwriters Laboratories (UL) to the rigors of UL and ULC 2079.

Installation is entirely from the deck surface above -- allowing for easier installation without compromising continuity of the fire-barrier from obstructions (e.g. columns, HVAC, electrical, plumbing, etc.)

- Watertight
- Built-in UL 2079-certified 1-hour or 2-hour fire-rating
- Eliminates traditional need for fire-blankets or gutters
- Exceptional durability under pedestrian traffic and extreme weather conditions
- Easy installation with non-invasive coverplate anchoring
- Side flashing sheets are heat-weldable thermoplastic rubber (TPR)
- Aluminum or stainless steel coverplates available
- Coverplate is easy to install with self-locating, vibration-dampening screws
- New construction or retrofit of failed older construction
- Movement of +50% and -50% (Total 100%) of nominal size

## SJS-FP-FR Sizing\*

Joint Size at Mean T°F	Depth of Seal
Inches (mm)	Inches (mm)
4 (100)	6 (150)
5 (125)	6 (150)
6 (150)	6 (150)
7 (175)	6 (150)
8 (200)	6 (150)
9 (225)	6 (150)
10 (250)	6 (150)

SJS-FP-FR sizes are available in 1" increments in nominal sizes from 2" to 10". Nominal size is equivalent to joint gap size at mean temperature. Leg heights are available from 1-inch (25mm) to 3-inches (75mm).



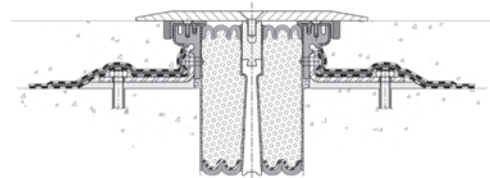
UL Systems  
FF-D-1093, FF-D-2016  
FF-D-1096, FF-D-2018, FW-D-2009

ULC Systems  
JF143, JF148, JF152

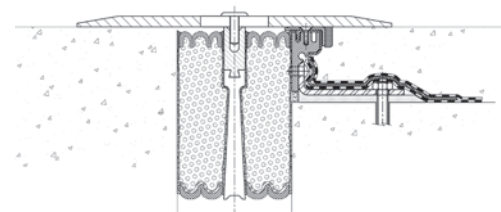
\*Joint sizing of 2" (50mm) through 3 1/2" (90mm) are also available. For performance specifications please consult EMSEAL.

## Typical SJS-FP-FR Usage

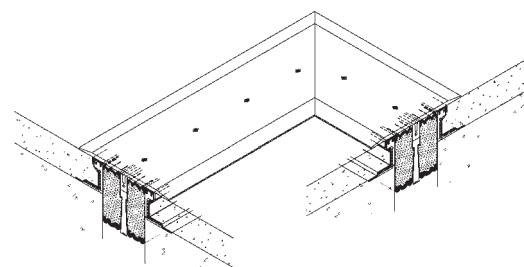
Illustrations of 4" (100mm) and larger.



SJS-FP-FR offers a fire-rated waterproof solution to split-slab deck-to-deck situations (above). Shown here is an expansion gap bridged with a fire-rated expansion joint system installed in a concrete substrate.



SJS-FP-FR can also fit applications of split-slab decks to solid-slab decks. The back pressure of SJS foam provides the required anchoring and sealing against the solid-slab side (left) of the expansion gap.



Watertight trafficable transitions are also achievable with the SJS-FP-FR system. Shown here is a 90-degree horizontal transition.

DECKS - Split Slab / Plaza  
UL / ULC FIRE-RATED



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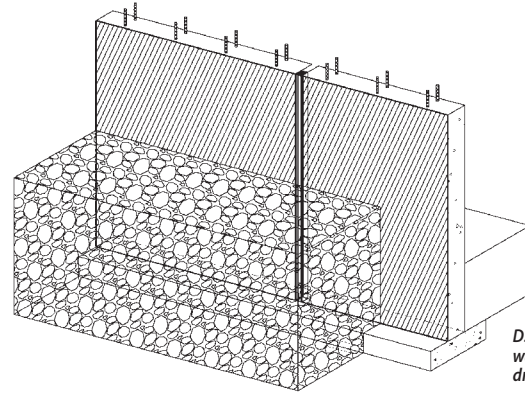
FX: 508-836-0281  
FX: 416-740-0233

Standard CAD details are available online at [www.emseal.com](http://www.emseal.com). For application specific CAD details contact EMSEAL directly.

# DSM System

WALLS Below Grade

Watertight by design®



DSM in a below-grade wall with an active drainage system.

The **DSM System** used below grade is a durable joint-face adhered, precompressed primary seal for non-hydrostatic conditions. It combines hydrophobic-acrylic impregnated foam sealant with factory pre-coated silicone bellows. It is available as standard single-sided (**DSM**) or optional double-sided (**DSM-DS**).

- Watertight
- Used as a primary seal for exterior vertical below-grade walls for installation from the positive side
- Non-invasive anchoring
- Non-staining
- Conforms to joint gap irregularities
- Size switching accommodates joint gap variations
- 100% free of wax and asphalt
- Movement of +50% and -50% (Total 100%) of nominal size

## DSM Sizing

Joint Size at Mean T°F	Depth of Seal
Inches (mm)	Inches (mm)
1/2 (12)	1 3/4 (45)
3/4 (20)	1 3/4 (45)
1 (25)	2 (50)
2 (50)	2 1/2 (65)
3 (75)	3 1/4 (80)
4 (100)	4 (100)

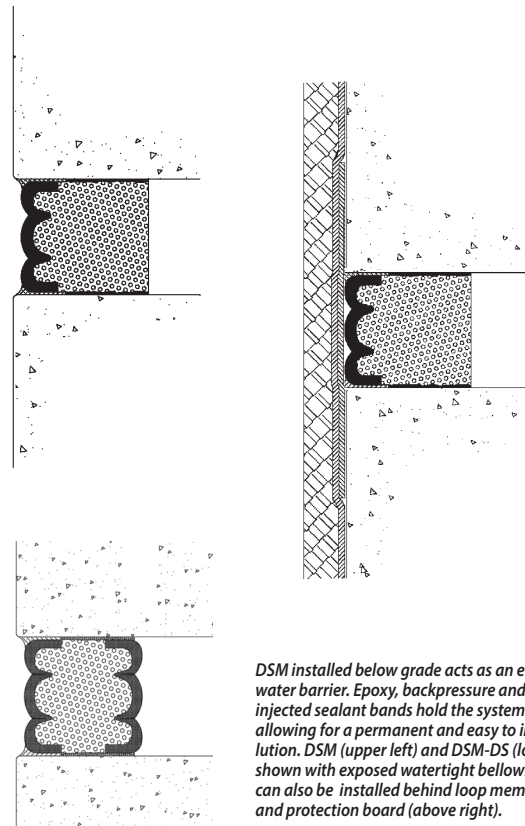
DSM sizes are available in 1/4" increments in nominal sizes from 1" to 4". Consult EMSEAL for larger sizes. Nominal size is equivalent to joint gap size at mean temperature. For depth-of-seal of DSM-DS contact EMSEAL.



Now Available  
**DSM System  
UNIVERSAL-90's**  
Factory-Fabricated  
Transitions & Terminations

See page 21

## Typical DSM and DSM-DS Usage



DSM installed below grade acts as an effective water barrier. Epoxy, backpressure and field-injected sealant bands hold the system in-place allowing for a permanent and easy to install solution. DSM (upper left) and DSM-DS (lower left) shown with exposed watertight bellows. Both can also be installed behind loop membrane and protection board (above right).



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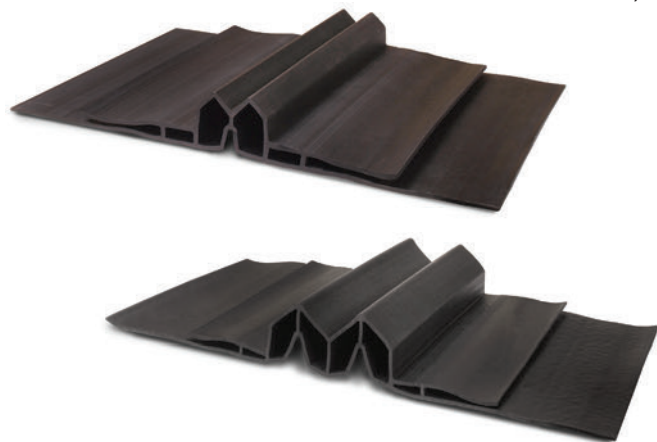


# BG System

WALLS Below Grade

Watertight by design®

US Patents: 9,850,662 9,322,163 B1 Patent Pending



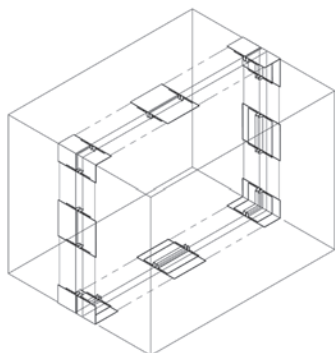
The **BG System** is a heavy-duty, double-celled, extruded, heat-weldable rubber gland flanked by integral side flashing sheets. It is combined in the field with a waterproofing membrane and accessories offered by the waterproofing membrane manufacturer for use in blind forming conditions. The BG System is the only expansion joint system designed for blind side as well as positive side applications.

- Integration of the below-grade waterproofing membrane and expansion joint system on the positive side of the wall or floor
- Ensures movement at the joint gap is properly accommodated
- Sizes:  
BG-0200: 2-3 inches | 50-75mm  
BG-0400: 3-5 inches | 75-125mm
- Applications include:

*Tunnel joints: Underside of floor-slabs, and continuing up and over wall and roof joints, blind-side and/or backfilled applications*

*Under the floor-slab and the walls of a blind-side formed foundation or tunnel*

*Walls of a blind-side formed foundation and backfilled below-grade walls*

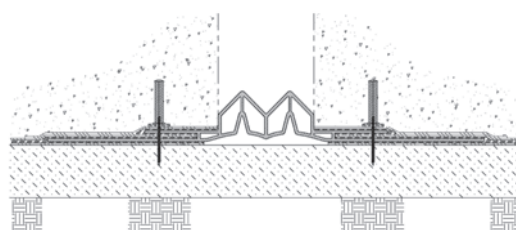


*In this typical tunnel application, BG is used under the slab and up the blind-side formed walls. At the transition above the blind-side walls, BG wraps over the roof in softscapes on the freestanding walls and across the roof or plaza deck in hardscape wear courses.*

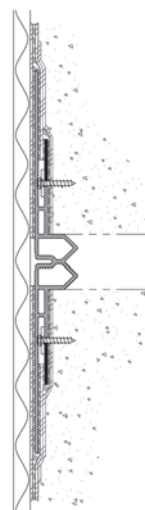


Once the BG system is installed to the mud-slab or lagging, concrete is cast to encapsulate the waterproofing membrane and BG resulting in an integrated watertight system which accommodates movement at the joint gap.

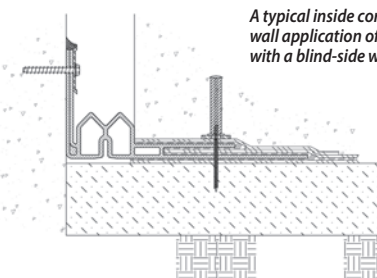
## Typical BG System Usage



*BG System can be installed in blind-side applications in walls and foundation floors (BG-0400 shown). Here the foundation floor under-slab is cast onto waterproofing membrane and BG System.*



*BG System in positive-side wall installation (BG-0200 shown). Dual-level flanges ensure positive integration with below-grade waterproofing membrane.*



*A typical inside corner foundation floor-to-wall application of the BG SYSTEM integrated with a blind-side waterproofing membrane.*

For specifications and limitations see BG System at [www.emseal.com](http://www.emseal.com) or contact EMSEAL.



Standard CAD details are available online at [www.emseal.com](http://www.emseal.com). For application specific CAD details contact EMSEAL directly.

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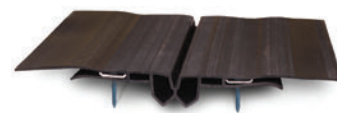
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RoofJoint RJ-0400 Black



RoofJoint RJ-0400 Reflective White



RoofJoint RJ-0200 Black



RoofJoint RJ-0200 Reflective White

**EMSEAL RoofJoint**, roof expansion joint, is a dual-seal, double-flanged, extruded thermoplastic rubber system for sealing expansion joints in roofs. Watertightness is achieved through positive integration with the roofing membrane and a purpose-designed system for transitioning between the joint in the roof and joints in walls.

Unique to EMSEAL's RoofJoint is the double-level flange. This flange configuration facilitates multi-layered, watertight integration with the roofing membrane. The lower flange is welded or adhered to the roof membrane brought up to the joint. A termination bar and anchors mechanically lock the flange to the roof decking or blocking. The upper flange counterflashes the termination bar and underlying membrane ensuring that penetrations made by the attachment of the termination bar are completely sealed. The upper flange is further flashed to the roofing membrane by means of the roofing manufacturers' standard flashing tape or by over-welding a strip of roofing.

**RJ-0200** for joint gaps of 2 to 3 inches (50-75mm) with movement capability of 2 1/2 inches (60 mm).

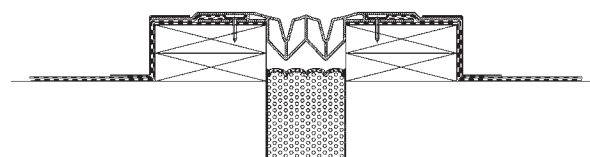
**RJ-0400** for joint gaps of 3 to 5 inches (75-125mm) with movement capability of 5 inches (125mm).

**RJ-0600** for joint gaps of 5 to 7 inches (125-175mm) with movement capability of 7 inches (175mm).

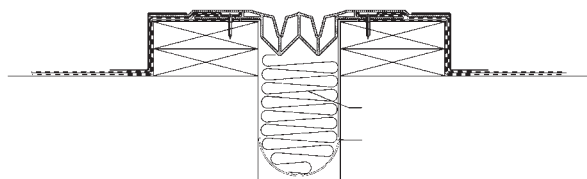
**RJ-0800** for joint gaps of 7 to 9 inches (175-225mm) with movement capability of 9 inches (225mm).

- High movement
- Redundant sealing
- Double-level roof-membrane integration flange
- Redundant fastening—adhesion or welding & termination bar
- Heat welded transitions at tees, crosses, roof-to-wall, etc.
- Watertight transition to SEISMIC COLORSEAL wall joints
- Uniquely addresses wall joint to roof joint interface
- Available in TPV (to TPO) or NPVC (to PVC) for broadest liquid and sheet membrane compatibility
- TPV available in reflective white color  
NPVC available in black or reflective white color

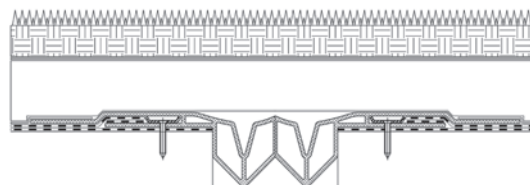
## Typical RoofJoint Usage



*HORIZONTAL COLORSEAL beneath RoofJoint ensures complete building envelope sealing, ensures thermal insulation, and adds a third water seal to the roof assembly.*



*RoofJoint installed over standard roofing material (by others) of fiberglass or mineral wool insulation batts. This solution provides no continuity or R-value with the wall expansion joint and is subject to insulation loss due to compression set and through moisture retention due to condensation accumulation in the batt insulation.*



*RoofJoint is ideally suited for use in sealing the structural slabs beneath green, vegetative roof assemblies.*



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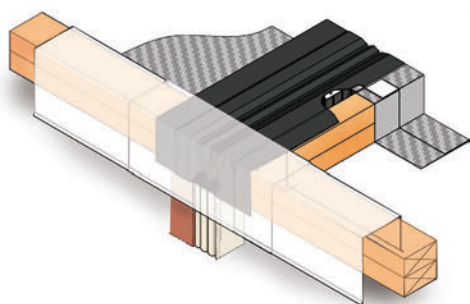
Standard CAD details are available online at [www.emseal.com](http://www.emseal.com). For application specific CAD details contact EMSEAL directly.

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**EMSEAL, LLC** 111 Royal Group Crescent, Woodbridge, ON L4H 1X9 Canada

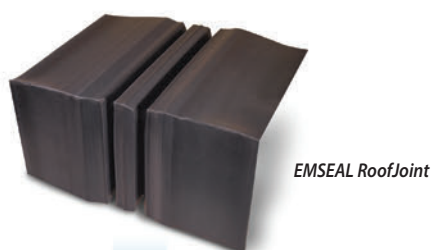
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## RoofJoint Wall Closure

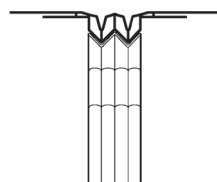


RoofJoint solves the problem of a watertight transition from the roof to the wall expansion joint. The solution lies in the EMSEAL RoofJoint seated in the joint-gap, a factory welded downturn transition in the RoofJoint gland that is sealed at a ship-lapped 45-degree angle to mate with an interlocking factory-fabricated RoofJoint Wall Closure transition piece. The result is an integrated wall and roof expansion joint system that is watertight.



EMSEAL RoofJoint

EMSEAL Cavity Wall RoofJoint Closure

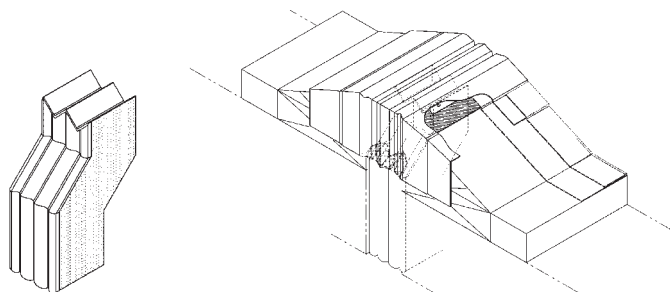


Cross section of RoofJoint seated on top of wall closure transition



EMSEAL RoofJoint placed onto Cavity Wall RoofJoint Closure to complete roof-to-wall transition.

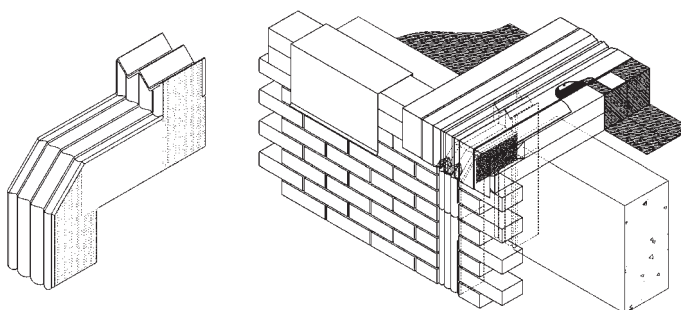
### Two Options: Solid-Wall RoofJoint Closure or Cavity-Wall RoofJoint Closure



#### Solid-Wall RoofJoint Closure

This factory-fabricated transition piece is manufactured from EMSEAL's Seismic Colorseal wall-expansion joint material. This single unit piece has factory-coated silicone bellows on the top and upper-back face for integration with Seismic Colorseal in the wall and Horizontal Colorseal as a secondary seal and insulator across the roof. The silicone-coated top side of the closure is shaped to match the underside of the RoofJoint extrusion.

The Solid-Wall RoofJoint Closure is installed before installing the RoofJoint. It is installed  $\frac{3}{4}$ " down from the roof deck or wood blocking surface. A sealant band of silicone is applied across the upper mating surface of the closure. The RoofJoint is then installed. The underside of the RoofJoint will mate with the top of the already installed closure.



#### Cavity-Wall RoofJoint Closure

Like the solid-wall closure, the cavity-wall RoofJoint closure is a factory-fabricated transition piece made from Seismic Colorseal. The difference is an extended, horizontal setback portion of foam to bridge the cavity from facade to structural backup wall. The sides of the "bridge" are additionally coated with silicone to seal them against moisture in the cavity and to constrain the lateral expansion of the foam into the cavity.

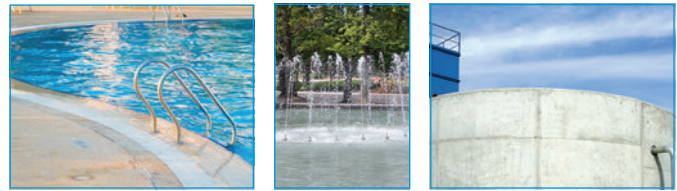
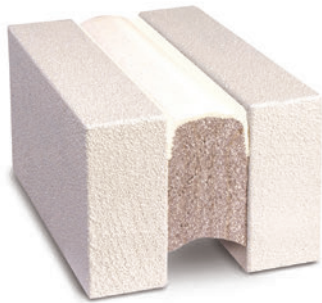
Standard CAD details are available online at [www.emseal.com](http://www.emseal.com). For application specific CAD details contact EMSEAL directly.



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Submerseal is manufactured to seal joints which come in contact with chlorinated and contaminated water as found in pools, fountains and wastewater treatment plants. Because its silicone surface meets NSF/ANSI Standard 61 it is applicable for potable water tanks and storage structures.

## Watertight Expansion Joint for Continuous Immersion in Chlorinated, Saline or Potable Water and Wastewater Environments

**Submerseal®** is a water resistant, joint-face-adhered, precompressed, primary seal for retrofit and new structural expansion joints and construction joints where continuous or intermittent immersion or contact with chlorinated water (up to 5 ppm), saline water, potable water or wastewater is planned. Typical applications include swimming pools, fountains, water parks, water features, water tanks, etc.

- Watertight
- Non-invasive anchoring
- Conforms to joint gap irregularities
- Size switching accommodates joint gap variations
- 100% free of wax or asphalt compounds
- NSF/ANSI STANDARD 61 compliant
- Resistant to chlorinated water (up to 5 ppm)
- Resistant to saline water
- Resistant to certain effluent concentrations\* (contact EMSEAL)
- Bellows is never under tension during joint movement
- No blockout required
- Movement of +/- 25% (Total 50%)

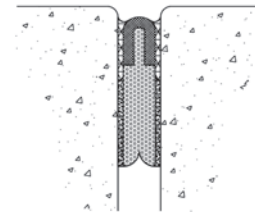
### Submerseal Sizing

Joint Size at Mean T°F	Depth of Seal
<i>Inches (mm)</i>	<i>Inches (mm)</i>
1/2 (12)	1 3/4 (45)
3/4 (20)	1 3/4 (45)
1 (25)	2 1/8 (55)
2 (50)	3 (75)
3 (75)	3 1/2 (90)
4 (100)	4 3/4 (120)

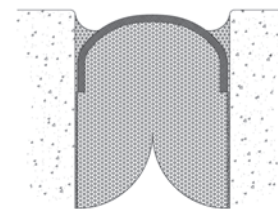
Submerseal sizes are available in 1/4" increments of nominal sizes from 1" to 4". Nominal size is equivalent to joint gap size at mean temperature.

\* For specific chemical resistance and expanded usage capabilities contact EMSEAL for additional submerged products and options.

### Typical Submerseal Usage



Submerseal is available in sizes to fit gaps as small as 1/2-inch (12mm).



Larger gaps up to 4-inches (10mm), submerged or that come in contact with chlorine or other contaminants, are typical Submerseal applications.

### Hydrostatic Head Pressure Resistance

Joint Size	Continuous Immersion Max. Allowable Liquid Depth
<i>Inches (mm)</i>	<i>Feet (meters)</i>
1 (25)	30 (10)
2 (50)	20 (6)
3 (75)	15 (5)
4 (100)	10 (3)



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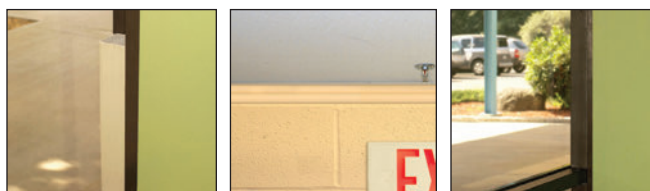
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**FX:** 416-740-0233





QuietJoint easily fills in gaps and joints between partitions, walls and windows, head of walls, and other non-moving locations.

## Sound, Draft, Heat, Cold, and Dust Blocking Acoustic Joint Filler for Interior Non-moving Joints and Gaps.

QuietJoint® is colorized, versatile and ideally suited to fill gaps between the ends of permanent, semi-permanent, or movable partitions, head-of-wall and other conditions.

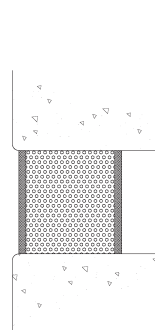
QuietJoint is supplied in uncompressed and slightly oversized 2-meter (6.56-foot) and also full-story 10-foot lengths. Installation of QuietJoint is quick and easy requiring no mechanical anchors or epoxies. When installed the material is compressed by hand and squeezed into the gap or opening. The internal backpressure of the material secures it to the joint faces.

The product is composed of a self-extinguishing, fire-retardant\*-acrylic-impregnated foam, factory pre-coated with high-quality silicone. QuietJoint makes an excellent sound attenuator which will conform to slight irregularities of gap construction.

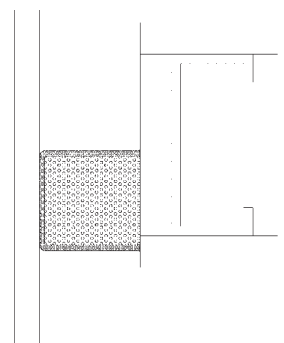
- Acoustic dampening –  
STC rated 53 (in a STC 56 wall)  
OITC rated 38 (in a OITC 38 wall)
- Width sizes from 1" (25mm) to 6" (150mm)
- Thermally insulating (R-value 5.96/inch of depth)
- Quick, easy installation
- Non-invasive anchoring
- Wide range of standard and custom colors
- Conforms to joint gap irregularities
- Size switching accommodates joint gap variations
- UV-stable
- Clean-handling, non-staining
- Won't suffer from compression set

Sound Attenuation STC 53 / OITC 38

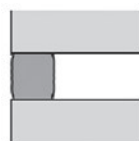
### Typical QuietJoint Usage



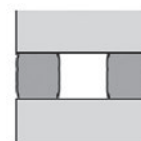
Two-sided SHH for use between opaque walls and partitions.



SHG is coated on three-sides for use in glass window-to-wall applications where one containing surface is transparent.



When filling a gap as a single unit, 2-inch QuietJoint displays impressive sound attenuation capabilities - STC 53 in a STC 56 wall and OITC 38 in an OITC 38 wall. It also has an R-value of 5.96 for its 1-inch of depth.



When two units of 2" QuietJoint are installed from both sides of a gap the sound dampening capabilities increase - STC 72 in a STC 72 wall and OITC 60 in an OITC 61 wall. It also has an R-value of 11.92 for its 2-inches of depth.

\*QuietJoint is fire-retardant and does not promote the spread of flame or smoke, however it has not been UL-tested for fire-rating.

Standard CAD details are available online at [www.emseal.com](http://www.emseal.com). For application specific CAD details contact EMSEAL directly.

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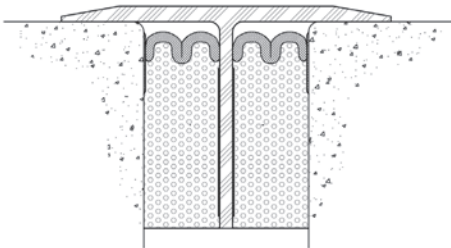


The name QuickCover expansion joint explains the system's simple and thorough installation procedure. It's build and technology allow for a quick and clean installation. With proper expansion the joint can, QuickCover handle traffic within an hour.

**QuickCover** is a rapidly installed, elegantly simple, aesthetically versatile coverplate system for new and retrofit floor expansion joints.

- No visible coverplate screws
- No visible anchoring fasteners
- Flush with floor retrofit into old hardware of failed joint systems
- Covers and conceals cracked adjacent flooring
- Resists pedestrian and rolling point loads
- Install while occupied using simple traffic diversion
- Easily installed in new construction after flooring is installed and completed
- Cost effective
- ADA compliant bevel and coefficient of friction
- Rapid installation—new or retrofit
- No blockouts, recesses, or backfilling
- Aesthetically and practically versatile

### Typical QuickCover Usage



QuickCover is supplied in 10-LF lengths and is a composite assembly of precompressed foam that flanks a vertical spline descending from an integral coverplate.

### QuickCover Sizing

Joint Size at Mean T°F	Coverplate Width	Product Depth
Inches (mm)	Inches (mm)	Inches (mm)
1 (25)	4 (100)	2 1/2 (65)
1 1/2 (40)	4 (100)	2 1/2 (65)
2 (50)	4 (100)	2 1/2 (65)
2 1/2 (65)	5 1/2 (140)	2 1/2 (65)
3 (75)	5 1/2 (140)	2 1/2 (65)
3 1/2 (90)	7 (175)	2 1/2 (65)
4 (100)	7 (175)	2 1/2 (65)

QuickCover sizes are available in 1/4" increments of nominal sizes from 1" to 4". Consult EMSEAL. Nominal size is equivalent to joint gap size at mean temperature.

# Interior Products

## INTERIOR Floors and Walls

EMSEAL offers superior products for interior floors, walls and ceilings to suit a variety of conditions and aesthetic requirements. They are designed and constructed with the highest quality materials and are matched specifically for each installation application. Additional configurations and heights are available (*consult EMSEAL*). For a complete listing and CAD details of interior joint solutions please visit [www.emseal.com](http://www.emseal.com).

## Interior Floor Joints

**MIGUTRANS FSFS Series** features heavy duty interlocking all-metal profiles for heavy point loads while the **Migutec FP Series**, **FGH Series** and **FV Series** are designed to bridge various width joint gaps utilizing a robust rubber sealing insert. Also available are **FN Series** in surface mount versions.



**SPJ Series** is made up of modular sections designed to handle seismic conditions. The **Twinsert Series**, is designed for joints sized to seismic conditions and provide solutions for extremely large joint gaps by permitting the insertion of the flooring materials as an inlay between rubber seals or metal inserts.



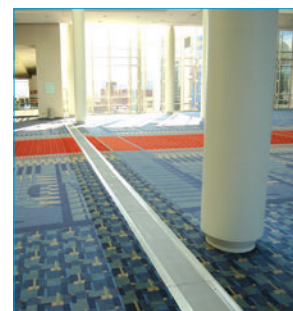
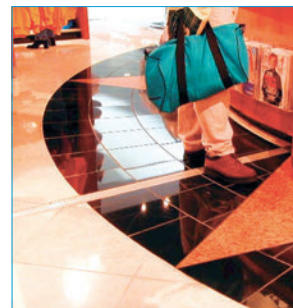
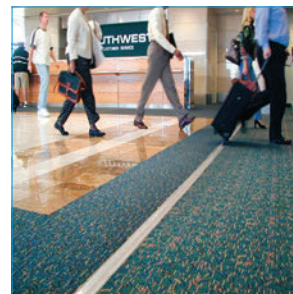
## Interior Wall (and Ceiling) Joints

The wall (and ceiling) selections include easy to install snap-cover all-metal versions such as the **KF Series** featuring rapid spring-anchor fastening in a variety of joint sizes as well as the **FN Series** composed of metal and elastomeric covers.



## ▼ Fire-Rating Interior Joints

Interior floor or wall expansion joints can be fire-rated when an Emshield UL-certified expansion joint is combined with another interior product. While Emshield expansion joints (WFR, SSW, DFR, SSF) are usually installed as a single expansion joint system, they can be placed in combination to create a dual assembly. The surface product should be backed in the expansion gap with an appropriate fire-rated Emshield foam product. Emshield **DFR** (pg. 18) can be placed under the following floor-mounted surface product series: **FP, FN, FV, FGH, and SFS**. The same holds true in walls where Emshield **WFR** (pg. 14) can be placed behind **FN** or **KF** series expansion joints. *Consult EMSEAL for further information.*



Standard CAD details are available online at [www.emseal.com](http://www.emseal.com). For application specific CAD details contact EMSEAL directly.

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## Migutec FN 20/12

**Joint sizes:**  
 $3/4'' - 1\ 1/4''$  (20 - 30mm)  
**Movement:**  
 $3/16'' = +1/8'', -1/16''$   
 (5mm = +3mm, -2mm)

**Floors / Walls / Ceilings**  
 Alum/rubber  
 Surface mount  
 Standard load rating



## Migutec FN 35/15

**Joint sizes:**  
 $1\ 3/8'' - 1\ 7/8''$  (35 - 48mm)  
**Movement:**  
 $3/8'' = +3/16'', -3/16''$   
 (10mm = +5mm, -5mm)

**Floors / Walls / Ceilings**  
 Alum/elastomeric  
 Surface mount  
 Standard load rating



## Migutec FV 35/35

**Joint sizes:**  
 $3/16'' - 1\ 1/4''$  (5 - 32mm)  
**Movement:**  
 $3/8'' = +3/16'', -3/16''$   
 (10mm = +5mm, -5mm)

**Floors**  
 Alum/elastomeric  
 Recess mount  
 Standard load rating



## Migutec FN 50/20

**Joint sizes:**  
 $2'' - 2\ 1/2''$  (50 - 65mm)  
**Movement:**  
 $5/8'' = +5/16'', -5/16''$   
 (16mm = +8mm, -8mm)

**Floors / Walls / Ceilings**  
 Alum/elastomeric  
 Surface mount  
 Standard load rating

EMSEAL offers an extended range of products. For more detailed information and drawings on any products please visit [www.emseal.com](http://www.emseal.com).

For additional products and sizes please contact EMSEAL directly.

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## Migutec FP 55/35

### Joint sizes:

**1/2" – 2" (13 - 50mm)**

### Movement:

**5/8" = + 5/16", -5/16"**  
(16mm = +8mm, -8mm)

### Floors

Alum/elastomeric

Recessed mount

Standard load rating



## Migutec FGH 65/30

### Joint sizes:

**13/16" – 2" (20 - 50mm)**

### Movement:

**3/4" = + 3/8", -3/8"**  
(20mm = +10mm, -10mm)

### Floors

Alum/rubber

Recessed mount

Standard load rating



## Migutrans SFS 90/115/135

### Joint sizes:

**3/8" – 4" (10 - 100mm)**

### Movement:

**SFS 90 3/4" = + 3/8", -3/8"**  
(20mm = +10mm, -10mm)

**SFS 115 1 1/4" = + 9/16", -9/16"**  
(30mm = +15mm, -15mm)

**SFS 135 1 1/2" = + 3/4", -3/4"**  
(40mm = +20mm, -20mm)

### Floors

Solid Aluminum

Recess mount

Heavy load rating

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## Migutec KF 250 / KFE 251

**Joint sizes:**  
1/2" – 3 1/4" (13 - 80mm)

**Walls / Ceilings**  
Solid Aluminum  
Surface mount



## Migumax SPJ 200

**Joint sizes:**  
**Up to 8" (200mm)**  
**Movement:**  
Thermal: 1 1/2" = + 3/4", -3/4"  
(40mm = +20mm, -20mm)  
Seismic: 11 1/4" = + 6", -5 1/4"  
(285mm = +150mm, -135mm)

**Floors**  
Aluminum  
Surface mount  
Standard load rating



## Twinsert Series

**Joint sizes:**  
**Up to 24" (825mm)**  
**Movement:**  
Various

**Floors**  
Solid Aluminum  
Extra Heavy loading



## QuickCover

**Joint sizes:**  
**1" – 4" (25 – 100mm)**  
**Movement:**  
Up to 100% (+50%, -50%)

**Floors**  
Precompressed  
Anchorless  
Rapid Installation



## QuietJoint

**Joint sizes:**  
**1" – 6" (25 - 150mm)**

**Walls and Windows**  
Mass-loaded acoustic seal / Insulating  
Fire-resistant / Sound Attenuating  
Non-mechanical and non-metallic

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Checklist PDF in English and Spanish available online at [www.EMSEAL.com](http://www.EMSEAL.com)

# THE EMSEAL CHECKLIST

**Name** \_\_\_\_\_ **Company** \_\_\_\_\_ **Date** \_\_\_\_\_  
**Phone** \_\_\_\_\_ **Fax** \_\_\_\_\_ **Email** \_\_\_\_\_  
**Job Name** \_\_\_\_\_ **Job Location (City & State)** \_\_\_\_\_

## INSTALLATION LOCATION

☐ Interior  
☐ Exterior

☐ Wall  
☐ Floor/Deck  
☐ Roof

☐ Above Grade  
☐ Below Grade  
☐ Submerged

## CONSTRUCTION TYPE

☐ New Construction  
☐ Retrofit Construction

## FIRE RATING

☐ No Fire Rating  
 Fire Rating: ☐ 1-hr ☐ 2-hr ☐ 3-hr

## EXPANSION GAP INFORMATION

Joint Gap Width(s): \_\_\_\_\_  
 Varies from: \_\_\_\_\_ to \_\_\_\_\_ (over its length)

Joint Substrate Depth: \_\_\_\_\_

Total Length (ft or m) \_\_\_\_\_

Have Gap Dimensions Been Field Measured? ☐ Yes / ☐ No  
 Substrate Surface Temp. \_\_\_\_\_ Ambient Temp. \_\_\_\_\_

Substrate Composition: \_\_\_\_\_  
 (e.g., concrete, brick, metal, etc.)

Membrane Tie-in?: ☐ Yes / ☐ No Type \_\_\_\_\_

Metal Pour Stops?: ☐ Yes / ☐ No

Movement (if known): \_\_\_\_\_

(e.g.,  $\pm$  thermal;  $\pm$  shear, etc.)

Joint is: ☐ Primary Seal  
☐ Secondary Seal

Joint Will Seal Out: ☐ Rain/Water ☐ Cold/Heat

☐ Sound ☐ Air ☐ Vermin ☐ Other \_\_\_\_\_

Are There Transitions? ☐ Yes (explain) / ☐ No

How Does the Joint Terminate?

## FOR HORIZONTAL DECK/FLOOR and ROOF JOINTS (ONLY)

### DECK CONSTRUCTION

Is this a Solid Slab Condition?

☐ Yes / ☐ No

Is this a Split Slab Condition?

☐ Yes / ☐ No

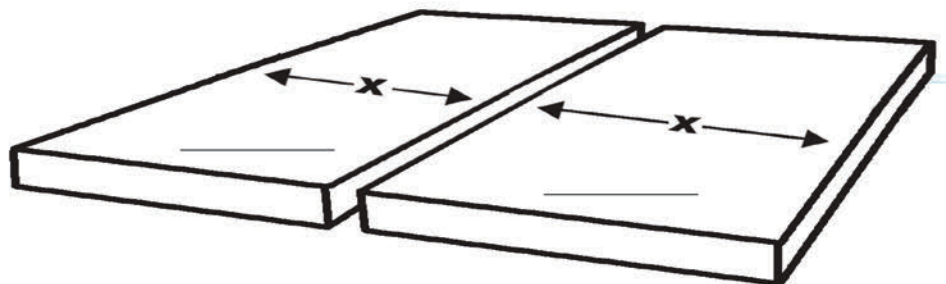
Does the Joint have Blockouts?

☐ Yes / ☐ No

Traffic Types (check all that apply):

☐ Car ☐ Bus ☐ Pedestrian ☐ None

Other \_\_\_\_\_

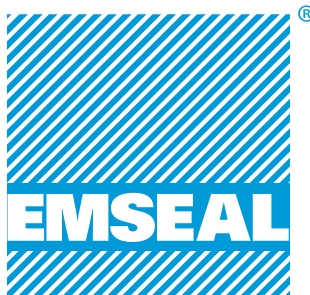


Please fill in the slab width dimensions at each "x". If one substrate of your joint is a wall instead of a slab, please denote that "x" as "Wall" instead of giving a dimension. If more than one joint occurs within the same immediate area, please draw them and the appropriate dimensions. Attach additional drawings as needed.

Please include any relevant details when submitting checklist to EMSEAL

**Architect:** \_\_\_\_\_ **Engineer:** \_\_\_\_\_ **Contractor:** \_\_\_\_\_ **Owner/Developer:** \_\_\_\_\_

**Please FAX or Email to EMSEAL Fax: (508) 836-0281 / Email: [techinfo@emseal.com](mailto:techinfo@emseal.com) / Phone: (508) 836-0280**



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