**SECTION 07 91 00**

**EMSEAL EXTERIOR WALL JOINT SEALS**

This section includes editing notes to assist the user in editing the section to suit project requirements. These notes are included as hidden text, and can be revealed or hidden by the following method in Microsoft Word:

 Display the FILE tab on the ribbon, click OPTIONS, then DISPLAY. Select or deselect HIDDEN TEXT.

This guide specification section has been prepared by Emseal Joint Systems, Ltd. for use in the preparation of a project specification section covering preformed joint seals for use expansion joints in exterior wall assemblies.

The following should be noted in using this specification:

Hypertext links to specific websites are included after manufacturer names and names of organizations whose standards are referenced within the text, to assist in product selection and further research. Hypertext links are contained in parenthesis and shown in blue, e.g.:

 [(www.astm.org](http://(www.astm.org))

Items requiring user input are enclosed within brackets and included as red text, e.g.:

 Section [09 00 00] [\_\_ \_\_ \_\_.]

Optional paragraphs are separated by an "OR" statement included as red text, e.g.:

\*\*\*\* OR \*\*\*\*

Sustainable requirements are included for projects requiring LEED certification, and are included as green text. For additional information on LEED, visit the U.S. Green Building Council website at [www.usgbc.org](http://www.usgbc.org).

For assistance on the use of the products in this section, contact Emseal by calling 800-526-8365, by email at techinfo@emseal.com, or visit their website at [www.emseal.com](http://www.emseal.com).

1. **GENERAL**
	1. SUMMARY
		1. Section Includes:
			1. Preformed, precompressed, expanding foam joint seals for expansion joints in exterior walls.
		2. Related Sections:
			1. Division 01: Administrative, procedural, and temporary work requirements.

Retain the following for Backerseal, which requires a field-applied joint sealer.

* + - 1. Section [07 92 00 - Joint Sealers.] [\_\_ \_\_ \_\_ - \_\_\_\_\_\_.]
	1. ADMINISTRATIVE REQUIREMENTS

Retain the following for a pre-installation conference to review the work of this section prior to installation.

* + 1. Pre-Installation Conference:
			1. Convene at Project site [2] [\_\_] weeks prior to beginning work of this Section.
			2. Attendance: [Architect,] [Contractor,] [Construction Manager,] joint seal installer, and related trades
			3. Review and discuss:
				1. Joint seal manufacturer’s requirements, project conditions, allowable structural movement at joints, and protection of completed work.
				2. Transitions in plane and direction, and requirement for continuity of seal through watertight transitions from wall expansion joint to other interfacing expansion joint systems at adjacent construction.
	1. SUBMITTALS
		1. Action Submittals:
			1. Shop Drawings:
				1. Indicate joint locations, dimensions, and adjacent construction.
				2. Provide details for transitions in plane and direction for continuity of seal through watertight transitions from wall expansion joint to other interfacing expansion joint systems at adjacent construction.
			2. Product Data: Material description and application instructions.
			3. Samples:
				1. Minimum [2 x 2] [\_\_ x \_\_] inch joint seal samples showing available colors.
				2. Minimum [6] [\_\_] inch long samples [of each joint seal].
		2. Informational Submittals:
			1. Manufacturer’s certification that:
				1. Products are capable of withstanding temperature of 150 degrees F (65 degrees C) for 3 hours while compressed to minimum of movement capability dimension without evidence of bleeding of impregnation medium from material.
				2. Same material after heat stability test and after cooling to room temperature will self-expand to maximum of movement capability dimension within 24 hours at 68 degrees F (20 degrees C).

Retain the following for projects requiring sustainable documentation.

* + 1. Sustainable Design Submittals: Refer to Division 01.
	1. QUALITY ASSURANCE
		1. Manufacturer Qualifications:
			1. Minimum [10] [15] [\_\_] years [documented] experience in production of specified materials.
			2. Certified to ISO 9001 and 14001.
		2. Installer Qualifications: Minimum [2] [\_\_] years [documented] experience in work of this Section.
	2. DELIVERY, STORAGE AND HANDLING
		1. In accordance with manufacturer’s instructions.
1. **PRODUCTS**
	1. MANUFACTURERS
		1. Contract Documents are based on products by Emseal Joint Systems, Ltd., 800-526-8365, [www.emseal.com](http://www.emseal.com).
		2. Substitutions: [Refer to Division 01.] [Not permitted.]
	2. MATERIALS

Retain the following for a single-sided joint seal. This joint seal is suitable for use in joints from 1/2 inch to 10 inches in width.

* + 1. Exterior Wall Joint Seal:
			1. Source: Seismic Colorseal/Colorseal.
			2. Description: Silicone coated, ultraviolet resistant, watertight, primary wall seal with factory-applied adhesive on one side.
			3. Form: Precompressed to less than nominal material size for installation into designed joint size equal to material nominal size.
			4. Movement capability: Plus and minus 50% (total 100%) of nominal material size.
			5. R-value: 2.15 per inch depth at nominal joint size compression, tested to ASTM C518.
			6. STC rating: 52 in STC 56 wall, tested to ASTM E90.
			7. OITC rating: 38 in OITC 38 wall, tested to ASTM E90.

The following maximum air permeability meets requirements of the Air Barrier Association of America (AABA).

* + - 1. Air permeability: Maximum 0.02 liter per second per square meter, tested to ASTM E283 at 75 Pa.
			2. Water penetration: No water penetration, tested to ASTM E331 at 5000 Pa test pressure.
			3. Wind loading:
				1. 0.1 mm net deflection, tested to ASTM E330 at 2730 Pa or 150 MPH wind.
				2. 0.6 mm net deflection, tested to ASTM E330 at 4854 Pa or 200 MPH wind.
			4. Weathering: Sealing of outside wall joints per DIN 18542-1999 / G155-2013: Pass
			5. VOC Emissions: CDPH-1.2-2017: Pass
			6. Color: [\_\_\_\_.] [To be selected from manufacturer’s full color range.]
			7. Silicone: Field applied corner bead at face of seal to substrate interface, furnished by joint seal manufacturer, in same material and color as used in factory coating.

a. Abrasion Resistance: Less than 1% weight loss, tested to ASTM D4060

b. Fuel Resistance: Pass, tested to ASTM C719/C1135

\*\*\*\* OR \*\*\*\*

Retain the following for a double-sided joint seal. This joint seal is suitable for use in joints from 1/2 inch to 10 inches in width.

* + 1. Exterior Wall Joint Seal:
			1. Source: Seismic Colorseal/Colorseal - DS.
			2. Description: Silicone coated, ultraviolet resistant, dual-faced, watertight primary wall seal with factory-applied adhesive on one side.
			3. Form: Precompressed to less than design joint size, packaged in shrink-wrap packaging.
			4. Movement capability: Plus and minus 50% (total 100%) of nominal material size.
			5. R-value: 2.15 per inch depth at nominal joint size compression, tested to ASTM C518.
			6. STC rating: 54 in STC 56 wall, tested to ASTM E90.
			7. OITC rating: 38 in OITC 38 wall, tested to ASTM E90.

The following maximum air permeability meets requirements of the Air Barrier Association of America (AABA).

* + - 1. Air permeability: Maximum 0.02 liter per second per square meter, tested to ASTM E283 at 75 Pa.
			2. Water penetration: No water penetration, tested to ASTM E331 at 5000 Pa test pressure.
			3. Wind loading:
				1. 0.01 mm net deflection, tested to ASTM E330 at 2730 Pa or 150 MPH wind.
				2. 0.06 mm net deflection, tested to ASTM E330 at 4854 Pa or 200 MPH wind.
			4. Weathering: Sealing of outside wall joints per DIN 18542-1999 / G155-2013: Pass
			5. VOC Emissions: CDPH-1.2-2017: Pass
			6. Color: [\_\_\_\_.] [To be selected from manufacturer’s full color range.]
			7. Silicone: Field applied corner bead at face of seal to substrate interface, furnished by joint seal manufacturer, in same material and color as used in factory coating.

a. Abrasion Resistance: Less than 1% weight loss, tested to ASTM D4060

b. Fuel Resistance: Pass, tested to ASTM C719/C1135

\*\*\*\* OR \*\*\*\*

Retain the following for a 1-hour fire-rated watertight joint seal, suitable for use in joints from 1/2 to 6 inches in width.

* + 1. Exterior Wall Joint Seal:
			1. Source: Emshield WFR1.
			2. Description: Silicone coated, ultraviolet resistant, dual-faced, fire-rated, watertight primary wall seal.
			3. Form: Precompressed to less than design joint size, packaged in shrink-wrap packaging.
			4. Fire protection rating: 1 hour, tested to UL 2079.
			5. Movement capability: Plus and minus 50% (total 100%) of nominal material size.
			6. R-value: 1.03 per inch depth at nominal joint size compression, tested to ASTM C518.
			7. STC rating: 62 in STC 68 wall, tested to ASTM E90.
			8. OITC rating: 52 in OITC 52 wall, tested to ASTM E90.

The following maximum air permeability meets requirements of the Air Barrier Association of America (AABA).

* + - 1. Air permeability: Maximum 0.02 liter per second per square meter, tested to ASTM E283 at 75 Pa.
			2. Water penetration: No water penetration, tested to ASTM E331 at 5000 Pa test pressure.
			3. Wind loading: No deflection, tested to ASTM E330 at 4954 Pa or 200 MPH wind.
			4. VOC Emissions: CDPH-1.2-2017: Pass
			5. Color: [\_\_\_\_.] [To be selected from manufacturer’s full color range.]
			6. Adhesive: Epoxy type, furnished by joint seal manufacturer.
			7. Silicone: Field applied corner bead at face of seal to substrate interface, furnished by joint seal manufacturer, in same material and color as used in factory coating.

a. Abrasion Resistance: Less than 1% weight loss, tested to ASTM D4060

b. Fuel Resistance: Pass, tested to ASTM C719/C1135

* + - 1. Intumescent Sealant: Field applied to face of joints, furnished by joint seal manufacturer.

\*\*\*\* OR \*\*\*\*

Retain the following for a 2-hour fire-rated watertight joint seal, suitable for use in joints from 1/2 to 6 inches in width.

* + 1. Exterior Wall Joint Seal:
			1. Source: Emshield WFR2.
			2. Description: Silicone coated, ultraviolet resistant, dual-faced, fire-rated, watertight primary wall seal.
			3. Form: Precompressed to less than design joint size, packaged in shrink-wrap packaging.
			4. Fire protection rating: 2 hours, tested to UL 2079.
			5. Movement capability: Plus and minus 50% (total 100%) of nominal material size.
			6. R-value: 1.03 per inch depth at nominal joint size compression, tested to ASTM C518.
			7. STC rating: 62 in STC 68 wall, tested to ASTM E90.
			8. OITC rating: 52 in OITC 52 wall, tested to ASTM E90.

The following maximum air permeability meets requirements of the Air Barrier Association of America (AABA).

* + - 1. Air permeability: Maximum 0.02 liter per second per square meter, tested to ASTM E283 at 75 Pa.
			2. Water penetration: No water penetration, tested to ASTM E331 at 5000 Pa test pressure.
			3. Wind loading: No deflection, tested to ASTM E330 at 4954 Pa or 200 MPH wind.
			4. VOC Emissions: CDPH-1.2-2017: Pass
			5. Color: [\_\_\_\_.] [To be selected from manufacturer’s full color range.]
			6. Adhesive: Epoxy type, furnished by joint seal manufacturer.
			7. Silicone: Field applied corner bead at face of seal to substrate interface, furnished by joint seal manufacturer, in same material and color as used in factory coating.

a. Abrasion Resistance: Less than 1% weight loss, tested to ASTM D4060

b. Fuel Resistance: Pass, tested to ASTM C719/C1135

* + - 1. Intumescent Sealant: Field applied to face of joints, furnished by joint seal manufacturer.

\*\*\*\* OR \*\*\*\*

Retain the following for a 3-hour fire-rated watertight joint seal, suitable for use in joints from 1/2 to 6 inches in width.

* + 1. Exterior Wall Joint Seal:
			1. Source: Emshield WFR3.
			2. Description: Silicone coated, ultraviolet resistant, dual-faced, fire-rated, watertight primary wall seal.
			3. Form: Precompressed to less than design joint size, packaged in shrink-wrap packaging.
			4. Fire protection rating: 3 hours, tested to UL 2079.
			5. Movement capability: Plus and minus 25% (total 50%) of nominal material size.
			6. R-value: 1.03 per inch depth at nominal joint size compression, tested to ASTM C518.
			7. STC rating: 62 in STC 68 wall, tested to ASTM E90.
			8. OITC rating: 52 in OITC 52 wall, tested to ASTM E90.

The following maximum air permeability meets requirements of the Air Barrier Association of America (AABA).

* + - 1. Air permeability: Maximum 0.02 liter per second per square meter, tested to ASTM E283 at 75 Pa.
			2. Water penetration: No water penetration, tested to ASTM E331 at 5000 Pa test pressure.
			3. Wind loading: No deflection, tested to ASTM E330 at 4954 Pa or 200 MPH.
			4. VOC Emissions: CDPH-1.2-2017: Pass
			5. Color: [\_\_\_\_.] [To be selected from manufacturer’s full color range.]
			6. Adhesive: Epoxy type, furnished by joint seal manufacturer.
			7. Silicone: Field applied corner bead at face of seal to substrate interface, furnished by joint seal manufacturer, in same material and color as used in factory coating.

a. Abrasion Resistance: Less than 1% weight loss, tested to ASTM D4060

b. Fuel Resistance: Pass, tested to ASTM C719/C1135

* + - 1. Intumescent Sealant: Field applied to face of joints, furnished by joint seal manufacturer.

\*\*\*\* OR \*\*\*\*

Retain the following for a 2-hour fire-rated, pick resistant, watertight joint seal for use in joints from 1/2 to 6 inches in width.

* + 1. Exterior Wall Joint Seal:
			1. Source: SecuritySeal SSW2.
			2. Description: Dual-sided, pick resistant, watertight, hardened flexible polyurethane sealing surfaces adhered to fire-retardant impregnated foam backing
			3. Form: Precompressed to less than design joint size, packaged in shrink-wrap packaging.
			4. Fire protection rating: 2 hours, tested to UL 2079.
			5. Movement capability: Plus and minus 50% (total 100%) of nominal material size.
			6. R-value: 1.03 per inch depth at nominal joint size compression, tested to ASTM C518.
			7. STC rating: 62 in STC 68 wall, tested to ASTM E90.
			8. OITC rating: 52 in OITC 52 wall, tested to ASTM E90.

The following maximum air permeability meets requirements of the Air Barrier Association of America (AABA).

* + - 1. Air permeability: Maximum 0.02 liter per second per square meter, tested to ASTM E283 at 75 Pa.
			2. Air permeability: No water penetration, tested to ASTM E331 at 5000 Pa test pressure.
			3. Water penetration: No water penetration, tested to ASTM E331 at 5000 Pa test pressure.
			4. Wind loading: No deflection, tested to ASTM E330 at 4954 Pa or 200 MPH.
			5. VOC Emissions: CDPH-1.2-2017: Pass
			6. Color: [\_\_\_\_.] [To be selected from manufacturer’s full color range.]
			7. Adhesive: Epoxy type, furnished by joint seal manufacturer.
			8. Polyurethane sealant: Field applied corner bead at face of seal to substrate interface, furnished by joint seal manufacturer, in same material and color as used in factory coating.
			9. Intumescent Sealant: Field applied to face of joints, furnished by joint seal manufacturer.

\*\*\*\* OR \*\*\*\*

Retain the following for an economical joint seal that requires a field-applied joint sealer. This joint seal is suitable for use in joints from 1/4 to 1-1/4 inches in width.

* + 1. Exterior Wall Joint Seal:
			1. Source: Backerseal.
			2. Description: Acrylic-impregnated polyurethane foam, wall seal with factory-applied adhesive on one side.
			3. Form: Precompressed to less than design joint size, packaged in shrink-wrap packaging.
			4. Movement capability: Plus and minus 25% (total 50%) of nominal material size.
			5. R-value: 1.8 per inch depth at nominal joint size compression, tested to ASTM C518.
			6. STC rating: 53 in STC 68 wall, tested to ASTM E90.
			7. OITC rating: 49 in OITC 68 wall, tested to ASTM E90.

The following maximum air permeability meets requirements of the Air Barrier Association of America (AABA), Alternative Method B.

* + - 1. Air permeability: Maximum 0.04 liter per second per square meter, tested to ASTM E283 at 75 Pa.
			2. Water penetration: No water penetration, tested to ASTM E331 at 20.88 PSF test pressure.
			3. Wind loading: No deflection, tested to ASTM E330 at plus 62.66 PSF and minus 56.93 PSF.
	1. ACCESSORIES

Retain one of the following two paragraphs for Backerseal.

* + 1. Joint Sealer: Specified in Section [07 92 00.] [\_\_ \_\_ \_\_.]

\*\*\*\* OR \*\*\*\*

* + 1. Joint Sealer:
			1. Type: ASTM C920, Type NS, Class 50, Use NT, M, G, A, or O, one part, neutral curing.
			2. Source: Sikasil WS-295 by Sika Corporation. [www.usa.sika.com](http://www.usa.sika.com)
			3. Color: [\_\_\_\_.] [To be selected from manufacturer’s full color range.]
1. **EXECUTION**
	1. PREPARATION
		1. Clean joints thoroughly; remove loose and foreign matter that could impair adhesion or performance.
	2. INSTALLATION
		1. Install joint seal in accordance with manufacturer's instructions and approved Shop Drawings.
		2. Remove joint seal from precompressed packaging, immediately insert into joint, and allow to expand.
		3. Use temporary retainers if required to maintain joint seals in position until expansion is complete.

Retain the following for Backerseal.

* + 1. Install joint sealer [in accordance with manufacturer’s instructions.] [as specified in Section 07 92 00.]

A joint seals schedule can be helpful if multiple types of joint seals are required. The following may assist in developing such a schedule. Coordinate with products selected under Part 2.

* 1. JOINT SEALS SCHEDULE
		1. Exterior Wall Joint Seals at [\_\_\_\_]: [Seismic Colorseal.] [\_\_\_\_.]
		2. Exterior Wall Joint Seals at [\_\_\_\_]: [Seismic Colorseal - DS.] [\_\_\_\_.]
		3. Exterior Wall Joint Seals at [\_\_\_\_]: [Emshield WFR1.] [\_\_\_\_.]
		4. Exterior Wall Joint Seals at [\_\_\_\_]: [Emshield WFR2.] [\_\_\_\_.]
		5. Exterior Wall Joint Seals at [\_\_\_\_]: [Emshield WFR3.] [\_\_\_\_.]
		6. Exterior Wall Joint Seals at [\_\_\_\_]: [Emshield SSW2.] [\_\_\_\_.]
		7. Exterior Wall Joint Seals at [\_\_\_\_]: [Emshield Backerseal.] [\_\_\_\_.]

END OF SECTION

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