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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 in expansion joints in decks and parking structures.

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 \*\*\*\*

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).

**SECTION 07 91 06 – DECK AND PARKING JOINT SEALS**

 GENERAL

 ADMINISTRATIVE REQUIREMENTS

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

 Pre-Installation Conference:

 Convene at Project site [2] [\_\_] weeks prior to beginning work of this Section.

 Attendance: [Architect,] [Contractor,] [Construction Manager,] joint seal installer, and related trades

 Review and discuss:

* + - * 1. Joint seal manufacturer’s requirements, project conditions, substrate requirements 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.

 SUBMITTALS

 Action Submittals:

 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.

 Product Data: Material description and application instructions.

 Samples:

* + - * 1. Minimum [2 x 2] [\_\_ x \_\_] inch joint seal samples showing available colors.
				2. Minimum [6] [\_\_] inch long samples [of each joint seal].

 Informational Submittals:

 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.

 Sustainable Design Submittals: Refer to Division 01.

 QUALITY ASSURANCE

 Manufacturer Qualifications:

 Minimum [10] [15] [\_\_] years [documented] experience in production of specified materials.

 Certified to ISO 9001 and 14001.

 Installer Qualifications: Minimum [2] [\_\_] years [documented] experience in work of this Section.

 DELIVERY, STORAGE AND HANDLING

 In accordance with manufacturer’s instructions.

 PRODUCTS

 MANUFACTURERS

 Contract Documents are based on products by Emseal Joint Systems, Ltd., 800-526-8365, [www.emseal.com](http://www.emseal.com).

 Substitutions: [Refer to Division 01.] [Not permitted.]

 MATERIALS

Retain the following for a single-sided, watertight, trafficable expansion joint seal. This joint seal is suitable for use in joints from 1/2 inch to 4 inches in width.

 Deck and Parking Joint Seal:

 Source: DSM System.

 Description: Precompressed, silicone coated and acrylic impregnated-foam hybrid installed into field-applied epoxy adhesive, with silicone sealant band on joint faces.

 Form: Precompressed to less than nominal material size for installation into designed joint size equal to material nominal size.

 Movement capability: Plus or minus 50 percent, total 100 percent; pass ASTM E1399.

 Color: [\_\_\_\_.] [To be selected from manufacturer’s full color range.]

 Adhesive: Epoxy type, furnished by joint seal manufacturer.

 Silicone: Field applied sealant band at face of seal to substrate interface, furnished by joint seal manufacturer; same material and color as factory coating.

* + - * 1. Abrasion resistance: Maximum 1 percent weight loss, tested to ASTM D4060.
				2. Fuel resistance: Pass ASTM C719 and ASTM C1135.

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

Retain the following for a double-sided, watertight, trafficable expansion joint seal. This joint seal is suitable for use in joints from 1/2 inch to 4 inches in width.

 Deck and Parking Joint Seal:

 Source: DSM-DS System.

 Description: Precompressed, silicone coated and acrylic impregnated foam hybrid installed into field-applied epoxy adhesive, with dual-faced silicone bellows and silicone sealant band on watertight side.

 Form: Precompressed to less than nominal material size for installation into designed joint size equal to material nominal size.

 Movement capability: Plus or minus 50 percent, total 100 percent; pass ASTM E1399.

 Color: [\_\_\_\_.] [To be selected from manufacturer’s full color range.]

 Silicone: Field applied sealant band at face of seal to substrate interface, furnished by joint seal manufacturer; same material and color as factory coating.

* + - * 1. Abrasion resistance: Maximum 1 percent weight loss, tested to ASTM D4060.
				2. Fuel resistance: Pass ASTM C719 and ASTM C1135.

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

Retain the following for a 2-hour fire rated, watertight, trafficable expansion joint seal. This joint seal is suitable for use in joints from 1/2 inch to 4 inches in width.

 Deck and Parking Joint Seal:

 Source: Emshield DFR2.

 Description: Traffic grade upper and lower silicone sealing surface adhered to fire-retardant impregnated foam backing installed into field-applied epoxy adhesive.

 Form: Precompressed to less than nominal material size for installation into designed joint size equal to material nominal size.

 Fire protection rating: 2 hours, tested to UL 2079.

 Movement capability: Plus or minus 50 percent, total 100 percent.

 Color: [\_\_\_\_.] [To be selected from manufacturer’s full color range.]

 Adhesive: Epoxy type, furnished by joint seal manufacturer.

 Silicone: Field applied sealant band at face of seal to substrate interface, furnished by joint seal manufacturer; same material and color as factory coating.

* + - * 1. Abrasion resistance: Maximum 1 percent weight loss, tested to ASTM D4060.
				2. Fuel resistance: Pass ASTM C719 and ASTM C1135.

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

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

Retain the following for a 3-hour fire rated, watertight expansion joint seal. This joint seal is suitable for use in joints from 1/2 inch to 4 inches in width.

 Deck and Parking Joint Seal:

 Source: Emshield DFR3.

 Description: Traffic grade upper silicone sealing surface, factory coated on underside with intumescent fireproofing material, adhered to fire-retardant impregnated foam backing installed into field-applied epoxy adhesive.

 Form: Precompressed to less than nominal material size for installation into designed joint size equal to material nominal size.

 Fire protection rating: 3 hours, tested to UL 2079.

 Movement capability: Plus or minus 25 percent; total 50 percent.

 Color: [\_\_\_\_.] [To be selected from manufacturer’s full color range.]

 Adhesive: Epoxy type, furnished by joint seal manufacturer.

 Silicone: Field applied sealant band at face of seal to substrate interface, furnished by joint seal manufacturer; same material and color as factory coating.

* + - * 1. Abrasion resistance: Maximum 1 percent weight loss, tested to ASTM D4060.
				2. Fuel resistance: Pass ASTM C719 and ASTM C1135.

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

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

Retain the following for a watertight, trafficable seismic expansion joint seal. This joint seal is suitable for use in joints from 2 to 16 inches in width.

 Deck and Parking Joint Seal:

 Source: SJS Seismic Joint System.

 Description: Silicone and impregnated foam hybrid sealants bonded to both sides of extruded aluminum spline, adhered with field-applied epoxy adhesive, with surface-mounted traffic plate attached to spline.

 Form: Precompressed to less than nominal material size for installation into designed joint size equal to material nominal size.

 Cover plate: Shot blasted [aluminum,] [stainless steel,] [\_\_\_\_,] thickness to suit loading conditions.

 Movement capability: Plus or minus 50 percent, total 100 percent.

 Color: [\_\_\_\_.] [To be selected from manufacturer’s full color range.]

 Adhesive: Epoxy type, furnished by joint seal manufacturer.

 Silicone: Field applied sealant band at face of seal to substrate interface, furnished by joint seal manufacturer; same material and color as factory coating.

* + - * 1. Abrasion resistance: Maximum 1 percent weight loss, tested to ASTM D4060.
				2. Fuel resistance: Pass ASTM C719 and ASTM C1135.

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

Retain the following for a 1-hour fire-rated, watertight expansion joint seal. This joint seal is suitable for use in joints from 2 to 10 inches in width.

 Deck and Parking Joint Seal:

 Source: SJS-FR1.

 Description: Traffic grade upper silicone sealing surface, factory coated on underside with intumescent fireproofing material, adhered to fire-retardant impregnated foam backing, bonded to both sides of extruded composite spline, adhered with field-applied epoxy adhesive, with surface-mounted traffic plate attached to spline.

 Form: Precompressed to less than nominal material size for installation into designed joint size equal to material nominal size.

 Cover plate: Shot blasted [aluminum,] [stainless steel,] [\_\_\_\_,] thickness to suit loading conditions.

 Fire protection rating: 1 hour, tested to UL 2079.

 Movement capability: Plus or minus 50 percent, total 100 percent.

 Color: [\_\_\_\_.] [To be selected from manufacturer’s full color range.]

 Adhesive: Epoxy type, furnished by joint seal manufacturer.

 Silicone: Field applied sealant band at face of seal to substrate interface, furnished by joint seal manufacturer; same material and color as factory coating.

* + - * 1. Abrasion resistance: Maximum 1 percent weight loss, tested to ASTM D4060.
				2. Fuel resistance: Pass ASTM C719 and ASTM C1135.

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

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

Retain the following for a 2-hour fire-rated, watertight expansion joint seal. This joint seal is suitable for use in joints from 2 to 10 inches in width.

 Deck and Parking Joint Seal:

 Source: SJS-FR2.

 Description: Traffic grade upper silicone sealing surface, factory coated on underside with intumescent fireproofing material, adhered to fire-retardant impregnated foam backing, bonded to both sides of extruded composite spline, adhered with field-applied epoxy adhesive, with surface-mounted traffic plate attached to spline.

 Form: Precompressed to less than nominal material size for installation into designed joint size equal to material nominal size.

 Cover plate: Shot blasted [aluminum,] [stainless steel,] [\_\_\_\_,] thickness to suit loading conditions.

 Fire protection rating: 2 hours, tested to UL 2079.

 Movement capability: Plus or minus 50 percent, total 100 percent.

 Color: [\_\_\_\_.] [To be selected from manufacturer’s full color range.]

 Adhesive: Epoxy type, furnished by joint seal manufacturer.

 Silicone: Field applied sealant band at face of seal to substrate interface, furnished by joint seal manufacturer; same material and color as factory coating.

* + - * 1. Abrasion resistance: Maximum 1 percent weight loss, tested to ASTM D4060.
				2. Fuel resistance: Pass ASTM C719 and ASTM C1135.

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

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

Retain the following for a non-traffic-bearing, watertight expansion joint seal. This joint seal is suitable for use in joints from 1/2 inch to 8 inches in width.

 Deck and Parking Joint Seal:

 Source: Horizontal Colorseal.

 Description Precompressed, silicone coated and acrylic impregnated-foam hybrid installed into field-applied epoxy adhesive, with silicone sealant band on joint faces.

 Form: Precompressed to less than nominal material size for installation into designed joint size equal to material nominal size.

 STC rating: 52, tested to ASTM E90.

 OITC rating: 38, tested to ASTM E90.

 Movement capability: Plus or minus 50 percent, total 100 percent; pass ASTM E1399.

 Color: [\_\_\_\_.] [To be selected from manufacturer’s full color range.]

 Adhesive: Epoxy type, furnished by joint seal manufacturer.

 Silicone: Field applied sealant band at face of seal to substrate interface, furnished by joint seal manufacturer; same material and color as factory coating.

* + - * 1. Abrasion resistance: Maximum 1 percent weight loss, tested to ASTM D4060.
				2. Fuel resistance: Pass ASTM C719 and ASTM C1135.

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

Retain the following for a pick and tamper resistant, 2-hour fire-rated, watertight expansion joint seal. This joint seal is suitable for use in joints from 1/2 inch to 4 inches in width.

 Deck and Parking Joint Seal:

 Source: Emshield SecuritySeal SSF2.

 Description: Dual-sided, pick resistant, watertight, hardened flexible polyurethane sealing surfaces adhered to fire-retardant impregnated foam backing

 Form: Precompressed to less than nominal material size for installation into designed joint size equal to material nominal size.

 Fire protection rating: 2 hours, tested to UL 2079.

 Movement capability: Plus or minus 50 percent, total 100 percent.

 Color: [\_\_\_\_.] [To be selected from manufacturer’s full color range.]

 Adhesive: Epoxy type, furnished by joint seal manufacturer.

* + - 1. 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.

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

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

Retain the following for a pick and tamper resistant, 3-hour fire-rated, watertight expansion joint seal. This joint seal is suitable for use in joints from 1/2 inch to 4 inches in width.

 Deck and Parking Joint Seal:

 Source: Emshield SecuritySeal SSF3.

 Description: Dual-sided, pick resistant, watertight, hardened flexible polyurethane sealing surface, factory coated on underside with intumescent fireproofing material, adhered to fire-retardant impregnated foam backing

 Form: Precompressed to less than nominal material size for installation into designed joint size equal to material nominal size.

 Fire protection rating: 3 hours, tested to UL 2079.

 Movement capability: Plus or minus 25 percent, total 50 percent.

 Color: [\_\_\_\_.] [To be selected from manufacturer’s full color range.]

 Adhesive: Epoxy type, furnished by joint seal manufacturer.

* + - 1. 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.

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

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

Retain the following for an extruded thermoplastic watertight expansion joint winged seal. This joint seal is suitable for use in joints from 1 to 5-1/2 inches in width. Refer to Emseal technical data for assistance in selecting the proper joint seal based on project parameters.

 Deck and Parking Joint Seal:

 Source: Thermaflex.

 System: Extruded sealing gland with punched flanges embedded in high-strength, flexible, impact-absorbing elastomeric concrete nosing.

 Gland:

* + - * 1. Description: Thermaflex sealing gland consisting of extruded thermoplastic vulcanizate gland with punched flanges and heat welded transitions.
				2. Shore A hardness: Minimum 65, tested to ASTM D 2240.
				3. Tensile strength: Minimum 1,000 PSI, tested to ASTM D 412.
				4. Ultimate elongation, Minimum 400 percent, tested to ASTM D 412.

 Nosing:

* + - * 1. Description: High strength, flexible, impact-absorbing elastomeric concrete material composed of two-part polyurethane resin reinforced with silica free aggregate.
				2. Tensile strength: 490 PSI, tested to ASTM D638.
				3. Compressive strength: Minimum 4,000 PSI, tested to ASTM D695.
				4. Adhesion to primed concrete: Minimum 400 PSI, tested to ASTM D2734.
				5. Impact resistance: No cracking at 19 inches, tested to ASTM D5628.
				6. Shore A hardness: 54.0, tested to ASTM D2240.

 Color: Black.

 EXECUTION

 PREPARATION

 Clean joints thoroughly; remove loose and foreign matter that could impair adhesion or performance.

 INSTALLATION

 Install joint seal in accordance with manufacturer's instructions and approved Shop Drawings.

 Remove joint seal from precompressed packaging, immediately insert into joint, and allow to expand.

 Use temporary retainers if required to maintain joint seals in position until expansion is complete.

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.

 JOINT SEALS SCHEDULE

 Exterior Deck Joint Seals at [\_\_\_\_]: [Horizontal Colorseal.] [\_\_\_\_.]

 Exterior Deck Joint Seals at [\_\_\_\_]: [SJS-FR2.] [\_\_\_\_.]

END OF SECTION