



SUBSTITUTION REQUEST

(After the Bidding/Negotiating Phase)

Project: _____ Substitution Request Number: _____

 From: _____
 To: _____ Date: _____

 A/E Project Number: _____
 Re: _____ Contract For: _____

Specification Title: _____ Description: _____
 Section: _____ Page: _____ Article/Paragraph: _____

Proposed Substitution: _____
 Manufacturer: _____ Phone: _____
 Address: _____
 Trade Name: _____ Model No.: _____
 Installer: _____ Phone: _____
 Address: _____

History: New product 1-4 years old 5-10 years old More than 10 years old

Differences between proposed substitution and specified product: _____

Point-by-point comparative data attached — REQUIRED BY A/E

Reason for not providing specified item: _____

Similar Installation:

Project: _____ Architect: _____
 Address: _____ Owner: _____
 _____ Date Installed: _____

Proposed substitution affects other parts of Work: No Yes; explain _____

Savings to Owner for accepting substitution: _____ (\$ _____).

Proposed substitution changes Contract Time: No Yes [Add] [Deduct] _____ days.

Supporting Data Attached: Drawings Product Data Samples Tests Reports _____

SUBSTITUTION REQUEST

(After the Bidding/Negotiating Phase — Continued)

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
 - Same warranty will be furnished for proposed substitution as for specified product.
 - Same maintenance service and source of replacement parts, as applicable, is available.
 - Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
 - Cost data as stated above is complete. Claims for additional costs related to accepted substitution which may subsequently become apparent are to be waived.
 - Proposed substitution does not affect dimensions and functional clearances.
 - Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.
 - Coordination, installation, and changes in the Work as necessary for accepted substitution will be complete in all respects.
-

Submitted by: _____

Signed by: _____

Firm: _____

Address: _____

Telephone: _____

Attachments:

A/E's REVIEW AND ACTION

- Substitution approved - Make submittals in accordance with Specification Section 01 25 00 Substitution Procedures.
- Substitution approved as noted - Make submittals in accordance with Specification Section 01 25 00 Substitution Procedures.
- Substitution rejected - Use specified materials.
- Substitution Request received too late - Use specified materials.

Signed by: _____ Date: _____

Additional Comments: Contractor Subcontractor Supplier Manufacturer A/E
 Other:

ES JOINT SYSTEM

PREMOLDED Urethane Wide Joint



Description

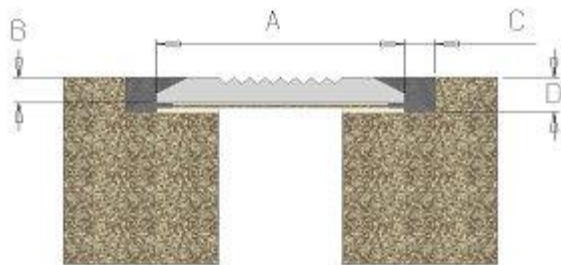
Erie Metal Specialties' Factory Molded Urethane Expansion Joint Sealing System features factory poured urethane sealant mat lengths that are field installed using pourable sealant caulking. The premolded seal is shipped to site in rolls, and once installed with the urethane nosing, traffic plates, primers, bedding and bond breakers, forms a watertight structural expansion joint.

The systems are designed for use in parking structures, stadiums and plazas where wheel and foot traffic applications are required. The sealer has a textured surface for skid-resistance, can be colored and meets ADA criteria.



Figures 1& 2 – This system is designed for use in stadiums, parking structures, and plazas, where foot and wheel traffic applications are required. It may also be used in various other horizontal, as well as vertical, projects. The seal has a textured surface for skid resistance, can be colored, and meets ADA standards.

ES-Series Profile



Features and Benefits

- **Flexible** – Used for many different horizontal and vertical applications.
- **Easy to Install** – System can be installed twice as fast as popular nosing/membrane systems.
- **ADA** – Systems are compliant with guidelines prescribed by the Americans with Disabilities Act.
- **Surface** – A textured surface provides skid-resistance for foot and auto traffic.
- **Directional Changes** – Easily accommodated while maintaining a watertight seal.
- **Fire-rated** – Systems can be made from 2-hr. fire-rated urethane meeting UL listings.

ES and EW Wide Joint System Model Numbers/Specifications (INCHES)					
Model	ES40	ES60	ES80	ES100	ES120
Overall width	5	7	9	11	13
Seal Width	4	6	8	10	12
Required Depth	5/8	5/8	5/8	3/4	3/4
Stem Op'ng Max	1	1 1/2	2 1/4	3	3
Movement	3/4	1	1 1/2	2	2 1/2
Plate Size	3.5x.063	5x.090	6.5x.090	8X.125	8X.125

Notes:

1. Contractor to provide recess free of voids and honeycombing.
2. Recess bed to be in the same plane both sides of the stem opening.
3. Contractor to provide 1/4" radius tooled edge along form at driving surface.
4. Wall seals may be surface applied, where recess is not required.
5. For wall seals, traffic plates are mandatory on larger sizes.

Technical Data

The factory-molded seal is made from urethane and has the following properties: 250 psi tensile strength (ASTM D412). 700% ultimate elongation (ASTM D412), 30 +/-5 shore A hardness (ASTM C661), a +/- 16% movement capability (ASTM C719) and is flexible at -40 deg. F (ASTM D1790).

PRODUCT	MIN. WIDTH IN (MM)	MID RANGE IN (MM)	MAX. WIDTH IN (MM)	TOTAL MOVEMENT IN (MM)	DIM. A: IN (MM)	DIM. B: IN (MM)	DIM. C: IN (MM)	DIM. D: IN (MM)
ES-40	0.25" (6.3)	0.62" (15.9)	1.00" (25.4)	0.75" (19.1)	5.00" (127.0)	4.00" (101.6)	0.62" (15.9)	1.00" (25.4)
ES-60	0.50" (12.7)	1.00" (25.4)	1.50" (38.1)	1.00" (25.4)	7.00" (177.8)	6.00" (152.4)	0.62" (15.9)	1.50" (38.1)
ES-80	0.75" (19.1)	1.50" (38.1)	2.25" (57.1)	1.50" (38.1)	9.00" (228.6)	8.00" (203.2)	0.62" (15.9)	2.25" (57.1)
ES-100	1.00" (25.4)	2.00" (50.8)	3.00" (76.2)	2.00" (50.8)	11.00" (279.4)	10.00" (254.0)	0.75" (19.1)	3.00" (76.2)
ES-120	1.00" (25.4)	2.25" (57.1)	3.00" (76.2)	2.50" (63.5)	13.00" (330.2)	12.00" (304.8)	0.75" (19.1)	3.00" (76.2)

The nosing sealant, as tested in the factory, has the following properties: 1000 psi tensile strength (ASTM D412), 200% ultimate elongation (ASTM D412), 55 +/- shore A hardness (ASTM C661), +/- 12% movement capacity (ASTM C719), 50 lbs. peel adhesion to concrete (ASTM C794), a 30 minute pot life at 70 deg. F and a 24 hour cure time at 75 deg, F.

Delivery and Storage

The main components of the system include the seal, which is shipped to site in 25-foot rolls, and the nosing compound that is a two-component polymeric material shipped in plastic containers. Until use, all components should be left in their original unopened containers and stored indoors. The resins should be stored at temperatures between 40 and 90 ° F. When properly stored, they have a shelf life of six months.

Installation

a.) Concrete subcontractor must prepare the blockout recess in accordance with the dimensions shown in the plans. They shall be clean, sound and free of any voids and honeycombing.

b.) Affix the traffic plate on one side only and allow it to move on the other concrete base by using a bond breaker.

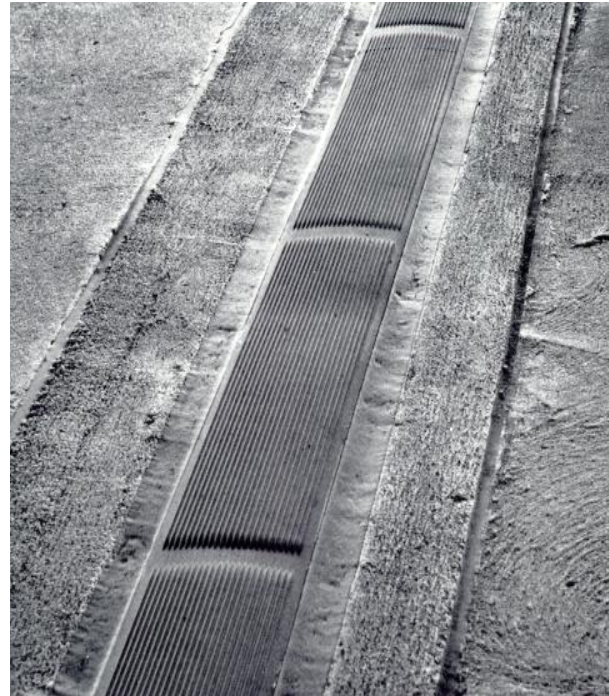
c) Place and adhere the molded seal so that it is flush with the deck surface.

d) Apply adhesive primer to concrete and seal edges. Install the nosing compound bond the factory-molded seal to the concrete.

Limitations

To function as intended, the expansion joint system must be installed as prescribed by the manufacturer. The following design criteria should be considered and provided for:

- Snowplows can damage the surface of the seal
- Vehicular traffic to include automobiles only. Trucks and other high-speed traffic are not recommended.
- Movements in excess of the design limits, specified herein, may cause premature failure of the system.
- System will function best when installed at the mean temperature of the movement range.



Clean lines and a smooth walking surface have always been the strength of this system

For additional information, contact

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EMS, Inc.

13311 Main Rd.

Akron, New York 14001

Website: eriemetal.com

ES-Series Urethane Wide Joint Expansion Joint Installation Procedures

- A.** The expansion joint opening shall be a consistent width along its entire length, or be within the established width dimensions for the specified seal for the particular project. The concrete blockout edges must be clean and sound. The expansion joint opening should be sandblasted to remove any laitance or material that would inhibit the bond of the sealant. Additionally, sandblasting will provide an adequate surface profile to which the sealant will bond. Should sandblasting not be possible, the joint faces must be ground with a coarse disc grinder to produce an abraded surface. Be careful not to polish the surface as this could cause failure of the sealant. Any repair materials used should be allowed to fully cure per manufacturer's recommendations before the installation is begun.
- B.** Blow the joint clean to remove any dust, or other contamination. Be certain that any high spots have been eliminated to ensure that the installed joints are slightly recessed from the concrete surface.
- C.** Roll out the Premold rubber along the side of the expansion joint blockout. Abrade the beveled edges of the Premold Seal by using a wire brush. Then wipe the surface clean with a solvent such as toluene. Note that the Premold can shrink once unrolled and allowed to relax. Do not make any final cuts until the rubber has had time to relax and to shrink to its normal length.
- D.** Wipe aluminum plates with Methyl Acetate solvent to remove any dirt or oils. Using either a brush or rag, apply a thin film of Primer #42 to the aluminum plate. Do not over prime. For maximum adhesion sandblasting or grinding of the plate is recommended prior to the solvent wipe. Let the primer dry for ½ to 2 hours.
- Note:** Proper installation requires that the 980 Nosing achieve a good bond to the ¾ inch depth and the base of the concrete blockout. Therefore, care should be taken not to contaminate the concrete during the bedding procedure that follows.
- E.** Prime the blockout ledge where the bedding will be installed using Primer #10. Allow the primer to dry for 1.5 to 2 hours. It must be dry to the touch. Always allow one and one half hour minimum for the primer to cure. You then have a four-hour window to apply the 881 bedding sealant.
- F.** Thoroughly mix the two components of 881 bedding. Using a bulk caulking gun ribbon the 881 bedding sealant on each side of the stem opening of the joint. The bedding is intended to level the blockout so that the plates will rest smooth and flat. Bedding must fully support the plate and provide for anticipated movement.

- G.** On one side of the stem opening lay out a precut piece of polyethylene on to the fresh bedding to act as a bond breaker. The polyethylene sheet should not extend into the area that will receive the 980 nosing.
- H.** Bed the aluminum plate, primed side down, into the bedding sealant. Be certain to leave 1/8" to 1/4" spacing between each plate section as you progress down the length of the joint Utilize a section of Premold as a template to set the plates to a proper depth. The temperature determines placement of plates within the blockout at the time of installation, and by the expected annual movement rating.
- I.** Tape visqueen over the top of the aluminum plates to keep the plates free floating under the Premold.
- J.** Place the premolded seal into the blockout making sure the seal is centered over the joint gap. Tape edges of the Premold seal and the concrete at the edge of the blockout to protect from over spill of the primer and sealant.
- K.** Apply Primer #10 to the concrete surfaces and the beveled edge of the Premold using a disposable brush. Apply just enough to wet out the surface. It is important that the Primer #10 be allowed to completely dry for a minimum of one and one half hours. It is important that the primer is dry before installing 980 Nosing. Following the one and one half hour minimum drying period there is a four-hour window of application. After four hours the surface must be re-primed.
- L.** Thoroughly mix the two components of 980 Nosing, and caulk the expansion joint into position. Tool to a smooth finish. Note that the 980 Nosing has a relatively short work life, ensuring full cure and bond strength before movement.
Note: Caulking alternately from one side to the other will avoid movement of the seal laterally in the blockout.
- M.** All butt joints must be precut to a 90 degree angle, primed, and then caulked tightly (1/8" or less) with 881 or 830 to bond one piece of Premold to the other. This operation can be done while polymeric nosing, 980, is being installed.
- N.** Pull the protective tape from the Premold and the concrete and dispose of properly.
- O.** Open to traffic after 24 hours of cure.

Rev 10/05

SPECIFICATION

Division 07900

ES-Series Urethane pad System

PART 1 - GENERAL

1.01 Work Included

- A. This work shall consist of furnishing and installing a deck joint sealing expansion control system at the location shown on the plans, and in accordance with the following specification. The sealing system shall prevent the passage of water through the expansion joint opening.
- B. Related Work
 - Cast-in-place concrete
 - Flashing and sheet metal
 - Sealants and caulking

1.02 Submittals

- A. Drawings-Submit typical expansion joint cross-section include pertinent dimensioning and relationship to adjacent construction.

1.03 Product Delivery, Storage and Handling

- A. Deliver products in manufacturer's original, intact, labeled containers and store under cover in a dry location until installed. Store off the ground, protect from weather and construction activities.

1.04 Acceptable Manufacturers

- A. All joints shall be as designed and manufactured by Erie Metal Specialties, Inc, 13311 Main Road, Akron, NY 14001
- B. Alternate manufacturers and their products will be considered.
- C. Any proposed alternate systems must be submitted prior to the bid date. This submission shall be in accordance with Materials and substitutions section in this specification.

1.05 Quality Assurance

- A. Warranty: The expansion control system shall be warranted when installed by the manufacturer's factory trained installer. Installation shall be in strict accordance with manufacturer's printed technical specifications, details, installation instructions and general procedures.

- B. Manufacturer: Shall have a minimum ten (10) years experience specializing in the design and manufacture of expansion control systems.
- C. Application: The specified expansion joint system shall be installed by the manufacturer's factory trained installer.

PART 2 - PRODUCT

2.01 General

- A. The joint seal shall be a factory molded and cured polyurethane with edges formed with a chamfer and mechanically abraded to ensure superior adhesion. Provide seal with non-slip serrated walking surface. The system shall incorporate the required nosing materials, bedding compounds and traffic support plate to form a complete watertight installation.

2.02 Materials

- A. Seal Profile - The profile shall conform to the following physical properties.

Thickness : ½ inch nominal

**EMS 880 FACTORY MOLDED SEAL
Technical Data From Laboratory Tests
(Field Properties May Vary)**

<u>Property</u>	<u>Test Method</u>	<u>Test Results</u>
Movement Capability	ASTM C719	±16%
Tensile Strength	ASTM D412	250 psi
Ultimate Elongation	ASTM D412	700%
Hardness (Shore A)	ASTM C661	30 ± 5
Low Temperature (Flexibility @ -40°F)	ASTM D1790	Pass
Service Temperature Range	---	-40°F to 150°F

- B. Support Plate

Shall be Aluminum Alloy 6061-T6. Standard thickness and width shall be determined by manufacturer according to system requirements.

- C. Plate Primer

Utilize manufacturer's standard single component primer applied to underside of plate to achieve optimum bond with Bedding Compound.

D. Block-out Primer

Utilize manufacturer's standard 1 component primer for application to the concrete block-out surfaces and beveled edge of the seal profile.

E. Bedding Compound

Utilize 980 Polymeric nosing. The mixed material shall conform to the following physical properties.

EMS 980 POLYMERIC NOSING
Technical Data From Laboratory Tests
(Field Properties May Vary)

<u>Property</u>	<u>Test Method</u>	<u>Test Results</u>
Movement Capability	ASTM C719	±12.5%
Tensile Strength	ASTM D412	1000 psi
Ultimate Elongation	ASTM D412	200%
Hardness (Shore A)	ASTM C661	55 ± 5
Weight Loss, Heat Aging	ASTM C792	< 5%
Peel Adhesion - Concrete	ASTM C794	50 lbs.
Pot Life @ 70°F	---	30 min.
Shelf Life @ 70°F	---	6 mths (sealed containers)
Cure Time @ 75°F	ASTM C920	24 hours
Low Temperature (Flexibility @ -40°F)	ASTM D1790	Pass
Service Temperature Range	---	-40°F to 150°F

F. Nosing

Utilize 980 sealant for installation of system nosing and splicing material between lengths of seal profile. The mixed material shall conform to the following physical properties.

2.03 Fabrication

- A. Seal profiles shall be shipped in continuous lengths of 30 and 60-foot rolls (depending on system size) in manufacturer's standard shipping carton. Seals shall be cut to length on jobsite where required. Miter-cut or bend seal in the field to conform to directional changes. Follow installation procedures as outlined in 3.01B.
- B. All components will be shipped in manufacturer's labeled containers.

2.04 Finishes

- A. Seal profile - Standard color, Concrete Gray.

PART 3 - EXECUTION

3.01 Installation

A. Construction Requirements

1. General

- a. Installation must be performed in gap openings with sound, clean and dry substrates.
- b. Gap openings must have parallel, dimensionally consistent side-walls.
- c. Any loose portion of concrete at the gap must be removed and the concrete properly repaired as directed by the engineer.

B. Procedure

1. The concrete block-out edges must be clean and sound. The edges should be sandblasted, or ground to remove laitance. Spot repairs of block-out, stem opening, or edge spalling must be completed prior to installation. Repair material must have adequate cure time before proceeding with expansion joint installation.
2. Utilizing compressed air clean to remove any dust, or other contamination. Be certain that any high spots have been eliminated to ensure that the installed joints are slightly recessed from the concrete.
3. Roll out the pre-molded seal along side of the expansion joint block-out. Wire brush and clean the beveled edges with solvent.

Note: Pre-mold can shrink after being unrolled. Do not make any final cuts at this time.

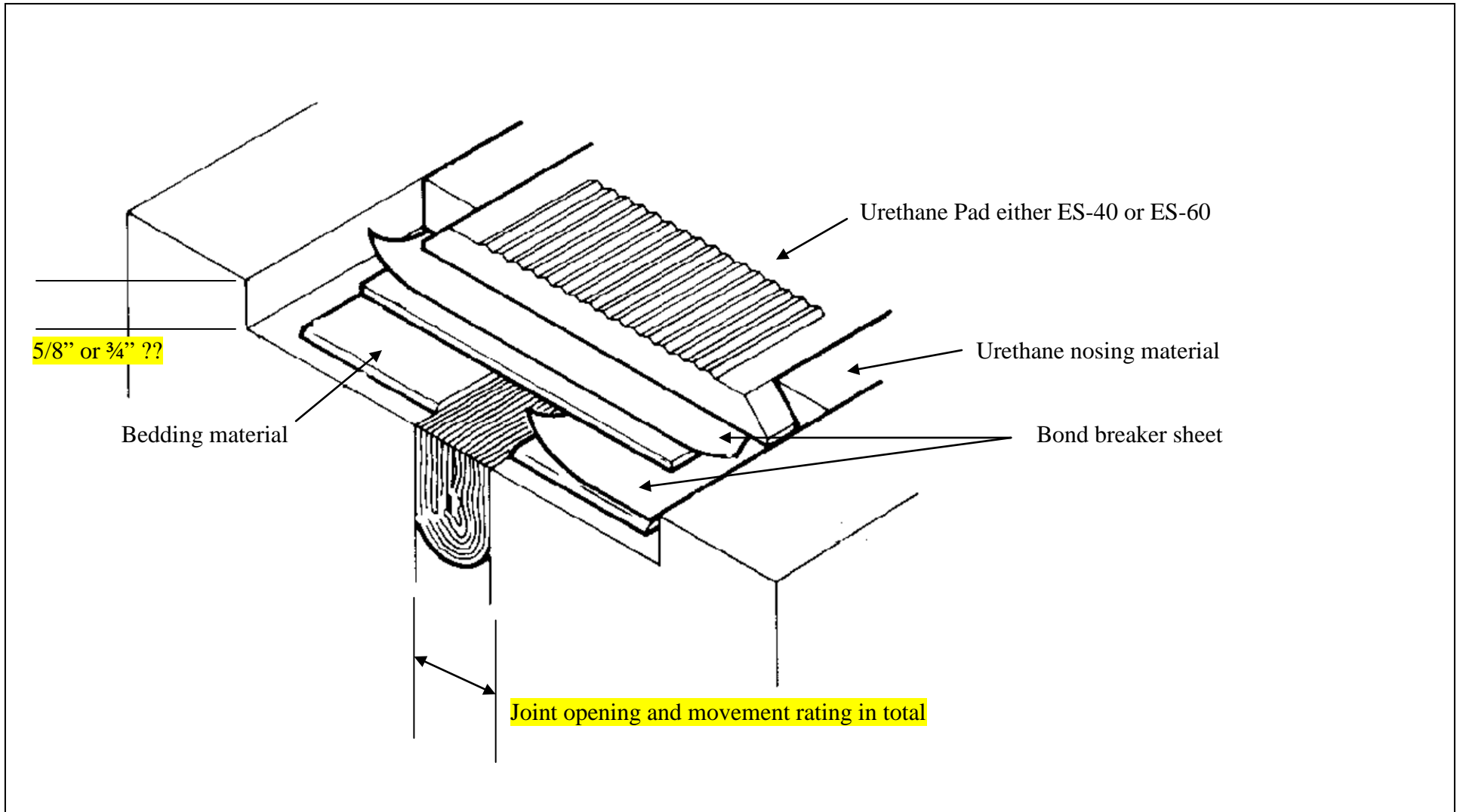
4. Wipe aluminum plates with MEK to remove any dirt or oil. Using either a brush or a rag, apply a thin film of EMS metal plate primer to the aluminum plate. Do not over prime. For maximum adhesion sandblasting or grinding is recommended prior to solvent wipe. Let dry until tacky.
5. Prime the block-out ledge where the bedding will be installed with concrete primer. Allow the primer to dry until it is tacky to the touch.
6. Caulk and trowel a thin section of bedding nosing material onto each side of the stem opening. The bedding is intended to level the block-out so that the plates will rest smooth and flat. Bedding must fully support the traffic plate and provide for anticipated movement.

7. On one side of the stem opening, place a precut piece of polyethylene onto the fresh bedding to act as bond breaker. Note: Polyethylene sheet should not extend into the area that will receive the nosing compound later.
8. Bed the aluminum plates; primed side down. Be certain to leave 1/8" to 1/4" between each plate as one progresses down the length of the joint. Use a piece of pre-mold as a template to set plates to proper depth. Place the plates into the block-out determine by the deck temperature at the time of installation where plate best align based on the expected annual movement rating.
9. Tape plastic sheeting over the top face of the aluminum plates to keep plates free floating under the pre-mold sealant.
10. Place pre-molded seal into the block-out making sure the seal is centered in joint. Tape the top edges of the pre-molded seal and the concrete at the edge of the block-out for protection. Apply EMS primer to the concrete and tapered pre-mold edge. Prime all butt splices at this time as well.
11. Thoroughly mix the Nosing, and caulk the pre-molded section into position. Tool smooth. The Nosing has a relatively short work life to ensure full cure and bond strength before movement.
12. All butt joints must be precut at a 90° angle, and then caulked tightly (1/8" or less) with 980 to bond one piece of pre-mold to another. This operation can be done while polymeric nosing is being installed.
13. Pull the tape from the top of the pre-mold and concrete edges.
14. Remove refuse and dispose of in a proper manner.

3.02 Clean and Inspect

- A. Protect system from damage during construction. After work is complete in adjacent areas, clean exposed surfaces with a suitable cleaner that will not harm or attack the seal profile.

END OF SECTION



NO.	Description	Date	By

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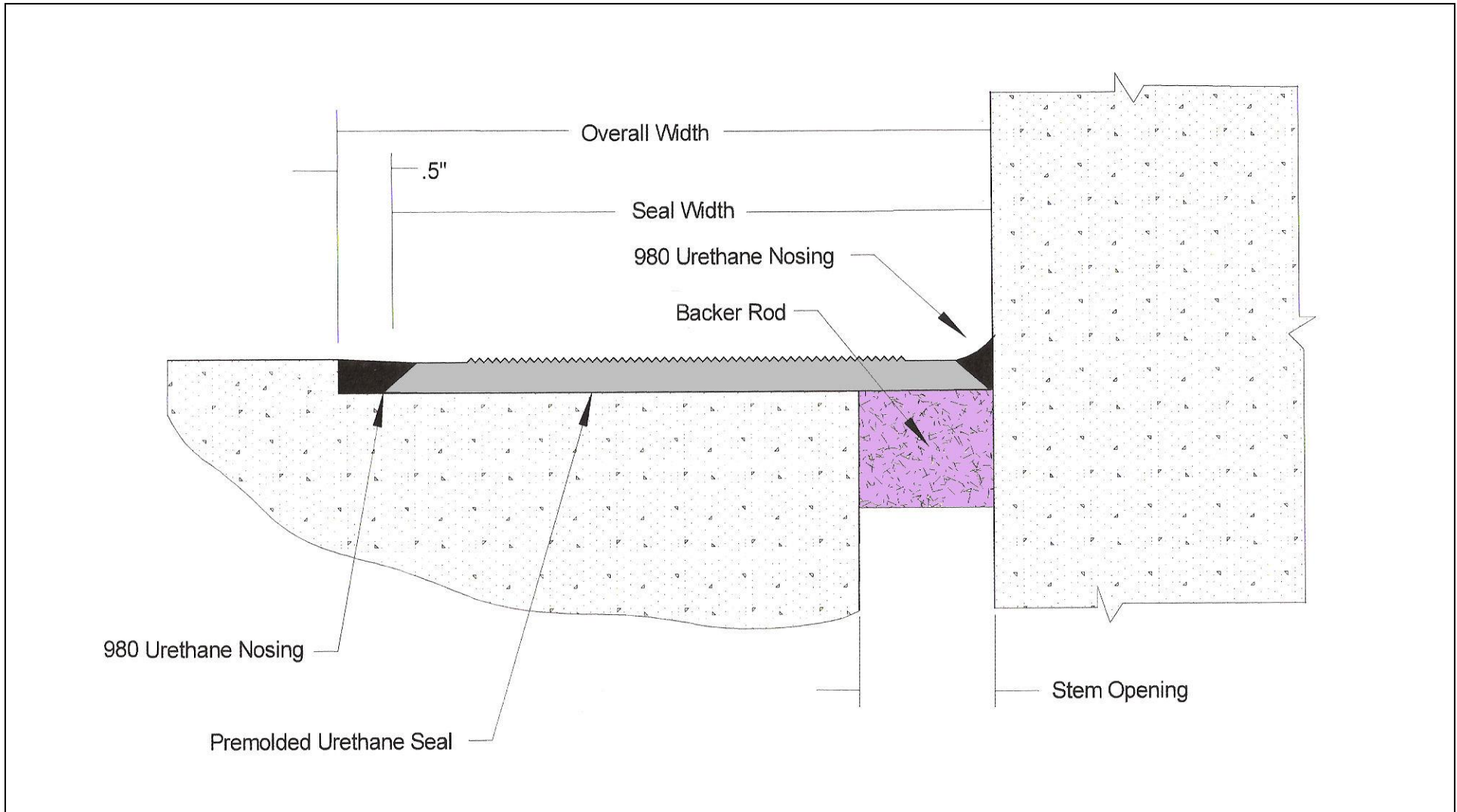


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PROJECT: Omaha Garages 1 & 4

TITLE: Joint Detail

Detailed by: AWG	Date: 06/01/15
Checked By: BAF	Date: 06/01/15
Scale: NTS	EMS Job #:
Sheet No.: 1 of 1	Drawing No.: CD-720



NO.	Description	Date	By

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 Phone: (716) 542-3991 • Fax: (716) 542-3996 • E-mail: sales@eriemetal.com

PROJECT: Allegany Hospital

TITLE: Floor to Wall Detail

Detailed by: AWG	Date: 10/9/00
Checked By: LJB	Date: 10/21/00
Scale: NTS	EMS Job #:
Sheet No.: 1 of 1	Drawing No.: CD-500