



*Specifiers: Click on the ¶ icon in the WORD toolbar to reveal detailed instructions.*

## SECTION 07 92 16

### RIGID JOINT SEALANTS

\*\*\*NOTE TO SPECIFIER\*\*\* This section is based on products of Pecora Corporation, manufacturers of architectural weatherproofing products including joint sealants, traffic coatings and air barriers; located at:  
165 Wambold Road  
Harleysville, PA 19438  
Toll Free: 800-523-6688  
Tel: 215-723-6051  
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Email:lawreys@pecora.com  
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This guide specification has been prepared by Pecora Corporation to assist design professionals in specifying rigid joint sealants for security applications in prisons, courthouses, psychiatric units, schools and animal enclosures. Contact your nearest Pecora product representative or Pecora Corporation at 1-800-523-6688 for assistance with product selection, specifications and detailing.

#### 1 GENERAL

##### 1.1 SECTION INCLUDES

1.1.1 Security joint sealants.

\*\*\*NOTE TO SPECIFIER\*\*\* Coordinate references to section numbers and titles with those used for the Project's specifications.

##### 1.2 RELATED SECTIONS

1.2.1 Section 07 92 00 Joint Sealants for elastomeric and acoustical joint sealants.

1.2.2 Section 32 13 73 Concrete Paving Joint Sealants for sealing joints in pavements, walkways, and curbing.

\*\*\*NOTE TO SPECIFIER\*\*\* Retain only those reference standards cited within this specification section.

##### 1.3 REFERENCES

1.3.1 AAMA 506 – Voluntary Specifications for Hurricane Impact and Cycle Testing of Fenestration Products.

1.3.2 ASTM C 661 – Standard Test Method for Indentation Hardness of Elastomeric-Type Sealants by Means of a Durometer.

- 1.3.3 ASTM C 719 – Standard Test Method for Adhesion and Cohesion of Elastomeric Joint Sealants Under Cyclic Movement (Hockman Cycle).
- 1.3.4 ASTM C 794 – Standard Test Method for Adhesion-in-Peel of Elastomeric Joint Sealants.
- 1.3.5 ASTM C 881/C 881M – Standard Specification for Epoxy-Resin-Base Bonding Systems for Concrete.
- 1.3.6 ASTM C 882 – Standard Test Method for Bond Strength of Epoxy-Resin Systems Used With Concrete By Slant Shear.
- 1.3.7 ASTM C 920 – Standard Specification for Elastomeric Joint Sealants.
- 1.3.8 ASTM C 1184 – Standard Specification for Structural Silicone Sealants.
- 1.3.9 ASTM D 412 – Standard Test Methods for Rubber Properties in Tension.
- 1.3.10 ASTM D 638 – Standard Test Method for Tensile Properties of Plastics.
- 1.3.11 ASTM D 695 – Standard Test Method for Compressive Properties of Rigid Plastics.

#### 1.4 PRECONSTRUCTION TESTING

- 1.4.1 Preconstruction Adhesion Testing: Before installing sealants, test sealant adhesion to Project joint substrates in accordance with ASTM C 794.  
[\\*\\*\\*NOTE TO SPECIFIER\\*\\*\\* Contact Pecora Technical Services at 800-523-6688 to arrange for substrate testing.](#)
  - 1.4.1.1 Arrange for sealant manufacturer's technical personnel to conduct laboratory tests for each rigid joint sealant and joint substrate indicated:
  - 1.4.1.2 Report whether sealant failed to adhere to joint substrates or tore cohesively; retest sealants that fail adhesively until satisfactory adhesion is obtained.
  - 1.4.1.3 Do not use sealants that fail to adhere to joint substrates during testing.

#### 1.5 SUBMITTALS

- 1.5.1 Submit under the provisions of Section 01 30 00 Administrative Requirements.  
[\\*\\*\\*NOTE TO SPECIFIER\\*\\*\\* The following three types of submittals are designated as "Action Submittals" in CSC/CSI's "SectionFormat."](#)
- 1.5.2 Product Data: For each rigid joint sealant product indicated; manufacturer's technical data, tested physical and performance properties and installation instructions.
- 1.5.3 Samples for Initial Selection: Three Colour charts showing manufacturer's standard range of Colours available for each product exposed to view.
- 1.5.4 Samples for Verification: Three strips of cured sealants 13 mm diameter by 150 mm (1/2- by 6-inch) in size for each colour of rigid joint sealant required.  
[\\*\\*\\*NOTE TO SPECIFIER\\*\\*\\* The following submittals are designated as "Informational Submittals" in CSC/CSI's "SectionFormat."](#)
- 1.5.5 Qualification Data: For installer.

1.5.6 Preconstruction Adhesion Test Reports: Indicate which rigid joint sealants and joint preparation methods resulted in optimum adhesion to joint substrates.

1.5.7 Field-Adhesion Test Reports: For each rigid joint sealant application tested.

1.5.8 Warranties: Sample of manufacturer’s warranty.

1.6 QUALITY ASSURANCE

\*\*\*NOTE TO SPECIFIER\*\*\* Pecora does not approve or certify applicators, but will issue a letter recognizing or recommending applicators who have demonstrated, over a 3-year period, the ability to apply Pecora products, and/or who have participated in a project-specific installation review with a Pecora technical representative.

1.6.1 Installer Qualifications: Engage installers trained, accepted or recommended by manufacturer.

1.6.2 Source Limitations: Obtain each kind of rigid joint sealant from single source from single manufacturer.

1.6.3 Mock-ups: Install sealant in mock-ups required by the Contract Documents that are indicated to receive specified rigid joint sealants in accordance with installation methods specified in this section.

1.6.4 Preinstallation Conference: Convene conference at Project site before start of work.

1.7 FIELD CONDITIONS

1.7.1 Do not proceed with installation of rigid joint sealants under the following conditions:

1.7.1.1 When ambient and substrate temperature conditions are outside limits permitted by rigid joint sealant manufacturer:

1.7.1.2 When joint substrates are wet.

1.7.1.3 Where contaminants capable of interfering with adhesion have not been removed from joint substrates.

1.8 WARRANTY

1.8.1 Refer to Section 01 78 00 Closeout Submittals for additional warranty requirements.

\*\*\*NOTE TO SPECIFIER\*\*\* Pecora Corporation offers a 5-year warranty, limited to replacement of materials deemed by Pecora to be defective in manufacture.

1.8.2 Material Warranty: Provide manufacturer’s standard five-year material warranty commencing at date of Substantial Completion.

2 PRODUCTS

2.1 MANUFACTURERS

2.1.1 Acceptable Manufacturer: Pecora Corporation; 165 Wambold Road, Harleysville, Pennsylvania 19438-2014; Toll Free Tel: 800-523-6688; Tel: 215-723-6051; Fax: 215-721-0286; Web: <http://www.pecora.com>.

\*\*\*NOTE TO SPECIFIER\*\*\* Delete one of the following “Substitutions” options; coordinate with requirements of Division 01 section on product options and substitutions.

2.1.2 Substitutions: Not permitted.

2.1.3 Substitutions: Requests for substitutions will be considered under the provisions of Section 01 60 00 – Product Requirements.

## 2.2 MATERIALS - GENERAL

2.2.1 Compatibility: Provide rigid joint sealants, primers, backings, and accessory materials that are compatible with one another and with Project joint substrates.

## 2.3 SECURITY JOINT SEALANTS

\*\*\*NOTE TO SPECIFIER\*\*\* Sealant below is a tamperproof security sealant for non-moving vertical and horizontal joints and cracks.

2.3.1 Multicomponent, Nonsag, Epoxy Resin Security Joint Sealant:

2.3.1.1 Acceptable Product: DynaPoxy EP-1200 as manufactured by Pecora Corporation.

\*\*\*NOTE TO SPECIFIER\*\*\* Delete the “Compliance” and “Physical Properties” paragraphs below if substitutions or equivalent products will not be considered.

2.3.1.2 Compliance: ASTM C 881, Types I and III, Grade 3, Classes B and C.

2.3.1.3 Physical Properties:

2.3.1.3.1 Compression Strength: 75.8 MPa (11000 psi) in accordance with ASTM D 695.

2.3.1.3.2 Bond Strength: 24.3 MPa (3530 psi) in accordance with ASTM C 882.

2.3.1.3.3 Shore A Hardness: Greater than 90 in accordance with ASTM C 661.

2.3.1.3.4 Dynamic Movement Capability: None in accordance with ASTM C 719.

\*\*\*NOTE TO SPECIFIER\*\*\* Retain one of the “Colour” options below. Pecora DynaPoxy EP-1200 is available in 50 standard colours. Select one of the first two options if colours will be selected after Contract is awarded. Select the third option to specify a custom colour. Include the fourth option when colours are scheduled or otherwise indicated on the Drawings.

2.3.1.3.5 Colour: As selected from manufacturer’s standard range.

2.3.1.3.6 Colour: Standard Colours matching adjacent surfaces.

2.3.1.3.7 Colour: Match Architect’s sample.

2.3.1.3.8 Colour: As indicated on Drawings.

\*\*\*NOTE TO SPECIFIER\*\*\* Sealant below is a tamper resistant security sealant for vertical and horizontal joints expected to experience up to 25 percent movement.

2.3.2 Multicomponent, Nonsag, Polyurethane Security Joint Sealant:

2.3.2.1 Acceptable Product: DynaFlex as manufactured by Pecora Corporation.

\*\*\*NOTE TO SPECIFIER\*\*\* Delete the “Compliance” and “Physical Properties” paragraphs below if substitutions or equivalent products will not be considered.

2.3.2.2 Compliance: ASTM C 920, Type M, Grade NS, Class 12.5, Uses T<sub>1</sub>, M, O.

2.3.2.3 Physical Properties:

2.3.2.3.1 Tensile Strength: 2.1 to 2.4 MPa (300 to 350 psi) in accordance with ASTM D 412.

2.3.2.3.2 Shore A Hardness: 55 plus or minus 5 in accordance with ASTM C 661.

2.3.2.3.3 Dynamic Movement Capability: 12.5 percent in accordance with ASTM C 719.

\*\*\*NOTE TO SPECIFIER\*\*\* Retain one of the “Colour” options below. Pecora DynaFlex is available in 50 standard colours. Select one of the first two options if colours will be selected after Contract is awarded. Select the third option to specify a custom colour.

Include the forth option when colours are scheduled or otherwise indicated on the Drawings.

- 2.3.2.3.4 Colour: As selected from manufacturer's standard range.
- 2.3.2.3.5 Colour: Standard Colours matching adjacent surfaces.
- 2.3.2.3.6 Colour: Match Architect's sample.
- 2.3.2.3.7 Colour: As indicated on Drawings.

\*\*\*NOTE TO SPECIFIER\*\*\* Sealant below is a tamper resistant security sealant for vertical and horizontal joints expected to experience up to 25 percent movement.

- 2.3.3 Multicomponent, Nonsag, Silyl-terminated Polyurethane (STPU) Security Joint Sealant:
  - 2.3.3.1 Acceptable Product: DynaFlex SC as manufactured by Pecora Corporation.

\*\*\*NOTE TO SPECIFIER\*\*\* Delete the "Compliance" and "Physical Properties" paragraphs below if substitutions or equivalent products will not be considered.

- 2.3.3.2 Compliance: ASTM C 920, Type S, Grade NS, Class 12.5.
- 2.3.3.3 Physical Properties:
  - 2.3.3.3.1 Tensile Strength: 1.7 MPa (250 psi) in accordance with ASTM D 412.
  - 2.3.3.3.2 Shore A Hardness: 55 plus or minus 5 in accordance with ASTM C 661.
  - 2.3.3.3.3 Dynamic Movement Capability: 12.5 percent in accordance with ASTM C 719.

\*\*\*NOTE TO SPECIFIER\*\*\* Retain one of the Colour options below. Pecora DynaFlex SC is available in a limited number of colours. Select one of the first two options if colours will be selected after Contract is awarded. Select the third option when colours are scheduled or otherwise indicated on the Drawings.

- 2.3.3.3.4 Colour: As selected from manufacturer's standard range.
- 2.3.3.3.5 Colour: Standard Colours matching adjacent surfaces.
- 2.3.3.3.6 Colour: As indicated on Drawings.

\*\*\*NOTE TO SPECIFIER\*\*\* Sealant below is a tamper-resistant, impact- and blast-resistant sealant for joints in impact, protective and blast-resistant construction.

- 2.3.4 Single Component, Nonsag, Neutral Curing, Non-staining Silicone, High Impact, Blast Resistant Security Joint Sealant:
  - 2.3.4.1 Acceptable Product: Pecora 896HIS as manufactured by Pecora Corporation.

\*\*\*NOTE TO SPECIFIER\*\*\* Delete the "Compliance" and "Physical Properties" paragraphs below if substitutions or equivalent products will not be considered.

- 2.3.4.2 Compliance:
  - 2.3.4.2.1 ASTM C 920, Type S, Grade NS, Class 25.
  - 2.3.4.2.2 ASTM C 1184.
  - 2.3.4.2.3 AAMA 506.
- 2.3.4.3 Physical Properties:
  - 2.3.4.3.1 Ultimate Tensile Strength: 2.6 MPa (375 psi) in accordance with ASTM D 412.
  - 2.3.4.3.2 Shore A Hardness: 45 in accordance with ASTM C 661.
  - 2.3.4.3.3 Dynamic Movement Capability: 25 percent in accordance with ASTM C 719.
  - 2.3.4.3.4 Service Temperature Range: Minus 51 to 149 degrees C (minus 60 to 300 degrees F).

\*\*\*NOTE TO SPECIFIER\*\*\* Retain one of the "Colour" options below. Pecora 896HIS is available in a limited number of colours. Select one of the first two options if Colours will be selected after Contract is awarded. Select the third option when Colours are scheduled or otherwise indicated on the Drawings.

- 2.3.4.3.5 Colour: As selected from manufacturer's standard range.
- 2.3.4.3.6 Colour: Standard Colours matching adjacent surfaces.

2.3.4.3.7 Colour: As indicated on Drawings.

## 2.4 ELASTOMERIC JOINT SEALANTS

\*\*\*NOTE TO SPECIFIER\*\*\* Sealant below is a general purpose polyurethane sealant that can accommodate dynamic joint movement up to 50 percent in compression and extension. It may be used on interior and exterior locations where building occupants cannot access the sealant and where greater movement capability is required.

2.4.1 Multicomponent, Nonsag, Polyurethane Joint Sealant:

2.4.1.1 Acceptable Product: DynaTrol II as manufactured by Pecora Corporation.

\*\*\*NOTE TO SPECIFIER\*\*\* Delete the "Compliance" and "Physical Properties" paragraphs below if substitutions or equivalent products will not be considered.

2.4.1.2 Compliance: ASTM C 920, Type M, Grade NS, Class 50, Use NT.

2.4.1.3 Physical Properties:

2.4.1.3.1 Tensile Strength: 0.8 MPa (110 psi) in accordance with ASTM D 412.

2.4.1.3.2 Shore A Hardness: 20 in accordance with ASTM C 661.

2.4.1.3.3 Dynamic Movement Capability: 50 percent in accordance with ASTM C 719.

\*\*\*NOTE TO SPECIFIER\*\*\* Retain one of the "Colour" options below. Pecora DynaTrol II is available in 50 standard colours. Select one of the first two options if colours will be selected after Contract is awarded. Select the third option to specify a custom colour. Include the fourth option when colours are scheduled or otherwise indicated on the Drawings.

2.4.1.3.4 Colour: As selected from manufacturer's standard range.

2.4.1.3.5 Colour: Standard Colours matching adjacent surfaces.

2.4.1.3.6 Colour: Match Architect's sample.

2.4.1.3.7 Colour: As indicated on Drawings.

## 2.5 ACCESSORIES

2.5.1 Primer: Type as recommended by rigid joint sealant manufacturer for joint materials.

2.5.2 Joint Cleaners: Non-corrosive, non-staining cleaners recommended by manufacturers of sealants and sealant backing materials for Project substrates and sealant backings.

2.5.3 Cylindrical Sealant Backings: ASTM C 1330, Type C (closed-cell); size and density to control sealant depth; oversized 25 to 33 percent greater than joint width.

2.5.4 Masking Tape: Non-staining, non-absorbent material compatible with joint sealants and surfaces adjacent to joints.

## 2.6 MIXING

\*\*\*NOTE TO SPECIFIER\*\*\* Retain "coloured paste" option for DynaPoxy EP-1200 and DynaFlex sealants.

2.6.1 Multicomponent Sealants: Mix base, activator **[and coloured paste]** in accordance rigid joint sealant manufacturer's instructions.

### 3 EXECUTION

#### 3.1 EXAMINATION

- 3.1.1 Verify that substrate surfaces and joint openings are ready to receive work.
- 3.1.2 Verify that joints in concrete and masonry have cured minimum 28 days.
- 3.1.3 Verify that joint backing is compatible with rigid joint sealant.
- 3.1.4 Proceed with installation only after unsatisfactory conditions have been corrected.

#### 3.2 PREPARATION

- 3.2.1 Prepare joint surfaces in accordance with rigid joint sealant manufacturer's installation instructions.
- 3.2.2 Remove loose particles, foreign materials, penetrating and film-forming compounds, and other bond-inhibiting substances from joint substrates.
- 3.2.3 Use masking tape where required to prevent contact of sealant with adjoining surfaces. Remove tape immediately after tooling without disturbing joint seal.

#### 3.3 INSTALLATION OF SEALANTS

- 3.3.1 Apply rigid joint-sealants in accordance with rigid joint sealant manufacturer's installation instructions.
- 3.3.2 Measure joint dimensions and size joint backers to achieve width-to-depth ratio and surface bond area as recommended by manufacturer.
  - 3.3.2.1 Install joint sealant backings to support sealant during application and to achieve recommended joint size and proportions.
- 3.3.3 Completely fill joints with sealant and ensure full contact of sealant to sides of joints.
- 3.3.4 Install sealant free of air pockets, foreign embedded matter, ridges or sags.
- 3.3.5 Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.
- 3.3.6 Immediately after sealant application and before skinning or curing begins, tool sealants to form smooth, uniform beads. Tool joints to profiles indicated.

#### 3.4 CLEANING

- 3.4.1 Remove excess sealant or sealant smears from adjacent surfaces as application progresses using cleaning materials and methods recommended by manufacturers of rigid joint sealant and adjacent surfaces.

#### 3.5 PROTECTION

- 3.5.1 Protect rigid joint sealants during and after curing period from contamination.

END OF SECTION