

SPECIFICATION
Section 07900/079500

Wabo®UreFlex
Expansion Control 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. Template Drawings - Submit typical expansion joint cross-section(s) indicating 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 Manufacturer

- A. All joints shall be as designed and manufactured by Watson Bowman Acme 95 Pineview Drive, Amherst, New York 14228.
- B. Alternate manufacturers and their products will be considered, provided they meet the design concept and are produced of materials that are equal to or superior to those called for in the base product specification.
- C. Any proposed alternate systems must be submitted and receive approval 21 days prior to the bid. All post bid submittals will not be considered. This submission shall be in accordance with MATERIALS AND SUBSTITUTIONS.
 - Any manufacturer wishing to submit for prior approval must provide the following:
 - 1. A working 6" sample of the proposed system with a letter describing how system is considered superior to the specified system.

2. A project proposal drawing that illustrates the recommended alternate system installed in the horizontal or vertical construction that is specific to the project. Typical catalog cut sections will not be considered.
3. Verifiable list of installations showing prior and successful experience with the proposed systems.
4. Any substitution products not adhering to all specification requirements within, will not be considered.

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.

For horizontal expansion joints furnish Wabo®UreFlex as manufactured by Watson Bowman Acme and as indicated on drawings. Select appropriate size based on project requirements.

2.02 Materials

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

Thickness: ½ inch nominal

PHYSICAL PROPERTIES @ 73°F (23°C)

<i>Property</i>	<i>Test Method</i>	<i>Test Results</i>
Movement Capability	ASTM C 719	+ 16%
Tensile Strength	ASTM D 412	250 psi
Ultimate Elongation	ASTM D 412	700%
Hardness (Shore A)	ASTM C 661	30 +/-5
Low Temperature	ASTM D 1790	Pass
Service Temperature Range		-40°F (-40°C) to 150°F (65°C)

- 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. Blockout Primer - Utilize manufacturer's standard 2 component primer for application to the concrete blockout surfaces and beveled edge of the seal profile.
- E. Bedding Compound - Utilize Wabo NS-25 two-component sealant as a bedding compound for the support plate. The mixed material shall conform to the following physical properties.

PHYSICAL PROPERTIES @ 73°F +/-2° (23°C +/- 1°)

Property	Test Method	Test Results
Movement Capability	ASTM C 719	+/- 25%
Tensile Strength	ASTM D 412	1.6 MPa (min.) 225 psi
Ultimate Elongation	ASTM D 412	750%
Hardness (Shore A)	ASTM C 661	30 +/- 5
Low Temperature Flexibility	ASTM D 1790 @ -4°F (-20°C)	Pass
Heat Aging	ASTM C 920	2%
Recovery	ASTM C 920 Bond Durability	98%
	Test Blocked @ 25% for 48 hr.	
Water Immersion	Samples applied between masonry blocks	
	Withstands water immersion elongated 25%	

- F. Nosing - Utilize Wabo NS-12.5 two component sealant for installation of system nosing and splicing material between lengths of seal profile. The mixed material shall conform to the following physical properties.

PHYSICAL PROPERTIES @ 73°F +/- 2° (23°C ±1°)

Property	Test Method	Test Results
Movement Capability	ASTM C 719	± 12.5%
Tensile Strength, Mpa	ASTM D 412	1000 psi
Ultimate Elongation	ASTM D 412	200%
Hardness (Shore A)	ASTM C 661	55 ± 5
Peel Adhesion – Concrete		50 pli
Low Temperature Flexibility	ASTM D 1790 @ -20°C (-4°F)	Pass
Weight Loss/Heat Aging	ASTM C 792	<5%
Pot Life @ 21° C (70° F)		30 min.

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 - Supply in 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 blockout edges must be clean and sound. The edges should be sandblasted, or ground to remove laitance. Spot repairs of blockout, 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 premolded seal along side of the expansion joint blockout. Wire brush and clean the beveled edges with solvent.

Note: Premold 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 Wabo Plate Primer to the aluminum plate. Do not over prime. For maximum adhesion sandblasting or grinding is recommended prior to solvent wipe. Let dry for ½ - 2 hours.

Note: Proper installation requires the bonding of Wabo Seal NS-12.5 Nosing to the concrete blockout ledge and interface. Care should be taken not to contaminate those areas during the bedding procedure that follows.

5. Prime the blockout ledge where the bedding will be installed with Wabo Blockout Primer. Allow the primer to dry until it is tacky to the touch.
6. Caulk and trowel a thin section of WaboSeal NS-25 material onto each side of the stem opening. The bedding is intended to level the blockout 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, lay a precut piece of polyethylene onto the fresh bedding to act as bond brake. 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 premold as a template to set plates to proper depth. Placement of plates within the blackout is determined by the temperature at the time of installation, and by the expected annual movement rating.
9. Tape visqueen over the top face of the aluminum plates to keep plates free floating under the premold sealant.
10. Place premolded seal into the blackout making sure the seal is centered in joint. Tape the edges of the premolded seal and the concrete at the edge of the blackout. Apply Wabo Blockout Primer to the concrete and tapered premold edge. Prime all butt splices at this time also.
11. Thoroughly mix the two components of Wabo Seal NS-12.5 Nosing, and caulk the expansion joint into position. Tool smooth. The Wabo Seal NS-12.5 Nosing has a relatively short work life to ensure full cure and bond strength before movement.

Note: Alternate caulking from one side to the other to avoid movement of the seal laterally in blackout.
12. All butt joints must be precut at a 90° angle, and then caulked tightly (1/8" or less) with Wabo Seal NS-12.5 to bond one piece of premold to another. This operation can be done while polymeric nosing is being installed.
13. Pull the tape from the premold and concrete.
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.