Specification

Delastic® Neoprene Sponge Joint (NSJ) Seals

PART 1 - GENERAL

1.01 Work Included

A. This work shall consist of furnishing and installing a watertight joint sealing expansion control system at the location shown on the plans, and in accordance with the following specification.

1.02 Submittals

A. Cross-Section Drawings - Submit typical expansion joint cross-section(s) indicating pertinent dimensioning.

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 The D.S. Brown Company, 300 East Cherry Street, North Baltimore, OH 45872.

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.

1.05 Quality Assurance

A. Installation: Installation shall be in strict accordance with manufacturer’s technical specifications, details, installation instructions and general procedures in effect for normal intended usage and suitable applications under specific design movements and loading conditions.

B. Manufacturer: Shall have a minimum ten (10) years experience specializing in the design and manufacture of expansion control systems.

C. Application: the manufacturer’s factory trained Technical Representative shall be present on jobsite to supervise the installation of the specified expansion control system(s).

PART 2 - PRODUCT

2.01 General

A. The joint seal shall be extruded from a preformed flexible cellular neoprene expanded rubber with a relatively dense layer of skin at the surface and shall be held in place by a two component 100% solids epoxy adhesive. The design of the seal shall accommodate movements and variations in joint widths through compression and tension of its shape. Serrated sidewalls shall be extruded to ensure an effective and quality surface for adhesion.

For horizontal and vertical expansion joints furnish NSJ Seals as manufactured by The D.S. Brown Company and as indicated on drawings. Select appropriate size of profile based on project requirements.

2.02 Materials

A. Seal Profile - The profile shall be preformed and manufactured from closed cell polychloroprene (neoprene). The profile shall meet the requirements of the properties listed in the table below unless specified otherwise.

Physical Properties of Delastic® Neoprene Sponge Joint (NSJ) seals

Physical Property	ASTM Test Method	Requirements
Tensile Strength	D-412	125 psi (.86 Mpa) min
Elongation Break	D-412	200% min
Compression Deflection	D-1056	5-9 psi (.03 - .06 Mpa)
Hardness, Shore “00”	D-2240	35-65
Water Absorption, by weight	D-1056	5%
Density	D-1056	12-25 pcf, average
Compression Set, ½” compressed 50%, 22 hrs. @ 70°F – 24 hr. recovery.	D-1056	15-25% average

B. Two Component Epoxy Adhesive - The adhesive shall be two-component, epoxy-based adhesive, which shall have the following properties:

Tensile Strength ..... 4600 PSI
Compressive Strength ..... 11500 PSI
Solids Hardness ..... 7 MOHS
Pot Life .....40 minutes at 68°F (20°C)
Flash Point ..... Greater than 200°F (93°C)
Initial Cure .....24 Hours
Full Cure ..... 7 Days at 68°F

2.03 Fabrication

A. Seal profiles shall be shipped in the longest practical continuous lengths in manufacturer's standard shipping carton. Seals shall be cut to length on jobsite where required. Miter cut or bend seal (depending on size) in the field to conform to directional changes unless otherwise contracted with expansion joint manufacturer.

B. Epoxy Adhesive will be shipped in manufacturer's labeled containers.

2.04 Finishes

A. Seal profile - Supply in color: Black.

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 sidewalls.
   C. Any loose portion of concrete at the gap must be removed and the concrete properly repaired as directed by the engineer.

B. Concrete (New Construction)

1. Forming materials should be carefully removed to avoid edge spalling of the concrete.
2. Joint gap edges should be chamfered to help prevent small fractures and spalling.
3. Edge spalling conditions should be repaired and allowed to properly cure prior to installation of the NSJ seal.
4. The concrete sidewalls must be sound and free of all contaminants such as grease, oil, and form release agents. etc., prior to installation of the NSJ seal.

5. The preferred method of surface preparation to produce laitance-free, roughened sidewalls is abrasive blasting. Where abrasive blasting is not permitted, disc grinding will be employed. Care should be taken to insure that coarse disc is used so as to produce an abraded surface.
6. The gap openings should be blown out with clean air to remove dust.

C. Concrete (Existing)

1. Installation must be performed in gap openings with sound, clean and dry substrates.
2. Gap openings must have parallel, dimensionally consistent sidewalls.
3. Any loose portion of concrete at the gap must be removed and the concrete properly repaired.

D. Steel (New or Existing)

1. Steel surfaces must be abrasive blasted immediately prior to installing the NSJ seal. This is a requirement in new or existing construction. All oxidation must be removed and “white steel” revealed. Where abrasive blasting is not permitted, steel surfaces will be aggressively disc ground to roughen and abrade the surface to achieve the “white steel” condition.
2. Stainless steel surfaces require aggressive grinding and abrasive blasting to remove the smooth, glassy surface.
3. On galvanized steel surfaces, the galvanizing material must be removed to look like “white steel.” Careful visual inspection is required because galvanized steel looks like “white steel.”
4. Installation of the NSJ Seal Profile into steel should immediately follow abrasive blasting to avoid re-oxidation of the steel surface.

E. NSJ™ Seal Installation

1. Form or saw cut the groove/joint opening into the concrete to the recommended depth. Assure that the interfaces, whether concrete or steel, run parallel to each other for the length of the run. Walls should be plumb and should be spaced at a consistent width across the joint. Unsound concrete shall be removed and repaired. Cracks also shall be repaired.
2. Clean dirt, stones and standing water from the joint opening. Use a stiff bristled brush and compressed air to remove all dust. Sandblast the vertical walls of the groove.

3. Immediately prior to installation, the interface walls should be blown out. Apply the conditioner to the concrete surfaces.
4. Uncoil the seal and allow it to relax. Apply seal conditioner, scrubbing vigorously into the ribs of the seal using a stiff nylon brush on the sidewalls. The surface must be abraded and tacky to the touch. This roughened, dull finishis needed for an aggressive bond. Continued scrubbing with a stiff nylon brush and new conditioner will clean the surface. Do this in two separate passes and then rinse the profile with cleaner.
5. Apply the adhesive to the joint surfaces and into the ribs of the profile using a margin trowel. The ribs must be completely filled.
6. After applying the adhesive, insert the seal into the joint at the required depth. A small amount of adhesive should be visible above the ribbed area. Remove any additional adhesive using organic solvents. Clean up the work area. Allow the adhesive to cure for 24 hours.

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.