



# SUGGESTED MASTER SPECIFICATION

## Armor-Edge® n2e Joint Assembly

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Products supplied under this section: Armored joint assembly for new to existing slab transitions
- B. Related sections:
  - 1. Section 03100 - Concrete forms and accessories.
  - 2. Section 03200 - Concrete reinforcement.
  - 3. Section 03300 - Cast-in-place concrete.

#### 1.2 REFERENCES

- A. American Concrete Institute (ACI):
  - 1. ACI 315R-18 Detailing Manual (SP-66)
  - 2. ACI 302.1R-15 Guide for Concrete Floor and Slab Construction.
  - 3. ACI 360R-10 Guide for Design of Slabs-on-Ground.
- B. American Society for Testing and Materials International (ASTM):
  - 1. A36 Standard Specifications for Carbon Structural Steel
  - 2. A108 Standard Specifications for Steel Bar, Carbon and Alloy, Cold Finished.

#### 1.3 SUBMITTALS

- A. Product data: Manufacturer's product data with application and installation instructions for proprietary materials and items, including but not limited to load transfer and joint protection systems.
- B. Shop drawings: Indicate placement of Armor-Edge® n2e joint assemblies.
  - 1. Indicate dimensions and spacings.
  - 2. Comply with ACI 302.1R-15, ACI 360R-10, ACI 315R-18 (SP-66) and PNA installation guides indicating arrangement of accessories.

#### 1.4 QUALITY ASSURANCE

- A. Pre-installation construction:
  - 1. Convene a pre-construction meeting before installation of PNA products. Require attendance of parties affecting the work of this section, including Contractor, Engineer, and installers.
  - 2. Review installation procedures and coordinate with other work.

#### 1.5 DELIVERY, STORAGE AND HANDLING

- A. Deliver Armor-Edge® n2e joint assemblies in manufacturer's packaging.
- B. Deliver and handle materials to prevent damage or weakening to assemblies.



- C. Store in an appropriate place to avoid accumulating rust, debris, or deleterious materials on assemblies. Store off ground and under cover.

## **PART 2 - PRODUCTS**

### **2.1 MANUFACTURER**

- A. Acceptable manufacturer: PNA Construction Technologies, [www.pna-inc.com](http://www.pna-inc.com); 800-542-0214.

### **2.2 ARMORED JOINT ASSEMBLIES FOR NEW TO EXISTING SLAB TRANSITIONS**

- A. Acceptable product: PNA Armor-Edge® n2e Joint Assembly.
- B. Material:
  - 1. Plates: Saw cut from cold rolled steel bar meeting ASTM A36 to within 3/16" of specified length.
  - 2. Bars: Saw cut from cold rolled steel bar meeting ASTM A108-03 grade 1018 to within 3/16" of specified length.
  - 3. Anchor bolts, square dowels, square dowel clips and assembly bracket shall be as provided by assembly manufacturer.
  - 4. Nylon shipping nut assembly: Nylon nut shall hold studded bar in position during new slab cast and shall be designed to yield under tension thus allowing completed joint to open freely while concrete undergoes its normal drying shrinkage.
  - 5. Square dowel clips: Contain compressible foam on each vertical side to allow horizontal movement parallel and perpendicular to joint. Length shall be +/- 3/16" of ½ total dowel length plus 1".
  - 6. Square dowels: Saw cut from hot rolled steel bar meeting ASTM A 36 to within 3/16" of specified length.
- C. Fabrication:
  - 1. Bolted a continuous 4-1/2" by 1/4" plate back-to-back with a continuous 1-1/2" by 3/8" square edged bar and hold together with a combination of nylon and steel nuts.
  - 2. Steel nut is used for shipping only.
  - 3. Welded 4" by 3/8" anchors at 12" on center to steel bar.
  - 4. Assembly length: 12'-0".
  - 5. Shipped assembly with seven 3/4" by 12" square dowels, seven 3/4" by 7" square dowel clips and five anchor bolts.

## **PART 3 - EXECUTION**

### **3.1 EXAMINATION**

- A. Notify Engineer at least 72 hours prior to placing armor joint assembly to allow time for examination of assemblies. Place no concrete in forms without Engineer's acceptance of assemblies.

### **3.2 INSTALLATION**

- A. Installation of Armor-Edge® n2e joint assembly for new slab to existing slab:
1. Hold steel plate against existing slab, ensuring steel plate and bar are flush with existing slab surface. Mark locations of holes for square dowels and anchor bolts with spray paint. Remove Armor-Edge® n2e joint assembly.
  2. Drill holes for square dowels using 1 1/4" drill bit and for anchor bolts using a 1/2" drill bit. Attach joint assembly to existing slab with anchor bolts provided. Check assembly for correct line and elevation and adjust if necessary.
  3. Epoxy grout 3/4" by 10" square dowels provided into pre-drilled holes. Allow epoxy to cure. Install square dowel clips with the plastic covering the top of the dowel and the side foam vertical to faces of bars. The plastic clip should extend the full length of the exposed dowel.
  4. If the Armor-Edge® n2e joint assembly will butt up to a saw-cut contraction joint, cut through the full depth form (1 1/2") of the abutting bar to allow activation of the joint.
  5. Remove steel shipping nut and washer.
  6. Place and finish the new slab using internal vibration to consolidate concrete in accordance with industry guidelines.
  7. Remove concrete paste from top of plate and bar during finishing.
  8. If existing slab is uneven or out of level, grind joint flush. If this is not possible, saw-cut 1/2" deep, 18"-24" back into existing slab; chip existing slab down 1/2"-3/4" and top with approved epoxy topping materials.

### **3.4 PROTECTION**

- A. Protect Armor-Edge® n2e joint assemblies from displacement and from damage until concrete casting is complete.

**END OF SECTION**