

# HECKMANN BUILDING PRODUCTS INC.

1501 N. 31<sup>st</sup> Avenue

Melrose Park, IL 60160-2911

800-621-4140 FAX: 708-865-2640

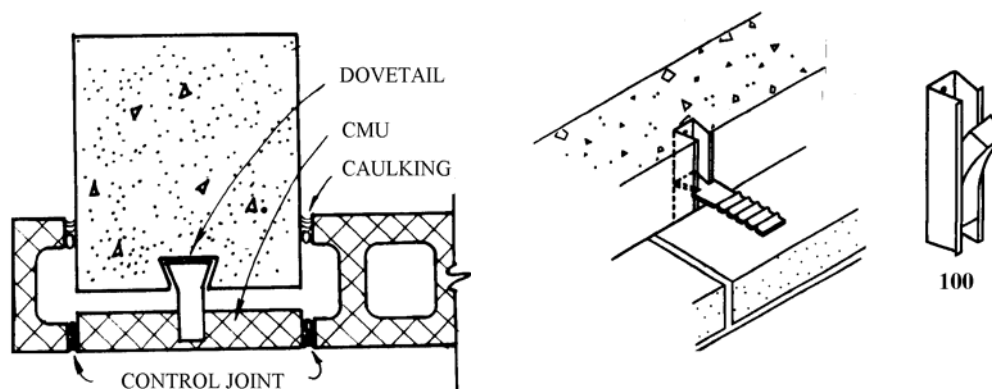
www.heckmannanchors.com

## #100 Dovetail Anchor Slots

**SIZE:** 1" (25.4mm) deep x 1" (25.4mm) wide narrowing down to a 5/8" (15.87mm) throat, furnished in 10 foot (3.048 meter) lengths, with nailing indentions spaced 4" (101.6mm) c.c. Standard slot is available in 22 gage and 24 gage mill-galvanized steel with polyurethane filler.

**APPLICATION:** Used to anchor stone and masonry to new concrete columns, walls, and beams. Slots are nailed to the inside of the wooden forms, before the concrete is poured. We recommend nailing the slot to the form every 12" (304.8mm). When using light gage slot in small columns we recommend attaching the slot to the form every 4" (101.6mm). After the forms are removed the dovetail anchors are inserted into the channels and adjusted vertically to fit into the joints of the exterior veneer. Anchor Slots are typically installed vertically 16" (406.4mm) o.c. and the anchors are spaced every 16" (406.4mm).

36" (914.4mm) long Anchor Slots were cast in a concrete form 3" (76.2mm) deep x 5-1/4" (133.3mm) wide x 36" (914.4mm) long. The concrete was a 3-1 ratio Portland Cement Type I which was allowed to set over 28 days. Four slabs were prepared: two 22 gage slots and two 24 gage slots both Mill Galvanized Steel. #106 Dovetail Corrugated Anchors were used for the test. The anchors were placed in the slot and pulled out at a 90o angle to the slot. 16 gage and 12 gage anchors were tested to failure at a crosshead speed of 0.5"/minute (12.7mm/minute). Both the 22 gage and 24 gage slots and the 16 gage anchors conformed to ASTM A-527 G90 and the 12 gage anchors conformed to ASTM A-526 G90.



### Pullout of Dovetail Anchor From Dovetail Slot

TEST RESULTS	22 GAGE SLOTS		24 GAGE SLOTS	
	NO. ANCHORS TESTED	AVERAGE PULLOUT	NO. ANCHORS TESTED	AVERAGE PULLOUT
16 Gage Anchors	5	600.5 lbs.	3	589.2 lbs
12 Gage Anchors	2	965 lbs.	4	939 lbs

#### 22 Gage Slots

##### 16 Gage Anchors

Anchor 1: Failure 725 lbs. Dovetail end of anchor folded and pulled out of slot. Slight groove in slot. No concrete damage.

Anchor 2: Failure 737.5 lbs. Failure same as #1.

Anchor 3: Failure 712.5 lbs. Crack in concrete near one side was noted. Ears on dovetail section of anchor bent down slightly. Slot distorted on one side with indentation on other side.

Anchor 4: Failure 422.5 lbs. Failure same as #3.

Anchor 5: Failure 405 lbs. Failure same as #3. Concrete broke all the way through at the hold downs.

##### 12 Gage Anchors

Anchor 1: Load increased to 970 lbs. Channel spread and concrete block cracked causing load line to drop to 810 lbs. Load increased again to 930 lbs.; then steadily decreased as the anchor continued to be withdrawn. No apparent damage to anchor.

Anchor 2: Failure 960 lbs. Similar failure as #1 except that the concrete cracked approximately in half longitudinally under the channel.

Anchor 3: Load increased to 680 lbs. Concrete broke away and slot pulled completely out. This sample was not taken into consideration because of the extensive damage from Anchor #2.

#### 24 Gage Slots

##### 16 Gage Anchors

Anchor 1: Failure 667.5 lbs. Anchor dovetail ears began to bend downward. Concrete holding the slot was severely cracked.

Anchor 2: Failure 327.5 lbs. Failure same as #1.

Anchor 3: Failure 772.5 lbs. Failure same as #1.

##### 12 Gage Anchors

Anchor 1: Load increased to 856 lbs., channel spread and a piece of the concrete broke out. Load dropped to 350 lbs. as the anchor continued to be completely withdrawn. No damage to the anchor.

Anchor 2: Load increased to 1,000 lbs. Similar failure as #1 except load dropped to 660 lbs. after the concrete broke.

Anchor 3: Load increased to 1,180 lbs. Failure same as #2.

Anchor 4: Load increased to 720 lbs. at which the concrete cracked vertically under the channel allowing the entire channel to be withdrawn by the anchor. This anchor was 4 inches from the end of the channel. No damage was done to the anchor.