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PD Series Expansion Joint System User Manual and Installation Instructions

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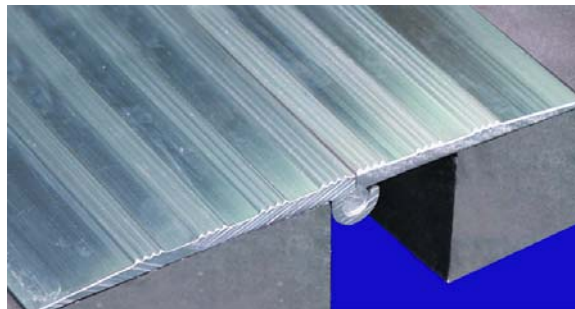


1. INTRODUCTION

This user manual describes the features and function of Nystrom's PD series expansion joint system. It contains a detailed description as well as suggested installation instructions. The PD system is an all aluminum expansion joint system ideal for walkways, parking decks, boat ramps and deplaning ramps in floor-to-floor applications.

2. GENERAL

The PD series surface mounted expansion joint cover eliminates the problems of live load movement, fluctuating temperature and differential settlement. The PD series utilizes a hinge design that will accommodate vertical movement or uneven slabs. The PD series expansion joints are designed for vehicle and pedestrian traffic.



User Manual No. UM-EJ0001 PD Series Expansion Joint System

Revision No. 3

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3. DESCRIPTION

3.1. Applications

The PD series is designed for parking decks and slow vehicular traffic, and pedestrian traffic.

3.2. Technical Specifications

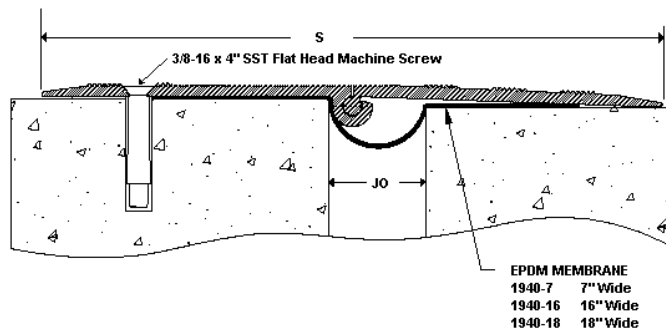
The PD system consists of a female half and a male half that are assembled together, creating a hinge that allows approximately a 20° rotation. The female section gets epoxied into the upper concrete/floor and the male half rests on the lower concrete/floor (when applicable). The PD system accommodates both thermal and seismic (4 way) movements.

The halves are made of 6063-T6 mill finish, extruded ¼” aluminum. The PD system is ADA compliant to section 4.5.2: Up to a ¼” vertical without edge treatment. Changes in level between ½” to ¼” shall be sloped no greater than 1:2.

PD Expansion Joint Technical Specifications

Part #	Section Length	EPDM Part# (optional)	Exposed Sight Line “S”	Min Joint Width/ Max Joint Width	Vertical Movement 20° Rotation	Joint Opening “JO”	Distributed Load (lb/in ²)
PD-200	10 FT	1940-7	8”	1” / 2”	1”	1”	1800
						2”	300
PD-300	10 FT	1940-7	13.1”	1” / 4”	2”	2”	400
						3”	150
						4”	80
PD-400	10 FT	1940-16	16.4”	1” / 6”	3”	2”	700
						3”	300
						4”	160
						5”	100
						6”	60
PD-600	10 FT	1940-18	19.8”	1”/8.5”	4”	8.5”	

The EPDM membrane is a .060” thick 50 durometer commercial grade ethylene propylene rubber. It is used in applications where a vapor barrier is necessary. It is an optional item that is ordered separately, using the part number 1940-X, where X is the width (7”, 16” or 18”).



4. INSTALLATION

4.1. Unpacking and Inspection

Unpack and inspect the aluminum extrusion pieces to detect any damage due to shipping. If damage is detected or if parts are missing, please notify Nystrom Customer Service. Refer to the section at the end of this manual for repair or replacement information.

Inspect each extrusion piece, both male and female, to detect any burrs. Remove burrs using a metal file. These burrs may hinder the assembly process when mating the male and female pieces together.

4.2. Material Items for Installation

Nystrom supplies these items along with pre-drilled expansion joint covers:

1. p/n 5696: 3/8-16x4" SST Flat Head Machine Screw for anchoring (Qty 11 per 10ft section)
2. p/n 5697: Hilti HY 150 2-part epoxy pack with 1 static mixing tip. (Qty one 11.1 oz pack fills 20-25 holes)
3. p/n 5698: Small static mixing tip, extra.

Additional items needed for the PD expansion joint installation:

4. p/n 5699: Epoxy gun. This gun is unique to accommodate the 2-part epoxy. (ordered separately)

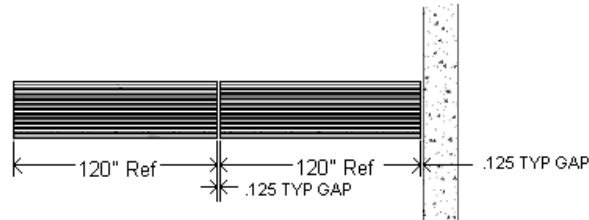


Other materials and tools that may be needed for installation:

1. Electric drill
2. Tape measure or ruler
3. Broom and dust pan or vacuum/blower
4. Saw to cut joints to length
5. 7/16" concrete drill bit
6. Hammer
7. Flash patch and utensils- optional

4.3. PD Assembly and Installation

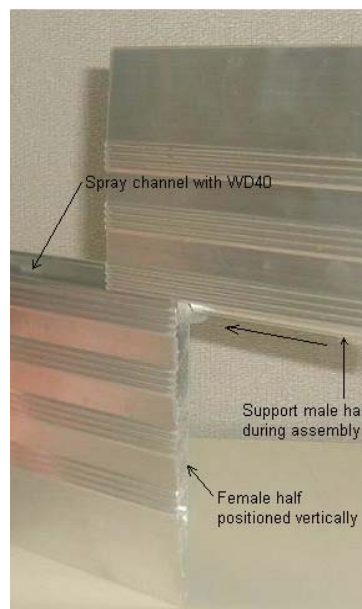
1. Insure that the floor is smooth. High spots should be ground down and low spots filled in. Make sure floor is clean by sweeping and/or vacuuming floor.
2. Cut and fit expansion joints to the required length. If installing more than one piece, lay out entire run to insure proper alignment.



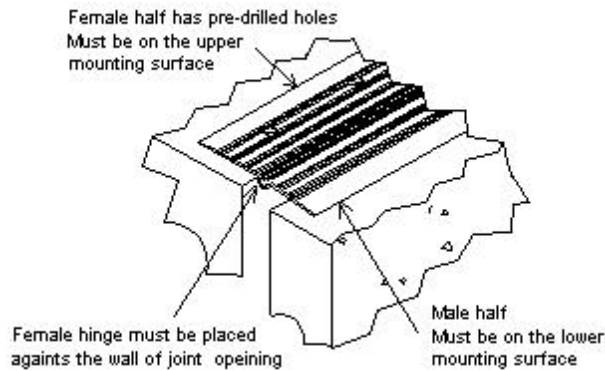
3. Optional EPDM membrane installation instructions:

Surfaces should be cleaned of dirt and grease on both sides. It is recommended to apply a thin layer of contact cement (Ashland Chemicals, plio bond 2375 or equivalent) to both sides of the EPDM membrane. Install membrane by inserting middle section into the expansion joint opening and press membrane to cement. The EPDM can also be nailed into concrete floor.

4. When assembling the 2 halves together, WD40 should be used as a lubricant. Place the female half vertically on end and spray the lubricant in the channel. Slide the male piece onto the female, making sure to fully support its weight. Vertical assembly (vs horizontal) will help eliminate flex and the possibility of binding. If necessary, you may use a non-metal hammer to apply more force to fully assembly the 10ft sections. Never hammer directly onto the expansion joint, damage will occur.



- When the 2 halves are assembled, place the female half up against the inside wall of opening. Also the female half should always be on the floor surface that is always above the other surface that the male half sits on. The male half's movement is restricted due to the joint and should not move above the female half.



- The female expansion joint has predrilled holes for the placement of mounting hardware. Transfer the location of these holes to the surface using a marker.
- Drill all marked holes using a 7/16" concrete drill bit to a min depth of 4". All holes should be pre-drilled and cleaned prior to putting the epoxy gun and 2-part HY 150 epoxy system together. The epoxy cures with time and can harden within the static mixing tip. An additional epoxy tip ships with the product and can be ordered separately if additional are needed, p/n 5698. Use precaution and safe handling of this high strength concrete adhesive.
- Assemble the epoxy gun and 2-part epoxy along with the static mixing tip. The epoxy pack slides in the holder and then in the gun. Screw on the mixing tip. Discard the first 2 trigger pulls of adhesive.



- Fill one hole approximately 1/2 to 2/3 full of the mixed epoxy. Take the 3/8-16 x4" flat head 18-8 stainless machine screw and press it into the epoxy filled hole. Use a flat head hammer, if necessary, to seat the flat head in the countersunk hole until flush with the surface of the aluminum expansion joint. The epoxy may take approximately 30 seconds to cure enough to hold the bolt in position. If the bolt should press out, continue to hold down until cured in place. It is important not to move on to the next bolt until the previous one is set.
- To assure a smooth transition, it is an option to flash patch on the female side (anchored side) and feather back 2-3 ft.
- Clean exposed surfaces with non-solvent cleaner as required.

5. OPERATION AND MAINTENANCE

- 5.1. Clean and protect system and its components during construction. After work is complete, clean exposed surfaces with a suitable cleaner that will not harm or attack the aluminum metal surface.
- 5.2. On-going maintenance shall include a visual check to verify that the bolts are properly seated and flush with the expansion joint cover.

6. Customer Support Service

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