

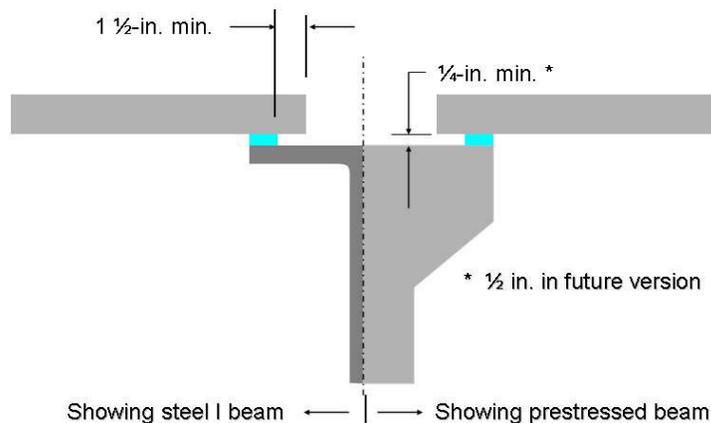


# Construction & Materials Tips

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## *Foam Bedding Strips for Precast Concrete Bridge Deck Panels*

Precast concrete panels (PCP) used as stay-in-place forms for bridge decks have become the main forming system for most girder-type bridges built in Texas. The following figure shows minimum dimensions that must be maintained to allow mortar to flow under the panel to provide the final support for live loads.



**Typical PCP Bridge Deck Section**

For many years, the bedding strips that support the panels prior to placement of the deck concrete were made from asphalt-impregnated fiberboard. The fiberboard crushed over time if panels were set too far in advance, causing panels initially set to meet the 1/4-inch minimum vertical dimension to lose the required gap when concrete was placed. Starting with the [1993 Standard Specifications](#), TxDOT allowed high-density extruded polystyrene foam (Item 425, p. 651) as a bedding strip for the panels. The foam does not deflect under the weight of the panels, does not absorb water, and can be glued to the girders for additional stability. Because it is very stiff, foam up to 4 inches high can be used (the height is capped at twice the width) while fiberboard is limited to 1.5 inches. In most cases, this eliminates the need for the special grading options shown on [TxDOT's PCP standard drawings](#).

Texas contractors initially had difficulty finding the foam, so its use has been limited; however, the foam is now readily available and is popular with contractors because of its dimensional stability and ease of use. The contractor should provide documentation showing that the foam meets ASTM C-578, Type VII (for 60 psi) or Type VI (for 40 psi). This information may be stamped on the foam board.

Future versions of PCP standards will allow only the foam to be used for panel bedding. The 1/4-inch minimum vertical dimension will be increased to 1/2-inch, and the strength of the foam will change from

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55 psi to 40 psi to allow the foam to conform to the irregular top surfaces of the concrete girders. Bedding strips must be placed at the edge of the girder flange, as shown in the figure. Contractors must use glue that is compatible with polystyrene. Many construction-grade adhesives (e.g., Liquid Nails) found on construction projects contain solvents that can weaken the foam and cause it to loosen. ChemRex's PL 300 Foam Board Adhesive is compatible with the foam, and other adhesives may be compatible.

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