



Filling in the voids

Volume #5

Fasteners and fastening

CORESLAB[®]
STRUCTURES
(ORLANDO) INC.

11041 Rocket Blvd., Orlando, FL 32824
Ph: (407) 855-3190 Fax: (407) 855-6870
www.coreslab.com

It is inevitable that the clear space and bottom surface free of struts and webs presents a great opportunity to attach and hang things from hollow core plank. Several key questions and considerations often come into play.

Before we suggest a type or style of fastener or fastening system compatible with hollow core we need to consider what is being supported. Size, weight, vibration, and location are a few of the main characteristics that need to be identified.

For relatively light items, such as suspended ceiling grids, lighter types of ductwork, and small diameter electrical conduit, powder actuated fasteners or screw-type concrete anchors work well. The main thing to bear in mind is depth of embedment (how far into the concrete itself does the anchor go). We suggest a maximum embed length of $\frac{3}{4}$ inch. Doing so virtually eliminates the possibility of striking a prestressing strand and increases the freedom and flexibility of layout.

Heavier items require a different approach. Moderately heavy loads can often be handled by a butterfly type anchor that opens in a slab void. The location of the voids will need to be established, but that can easily be done with a cross section from the hollow core plank manufacturer and a set of erection shop drawings. Making a guide stick can be really helpful if there are a number of different plank with voids to locate.

The heaviest loads, such as cable/pipe trays, mechanical units, or fire sprinkler stand pipes, may call for a through-the-deck type solution. This can take several forms from a simple threaded rod, plate, washer and nut combination to a welded plate and down-rod setup. Through the deck assemblies often work best where there is a structural concrete topping, leveling underlayment, or roofing insulation to hide the portion of the connection protruding above the deck. Once again, the location of the voids will need to be established for proper placement.

As always, coordination with the hollow core plank supplier is the best insurance of a successful outcome. Most manufactures have on staff engineering personnel who are your top source for guidance in answering these questions.