



### **Kerkstra's Elematic Hollowcore Slabs** Frequently asked questions

**What is hollowcore?** Hollowcore is a prestressed concrete slab with continuous voids provided to reduce weight and cost. Hollowcore is primarily used as a floor or roof deck system.

**How is hollowcore made?** Hollowcore slabs are produced worldwide using a variety of manufacturing processes. Kerkstra has chosen to use a production system developed by Elematic. This state-of-the-art system is a dry cast, extrusion process where zero slump concrete is forced through the machine. The cores are formed with augers and tubes with the concrete being compacted around the cores using high frequency vibrators.

**What are the benefits of hollowcore?** Hollowcore slabs provide economical, efficient floor and roof systems. Structurally, a hollowcore slab provides the efficiency of a prestressed member for unsurpassed load capacity, span range, and deflection control. In addition, the grouted slab assembly provides a basic diaphragm for resisting lateral loads. Excellent fire resistance is another attribute of the hollowcore slab system. Used as floor-ceiling assemblies, hollowcore slabs have the excellent sound transmission characteristics associated with concrete.

**Will the hollowcore provide a perfectly smooth surface?** Hollowcore slabs will be cambered as with any other prestressed flexural member. The amount of camber is affected by span, prestressing forces, concrete differences and curing variations. Kerkstra recommends that the erector adjust the bearing elevations and level adjacent slabs to minimize the camber differential. Also, as with any structural concrete component, minor imperfections in the surface should be anticipated.

**What is done to finish hollowcore at the project site?** The top surface can be finished with a structural, composite concrete topping or by simply 'feathering' the joints with latex cement. We do not recommend carpet direct. The underside can be used as a finished ceiling as installed, by painting, or applying an acoustical spray.

**What openings can Kerkstra put in the hollowcore?** The drycast system used in the manufacturer of the hollowcore slabs is not conducive to providing

“finished” openings similar to those available in other Kerkstra products. Kerkstra will provide “rough” square or rectangular openings through the hollowcore slabs required by other trades which are 100 square inches or larger. Kerkstra will review required openings in the hollowcore slabs and if necessary, introduce steel header frames to achieve the openings. In some instances, openings may have to be field cut by others to ensure the structural integrity of the hollowcore slabs during manufacture, shipping and installation.

**What needs to be done to finish the openings?** Plant provided openings are ‘rough openings’. If openings through the hollowcore slabs are to be left in an exposed condition, others may provide concrete patching or trimming of the opening with another building material.

**What needs to be done for openings less than 100 square inches?** Holes smaller than 100 square inches should be core drilled by the trade requiring them after the slabs have been erected and grouted. The drilling should be done only with the express written approval of Kerkstra” engineering department.

**Are narrow width slabs available?** Kerkstra can provide hollowcore slabs narrower than the 4’-0” modular width. A longitudinal saw cutting process after the slab is cured and removed from the casting facility achieves this. To ensure the structural adequacy of the slab, there are restrictions on the widths of slabs that are available. Contact your Kerkstra representative for further information on the range of narrow widths available.

**Will the hollowcore cover the entire floor area?** The hollowcore slabs will be laid out on Kerkstra’s drawings to minimize the requirements for field pour strips. However, in some instances, pour areas adjacent to walls or around openings may be required. These will be clearly indicated on our layout drawings and details and are the responsibility of others.

**How is the hollowcore erected?** Hollowcore should be erected by personnel skilled in such work utilizing lifting devices and cranes capable of safely handling the slabs. The slabs are to be positioned and connected to the structure in accordance with Kerkstra drawings and details. The slabs are erected one at a time with slings and spreader bars specifically suited for hollowcore. Your Kerkstra representative can provide you with the information sheet ‘Procedure for the Proper Installation of Precast Hollowcore Slabs’. Kerkstra Precast is also a qualified PCI erector.

**How is hollowcore connected to my building?** There are numerous methods to connect the hollowcore slabs to the building frame. The type of connection is dependent on the building material the hollowcore bears on or connects to. Kerkstra has a library of cost-effective connection details for concrete, masonry, steel and precast concrete construction.

