Oldcastle Precast®

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How to use Hollow core for inexpensive Space under your Garage

Thousands of residential garages throughout the Northeast have been built with hollow core floors, providing large, open spaces below for additional parking, storage, shop and living space -- even swimming pools and storm shelters.

Hollow core is a prestressed concrete product for floors and roofs. It is machine extruded and saw cut to specified lengths for each project. Four foot widths are standard but if necessary, narrow widths can be provided from standard units.

A residential garage floor would be typically designed for a minimum one-hour fire rating, but can be fire rated up to four hours. Hollow core also is resistant to high levels of sound transmission and noise impact. It is very durable and is rot and termite proof.

Consult this guide on how to design, specify and order hollow core for your home project. Consult our web site or an Oldcastle Precast representative for more information.

Common Practice: Residential Garage

Whether you know it or not, floors are the

key element when it comes to architectural freedom and design: their load bearing capacity has a direct influence on the need for partition walls and other structural elements of a building. Hollow core slabs are prestressed floor elements with voids. Their excellent load-bearing capacity and structural efficiency allow you to build large areas with fewer partition walls. Ultimately, this means greater freedom in design and architecture during and after construction as well as savings in material costs.

A mechanical connection between the hollow core plank and your structure may be required. If necessary, bent bar connections are provided by your erector or Oldcastle Precast. These connections will be shown on the erection drawings.

Cold weather locations may require insulation at the entire perimeter of the garage. Consult with your design team regarding the proper location and thermal performance that is best for your garage.

A water-proofing membrane is recommended to be installed on top of the plank prior to placement of concrete topping. The membrane is commercially available and should be capable of flexibly bridging the insulation and small gaps around the perimeter walls. It should return up the walls and terminate at the top of the topping slab.

The membrane is necessary to prevent water from penetrating the plank, which could cause deterioration of the reinforcing and concrete in the future. It will also act as a vapor barrier in cold climates where the area below the floor is heated.

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For more Information Please visit us on the

WEBSITE: oldcastleprecastspokane.com

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Get to know more about

Hollow core Plank for your single family garage

The depth required for your project is dependent upon plank spans and loading requirements. The most common plank depths used for residential garages, based on typical loading, are 8" for spans up to 30' and 12" for spans up to 40'.

Plank notches and or openings required for your floor layout will be cut prior to shipping or in the field. Small openings are usually provided by other trades.

Live load requirements for residential garage floors in most areas is equal to 50 psf. Hollow core can be designed to handle additional loads such as unbonded concrete topping, partition walls or the roof.

The erection process for a typical garage floor takes less than a day. A mobile crane and experienced erection crew hoist the plank from a flatbed trailer, place them directly on the supporting structure and make all necessary plank to wall and/or beam connections. Plank to plank joints are first leveled and then grouted, which emulates a monolithic floor system.

Wide Open Spaces

Hollow core plank can provide long, clear spans with column-free interior spaces for your garage, pool, shop, storage or living areas.

The erection process for your garage takes less than one day.

Quality, high-strength, air-entrained concrete placed by qualified personnel, is the final important step to your project. Minimum concrete topping thickness is 2-inches and must positively slope to the garage door to ensure drainage and prevent water from ponding on the floor. If interior drains are used, the concrete should be sloped to the drains and drain fixture details should be capable of draining moisture from the membrane. Reinforcing is recommended in the topping, and a concrete sealer should be applied after curing.

Additional reinforcing, such as mesh, properly placed in the topping at the door entrance, can minimize the possibility of a crack developing in the topping along the base of your overhead door. At steel beams, plank bearing must extend at least 1-inch past the beam-web center to prevent beam rotation. A weld plate, or other mechanical connection, is required. This detail should be shown on the erection drawing.

Masonry should not be installed above plank bearing elevation prior to plank erection, as it is highly susceptible to damage during plank erection. If you have specified a poured concrete wall, at least one edge (above plank bearing elevation) on the plank bearing wall has to be left down to provide ample space for erection tolerances. Grout plank keyways with the recommended mix design.

Your Garage

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