



Hollowcore Planks



Hollowcore floor planks are precast concrete elements with continuous longitudinal voids providing an efficient lightweight section.

When grouted, the effective shear key between adjacent Hollowcore planks ensures that the individual planks behave similarly to a monolithic slab. Hollowcore planks may be used to produce a diaphragm to resist horizontal forces, either with or without a structural topping. Hollowcore planks, supported on masonry or steel can be used in domestic, commercial and industrial applications.

Advantages of Using Hollowcore Planks

Flexibility and Design

Precast floors can generally span greater distances than timber, providing the designer with more options. Any alterations to the floor layout can be accommodated by the homeowner at a later stage, without the need of any further structural works to the floor.

Separating Floors

Hollowcore floors hold a robust detail relating to Approved Document Part E 'Resistance to the Passage of Sound' and can therefore be used without the need to carry out pre-completion site tests.

Upper Floors in Houses

Noise at home is a major source of concern to occupants. Concrete upper floors provide improved sound insulation between floors - essential for households with families. Also block partition walls can be supported on precast floors, further improving sound insulation between rooms.

Easy Installation

Installation of the Hollowcore floor planks is straightforward. The units are hoisted into position on the supporting structure by crane and the joints grouted with 20 N/mm² concrete using a maximum 20 mm aggregate to form a monolithic floor. Longley Concrete Floors provide a complete professional service and employ their own trained/experienced fixing teams to install the precast concrete products, operating on a national basis. Risk Assessments and Safe Working Method Statements are carried out by a Contracting Team.

Immediate Working Platform

The completed floor provides an immediate working platform for follow on trades. This reduces site delays to a minimum.

Eco-Friendly

Masonry homes with concrete floors are energy efficient and their mass helps to balance internal temperatures, thus avoiding the need for air conditioning which can be noisy and harmful to the environment.

Fire Resistant

The safety of you and your family are paramount should a fire start. Traditional masonry construction including concrete floors gives four times longer to exit, ie 2 hours protection against 30 minutes for timber. Concrete is inherently fireproof with no need for anti-fire chemical treatment and its thermal capacity absorbs heat from the fire, thus cooling it reducing the rate of spread from ignition to full fire.

Squeak Resistant

Due to the density of concrete and its limited deflection, concrete floors inherently do not cause sound transmission when walked on.

Pest Resistant

Concrete products are completely resistant to vermin, rot and termites. It is inorganic and of no nutritional interest to pests thus the structure will remain intact for the life of the building.

Flood Resistant

It is becoming more common to build on flood planes due to the lack of land. In the event of flash floods, concrete floors dry out easily and quickly and remain in place.



Technical Details

Span Load Tables

Design... All Hollowcore planks are designed to the requirements of BS 8110. Standard Hollowcore planks have a minimum fire resistance of 1 hour. Units are manufactured to the following nominal depths 150mm, 200mm, 250mm and 300mm.

Drawings... Longley Concrete Floors will provide layout drawings for the floor units prior to manufacture. These drawings show the structure supporting the precast units, position of service entries etc., typical sections and the loads for which the floor is designed.

Quality:
Quality is the prime concern of designers, developers, builders and ultimately homeowners.

The robustness of a concrete floor adds to the quality of a house. Concrete floors act as a thermal store, this can reduce heating costs especially when under-floor heating systems are used.

FINISHES and SERVICE RUNS Floor Finishes

The grouted precast floor provides a firm working platform for following trades and is a suitable base for either sand / cement screeds or timber finishes. As all prestressed floor units are cambered, levelling screeds or packing may be required when laying floating finishes. Where required a structural concrete topping can be laid together with the joint infill to form a composite concrete floor to increase the strength of the flooring system.

Ceiling Finishes

Textured paint finishes or plaster finishes may be applied to Hollowcore planks in accordance with the manufacturer's instructions. Plaster manufacturers may require the application of a bonding agent. (Plastered finishes are not recommended for longer spans).

For suspended ceilings, plasterboard manufacturers have developed ceiling fixing systems using galvanised metal channels and hangers that can be fixed directly to the soffit of all types of floor. These fixing systems may be used instead or timber battens.

Safe Superimposed (Service) Load - kN/m ²											
Unit Depth (mm)	Self Weight kg/m ²	4m	5m	6m	7m	8m	9m	10m	11m	12m	13m
150	220	15	8	4.5	2	1	-	-	-	-	-
150	220	22	12	7	5	3	-	-	-	-	-
150	310	20	11	7	4.5	2	1	-	-	-	-
150	310	25	16	10	6	4	2	-	-	-	-
200	285	-	-	11.5	7.5	5	3	1.75	-	-	-
200	285	-	-	15	11	7	5	3.5	2	-	-
200	310	-	-	12	8	5	3	2	-	-	-
200	310	-	-	15	11	7	5	3.5	2	-	-
250	340	-	-	-	13.5	9.5	6.5	4.75	3	2	-
250	340	-	-	-	15	11	8	6	4	3	-
300	400	-	-	-	-	15	11	8	6	4	3
300	400	-	-	-	-	16	11	8	6	5	4

Unfactored Load Unscreeded. Unfactored Load plus 50mm Screed.

Ceiling Fixings

Proprietary site drilled anchor systems are suitable for fixing suspended ceilings, and when installed to the manufacturer's instructions, these provide a simple and economic fixing method. Anchor fixing systems can be suitable for suspended disabled persons hoists. Shot firing of fixings into prestressed concrete is not recommended.

Horizontal Services

The essential services for a modern dwelling including plumbing, central heating, lighting and power circuits, etc. can be accommodated in ducts within the floor finish or the suspended ceiling void. Larger services such as waste pipes can be run in skirting ducts around the perimeter of the floor.

Screeded Finishes... The screed should be deep enough to bury pipework and conduits for electrical wiring.

Timber Finishes... Timber battens can be fixed directly on top of the precast floor, or supported on spacers. Services can be run between the battens.

Vertical Services

Holes such as for soil pipes openings etc., may be formed during manufacture of the units, or subject to the design capacity of the unit, may be cored on site. Large openings for services or roof lights are normally trimmed with steelwork.



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