

ARC CONBLOC
Data Sheet
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ARC Conbloc

THE FUNDAMENTAL FORCE IN CONSTRUCTION



UNIFLOOR FLOORING SYSTEM

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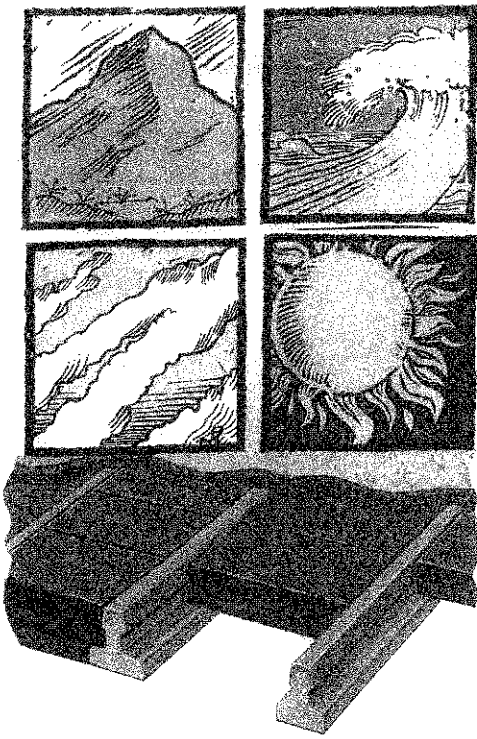


FIGURE 1
TYPICAL SECTION THROUGH
BEAM-BLOCK FLOOR

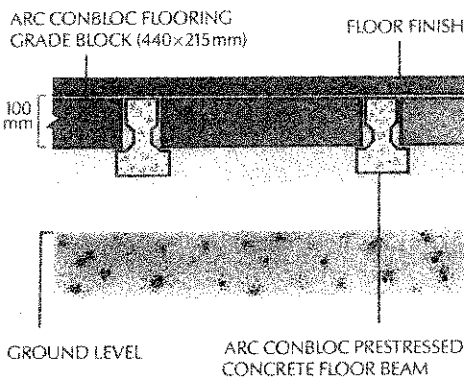
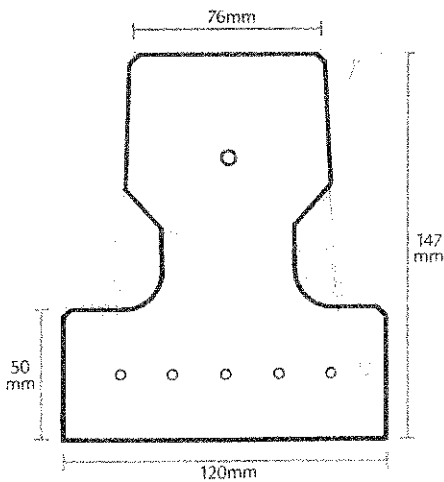


FIGURE 2



THE UNIFLOOR FLOORING SYSTEM COMBINES PRESTRESSED CONCRETE BEAMS AND FLOORING GRADE CONCRETE BLOCKS TO PROVIDE A FORM OF SUSPENDED FLOOR WHICH IS SUPPORTED BY EXTERNAL AND/OR CROSS WALLS. THIS SYSTEM PROVIDES MANY ADVANTAGES OVER IN SITU CONCRETE SLABS PARTICULARLY ON SLOPING SITES OR WHERE DIFFICULT GROUND CONDITIONS EXIST. THIS CAN LEAD TO SIGNIFICANT COST SAVINGS ESPECIALLY WHERE THERE IS A POTENTIAL RISK OF DIFFERENTIAL MOVEMENT BETWEEN THE FOUNDATIONS AND THE GROUND FLOOR SLAB RESULTING FROM LOADINGS, SITE TOPOGRAPHY, SOIL TYPE, GROUND CONDITION OR THE EFFECT OF TREES.

COMPOSITION AND MANUFACTURE

The Unifloor System comprises of inverted T section prestressed concrete beams and flooring grade concrete blocks. (FIGURE 1)

BEAMS

The beams are of a standard profile (FIGURE 2) and can be made to any required length within given limits. They are designed and manufactured in accordance with B.S. 8110 Part 1-1985 using top quality aggregate and Ordinary Portland Cement with integral steel wire which is prestressed to increase load carrying capabilities.

BLOCKS

The blocks supplied by ARC Conbloc for infill are manufactured to B.S. 6073 Part 1-1981 and comply with the following:-

A minimum transverse load capacity of 3.5kN on a span of 420mm or a minimum compressive strength of 3.5N/mm² or a mean compressive strength of 7.0N/mm².

All blocks are tongueless, 440mm long x 215mm wide and 100mm thick. Slip blocks and cavity closer blocks are also manufactured to facilitate easy edge detailing (FIGURE 3). The total weight per square metre of the Unifloor System is given in the span loading table.

PERFORMANCE

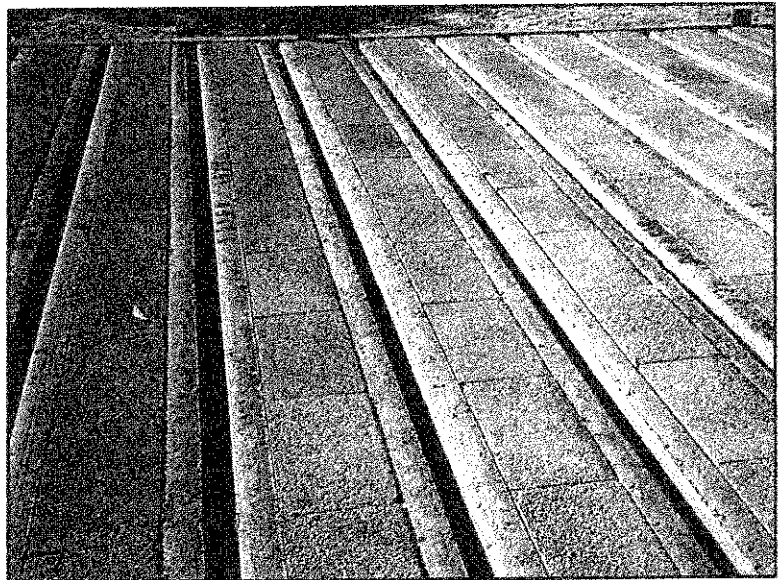
The Unifloor System retains the benefits associated with concrete and provides a maintenance free unit once constructed. It is unaffected by damp, rot and vermin and is fire resistant with a potential for high standards of thermal and sound insulation.

BEAM STRENGTHS

Beam code 3515-35N/mm² cube strength at detensioning

Beam code 4515-35N/mm² cube strength at detensioning

Beam code 5515-40N/mm² cube strength at detensioning



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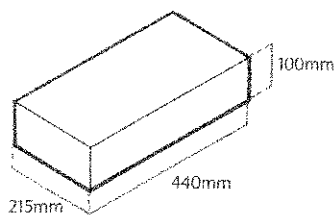
SPAN TABLES

To assist with design the table below gives the maximum spans for various loading conditions.

SPAN LOADING TABLE

BEAM TYPE	BEAM CENTRES mm	BLOCK TYPE	WT. OF FLOOR EXCLUDING DEAD LOAD FINISHES kg/m ²	MAXIMUM SPANS (m) FOR APPLIED DEAD LOAD kN/m ² OF				
				1.0	1.25	1.5	2.0	3.0
3515	295	LIGHTWEIGHT	185	4.96	4.82	4.70	4.48	4.11
		DENSE	255	4.60	4.50	4.40	4.22	3.91
	520	LIGHTWEIGHT	155	3.91	3.79	3.69	3.50	3.20
		DENSE	236	3.56	3.48	3.39	3.25	3.06
4515	295	LIGHTWEIGHT	185	5.10	5.05	4.95	4.82	4.54
		DENSE	255	4.91	4.82	4.75	4.61	4.33
	520	LIGHTWEIGHT	155	4.32	4.19	4.08	3.87	3.54
		DENSE	236	3.94	3.84	3.75	3.59	3.32
5515	295	LIGHTWEIGHT	185	5.31	5.22	5.11	4.94	4.66
		DENSE	255	5.03	4.97	4.88	4.72	4.50
	520	LIGHTWEIGHT	155	4.50	4.41	4.31	4.17	3.97
		DENSE	236	4.21	4.15	4.08	3.94	3.65

FIGURE 3
FLOORING GRADE BLOCK



MAKE UP BLOCK
40 SLIP BLOCK

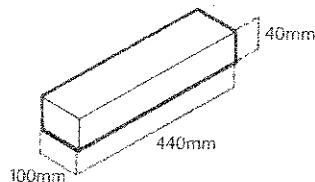


FIGURE 4

ARC CONBLOC
FLOORING GRADE BLOCKS



ARC CONBLOC PRESTRESSED
CONCRETE FLOOR BEAM

NOTES:

1. Maximum spans indicated in the table allow for the self weight of the beams plus 1.5kN/m² live load.
2. For live loads greater than 1.5kN/m² and dead loads greater than 3.0kN/m², please consult ARC Technical Service at Ipswich.
3. Minimum weight of beam and block flooring when used as a sound resisting floor to be 365kg/m² if a screed is applied, or 220kg/m² if a floating layer is applied.

APPLICATION

The Unifloor System can be used for both ground and subsequent floors in all types of construction from residential to commercial premises. Site preparation is minimal and a working platform can be quickly established leading to significant savings in terms of materials and labour. The more difficult the site, the more the potential savings. Unifloor is particularly useful on sloping sites where the establishing of a level ground floor platform can often require the movement and compaction of considerable volumes of material. It should be noted that it has been a mandatory requirement of the National Housebuilding Council since 1974 (Practice Note No.6) that suspended ground floors must be used for house floors where the depth of infill exceeds 600mm. It should also be remembered that Unifloor can be used on first and subsequent floors in buildings allowing stable dry working platforms to be erected with the minimum use of trades.

CONSTRUCTION PROCEDURE

Preparation for the use of Unifloor is minimal. Top soil and vegetable matter are removed to ensure a clear minimum airspace of 75mm, between the ground and the underside of the flooring system. The footings and foundations up to DPC level are constructed in the normal way. The floor beams are then located in accordance with the layout drawings. The beams can be manhandled into position on top of the DPC and flooring grade blocks inserted from above (FIGURE 4). The beams may be staggered at the internal walls and multiple beams may be necessary to support partition walls. A sand cement grout is then brushed into the joints between the beam and block elements to complete the process and ensure a rigid floor construction. It is advocated that the infill blocks are off-loaded and transported carefully to the laying area. On no account should damaged or cracked blocks be used.

Where service pipes have to be accommodated, blocks can easily be cut or omitted. Unifloor slip blocks can be used as infill to maintain coursing.

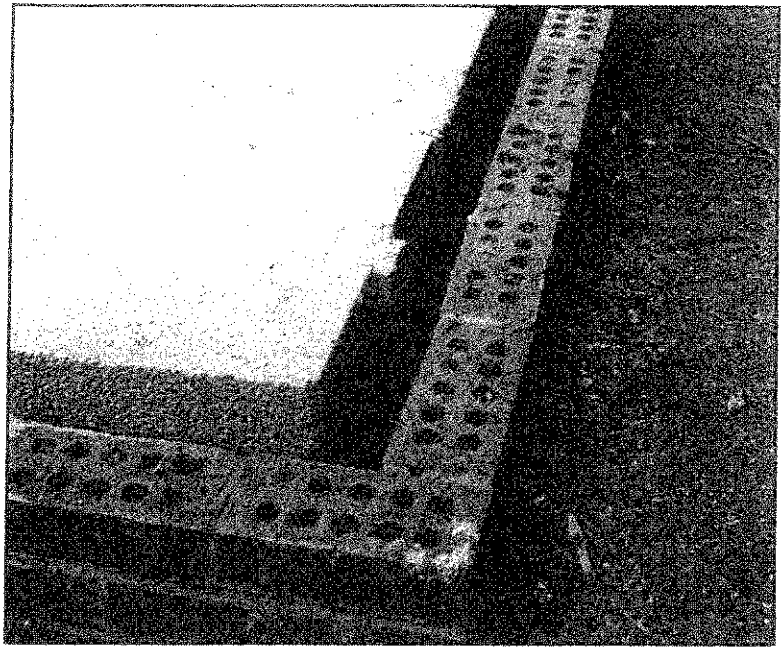
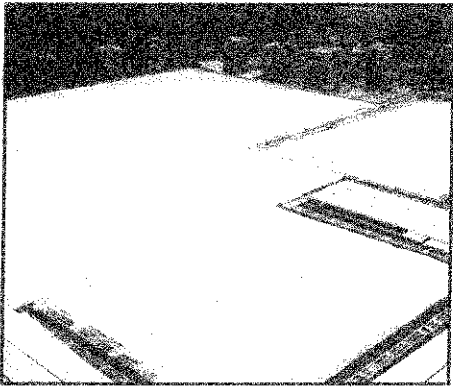
FINISHES

A variety of floor finishes can be specified including sand-cement screeds or lightweight Leca concrete screeds (see Leca Aggregate brochure for details). Alternatively all-dry chipboard and insulation systems can be used to produce a warm highly energy efficient floor.

SUPPLY

The proprietary prestressed beams are readily available and are supplied in accordance with the plans provided. The flooring blocks and finishing blocks are provided in the same manner.

UNIFLOOR FLOORING SYSTEM



TECHNICAL ADVICE

ARC Conbloc offer a free computer aided design facility at the Ipswich manufacturing works to give accurate quantity assessment and construction guides. For details telephone 0473 461771. For general technical guidance on the use of the Unifloor System please contact our Technical Advisory Service on Ipswich 0473 461771.

AREA SALES OFFICES

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