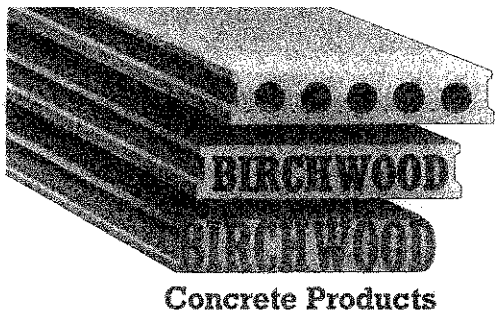
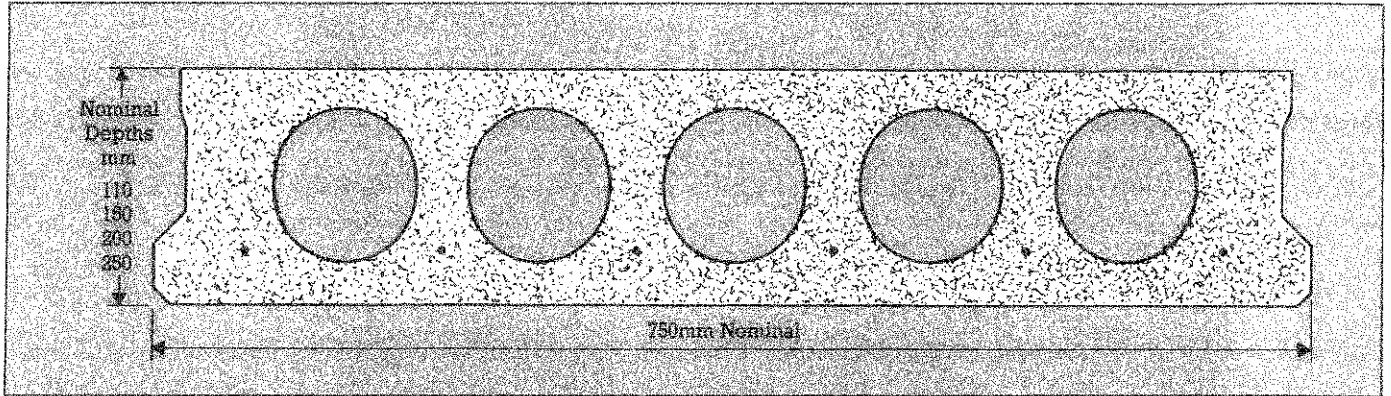


**Hollow Core Floor and Roof Units**



# Hollow Core Floor and Roof Units



**Load Span Table (BS 8110)**

DEPTH mm	SELF WEIGHT kN/m <sup>2</sup>	SELF WEIGHT kg/m <sup>2</sup>	MAXIMUM PERMISSIBLE SPANS IN METRES								
			Spans indicated allow for live load plus 1.5 kN/m <sup>2</sup> for finishes								
			1.5	2.0	2.5	3.0	3.5	4.0	5.0	7.5	10.0
110	2.0	204	6.06	5.79	5.54	5.31	5.12	4.94	4.64	4.06	3.66
150	2.4	245	7.64	7.20	6.91	6.65	6.42	6.21	5.85	5.15	4.66
200	2.8	289	9.79	9.35	9.00	8.69	8.39	8.15	7.68	6.90	6.17
250	3.3	336	11.32	10.90	10.52	10.18	10.06	9.89	9.08	8.11	7.39

**Load Span Table —  
in conjunction with structural screed (to be designed and supplied by others)**

DEPTH mm	MINIMUM SCREED THICKNESS AT MID-SPAN mm	MAXIMUM PERMISSIBLE SPANS IN METRES								
		Spans indicated allow for live load plus 1.5 kN/m <sup>2</sup> for screed								
		1.5	2.0	2.5	3.0	3.5	4.0	5.0	7.5	10.0
110	40	6.91	6.64	6.41	6.19	6.00	5.82	5.61	4.91	4.46
150	50	8.20	7.92	7.68	7.45	7.24	7.05	6.71	6.03	5.52
200	50	10.40	10.11	9.89	9.50	9.24	8.99	8.58	7.69	7.04
250	50	12.00	11.63	11.29	10.98	10.68	10.43	9.96	9.00	8.28

*The above tables are for guidance only. For further information please contact our Technical Department.*

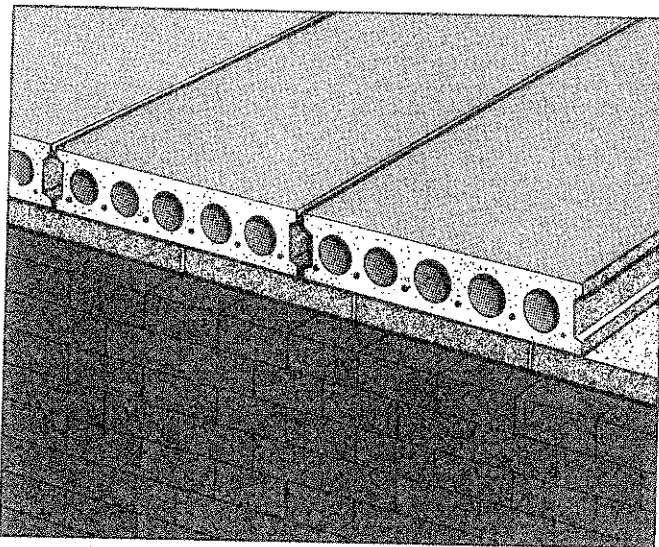


# Specification — Design Compliance

Birchwood Hollow Core Floor and Roof Units are designed in accordance with BS8110. The units are prestressed creating an inherent upward camber and therefore due allowance should be made for any finishes which may reduce this camber.

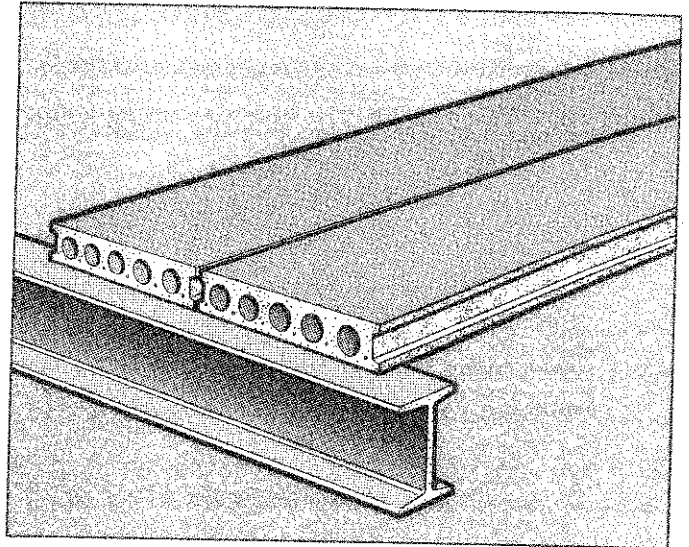
The camber of Birchwood units will generally comply with the recommendations of BS 8110.

## Bearing onto brick wall



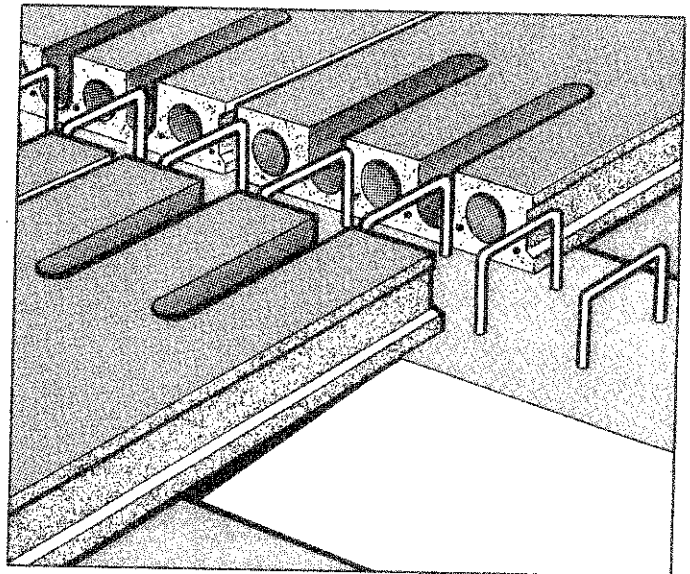
100mm Bearing Generally

## Bearing onto top of steel flange



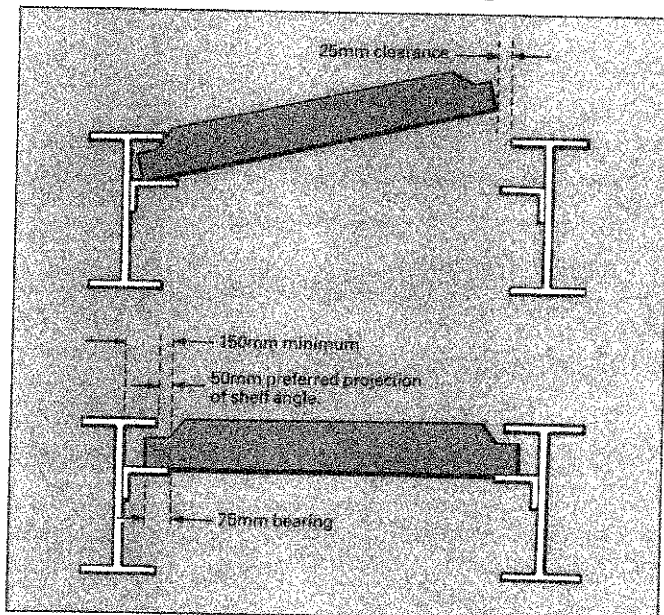
75mm Bearing Generally

## Composite tee beam construction



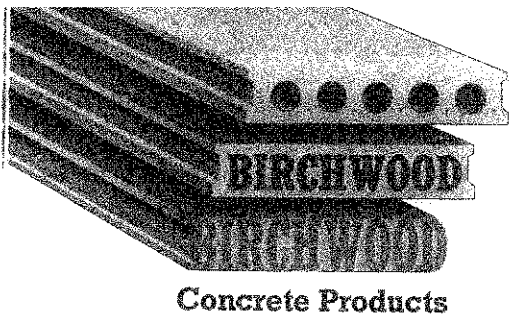
75mm Bearing Generally

## Bearing onto steel shelf angles



75mm Bearing Generally

Continuity with supporting concrete beams either precast or in situ can be achieved by using projecting reinforcement steel lacing bars. Voids are to be filled with 30 N/mm<sup>2</sup> in situ concrete.



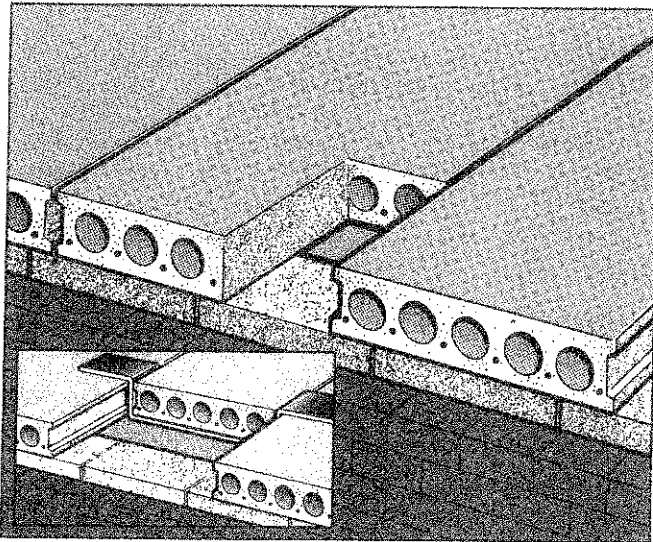
Concrete Products

# Specification — Design Compliance

## Service Holes

Holes 75mm or less can be formed on site by drilling through the cores via the soffit. Holes 100mm and above will be preformed at our Works and may require steel trim support straps in certain cases.

## Preformed holes

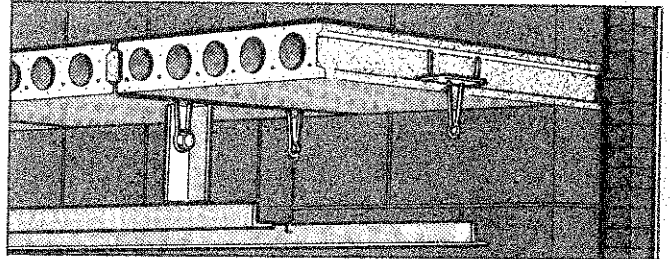


## Ceiling Finishes

The following are some of the options available —  
 (a) The soffits of the units can be plastered using a suitable bonding agent.  
 (b) Apply 'Artex' or similar decorative finish following the manufacturer's application instructions.  
 (c) Galvanised ceiling clips to support battens can be fixed between the units at appropriate centres during erection. Alternatively the Contractor could use shot-fired fixtures or self-tapping screws to secure the batten to the soffit.

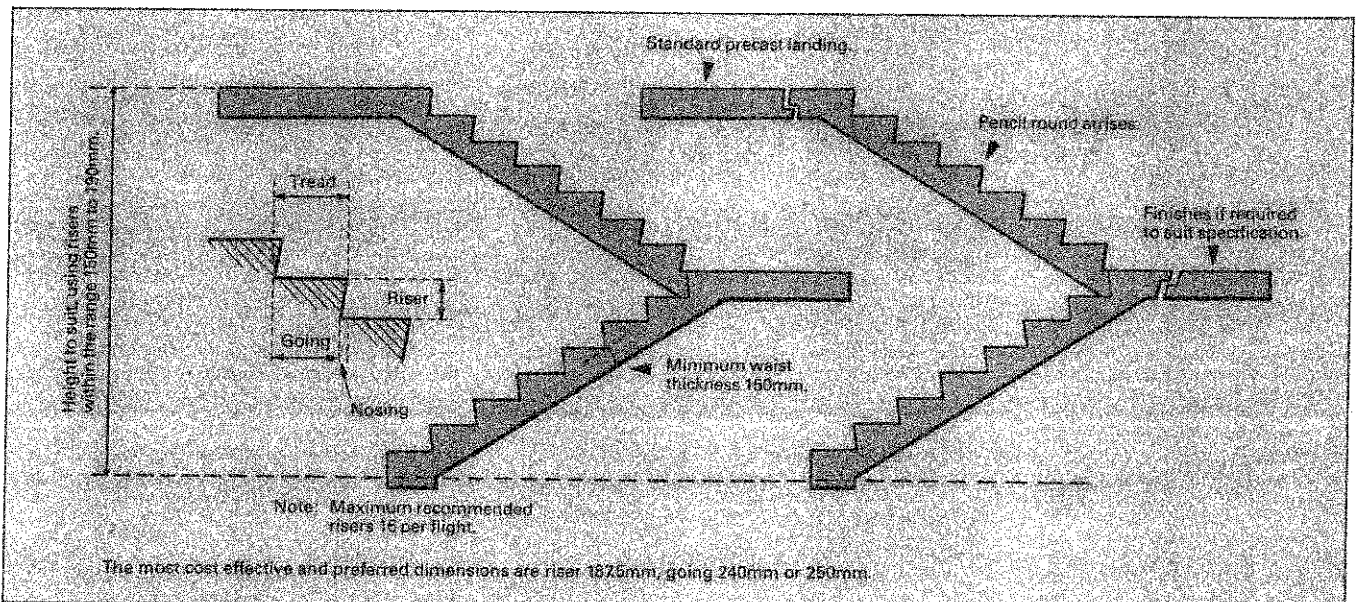
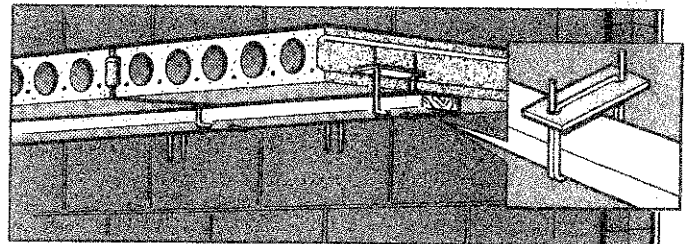
In the latter two cases technical advice must be sought from the fixture manufacturer.

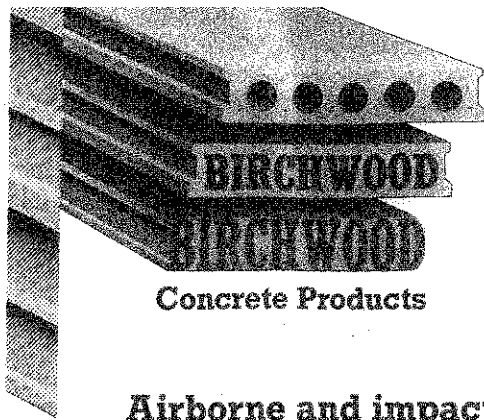
## Soffit fixings and ceiling hangers



## Staircases

Birchwood will design, cast and erect most types of staircases — all component parts are manufactured to BS8110 in high quality moulds giving in the main fair-faced finish all round. The maximum number of risers for a straight flight standard unit is sixteen.





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# Sound Resistance and Floor Finishes

## Airborne and impact sound

The Building Regulations 1985 Approved Document 'E' pages 16.D and 18.D demonstrate how using Hollow Core Concrete Beams compliance may/can be obtained.

## Floor type 1 concrete base (*with soft covering*)

The weight of the base must not be less than  $365\text{kg/m}^2$  — this can be obtained using a 50mm sand and cement screed to Birchwood 150mm and 200mm deep units.

## Floor type 2 concrete base (*with floating layer*)

The weights of Birchwood 150mm and 200mm units are  $245\text{kg/m}^2$  and  $285\text{kg/m}^2$  respectively and therefore will exceed the compliance requirements.

# Fire Resistance

All Birchwood units are designed to give five ratings in accordance with BS8110 Part 2 1985. For further information please contact our Design Department.

# Birchwood Services

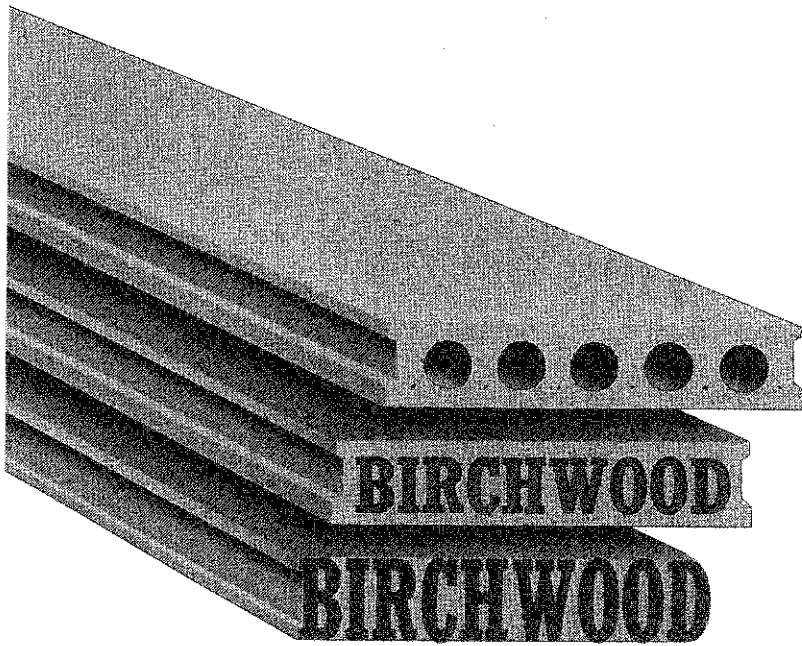
As a long and well established supplier to the UK Construction Industry, Birchwood operates nationwide and provides the following services:

- (1) Comprehensive and efficient estimating offering Quotations for Supply and Erect or Supply Only Contracts.
- (2) Detailed layout drawings, relevant support calculations and technical guidance.
- (3) Fast, effective, economic delivery and erection using our own experienced erection teams and equipment.
- (4) Flexible manufacturing schedules to meet customers' delivery requirements.

**Value with flexibility —**  
**BIRCHWOOD**

*Because our policy is one of continuous improvement, Birchwood reserve the right to change the specification without notice.*

*All illustrations are a sample of typical applications of Birchwood Hollow Core Floor and Roof Units. Please note that they are graphical illustrations only.*



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