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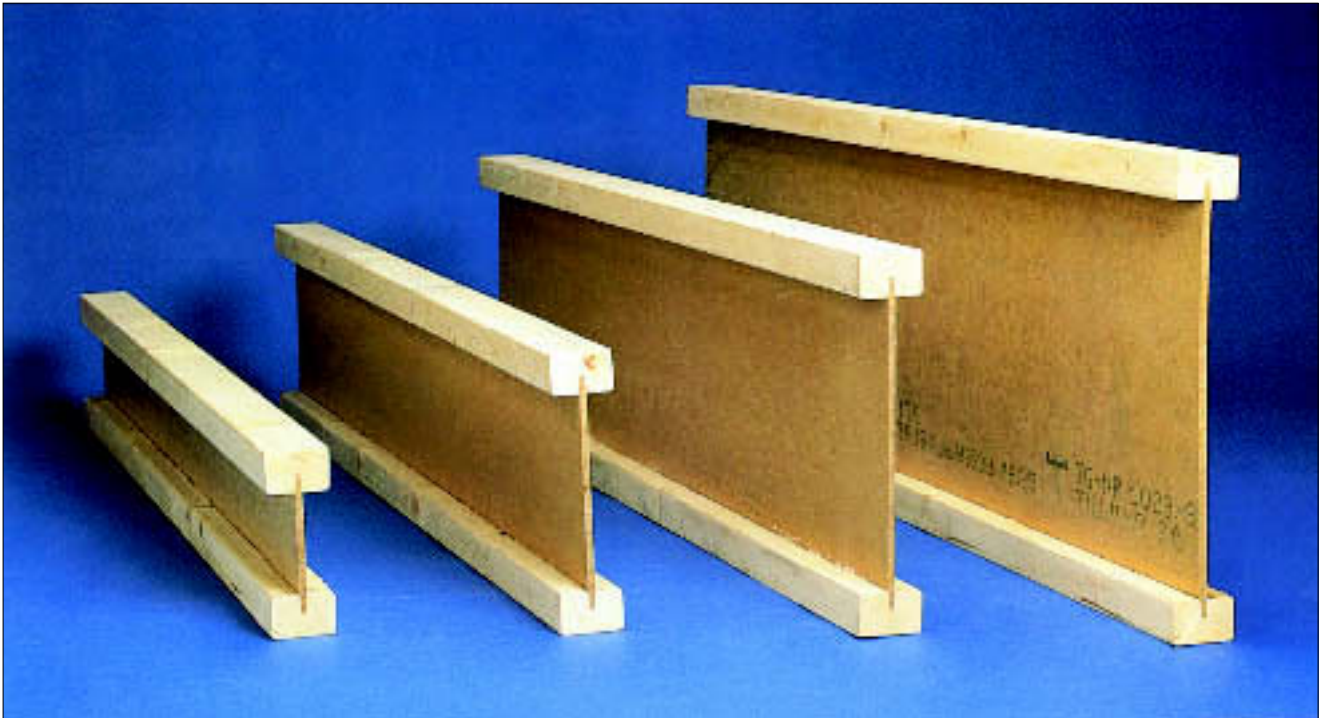
**Agrément
Certificate
No 98/3514/C**

Designated by Government
to issue
European Technical
Approvals

MASONITE BEAMS AND STUDS

Poutres pour planchers
Bodenbalken

Product



- THIS CERTIFICATE OF CONFIRMATION RELATES TO MASONITE BEAMS AND STUDS, COMPRISING TIMBER FLANGES AND FIBREBOARD WEBS.
- The products are fabricated from timber based components and are for use as structural members, eg the beams as floor or roof joists, beams, rafters or ceiling ties, and the studs in the construction of loadbearing and non-loadbearing walls.
- Masonite Beams and Studs are marketed in the UK by Panel Agency Limited, Maple House, 5 Over Minnis, New Ash Green, Longfield, Kent DA3 8JA.
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Confirmation of SITAC type approval
(Swedish Agrément Certificate)
No 1028/88.

Regulations

1 The Building Regulations 1991 (as amended) (England and Wales)



The Secretary of State has agreed with the British Board of Agrément the requirements of the Building Regulations to which beams and studs can contribute in achieving compliance. In the opinion of the BBA, Masonite Beams and Studs, if used in accordance with the provisions of this Certificate, will contribute to meeting the relevant requirements.

Requirement: A1	Loading
Comment:	The products have adequate strength and stiffness. See sections 9.1 to 9.15 of this Certificate.
Requirement: B3	Internal fire spread (structure)
Comment:	A fire test on walls constructed of Masonite studs protected by materials given in section 11.2 of this Certificate, has shown this configuration to achieve a one-hour fire resistance when under load.
Requirement: B2	Internal fire spread (linings)
Comment:	Timbers from which the Masonite beams are manufactured have a class 3 surface and those for the studs a class 4 surface, and therefore both products are combustible. See section 11.1 of this Certificate.
Requirement: Regulation 7	Materials and workmanship
Comment:	The products are acceptable but have been assessed as untreated and are therefore restricted under this Regulation. See sections 12.1 to 12.4 of this Certificate.

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2 The Building Standards (Scotland) Regulations 1990 (as amended)



In the opinion of the BBA, Masonite Beams and Studs, if used in accordance with the provisions of this Certificate, will satisfy or contribute to satisfying the various Regulations and Technical Standards as listed below.

Regulation:	10	Fitness of materials
Standard:	B2.1	Selection and use of materials and components
Comment:		The products are acceptable.
Regulation:	11	Structure
Standard:	C2.1	Construction
Comment:		The products have adequate strength and stiffness. See sections 9.1 to 9.15 of this Certificate.
Regulation:	12	Structural fire precautions
Standard:	D2.1	Fire resistance
Comment:		A fire test on walls constructed of Masonite studs protected by the materials given in section 11.2 of this Certificate, has shown this configuration to achieve a one-hour fire resistance when under load.
Standard:	D2.2	Non-combustibility
Comment:		In common with other timber products the beams and studs are of a combustible material and their use will be restricted under this Standard. See section 11.1 of this Certificate.
Regulation:	13	Means of escape from fire, facilities for fire-fighting and means of warning of fire in dwellings
Standard:	E6.1	Resistance to surface spread of flame
Comment:		The beams have a class 3 surface and the studs a class 4 surface. See section 11.1 of this Certificate.

3 The Building Regulations (Northern Ireland) 1994 (as amended)



In the opinion of the BBA, Masonite Beams and Studs, if used in accordance with the provisions of this Certificate, will satisfy the various Building Regulations as listed below.

Regulation:	B2	Fitness of materials and workmanship
Comment:		The products are acceptable. See sections 12.1 to 12.3 of this Certificate.
Regulation:	D2	Stability
Comment:		The products have adequate strength and stiffness. See sections 9.1 to 9.15 of this Certificate.
Regulation:	E4	Internal fire spread – Linings
Comment:		The beams have a class 3 surface and the studs a class 4 surface. See section 11.1 of this Certificate.
Regulation:	E6	Internal fire spread – Structure
Comment:		A fire test on walls constructed of Masonite studs protected by materials given in section 11.2 of this Certificate, has shown this configuration to achieve a one-hour fire resistance when under load.

4 Construction (Design and Management) Regulations 1994

Information in this Certificate may assist the client, planning supervisor, designers and constructors to address their obligations under these Regulations.

See sections: *6 Delivery to site and storage and 8 Practicability of installation.*

Technical Specification

5 Description

5.1 Masonite Beams and Studs are of composite construction with timber flanges and fibreboard webs (see Figure 1). They are available in the flange sizes and overall depths given in Table 1. The tolerances on member sizes are given in Table 2. The lengths may be limited for handling or transportation purposes but are available up to 12 m for the beams and 5.5 m for the studs.

5.2 The flanges are selected based on machine stress graded K18, K24 or K30⁽¹⁾ Swedish spruce

(*Picea abies*) timber with restriction on the size and location of knots monitored by the Swedish Approval Body (SP)⁽²⁾.

(1) Swedish performance specification.

(2) Swedish National Testing and Research Institute

5.3 The web material is a structural fibreboard manufactured to grade K40⁽¹⁾ with an 8 mm nominal thickness. The fibreboard sections are butt-jointed without structural connection to form a continuous web (see Figure 2).

(1) Swedish performance specification.

5.4 The web-to-flange connection is made by gluing the web into a groove in the centre of the wide face of the flange. Phenol-resorcinol formaldehyde adhesive to BS EN 301 : 1992, is used in all joints.

5.5 At the time of manufacture the moisture content in the flanges is between 12% and 18% and in the web 6% and 8%.

5.6 The components are machine-assembled in one pass.

5.7 Quality control includes checks on flange and web materials, before and after preparation, for quality and dimensional accuracy. Process controls include checks on glue spread, fit of component parts and curing temperature. Regular tests are made for tightness of web-flange connections and strength of completed beams and studs.

Figure 1 Section

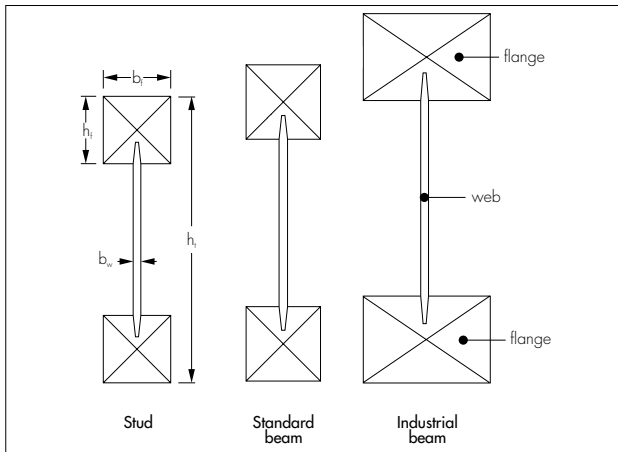


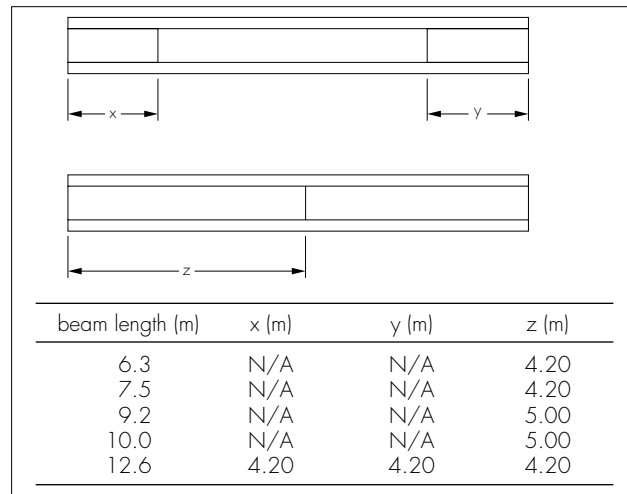
Table 1 Types and sizes

Beam/ stud type	Depth (mm)	Standard length (m)	Flanges		Web	
			material spruce grade	size $h_f \times b_f$ (mm)	material	thickness b_w (mm)
Standard beam type H	200		K30			
	220		K30		Masonite	
	250	6.3, 7.5,	K30	47 × 47	structural	8.0
	300	8.9, 9.9,	K24		fibreboard	
	350	12.0	K24		Grade K40	
400		K24				
Industrial beam type HI	200		K30			
220		K30		Masonite		
250		K30	47 × 70	structural	8.0	
300	7.5, 9.9,	K24		fibreboard		
350	12.0	K24		Grade K40		
400		K24				
450		K24				
500		K24				
Stud type R	150		K18			
	170		K18		Masonite	
	200		K18	47 × 47	structural	8.0
	220	5.0, 5.5	K18		fibreboard	
	240		K18		Grade K40	
	240		K18			
300		K18				

Table 2 Tolerances

Member dimension	Tolerance (mm)
Overall joist height (h_i)	±1
Overall joist length	cut to length
Flange thickness (h_f)	-0 +1.0
Flange width (b_f)	-0 +1.0
Web thickness	±0.5

Figure 2 Location of web butt-joints in beams and studs of standard length



6 Delivery and site storage

6.1 Delivery and site storage must be carried out in accordance with the manufacturer's instructions and the requirements of this Certificate.

6.2 During transportation and construction the beams and studs must be protected from wetting and adverse weather conditions.

6.3 In accordance with normal good practice for timber products, the beams and studs should be stored clear of the ground and stacked vertically (within the plane of the spans). To minimise the effects of variations in moisture content with weather conditions, the products should be fully covered but still allow free airflow.

6.4 The products bear the BBA identification mark incorporating the number of this Certificate.

Design Data

7 General

7.1 Masonite Beams and Studs are satisfactory for use as structural members, eg the beams as floor or roof joists, beams, rafters, or ceiling ties and the studs in the construction of loadbearing walls, provided the conditions described in section 9 of this Certificate are followed.

7.2 The sound reduction properties of floors incorporating the beams or walls incorporating the studs are not covered by this Certificate. Where particular sound insulation properties are required, appropriate testing or assessment (relating to the structure) should be obtained.

8 Practicability of installation

8.1 The beams or studs are lighter than solid timber beams or studs of equivalent structural properties and, therefore, are easier to handle.

8.2 They are easily cut to length and fixed using conventional woodworking tools.

8.3 Sheathing, flooring and ceiling materials can be nailed to the flanges.

8.4 Care should be taken to avoid damage to the flanges and to the webs.

9 Structural performance



9.1 The products will have adequate strength and stiffness when used in structures designed in accordance with the recommendations given in BS 5268 : Part 2 : 1996 and the manufacturer's literature using the design data given in this Certificate.

9.2 The lower flanges of the beams are able to support small loads, for example those associated with normal domestic services and ceilings. The recommended loads relate to the full joist loaded through the top flange.

9.3 Design and detailing of Masonite structures should be carried out by a qualified structural engineer and in accordance with the manufacturer's instructions and the requirements of this Certificate.

9.4 The properties given in Tables 3 and 4 apply only in the internal conditions of service class 1 or 2 environments as defined in BS 5268 : Part 2 : 1996.

9.5 The structural performance of the beams and studs relies upon adequate lateral restraint to the compression flanges. To achieve this, such restraint should be applied at maximum centres of 350 mm for Masonite Standard Beams, type H, and Studs,

type R, and at maximum centres of 500 mm for Masonite Industrial Beams, type HI. Lateral restraint is readily achieved for simply-supported beams by battens, boarding or similar fixed to the top flange at satisfactorily close intervals. However, in certain conditions additional lateral restraint is required, eg the lower flange can be in compression and may not have such features as boarding to act as lateral restraint. Continuous beams and members subject to wind uplift both fall into this category and may require the addition of diagonal braces or similar to provide the necessary restraint.

9.6 Values for long-term bending moment capacity and shear resistance for the beams and studs are given in Table 3, for service classes 1 and 2 respectively. Where other durations of loading apply, these values can be adjusted by multiplying by the modification factor K_3 given in BS 5268 : Part 2 : 1996.

9.7 The values tabulated for load-sharing systems relate to a modification factor K_8 of 1.05 for beams (bending) and 1.10 for studs (vertical load only), as defined in BS 5268 : Part 2 : 1996, where four or more joists of the same cross-section are spaced at a maximum of 610 mm centres, and have adequate provision for the distribution of loads by use of such features as purlins, binders, boarding, battens.

Table 3 Long-term bending moment and shear capacity for service class 1 and 2

Beam/ stud type	Depth h_i (mm)	Service class 1				Service class 2			
		Moment capacity ⁽¹⁾		Shear capacity ⁽²⁾		Moment capacity ⁽¹⁾		Shear capacity ⁽²⁾	
		non-load-sharing ⁽³⁾ (kNm)	load-sharing ⁽⁴⁾ (kNm)	non-load-sharing ⁽³⁾ (kN)	load-sharing ⁽⁴⁾ (kN)	non-load-sharing ⁽³⁾ (kNm)	load-sharing ⁽⁴⁾ (kNm)	non-load-sharing ⁽³⁾ (kN)	load-sharing ⁽⁴⁾ (kN)
Standard beam type H	200	3.52	3.70	3.82	4.01	2.81	2.95	3.06	3.21
	220	3.97	4.17	3.95	4.15	3.17	3.33	3.16	3.32
	250	4.63	4.86	4.15	4.36	3.69	3.88	3.32	3.49
	300	4.65	4.88	4.40	4.62	3.70	3.89	3.52	3.69
	350	5.49	5.76	4.40	4.62	4.37	4.59	3.52	3.69
	400	6.30	6.62	4.40	4.62	5.01	5.26	3.52	3.69
Industrial beam type HI	200	5.30	5.56	3.82	4.01	4.23	4.44	3.06	3.21
	220	5.97	6.27	3.95	4.15	4.77	5.01	3.16	3.32
	250	6.96	7.31	4.15	4.36	5.56	5.84	3.32	3.49
	300	6.99	7.34	4.40	4.62	5.57	5.85	3.52	3.69
	350	8.25	8.66	4.40	4.62	6.58	6.90	3.52	3.69
	400	9.47	9.94	4.40	4.62	7.54	7.92	3.52	3.69
	450	10.65	11.19	4.40	4.62	8.48	8.91	3.52	3.69
500	11.81	12.40	4.40	4.62	9.40	9.87	3.52	3.69	
Stud type R	150	0.67	0.74	N/A	N/A	0.67	0.74	N/A	N/A
	170	0.83	0.91	N/A	N/A	0.83	0.91	N/A	N/A
	200	1.07	1.18	N/A	N/A	1.07	1.18	N/A	N/A
	220	1.24	1.37	N/A	N/A	1.24	1.37	N/A	N/A
	240	1.41	1.55	N/A	N/A	1.41	1.55	N/A	N/A
	300	1.93	2.12	N/A	N/A	1.92	2.12	N/A	N/A

(1) Moment capacity of studs:

If compression flange is continuously restrained, values may be increased by a factor of 1.10.

(2) Shear capacity based on flange capacity with web joints at distance from support:

beam depth (mm)	min distance from support (mm)
200, 300	300
250	450
400	600

In the table, values for 220 mm deep beams interpolated.

(3) For standard and industrial beams — assumes lateral restraint of compression flange of 350 mm (beams type H) and 500 mm (beams type HI).

(4) Load-sharing factor K_8 taken as 1.05 for beams (bending) and 1.10 for studs (vertical load only).

Table 4 Stiffness properties

Beam/stud type	Depth (mm)	Grade of flange	EI ⁽¹⁾ long-term service class 1 (Nmm ² × 10 ⁹)	EI ⁽¹⁾ long-term service class 2 (Nmm ² × 10 ⁹)	G _w A _w long-term service class 1 (N × 10 ⁶)	G _w A _w long-term service class 2 (N × 10 ⁶)
Standard beam type H	200	K30	335.64	309.24	0.957	0.754
	220	K30	422.98	340.19	1.116	0.879
	250	K30	577.58	465.11	1.353	1.066
	300	K24	763.33	608.16	1.749	1.378
	350	K24	1093.04	869.98	2.145	1.690
	400	K24	1483.65	1179.72	2.541	2.002
Industrial beam type HI	200	K30	504.67	403.23	0.957	0.754
	220	K30	641.04	512.07	1.116	0.879
	250	K30	877.10	700.40	1.353	1.066
	300	K24	1147.75	915.69	1.749	1.378
	350	K24	1642.74	1309.74	2.145	1.690
	400	K24	2228.37	1775.49	2.541	2.002
	450	K24	2905.24	2313.28	2.937	2.314
	500	K24	3673.96	2923.44	3.333	2.626
Stud type R	150	K18	111.64	89.23	0.399	0.314
	170	K18	156.44	124.99	0.518	0.408
	200	K18	238.60	190.52	0.696	0.548
	220	K18	303.40	242.17	0.815	0.642
	240	K18	376.27	300.20	0.933	0.735
	300	K18	643.67	512.86	1.290	1.016

(1) EI values based on a combination of tests, equivalent I derived for long-term effect or creep.

9.8 The flexural and shear rigidities, required for evaluating deflections, are given in Table 4. The deflection (y) of a uniformly loaded I-beam is given by:

$$y = \frac{5WL^4}{384EI} \pm \frac{M}{G_w A_w}$$

where: W = uniform load (Nmm⁻¹)
 L = effective span (mm)
 EI = flexural rigidity (Nmm⁻²)
 M = applied moment (Nmm)
 G_wA_w = web shear rigidity (N)

9.9 Lightweight I-beam floors may require higher deflection control to avoid undue vibration. Shear deflection will, unlike solid beams, have a significant contribution to the overall deflection. The limits should be based on the required performance of the structure. The manufacturer's literature should be consulted regarding recommended deflection control limits. Consideration of the deflection criterion should be agreed between interested parties at the design stage.

9.10 The beams and studs are typically installed at the moisture content given in section 5.5 of this Certificate. The effect of creep deflection is taken into account when deriving long-term values for G_w and E_bI. These values assume stable environments. Where variable environments are expected, the manufacturer should be consulted as the creep values adopted may need to be increased.

9.11 Long-term permissible bearing stresses are given in Table 5. These should be used to derive minimum bearing lengths for end and intermediate reaction. Details for web stiffeners for Masonite Beams and Studs have not been assessed by the BBA.

Table 5 Long-term permissible bearing stresses

Joist depth(h) (mm)	Service Class 1		Service Class 2	
	End support (Nmm ⁻²)	Inter support ⁽¹⁾ (Nmm ⁻²)	End support (Nmm ⁻²)	Inter support ⁽¹⁾ (Nmm ⁻²)
200	1.91	3.08	1.52	2.46
300	0.75	1.25	0.50	0.83
400	0.46	0.92	0.31	0.61

(1) Intermediate support value applicable for distance >2 h from end support.

Compression load only

9.12 When Masonite beams are used as a strut, the flange-only values are to be used and modified according to the relevant lateral restraint points and guidance given in BS 5268 : Part 2 : 1996. The admissible long-term compression grade stress parallel to the beam span is given in Table 6.

Table 6 Admissible long-term compression stress

Timber grade in flange	Stress (Nmm ⁻²)
K30	8.6
K24	7.9
K18	7.1

Tension load only

9.13 When Masonite beams are used as a tie, the flange-only values are to be used and modified according to the guidance given in BS 5268 : Part 2 : 1996. The admissible long-term tension grade stress parallel to the beam is given in Table 7.

Table 7 Admissible long-term tensile stress

Timber grade in flange	Stress ⁽¹⁾ (Nmm ⁻²)
K30	6.6 × K ₁₄
K24	4.5 × K ₁₄
K18	3.5 × K ₁₄

(1) K₁₄ = 1.17, as given in BS 5268 : Part 2 : 1996.

Fibreboard

9.14 The presence of holes in the webs of Masonite beams will primarily affect the shear strength of the beam. The study of the effect or the presence of web holes has not been considered by the BBA. Should holes be required, further advice may be sought from the manufacturer.

Axial load

9.15 The axial load-carrying capacity of the masonite beams and studs should be calculated in accordance with the procedures given in BS 5268 : Part 2 : 1996. Axial forces are to be resisted by the flanges only, the web should not be taken into account when calculating the radius of gyration r_y . The slenderness λ_y should be taken as:

$$\sqrt{\frac{12}{b_f}} \cdot L_e$$

where:

b_f = width of flange and

L_e = $0.7 L_s$ (effective lateral restraint spacing) — assuming a rafter or stud application not a single column or principle rafter without end restraint.

10 Behaviour in relation to moisture

10.1 This assessment and the design values given in this Certificate cover the structural use of the beams and studs in service classes 1 and 2 environments as defined in BS 5268 : Part 2 : 1996. The moisture content at the time of manufacture is given in section 5.5 of this Certificate.

10.2 Where a building construction is likely to be sensitive to the relative movement of members, it is recommended, in accordance with BS 5268 : Part 2 : 1996, that the members should:

- (1) be checked for moisture content at the time of the installation (the determination by a calibrated moisture meter will be sufficiently accurate)
- (2) have a moisture content at the time of installation close to that likely to be attained in service.

10.3 The beams and studs will arrive on site with a typical moisture content in the range given in section 5.5.

10.4 Masonite Beams and Studs will not shrink in the same manner as solid timber of equal depth, therefore care is needed to avoid problems of differential movement.

10.5 The beams and studs are intended for internal dry conditions as defined in BS 5268 : Part 2 : 1996 service classes 1 and 2 and the dimensional stability of the beams and studs is considered adequate for its use as structural elements in these environments.

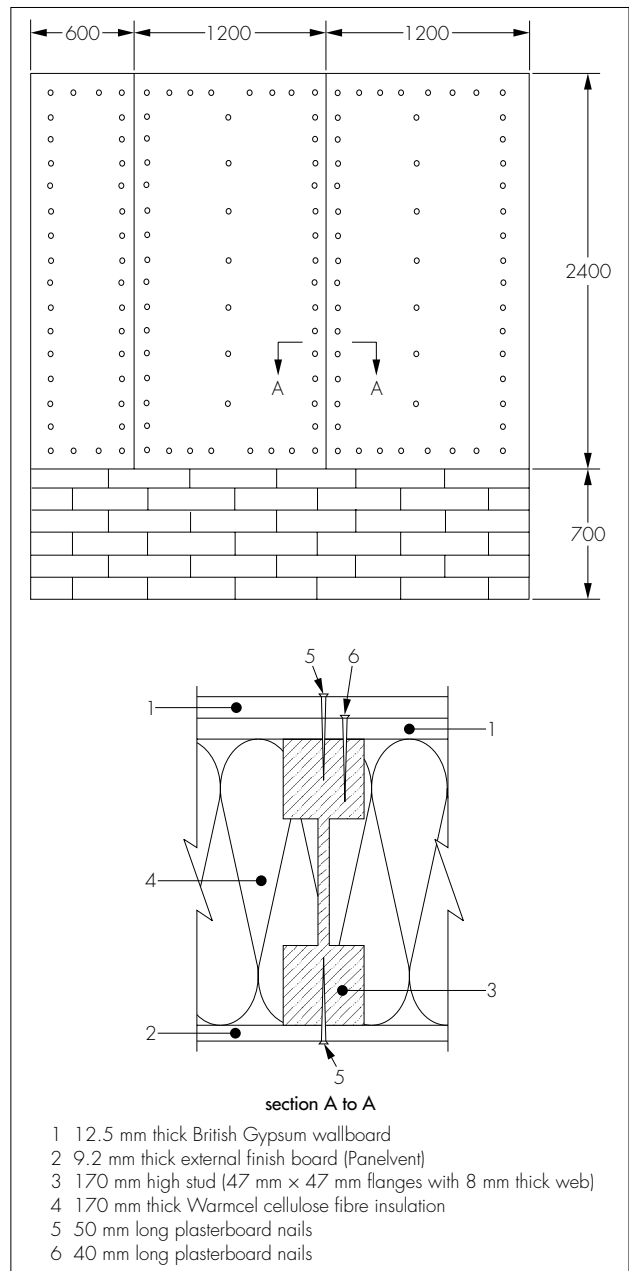
11 Behaviour in relation to fire

11.1 The timber used in the manufacture of Masonite beams has been assessed as class 3 and that for Masonite studs as class 4, in accordance with BS 476 : Part 7 : 1997, therefore in common with other timber products, the products are combustible.

11.2 A fire test was carried out in accordance with BS 476 : Part 20 : 1987 on a wall constructed of Masonite studs, Warmcel insulation and two layers of 12.5 mm thick plasterboard (see Figure 3) and achieved a one-hour fire resistance grading.

11.3 The fire resistance properties are dependent on the design of the construction incorporating the products. Where fire resistance is a requirement, an appropriate assessment or test must be carried out by a UKAS (United Kingdom Accreditation Service) approved fire testing laboratory.

Figure 3 Wall test arrangement — fire resistance



12 Durability

12.1 The timber used in Masonite Beams and Studs is acceptable for use in service class 1 and 2 environments as outlined in BS 5268 : Part 2 : 1996, ie in dry conditions where the moisture content does not exceed 18% in the timber flanges nor 8% in the fibreboard web. The adhesive used in the beam flange-to-web joint

and in the flange finger joints is a phenol resorcinol formaldehyde and is acceptable for service classes 1 and 2 environments. The risk of rot or fungal attack in these service environments is low providing the beams are kept within the value of equilibrium moisture content for these environments.

12.2 To ensure that these moisture conditions are maintained:

(1) flat roofs must be constructed in accordance with BS 6229 : 1982, BRE Digests 312 and 324, NHBC Standards, *Chapter 7.1* or Zurich Municipal Technical Manual, *Chapter 6*

(2) roof coverings must be kept in good repair

(3) in suspended ground floors, careful attention must be given to the adequate provision of solum treatment, underfloor space and ventilation.

Guidance on design is given in CP 102 : 1973 and BRE Digest 364.

12.3 The timber used in Masonite Beams and Studs is classified as slightly durable in accordance with BS EN 350-2 : 1994.



12.4 This assessment assumed the beams and studs were untreated. Treated timber, not covered by this Certificate, must be used in roof spaces of buildings in the House Longhorn beetle areas defined in the Approved Document to Regulation 7 of the Building Regulations (England and Wales).

Installation

13 General

13.1 The flanges must not be drilled, notched or otherwise altered on site.

13.2 Masonite Beams and Studs should be handled and installed in a similar manner to solid timber beams. However, the strength and stiffness of the beams and studs about their minor axis is less than that of corresponding solid timber sections. Therefore, care must be exercised to ensure that joists are not damaged during handling. In accordance with normal good practice for timber they should be protected from wetting during installation.

13.3 The product can withstand normal site handling and usage but those significantly damaged must not be used.

14 Procedure

14.1 Installation must be in accordance with the manufacturer's instructions.

14.2 Temporary bracing should be provided to keep the beams and studs straight and plumb during installation.

14.3 Rigid service pipes can be incorporated within the floor or roof void by passing through holes drilled in the web. Advice on holes may be sought from the manufacturer.

Technical Investigations

The following is a summary of technical investigations carried out on Masonite Beams and Studs.

15 Tests

15.1 Tests carried out by SP⁽¹⁾ include:
short-term behaviour (bonding strength, shear capacity, permissible stresses, etc)
behaviour under long-term loading
behaviour under long-term creep
dimensional stability
moisture content.

(1) The Swedish National Testing and Research Institute.

15.2 A fire resistance test to BS 476 : Part 20 : 1987 was undertaken.

15.3 The manufacturing processes for the flanges, fibreboard webs and the complete beams were examined, including the methods adopted for quality control, and details were obtained of the quality and composition of the materials used.

16 Investigations

16.1 The results of the tests listed in section 15.1 were evaluated by SITAC⁽²⁾ as part of the assessment leading to the issue of Swedish Approval No 1028/88.

(2) Swedish Institute for Technical Approval in Construction.

16.2 An independent assessment was carried out by the BBA on:

derivation of long-term permissible values given in this Certificate for service classes 1 and 2
durability of timber in the specified environments
adequacy of the products under short-term exposure
fire assessment, including ignitability,
combustibility, surface spread of flame and fire resistance
moisture content
practicability of installation.

Bibliography

BS 476 *Fire tests on building materials and structures*

Part 7 : 1987 *Method for classification of the surface spread of flame of products*

Part 20 : 1987 *Method for determination of the fire resistance of elements of construction (general principles)*

BS 5268 *Structural use of timber*

Part 2 : 1996 *Code of practice for permissible stress design, materials and workmanship*

BS 6229 : 1982 *Code of practice for flat roofs with continuously supported coverings*

BS EN 301 : 1992 *Adhesive phenolic and aminoplastic for load-bearing timber structures : classification and performance requirements*

BS EN 350 *Durability of wood and wood-based products. Natural durability of solid wood*

BS EN 350-2 : 1994 *Guide to natural durability and treatability of selected wood species of importance in Europe*

CP 102 : 1973 *Code of practice for protection of buildings against water from the ground*

BRE Digest 312 : 1986 *Flat roof design, the technical options*

BRE Digest 324 : 1987 *Flat roof design, thermal insulation*

BRE Digest 364 : 1981 *Design of timber floors to prevent decay*

Conditions of Certification

17 Conditions

17.1 This Certificate:

- (a) relates only to the product that is described, installed, used and maintained as set out in this Certificate;
- (b) is granted only to the company, firm or person identified on the front cover — no other company, firm or person may hold or claim any entitlement to this Certificate;
- (c) is copyright of the BBA.

17.2 References in this Certificate to any Act of Parliament, Regulation made thereunder, Directive or Regulation of the European Union, Statutory Instrument, Code of Practice, British Standard, manufacturers' instructions or similar publication, shall be construed as references to such publication in the form in which it was current at the date of this Certificate.

17.3 This Certificate will remain valid for an unlimited period provided that the product and the manufacture and/or fabricating process(es) thereof:

- (a) are maintained at or above the levels which have been assessed and found to be satisfactory by the BBA;
- (b) remain covered by a valid Swedish Agrément; and
- (c) are reviewed by the BBA as and when it considers appropriate.

17.4 In granting this Certificate, the BBA makes no representation as to:

- (a) the presence or absence of any patent or similar rights subsisting in the product or any other product;
- (b) the right of the Certificate holder to market, supply, install or maintain the product; and
- (c) the nature of individual installations of the product, including methods and workmanship.

17.5 Any recommendations relating to the use or installation of this product which are contained or referred to in this Certificate are the minimum standards required to be met when the product is used. They do not purport in any way to restate the requirements of the Health & Safety at Work etc Act 1974, or of any other statutory, common law or other duty which may exist at the date of this Certificate or in the future; nor is conformity with such recommendations to be taken as satisfying the requirements of the 1974 Act or of any present or future statutory, common law or other duty of care. In granting this Certificate, the BBA does not accept responsibility to any person or body for any loss or damage, including personal injury, arising as a direct or indirect result of the installation and use of this product.



In the opinion of the British Board of Agrément, Masonite Beams and Studs are fit for their intended use provided they are installed, used and maintained as set out in this Certificate. Certificate No 98/3514/C is accordingly awarded to Masonite Beams AB.

On behalf of the British Board of Agrément

A handwritten signature in black ink, appearing to read 'P. Q. Newton', is written over a light grey background.

Date of issue: 10th September 1998

Director