



Ancillary materials, equipment & fittings
For all types of tunnelling

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JACKING PIPE PACKERS

Jacking Pipe Packers are made from MDF (medium density fibreboard), which is an engineered wood product formed by breaking down hardwood residuals into wood fibres, combining it with a wax and resin binder, and forming panels by applying high temperature and pressure.

MDF has been found to be the best sheet material for use as a compression packer on the ends of jacking pipes due to its resistance to compressive load, and its thickness recovery if the load is removed.

The packers are normally manufactured in segments, with the number per joint ring dependant on the size of pipe – 3 No per ring on a 450mm dia. to 6 No per ring for a 2100mm dia. pipe.

The inside diameter of the packer ring is normally larger than the inside diameter of the pipe, and the outside diameter is normally smaller than the outside diameter of the spigot joint. This is to concentrate the jacking load through the centre of the pipe wall thickness (the strongest part of the pipe), and to reduce the possibility of spalling the internal and external edges of the concrete.

The packer ring is normally fixed onto the socket end of the pipe using contact adhesive.

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Issue 11/92A

Leaflet CB3

Caberwood - Medium Density Fibreboard

The exciting alternative to wood.

Caberwood is a precision made resin bonded wood fiberboard which is completely homogeneous with a uniform density across the thickness of the board.

Caberwood possesses a superb smooth finish with the surface density enriched to facilitate a wide variety of finishes from painting and lacquering to the application of veneers, foils and laminates.

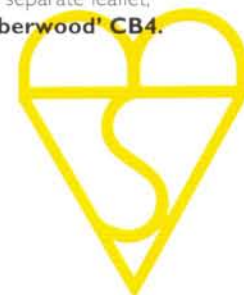
Caberwood is produced from Scottish softwood, mainly debarked spruce, at our plant near Stirling. This plant, the first production unit for medium density fibreboard in the United Kingdom, incorporates the very latest in machinery design, board development and resin technology.

The Best of British ...

Caberwood is engineered within the independent control and assessment of the Government sponsored BS 5750 Part 2, 1987/ISO 9002 - 1987/EN29002 - 1987. Quality Assurance Scheme. It complies with BS 1142, 1989 and has earned the British Standards Institute 'Kitemark'.

Caberwood is produced in the many standard sizes shown overleaf with special sizes available on request.

For further information on processing possibilities see the separate leaflet, 'How to Use Caberwood' CB4.



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A member of the Glunz Group



Machinability

Caberwood's homogeneous nature makes machinability its premium property. It can easily be sawn and routed, and intricate machining and moulding can be carried out without experiencing the difficulty of core voids, encountered in other sheet materials.

Caberwood can be used in the joinery and building industries for architraves, cornices, pelmets, skirting boards and similar high relief mouldings. Caberwood has wide application in the Furniture Industry where it can save production costs and enhance the value of the end product.

Profiling

With Caberwood, profiled edges require no edge banding or lipping. Sculptured or textured face effects can be machined or embossed and narrow or small door frames can be produced from a single piece of board. Its smooth surfaces are ideal for painting, grain printing or the application of paper foils and veneers. In many respects it may be treated as high quality timber, but without knots and grains.

Versatility

As a sheet material Caberwood is an ideal alternative to Blockboard or Plywood for most applications, without the problem of having to lip or cover exposed edges experienced with these generally more expensive materials. Caberwood cuts easily but is strong and more consistent than other board products.

Transport and Storage

Caberwood should be transported in uniform stacks on a flat base to avoid damage, and should be protected against the weather. Caberwood should be stored on a rigid flat base and should be adequately ventilated. Boards should be insulated from floors to avoid dampness. When wooden battens are used they should be of uniform thickness and placed in line. The distance between battens should be no greater than 70-100cms.

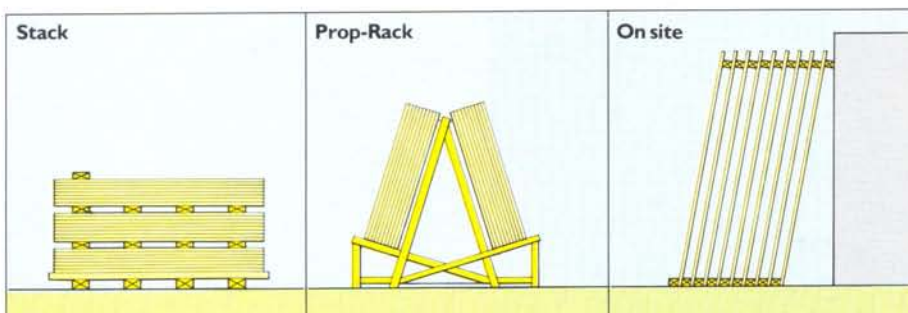
For availability and further information about sheet sizes and thickness, please contact your local distributor or the MDF Product Manager at Caberboard.

PRODUCT DATA					
	Units	Greater than 5mm to 8 mm	Greater than 8mm to 12 mm	Greater than 12mm to 22 mm	Greater than 22mm
Density	Kg/m ³	800	760	750	730
Internal Bond	Mpa	1.3	1.2	1.15	1.10
Modulus of Rupture	Mpa	60	55	45	40
Modulus of Elasticity	Mpa	5000	4500	4000	3500
Water Absorption (24 hour)	%	25	20	15	10
Thickness Swelling (24 hour)	%	10	8	5	3
Thickness Tolerance	mm	±0.2	±0.2	±0.2	±0.3
Dimensional Stability					
35%-85% - Length	%	0.30	0.25	0.2	0.2
- Thickness	%	5.0	4.5	4.0	4.0
Screw Holding - Edge	N	N/A	N/A	1500	1300
- Face	N	N/A	N/A	1600	1500
Moisture Content (ex Plant)	%	7.5	8	8	8
Surface Soundness	N	2400	2500	2700	2900
Total Extractable Formaldehyde	%	0.02	0.02	0.02	0.02
Low Emission E1 Grade available	%	<0.01	<0.01	<0.01	<0.01

Caberwood exceeds the minimum requirements in every respect when tested to BS 1142: 1989 and was the first MDF board to be quality certified by the British Standards Institute 'Kitemark'. 1 Mpa = 1 MN/m².

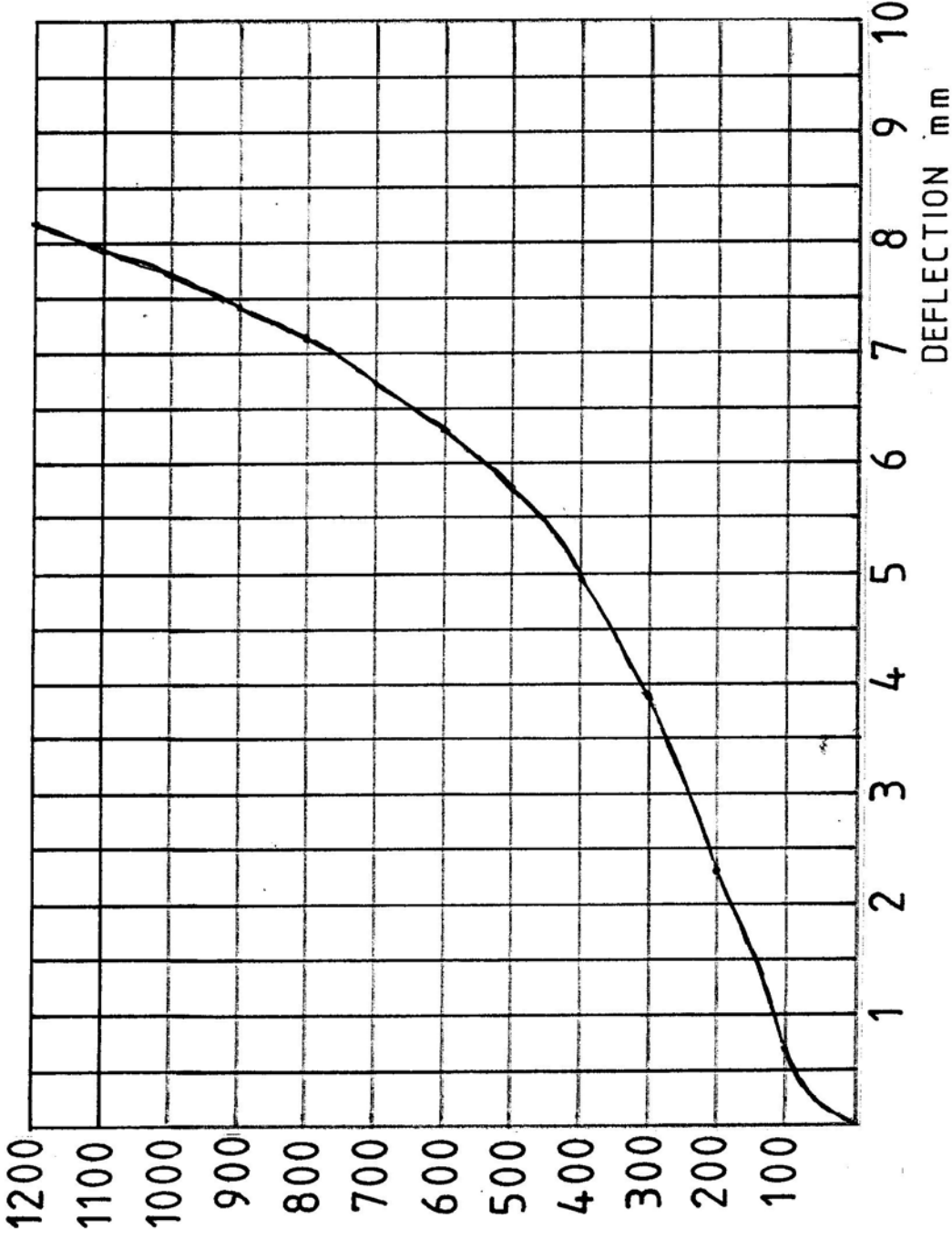
PANEL SIZE		THICKNESS AND BOARDS PER PACK														
Metric	Imp.	Board Thickness in Millimetres														
		6	8	9	12	15	16	18	19	22	25	28	30	32	36	38
2440 x 1220	8 x 4	90	80	72	55	44	40	36	34	30	26	23	22	21	19	18
2475 x 1220	9 x 4	72	72	64	48	38	36	32	30	26	23	20	19	—	—	—
3050 x 1220	10 x 4	72	64	56	44	34	32	28	27	23	20	18	18	12	14	14
2440 x 1525	8 x 5	64	64	56	44	34	32	28	27	23	21	18	18	—	—	—
2440 x 1830	8 x 6	54	54	48	36	28	26	24	24	20	18	16	14	15	—	12

Storage



LOAD VS DEFLECTION

LOAD kN ON 0.0225m² AREA OF MATERIAL



TEST CARRIED OUT
ON 150mm X 150mm
TEST PIECE

THICKNESS BEFORE
LOADING = 17.9mm

THICKNESS AFTER
LOAD REMOVED
= 13.65mm
(after leaving for 1 hour)

DATE		AMENDMENTS		MATERIAL		SCALE		DRAWING No	
A								DRAWN BY	LT 18 M
B								CHECKED	
C								DATE	12.03.09
D									

TUNNELLING ACCESSORIES

DESCRIPTION

COMPRESSIVE LOAD TEST ON 18mm MDF