

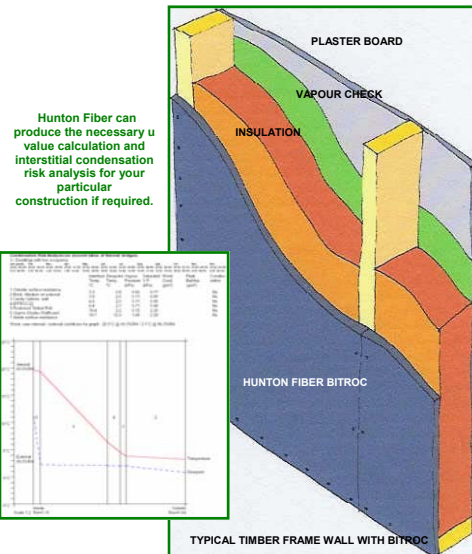
Thermal Conductivity and Vapour Resistivity

Bitroc has a thermal conductivity of 0.05 W/mk giving a resistance for the standard thicknesses of 12mm – 0.24m²/k/W, 15mm – 0.3m²/k/W and 22mm – 0.4m²/k/W. The table below illustrates typical timber frame constructions and the U-values achieved using Bitroc sheathing.

Bitroc is also very breathable up to ten times more permeable than most other sheathing materials. Bitroc allows any moisture that gets past the internal vapour barrier to breath out through the wall.

Separate breather membranes are not always required when Bitroc is used as a sheathing as acknowledged by NHBC, TRADA etc in their handbooks. However there are instances where for additional protection or as part of a composite framing a breather membrane or part breather membrane can be required at junctions of construction.

There are various methods of fixing the breather membrane depending on whether the membrane is factory or site applied to frames and also the method of factory manufacture of frames. Hunton Fiber will be pleased to advise on any particular installation.



BITROC	TIMBER STUD	INSULATION	U VALUE
22	90 x 38	Rockwool [0.037]	0.33W/m ² K
22	90 x 38	Glass fibre [0.04]	0.34W/m ² K
22	115 x 38	Rockwool [0.037]	0.27W/m ² K
22	115 x 38	Glass fibre [0.04]	0.28W/m ² K
22	140x 38	Rockwool [0.037]	0.24W/m ² K
22	140x 38	Glass fibre [0.04]	0.25W/m ² K

U VALUES SHOWN RELATE TO BRICK CLAD TIMBER FRAME WALLS BRIDGED WITH DOUBLE SOLE PLATES AND DOUBLE HEAD PLATES AND STUDS AT 600 C/C. FOR COPIES OF THE FULL U VALUE CALCULATION OR OF CONSTRUCTIONS USING ALTERNATE CLADDINGS AND INSULANTS PLEASE CONTACT HUNTON FIBER [UK].

OTHER HUNTON FIBER PRODUCTS

- HUNTON FIBER SILENCIO ACOUSTIC FLOORING BOARD
- HUNTON FIBER SILENCIO THERMO BOARD
- HUNTON FIBER SARKET ROOFING BOARD



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HUNTON BITROC

TS/OOI
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BITROC SHEATHING BOARD



THE MATERIAL

Description, Composition and Manufacture

Hunton Fiber AS in Norway produce various thickness of sheathing boards for the UK timber and steel frame market all of which are wet process woodfibre softboards manufactured from lignocellulosic fibres, which are pressed into form.

The boards are made using Scandinavian recycled chipped softwood together with waste newsprint. These are thermally softened in water and mechanically refined into fibres. Natural bitumen in emulsified form is added and the result is formed into a mat, which is rolled and pressed into the desired thickness before drying. The primary bond is derived from the felting of the fibres and the inherent natural adhesive properties of the timbers lignin.

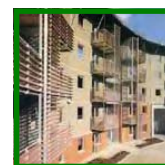
The bitumen emulsion forms a minimum of 20% of the dry weight of the board and part of the emulsion is mixed with a wood pulp or recycled paper and curtain coat applied to one face of the board before pressing and drying. This surface coating forms a skin, which is an integral part of the board and gives enhanced weather protection and durability to the sheathings. This skin can be considered to be a built in breather paper as acknowledged by NHBC and TRADA in their handbooks.

The boards comply with all relative BS and EN requirements [sarking and sheathing grade] and the Norwegian Building Research Institute independently monitors the manufacturing processes both for the European market and on behalf of the BBA for the UK market.

Bitumen impregnated fibreboards will not normally be attacked by wood boring insects or vermin common to the UK nor are they susceptible to mould growth under normal conditions.



- THERMALLY EFFICIENT SHEATHING
- BREATHABLE AND WEATHER RESISTANT
- GOOD RACKING PERFORMANCE
- EASILY HANDLED AND INSTALLED



INSTALLATION

Sheathing Fixing

Hunton Fiber Bitroc as bitumen impregnated fibreboard is included in the list of materials suitable for timber frame sheathing as described in BS 5268. Bitroc is suitable for providing a racking sheathing to timber frame wall panels with stud framing not less than 38mm wide with centres not exceeding 600mm.

Joints between sheathing boards should be butted at the studs and all edges must be supported and fixed to the framing with an 18mm minimum bearing.

Where the board is to be used to provide a racking resistance to timber frames it should be nailed. Nails should be either galvanised, sheradized, stainless steel or similar durable material. They can be wire, clout, annular ring shank, twist nails or proprietary gun driven nails with a minimum diameter of 3.0mm [or nearest equivalent for gun nails] and a minimum length of 50mm.

Where the boards are not required to provide a racking resistance staples can be used. These should be of equivalent length to two and a half times the board thickness should be not less than 15 gauge and have a crown width of at least 11mm. Staples should be of austenitic stainless steel or other material of equal strength and corrosive resistance.

When fixing the board it is recommended that the boards be fixed in a consistent pattern working outwards from the centre of the board. The type, size and spacing of the fixings should be specified by the panel designer however it is recommended that the perimeter spacing is not less than 75mm for 15mm board or 50mm for 22mm board. Spacing of nails on intermediate studs is generally not less than 150mm centres. The minimum recommended edge-nailing distance is 8mm.

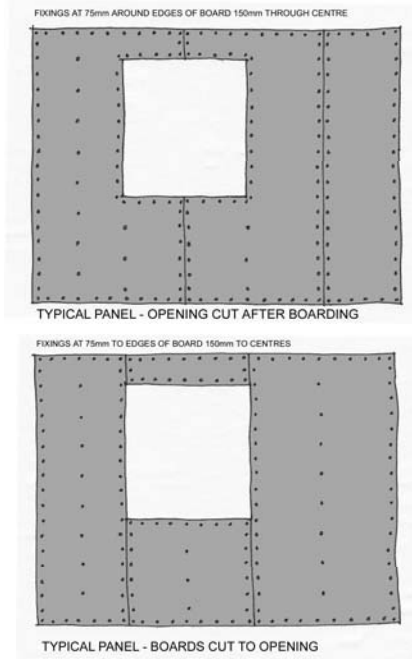
Hunton Fiber boards can also be used as a sheathing to lightweight cold rolled steel framing providing racking and insulation. The boards can be fixed using proprietary dry wall screws or self-drilling tek screws. The centres of the screws should be as determined by the structural engineer designing the steelwork framing. If there is no specific requirement by the engineer than the boards should be screwed to the frames at 150mm centres on the perimeter of the board and 300mm centres through the centre.

Hunton Fiber Bitroc has good weather resistance and can resist exposure to the elements without deterioration during exposure or if cladding is delayed and as such a breather membrane is not normally required. However to improve wind tightness panel joints can be taped or sealed with a gasket

Racking

Wall racking tests have been carried out by The University of Surrey and the BRE in accordance with BS EN 594 and the results analysed in accordance with BS 5268 on the three boards recommended by Hunton Fiber as sheathing materials and the principal results from the tests were:

BOARD	RACKING AT 50mm c/c	RACKING AT 75mm c/c	RACKING AT 100 mm c/c
12MM BITROC	na	1.33 kN/m	na
15MM BITROC	na	1.58 kN/m	na
22MM BITROC	2.63 kN/m	na	1.68 kN/m



PHYSICAL PROPERTIES

Climate

Like other wood-based products and sheathings, fibreboards are hygroscopic and their dimensions change in response to humidity variances.

In order to counteract warping of the boards when exposed to moisture during installation the boards are factory preconditioned to a moisture content of 6%. It may however be necessary in some cases to further condition the boards to bring them into equilibrium with the environment in which they are to be installed.

Typically the effect of a change of humidity from 35% to 85% at 20°C will result in a length and width increase of 0.3% and a thickness increase of 5% all of which are well within the maximum allowances of the sarking and sheathing grade requirements of the relevant BS and EN standards.

Repair

All wall panels should be stored upright to avoid them being walked on and damaged on the ground. If damage does occur the boards can be easily repaired. Bitroc is easy to cut using normal hand tools such as a saw or a knife therefore the damaged or affected section should be neatly cut out and a new piece fitted.

All edges of the board must be adequately supported on studs or rails and if necessary additional noggins should be introduced. These are best fixed before the damaged section is cut out. To maintain the racking strength of the board the edges of the board should be nailed at centres to match the structural engineers requirements of the original whole panel.

Storage and Handling

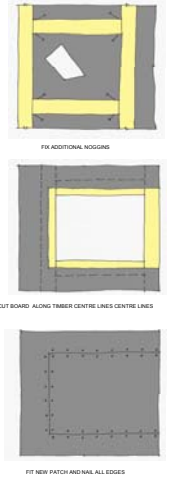
The boards are delivered on pallets maximum 1.3m high and weighing up to 0.95 tonnes. The boards are delivered banded with a protective wrapping to the pack to maintain the moisture equilibrium during transit and should be stored in a dry area on a level base clear of the ground on bearers not exceeding 600mm to prevent distortion of the boards. The banding should be cut and the edges and corners of the packs protected during storage.

Fire

When tested in accordance with BS 476 will achieve a Class 4 surface spread of flame rating. In common with other combustible linings in the cavity that do not have a Class 0 or Class 1 designation it is necessary to introduce cavity barriers to limit the areas of combustibility and flame spread. These cavity barriers should be fitted in accordance with the manufacturers standard specification at positions determined by the Approved Document to the building Regulations Part B.

Thickness and Size

The boards are available as a standard size of 2400mm x 1200mm although alternate lengths up to 3600mm can be made available by agreement depending on the quantity required. The standard thicknesses are 12mm, 15mm and 22mm. All the boards have a nominal density of 280 kg/m³ and are marked with the Hunton name and designation on the external face.



PHYSICAL PROPERTIES

Thickness variation	±1mm
Length/width variation	±3 / ±2
Standard size	2.4 x 1.2m
Density Kg/m ³	280 [+20-10]
Vapour transmission resistivity MNs/gm	51
Thermal conductivity Wm/K	0.05
Airtightness, material m ³ /m ² hPa	0.012