



**CONSTRUCTION GUIDE**

# NATIVO WOOD FIBER INSULATION BLOWN-IN



# Hunton Wall™

– Recommended solution for timber frame walls

Our standard external wall solution with Hunton Nativo Blown-in wood fibre insulation, used for residential buildings, cabins and commercial properties.

## WALL TYPE: Timber frame wall 198 + 48 mm



### WALL CONSTRUCTION

- 1 HUNTON WINDPROOF 19 mm
- 2 TIMBER FRAME WALL 48 x 198 mm
- 3 NATIVO WOOD FIBER INSULATION Blown-in
- 4 HUNTON VAPOUR BARRIER Intello Plus / SD 10
- 5 BATTEN 48 x 48 mm
- 6 INTERIOR CLADDING

### ABOUT THE CONSTRUCTION

Blown-in insulation for external wall construction.

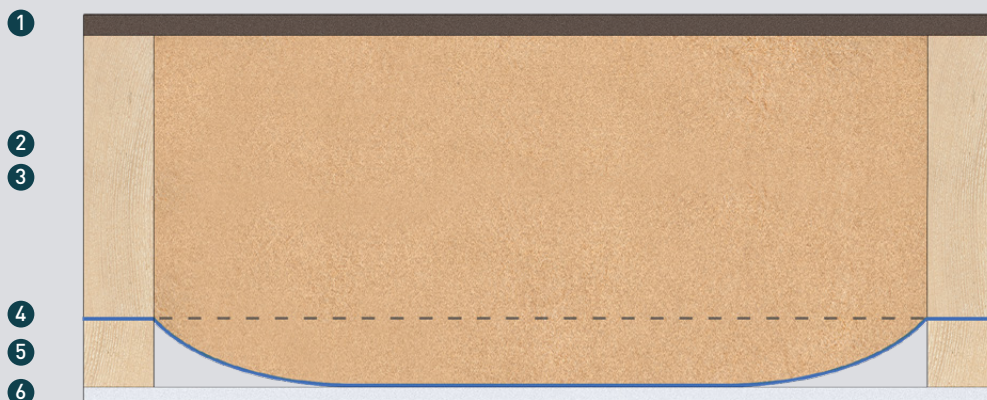
Effective and economical.

Meets technical requirements (No).

U-value for construction described is 0.178 W/(m<sup>2</sup>K).

See comprehensive U-value table for other wall thicknesses on page 7.

See also SINTEF TG 20441 for further technical details.



# Hunton Wall™

– Alternative solution for stud walls with external plasterboard

For external walls with external gypsum board, a different structure is required than for our standard solution with Hunton Windproof 19 mm.

## WALL TYPE: Stud wall 198 + 30 + 48 mm

### WALL CONSTRUCTION

- 1 EXTERNAL GYPSUM BOARD
- 2 TIMBER FRAME WALL 48 x 198 mm
- 3 NATIVO WOOD FIBER INSULATION Blown-in
- 4 MEMBRANE (Ventilating)
- 5 BATTEN 30 x 48 mm
- 6 HUNTON VAPOUR BARRIER Intello Plus / SD 10
- 7 BATTEN 48 x 48 mm
- 8 NATIVO WOOD FIBER INSULATION 50 mm board
- 9 INTERIOR CLADDING

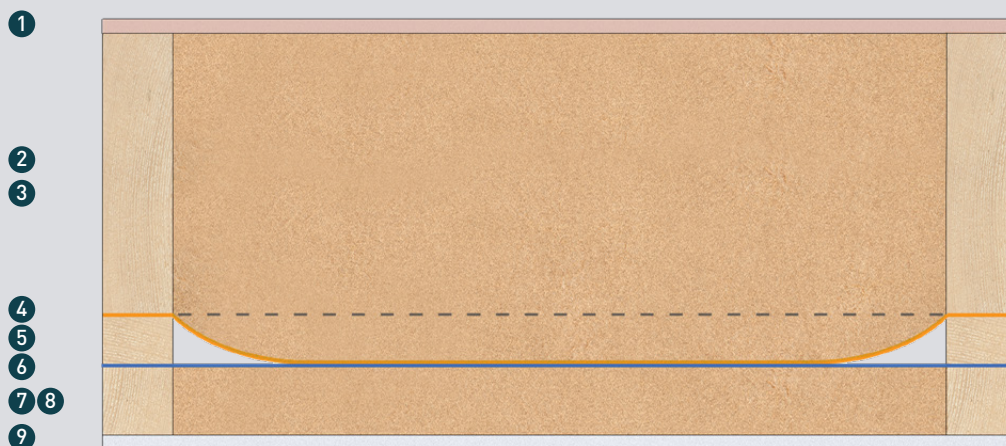
### ABOUT THE CONSTRUCTION

Blown-in insulation of supporting external wall construction.

The solution requires a ventilating membrane to prevent the external plasterboard from cracking from the airpressure that occurs during installation of blown-in.

Ventilating membrane is not necessary for the standard external wall using Hunton Windproof.

U-value for construction described is 0.165 W/(m<sup>2</sup>K).



# Recommended solution for CLT

Recommended solution for Blown-in insulation of cross laminated timber (CLT) constructions.  
Solution suitable for both walls and roofs, used for residential buildings, cabins and commercial properties.

## WALL TYPE: CLT + I-BEAM

### WALL CONSTRUCTION

- 1 HUNTON WINDPROOF 19 mm
- 2 HUNTON I-BEAM 200 – 500 mm
- 3 NATIVO WOOD FIBER INSULATION Blown-in
- 4 CLT

### ABOUT THE CONSTRUCTION

The Hunton I-Beam is a fast and easy cavity solution to mount on CLT constructions.

Sealing the cavity with Hunton Windproof before installing blowing insulation, prevents moisture in the construction.

This saves time and costs during the construction period.



# Density tables for Blown-in

Tests of density must always be carried out during and after installation on the construction site in order to ensure the correct quality. The correct settings of the blowing machine and other equipment must be followed to ensure the correct density and quality.

For Blown-in insulation of elements that are to be transported prior to mounting, the density should be increased by at least 10%.

LOFT/ FLAT OPEN CEILING				
Insulation height mm after settling	Density after settlement*	Consumption kg / m <sup>2</sup>	Consumption m <sup>2</sup> / pack	Excess height on installation [mm]
100	30–32 kg pr. m <sup>3</sup>	3.10	4.84	20
150		4.65	3.23	30
200		6.20	2.42	40
250		7.75	1.94	50
300		9.30	1.61	60
350		10.85	1.38	70
400		12.40	1.21	80
450		13.95	1.08	90
500		15.50	0.97	100
550		17.05	0.88	110
600		18.60	0.81	120

\* Density before settlement is 26 – 28 kg/m<sup>3</sup>, increasing to 30 - 32 kg/m<sup>3</sup> after settlement.  
Stated consumption includes excess height on installation (settlement).

WALLS			
Wall thickness mm	Density kg / m <sup>3</sup>	Consumption kg / m <sup>2</sup>	Consumption m <sup>2</sup> / pack
100	40	4.00	3.75
150	41	6.15	2.44
200	42	8.40	1.79
250	43	10.75	1.40
300	44	13.20	1.14
350	45	15.75	0.95
400	46	18.40	0.82

For walls of over 3 metres height, noggings of at least 50% of the wall's thickness should be used.  
The noggings should be mounted half-way up the wall. This provides increased stability and prevents settlement.

## PITCHED ROOF

Thickness mm	Density kg / m <sup>3</sup>	Consumption kg / m <sup>2</sup>	Consumption m <sup>2</sup> / pack
200	38	7.60	1.97
250	38	9.50	1.58
300	38	11.40	1.32
350	40	14.00	1.07
400	40	16.00	0.94
450	40	18.00	0.83
500	42	21.00	0.71
550	42	23.10	0.65
600	42	25.20	0.60

The density table for pitched roof is valid for structures between 10° and 45°.

With an roof angle over 45°, the density table for walls should be used.

With an roof angle under 10°, the density table for floor construction should be used.

## FLOOR CONSTRUCTION

Thickness mm	Density kg / m <sup>3</sup>	Consumption kg / m <sup>2</sup>	Consumption m <sup>2</sup> / pack
100	36	3.60	4.17
150	36	5.40	2.78
200	36	7.20	2.08
250	38	9.50	1.58
300	38	11.40	1.32
350	38	13.30	1.13
400	38	15.20	0.99
450	38	17.10	0.88
500	40	20.00	0.75
550	40	22.00	0.68
600	40	24.00	0.63

When blowing an open floor construction, the stated density will not be achieved, as this corresponds to blowing a loft. Open blowing of the floor must be compressed manually around the edges, in accordance with the given densities.

# U-value tables for Blown-in

EXTERIOR WALL – BLOWN-IN WITH TIMBER							
Construction studs	Dimensions	Timberwork % construction	Batten dimensions	Timberwork % batten	Wind-proofing	Interior board	U-value W/[m <sup>2</sup> K]
Timber	98x36	9 %	48x48	12 %	19 mm	12.5 mm plaster	0.278
Timber	98x36	9 %	48x48	12 %	25 mm	12.5 mm plaster	0.269
Timber	98x48	12 %	48x48	12 %	19 mm	12.5 mm plaster	0.286
Timber	98x48	12 %	48x48	12 %	25 mm	12.5 mm plaster	0.276
Timber	148x36	9 %	48x48	12 %	19 mm	12.5 mm plaster	0.212
Timber	148x36	9 %	48x48	12 %	25 mm	12.5 mm plaster	0.206
Timber	148x48	12 %	48x48	12 %	19 mm	12.5 mm plaster	0.219
Timber	148x48	12 %	48x48	12 %	25 mm	12.5 mm plaster	0.213
Timber	198x36	9 %	48x48	12 %	19 mm	12.5 mm plaster	0.171
Timber	198x36	9 %	48x48	12 %	25 mm	12.5 mm plaster	0.168
Timber	198x48	12 %	48x48	12 %	19 mm	12.5 mm plaster	0.178
Timber	198x48	12 %	48x48	12 %	25 mm	12.5 mm plaster	0.174

EXTERIOR WALL – BLOWN-IN WITH I-BEAMS							
Construction studs	Dimensions	Timber % construction	Batten dimensions	Timberwork % batten	Wind-proofing	Interior board	U-value W/[m <sup>2</sup> K]
I-Beams	200x45	7 %	48x48	12 %	19 mm	12.5 mm plaster	0.167
I-Beams	200x45	7 %	48x48	12 %	25 mm	12.5 mm plaster	0.164
I-Beams	250x45	7 %	48x48	12 %	19 mm	12.5 mm plaster	0.140
I-Beams	250x45	7 %	48x48	12 %	25 mm	12.5 mm plaster	0.138
I-Beams	300x45	7 %	48x48	12 %	19 mm	12.5 mm plaster	0.121
I-Beams	300x45	7 %	48x48	12 %	25 mm	12.5 mm plaster	0.119
I-Beams	350x45	7 %	48x48	12 %	19 mm	12.5 mm plaster	0.106
I-Beams	350x45	7 %	48x48	12 %	25 mm	12.5 mm plaster	0.104
I-Beams	400x45	7 %	48x48	12 %	19 mm	12.5 mm plaster	0.094
I-Beams	400x45	7 %	48x48	12 %	25 mm	12.5 mm plaster	0.093
I-Beams	450x45	7 %	48x48	12 %	19 mm	12.5 mm plaster	0.085
I-Beams	450x45	7 %	48x48	12 %	25 mm	12.5 mm plaster	0.084

#### Declared thermal conductivity $\lambda D$ (lambda) used as basis for calculations of U-values

Timberwork	0.120 W/mk
Nativo	0.038 W/mk
Wind-proof	0.050 W/mk
Gypsum board	0.210 W/mk

#### Heat transfer resistance used as basis for calculations of U-values

Internal (Rsi)	0.13 m <sup>2</sup> K/W (horizontal heat flow direction)
External (Rse)	0.04 m <sup>2</sup> K/W

#### Other assumptions for calculating U-values

All timber percentages are based on walls with a height of 2.4 m, studs with a c/c of 0.6 m and simple bottom and top sills (a total of 2.45 m studs per m<sup>2</sup>). Window frames, columns and similar items which can increase the timber percentage are not taken into account.

Battens are calculated as transverse with c/c 0.6 cm, and 60% of the cavity in the batten is calculated as insulated in the event of blown-in.

## EXTERIOR ROOF - BLOWN-IN WITH TIMBER

Construction rafters	Dimensions	Timber % construction	Battens dimensions	Timberwork % batten	Hunton Sarket	Interior board	U-value W/[m <sup>2</sup> K]
Timber	198x36	7.5 %	48x48	10 %	18 mm	12.5 mm plaster	0.169
Timber	198x36	7.5 %	48x48	10 %	25 mm	12.5 mm plaster	0.165
Timber	198x48	10 %	48x48	10 %	18 mm	12.5 mm plaster	0.174
Timber	198x48	10 %	48x48	10 %	25 mm	12.5 mm plaster	0.170

## EXTERIOR ROOF - BLOWN-IN WITH I-BEAMS

Construction rafters	Dimensions	Timber % construction	Battens dimensions	Timberwork % batten	Hunton Sarket	Interior board	U-value W/[m <sup>2</sup> K]
I-Beams	200x45	4 %	48x48	10 %	18 mm	12.5 mm plaster	0.161
I-Beams	200x45	4 %	48x48	10 %	25 mm	12.5 mm plaster	0.157
I-Beams	250x45	4 %	48x48	10 %	18 mm	12.5 mm plaster	0.135
I-Beams	250x45	4 %	48x48	10 %	25 mm	12.5 mm plaster	0.132
I-Beams	300x45	4 %	48x48	10 %	18 mm	12.5 mm plaster	0.116
I-Beams	300x45	4 %	48x48	10 %	25 mm	12.5 mm plaster	0.114
I-Beams	350x45	4 %	48x48	10 %	18 mm	12.5 mm plaster	0.101
I-Beams	350x45	4 %	48x48	10 %	25 mm	12.5 mm plaster	0.100
I-Beams	400x45	4 %	48x48	10 %	18 mm	12.5 mm plaster	0.900
I-Beams	400x45	4 %	48x48	10 %	25 mm	12.5 mm plaster	0.089
I-Beams	450x45	4 %	48x48	10 %	18 mm	12.5 mm plaster	0.081
I-Beams	450x45	4 %	48x48	10 %	25 mm	12.5 mm plaster	0.080
I-Beams	500x45	4 %	48x48	10 %	19 mm	12.5 mm plaster	0.074
I-Beams	500x45	4 %	48x48	10 %	25 mm	12.5 mm plaster	0.073

### Declared thermal conductivity $\lambda D$ (lambda) used as basis for calculations of U-values

Timberwork	0.120 W/mk
Nativo	0.038 W/mk
Sub-roof	0.050 W/mk
Gypsum board	0.210 W/mk

### Heat transfer resistance used as basis for calculations of U-values

Internal (Rsi)	0.13 m <sup>2</sup> K/W (heat flow direction up to 30° roof angle)
External (Rse)	0.04 m <sup>2</sup> K/W

### Other assumptions for calculating U-values

The cavity in the construction is considered to be fully insulated. All timber percentages are based on afters with c/c 0.6 m. Battens is calculated as transverse with c/c 0.6 cm, and 60% of the cavity in the batten is calculated as insulated in the event of blown-in.



## SUSPENDED GROUND FLOOR TIMBER JOISTS- BLOWN-IN

Construction rafters	Dimensions	Timber % construction	Wind barrier	Internal floor	U-value W/(m <sup>2</sup> K)
Timber	198x36	7.5 %	18 mm	22 mm	0.187
Timber	198x36	7.5 %	25 mm	22 mm	0.182
Timber	198x48	10 %	18 mm	22 mm	0.194
Timber	198x48	10 %	25 mm	22 mm	0.188

## SUSPENDED GROUND FLOOR I-BEAMS – BLOWN-IN

Construction rafters	Dimensions	Timber % construction	Wind barrier	Internal floor	U-value W/(m <sup>2</sup> K)
I-Beams	200x45	4 %	18 mm	22 mm	0.177
I-Beams	200x45	4 %	25 mm	22 mm	0.173
I-Beams	250x45	4 %	18 mm	22 mm	0.146
I-Beams	250x45	4 %	25 mm	22 mm	0.143
I-Beams	300x45	4 %	18 mm	22 mm	0.124
I-Beams	300x45	4 %	25 mm	22 mm	0.122
I-Beams	350x45	4 %	18 mm	22 mm	0.108
I-Beams	350x45	4 %	25 mm	22 mm	0.106
I-Beams	400x45	4 %	18 mm	22 mm	0.095
I-Beams	400x45	4 %	25 mm	22 mm	0.094
I-Beams	450x45	4 %	18 mm	22 mm	0.085
I-Beams	450x45	4 %	25 mm	22 mm	0.084
I-Beams	500x45	4 %	19 mm	22 mm	0.077
I-Beams	500x45	4 %	25 mm	22 mm	0.077

### Declared thermal conductivity $\lambda D$ (lambda) used as basis for calculations of U-values

Timberwork	0.120 W/mk
Nativo	0.038 W/mk
Sub-roof	0.050 W/mk
Gypsum board	0.210 W/mk

### Heat transfer resistance used as basis for calculations of U-values

Internal (Rsi)	0.17 m <sup>2</sup> K/W (heat flow direction up to 30° roof angle)
External (Rse)	0.04 m <sup>2</sup> K/W

### Other assumptions for calculating U-values

The cavity in the construction is considered to be fully insulated.

The wind barrier is assumed to be mounted beneath the joists (not between). Hunton Sarket boards may be used.

All timberwork percentages are based on joists with c/c 0.6 m + nogging with c/c 0.6 m in gables.

## LOFT – TIMBERWORK BLOWN-IN WITH 36 MM BOTTOM CHORD

Bottom chord dimensions	Insulation thickness	Timber % construction	U-value W/(m <sup>2</sup> K)
36x148	150	6 %	0.273
36x148	200	6 %	0.199
36x148	250	6 %	0.157
36x148	300	6 %	0.130
36x148	350	6 %	0.111
36x148	400	6 %	0.097
36x148	450	6 %	0.086
36x148	500	6 %	0.077
36x198	200	6 %	0.207
36x198	250	6 %	0.161
36x198	300	6 %	0.132
36x198	350	6 %	0.113
36x198	400	6 %	0.098
36x198	450	6 %	0.087
36x198	500	6 %	0.078
36x223	200	6 %	0.208
36x223	250	6 %	0.164
36x223	300	6 %	0.134
36x223	350	6 %	0.113
36x223	400	6 %	0.990
36x223	450	6 %	0,087
36x223	500	6 %	0,078

## LOFT – TIMBERWORK BLOWN-IN WITH 48 MM BOTTOM CHORD

Bottom chord dimensions	Insulation thickness	Timber % construction	U-value W/(m <sup>2</sup> K)
48x148	150	8 %	0.283
48x148	200	8 %	0.203
48x148	250	8 %	0.160
48x148	300	8 %	0.132
48x148	350	8 %	0.112
48x148	400	8 %	0.098
48x148	450	8 %	0.086
48x148	500	8 %	0.078
48x198	200	8 %	0.215
48x198	250	8 %	0.165
48x198	300	8 %	0.135
48x198	350	8 %	0.114
48x198	400	8 %	0.099
48x198	450	8 %	0.880
48x198	500	8 %	0.079
48x223	200	8 %	0.215
48x223	250	8 %	0.169
48x223	300	8 %	0.137
48x223	350	8 %	0.116
48x223	400	8 %	0.100
48x223	450	8 %	0.088
48x223	500	8 %	0.079

### Declared thermal conductivity $\lambda D$ (lambda) used as basis for calculations of U-values

Timberwork	0.120 W/mk
Nativo	0.038 W/mk

### Heat transfer resistance used as basis for calculations of U-values

Internal (Rsi)	0.10 m <sup>2</sup> K/W
External (Rse)	0.04 m <sup>2</sup> K/W

### Other assumptions for calculating U-values

Timber percentages are calculated for timber supporting construction at c/c 0.6 m.

The timber percentage is 6% when the bottom chord has a width of 36 mm and 8% when it is 48 mm. No account has been taken of the use of load-bearing beams made of glulam and the like, which can increase the timber percentage.

The insulation is installed with up to 20 % excess height to compensate for settling that may occur over time

## HUNTON NATIVO WOOD FIBER INSULATION BLOWN-IN

Essential properties	Performance/class	Standard
Fire class	Class E	EN 15101:2013
Airflow resistivity (for floors)	5kPa*s/m <sup>2</sup>	EN 15101:2013
Thermal resistance and conductivity (Lambda)	0.038 (W/m*K)	EN 15101:2013
Vapour resistance	1-2	NS-EN ISO 12086
Thermal capacity	2100 (J/kg*K)	

Format	Packs, of 15 kg
No. packs/kg per pallet:	21 / 315 kg
Pallet size:	ca. 0.8 x 1.2 x 2.55 m (l x b x h)

**Renewable raw material that stores carbon**

Nativo Wood Fiber Insulation is largely made of wood fiber: a natural, renewable raw material.

All chips come from 100% PEFC certified forestry, which means that the forest is managed in accordance with strict regulations. Wood fiber insulation contributes to a reduced carbon footprint as it stores carbon throughout the product's life cycle.

**Insulate without itching or discomfort**

Nativo® Wood Fiber Insulation does not irritate the skin or airways. Either during installation or subsequent use of the building.

**Hygroscopic properties**

Wood fiber insulation has hygroscopic properties, which means that it absorbs and releases moisture depending on the relative humidity of the air.

**Dimensionally stable**

Nativo Wood Fiber Insulation is dimensionally stable whether you use boards or blown-in insulation. The wood fiber's natural ability to reduce air movement in the insulation provides good sealing around windows and studs. Blown-in insulation also fills cavities and holes in constructions extremely well.

**Sound absorbent**

Wood fiber insulation has soft fibers and also consists of more mass (kg) pr. m<sup>3</sup>. Therefore Nativo Wood Fiber insulation has excellent sound absorbent properties.

**Added fire retardant**

Nativo Wood Fiber Insulation is impregnated with a fire retardant and satisfies Euroclass E. It can be used in fire class 1 and in buildings up to three storeys.