



# Steel Frame Solutions

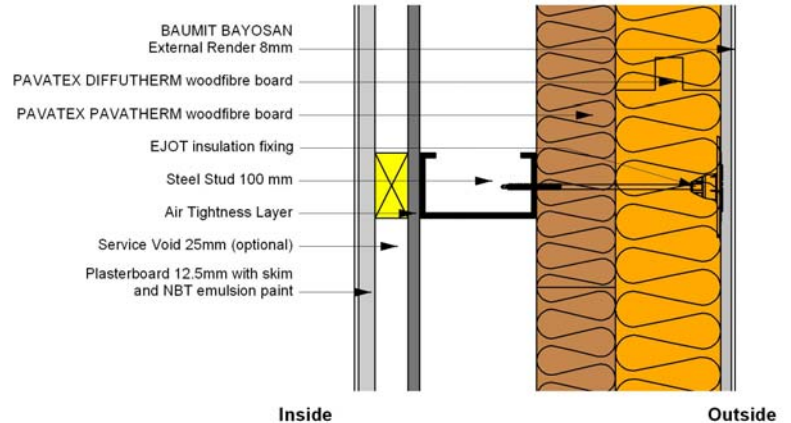
## DIFFUTHERM / System description:

NBT Steel Frame Diffutherm System is for light steel buildings externally finished with render.

Diffutherm systems use NBT Pavatex woodfibre boards over the outside of the frame in a continuous layer. The airtightness layer is on the inside of the frame and it is optional whether to install a service void on the inside of this layer for easy service alterations.

Externally a mineral based thin render system is applied directly to the woodfibre boards. Over 200 light fast colours are available in a variety of finishes, including high impact render coats.

### *NBT Steel Frame* DIFFUTHERM System



### *System Application:*

NBT Steel Frame Diffutherm System can be used with any conventional light steel frame design. The same limitations apply as to all light steel frame applications. The Diffutherm system has good fire rating and is suitable in many situations requiring fire resistance. Contact NBT for further details.



### *System Benefits:*

- Excellent thermal performance, with very low thermal bridging, enabling very slim construction for new Part L compliance
- Alternatively very high thermal shell performance possible in slim and cost effective way.
- Excellent airtightness by design
- Excellent acoustic insulation
- Good overheating control
- Fully breathing construction
- Full design and site support from NBT
- Full systems parts from NBT
- Tried and tested system, fully certified

### *Environmental Performance:*

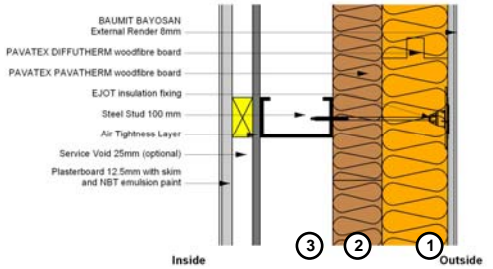
Woodfibre boards are non-toxic, contain over 95% waste wood from sustainable forests, and lock up 1.2 tonnes of CO<sub>2</sub> for every tonne of boards produced. They are BREEAM Green Guide, and WRAP assessed.



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## Technical details: Thermal values

Insulation Layer ①	100mm Diffutherm	60mm Diffutherm	60mm Diffutherm	60mm Diffutherm
Insulation Layer ②	-	60mm Pavatherm	80mm Pavatherm	100mm Pavatherm
U-Value* [W/m²K]	0.34	0.28	0.24	0.22
Decrement Factor	0.57	0.44	0.34	0.26
Decrement Delay [h]	7.1	8.6	10.1	11.6
Admittance [W/m²K]	1.53	1.53	1.53	1.52



Insulation Layer ①	80mm Diffutherm	100mm Diffutherm	60mm Diffutherm	100mm Diffutherm
Insulation Layer ②	100mm Pavatherm	100mm Pavatherm	100mm Pavatherm	100mm Pavatherm
Insulation Layer ③	-	-	100mm Isonat	100mm Isonat
U-Value* [W/m²K]	0.20	0.18	0.16	0.14
Decrement Factor	0.19	0.14	0.14	0.08
Decrement Delay [h]	13.1	14.6	14.0	16.6
Admittance [W/m²K]	1.52	1.52	1.40	1.37

Calculation of  $\gamma$  values is available for specific build ups, enabling better thermal performance (New Part L) calculations and/or thinner structures. Please contact NBT for further information

\*based on JPA calculation with 0.3% cavity bridging (steel), warm frame solution. Isonat insulation has a k value of 0.039W/mK. Other vapour open insulations can be substituted. Contact NBT

### Full System Components:

- Insulation boards:** Interlocking, water-resistant Diffutherm boards (60, 80, 100mm), square edged Pavatherm backing boards, plinth and reveal boards.
- Fixings, tracks and tapes:** Insulated screw and staple fixings, along with starter tracks, and sealing tapes
- Render system:** A fully warranted thin coat mineral render system from NBT BaumitBayosan, with over 200 colours in many types of finish. Comes with full system of reinforcing meshes, beads, APU rails and window cills.
- Infill insulation:** NBT provide natural insulation materials such as Hemp Cotton, Sheepswool and Cellulose
- Plaster boards and paints:** NBT can provide clay boards, plasters and trade environmental paints for internal walls

### NBT Support:

- Design support:** Full design support including drawings review, assistance with detailing, and thermal bridging (New Part L) and interstitial moisture calculations
- Training:** either at NBT or on site for applicators, site managers etc
- Site Support:** NBT will assist on site, giving advice on technical, application and quality issues.
- Approved Applicators:** NBT have a list of trained and approved applicators for the various systems processes.



DIFFUTHERM – Park End Street, Oxford