THERMAL MODEL JUNCTIONS - ACTIS INSULATION

PSI-VALUES FOR CONSTRUCTION BUILD-UPS

The thermal model junctions quantify the thermal performance of each specific thermal bridge, including thermal transmittance values ψ (psi-values) and temperature factors. The set of thermal model junctions listed below can be applied in energy assessments (e.g. SAP calculations):

HYBRID RANGE

		SAP default		ACTIS thermal details					
Detail		**table R2, 2021**	**K1, 2021**	**HControl Hybrid + Hybris + Boost' R Hybrid (HY)**		**HControl Hybrid + Hybris (HH)**		**Hybris + Boost' R Hybrid (HB)**	
	Ref	**ψ (W/mK)**	**ψ (W/mK)**	**ψ (W/mK)**		**ψ (W/mK)**		**ψ (W/mK)**	
WALL				**U-value 0.14 W/m² K** **(ref:PF201)** 105mm Brick outer leaf 50mm vented airgap **Boost'R Hybrid** 9mm OSB **90mm Hybris** / 140mm Stud 32mm Low-e cavity / 140mm Stud **H-Control Hybrid** 20mm Low-e cavity / 38mm service batten 15mm Plasterboard		**U-value 0.16 W/m² K** **(ref:PF214)** 105mm Brick outer leaf 50mm vented airgap Reflective Breather Membrane 9mm OSB **105mm Hybris** / 140mm Stud 17mm Low-e cavity / 140mm Stud **H-Control Hybrid** 20mm Low-e cavity / 38mm service batten 15mm Plasterboard		**U-value 0.18 W/m² K** **(ref:PF214)** 105mm Brick outer leaf 50mm vented airgap Boost'R Hybrid 9mm OSB **125mm Hybris** / 140mm Stud 15mm Low-e cavity / 140mm Stud Vapour Control Layer 15mm Plasterboard	
WARM ROOF				**U-value 0.13 W/m² K** **(ref:PF272)** Concrete Tiles 25mm tile batten 25mm counter batten **Boost'R Hybrid Roof** 22.5mm Low-e cavity / 200mm Rafter @600 centers **125mm Hybris** / 200mm Rafter @600 centers 22.5mm Low-e cavity / 200mm Rafter @600 centers **H-Control Hybrid** 11mm Low-e cavity / 38mm service batten 15mm Plasterboard		**U-value 0.14 W/m² K** **(ref:TE4159)** Concrete Tiles 25mm tile batten Breather Membrane 15.5mm Low-e cavity / 200mm Rafter @600 centers **155mm Hybris** / 200mm Rafter @600 centers 15.5mm Low-e cavity / 200mm Rafter @600 centers **H-Control Hybrid** 11mm Low-e cavity / 38mm service batten 15mm Plasterboard		**U-value 0.15 W/m² K** **(ref:PF278)** Concrete Tiles 25mm tile batten 25mm counter batten Boost'R Hybrid Roof 17mm Low-e cavity / 225mm Rafter @600 centers **170mm Hybris** / 225mm Rafter @600 centers 17mm Low-e cavity / 225mm Rafter @600 centers Vapour Control Layer 15mm Plasterboard	
CEILING				**U-value 0.11 W/m²K** **(ref:TE5115)** 200mm Mineral wool – 0.044 Lambda above joists 100mm Mineral wool between joists **H-Control Hybrid** below 50mm Batten 15mm Plasterboard		**U-value 0.11 W/m²K** **(ref:TE5115)** 200mm Mineral wool – 0.044 Lambda above joists 100mm Mineral wool between joists **H-Control Hybrid** below 50mm Batten 15mm Plasterboard		**U-value 0.11 W/m²K** **(ref:TE5114)** 300mm Mineral wool – 0.044 Lambda above joists 100mm Mineral wool between joists VCL 15mm Plasterboard	
SUSPENDED GROUND FLOOR				**U-value 0.11 W/m²K** **(ref:TE4439)** Screed 150 PIR insulation Suspended concrete floor		**U-value 0.11 W/m²K** **(ref:TE4439)** Screed 150 PIR insulation Suspended concrete floor		**U-value 0.11 W/m²K** **(ref:TE4439)** Screed 150 PIR insulation Suspended concrete floor	
EXPOSED FLOOR				**U-value 0.11 W/m²K** **(ref:PF447)** Chipboard **50mm Hybris** between dynamic battens Vapour control layer 18mm OSB **170mm Hybris** between 250mm Joists **Boost'R Hybrid** below 38mm Batten Renderboard		**U-value 0.13 W/m²K** **(ref:TE5116)** Chipboard **50mm Hybris** between dynamic battens Vapour control layer 18mm OSB **185mm Hybris** between mm Joists Breather Membrane Renderboard		**U-value 0.11 W/m²K** **(ref:PF447)** Chipboard **50mm Hybris** between dynamic battens Vapour control layer 18mm OSB **170mm Hybris** between 250mm Joists **Boost'R Hybrid** below 38mm Batten Renderboard	
				Junction reference	**psi-value**	**Junction reference**	**psi-value**	**Junction reference**	**psi-value**
Window head, steel lintel	**E2**	0.05	1.000	1000_E2_HY	**0.074**	1000_E2_HH	**0.096**	1000_E2_HB	**0.072**
Window sill	**E3**	0.05	0.100	1000_E3_HY	**0.040**	1000_E3_HH	**0.053**	1000_E3_HB	**0.037**
Window jamb	**E4**	0.05	0.100	1000_E4_HY	**0.044**	1000_E4_HH	**0.078**	1000_E4_HB	**0.050**
Wall - Ground floor, joists parallel	**E5**	0.16	0.320	1000_E5_HY	**0.061**	1000_E5_HH	**0.054**	1000_E5_HB	**0.089**
Wall - Intermediate floor	**E6**	0	0.140	1000_E6_HY	**0.029**	1000_E6_HH	**0.043**	1000_E6_HB	**0.033**
Wall - Separating floor	**E7**	0.07	0.280	1000_E7_HY	**0.023**	1000_E7_HH	**0.031**	1000_E7_HB	**0.023**
Eaves - cold roof	**E10**	0.06	0.120	1000_E10_HY	**0.073**	1000_E10_HH	**0.054**	1000_E10_HB	**0.082**
Eaves - warm roof	**E11**	0.04	0.150	1000_E11_HY	**0.033**	1000_E11_HH	**0.040**	1000_E11_HB	**0.036**
Gable - cold roof	**E12**	0.06	0.250	1000_E12_HY	**0.040**	1000_E12_HH	**0.041**	1000_E12_HB	**0.054**
Gable - warm roof	**E13**	0.08	0.250	1000_E13_HY	**0.043**	1000_E13_HH	**0.045**	1000_E13_HB	**0.054**
Wall - external corner 90º	**E16**	0.09	0.180	1000_E16_HY	**0.041**	1000_E16_HH	**0.053**	1000_E16_HB	**0.054**
Wall - external corner 270º	**E17**	-0.09	0.000	1000_E17_HY	**- 0.030**	1000_E17_HH	**- 0.020**	1000_E17_HB	**- 0.030**
Party Wall - External Wall	**E18**	0.06	0.240	1000_E18_HY	**0.070**	1000_E18_HH	**0.066**	1000_E18_HB	**0.087**
Wall - Exposed Floor	**E20**	0.32	0.320	1000_E20_HY	**0.032**	1000_E20_HH	**0.030**	1000_E20_HB	**0.034**
Party Wall - cold roof	**P4**	0.12	0.480	1000_P4_HY	**0.073**	1000_P4_HH	**0.073**	-	-
Party Wall - warm roof	**P5**	0.08	0.480	1000_P5_HY	**0.066**	1000_P5_HH	**0.085**	1000_P5_HB	**0.082**

For further detailed information, including individual datasheets of thermal model junctions and drawings, please contact technical@insulation-actis.com
Construction details in CAD are available on request.

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