

ACTIS HYBRID SOLUTIONS AND SYSTEMS

FOR ROOF, WALL, CEILING & FLOOR APPLICATIONS






ACTIS

TOMORROW'S INSULATION TODAY

WALL SOLUTIONS

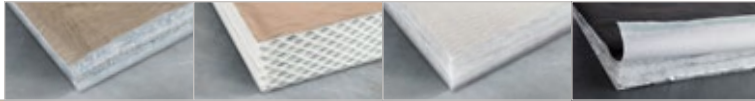
	Timber dimensions (mm)	Timber centres (mm)	Other insulation
TIMBER FRAME WALL			
External Timber Frame with Brick Cladding			
HCONTROL HYBRID + 125mm HYBRIS + BOOST [®] HYBRID	184 x 38	15% timber bridging (as standard)	
HCONTROL HYBRID + 100 FOAM BOARD ($\lambda = 0.022 \text{ W/m}^2\text{K}$) + BOOST [®] HYBRID	140 x 38		✓
HCONTROL HYBRID + 90mm HYBRIS + BOOST [®] HYBRID	140 x 38		
HCONTROL HYBRID + 105mm HYBRIS + REFLECTIVE BREATHER MEMBRANE	140 x 38		
HCONTROL HYBRID + 100mm FOAM BOARD ($\lambda = 0.022 \text{ W/m}^2\text{K}$)	140 x 38		✓
120mm FOAM BOARD ($\lambda = 0.022 \text{ W/m}^2\text{K}$) + BOOST [®] HYBRID	140 x 38		✓
125mm HYBRIS + BOOST [®] HYBRID + REFLECTIVE VAPOUR CONTROL LAYER	140 x 38		
HCONTROL HYBRID + 105mm HYBRIS	140 x 38		
BOOST [®] HYBRID + 125mm HYBRIS	140 x 38		
125mm HYBRIS + REFLECTIVE VAPOUR CONTROL LAYER + REFLECTIVE BREATHER MEMBRANE	140 x 38		
HCONTROL HYBRID + 50mm HYBRIS + REFLECTIVE BREATHER MEMBRANE	89 x 38		
90mm HYBRIS + BOOST [®] HYBRID	114 x 38		
125mm HYBRIS + REFLECTIVE BREATHER MEMBRANE	140 x 38		
HCONTROL HYBRID + 50mm HYBRIS	89 x 38		
HCONTROL HYBRID + REFLECTIVE BREATHER MEMBRANE	72 x 47		
125mm HYBRIS	140 x 38		
HCONTROL HYBRID	72 x 47		
External Timber Frame with Timber Cladding			
HCONTROL HYBRID + 125mm HYBRIS + BOOST [®] HYBRID	184 x 38	15% timber bridging (as standard)	
HCONTROL HYBRID + 105mm HYBRIS + BOOST [®] HYBRID	140 x 38		
HCONTROL HYBRID + 105mm HYBRIS + REFLECTIVE BREATHER MEMBRANE	140 x 38		
125mm HYBRIS + BOOST [®] HYBRID + REFLECTIVE VAPOUR CONTROL LAYER	140 x 38		
125mm HYBRIS + BOOST [®] HYBRID	140 x 38		
125mm HYBRIS + REFLECTIVE VAPOUR CONTROL LAYER + REFLECTIVE BREATHER MEMBRANE	140 x 38		
125mm HYBRIS + REFLECTIVE BREATHER MEMBRANE	140 x 38		
HCONTROL HYBRID + REFLECTIVE BREATHER MEMBRANE	72 x 47		
External Timber Frame with Timber Cladding (example Dormer Cheek)			
HCONTROL HYBRID + 60mm HYBRIS + BOOST [®] HYBRID	100 x 47	11% timber bridging (as standard)	
HCONTROL HYBRID + 60mm HYBRIS + REFLECTIVE BREATHER MEMBRANE	100 x 47		
75mm HYBRIS + BOOST [®] HYBRID	100 x 47		
75mm HYBRIS + REFLECTIVE BREATHER MEMBRANE	100 x 47		
HCONTROL HYBRID	100 x 47		
HCONTROL HYBRID + 90mm HYBRIS + BOOST [®] HYBRID	125 x 47		
HCONTROL HYBRID + 90mm HYBRIS + REFLECTIVE BREATHER MEMBRANE	125 x 47		
105mm HYBRIS + BOOST [®] HYBRID	125 x 47		
105mm HYBRIS + REFLECTIVE BREATHER MEMBRANE	125 x 47		
105mm HYBRIS	125 x 47		
Ashlar Wall			
HCONTROL HYBRID + 60mm HYBRIS	100 x 47	600	
140mm HYBRIS	150 x 47		
HCONTROL HYBRID + BREATHER MEMBRANE	100 x 47		
105mm HYBRIS	125 x 47		
90mm HYBRIS	125 x 47		
MASONRY WALL			
Solid Wall (Internal Insulation)			
HCONTROL HYBRID + 90mm HYBRIS	120 x 47	600	
105mm HYBRIS	120 x 47		
22mm INSULATED PLASTERBOARD ($\lambda = 0.04 \text{ W/m}^2\text{K}$) + HCONTROL HYBRID	38 x 38mm battens		✓
HCONTROL HYBRID	38 x 38mm battens		
Cavity Wall (Internal Insulation)			
HCONTROL HYBRID + 75mm HYBRIS	120 x 47	600	
90mm HYBRIS	100 x 47		
22mm INSULATED PLASTERBOARD ($\lambda = 0.04 \text{ W/m}^2\text{K}$) + HCONTROL HYBRID	38 x 38mm battens		✓
Solid Wall (External Insulation)			
90mm HYBRIS + BOOST [®] HYBRID	120 x 47	600	
60mm HYBRIS + REFLECTIVE BREATHER MEMBRANE	89 x 38		

						
Reflective vapour control layer	Reflective breather membrane	HControl Hybrid	Hybris	Boost ^{1R} Hybrid	Calculated U-values W/m ² K	Reference
		✓	✓	✓	0.13	PF60
		✓		✓	0.13	PF61
		✓	✓	✓	0.14	PF23
	✓	✓	✓		0.16	PF56
		✓			0.16	PF62
				✓	0.16	PF63
✓			✓	✓	0.16	PF111
		✓	✓		0.18	PF24
			✓	✓	0.18	PF49
✓	✓		✓		0.19	PF112
	✓	✓	✓		0.20	PF58
	✓		✓	✓	0.21	PF64
	✓	✓	✓		0.22	PF55
	✓	✓	✓		0.23	PF50
	✓	✓			0.25	PF57
		✓	✓		0.26	PF47
		✓			0.30	PF39
		✓	✓	✓	0.13	PF65
		✓	✓	✓	0.14	PF66
	✓	✓	✓		0.16	PF67
✓			✓	✓	0.17	PF113
			✓	✓	0.19	PF68
✓	✓		✓		0.20	PF114
	✓		✓		0.23	PF69
	✓	✓			0.26	PF70
		✓	✓	✓	0.17	PF115
	✓	✓	✓		0.19	PF116
			✓	✓	0.23	PF117
	✓		✓		0.28	PF122
		✓			0.30	PF123
		✓	✓	✓	0.15	PF118
	✓	✓	✓		0.17	PF119
			✓	✓	0.20	PF120
	✓		✓		0.24	PF121
			✓		0.27	PF134
		✓	✓		0.20	PF124
			✓		0.22	PF79
		✓			0.29	PF126
			✓		0.26	PF125
			✓		0.28	PF135
		✓	✓		0.18	PF81
			✓		0.27	PF82
		✓			0.28	PF83
		✓			0.30	PF40
		✓			0.18	PF84
			✓		0.28	PF85
		✓			0.27	PF86
			✓	✓	0.20	PF87
	✓		✓		0.29	PF88

ROOF & FLOOR SOLUTIONS

	Timber dimensions (mm)	Timber centres (mm)
PITCHED ROOF		
Warm Pitched Roof (with insulation at sloping ceiling)		
HCONTROL HYBRID + 125mm HYBRIS + BOOST ^{TR} HYBRID or BOOST ^{TR} HYBRID ROOF	200 x 47	600
205mm HYBRIS + BOOST ^{TR} HYBRID or BOOST ^{TR} HYBRID ROOF	250 x 47	
HCONTROL HYBRID + 170mm HYBRIS	225 x 47	
HCONTROL HYBRID + 50mm HYBRIS + BOOST ^{TR} HYBRID or BOOST ^{TR} HYBRID ROOF	125 x 47	
HCONTROL HYBRID + 90mm HYBRIS	150 x 47	
125mm HYBRIS + BOOST ^{TR} HYBRID or BOOST ^{TR} HYBRID ROOF	175 x 47	
185mm HYBRIS	225 x 47	
HCONTROL HYBRID + 60mm FOAM BOARD ($\lambda = 0.022 \text{ W/m}^2\text{K}$)	125 x 47	
BOOST ^{TR} HYBRID ROOF + 90mm FOAM BOARD ($\lambda = 0.022 \text{ W/m}^2\text{K}$)	175 x 47	
50mm HYBRIS + BOOST ^{TR} HYBRID ROOF	100 x 50	400
FLAT ROOF		
Cold Flat Roof		
HCONTROL HYBRID + 125mm HYBRIS + BOOST ^{TR} HYBRID or BOOST ^{TR} HYBRID ROOF	200 x 47	600
HCONTROL HYBRID + 130mm FOAM BOARD ($\lambda = 0.022 \text{ W/m}^2\text{K}$)	200 x 47	
125mm HYBRIS + BOOST ^{TR} HYBRID or BOOST ^{TR} HYBRID ROOF	200 x 47	
HCONTROL HYBRID + 105mm HYBRIS	200 x 47	
Warm Flat Roof		
HCONTROL HYBRID + 120mm FOAM BOARD ($\lambda = 0.025 \text{ W/m}^2\text{K}$)	200 x 47	600
HCONTROL HYBRID + 70mm FOAM BOARD ($\lambda = 0.025 \text{ W/m}^2\text{K}$)	150 x 47	
FLOORS		
Suspended Timber Floor		
HCONTROL HYBRID + 125mm HYBRIS	200 x 47	400
155mm HYBRIS + BOOST ^{TR} HYBRID or BOOST ^{TR} HYBRID ROOF	225 x 47	
155mm HYBRIS	200 x 47	
105mm HYBRIS	150 x 47	
Exposed Floor		
HCONTROL HYBRID + 155mm HYBRIS + BOOST ^{TR} HYBRID	200 x 47	400
HCONTROL HYBRID + 155mm HYBRIS	225 x 47	
50mm HYBRIS + 155mm HYBRIS + BOOST ^{TR} HYBRID	200 x 47	
155mm HYBRIS	225 x 47	

Other solutions are available please contact Actis at solutions@insulation-actis.com or **01249 462 888**.



Other insulation	HControl Hybrid	Hybris	Boost [®] Hybrid	Boost [®] Hybrid Roof	Calculated U-values W/m ² K	Reference
	✓	✓	✓	✓	0.13	PF52 / PF127
		✓	✓	✓	0.13	PF89 / PF128
	✓	✓			0.13	PF90
	✓	✓	✓	✓	0.18	PF51 / PF129
	✓	✓			0.18	PF31
		✓	✓	✓	0.18	PF53 / PF130
		✓			0.17	PF59
✓	✓				0.18	PF34
✓			✓	✓	0.18	PF42 / PF131
		✓		✓	0.33	PF110
	✓	✓	✓	✓	0.13	PF93 / PF132
✓	✓				0.13	PF94
		✓	✓	✓	0.18	PF95 / PF133
	✓	✓			0.18	PF96
✓	✓				0.13	PF97
✓	✓				0.18	PF98
	✓	✓			0.13	PF99
		✓	✓	✓	0.13	PF139
		✓			0.16	PF101
		✓			0.20	PF102
	✓	✓	✓		0.11	PF105
	✓	✓			0.13	PF136
		✓	✓		0.12	PF137
		✓			0.18	PF138

* U-values calculated with perimeter/area ratio = 0.5

U-value calculations have been made according to EN ISO 6946, BR 443, BBA IB3. The solutions offered do not have a condensation risk according to BS 5250.

Calculations are based on slightly ventilated / ventilated roof build-ups and vented wall build-ups, and use standard construction products ie standard plasterboard, standard vapour control layer, standard breather membrane and standard foil faced foam board unless **HControl Hybrid**, **Boost[®] Hybrid** or a **reflective breather membrane** is used.

TIMBER FRAME WALL WITH BRICK CLADDING

HYBRIS is fitted between studs, faced internally with **HCONTROL HYBRID**, the vapour control layer and externally with OSB and **BOOST[®] HYBRID**, the breather membrane. A 50mm cavity separates the timber frame from the outer brick leaf.

min. stud size (mm)	Products used	U-value (W/m ² K)	Reference
184 x 38	HCONTROL HYBRID + 125mm HYBRIS + BOOST [®] HYBRID	0.13	PF60
140 x 38	HCONTROL HYBRID + 100 FOAM BOARD ($\lambda = 0.022 \text{ W/m}^2\text{K}$) + BOOST [®] HYBRID	0.13	PF61
140 x 38	HCONTROL HYBRID + 90mm HYBRIS + BOOST[®] HYBRID	0.14	PF23
140 x 38	HCONTROL HYBRID + 105mm HYBRIS + REFLECTIVE BREATHER MEMBRANE	0.16	PF56
140 x 38	HCONTROL HYBRID + 100mm FOAM BOARD ($\lambda = 0.022 \text{ W/m}^2\text{K}$)	0.16	PF62
140 x 38	120mm FOAM BOARD ($\lambda = 0.022 \text{ W/m}^2\text{K}$) + BOOST [®] HYBRID	0.16	PF63
140 x 38	125mm HYBRIS + BOOST [®] HYBRID + REFLECTIVE VAPOUR CONTROL LAYER	0.16	PF111
140 x 38	HCONTROL HYBRID + 105mm HYBRIS	0.18	PF24
140 x 38	BOOST[®] HYBRID + 125mm HYBRIS	0.18	PF49
140 x 38	125mm HYBRIS + REFLECTIVE VAPOUR CONTROL LAYER + REFLECTIVE BREATHER MEMBRANE	0.19	PF112
89 x 38	HCONTROL HYBRID + 50mm HYBRIS + REFLECTIVE BREATHER MEMBRANE	0.20	PF58
114 x 38	90mm HYBRIS + BOOST [®] HYBRID	0.21	PF64
140 x 38	125mm HYBRIS + REFLECTIVE BREATHER MEMBRANE	0.22	PF55
89 x 38	HCONTROL HYBRID + 50mm HYBRIS	0.23	PF50
72 x 47	HCONTROL HYBRID + REFLECTIVE BREATHER MEMBRANE	0.25	PF57
140 x 38	125mm HYBRIS	0.26	PF47
72 x 347	HCONTROL HYBRID	0.30	PF39

HYBRID SYSTEM SOLUTION

PF23: HCONTROL HYBRID + 90mm HYBRIS + BOOST[®] HYBRID

U-VALUE REACHED: 0.14 W/m²K



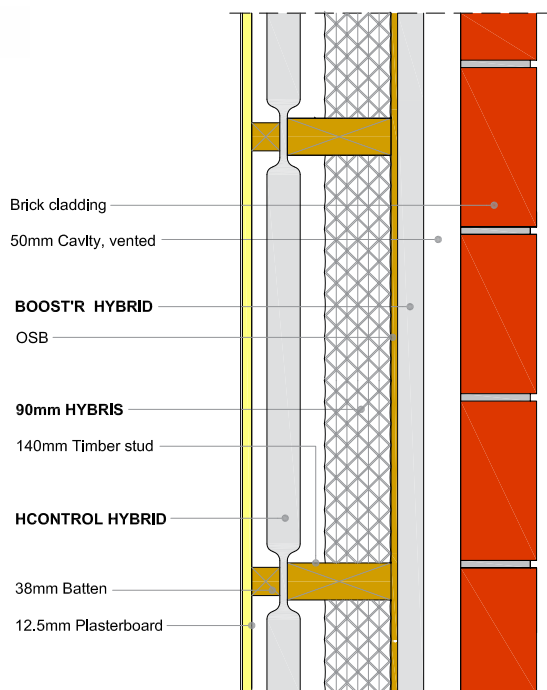
HCONTROL HYBRID



HYBRIS



BOOST[®] HYBRID



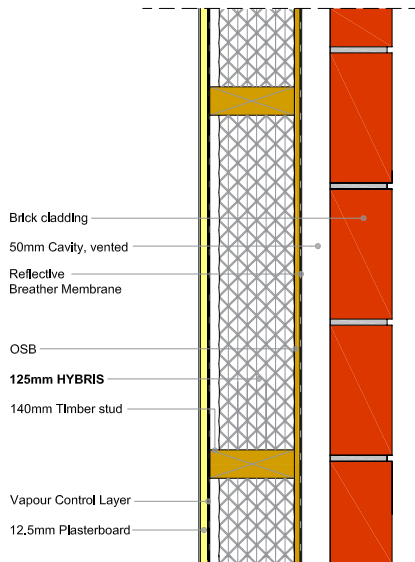
OTHER HYBRID CONFIGURATIONS

PF55: 125mm HYBRIS
+ REFLECTIVE BREATHER MEMBRANE

U-VALUE REACHED: 0.22 W/m²K

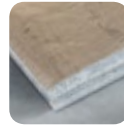


HYBRIS



PF56: HCONTROL HYBRID + 105mm HYBRIS
+ REFLECTIVE BREATHER MEMBRANE

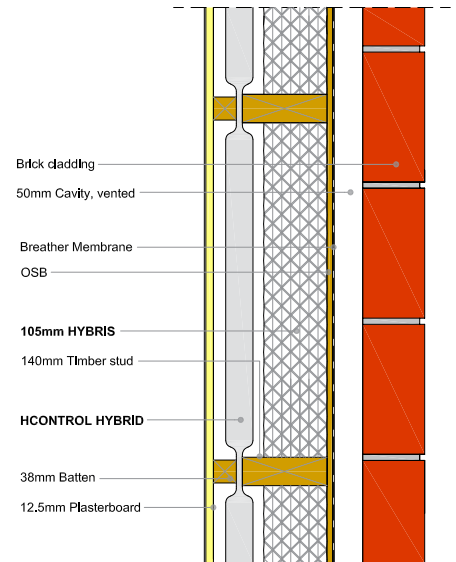
U-VALUE REACHED: 0.16 W/m²K



HCONTROL HYBRID



HYBRIS



PF49: 125mm HYBRIS + BOOST^{TR} HYBRID

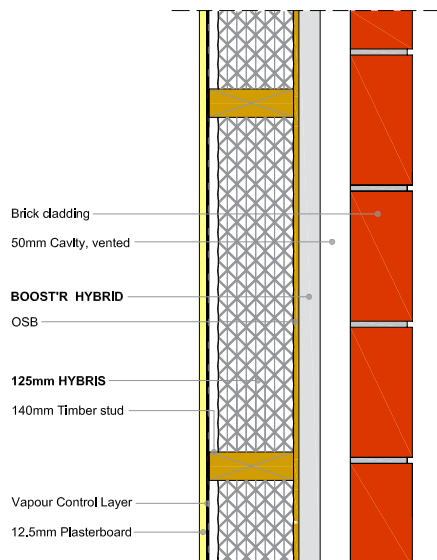
U-VALUE REACHED: 0.18 W/m²K



HYBRIS



BOOST^{TR} HYBRID



TIMBER FRAME WALL WITH TIMBER CLADDING

HYBRIS is fitted between studs, faced internally with **HCONTROL HYBRID**, the vapour control layer and externally with OSB and **BOOST^{TR} HYBRID**, the breather membrane, then a batten cavity before the external cladding.

min. stud size (mm)	Products used	U-value (W/m ² K)	Reference
External Timber Frame with timber cladding			
184 x 38	HCONTROL HYBRID + 125mm HYBRIS + BOOST ^{TR} HYBRID	0.13	PF65
140 x 38	HCONTROL HYBRID + 105mm HYBRIS + BOOST^{TR} HYBRID	0.14	PF66
140 x 38	HCONTROL HYBRID + 105mm HYBRIS + REFLECTIVE BREATHER MEMBRANE	0.16	PF67
140 x 38	125mm HYBRIS + BOOST ^{TR} HYBRID + REFLECTIVE VAPOUR CONTROL LAYER	0.17	PF113
140 x 38	125mm HYBRIS + BOOST^{TR} HYBRID	0.19	PF68
140 x 38	125mm HYBRIS + REFLECTIVE VAPOUR CONTROL LAYER + REFLECTIVE BREATHER MEMBRANE	0.20	PF114
140 x 38	125mm HYBRIS + REFLECTIVE BREATHER MEMBRANE	0.23	PF69
72 x 47	HCONTROL HYBRID + REFLECTIVE BREATHER MEMBRANE	0.26	PF70
External Timber Frame with timber cladding (example Dormer Cheek)			
125 x 47	HCONTROL HYBRID + 90mm HYBRIS + BOOST ^{TR} HYBRID	0.15	PF118
100 x 47	HCONTROL HYBRID + 60mm HYBRIS + BOOST ^{TR} HYBRID	0.17	PF115
125 x 47	HCONTROL HYBRID + 90mm HYBRIS + REFLECTIVE BREATHER MEMBRANE	0.17	PF119
100 x 47	HCONTROL HYBRID + 60mm Hybris + REFLECTIVE BREATHER MEMBRANE	0.19	PF116
125 x 47	105mm HYBRIS + BOOST^{TR} HYBRID	0.20	PF120
100 x 47	75mm HYBRIS + BOOST ^{TR} HYBRID	0.23	PF117
125 x 47	105mm HYBRIS + REFLECTIVE BREATHER MEMBRANE	0.24	PF121
125 x 47	105mm HYBRIS	0.27	PF134
100 x 47	75mm HYBRIS + REFLECTIVE BREATHER MEMBRANE	0.28	PF122
100 x 47	HCONTROL HYBRID	0.30	PF123

HYBRID SYSTEM SOLUTION

PF66: HCONTROL HYBRID + 105mm HYBRIS + BOOST^{TR} HYBRID

U-VALUE REACHED: 0.14 W/m²K



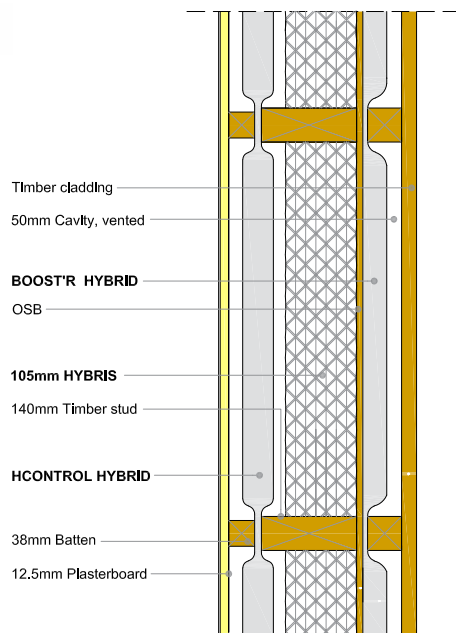
HCONTROL HYBRID



HYBRIS



BOOST^{TR} HYBRID



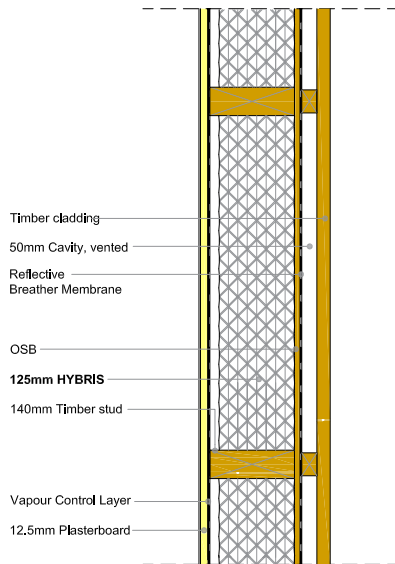
OTHER HYBRID CONFIGURATIONS

PF69: 125mm HYBRIS + REFLECTIVE BREATHER MEMBRANE

U-VALUE REACHED: 0.23 W/m²K



HYBRIS

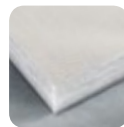


PF68: 125mm HYBRIS + BOOST^{TR} HYBRID

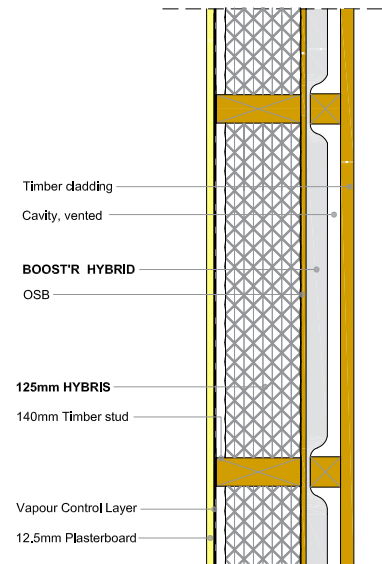
U-VALUE REACHED: 0.19 W/m²K



HYBRIS



BOOST^{TR} HYBRID



PF119: HCONTROL HYBRID + 90mm HYBRIS + REFLECTIVE BREATHER MEMBRANE

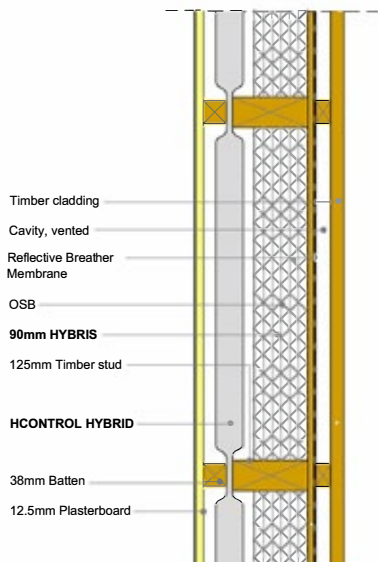
U-VALUE REACHED: 0.17 W/m²K



HCONTROL HYBRID



HYBRIS

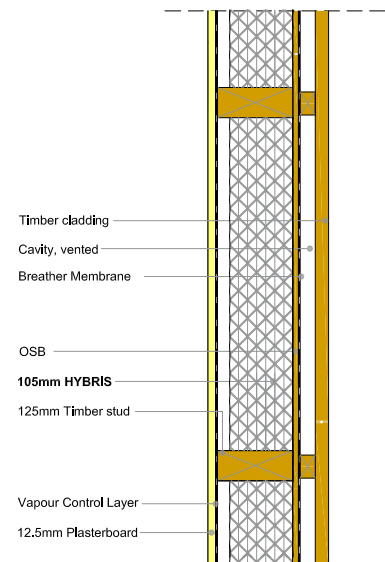


PF134: 105mm HYBRIS

U-VALUE REACHED: 0.27 W/m²K



HYBRIS



ASHLAR WALL

HYBRIS is fitted between studs and/or **HCONTROL HYBRID** onto the internal face of the studs, before standard plasterboard.

min. stud size (mm)	Products used	U-value (W/m ² K)	Reference
150	140mm HYBRIS	0.22	PF79
100	HCONTROL HYBRID + 60mm HYBRIS	0.20	PF124
125	105mm HYBRIS	0.26	PF125
100	HCONTROL HYBRID + BREATHER MEMBRANE	0.29	PF126
125	90mm HYBRIS	0.28	PF135

PF124: HCONTROL HYBRID + 60mm HYBRIS SOLUTION

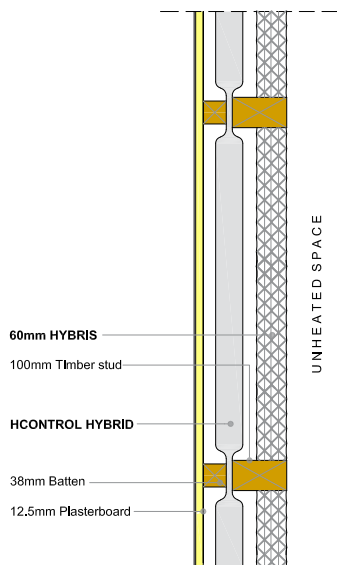
U-VALUE REACHED: 0.20 W/m²K



HCONTROL HYBRID



HYBRIS

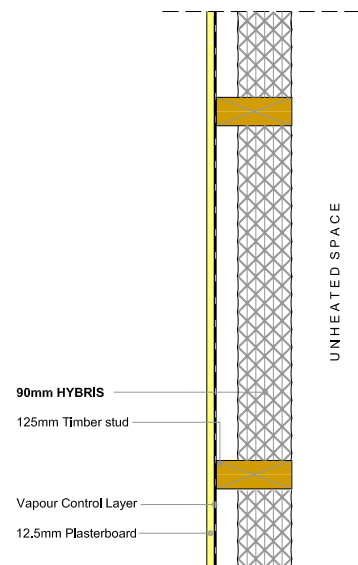


PF135: 90mm HYBRIS SOLUTION

U-VALUE REACHED: 0.28 W/m²K



HYBRIS



SOLID WALL WITH INTERNAL INSULATION

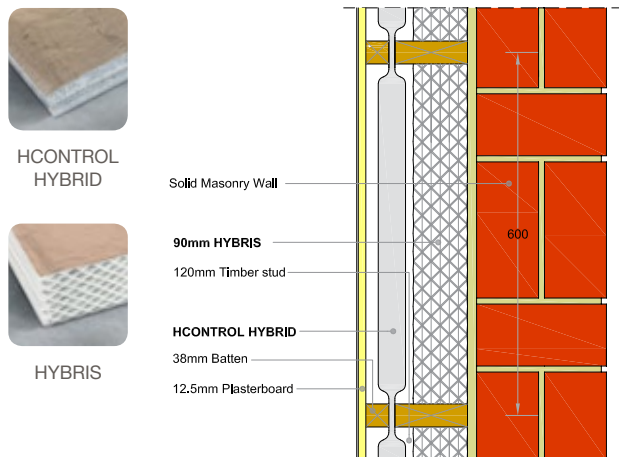
HCONTROL HYBRID and/or **HYBRIS** is installed on the internal side of a solid wall. Internal finish is standard plasterboard.

The existing solid masonry wall must be non-absorbent, in good condition, have a low moisture content and low driving rain load on the outside. If the existing wall does not meet these requirements, these solutions are not feasible. Please contact Actis Technical Department for further information.

Products used	U-value (W/m ² K)	Reference
Solid Wall		
Internal insulation		
HCONTROL HYBRID + 90mm HYBRIS	0.18	PF81
105mm HYBRIS	0.27	PF82
22mm INSULATED PLASTERBOARD ($\lambda = 0.04$ W/m ² K) + HCONTROL HYBRID	0.28	PF83
HCONTROL HYBRID	0.30	PF40
Cavity Wall (uninsulated cavity)		
Internal Insulation		
HCONTROL HYBRID + 75mm HYBRIS	0.18	PF84
90mm HYBRIS	0.28	PF85
22mm INSULATED PLASTERBOARD ($\lambda = 0.04$ W/m ² K) + HCONTROL HYBRID	0.27	PF86

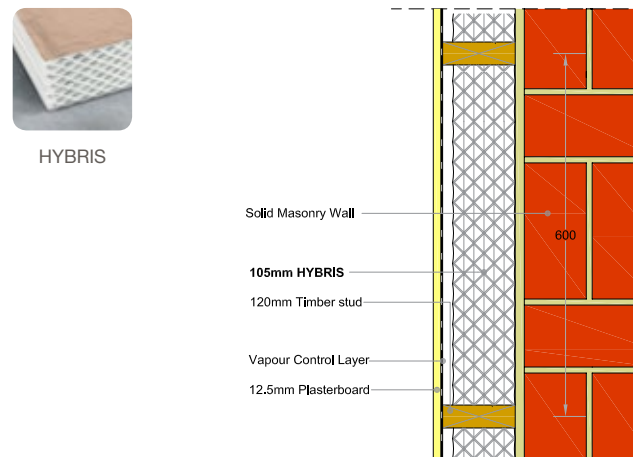
PF81: HCONTROL HYBRID + 90mm HYBRIS

U-VALUE REACHED: 0.18 W/m²K



PF82: 105mm HYBRIS

U-VALUE REACHED: 0.27 W/m²K



SOLID WALL WITH EXTERNAL INSULATION

BOOST[®] HYBRID and/or **HYBRIS** is installed on the external side of a solid wall, then a batten cavity before the external cladding.

Products used	U-value (W/m ² K)	Reference
Solid Wall		
External insulation		
90mm HYBRIS + BOOST[®] HYBRID	0.20	PF87
60mm HYBRIS + REFLECTIVE BREATHER MEMBRANE	0.29	PF88

PF87: 90mm HYBRIS + BOOST[®] HYBRID

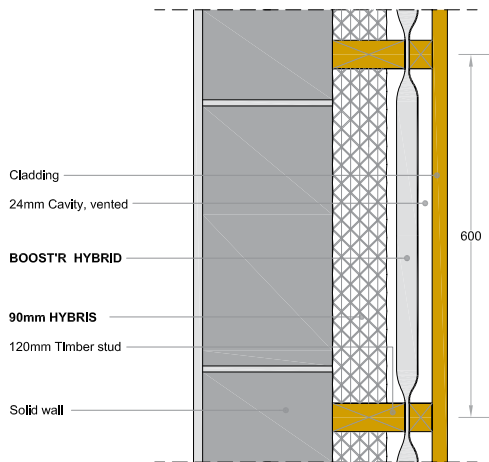
U-VALUE REACHED: 0.20 W/m²K



HYBRIS



BOOST[®] HYBRID



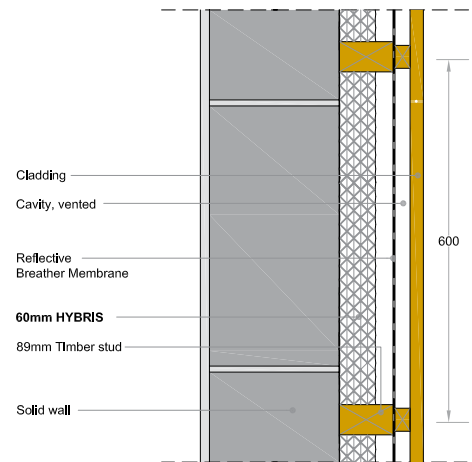
External insulation

PF88: 60mm HYBRIS + REFLECTIVE BREATHER SOLUTION

U-VALUE REACHED: 0.29 W/m²K



HYBRIS



COLD FLAT ROOF

HCONTROL HYBRID, HYBRIS, BOOST[®] HYBRID or BOOST[®] HYBRID ROOF can be installed but please note in accordance with BS 5250 it is crucial to introduce 50mm cross ventilation together with a VCL. However, the construction may still be vulnerable to condensation, for example BS6229 and Scottish Building Regulations do not recommend cold flat roofs.

Joist sizes	Products used	U-value (W/m ² K)	Reference
200 x 47	HCONTROL HYBRID + 125mm HYBRIS + BOOST[®] HYBRID or BOOST[®] HYBRID ROOF	0.13	PF93 / PF132
200 x 47	HCONTROL HYBRID + 130mm FOAM BOARD ($\lambda = 0.022$ W/m ² K)	0.13	PF94
200 x 47	125mm HYBRIS + BOOST [®] HYBRID or BOOST [®] HYBRID ROOF	0.18	PF95 / PF133
200 x 47	HCONTROL HYBRID + 105mm HYBRIS	0.18	PF96

HYBRID SYSTEM SOLUTION

PF132: HCONTROL HYBRID + 125mm HYBRIS + BOOST[®] HYBRID or BOOST[®] HYBRID ROOF

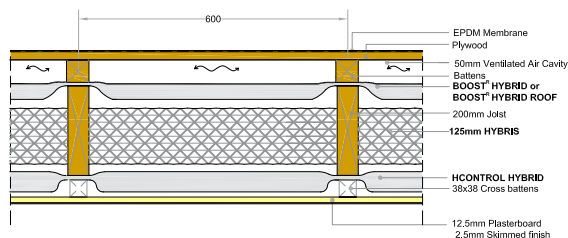


U-VALUE REACHED: 0.13 W/m²K

HCONTROL HYBRID

HYBRIS

BOOST[®] HYBRID ROOF



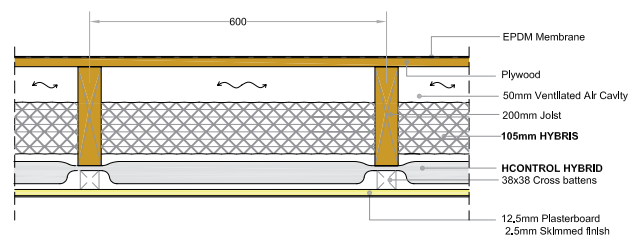
PF96: HCONTROL HYBRID + 105mm HYBRIS

U-VALUE REACHED: 0.18 W/m²K



HCONTROL HYBRID

HYBRIS



WARM FLAT ROOF

HCONTROL HYBRID can be installed to reduce the thickness of rigid board insulation, but only if specific circumstances apply, please contact ACTIS for further details.

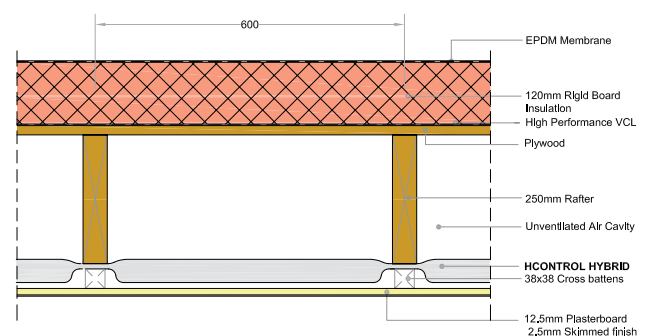
PF97: HCONTROL HYBRID + 120mm FOAM BOARD SOLUTION

U-VALUE REACHED: 0.13 W/m²K



HCONTROL HYBRID

Products used	U-value (W/m ² K)	Reference
HCONTROL HYBRID + 120mm FOAM BOARD ($\lambda = 0.022$ W/m²K)	0.13	PF97
HCONTROL HYBRID + 70mm FOAM BOARD ($\lambda = 0.022$ W/m ² K)	0.18	PF98



WARM PITCHED ROOF WITH INSULATION AT SLOPING CEILING

BOOST^{TR} HYBRID or **BOOST^{TR} HYBRID ROOF** is used as a breather membrane, **HYBRIS** is fitted between rafters and **HCONTROL HYBRID** is the vapour control layer, installed under rafter. Internal finish is standard plasterboard.

Rafter sizes	Products used	U-value (W/m ² K)	Reference
200 x 47	HCONTROL HYBRID + 125mm HYBRIS + BOOST^{TR} HYBRID or BOOST^{TR} HYBRID ROOF	0.13	PF52 / PF127
250 x 47	205mm HYBRIS + BOOST^{TR} HYBRID or BOOST^{TR} HYBRID ROOF	0.13	PF89 / PF128
225 x 47	HCONTROL HYBRID + 170mm HYBRIS	0.13	PF90
225 x 47	185mm HYBRIS	0.17	PF59
125 x 47	HCONTROL HYBRID + 50mm HYBRIS + BOOST ^{TR} HYBRID or BOOST ^{TR} HYBRID ROOF	0.18	PF51 / PF129
150 x 47	HCONTROL HYBRID + 90mm HYBRIS	0.18	PF31
175 x 47	125mm HYBRIS + BOOST ^{TR} HYBRID or BOOST ^{TR} HYBRID ROOF	0.18	PF53 / PF130
125 x 47	HCONTROL HYBRID + 60mm FOAM BOARD ($\lambda = 0.022$ W/m ² K)	0.18	PF34
150 x 47	BOOST ^{TR} HYBRID ROOF + 85mm FOAM BOARD ($\lambda = 0.022$ W/m ² K)	0.18	PF42
175 x 47	BOOST ^{TR} HYBRID ROOF + 90mm FOAM BOARD ($\lambda = 0.022$ W/m ² K)	0.18	PF131
100 x 47	BOOST ^{TR} HYBRID ROOF + 50mm HYBRIS	0.33	PF110

HYBRID SYSTEM SOLUTION

PF127: HCONTROL HYBRID + 125mm HYBRIS + BOOST^{TR} HYBRID or BOOST^{TR} HYBRID ROOF

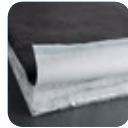
U-VALUE REACHED: 0.13 W/m²K



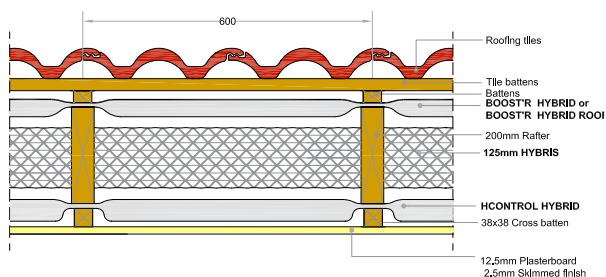
HCONTROL HYBRID



HYBRIS



BOOST^{TR} HYBRID ROOF



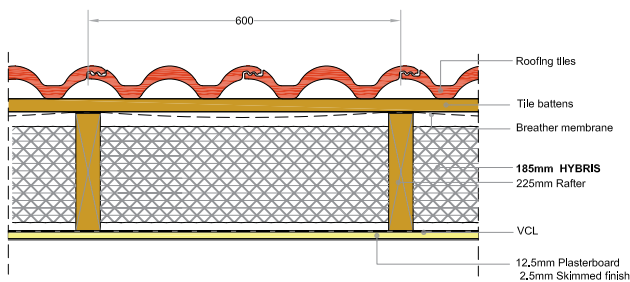
OTHER HYBRID CONFIGURATIONS

PF59: 185mm HYBRIS

U-VALUE REACHED: 0.17 W/m²K



HYBRIS



PF90: HCONTROL HYBRID + 170mm HYBRIS

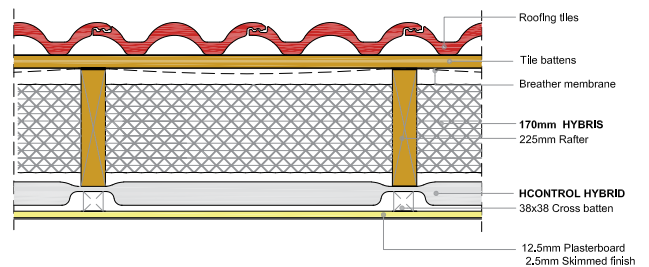
U-VALUE REACHED: 0.13 W/m²K



HCONTROL
HYBRID



HYBRIS



PF128: 205mm HYBRIS + BOOST[®] HYBRID or
BOOST[®] HYBRID ROOF

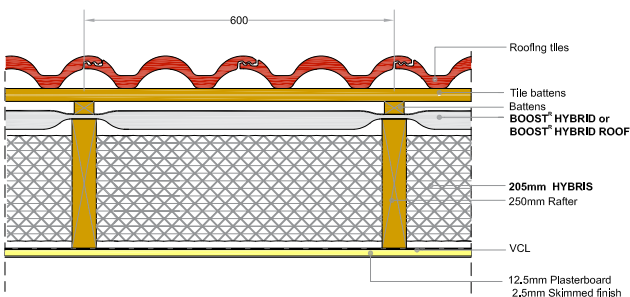
U-VALUE REACHED: 0.13 W/m²K



HYBRIS



BOOST[®]
HYBRID ROOF



PF110: 50mm Hybris + BOOST[®] HYBRID ROOF

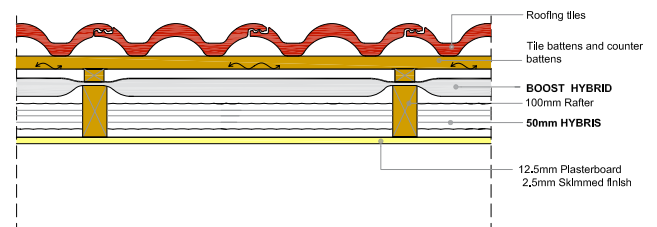
U-VALUE REACHED: 0.33 W/m²K



HYBRIS



BOOST[®]
HYBRID ROOF



SUSPENDED TIMBER FLOOR

HYBRIS is fitted between joists and can be faced internally with **HCONTROL HYBRID**, the vapour control layer or externally with **BOOST^{TR} HYBRID**, the breather membrane.

Products used	U-values calculated from perimeter/area ratio						Reference
	0.2	0.3	0.4	0.5	0.6	0.7	
Ratio	0.2	0.3	0.4	0.5	0.6	0.7	
HCONTROL HYBRID + 125mm HYBRIS	0.11	0.12	0.12	0.13	0.13	0.13	PF99
155mm HYBRIS + BOOST^{TR} HYBRID	0.11	0.12	0.12	0.13	0.13	0.13	PF139
155mm HYBRIS	0.14	0.15	0.15	0.16	0.16	0.16	PF101
105mm HYBRIS	0.17	0.18	0.19	0.20	0.20	0.21	PF102

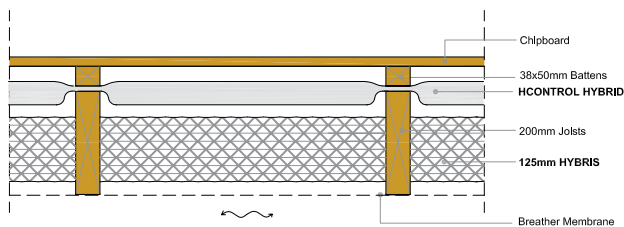
The following examples are based on perimeter/area ratio being 0.5:

PF99: HCONTROL HYBRID + 125mm HYBRIS

U-VALUE REACHED: 0.13 W/m²K

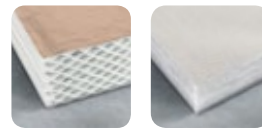


HCONTROL HYBRID HYBRIS

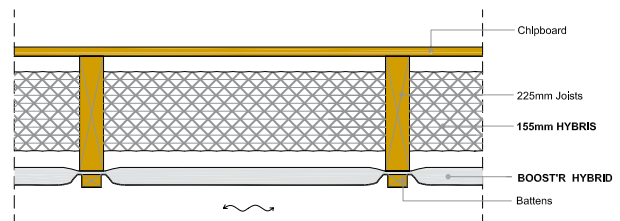


PF139: 155mm HYBRIS + BOOST^{TR} HYBRID

U-VALUE REACHED: 0.13 W/m²K



HYBRIS BOOST^{TR} HYBRID

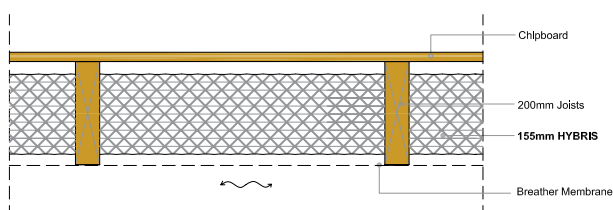


PF101: 155mm HYBRIS SOLUTION

U-VALUE REACHED: 0.16 W/m²K



HYBRIS



EXPOSED TIMBER FLOOR

HYBRIS is fitted between joists and can be faced internally with **HCONTROL HYBRID**, the vapour control layer and/or externally with **BOOST[®] HYBRID**, the breather membrane.

Products used	U-value (W/m ² K)	Reference
HCONTROL HYBRID + 155mm HYBRIS + BOOST[®] HYBRID	0.11	PF105
HCONTROL HYBRID + 155mm HYBRIS	0.13	PF136
50mm HYBRIS + 155mm HYBRIS + BOOST [®] HYBRID	0.12	PF137
155mm HYBRIS	0.18	PF138

HYBRID SYSTEM SOLUTION

PF105: HCONTROL HYBRID + 155mm HYBRIS + BOOST[®] HYBRID SOLUTION



HCONTROL HYBRID

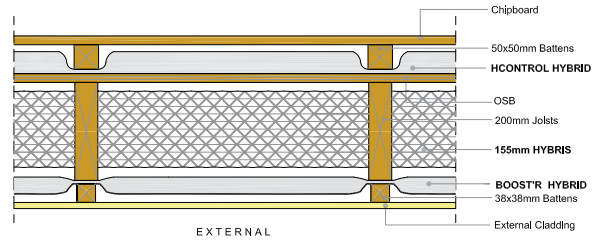


HYBRIS



BOOST[®] HYBRID

**U-VALUE REACHED:
0.11 W/m²K**



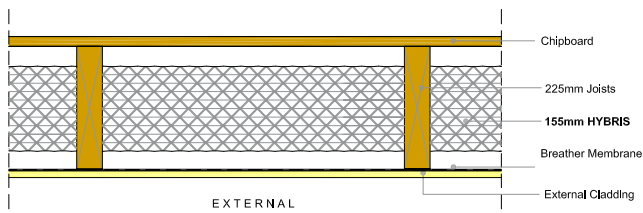
OTHER HYBRID CONFIGURATIONS

PF138: 155mm HYBRIS SOLUTION

U-VALUE REACHED: 0.18 W/m²K

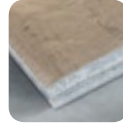


HYBRIS



PF136: HCONTROL HYBRID + 155mm HYBRIS SOLUTION

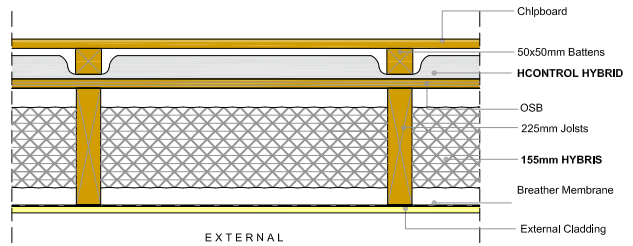
U-VALUE REACHED: 0.13 W/m²K



HCONTROL HYBRID



HYBRIS



PF137: 50mm HYBRIS + 155mm HYBRIS + BOOST[®] HYBRID SOLUTION

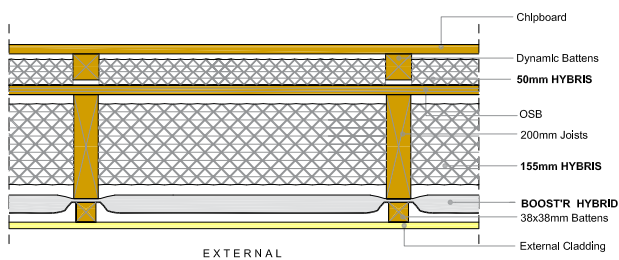
U-VALUE REACHED: 0.12 W/m²K



HYBRIS



BOOST[®] HYBRID



BUILDING REGULATIONS

Schemes		Legislation	U-Value W/m ² K				
		Act	Wall			Roof	
			External	Cavity	Party	Ceiling	Pitched
England							
New Build	Notional	2010 BRegs Part L1A	0.18			0.13	
	Limiting		0.30		0.20	0.20	
Existing	New & replaced	2010 BRegs Part L1B	0.28			0.16	0.18
	Retained		0.30	0.55		0.16	0.18
	Retained treshold		0.70			0.35	
Wales							
New Build	Notional	2010 BRegs Part L1A	0.18			0.13	
	Limiting		0.21		0.20	0.15	
Existing	New & replaced	2010 BRegs Part L1B	0.21			0.15	
	Conversion & Renovation		0.30	0.55		0.16	0.18
	Retained treshold		0.70			0.35	
Scotland							
New Build	Notional	Technical Hardbook Section 6	0.17		0.20	0.11	
	Limiting (average)		0.22			0.15	
	Limiting (individual)		0.70			0.35	
Existing	Extensions (Wall>0.70, Roof>0.25)	Technical Hardbook Section 6	0.17			0.11	0.13
	Extensions (Wall<0.70, Roof<0.25)		0.22			0.15	0.18
	Conversions (average)		0.30			0.25	
	Individual elements		0.70			0.35	

BUILDING REGULATIONS

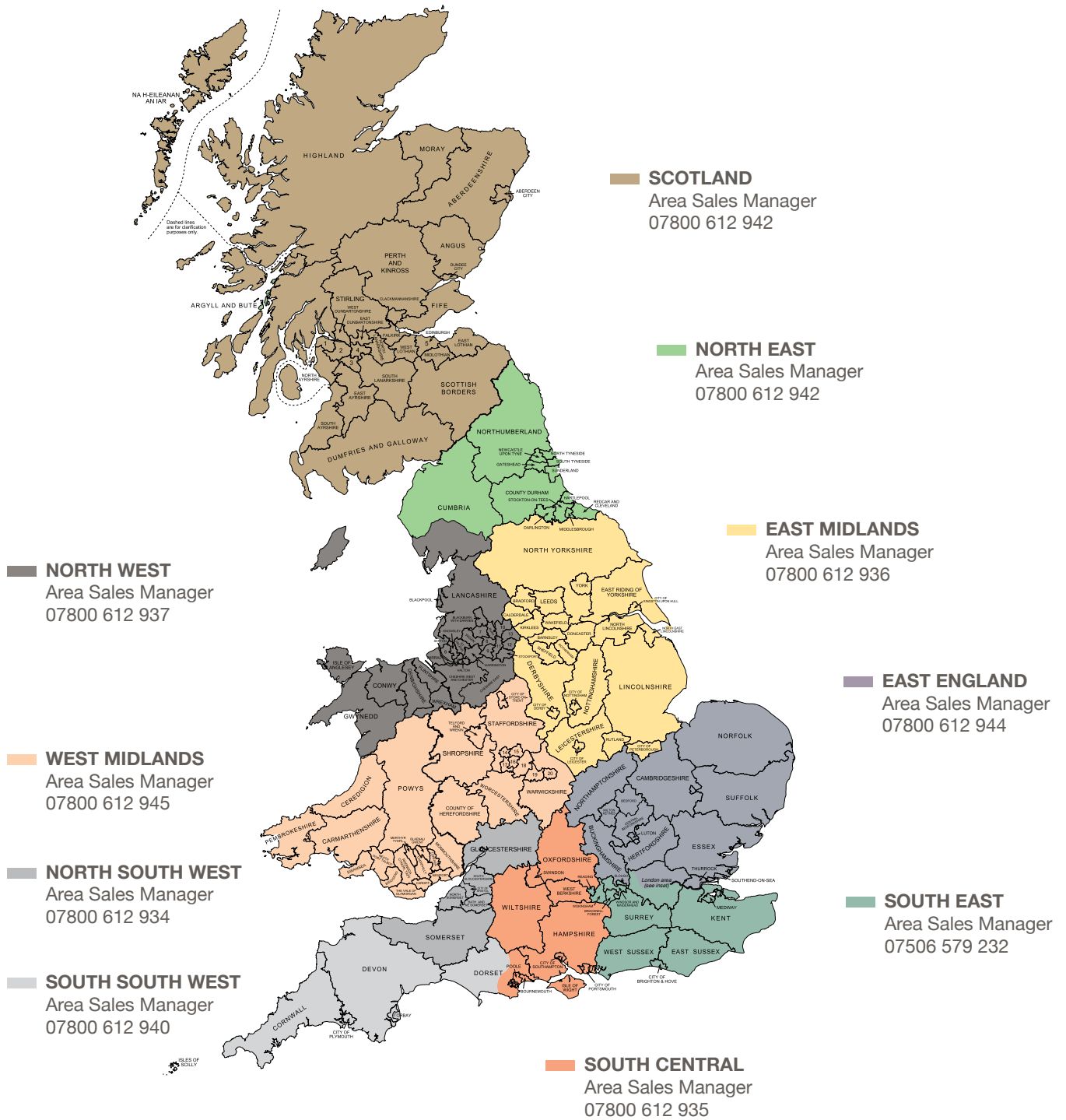
Building Regulations require thermal elements within a building envelope to meet certain U-values. The target U-value depends on type of element, use of building and whether it is a new or an existing construction.

England, Wales and Scotland are now each responsible for their own Building Regulations and target U-values can therefore differ throughout the UK. The above table gives a summary of requirements for domestic buildings at time of printing (February 2017). If required this information can be confirmed with your local Building Control.

GOOD PRACTICE GUIDANCE

The solutions provided may require an independent vapour control layer or breather membrane product to reduce the risk of interstitial condensation. Where a vapour control layer is required, a product with a vapour resistance $Z > 500 \text{ MNs/g}$ should be used. Both vapour control layer and breather membrane need to be continuous and all joints sealed with adequate tape, to avoid air infiltration. To allow moist air to disperse into the atmosphere, the void between breather membrane and outer covering needs adequate ventilation. Please also refer to the installation guidelines.

YOUR CONTACTS FOR MORE INFORMATION



U-VALUE SIMULATOR

Discover a unique tool to get a quick simulation of your project by visiting Hybrid.insulation-actis.com

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