

# ACTIS HYBRID SOLUTIONS AND SYSTEMS

FOR ROOF, WALL, CEILING & FLOOR APPLICATIONS



eurofins



**ACTIS**

TOMORROW'S INSULATION TODAY



	Timber dimensions (mm)	Timber centres (mm)	Other insulation	Reflective vapour control layer	Reflective breather membrane	HControl Hybrid	Hybris	Boost <sup>®</sup> Hybrid	Calculated U-values W/m <sup>2</sup> K	Reference	
<b>TIMBER FRAME WALL</b>											
External Timber Frame with Brick Cladding											
HCONTROL HYBRID + 125mm HYBRIS + BOOST <sup>®</sup> HYBRID	175 x 47	15% timber bridging (as standard)				✓	✓	✓	0.13	PF218	
HCONTROL HYBRID + 100 PIR + BOOST <sup>®</sup> HYBRID	140 x 38		✓			✓	✓	✓	0.13	PF217	
HCONTROL HYBRID + 90mm HYBRIS + BOOST <sup>®</sup> HYBRID	140 x 38					✓	✓	✓	0.14	PF201	
BOOST <sup>®</sup> HYBRID + 105mm HYBRIS + REFLECTIVE VAPOUR CONTROL LAYER*	140 x 38				✓		✓	✓	0.15	PF216	
HCONTROL HYBRID + 105mm HYBRIS + REFLECTIVE BREATHER MEMBRANE*	140 x 38					✓	✓	✓	0.15	PF215	
HCONTROL HYBRID + 105mm HYBRIS + REFLECTIVE BREATHER MEMBRANE	140 x 38					✓	✓	✓	0.16	PF214	
BOOST <sup>®</sup> HYBRID + 105mm HYBRIS + REFLECTIVE VAPOUR CONTROL LAYER	140 x 38				✓		✓	✓	0.16	PF213	
HCONTROL HYBRID + 90mm HYBRIS + REFLECTIVE BREATHER MEMBRANE	140 x 38					✓	✓	✓	0.17	PF212	
HCONTROL HYBRID + 105mm HYBRIS	140 x 38					✓	✓	✓	0.18	PF210	
HCONTROL HYBRID + 75mm HYBRIS + REFLECTIVE BREATHER MEMBRANE	114 x 38					✓	✓	✓	0.18	PF211	
BOOST <sup>®</sup> HYBRID + 125mm HYBRIS	140 x 38						✓	✓	0.18	PF209	
REFLECTIVE VAPOUR CONTROL LAYER + 125mm HYBRIS + REFLECTIVE BREATHER MEMBRANE	140 x 38				✓	✓	✓	✓	0.19	PF208	
HCONTROL HYBRID + 50mm HYBRIS + REFLECTIVE BREATHER MEMBRANE	89 x 38					✓	✓	✓	0.20	PF207	
REFLECTIVE VAPOUR CONTROL LAYER + 105mm HYBRIS + REFLECTIVE BREATHER MEMBRANE	140 x 38				✓	✓	✓	✓	0.21	PF206	
BOOST <sup>®</sup> HYBRID + 90mm HYBRIS	114 x 38						✓	✓	0.21	PF205	
125mm HYBRIS + REFLECTIVE BREATHER MEMBRANE	140 x 38					✓	✓	✓	0.22	PF204	
HCONTROL HYBRID + REFLECTIVE BREATHER MEMBRANE	72 x 47					✓	✓	✓	0.26	PF203	
125mm HYBRIS	140 x 38						✓	✓	0.26	PF202	
External Timber Frame with Timber Cladding											
HCONTROL HYBRID + 125mm HYBRIS + BOOST <sup>®</sup> HYBRID	175 x 47		15% timber bridging (as standard)				✓	✓	✓	0.13	PF230
HCONTROL HYBRID + 105mm HYBRIS + BOOST <sup>®</sup> HYBRID	140 x 38					✓	✓	✓	0.14	PF229	
HCONTROL HYBRID + 105mm HYBRIS + REFLECTIVE BREATHER MEMBRANE	140 x 38					✓	✓	✓	0.16	PF228	
125mm HYBRIS + BOOST <sup>®</sup> HYBRID + REFLECTIVE VAPOUR CONTROL LAYER	140 x 38				✓		✓	✓	0.17	PF227	
HCONTROL HYBRID + 105mm HYBRIS	140 x 38					✓	✓	✓	0.18	PF226	
HCONTROL HYBRID + 75mm HYBRIS + REFLECTIVE BREATHER MEMBRANE	114 x 38					✓	✓	✓	0.18	PF225	
125mm HYBRIS + BOOST <sup>®</sup> HYBRID	140 x 38						✓	✓	0.19	PF224	
125mm HYBRIS + REFLECTIVE VAPOUR CONTROL LAYER + REFLECTIVE BREATHER MEMBRANE	140 x 38				✓	✓	✓	✓	0.20	PF223	
105mm HYBRIS + BOOST <sup>®</sup> HYBRID	125 x 47						✓	✓	0.20	PF221	
105mm HYBRIS + REFLECTIVE VAPOUR CONTROL LAYER + REFLECTIVE BREATHER MEMBRANE	140 x 38				✓	✓	✓	✓	0.21	PF222	
125mm HYBRIS + REFLECTIVE BREATHER MEMBRANE	140 x 38					✓	✓	✓	0.23	PF220	
HCONTROL HYBRID + REFLECTIVE BREATHER MEMBRANE	89 x 38					✓	✓	✓	0.26	PF219	
External Timber Frame with Timber Cladding (example Dormer Cheek)											
HCONTROL HYBRID + 125mm HYBRIS + BOOST <sup>®</sup> HYBRID	175 x 47	11% timber bridging (as standard)				✓	✓	✓	0.13	PF236	
HCONTROL HYBRID + 90mm HYBRIS + BOOST <sup>®</sup> HYBRID	125 x 47					✓	✓	✓	0.15	PF240	
HCONTROL HYBRID + 125mm HYBRIS + REFLECTIVE BREATHER MEMBRANE	150 x 47					✓	✓	✓	0.15	PF241	
HCONTROL HYBRID + 60mm HYBRIS + BOOST <sup>®</sup> HYBRID ROOF	100 x 47					✓	✓	✓	0.17	PF239	
HCONTROL HYBRID + 90mm HYBRIS + REFLECTIVE BREATHER MEMBRANE	125 x 47					✓	✓	✓	0.17	PF238	
HCONTROL HYBRID + 90mm HYBRIS	125 x 47					✓	✓	✓	0.18	PF237	
HCONTROL HYBRID + 75mm HYBRIS + REFLECTIVE BREATHER MEMBRANE	100 x 47					✓	✓	✓	0.19	PF235	
105mm HYBRIS + BOOST <sup>®</sup> HYBRID ROOF	125 x 47						✓	✓	0.21	PF234	
90mm HYBRIS + BOOST <sup>®</sup> HYBRID ROOF	100 x 47						✓	✓	0.23	PF233	
105mm HYBRIS + REFLECTIVE BREATHER MEMBRANE	125 x 47					✓	✓	✓	0.24	PF232	
HCONTROL HYBRID + REFLECTIVE BREATHER MEMBRANE	100 x 47					✓	✓	✓	0.26	PF231	
Ashlar Wall											
HCONTROL HYBRID + 170mm HYBRIS	200 x 47		600				✓	✓	✓	0.14	PF248
HCONTROL HYBRID + 140mm HYBRIS	175 x 47					✓	✓	✓	0.15	PF247	
HCONTROL HYBRID + 90mm HYBRIS	125 x 47					✓	✓	✓	0.18	PF246	
185mm HYBRIS	225 x 47						✓	✓	0.18	PF298	

\* Lightweight block finish

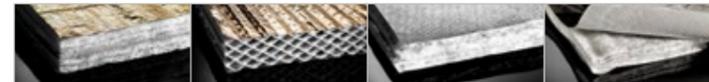
\* U-values calculated with perimeter/area ratio = 0.5

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<sup>®</sup> Hybrid** or a **reflective breather membrane** is used. Please use in conjunction with ACTIS current installation guidelines.

Other solutions are available, please contact Actis at [solutions@insulation-actis.com](mailto:solutions@insulation-actis.com) or 01249 462 888.

	Timber dimensions (mm)	Timber centres (mm)	Other insulation	Reflective vapour control layer	Reflective breather membrane	HControl Hybrid	Hybris	Boost <sup>TR</sup> Hybrid	Calculated U-values W/m <sup>2</sup> K	Reference
<b>MASONRY WALL</b>										
Solid Wall (Internal insulation)										
HCONTROL HYBRID + 140mm HYBRIS	140 x 38	600				✓	✓		0.15	PF252
HCONTROL HYBRID + 90mm HYBRIS	125 x 47					✓	✓		0.19	PF251
105mm HYBRIS	125 x 47						✓		0.28	PF250
HCONTROL HYBRID + 22mm (EPS) INSULATED PLASTERBOARD (2 X 38mm BATTENS)	38 x 38		✓			✓			0.28	PF249
Cavity Wall (Internal uninsulated cavity)										
HCONTROL HYBRID + 125mm HYBRIS	175 x 47	600				✓	✓		0.16	PF256
HCONTROL HYBRID + 90mm HYBRIS	125 x 47					✓	✓		0.19	PF255
90mm HYBRIS	114 x 38						✓		0.29	PF254
HCONTROL HYBRID (2 x 38mm BATTENS)	38 x 38					✓			0.30	PF253
Solid Wall (External insulation)										
125mm HYBRIS + BOOST <sup>TR</sup> HYBRID	175 x 47	600					✓	✓	0.16	PF259
105mm HYBRIS + BOOST <sup>TR</sup> HYBRID	150 x 47						✓	✓	0.18	PF258
60mm HYBRIS + REFLECTIVE BREATHER MEMBRANE	75 x 47				✓		✓	✓	0.30	PF257
Cavity Wall (External uninsulated cavity)										
140mm HYBRIS + BOOST <sup>TR</sup> HYBRID	175 x 47	600					✓	✓	0.16	PF262
125mm HYBRIS + BOOST <sup>TR</sup> HYBRID	150 x 47						✓	✓	0.18	PF261
60mm HYBRIS + REFLECTIVE BREATHER MEMBRANE	75 x 47				✓		✓	✓	0.30	PF260



	Timber dimensions (mm)	Timber centres (mm)	Other insulation	HControl Hybrid	Hybris	Boost <sup>TR</sup> Hybrid	Boost <sup>TR</sup> Hybrid Roof	Calculated U-values W/m <sup>2</sup> K	Reference	
<b>FLAT ROOF</b>										
Cold Flat Roof										
HCONTROL HYBRID + 195mm HYBRIS + BOOST <sup>TR</sup> HYBRID ROOF	275 x 47	400		✓	✓		✓	0.11	PF267	
HCONTROL HYBRID + 205mm HYBRIS	250 x 47			✓	✓			0.13	PF266	
HCONTROL HYBRID + 140mm HYBRIS + BOOST <sup>TR</sup> HYBRID ROOF	225 x 47			✓	✓		✓	0.13	PF265	
HCONTROL HYBRID + 155mm HYBRIS	175 x 47			✓	✓			0.16	PF264	
170mm HYBRIS + BOOST <sup>TR</sup> HYBRID ROOF	225 x 47				✓		✓	0.16	PF263	
Warm Flat Roof										
HCONTROL HYBRID + 150mm PIR (λ=0.025W/mK)	250 x 47	400	✓	✓				0.11	PF270	
HCONTROL HYBRID + 120mm PIR (λ=0.025W/mK)	250 x 47		✓	✓				0.13	PF269	
HCONTROL HYBRID + 90mm PIR (λ=0.025W/mK)	250 x 47		✓	✓				0.16	PF268	
<b>PITCHED ROOF</b>										
Warm Pitched Roof (with insulation at sloping ceiling)										
HCONTROL HYBRID + 185mm HYBRIS + BOOST <sup>TR</sup> HYBRID ROOF	250 x 47	600		✓	✓		✓	0.11	PF273	
HCONTROL HYBRID + 125mm HYBRIS + BOOST <sup>TR</sup> HYBRID ROOF	200 x 47				✓	✓		✓	0.13	PF272
HCONTROL HYBRID + 170mm HYBRIS	225 x 47				✓	✓			0.13	PF276
185mm HYBRIS + BOOST <sup>TR</sup> HYBRID ROOF	250 x 47				✓	✓		✓	0.14	PF297
HCONTROL HYBRID + 90mm HYBRIS + BOOST <sup>TR</sup> HYBRID ROOF	150 x 47				✓	✓		✓	0.15	PF200
HCONTROL HYBRID + 140mm HYBRIS	175 x 47				✓	✓			0.15	PF275
170mm HYBRIS + BOOST <sup>TR</sup> HYBRID ROOF	225 x 47				✓	✓		✓	0.15	PF278
HCONTROL HYBRID + 75mm HYBRIS + BOOST <sup>TR</sup> HYBRID ROOF	150 x 47				✓	✓		✓	0.16	PF271
HCONTROL HYBRID + 125mm HYBRIS	175 x 47				✓	✓			0.16	PF274
155mm HYBRIS + BOOST <sup>TR</sup> HYBRID ROOF	200 x 47				✓	✓		✓	0.16	PF277
205mm HYBRIS	275 x 47			✓	✓			0.16	PF280	
HCONTROL HYBRID + 90mm HYBRIS + BOOST <sup>TR</sup> HYBRID ROOF	150 x 47	400		✓	✓		✓	0.16	PF281	
HCONTROL HYBRID + 140mm HYBRIS	175 x 47				✓	✓			0.16	PF282
170mm HYBRIS + BOOST <sup>TR</sup> HYBRID ROOF	225 x 47				✓	✓		✓	0.16	PF283
50mm HYBRIS + BOOST <sup>TR</sup> HYBRID ROOF	100 x 47				✓	✓		✓	0.30	PF284
<b>FLOORS</b>										
Suspended Timber Floor										
205mm HYBRIS + BOOST <sup>TR</sup> HYBRID	300 x 38	400			✓	✓		0.11	PF291	
155mm HYBRIS + BOOST <sup>TR</sup> HYBRID	250 x 38				✓	✓		0.13	PF290	
170mm HYBRIS	250 x 38				✓	✓		0.15	PF289	
105mm HYBRIS + BOOST <sup>TR</sup> HYBRID	200 x 38				✓	✓		0.15	PF288	
125mm HYBRIS	200 x 38				✓	✓		0.18	PF287	
BOOST <sup>TR</sup> HYBRID	125 x 47						✓	0.23	PF285	
90mm HYBRIS	125 x 47					✓		0.24	PF286	
Exposed Floor										
50mm HYBRIS + 170mm HYBRIS + BOOST <sup>TR</sup> HYBRID	250 x 38	400			✓	✓		0.11	PF295	
50mm HYBRIS + 125mm HYBRIS + BOOST <sup>TR</sup> HYBRID	200 x 38				✓	✓		0.13	PF296	
140mm HYBRIS + BOOST <sup>TR</sup> HYBRID	200 x 38				✓	✓		0.15	PF293	
205mm HYBRIS	300 x 38				✓	✓		0.15	PF294	
155mm HYBRIS	250 x 38				✓	✓		0.18	PF292	

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<sup>®</sup> HYBRID**, the breather membrane. A 50mm cavity separates the timber frame from the outer brick leaf.

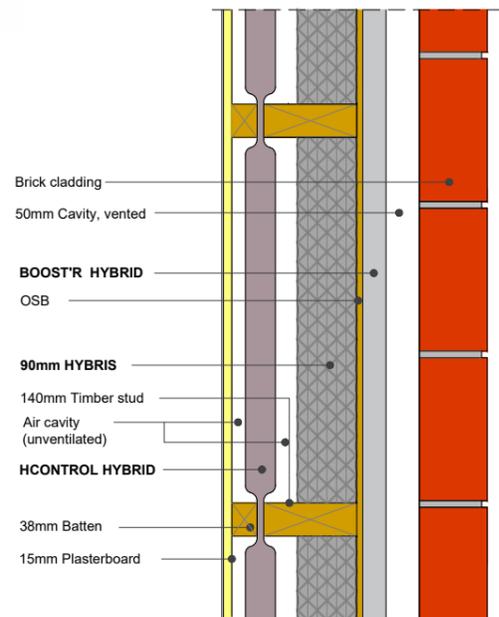
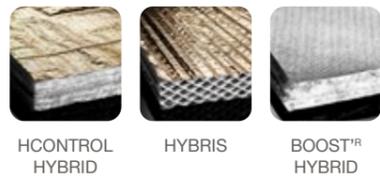
min. stud size (mm)	Products used	U-value (W/m <sup>2</sup> K)	Reference
175 x 47	HCONTROL HYBRID + 125mm HYBRIS + BOOST <sup>®</sup> HYBRID	0.13	PF218
140 x 38	HCONTROL HYBRID + 100 PIR + BOOST <sup>®</sup> HYBRID	0.13	PF217
140 x 38	HCONTROL HYBRID + 90mm HYBRIS + BOOST <sup>®</sup> HYBRID	0.14	PF201
140 x 38	BOOST <sup>®</sup> HYBRID + 105mm HYBRIS + REFLECTIVE VAPOUR CONTROL LAYER*	0.15	PF216
140 x 38	HCONTROL HYBRID + 105mm HYBRIS + REFLECTIVE BREATHER MEMBRANE*	0.15	PF215
140 x 38	HCONTROL HYBRID + 105mm HYBRIS + REFLECTIVE BREATHER MEMBRANE	0.16	PF214
140 x 38	BOOST <sup>®</sup> HYBRID + 105mm HYBRIS + REFLECTIVE VAPOUR CONTROL LAYER	0.16	PF213
140 x 38	HCONTROL HYBRID + 90mm HYBRIS + REFLECTIVE BREATHER MEMBRANE	0.17	PF212
140 x 38	HCONTROL HYBRID + 105mm HYBRIS	0.18	PF210
114 x 38	HCONTROL HYBRID + 75mm HYBRIS + REFLECTIVE BREATHER MEMBRANE	0.18	PF211
140 x 38	BOOST <sup>®</sup> HYBRID + 125mm HYBRIS	0.18	PF209
140 x 38	REFLECTIVE VAPOUR CONTROL LAYER + 125mm HYBRIS + REFLECTIVE BREATHER MEMBRANE	0.19	PF208
89 x 38	HCONTROL HYBRID + 50mm HYBRIS + REFLECTIVE BREATHER MEMBRANE	0.20	PF207
140 x 38	REFLECTIVE VAPOUR CONTROL LAYER + 105mm HYBRIS + REFLECTIVE BREATHER MEMBRANE	0.21	PF206
114 x 38	BOOST <sup>®</sup> HYBRID + 90mm HYBRIS	0.21	PF205
140 x 38	125mm HYBRIS + REFLECTIVE BREATHER MEMBRANE	0.22	PF204
72 x 47	HCONTROL HYBRID + REFLECTIVE BREATHER MEMBRANE	0.26	PF203
140 x 38	125mm HYBRIS	0.26	PF202

\* Lightweight block finish

HYBRID SYSTEM SOLUTION

PF201: HCONTROL HYBRID + 90mm HYBRIS + BOOST<sup>®</sup> HYBRID

U-VALUE REACHED: 0.14 W/m<sup>2</sup>K



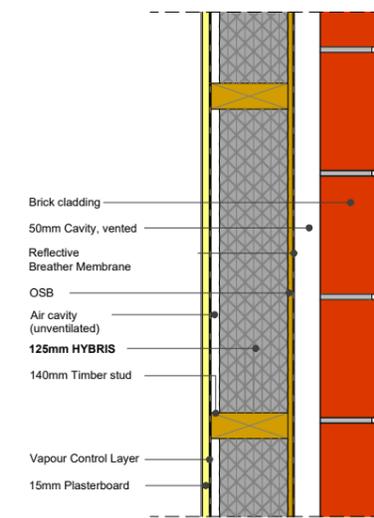
OTHER HYBRID CONFIGURATIONS

PF204: 125mm HYBRIS + REFLECTIVE BREATHER MEMBRANE

U-VALUE REACHED: 0.22 W/m<sup>2</sup>K



HYBRIS



PF214: HCONTROL HYBRID + 105mm HYBRIS + REFLECTIVE BREATHER MEMBRANE

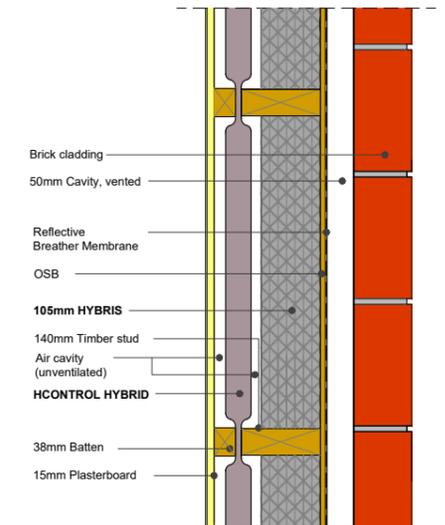
U-VALUE REACHED: 0.16 W/m<sup>2</sup>K



HCONTROL HYBRID



HYBRIS



PF209: 125mm HYBRIS + BOOST<sup>®</sup> HYBRID

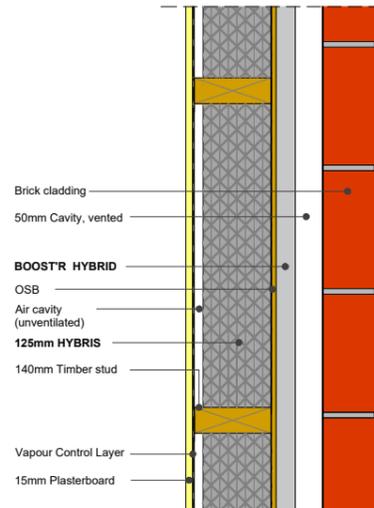
U-VALUE REACHED: 0.18 W/m<sup>2</sup>K



HYBRIS



BOOST<sup>®</sup> HYBRID



TIMBER FRAME WALL WITH TIMBER CLADDING

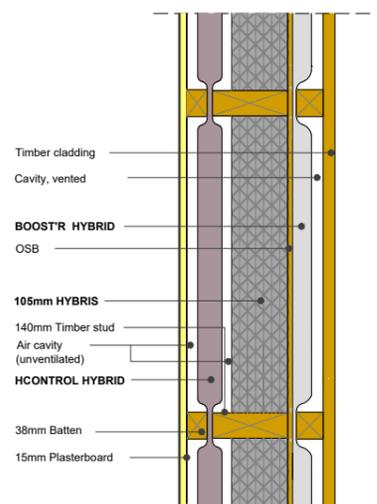
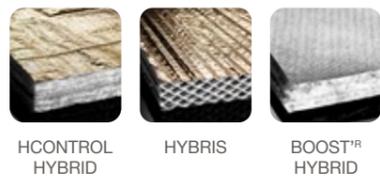
**HYBRIS** is fitted between studs, faced internally with **HCONTROL HYBRID**, the vapour control layer and externally with OSB and **BOOST<sup>®</sup> HYBRID**, the breather membrane, then a batten cavity before the external cladding.

min. stud size (mm)	Products used	U-value (W/m <sup>2</sup> K)	Reference
External Timber Frame with timber cladding			
175 x 47	HCONTROL HYBRID + 125mm HYBRIS + BOOST <sup>®</sup> HYBRID	0.13	PF230
140 x 38	HCONTROL HYBRID + 105mm HYBRIS + BOOST <sup>®</sup> HYBRID	0.14	PF229
140 x 38	HCONTROL HYBRID + 105mm HYBRIS + REFLECTIVE BREATHER MEMBRANE	0.16	PF228
140 x 38	125mm HYBRIS + BOOST <sup>®</sup> HYBRID + REFLECTIVE VAPOUR CONTROL LAYER	0.17	PF227
140 x 38	HCONTROL HYBRID + 105mm HYBRIS	0.18	PF226
114 x 38	HCONTROL HYBRID + 75mm HYBRIS + REFLECTIVE BREATHER MEMBRANE	0.18	PF225
140 x 38	125mm HYBRIS + BOOST <sup>®</sup> HYBRID	0.19	PF224
140 x 38	125mm HYBRIS + REFLECTIVE VAPOUR CONTROL LAYER + REFLECTIVE BREATHER MEMBRANE	0.20	PF223
125 x 47	105mm HYBRIS + BOOST <sup>®</sup> HYBRID	0.20	PF221
140 x 38	105mm HYBRIS + REFLECTIVE VAPOUR CONTROL LAYER + REFLECTIVE BREATHER MEMBRANE	0.21	PF222
140 x 38	125mm HYBRIS + REFLECTIVE BREATHER MEMBRANE	0.23	PF220
89 x 38	HCONTROL HYBRID + REFLECTIVE BREATHER MEMBRANE	0.26	PF219
External Timber Frame with timber cladding (example Dormer Cheek)			
175 x 47	HCONTROL HYBRID + 125mm HYBRIS + BOOST <sup>®</sup> HYBRID	0.13	PF236
125 x 47	HCONTROL HYBRID + 90mm HYBRIS + BOOST <sup>®</sup> HYBRID	0.15	PF240
150 x 47	HCONTROL HYBRID + 125mm HYBRIS + REFLECTIVE BREATHER MEMBRANE	0.15	PF241
100 x 47	HCONTROL HYBRID + 60mm HYBRIS + BOOST <sup>®</sup> HYBRID ROOF	0.17	PF239
125 x 47	HCONTROL HYBRID + 90mm HYBRIS + REFLECTIVE BREATHER MEMBRANE	0.17	PF238
125 x 47	HCONTROL HYBRID + 90mm HYBRIS	0.18	PF237
100 x 47	HCONTROL HYBRID + 75mm Hybris + REFLECTIVE BREATHER MEMBRANE	0.19	PF235
125 x 47	105mm HYBRIS + BOOST <sup>®</sup> HYBRID ROOF	0.21	PF234
100 x 47	90mm HYBRIS + BOOST <sup>®</sup> HYBRID ROOF	0.23	PF233
125 x 47	105mm HYBRIS + REFLECTIVE BREATHER MEMBRANE	0.24	PF232
100 x 47	HCONTROL HYBRID + REFLECTIVE BREATHER MEMBRANE	0.26	PF231

HYBRID SYSTEM SOLUTION

PF229: HCONTROL HYBRID + 105mm HYBRIS + BOOST<sup>®</sup> HYBRID

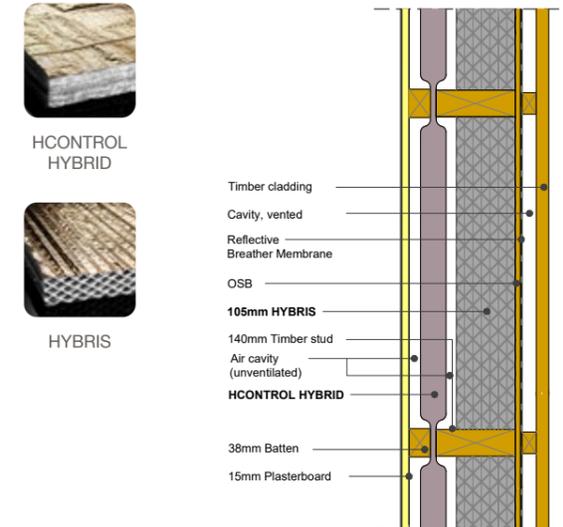
U-VALUE REACHED: 0.14 W/m<sup>2</sup>K



OTHER HYBRID CONFIGURATIONS

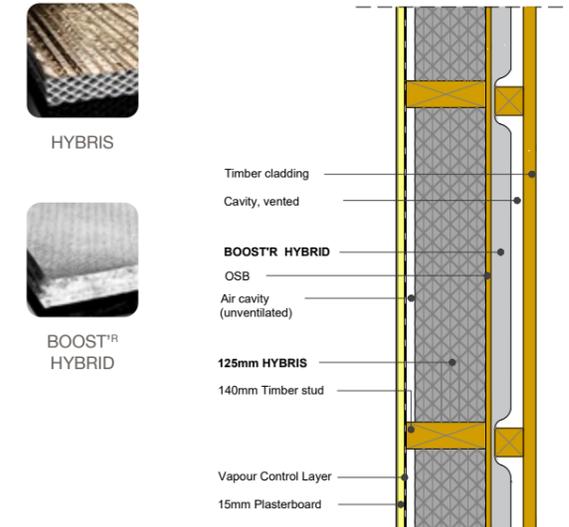
PF228: HCONTROL HYBRID + 105mm HYBRIS + REFLECTIVE BREATHER MEMBRANE

U-VALUE REACHED: 0.16 W/m<sup>2</sup>K



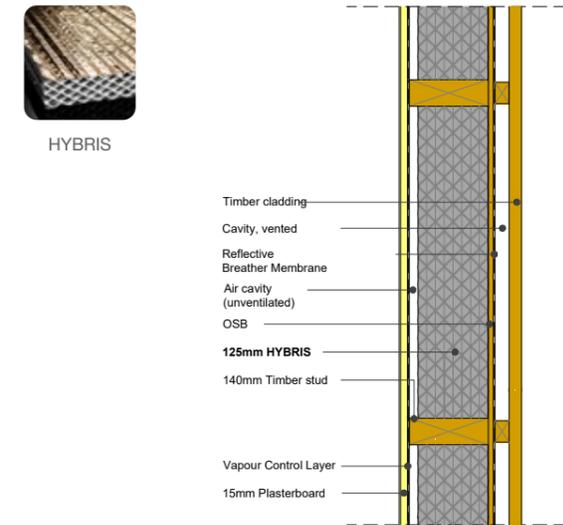
PF224: 125mm HYBRIS + BOOST<sup>®</sup> HYBRID

U-VALUE REACHED: 0.19 W/m<sup>2</sup>K



PF220: 125mm HYBRIS + REFLECTIVE BREATHER MEMBRANE

U-VALUE REACHED: 0.23 W/m<sup>2</sup>K



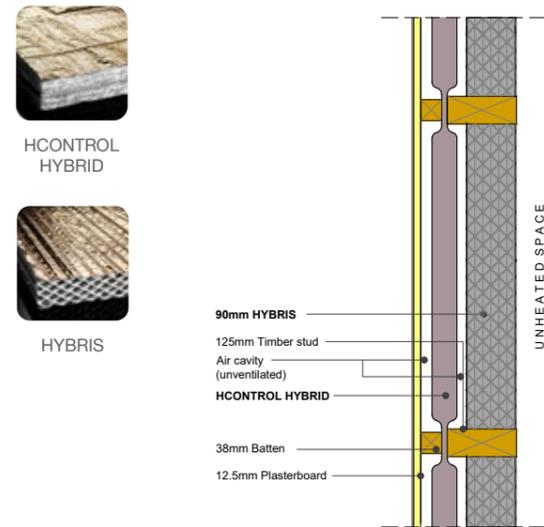
ASHLAR WALL

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 <sup>2</sup> K)	Reference
200 x 47	HCONTROL HYBRID + 170mm HYBRIS	0.14	PF248
175 x 47	HCONTROL HYBRID + 140mm HYBRIS	0.15	PF247
125 x 47	HCONTROL HYBRID + 90mm HYBRIS	0.18	PF246
225 x 47	185mm HYBRIS	0.18	PF298

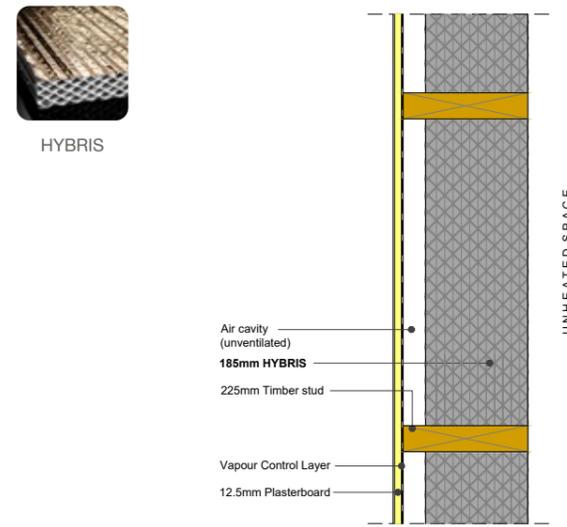
PF246: HCONTROL HYBRID + 90mm HYBRIS

U-VALUE REACHED: 0.18 W/m<sup>2</sup>K



PF298: 185mm HYBRIS

U-VALUE REACHED: 0.18 W/m<sup>2</sup>K



SOLID WALL WITH INTERNAL INSULATION

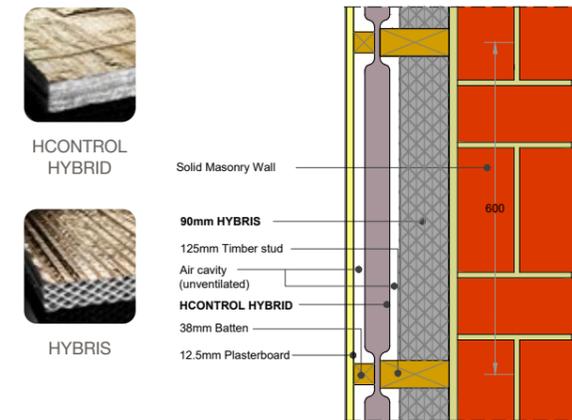
HCONTROL HYBRID and/or HYBRIS is installed on the internal side of a solid wall. Internal finish is standard plasterboard.

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 and solutions for absorbent masonry walls.

min. stud size (mm)	Products used	U-value (W/m <sup>2</sup> K)	Reference
<b>Solid Wall</b>			
Internal insulation			
140 x 38	HCONTROL HYBRID + 140mm HYBRIS	0.15	PF252
125 x 47	HCONTROL HYBRID + 90mm HYBRIS	0.19	PF251
125 x 47	105mm HYBRIS	0.28	PF250
38 x 38	HCONTROL HYBRID + 22mm (EPS) INSULATED PLASTERBOARD (2 X 38mm BATTENS)	0.28	PF249
<b>Cavity Wall (uninsulated cavity)</b>			
Internal Insulation			
175 x 47	HCONTROL HYBRID + 125mm HYBRIS	0.16	PF256
125 x 47	HCONTROL HYBRID + 90mm HYBRIS	0.19	PF255
114 x 38	90mm HYBRIS	0.29	PF254
38 x 38	HCONTROL HYBRID (2 X 38mm BATTENS)	0.30	PF253

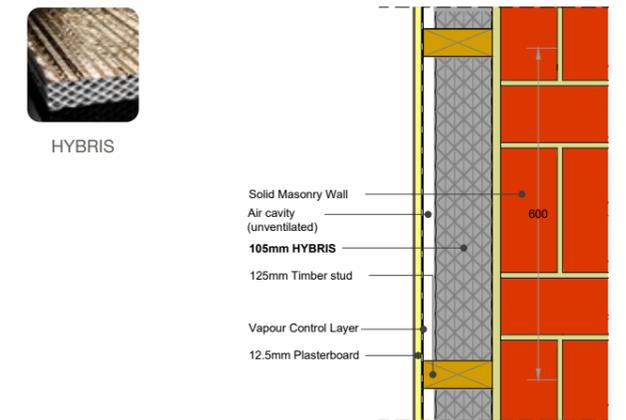
PF251: HCONTROL HYBRID + 90mm HYBRIS

U-VALUE REACHED: 0.19 W/m<sup>2</sup>K



PF250: 105mm HYBRIS

U-VALUE REACHED: 0.28 W/m<sup>2</sup>K



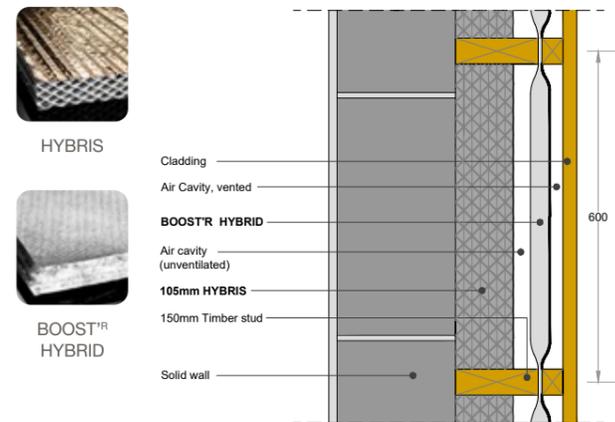
**SOLID WALL WITH EXTERNAL INSULATION**

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

min. stud size (mm)	Products used	U-value (W/m <sup>2</sup> K)	Reference
<b>Solid Wall</b>			
External insulation			
175 x 47	125mm HYBRIS + BOOST <sup>®</sup> HYBRID	0.16	PF259
150 x 47	105mm HYBRIS + BOOST <sup>®</sup> HYBRID	0.18	PF258
75 x 47	60mm HYBRIS + REFLECTIVE BREATHER MEMBRANE	0.30	PF257
<b>Cavity Wall (uninsulated cavity)</b>			
External insulation			
175 x 47	140mm HYBRIS + BOOST <sup>®</sup> HYBRID	0.16	PF262
150 x 47	125mm HYBRIS + BOOST <sup>®</sup> HYBRID	0.18	PF261
75 x 47	60mm HYBRIS + REFLECTIVE BREATHER MEMBRANE	0.30	PF260

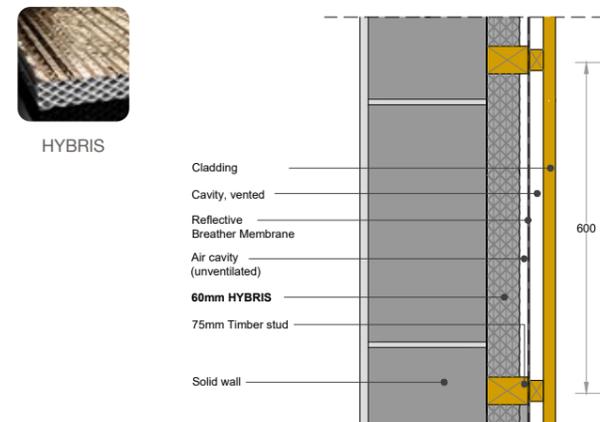
PF258: 105mm HYBRIS + BOOST<sup>®</sup> HYBRID

**U-VALUE REACHED: 0.18 W/m<sup>2</sup>K**



PF257: 60mm HYBRIS + REFLECTIVE BREATHER MEMBRANE

**U-VALUE REACHED: 0.30 W/m<sup>2</sup>K**



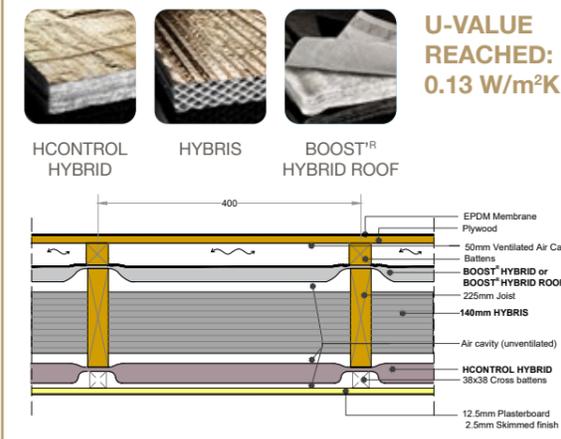
**COLD FLAT ROOF \***

**HCONTROL HYBRID, HYBRIS, BOOST<sup>®</sup> HYBRID** or **BOOST<sup>®</sup> HYBRID ROOF** can be installed but please note in accordance with BS5250:2020 cold insulated flat roofs with a span greater than 5 metres should no longer be accepted and must be a warm or inverted roof design instead. 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 <sup>2</sup> K)	Reference
275 x 47	HCONTROL HYBRID + 195mm HYBRIS + BOOST <sup>®</sup> HYBRID ROOF	0.11	PF267
250 x 47	HCONTROL HYBRID + 205mm HYBRIS	0.13	PF266
225 x 47	HCONTROL HYBRID + 140mm HYBRIS + BOOST <sup>®</sup> HYBRID ROOF	0.13	PF265
175 x 47	HCONTROL HYBRID + 155mm HYBRIS	0.16	PF264
225 x 47	170mm HYBRIS + BOOST <sup>®</sup> HYBRID ROOF	0.16	PF263

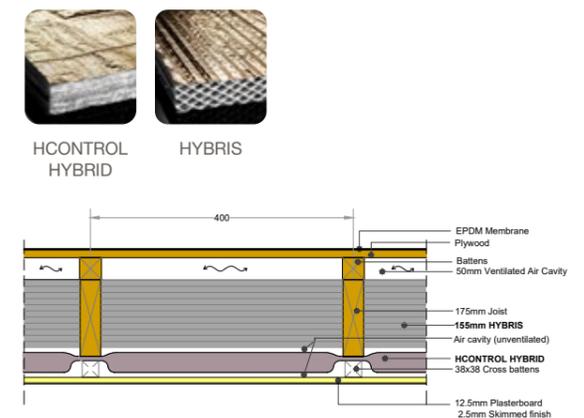
**HYBRID SYSTEM SOLUTION**

PF265: HCONTROL HYBRID + 140mm HYBRIS + BOOST<sup>®</sup> HYBRID ROOF



PF264: HCONTROL HYBRID + 155mm HYBRIS

**U-VALUE REACHED: 0.16 W/m<sup>2</sup>K**



**WARM FLAT ROOFS \***

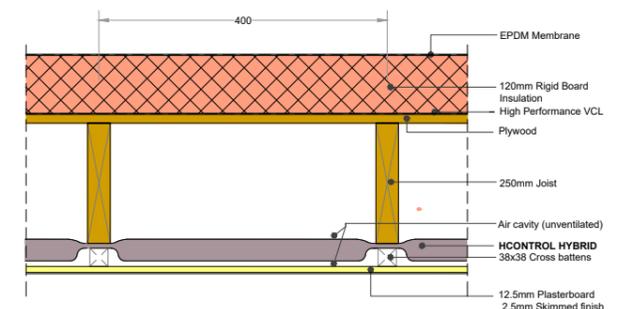
**HCONTROL HYBRID** can be installed to reduce the thickness of rigid board insulation, but only if specific circumstances apply, please contact ACTIS for further details.

PF269: HControl Hybrid + 120mm PIR (λ=0.025 W/mK)

**U-VALUE REACHED: 0.13 W/m<sup>2</sup>K**



Joist sizes	Products used	U-value (W/m <sup>2</sup> K)	Reference
250 x 47	HCONTROL HYBRID + 150mm PIR	0.11	PF270
250 x 47	HCONTROL HYBRID + 120mm PIR	0.13	PF269
250 x 47	HCONTROL HYBRID + 90mm PIR	0.16	PF268



\*Note: Please use in conjunction with Actis 'Flat Roof Guidelines'

WARM PITCHED ROOF WITH INSULATION AT SLOPING CEILING

**BOOST<sup>TR</sup> HYBRID** or **BOOST<sup>TR</sup> 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	Timber centres (mm)	Products used	U-value (W/m <sup>2</sup> K)	Reference	
250 x 47	600	HCONTROL HYBRID + 185mm HYBRIS + BOOST <sup>TR</sup> HYBRID ROOF	0.11	PF273	
200 x 47		HCONTROL HYBRID + 125mm HYBRIS + BOOST <sup>TR</sup> HYBRID ROOF	0.13	PF272	
225 x 47		HCONTROL HYBRID + 170mm HYBRIS	0.13	PF276	
250 x 47		185mm HYBRIS + BOOST <sup>TR</sup> HYBRID ROOF	0.14	PF297	
150 x 47		HCONTROL HYBRID + 90mm HYBRIS + BOOST <sup>TR</sup> HYBRID ROOF	0.15	PF200	
175 x 47		HCONTROL HYBRID + 140mm HYBRIS	0.15	PF275	
225 x 47		170mm HYBRIS + BOOST <sup>TR</sup> HYBRID ROOF	0.15	PF278	
150 x 47		HCONTROL HYBRID + 75mm HYBRIS + BOOST <sup>TR</sup> HYBRID ROOF	0.16	PF271	
175 x 47		HCONTROL HYBRID + 125mm HYBRIS	0.16	PF274	
200 x 47		155mm HYBRIS + BOOST <sup>TR</sup> HYBRID ROOF	0.16	PF277	
275 x 47		205mm HYBRIS	0.16	PF280	
150 x 47		400	HCONTROL HYBRID + 90mm HYBRIS + BOOST <sup>TR</sup> HYBRID ROOF	0.16	PF281
175 x 47			HCONTROL HYBRID + 140mm HYBRIS	0.16	PF282
225 x 47			170mm HYBRIS + BOOST <sup>TR</sup> HYBRID ROOF	0.16	PF283
100 x 47	50mm HYBRIS + BOOST <sup>TR</sup> HYBRID ROOF		0.30	PF284	

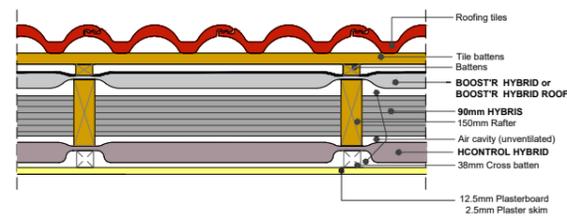
HYBRID SYSTEM SOLUTION

PF200: HCONTROL HYBRID + 90mm HYBRIS + BOOST<sup>TR</sup> HYBRID ROOF

U-VALUE REACHED: 0.15 W/m<sup>2</sup>K

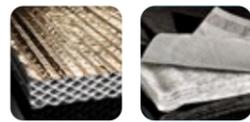


HCONTROL HYBRID    HYBRIS    BOOST<sup>TR</sup> HYBRID ROOF

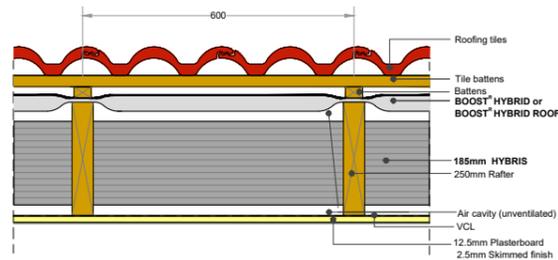


PF297: 185mm HYBRIS + BOOST<sup>TR</sup> HYBRID ROOF

U-VALUE REACHED: 0.14 W/m<sup>2</sup>K



HYBRIS    BOOST<sup>TR</sup> HYBRID ROOF



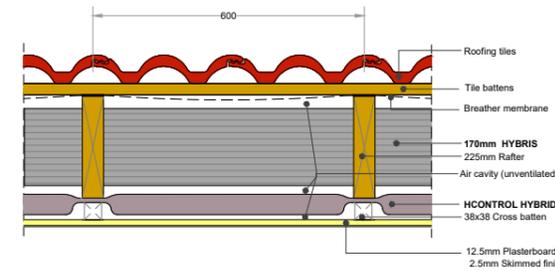
OTHER HYBRID CONFIGURATIONS

PF276: HCONTROL HYBRID + 170mm HYBRIS

U-VALUE REACHED: 0.13 W/m<sup>2</sup>K



HCONTROL HYBRID    HYBRIS

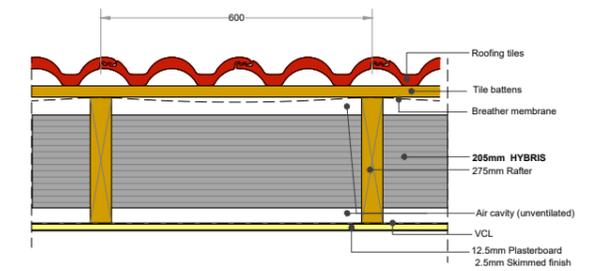


PF280: 205mm HYBRIS

U-VALUE REACHED: 0.16 W/m<sup>2</sup>K



HYBRIS

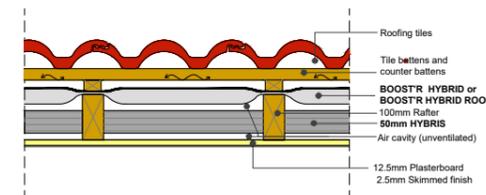


PF284: HCONTROL HYBRID + 50mm HYBRIS

U-VALUE REACHED: 0.30 W/m<sup>2</sup>K



HCONTROL HYBRID    HYBRIS



SUSPENDED TIMBER FLOOR

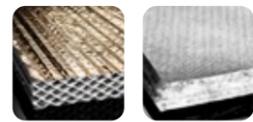
The floor construction is suspended above a ventilated void above ground. The underfloor space is enclosed around the perimeter with appropriate ventilation openings and a damp proof course (DPC) installed. **HYBRIS** is fitted between joists and can be faced externally with **BOOST<sup>®</sup> HYBRID**, the breather membrane.

Products used	Timber dimensions (mm)	Timber centres (mm)	U-values calculated from perimeter/area ratio						Reference
			0.2	0.3	0.4	0.5	0.6	0.7	
Ratio									
205mm HYBRIS + BOOST <sup>®</sup> HYBRID	300 x 38	400	0.10	0.11	0.11	0.11	0.11	0.11	PF291
155mm HYBRIS + BOOST <sup>®</sup> HYBRID	250 x 38		0.12	0.12	0.13	0.13	0.13	0.13	PF290
170mm HYBRIS	250 x 38		0.13	0.14	0.14	0.15	0.15	0.15	PF289
105mm HYBRIS + BOOST <sup>®</sup> HYBRID	200 x 38		0.13	0.14	0.15	0.15	0.15	0.16	PF288
125mm HYBRIS	200 x 38		0.16	0.17	0.18	0.18	0.19	0.19	PF287
BOOST <sup>®</sup> HYBRID	125 x 47		0.19	0.21	0.23	0.23	0.24	0.24	PF285
90mm HYBRIS	125 x 47		0.20	0.22	0.23	0.24	0.24	0.25	PF286

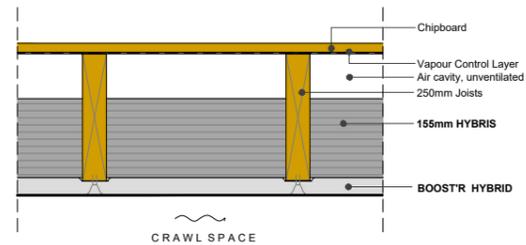
The following examples are based on perimeter/area ratio being 0.5:

PF290: 155mm HYBRIS + BOOST<sup>®</sup> HYBRID

U-VALUE REACHED: 0.13 W/m<sup>2</sup>K



HYBRIS BOOST<sup>®</sup> HYBRID

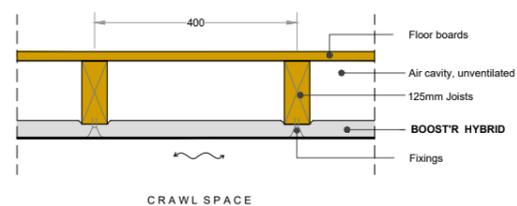


PF285: BOOST<sup>®</sup> HYBRID

U-VALUE REACHED: 0.23 W/m<sup>2</sup>K



BOOST<sup>®</sup> HYBRID

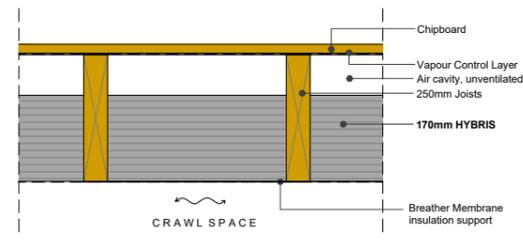


PF289: 170mm HYBRIS

U-VALUE REACHED: 0.15 W/m<sup>2</sup>K



HYBRIS

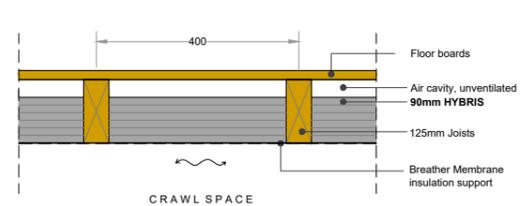


PF286: 90mm HYBRIS

U-VALUE REACHED: 0.24 W/m<sup>2</sup>K



HYBRIS



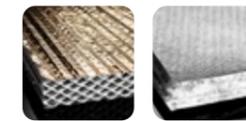
EXPOSED TIMBER FLOOR

**HYBRIS** is fitted between joists and can be faced externally with **BOOST<sup>®</sup> HYBRID**, the breather membrane.

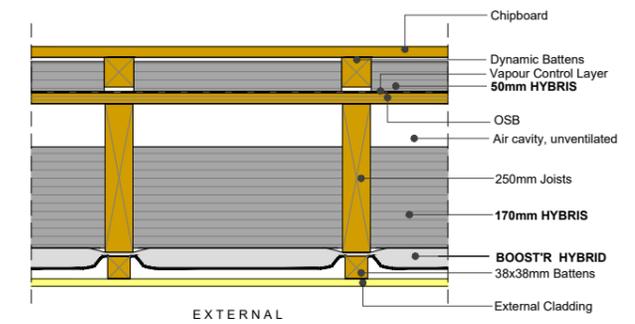
Products used	Timber dimensions (mm)	Timber centres (mm)	U-value (W/m <sup>2</sup> K)	Reference
50mm HYBRIS + 170mm HYBRIS + BOOST <sup>®</sup> HYBRID	250 x 38	400	0.11	PF295
50mm HYBRIS + 125mm HYBRIS + BOOST <sup>®</sup> HYBRID	200 x 38		0.13	PF296
140mm HYBRIS + BOOST <sup>®</sup> HYBRID	200 x 38		0.15	PF293
205mm HYBRIS	300 x 38		0.15	PF294
155mm HYBRIS	250 x 38		0.18	PF292

PF295: 50mm HYBRIS + 170mm HYBRIS + BOOST<sup>®</sup> HYBRID

U-VALUE REACHED: 0.11 W/m<sup>2</sup>K



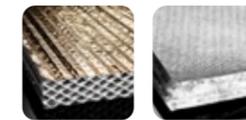
HYBRIS BOOST<sup>®</sup> HYBRID



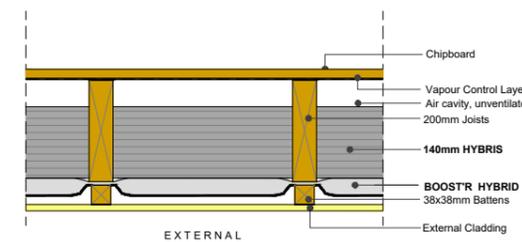
OTHER HYBRID CONFIGURATIONS

PF293: 140mm HYBRIS + BOOST<sup>®</sup> HYBRID

U-VALUE REACHED: 0.15 W/m<sup>2</sup>K



HYBRIS BOOST<sup>®</sup> HYBRID

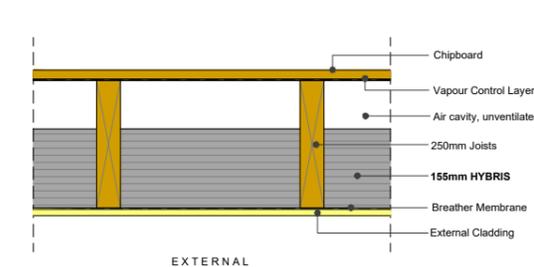


PF292: 155mm HYBRIS

U-VALUE REACHED: 0.18 W/m<sup>2</sup>K



HYBRIS



Schemes	Legislation		U-Value W/m <sup>2</sup> K				
	Act	Wall			Roof		Flat
		External	Cavity	Party	Ceiling	Pitched	
<b>England (pre 15th June 2022)</b>							
New Build	Notional	BRegs Part L	0.18		0.13		
	Limiting		0.30	0.20	0.20		
Existing	New & replaced		0.28		0.16	0.18	
	Retained		0.30	0.55	0.16	0.18	
	Retained treshold		0.70		0.35		
<b>Wales (pre 23rd November 2022)</b>							
New Build	Notional	BRegs Part L	0.18		0.13		
	Limiting		0.21	0.20	0.15		
Existing	New & replaced		0.21		0.15		
	Conversion & renovation		0.30	0.55	0.16	0.18	
	Retained treshold		0.70		0.35		
<b>Scotland (pre 1st December 2022)</b>							
New Build	Notional	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)		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.

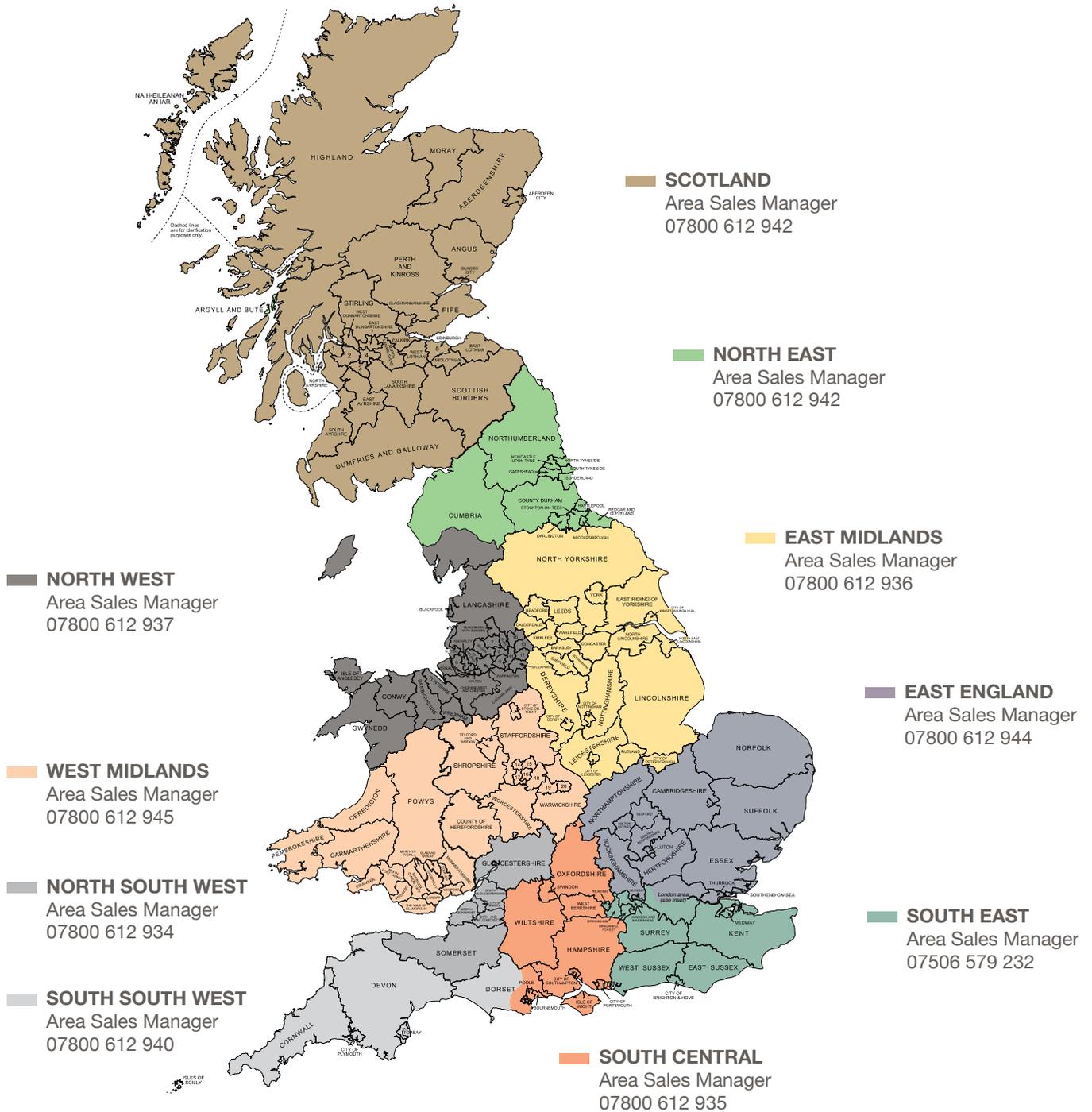
England, Wales and Scotland are now each responsible for their own Building Regulations and target U-values can therefore differ throughout the UK. The above table gives a summary of requirements for domestic buildings at time of printing (June 2022). If required this information can be confirmed with 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.

Schemes	Legislation		U-Value W/m <sup>2</sup> K			
	Act	Wall		Roof	Floor	
		External	Cavity			
<b>England (from 15th June 2022)</b>						
New Build	Notional	BRegs Part L	0.18		0.11	0.13
	Limiting		0.26		0.16	0.18
Existing	New & replaced, incl. extentions		0.18		0.15	0.18
	Renovation & upgrading retained elements		0.30	0.55	0.16	0.25
	Retained treshold		0.70		0.35	0.70
<b>Wales (from 23rd November 2022)</b>						
New Build	Notional	BRegs Part L	0.13		0.11	0.11
	Limiting		<b>Houses: 0.18</b>	<b>Flats: 0.21</b>	0.13	0.15
Existing	New & replaced, incl. extentions		<b>Houses: 0.18</b>	<b>Flats: 0.21</b>	0.13	0.15
	Conversion, renovation, change of use		0.30	0.55	0.16	0.25
	Retained treshold		0.70		0.35	0.70
<b>Scotland (from 1st December 2022)</b>						
New Build	Notional	Section 6	0.15		0.09	0.12
	Limiting		0.17		0.12	0.15
Existing	Extensions, conversions, alterations		Same as limiting U-values for new build			
	Individual elements (localised areas)		0.70		0.35	0.70

# YOUR CONTACTS FOR MORE INFORMATION



## REGIONAL SPECIFICATION MANAGERS

**NORTH UK** | 07508 525 917

**SOUTH WEST ENGLAND & WALES** | 07800 612 943

**SOUTH EAST ENGLAND** | 07951 769 494

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