Physical Properties

Cellecta's insulation products are manufactured to the highest possible specification. All products' physical properties are determined under strictly controlled laboratory conditions in accordance with the new harmonised European Standards.

All *Cellecta's* extruded polystyrenes have excellent properties which will last the life of the building:

- Excellent thermal performance
- CFC & HCFC free
- Zero ODP
- High compressive strength
- Very low water absorption
- Closed-cell structure
- Zero capillary strength

The closed-cell structure of YELOFOAM X magnified by 500 times.

			YELOFOAM®															
Properties[1]	**Standard**	**Unit**	**X2i**	**X3i**	**X4L**	**TETRiS**	**XCHiP**[3][7]	**XCPL**[4][7]	**XWL**	**XPLY**[5][7]	**XPERi**	**XR**	**XGYP**[6][7]	**X2D**	**XPT**[7]	**X3L**	**XDRAIN**	**XMD**[8]
Thermal conductivity	BS EN 12667: 2001	W/mK	0.029	≤120 - 0.029 ≥120 - 0.031	≤60 - 0.030 70 - 80 - 0.032 ≥90 - 0.033	0.029	≤60 - 0.031 70 - 80 - 0.033 ≥90 - 0.034	≤120 - 0.029 140 - 0.031 160 - 0.033	0.029	≤120 - 0.029 140 - 0.031 160 - 0.033	0.029	≤60 - 0.031 70 - 80 - 0.033 ≥90 - 0.034	≤60 - 0.031 70 - 80 - 0.033 ≥90 - 0.034	≤120 - 0.029 140 - 0.031 160 - 0.033	≤120 - 0.029 140 - 0.031 160 - 0.033	≤120 - 0.029 ≥120 - 0.031	≤120 - 0.029 ≥120 - 0.031	0.029
Compressive strength[2]	BS EN 826	kPa	≤40mm 250 ≥50mm 300	≤40mm 300 ≥50mm 350	480	320	280	300	300	300	350	280	280	≤40mm 250 ≥50mm 300	300	350	350	300
Grade	BS EN 826	–	CS250 CS300	CS300	CS400	CS300	CS250	CS300	CS300	CS300	CS300	CS250	CS250	CS250 CS300	CS300	CS300	CS300	CS300
Long-term water absorption by immersion	BS EN 12087	% Volume	<0.5%	<0.5%	<0.5%	<0.5%	<0.7%	<0.5%	<0.5%	<0.5%	<0.5%	<0.7%	<0.7%	<0.5%	<0.5%	<0.5%	<0.5%	<0.5%
Water vapour diffusion factor	BS EN 12086		100-200	100-200	100-200	100-200	100	100-200	100-200	100-200	100-200	100	100	100-200	100-200	100-200	100-200	100-200
Capillarity	–	–	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None
Density (minimum)	BS EN 1602	kg/m^3	30	34	40	34	30	30	30	30	34	30	30	30	30	34	34	30
Temperature range	–	°C	-50/+75	-50/+75	-50/+75	-50/+75	-50/+75	-50/+75	-50/+75	-50/+75	-50/+75	-50/+75	-50/+75	-50/+75	-50/+75	-50/+75	-50/+75	-50/+75
Surface finish	–	– –	Skin Skin	Skin Skin	Skin Skin	Skin Skin	18mm P5 Chipboard Skin / Planed	6mm Grey cementitious or white Glasroc sheet Skin	Skin Skin	12mm Plywood Skin	Skin Skin	Planed Planed	10 or 12.5mm Plasterboard Planed	Skin Skin	Skin Skin	Skin Skin	Skin Skin & drainage channels	6mm High impact cementitious sheet Skin

(1) Physical properties of extruded polystyrene
(2) Minimum value at 10% compression
(3) Faced with a 18mm P5 moisture resistant chipboard with a thermal conductivity of 0.14W/mK.
(4) Faced with a 6mm class O high impact reinforced cement building board) with a thermal conductivity of 0.41W/mK or a 6mm class O white glasroc multiboard with a thermal conductivity of 0.29W/mK.
(5) Faced with a 12mm Far Eastern grade plywood with a thermal conductivity of 0.14W/mK.
(6) Faced with either a class O 10mm or 12.5mm plasterboard with a thermal conductivity of 0.16W/mK.
(7) Subject to availability thickness's over 100mm may a combination of boards factory laminated.
(8) Faced with a 6mm class O high impact reinforced cement building board with a thermal conductivity of 0.41W/mK.

Board dimensions

	Unit	X2i	X3i	X4L	TETRiS	XCHiP	XCPL	XWL	XPLY	XPERi	XR	XGYP	X2D	XPT	X3L	XDRAIN	XMD
Board size	mm	600 x 2500	600 x 2500	600 x 1250	600 x 2500 300 x 2500	600 x 2400	1200 x 2400	450 x 1250	1200 x 2400	600 x 2500	600 x 2500	1200 x 2400	600 x 2500	600 x 2500 400 x 2500	600 x 1250	600 x 1250	1200 x 2400 or cut to size
Standard thickness'[9]	mm	20 25 30 35 40 50 60 65 70 75 80 90 100 - - -	- - 30 - 40 50 60 - - 75 80 90 100 120 140 160	- - - - - 50 60 - - 75 80 90 100 120 140 160	- - - - - - - - - - - 90 100 120 140 160	38 (18 + 20) 43 (18 + 25) 48 (18 + 30) 53 (18 + 35) 58 (18 + 40) 68 (18 + 50) 78 (18 + 60) 83 (18 + 65) 88 (18 + 70) 95 (18 + 75) 98 (18 + 80) 108 (18 + 90) 118 (18 + 100) 138 (18 + 120) 158 (18 + 140) 178 (18 + 160)	- - - - - - - - - - 86 (6 + 80) 96 (6 + 90) 106 (6 + 100) 126 (6 + 120) 146 (6 + 140) 166 (6 + 160)	- 25 - - 40 50 60 - 70 - 80 - - - - -	- - 42 (12 + 30) 47 (12 + 35) 52 (12 + 40) 62 (12 + 50) 72 (12 + 60) 77 (12 + 65) 82 (12 + 70) 87 (12 + 75) 92 (12 + 80) 102 (12 + 90) 112 (12 + 100) 132 (12 + 120) 152 (12 + 140) 172 (12 + 160)	- - 30 40 - 50 60 - - - 80 - 100 - - -	20 25 30 - 40 50 60 - - - 80 90 100 120 140 150	10 / 12.5 + 20 10 / 12.5 + 25 10 / 12.5 + 30 - 10 / 12.5 + 40 10 / 12.5 + 50 10 / 12.5 + 60 - - - 10 / 12.5 + 80 10 / 12.5 + 90 10 / 12.5 + 100 10 / 12.5 + 120 - -	- - - 40 - 50 60 - - - 80 - 100 120 140 160	- - - - - - - - - - 80 90 100 120 140 160	- - - - - 50 60 - 70 75 80 90 100 120 140 160	- - - - - 50 60 - 70 75 80 90 100 120 140 160	- - - - - 56 (6 + 50) 66 (6 + 60) - - 81 (6 + 75) 86 (6 + 80) 96 (6 + 90) 106 (6 + 100) 126 (6 + 120) - -
Edge profile	-	Square	Square	Shiplap	Rebated	Tongue & grooved	Square	Shiplap	Square	Tongue & grooved	Square	Square	Tongue & grooved	Rebated	Shiplap	Shiplap	Square

Note. [9] Other sizes manufactured to order subject to minimum quantity.

Independent Accreditation & Approvals

CE

Cellecta's extruded polystyrenes are manufactured in accordance with harmonised European Standard EN 13374: 2001, and where required carry the CE mark.

UKAS Tested
N° 26822

Cellecta's extruded polystyrenes have been independently tested by a UKAS accredited laboratory in accordance with BS EN 12267: 2001, confirming the advertised thermal conductivity is correct.

BRE Certification Limited
093/02

TETRiS insulation blocks have undergone rigorous testing by the Building Research Establishment to confirm their technical performance and application suitability, and have been awarded BRE certification. They are also accepted by the NHBC & Zurich Assurance.

NHBC Accepted

Z Accepted

Properties	**Standard**	**Unit**	**XES**	**XCC**
Thermal conductivity	BS EN 12667: 2001	W/mK	0.029	0.029
Compressive strength	BS EN 826	kPa	250	250
Long-term water absorption by immersion	BS EN 12087	% Volume	<0.5%	<0.5%
Temperature range	–	°C	-50/+75	-50/+75
Surface finish	–	–	Skin	Waffled
Strip size / closer size	–	mm	Cut to suit (600 x 2500 max)	2500
Standard - Thickness'/ cavity closer widths	–	mm	20 25 30 35 40 50	50 65 75 85 90 100