



CHEER SYSTEM INTERNATIONAL (THAILAND) LIMITED

บริษัท เชียร์ ซีสเต็ม อินเตอร์เนชั่นแนล (ไทยแลนด์) จำกัด

Information about XPS Foam

⊕ PRODUCT BROCHURE : EUROPE'S GREEN INSULATION

⊕ APPLICATIONS

- Basement Insulation
- Load Bearing and Floor Insulation
- Wall Insulation
- Roof Insulation
- Ceiling Insulation
- Reconstruction and Refurbishment

⊕ TECHNICAL DATA

- Recommended Applications and Technical Data
- Technical Data and Assistance data for dimensioning

⊕ CHEMICAL RESISTANCE

⊕ XPS Foam : EUROPE'S GREEN INSULATION

⊕ WEBSITE : www.cheersystem.com

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RECOMMENDED APPLICATIONS XPS FOAM

RECOMMENDED APPLICATIONS ⊕ TECHNICAL DATA

COOLROFOAM	2500 C	2800 C	3035 CS	4000 CS	5000 CS
Load bearing floor slabs *			■	■	■
Domestic floors	■	■	■		
Load bearing floors	■	■	■	■	■
Perimeter* floor slabs			■	■	■
Premier* basement walls			■	■	■
Perimeter* / subsoil water areas			■	■	■
Cavity walls	■		■		
Internal walls		■			
Lost formwork		■			
Cold Bridges		■			
Exterior basement wall insulation		■			
Plaster base		■			
Inverted flat roofs			■	■	■
Duo roofs			■	■	■
Plus roofs			■	■	■
Parking decks				■ 1)	■
Promenade roofs			■	■	■
Roof gardens			■	■	■
Conventional flat roofs	■		■		
Parapet walls	■	■	■		
Pitched roofs	■	■			
Ceilings					
Plasterboard laminates		■			
Sandwich panels	■	■			
Warehouses	■		■	■	■
Roads and railways			■	■	■
Ice rinks			■	■	■

XPS FOAM : Extruded polystyrene foam conforming to DIN EN 13164

Free of CFC, HCFC, and HFC

* = Insulation in direct contact with the ground

1) Not for installation under concrete paving stones

Note : The information submitted in this publication is based on our current knowledge and experience at the time of going to press. It does not imply any legally binding assurance. Attention must be paid to the demands of specific applications, especially the physical and technological aspects of construction and building regulations.



TECHNICAL DATA XPS FOAM

Property	Unit ¹⁾	Code according to DIN EN 13164	CS 1150	CS 1250	CS 2160	CS 2260	Standard
Edge profile							
Surface			Skin	Skin	Skin	Skin	
Length x Width	mm		1000 x 500	2000 x 500	1000 x 600	2000 x 600	
Density	kg / m ³		36	36	36	36	DIN EN 1602
Thermal conductivity	λ_b [W/(m K)]		λ_b	λ_b	λ_b	λ_b	DIN EN
Thermal resistance	R_b [m ² ·K/W]		R_b	R_b	R_b	R_b	13164
	30 mm	-	0.032 0.95	0.032 0.95	0.032 0.95	0.032 0.95	
	40 mm	-	0.034 1.25	0.034 1.25	0.034 1.25	0.034 1.25	
	50 mm	-	0.034 1.50	0.034 1.50	0.034 1.50	0.034 1.50	
Thickness	60 mm	-	0.034 1.80	0.034 1.80	0.034 1.80	0.034 1.80	
	80 mm	-	-	0.036 2.30	0.036 2.30	0.036 2.30	
	100 mm	-	-	0.038 2.80	0.038 2.80	0.038 2.80	
	120 mm	-	-	0.038 3.20	0.038 3.20	0.038 3.20	
	140 mm	-	-	-	0.038 3.65	-	
Compressive stress or compressive strength at 10% deformation	kPa	CS(10\V)	150 - 200 ²⁾	200 - 300 ³⁾	300	500	DIN EN 826
Compressive creep over 50 years at < 2% deformation	kPa	CC(2/1.5/50)	60 - 80 ²⁾	200 - 300 ³⁾	130	180	DIN EN 1606
Certificated compressive stress under load bearing floor slabs	kPa	-	-	-	130	180	DIBT Z - 23, 34 - 1325
Adhesive strength concrete	kPa	TR 200	-	> 200	-	-	DIN EN 1607
Shear strength	kPa	SS	> 300	> 300	> 300	> 300	DIN EN 12090
Compressive modulus of elasticity	kPa	CM	10,000	15,000	20,000	30,000	DIN EN 826
Dimensional stability 70° C; 90% r.h.	%	DS(TH)	≤ 5%	≤ 5%	≤ 5%	≤ 5%	DIN EN 1604
Deformation behavior load 20 kPa; 80° C	%	DLT(1)5	≤ 5%	≤ 5%	≤ 5%	≤ 5%	DIN EN 1605
Deformation behavior load 40 kPa; 70° C	%	DLT(2)5	≤ 5%	≤ 5%	≤ 5%	≤ 5%	DIN EN 1605
Linear coefficient of thermal expansion	mm/(m·K)						DIN
Longitudinal		-	0.08	0.08	0.08	0.08	53752
Transverse		-	0.06	0.06	0.06	0.06	
Reaction of fire	Class	-	E	E	E	E	DIN EN 13501-1
Long term water absorption by immersion	% v/v	WL(T)0.7	0.2	0.3	0.2	0.2	DIN EN 12087
Long term water absorption by diffusion ²⁾	% v/v	WD(V)3	< 3	-	< 3	< 3	DIN EN 12088
Water vapour transmission ²⁾		MU	150 - 50	200 - 80	150 - 50	150 - 80	DIN EN 12086
Freeze - thaw - resistance	% v/v	FT2	≤ 1	≤ 1	≤ 1	≤ 1	DIN EN 12091
Maximum service temperature	°C	-	-	75	75	75	-

¹⁾ N/mm² = 1 Mpa = 1,000 kPa

²⁾ Depends on thickness

³⁾ Thickness ≥ 30 mm

⁴⁾ Thickness 30 and 40 mm; 2,510 x 610 mm



TECHNICAL DATA XPS FOAM

Property	Unit ¹⁾	Code according to DIN EN 13164	CSL 1150	CSL 1250	CSL 2160	CSL 2260	Standard
Edge profile							
Surface			Skin	Skin	Skin	Skin	
Length x Width	mm		1000 x 500	2000 x 500	1000 x 600	2000 x 600	
Density	kg / m ³		36	36	36	36	DIN EN 1602
Thermal conductivity	λ_D [W/(m K)]		λ_D	λ_D	λ_D	λ_D	DIN EN
Thermal resistance	R_D [m ² -K/W]		R_D	R_D	R_D	R_D	13164
	30 mm	-	0.032 0.95	0.032 0.95	0.032 0.95	0.032 0.95	
	40 mm	-	0.034 1.25	0.034 1.25	0.034 1.25	0.034 1.25	
	50 mm	-	0.034 1.50	0.034 1.50	0.034 1.50	0.034 1.50	
Thickness	60 mm	-	0.034 1.80	0.034 1.80	0.034 1.80	0.034 1.80	
	80 mm	-	-	0.036 2.30	0.036 2.30	0.036 2.30	
	100 mm	-	-	0.038 2.80	0.038 2.80	0.038 2.80	
	120 mm	-	-	0.038 3.20	0.038 3.20	0.038 3.20	
	140 mm	-	-	-	0.038 3.65	-	
Compressive stress or compressive strength at 10% deformation	kPa	CS(10\Y)	150 - 200 ²⁾	200 - 300 ³⁾	300	500	DIN EN 826
Compressive creep over 50 years at < 2% deformation	kPa	CC(2/1.5/50)	60 - 80 ²⁾	200 - 300 ³⁾	130	180	DIN EN 1606
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Adhesive strength concrete	kPa	TR 200	-	> 200	-	-	DIN EN 1607
Shear strength	kPa	SS	> 300	> 300	> 300	> 300	DIN EN 12090
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Dimensional stability 70° C; 90% r.h.	%	DS(TH)	≤ 5%	≤ 5%	≤ 5%	≤ 5%	DIN EN 1604
Deformation behavior load 20 kPa; 80° C	%	DLT(1)5	≤ 5%	≤ 5%	≤ 5%	≤ 5%	DIN EN 1605
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Linear coefficient of thermal expansion	mm/(m K)						DIN 53752
Longitudinal		-	0.08	0.08	0.08	0.08	
Transverse		-	0.06	0.06	0.06	0.06	
Reaction of fire	Class	-	E	E	E	E	DIN EN 13501-1
Long term water absorption by immersion	% v/v	WL(T)0.7	0.2	0.3	0.2	0.2	DIN EN 12087
Long term water absorption by diffusion ²⁾	% v/v	WD(V)3	< 3	-	< 3	< 3	DIN EN 12088
Water vapour transmission ²⁾		MU	150 - 50	200 - 80	150 - 50	150 - 80	DIN EN 12086
Freeze - thaw - resistance	% v/v	FT2	≤ 1	≤ 1	≤ 1	≤ 1	DIN EN 12091
Maximum service temperature	°C	-	-	75	75	75	-

¹⁾ N/mm² = 1 Mpa = 1,000 kPa

²⁾ Depends on thickness

³⁾ Thickness ≥ 30 mm

⁴⁾ Thickness 30 and 40 mm ; 2,510 x 610 mm



No. 0307/ 14441

To CHEER SYSTEM INTERNATIONAL (THAILAND) LIMITED.

The Department of Science Service presents the test report for the sample named "EXTRUCTION POLYSTYRENE FOAM" Laboratory No.L54/06856.1 as the total of 1 sample with reference to the request No. L54/06856 dated 3 August 2011.

Enclosed herewith the following result avails for your acknowledgement.



Physics and Engineering Program

Tel. 0 2201 7130

Fax 0 2201 7127

E-mail : physics@dss.go.th

Certified True Translation

(Miss Chutima Sucharitakul)
Chief, Registration Sub-Division



TEST REPORT

Sample's name	Mark / Brand	Laboratory No.
EXTRUCTION POLYSTYRENE FOAM	-	L54/06856.1

Test Results

1. Density, kg/m ³	41
2. Dimension stability	
- At -30 °C for 48 h	
- Change in length, %	0
- Change in width, %	0
- At 100 °C for 48 h	
- Change in length, %	-
- Change in width, %	-
3. Thermal conductivity at temp. 27.4 °C, W/m.K	0.028
4. Compressive strength at 10% deformation, MPa	0.18

Certified True Translation

C. Sucharitakul

(Miss Chutima Sucharitakul)
Chief, Registration Sub-Division

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Department of Science Service, Ministry of Science and Technology

Rama VI Road, Ratchathewi, Bangkok 10400, Thailand

Laboratory No. L54/06856.1

Customer's name CHEER SYSTEM INTERNATIONAL (THAILAND) LIMITED.
Customer's address 103/1-2 Moo 12 T.Bangpla, A.Bangplee, Samutprakarn 10540
Sample's description White foam sheets having approximately 50 mm thickness.
Test date 11 - 26 August 2011
Test method - ASTM D 1622 for test item no.1
- ASTM D 2126 for test item no.2
- ASTM C 518 for test item no.3
- ASTM D 1621 for test item no.4

Note

The test result of dimension stability :-

- The specimens were swelling and deformation after aging at 100 ° C for 48 h.

Approved by

(Sgd.) Surin Athakitkarnka

(Mr. Surin Athakitkarnka)

Scientist, Senior Professional Level

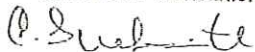
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Department of Science Service, Ministry of Science and Technology

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