

Certification Body Report

Applicant:	BASF SE Carl-Bosch-Str. 38 67056 Ludwigshafen
Content:	Overview on testing for Product Type Determination (PTD) and regular testing according to EN 13164:2012+A1:2015 on Extruded Polystyrene Foam (XPS) according to CEN Keymark Scheme Rules for Thermal Insulation Products
Material Identification:	Thermal insulation products for buildings: Factory made products of extruded polystyrene foam (XPS) according to EN 13164:2012+A1:2015, blown with CO ₂ and isobutane, with/without edge profiles, with skins: „STYRODUR 2800 C“ „STYRODUR 3000 CS“ „STYRODUR 3035 CS“ „STYRODUR 4000 CS“ „STYRODUR 5000 CS“ Nominal Thickness: 20 mm till 200 mm
Sampling:	The samples were taken by a staff member of FIW München (notified body no. 0751) during regular supervision audits in the production plant
Production plant:	Ludwigshafen Germany
Report No.:	L1-18-041
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Procedure:

The Keymark Scheme Rules require the notified body to perform audit testing once a year for all characteristics declared by the manufacturer. This Certification Body Report gives an overview on test results in a period between the present report and the last report (PTD Overview L1-16-028). The test results are part of the audit testing and also supplement previous PTD overview. Any missing data will be determined and supplemented in the course of the future inspections and audit testing.

This overview summarizes the properties relevant to XPS according to EN 13164:2012+A1:2015 from various test reports and updates and supplements the PTD-(ITT)-Report No.: L1-16-028, L1-08-062b, L1-08-063b and L1-08-064b:

- Thermal resistance/thermal conductivity according to EN 12667 after cutting the test specimens with the dimensions 500 x 500 mm² into 10 mm thick slices with a band saw and storage of the stack at 23°C and approx. 50 % relative humidity about a time of:
 - (90 ± 2) days for thicknesses 20 mm till 70 mm
 - (50 ± ²₋₁) days for thicknesses 71 mm till 120 mm
 - (30 ± ²₋₀) days for thicknesses from 121 mm

Test results were corrected following EN 13164 Annex C.2.3.

- Thickness according EN 823
- Dimensional stability under specified conditions according to EN 1604
- Deformation under specified compressive load and temperature conditions according to EN 1604
- Compressive strength/stress according to EN 826
- Tensile strength perpendicular to faces according to EN 1607
- Long term water absorption by total immersion according to EN 12087, Method 2A
- Long term water absorption by diffusion according to EN 12088
- Freeze-thaw resistance after long term water diffusion test according to EN 12091

For reaction to fire classification see reports No. H.K-45/16, H.K-76/16 and H.K-46/16 by FIW München. Compressive creep is measured according to certification program "Zertifizierungsprogramm Anwendung von Wärmedämmstoffen für Gebäude" annex C, footnote 5, 27.10.2016 by DIN CERTCO.

Results:

The test results are made up in the following tables.

Thermal conductivity according to EN 13164:2012+A1:2015, part 4.2.1:
Determined according to EN 12667

Styrodur 2800 nominal thickness 20 mm - 40 mm

Product	Test report No.	Date of sampling/ Date of Production	Nominal thickness	$\lambda_{10\text{ °C}}$ after correction ¹⁾	Declared value of thermal Conductivity
STYRODUR			mm	W/(m·K)	W/(m·K)
Styrodur 2800 C	KC-17-1252-30	12.07.2017	40	0,0319	0,033
	L1-08-063b	08.06.2009	20	0,0297	0,033
	L1-08-063b	23.06.2009	20	0,0298	
	L1-08-063b	18.05.2006	30	0,0304	
	L1-08-063b	29.06.2007	30	0,0306	
	U1.3-9/12	03.05.2012	30	0,0307	
	U1.3-10/10	15.06.2010	30	0,0300	
	U1.3-10/11	10.08.2011	40	0,0313	
	L1-08-063b	31.05.2006	40	0,0311	
	L1-08-063b	20.04.2008	40	0,0317	
	U1.3-7/15	21.03.2015	40	0,0310	

¹⁾ The test results were corrected following EN 13164 Annex C.2.3:
For products with skin: - 0,001 W/(m·K)

Thermal conductivity (continued)

Styrodur 2800/3035 nominal thickness 50 mm - 60 mm

Product	Test report No.	Date of sampling/ Date of production	Nominal thickness	$\lambda_{10^\circ\text{C}}$ after correction ¹⁾	Declared value of thermal Conductivity
STYRODUR			mm	W/(m·K)	W/(m·K)
Styrodur 2800 C	U1.3-6/16	13.05.2017	60	0,0318	0,034
Styrodur 3035 CS	U1.3-14/15	19.03.2015	50	0,0313	0,034
Styrodur 2800 C	L1-08-063b	03.06.2005	50	0,0328	
Styrodur 2800 C	U1.3-1/14	04.04.2014	50	0,0319	
Styrodur 2800 C	L1-08-062b	23.06.2009	60	0,0337	
Styrodur 3035 CS	L1-08-063b	17.06.2009	50	0,0325	
Styrodur 3035 CS	L1-08-062b	04.06.2003	50	0,0319	
Styrodur 3035 CS	U1.3-12/11	10.08.2011	50	0,0315	
Styrodur 3035 CS	L1-08-062b	01.07.2007	60	0,0328	
Styrodur 3035 CS	U1.3-3/13	13.03.2013	60	0,0312	
Styrodur 3035 CS	U1.3-11/12	12.05.2012	60	0,0303	

¹⁾ The test results were corrected following EN 13164 Annex C.2.3:
For products with skin: - 0,001 W/(m·K)

Thermal conductivity (continued)

Styrodur 2800/3035 nominal thickness 80 mm - 100 mm

Product	Test report No.	Date of sampling/ Date of production	Nominal thick- ness	Density	$\lambda_{10\text{ °C}}$ after correc- tion ¹⁾	Declared value of thermal Conductivity
STYRODUR			mm	kg/m ³	W/(m·K)	W/(m·K)
Styrodur 3035 CS	U1.3-2/16	13.05.2017	80	30,5	0,0324	0,035
Styrodur 2800 C	U1.3-2/13	07.04.2012	100	-	0,0341	
Styrodur 3035 CS	U1.3-4/13	12.03.2013	80	-	0,0319	
Styrodur 3035 CS	L1-08-062b	20.04.2008	80	-	0,0341	
Styrodur 3035 CS	L1-08-064b	22.05.2006	80	-	0,0335	
Styrodur 3035 CS	L1-08-064b	28.04.2004	100	-	0,0344	

Styrodur 2800/3035 nominal thickness 120 mm

Product	Test report No.	Date of sampling/ Date of production	Nominal thick- ness	Density	$\lambda_{10\text{ °C}}$ after correc- tion ¹⁾	Declared value of thermal Conductivity
STYRODUR			mm	kg/m ³	W/(m·K)	W/(m·K)
Styrodur 3035 CS	KC-17-1252-10	12.07.2017	120	31,2	0,0328	0,036
Styrodur 3035 CS	L1-08-064b	22.04.2004	120	-	0,0347	
Styrodur 3035 CS	U1.3-15/15	04.04.2015	120	-	0,0343	

Thermal conductivity (continued)

Styrodur 2800/3035 nominal thickness 140 mm - 200 mm

Product	Test report No.	Date of sampling/ Date of production	Nominal thickness	Density	$\lambda_{10\text{ °C}}$ after correction ¹⁾	Declared value of thermal Conductivity
STYRODUR			mm	kg/m ³	W/(m·K)	W/(m·K)
Styrodur 3035 CS	U1.3-12/12	02.05.2012	160	-	0,0367	0,038
Styrodur 3035 CS	U1.3-3/14	08.04.2014	200	-	0,0356	
Styrodur 3035 CS	KC-17-1252-16	01.07.2017	140	34,6	0,0327	
Styrodur 3035 CS	U1.3-3/16	13.05.2016	160	34,2	0,0339	

¹⁾ The test results were corrected following EN 13164 Annex C.2.3:
For products with skin: - 0,001 W/(m·K)

Styrodur 3000 nominal thickness 30 mm - 160 mm

Product	Test report No.	Date of sampling/ Date of Production	Nominal thickness	$\lambda_{10\text{ °C}}$ after correction ¹⁾	Declared value of thermal Conductivity
STYRODUR			mm	W/(m·K)	W/(m·K)
Styrodur 3000 CS	U1.3-6/15	22.03.2015	40	0,0310	0,033
	U1.3-3/15	17.10.2015	60	0,0313	
	U1.3-6/15	27.02.2015	120	0,0322	
	U1.3-3/15	09.09.2015	160	0,0328	

¹⁾ The test results were corrected following EN 13164 Annex C.2.3:
For products with skin: - 0,001 W/(m·K)

Thermal conductivity (continued)

Styrodur 4000 nominal thickness 60 mm - 160 mm

Product	Test report No.	Date of sampling/ Date of Production	Nominal thickness	Density	$\lambda_{10^\circ\text{C}}$ after correction ¹⁾	Declared value of thermal Conductivity
STYRODUR			mm	kg/m ³	W/(m·K)	W/(m·K)
Styrodur 4000 CS	U1.3-4/16	13.05.2017	60	36,2	0,0326	0,035
	KC-17-1252-23	21.07.2017	120	37,4	0,0341	
	U1.3-4/16	13.05.2017	140	37,0	0,0347	
	U1.3-16/15	24.03.2015	60	-	0,0320	
Styrodur 4000 CS	L1-08-062b	12.01.2005	80	-	0,0343	0,035
	U1.3-17/15	31.03.2015	100	-	0,0340	
	U1.3-5/13	25.03.2013	100	-	0,0331	
	U1.3-5/14	11.11.2013	160	-	0,0338	

¹⁾ The test results were corrected following EN 13164 Annex C.2.3:
For products with skin: - 0,001 W/(m·K)

Thermal conductivity (continued)

Styrodur 5000 nominal thickness 60 mm - 120 mm

Product	Test report No.	Date of sampling/ Date of Production	Nominal thickness	Density	$\lambda_{10^\circ\text{C}}$ after correction ¹⁾	Declared value of thermal Conductivity
STYRODUR			mm	kg/m ³	W/(m·K)	W/(m·K)
Styrodur 5000 CS	KC-17-1252-06	12.01.2017	120	43,2	0,0346	0,035
	U1.3-5/16	13.05.2016	60	42,3	0,0323	
	U1.3-5/16	13.05.2016	120	42,9	0,0344	
	U1.3-18/15	22.03.2015	60	-	0,0321	0,035
	U1.3-6/14	28.03.2014	60	-	0,0320	
	U1.3-19/15	20.03.2015	80	-	0,0335	
	U1.3-7/14	03.04.2014	100	-	0,0337	

¹⁾ The test results were corrected following EN 13164 Annex C.2.3:
For products with skin: - 0,001 W/(m·K)

Thickness according to EN 13164:2012+A1:2015, part 4.2.3
Determined according to EN 823

Product	Test report No.	Date of sampling/ Date of Production	Nominal thickness	Density	Thickness (measured)	Declared value
STYRODUR			mm	kg/m ³	mm	
Styrodur 3035 CS	KC-17-1252-10	12.07.2017	120	31,2	122	T1
Styrodur 2800 C	KC-17-1252-30	12.07.2017	40	-	41,3	
Styrodur 3035 CS	KC-17-1252-16	01.07.2017	140	34,6	143	
Styrodur 4000 CS	KC-17-1252-23	21.07.2017	120	37,4	123	
Styrodur 3035 CS	U1.3-2/16	13.05.2017	80	30,5	81,3	
Styrodur 5000 CS	KC-17-1252-06	12.01.2017	120	43,2	123	
Styrodur 3035 CS	U1.3-3/16	30.05.2016	160	34,2	161,1	
Styrodur 4000 CS	U1.3-4/16	13.05.2017	60	36,2	61,2	
Styrodur 4000 CS	U1.3-4/16	13.05.2017	140	37,0	143,6	
Styrodur 5000 CS	U1.3-5/16	13.05.2016	60	42,3	62,4	
Styrodur 5000 CS	U1.3-5/16	13.05.2016	120	42,9	124,1	
Styrodur 2800 C	U1.3-6/16	13.05.2017	60	-	61,2	
Styrodur 3000 CS	U1.3-3/15	17.10.2015	60	32,9	60,9	T1
Styrodur 3000 CS	U1.3-3/15	09.09.2015	160	36,2	161,1	
Styrodur 3000 CS	U1.3-4/15	24.12.2015	40	28,7	39,7	
Styrodur 3000 CS	U1.3-6/15	22.03.2015	40	28,8	40,3	
Styrodur 3000 CS	U1.3-6/15	27.02.2015	120	32,7	121,3	
Styrodur 2800 C	U1.3-7/15	21.03.2015	40	-	41,9	

**Dimensional stability under specified conditions according to
EN 13164:2012+A1:2015, part 4.3.2**
Determined according to EN 1604.

Product	Test report No.	Date of sampling/ Date of Production	Nominal thickness mm	Density ρ kg/m ³	Dim.-Stabilität (bestimmt) $\Delta\epsilon_l, \Delta\epsilon_b, \Delta\epsilon_d$ mm	Declared value
STYRODUR						
Styrodur 5000 CS	KC-17-1252-06	12.01.2017	120	43,2	0,3/0,0/-0,5	DS(70,90)
Styrodur 3035 CS	KC-17-1252-10	12.07.2017	120	31,2	0,3/0,0/0,1	
Styrodur 3035 CS	KC-17-1252-16	01.07.2017	140	34,6	0,4/-0,2/-0,1	
Styrodur 2800 C	KC-17-1252-30	12.07.2017	40	-	0,0/0,1/0,0	
Styrodur 4000 CS	KC-17-1252-23	21.07.2017	120	37,4	0,7/-0,2/-0,2	
Styrodur 3035 CS	U1.3-2/16	13.05.2017	80	30,5	0,9/-0,2/-0,3	
Styrodur 3035 CS	U1.3-3/16	30.05.2016	160	34,2	0,5/-0,2/-0,1	
Styrodur 4000 CS	U1.3-4/16	13.05.2017	60	36,2	0,3/-0,2/-0,1	
Styrodur 4000 CS	U1.3-4/16	13.05.2017	140	37,0	0,6/-0,2/-0,3	
Styrodur 5000 CS	U1.3-5/16	13.05.2016	60	42,3	0,2/-0,3/-0,3	
Styrodur 5000 CS	U1.3-5/16	13.05.2016	120	42,9	0,5/-0,4/-0,4	
Styrodur 2800 C	U1.3-6/16	13.05.2017	60	-	0,8/-0,3/-0,4	
Styrodur 3000 CS	U1.3-3/15	17.10.2015	60	32,9	0,6/0,0/-0,1	DS(70,90)
Styrodur 3000 CS	U1.3-3/15	09.09.2015	160	36,2	0,7/-0,2/-0,3	
Styrodur 3000 CS	U1.3-4/15	24.12.2015	40	28,7	-0,1/0,2/0,7	
Styrodur 3000 CS	U1.3-6/15	22.03.2015	40	28,8	0,0/0,1/-0,1	
Styrodur 2800 C	U1.3-7/15	21.03.2015	40	-	0,1/0,0/0,2	

**Deformation under specified load and temperature conditions
according to EN 13164, part 4.3.2.3**

Determined in accordance with EN 1605, test condition 2 (40 kPa, 70°C, 168h)

Declared level: DLT(2)5

Product	Test report No.	Date of sampling/ Date of production	Nominal thickness	Density ρ	Deformation under test condition 2	Declared level
STYRODUR			mm	kg/m ³	Vol.-%	
Styrodur 5000 CS	KC-17-1252-06	12.01.2017	120	43,2	-0,8	DLT(2)5
Styrodur 3035 CS	KC-17-1252-10	12.07.2017	120	31,2	-0,6	
Styrodur 3035 CS	KC-17-1252-16	01.07.2017	140	34,6	-0,5	
Styrodur 2800 C	KC-17-1252-30	12.07.2017	40	-	-1,5	
Styrodur 4000 CS	KC-17-1252-23	21.07.2017	120	37,4	-0,6	
Styrodur 3035 CS	U1.3-2/16	13.05.2017	80	30,5	-0,6	
Styrodur 3035 CS	U1.3-3/16	30.05.2016	160	34,2	-1	
Styrodur 4000 CS	U1.3-4/16	13.05.2017	60	36,2	-0,7	
Styrodur 4000 CS	U1.3-4/16	13.05.2017	140	37,0	-0,7	
Styrodur 5000 CS	U1.3-5/16	13.05.2016	60	42,3	-0,8	
Styrodur 5000 CS	U1.3-5/16	13.05.2016	120	42,9	-1	
Styrodur 2800 C	U1.3-6/16	13.05.2016	60	-	-0,9	

Compressive stress/ strength according to EN 13164:2012+A1:2015, part 4.3.4
Determined according to EN 826

Declared value: 200 kPa

Styrodur 2800 C: Nominal thickness 20 mm – 60 mm

Product	Test report No.	Date of sampling/ Date of Production	Nomi- nal thick- ness	Density ρ	Compres- sive strength/ stress	Deform- ation	Declared value of com- pressive strength
STYRODUR			mm	kg/m ³	kPa	%	kPa
Styrodur 2800 C	KC-17-1252-30	12.07.2017	40	-	417	6	200
	U1.3-6/16	13.05.2017	60	-	434	4	
Styrodur 2800 C	L1-08-063b	31.05.2006	40	32	324	5	200
	L1-08-063b	18.05.2006	30	34	362	7	
	L1-08-063b	29.06.2007	30	30	312	8	
	L1-08-063b	20.04.2008	40	29	354	8	

Declared value: 300 kPa

Styrodur 2800 C: Nominal thickness 80 mm – 200 mm

Styrodur 3035 CS: Nominal thickness 50 mm – 200 mm

Product	Test report No.	Date of sampling/ Date of Production	Nominal thickness	Density ρ	Compressive strength/stress	Deformation	Declared value of compressive strength
STYRODUR			mm	kg/m ³	kPa	%	kPa
Styrodur 3035 CS	KC-17-1252-16	01.07.2017	140	34,6	387	2	300
	KC-17-1252-10	12.07.2017	120	31,2	337	2	
	U1.3-2/16	13.05.2017	80	30,5	401	3	
	U1.3-3/16	30.05.2016	160	34,2	347	2	
	L1-08-062b	12.01.2005	80	34	480	10	300
	L1-08-062b	18.05.2006	50	30	382	3	
	L1-08-062b	01.07.2007	60	31	401	10	
	L1-08-062b	20.04.2008	80	32	414	2	

Declared value: 500 kPa

Styrodur 4000 CS: Nominal thickness 60 mm – 160 mm

Product	Test report No.	Date of sampling/ Date of Production	Nominal thickness	Density ρ	Compressive strength/stress	Deformation	Declared value of compressive strength
STYRODUR			mm	kg/m ³	kPa	%	kPa
Styrodur 4000 CS	KC-17-1252-23	21.07.2017	120	37,4	565	2	500
	U1.3-4/16	13.05.2017	60	36,2	676	9	
	U1.3-4/16	13.05.2017	140	37,0	544	2	
Styrodur 4000 CS	L1-08-062b	01.06.2003	60	37	676	8	500
	L1-08-062b	12.01.2005	80	39	597	3	
	L1-08-062b	03.05.2009	60	37	685	10	
	L1-08-062b	21.06.2009	60	38	627	10	
	L1-08-062b	05.06.2009	120	38	594	2	

Declared value: 700 kPa

Styrodur 5000 CS: Nominal thickness 50 mm – 120 mm

Product	Test report No.	Date of sampling/ Date of Production	Nominal thickness	Density ρ	Compressive strength/stress	Deformation	Declared value of compressive strength
STYRODUR			mm	kg/m ³	kPa	%	kPa
Styrodur 5000 CS	KC-17-1252-06	12.01.2017	120	43,2	848	-	700
	U1.3-5/16	13.05.2016	60	42,3	800	5	
	U1.3-5/16	13.05.2016	120	42,9	775	2	
Styrodur 5000 CS	L1-08-062b	29.05.2003	50	47	961	6	700
	L1-08-062b	05.05.2004	60	46	960	9	
	L1-08-062b	21.01.2005	50	46	705	2	
	L1-08-062b	10.07.2009	50	43	788	7	

**Tensile strength perpendicular to faces according to EN 13164:2012+A1:2015,
part 4.3.5**

Determined according to EN 1607.

Product	Test report No.	Date of sampling/ Date of Production	Nominal thickness	Density ρ	Tensile strength (measured)	Declared level
STYRODUR			mm	kg/m ³	kPa	
Styrodur 2800 C	KC-17-1252-30	12.07.2017	40	-	932	200
	U1.3-6/16	13.05.2017	60	-	802	
Styrodur 2800 C	U1.003-7/15	21.03.2015	40	-	931	200
	U1.003-1/14	04.04.2014	50	-	918	
	U1.003-2/13	07.04.2012	100	-	699	
	U1.003-8/12	05.03.2012	200	-	546	
	U1.003-9/12	03.05.2012	30	-	871	

Long term water absorption by immersion according to EN 13164 part 4.3.6.1

Determined in accordance with EN 12087, Method 2A

Time: 28 days, dimensions of test specimens: thickness x 200 mm x 200 mm

Declared level: WL(T)0,7

Product	Test report No.	Date of sampling/ Date of production	Nominal thickness	Density ρ	Water absorption after 28 days	Declared level
STYRODUR			mm	kg/m ³	Vol.-%	
Styrodur 3000 CS	P-16-017	22.03.2015	40	29	0,7	WL(T)0,7
Styrodur 3000 CS	P-16-018	27.02.2015	120	33	0,6	
Styrodur 3035 CS	P-16-019	19.03.2015	50	31	0,7	
Styrodur 4000 CS	P-16-021	24.03.2015	60	38	0,6	
Styrodur 5000 CS	P-16-024	20.03.2015	80	45	0,7	
Styrodur 3000 CS	P-18-046	12.07.2017	140	35	0,4	
Styrodur 3035 CS	P-18-047	12.07.2017	120	32	0,3	
Styrodur 4000 CS	P-18-048	12.07.2017	120	38	0,3	
Styrodur 5000 CS	P-18-049	12.07.2017	120	44	0,3	
Styrodur 3035 CS	P-17-001	13.05.2016	80	31	0,4	
Styrodur 3035 CS	P-17-002	13.05.2016	160	35	0,5	
Styrodur 4000 CS	P-17-003	13.05.2016	60	36	0,5	
Styrodur 4000 CS	P-17-004	13.05.2016	140	37	0,3	
Styrodur 5000 CS	P-17-005	13.05.2016	60	43	0,4	
Styrodur 5000 CS	P-17-006	13.05.2016	120	43	0,4	
Styrodur 3000 CS	P-16-182	02.12.2015	60	33	0,2	
Styrodur 3000 CS	P-16-183	02.12.2015	160	37	0,3	

Long term water absorption by immersion (continued)

Product	Test report No.	Date of sampling/ Date of Production	Nominal thickness	Density ρ	Water absorption after 28 days	Declared level
STYRODUR			mm	kg/m ³	Vol.-%	
Styrodur 3000 CS	P-16-184	13.05.2016	40	29	0,3	WL(T)0,7
Styrodur 4000 CS	P-16-22	06.05.2015	100	37	0,5	
Styrodur 5000 CS	P-16-23	06.05.2015	60	44	0,6	

Long term water absorption by diffusion according to EN 13164:2012+A1:2015, part 4.3.7.2:

Determined according to EN 12088

Time: 28 days, dimensions of test specimens: thickness x 500 mm x 500 mm

Declared level: WD(V)3

Product	Test report No.	Date of sampling/ Date of Production	Nominal thickness dN	Density ρ	Water absorption	Declared level
STYRODUR			mm	kg/m ³	Vol.-%	
Styrodur 3000 CS	P-18-046	12.07.2017	140	35	0,4	WD(V)3
Styrodur 3035 CS	P-18-047	12.07.2017	120	32	0,5	
Styrodur 4000 CS	P-18-048	12.07.2017	120	38	0,6	
Styrodur 5000 CS	P-18-049	12.07.2017	120	44	0,6	
Styrodur 3035 CS	P-17-001	13.05.2016	80	31	0,3	
Styrodur 3035 CS	P-17-002	13.05.2016	160	35	0,5	
Styrodur 4000 CS	P-17-003	13.05.2016	60	37	1,7	
Styrodur 4000 CS	P-17-004	13.05.2016	140	38	0,4	
Styrodur 5000 CS	P-17-005	13.05.2016	60	43	1,4	
Styrodur 5000 CS	P-17-006	13.05.2016	120	43	0,5	

Test results only refer to tested objects. The written consent of the institute is required for any publication concerning the content of this report and/or its publication or parts of it.

Long term water absorption by diffusion (continued)

Product	Test report No.	Date of sampling/ Date of Production	Nominal thickness d_N	Density ρ	Water absorption	Declared level
STYRODUR			mm	kg/m ³	Vol.-%	
Styrodur 3000 CS	P-16-017	22.03.2015	40	29	2,6	WD(V)3
Styrodur 3000 CS	P-16-018	27.02.2015	120	33	0,3	
Styrodur 3035 CS	P-16-019	19.03.2015	50	31	1,6	
Styrodur 4000 CS	P-16-021	24.03.2015	60	38	1,0	
Styrodur 5000 CS	P-16-024	20.03.2015	80	45	0,6	
Styrodur 3000 CS	P-16-182	13.05.2016	60	34	1,8	
Styrodur 3000 CS	P-16-183	13.05.2016	160	36	0,2	
Styrodur 4000 CS	P-16-22	06.05.2015	100	37	0,9	
Styrodur 5000 CS	P-16-23	06.05.2015	60	45	1,3	

Freeze-thaw resistance after long term water diffusion test according to EN 13164:2012+A1:2015, part 4.3.8.2 Determined according to EN 12091.

Product	Test report No.	Date of sampling/ Date of Production	Nominal thickness d_N	Density ρ	Water absorption	Declared level
			mm	kg/m ³	Vol.-%	
Styrodur 3000 CS	P-18-046	12.07.2017	140	35	0,7	FTCD1
Styrodur 3035 CS	P-18-047	12.07.2017	120	32	1,0	
Styrodur 4000 CS	P-18-048	12.07.2017	120	39	0,8	
Styrodur 5000 CS	P-18-049	12.07.2017	120	44	1,0	
Styrodur 3035 CS	P-17-001	13.05.2016	80	31	0,1	

Freeze-thaw resistance (continued)

Product	Test report No.	Date of sampling/ Date of Production	Nominal thickness d_N mm	Density ρ kg/m ³	Water absorption Vol.-%	Declared level Vol.-%
Styrodur 3035 CS	P-17-002	13.05.2016	160	35	0,5	FTCD1
Styrodur 4000 CS	P-17-003	13.05.2016	60	37	0,4	
Styrodur 4000 CS	P-17-004	13.05.2016	140	38	0,2	
Styrodur 5000 CS	P-17-005	13.05.2016	60	43	0,2	
Styrodur 5000 CS	P-17-006	13.05.2016	120	43	0,3	
Styrodur 3000 CS	P-16-182	13.05.2016	60	34	0,1	
Styrodur 3000 CS	P-16-184	13.05.2016	40	29	0,4	
Styrodur 4000 CS	P-16-22	06.05.2015	100	37	0,2	
Styrodur 5000 CS	P-16-23	06.05.2015	60	45	0,2	
Styrodur 3000 CS	P-16-017	22.03.2015	40	29	0,4	
Styrodur 3000 CS	P-16-018	27.02.2015	120	33	0,3	
Styrodur 3035 CS	P-16-019	19.03.2015	50	31	0,3	
Styrodur 4000 CS	P-16-021	24.03.2015	60	38	0,3	
Styrodur 5000 CS	P-16-024	20.03.2015	80	45	0,2	

Conclusions:

Gräfelfing, 2 May 2018

Andreas

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