

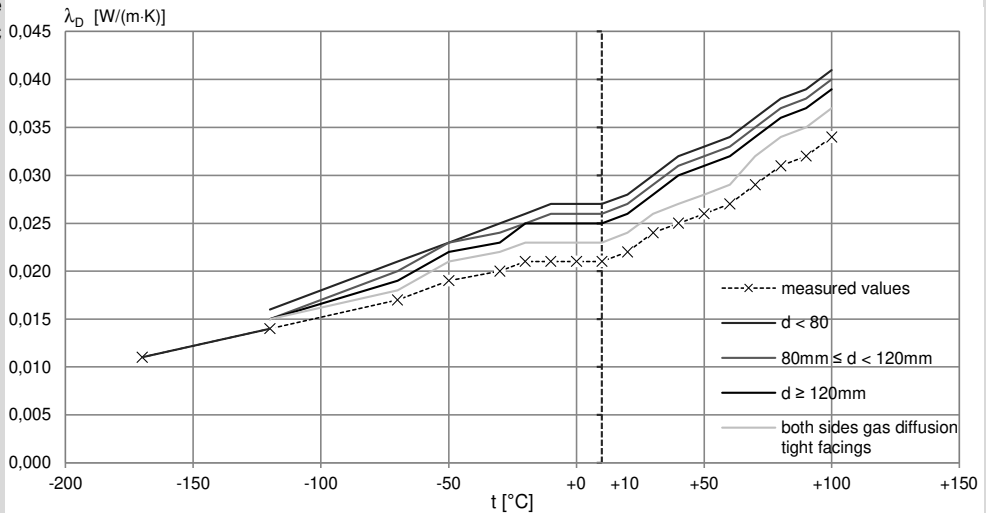
thermoset high-performance insulating material

application	for thermal insulation of technical facilities and other applications in supercooled areas
assembly	unlaminated blocks, boards or pre-cut parts dimensions at customer's option upon request dimensional tolerances acc. to puren factory standard



Cryodur® P 40 Technical data PU rigid foam

Characteristic	Standard/test procedure	Unit	Indicator			
Material	Polyurethane rigid foam (PU) acc. to EN 14308, quality-certified, harmless from a biological and building ecology point of view, recyclable, rotproof, resistant to mildew and decay.					
Bulk density	EN 1602	kg/m <sup>3</sup>	38 - 42			
Thermal conductivity						
Monitored limit value (fresh value) at 10°C mean temperature	EN 12667	W/(m·K)	0,021			
Nominal value (EU) $\lambda_D$ at 10°C application temperature	EN 14308	W/(m·K)	at thickness	d < 80 mm	80 ≤ d < 120 mm	d ≥ 120 mm
in the application temperature range -170 °C to +100 °C				0,027	0,026	0,025



Thermal insulation resistance for thickness	mm	20	40	60	80	100	120	140	160	180	200
$R_D$	m <sup>2</sup> ·K/W	0,70	1,45	2,20	3,05	3,80	4,80	5,60	6,40	7,20	8,00

Compressive strength	measured values <sup>2)</sup>										
Compressive stress at 10% compression	EN 826		kPa	250	290 - 350						
E-modulus (compressive stress) <sup>2)</sup>			MPa		6,5 - 8,5						
Tensile strength perpendicular to panel plane											
Transverse tensile strength	EN 1607		kPa	150	230 - 280						
E-modulus (transverse tensile stress) <sup>2)</sup>			MPa		10,5 - 13,5						
Bending strength <sup>2)</sup>	EN 12089		kPa		350 - 450						
Transverse strength <sup>2)</sup>	EN 12090 (in compliance with DIN 53427)		kPa		150 - 200						
Shear strength <sup>2)</sup>	EN 12090 (in compliance with DIN 53294)		kPa		160 - 220						
Designation (EU)	EN 14308	PU-EN 14308-DS(TH)3-CS(10\Y)250									
Fire behaviour	non-smouldering, non-melting, non-dripping										
Reaction to Fire Class / RtF (EU)	EN 13501-1	E									
Water-soluble chlorides	EN 13468		ppm	≤ 90	(100°C / 30 min)						
CTSR	f	EN 14308		> 1,5	measured values > 4						

1) Literature value, not part of the factory production control and external supervision.  
2) Average values calculated on a regular basis under production conditions as part of factory production control. It is ensured that mechanical characteristic values do not fall below their minimum level by more than 10%..



Declaration of performance  
30131.CPR.2020.10  
puren-PIR NE 40  
www.puren.com/download



EN 14308:2015  
Verification authority: 0751 FIW München



controlled by  
0751 FIW München

## thermoset high-performance insulating material

Cryodur® P 40		Technical data PU rigid foam		
Characteristic		Standard/test procedure	Unit	Indicator
Closed cell content <sup>2)</sup>		ISO 4590	%	90 - 95
Temperature resistance			°C	-200 <sup>3)</sup> to +120
Moisture absorption <sup>2)</sup>		EN 12087	Vol.-%	≤ 3
Specific heat capacity <sup>1)</sup>	C	EN 12524	J/(kg·K)	1400
Water vapour diffusion resistance factor <sup>1)</sup>	μ	EN 12086		40 - 200
Linear expansion coefficient <sup>1)</sup>		EN 1604	1/K	5 - 8 · 10 <sup>-5</sup>
3) Anwendungstemperatur abhängig von Dauer und Intensität (Medium) der Temperatureinwirkung sowie der Wärmeübertragung (konstruktive Gegebenheiten, Wandungsmaterialien).				