

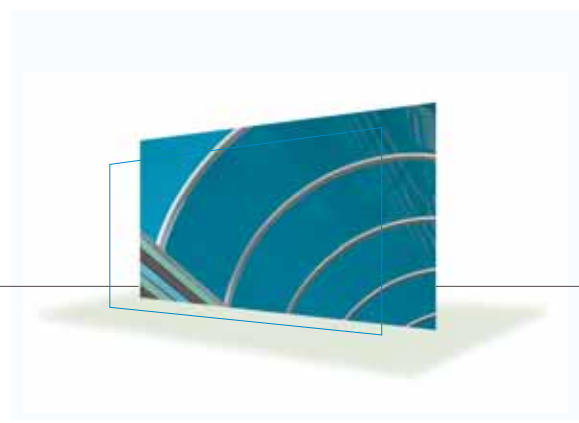
# Properties of Altuglas®

## TABLE OF SPECIFICATIONS

	Main characteristics			Indicative values				
	TEST METHOD			UNITS	ALTUGLAS® CN		ALTUGLAS® EX	
	ISO	NF	Others		Thickness mm	Value	Thickness mm	Value
<b>GENERAL PROPERTIES</b>								
Water absorption, 24 hrs.	62	T 51002	DIN 53495	%	4	0.30	4	0.30
Water absorption, 8 days	62	T 51002	DIN 53495	%	4	0.50	4	0.50
Water absorption, max. (Total immersion, 1200 hrs.)			Internal	%	3	1.75	3	1.75
Density	1183	T 51063	DIN 53479			1.19		1.19
<b>MECHANICAL PROPERTIES</b>								
Poisson ratio to 20°C						0.39		0.39
Tensile strength to 23°C	527	T 51034	DIN 53455					
Stress at break	-2/1A/5			MPa	4	76	4	74
Modulus of elasticity				MPa	4	3300	4	3300
Elongation at break				%	4	6	4	5
Tensile strength to -20°C	527	T 31034	DIN 53455					
Stress at break	-2/1A/5			MPa	4	102		
Elongation at break				%	4	5		
Tensile strength to 80°C	527	T 51304	DIN 53455					
Stress at break	-2/1A/5			MPa	4	24		
Elongation at break				%	4	22		
Flexural strength to 23°C	178*	T 51001	DIN 53452					
Stress at break				MPa	4	130	4	120
Modulus of elasticity				MPa	4	3250	4	3250
Charpy impact strength (un-notched)	179/2D	T 51035	DIN 53453	Kj/m <sup>2</sup>	4	12	4	10
Izod impact strength (notched)	180/1A		ASTM D256A	Kj/m <sup>2</sup>	4	1.4	4	1.3
Hardness, Rockwell Scale M	2039		ASTM D 785			100		95
Hardness, Shore Scale D	868	T 51109				60-70		80
Compressive strength	684	T 51101	DIN 53454	MPa	4	130	4	110
Shear strength - dynamic modulus			DIN 53445	MPa		1700		1700
<b>OPTICAL PROPERTIES</b>								
Light transmittance	T 51068	DIN 5036						
3 mm thick				%	3	92	3	92
5 mm thick				%	5	92	5	92
8 mm thick				%			8	92
10 mm thick				%	10	92		
Refractive index	T 51064	DIN 53491				1.492		1.492

**NB:** The standards quoted are not always strictly equivalent. We have given the average values of our laboratory tests, as an indicator only. \* speed: 1mm/min

**WARRANTY:** The information given in this literature is based on the findings of our research and experience. It is intended as a general guide to the use of our products and must not be considered as a binding specification. In no way does this information incur the liability of Altuglas International, especially in case of infringement of the rights of a third party.



	Main characteristics			Indicative values				
	TEST METHOD			UNITS	ALTUGLAS® CN		ALTUGLAS® EX	
	ISO	NF	Others		Thickness mm	Value	Thickness mm	Value
<b>ELECTRICAL PROPERTIES</b>								
Dielectric strength		C 26225	DIN 53481	KV/mm	20 to 25		20 to 25	
Transverse resistivity		C 26215	DIN 53482	Ohm.cm	> 10 <sup>15</sup>		> 10 <sup>15</sup>	
Dielectric constant		C 26230 DIN 53483						
to 50 Hz					3.7		3.7	
to 1 MHz					2.6		2.6	
<b>THERMAL PROPERTIES</b>								
Coefficient of linear expansion	EN 2155-1	T 51251	DIN 52328	mm/m/°C	0.065		0.065	
Thermal conductivity			DIN 52612	W/m/°C	0.17		0.19	
Specific heat			ASTM C 351	J/g/°C	1.32		1.32	
Insulation coefficient K			DIN 4701					
3 mm thick				W/m <sup>2</sup> /°C	3	5.4	3	5.4
5 mm thick				W/m <sup>2</sup> /°C	5	5.1	5	5.1
10 mm thick				W/m <sup>2</sup> /°C	10	4.5	10	4.5
Vicat softening point B 10/10, conditioned samples	306	T 51021	DIN 53460	°C	115		105	
Heat distortion temperature under load, 1.8 N/mm <sup>2</sup> , conditioned samples	75/A	T 51005	DIN 53461	°C	109		102	
Max. continuous service temperature				°C	85		80	
Forming oven temperature				°C	130-190		140-175	
Max. heating temperature				°C	200		180	
Max. linear shrinkage after heating, thickness ≥ 3 mm				%	2		3	
Max. linear shrinkage after heating, thickness < 3 mm				%	2		6	
Max. superficial temperature under infrared			°C		220		210	
<b>FLAMMABILITY</b>								
Self-ignition temperature				°C	approx.450		approx.450	
Flame resistance (Radiant heat source)		P 92501			3	M4	M4	
Melt behaviour when burning		P 92505			3	non-drip	drips	
Flame resistance			DIN 4102			B2	B2	
Flame resistance			BS 476 Pt. 7			class 3	class 4	
Flame resistance			UL 94			HB	HB	
Oxygen index		T 5107	ASTM 2863 77	%	18		18	
Chlorine content				%	0		0	
Nitrogen content				%	< 0.02		< 0.02	

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