

Klegecell R Grade Structural Foam

Klegecell R Grade offers cost-effective performance for most sandwich applications where there is a need for a lightweight core material. It offers good dimensional stability, outstanding strength to weight ratio, excellent moisture resistance and good thermal properties.

It is available in a particular wide variety of densities (30 to 400 Kg/m³) to enable designers, engineers and builders to choose the most appropriate material for the prevailing application.

Other Klegecell Grades

- Klegecell TR** Specially formulated and processed for compatibility with high process temperature applications.
- Klegecell SR** An intermediate product between the R and TR grades.
- Klegecell D** Improved ductility makes the D grade suitable for use in dynamically loaded structures.
- Klegecell DS** Combines the good properties of the D grade with improved thermal stability.

Approvals



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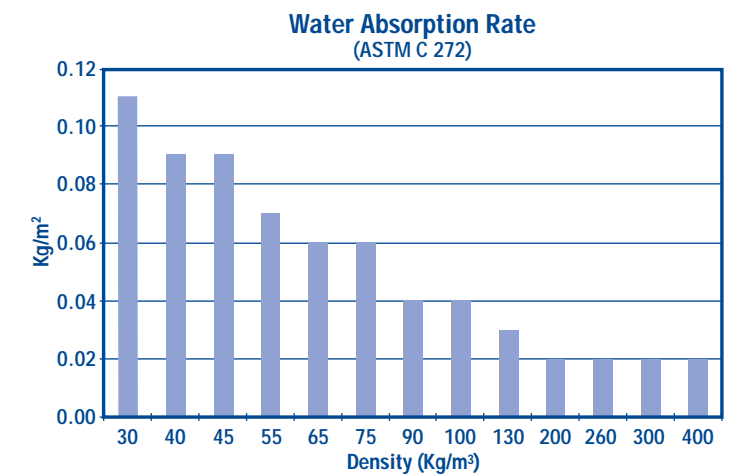
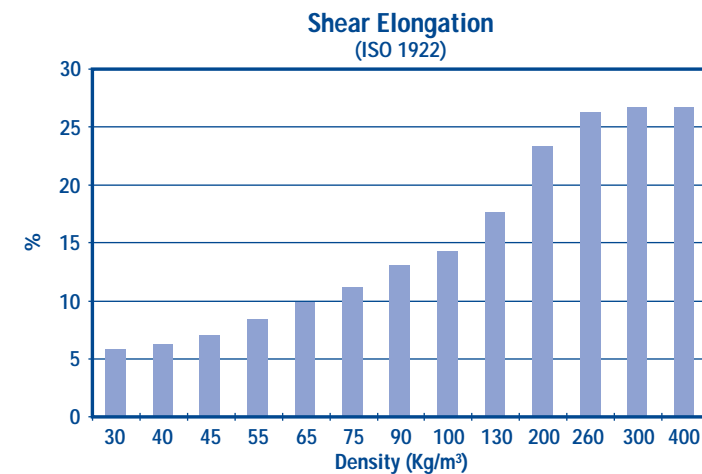
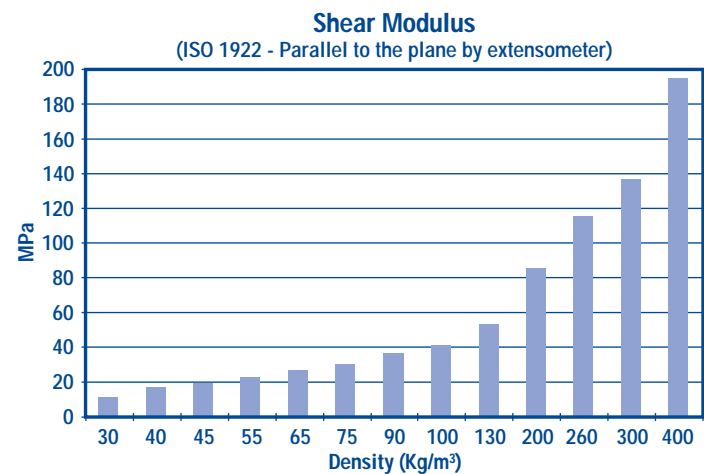
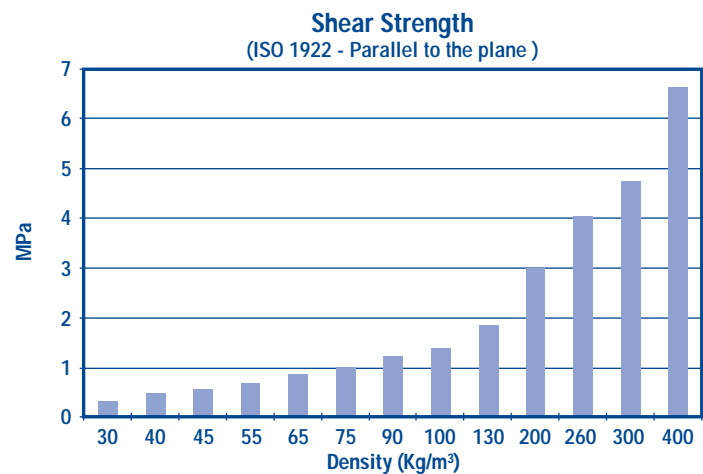
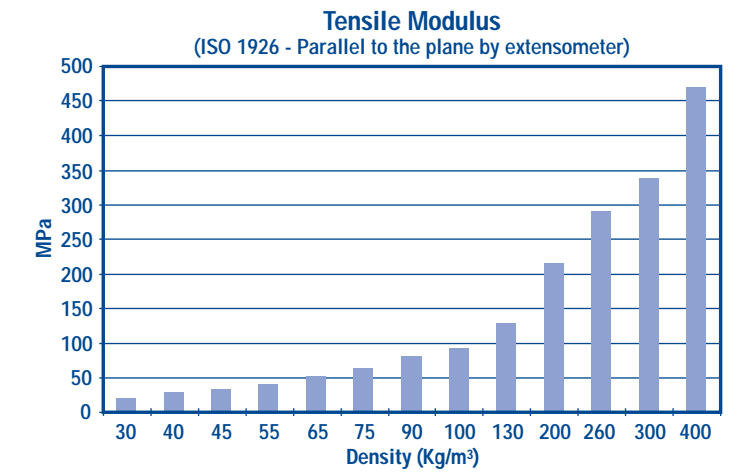
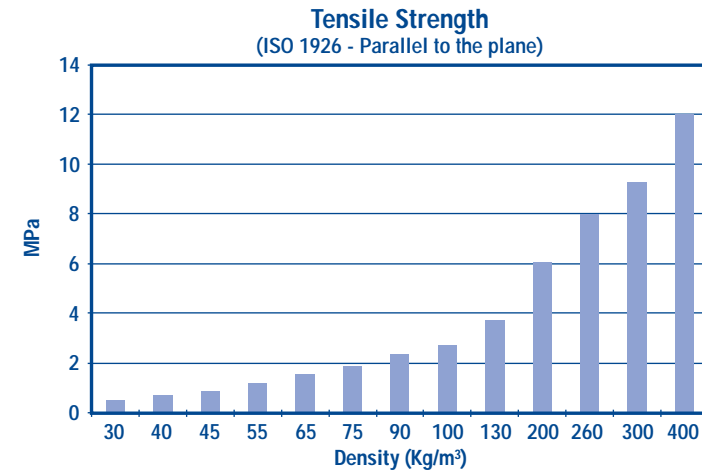
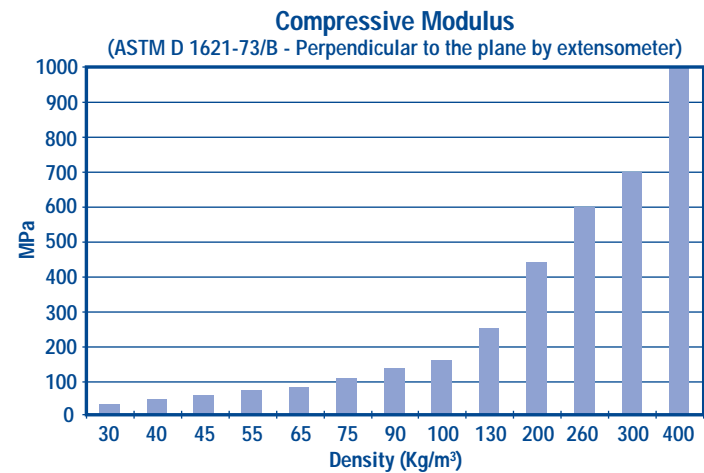
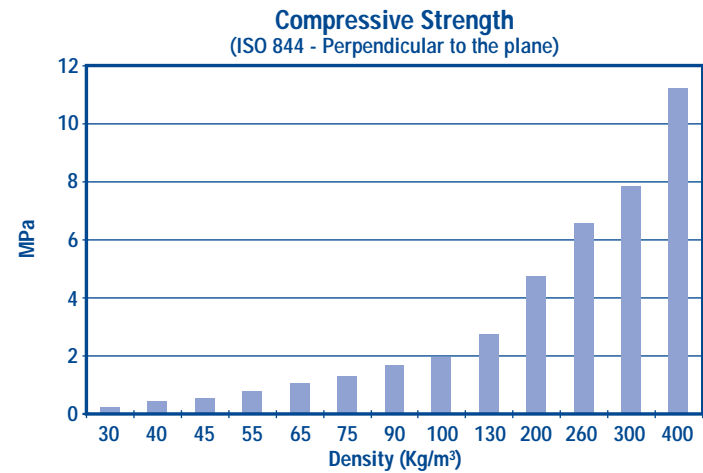
Web Site: <http://www.diabgroup.com>



Klegecell[®]

R Grade Technical Data

Klegecell R Grade - Performance Characteristics (average properties for the nominal density)



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Property	Test Standard	Units	R30	R40	R45	R55	R65	R75	R90	R100	R130	R200	R260	R300	R400	Remarks
Density	ISO 845	Kg/m³	30	40	45	55	65	75	90	100	130	200	260	300	400	
Compressive Strength	ISO 844	MPa	0.22	0.41	0.54	0.78	1.0	1.3	1.7	1.9	2.75	4.7	6.6	7.8	11	Perpendicular to the plane
Compressive Modulus	ASTM D 1621-73/B	MPa	26	46	60	77	84	109	140	160	250	440	600	700	1000	Perpendicular to the plane by extensometer
Compressive Modulus	ISO 844	MPa	12	20	25	35	46	56	73	84	118	205	286	344	501	Perpendicular to the plane by cross-head motion
Tensile Strength	ISO 1926	MPa	0.51	0.69	0.86	1.2	1.5	1.9	2.4	2.7	3.7	6.1	8.0	9.3	12	Parallel to the plane
Tensile Modulus	ISO 1926	MPa	20	28	32	40	51	62	80	92	128	215	290	338	469	Parallel to the plane by extensometer
Shear Strength	ISO 1922	MPa	0.31	0.47	0.55	0.69	0.85	0.99	1.2	1.4	1.85	3.0	4.0	4.75	6.6	Parallel to the plane
Shear Modulus	ISO 1922	MPa	11	17	19	23	27	31	37	41	53.5	85	115	137	195	Parallel to the plane by extensometer
Shear Elongation	ISO 1922	%	5.8	6.3	7.0	8.5	9.8	11	13	14	18	23	26	27	27	
Thermal Conductivity	ASTM C518	W/(m K)	0.029	0.030	0.030	0.030	0.030	0.030	0.030	0.031	0.032	0.037	0.042	0.045	0.059	At +10°C
Water Absorption Rate	ASTM C 272	Kg/m²	0.11	0.09	0.09	0.07	0.06	0.06	0.04	0.04	0.03	0.02	0.02	0.02	0.02	1 week at 40°C
Water Vapour Transmission	ISO 1663	g/m² x 24 hrs.	8.2	7.5	7.5	6.6	5.8	5.1	4.0	3.2	2.0	1.2	0.9	0.8	0.7	23°C and 85% r. h.
Expansion Coefficient	ASTM D 696	1/°C	4 x 10 ⁻⁵	4 x 10 ⁻⁵	4 x 10 ⁻⁵	3.5 x 10 ⁻⁵	3.5 x 10 ⁻⁵	3.5 x 10 ⁻⁵	3.5 x 10 ⁻⁵	3 x 10 ⁻⁵	3 x 10 ⁻⁵	2.8 x 10 ⁻⁵	2.6 x 10 ⁻⁵	2.4 x 10 ⁻⁵	2.2 x 10 ⁻⁵	Between -30° and +20°C
Specific Heat		Kcal/Kg °C	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	
Flammability	NF F 16 101		M1	M1	M1	M1	M1	M1	M1	M1	M1	-	-	-	-	For R200 to R400 contact DIAB
Heat Distortion Temperature	DIN 53 424	°C	95	95	95	95	95	95	95	95	95	95	95	95	95	

Notes:

Maximum processing temperature is nominally 80°C. However it can be effected by time, pressure and process conditions. Normally Klegecell products can be processed up to the issued values without appreciable dimensional changes.

Operating temperature range: -200°C to +70°C. Lifetime consideration must be taken into account for very low and high temperatures.

Please contact DIAB for advise before use.

Important:

The data provided is approximate for average density material and shall not be interpreted as minimum guaranteed values. Minimum values to calculate sandwich constructions can be provided on request. The information and statements herein are believed to be reliable but should not be construed as a warranty for which we assume legal responsibility. Users should undertake sufficient verification and testing to determine the suitability of their own purpose of any information or product referred herein. No warranty of fitness for a particular purpose is made. The company reserves the right to issue new data in replacement. Customers should check that they have the latest issue.