

Sandwich elements for plastic

PVC Veka	Symbol	Test method	Unit	Value
Gross density	ρ_a	DIN EN ISO 1183	kg/m ³	1400–1460
Thermal conductivity	λ_D	DIN 52612	W/mK	0.160
Modulus of elasticity		ISO 527	MPa	3000
Impact resistance		ISO 179/1eU	kJ/m ²	Without break
Notch impact resistance		ISO 179/1eA	kJ/m ²	9.0
Tensile strength		ISO 527	MPa	52
Bending strength		ISO 178	MPa	77.8
Shore hardness D		ISO 868		81
Surface resistance		DIN IEC 60167	ROE [Ω]	>2.00E+14
Contact resistance		DIN IEC 60093	RD [Ω cm]	1.74E+16
Dielectric strength		DIN IEC 243	[kV/mm]	16.8
Dielectric constant ϵ_r		DIN 53483		3.0–3.6
Expansion coefficient		DIN 53752	[10 ⁻⁴ /K]	7 · 10 ⁻⁵
Compressive strength		DIN 53421	N/mm ²	70
Vicat softening point		ISO 306 (B 50)	°C	72
Heat distortion temperature		ISO 75-2 (1.8 MPa)	°C	60
Water absorption		ISO 62 (after 216 hrs)	%	0.1

PVC Kömmerling	Symbol	Test method	Unit	Value
Gross density	ρ_a	DIN 53479/ISO 1183	kg/m ³	~1430
Thermal conductivity	λ_D	DIN 52612	W/mK	0.160
Fire behaviour		DIN 4102 Fire index (CH)		B1 5.2
Tensile yield stress (tensile strength)		DIN 53455/ISO 527	MPa	≥45
Elongation at break		DIN 53455/ISO 527	%	≥20
Bending strength		DIN 53452/ISO 178	MPa	≥70
Compressive strength		DIN 53454/ISO 3605	MPa	≥60
Elastic modulus		DIN 53457 ISO 527-2/1A/50	MPa	≥2500
Notch impact resistance		DIN 53453 ISO 179/1ePa	kJ/m ²	≥8
Impact resistance down to -40°C		DIN 53453/ISO 179	kJ/m ²	Without break
Ball hardness (358 N/30 S)		DIN 53456/ISO 2039	MPa	~90
Shore hardness D		DIN 53505		78
Vicat softening point		DIN 53460/ISO 306 Method B50	°C	≥72
Heat distortion temperature		DIN 53461/ISO 75	°C	~66
Linear expansion coefficient, -30°C to +50°C		DIN 53752 Method Ae	mm/mK	0.08
Dielectric constant E (at 1 kHz)		VDE 0303 T4		3.4
Dielectric loss factor tan δ (at 1 kHz)		VDE 0303 T4		0.016
Surface resistance		DIN VDE 0303 T30 DIN IEC 93	Ω	>10 ¹⁵
Specific contact resistance		DIN VDE 0303 T30 DIN IEC 93	Ω m	>10 ¹⁴
Dielectric strength		DIN VDE 0303 T21 1 mm board	kV/mm	≥27
Tracking		DIN IEC 112	Level	CTI 600
Arc resistance		DIN VDE 0303 T5	Index number	2.2.2.2
Water absorption after 7 days		DIN 53495	%	<0.08
Physiological assessment				Unobjectionable

PVC Finstral	Symbol	Test method	Unit	Value
Gross density	ρ_a	DIN 53479/ISO 1183	kg/m ³	~1410
Thermal conductivity	λ_D		W/mK	0.160
Fire behaviour		DIN 4102 (D)		B1
Tensile yield stress		DIN 53455/ISO 527	N/mm ²	45
Elongation at break		DIN 53455/ISO 527	%	20
Elasticity modulus		DIN 53457/ISO 527-2	N/mm ²	2500
Compressive strength		DIN 53454/ISO 3605	N/mm ²	65
3.5% bending stress		DIN 53452/ISO 178	N/mm ²	60
Impact resistance		DIN 53453/ISO 179	kJ/m ²	No break at -20°C
Notch impact resistance		DIN 53453/ISO 179	kJ/m ²	8
Flexural creep modulus Time under stress: 1 year Bending stress: <5 N/mm ²			N/mm ²	20°C ~1700 40°C ~1100 60°C ~300
Ball hardness		DIN 53456/ISO 2039	N/mm ²	~120
Vicat softening point		DIN 53460/ISO 306 Method B50	°C	75
Heat distortion temperature		DIN EN ISO 75 Method A	°C	~70
Heat distortion temperature		DIN EN ISO 75 Method B	°C	~74
Linear expansion coefficient, 20°C to 60°C		DIN 53752	K ⁻¹	~70 · 10 ⁻⁶
Specific contact resistance		DIN IEC 60093 VDE 0303-30	Ωcm	>10 ¹⁵
Surface resistance		DIN IEC 60093 VDE 0303-30	Ω	>10 ¹³
Dielectric constant ϵ_r		DIN 53483 VDE 0303, part 4	At 1 kHz	~3.2
Dielectric loss factor tan δ		DIN 53483 VDE 0303, part 4	At 1 kHz	~0.02
Tracking		DIN IEC 112 VDE 0303, part 1	CTI	600
Dielectric strength		DIN 53481 VDE 0303, part 2	kV/mm Sample thickness: 3 mm	≥12
Water absorption		DIN 53495/ISO 62 Method CL/100	mg/cm ²	≤3
Service temperature range		Benchmark		-30°C to +60°C
Resistance to weather (Radiation dosage: 0.8 MJ/cm ² in xenon 450)		DIN 53387 DIN EN 20105-A02 Grey scale		Level 4-3 (white only)
Physiological harmlessness				No

PUR rigid foam	Symbol	Test method	Unit	Value
Gross density	ρ_a	EN 1602	kg/m ³	31–33
Thermal conductivity	λ_D	EN 12667	W/mK	0.022–0.024
Fire behaviour		DIN 4102		B3
Compressive strength		EN 826	kPa	200–240
Bending strength		EN 12089	kPa	250–300
Transverse tensile strength		EN 1607	kPa	320–380
Shear strength		EN 12090	kPa	150–200
Shear resistance		EN 12090	kPa	170–230
Closed-cell structure		ISO 4590	%	90–95
Water absorption		EN 12087	%	3
Applicable in a temperature range			°C	From –30 to +120

Plywood	Symbol	Test method	Unit	Value
Classification				IW67
Gross density	ρ_a	EN 323	kg/m ³	~420
Thermal conductivity	λ_D		W/mK	0.130
Emission category		UNI EN 717/2	mg HCHO/m ² h	E1
Bending strength (longitudinal)		EN 310	N/mm ²	24
Bending strength (lateral)		EN 310	N/mm ²	30
Elasticity modulus (longitudinal)		EN 310	N/mm ²	2800
Elasticity modulus (lateral)		EN 310	N/mm ²	3800