

Physical Properties of PVC Plates

Evaluation Items		Product Types Unit		Impact-Resistant PVC Plates				Low-Foamed PVC	Testing Methods
				Press lamination		Extrusion		Extrusion	
				THQ098 THQ038	TSHI601HI	EQ009 EQ004	Rigid PVC for vacuum forming Various colors	Foam PVC Various colors	
Physical Properties	Specific Gravity	—		1.35	1.32	1.35	1.35	0.72	ISO 1183-1 and -2
	Rockwell Hardness	M Scale		37	47	41	40	—*2	JIS K 7202
		R Scale		108	112	110	109	—*2	
Mechanical Properties	Tensile Yield Stress	MPa		48	53	47	44	20	JIS K 7161-2-1B/50
	Nominal Tensile Strain at Break	%		74	15	23	45	8	
	Tensile Elasticity	MPa		2300	2500	2200	2100	—*2	JIS K 7161-2-1B/1
	Charpy Notched Impact Strength	KJ/m ²		80.0	58.0	87.0	79.0	1.5	JIS K 7111-1 1epA
	Flexural Stress	MPa		61	73	66	60	32	JIS K 7171
	Flexural Elasticity	MPa		2200	2600	2300	2200	1300	
	Compressive Yield Stress	MPa		64	64	56	51	—*2	JIS K 7181-B/5
	Compressive Elasticity	MPa		2200	2100	2000	1800	—*2	JIS K 7181-A/1
	Shear Fracture Stress ^{*1}	MPa		54	53	48	45	—*2	JIS K 7214
Thermal Properties	Deflection Temperature under Load	°C	1.8MPa	72	66	70	74	67	JIS K 7191
	Vicat Softening Temperature	°C	Method B (50 N)	78	71	77	79	—*2	JIS K 7206
	Dimensional Change on Heating	%	Vertical	−3	−4	−3	−3	—*2	JIS K 6745
			Horizontal	−2	−2	−2	−1	—*2	
	Linear Thermal Expansion Coefficient	×10 ^{−5} ·K ^{−1}		8.0	7.7	8.4	8.2	6.9	JIS K 7197
	Thermal Conductivity	W/m·K		0.20	0.20	0.21	0.21	Unmeasurable	Laser flash method
	Specific Heat Capacity	J/g·K		1.20	1.21	1.20	1.29	Unmeasurable	JIS K 7123
Flame Resistance		—		Self-extinguishing					JIS K 6911
Electrical Properties	Surface Resistivity	Ω/□		—					JIS K 6911
	Volume Resistivity	Ω·m		10 ¹³ Ω or more					JIS K 6911
	Breakdown Strength	MV/m		18	17	19	17	16	JIS K 6911
	Permittivity (1 MHz)	—		3	3	3	3	2	JIS K 6911
	Dissipation Factor (1 MHz)	—		0.023	0.014	0.024	0.031	0.010	JIS K 6911
	Water Absorption	%		0.018	0.015	0.046	0.051	0.051	JIS K 7209
Optical Properties	Total Light Transmittance	%		—	72	—	—	—	JIS K 7361-1
	Hue (Color)	—		Dark gray Ivory	Transparent	Dark gray Green	—	—	—

* The above data are a series of test results for a 5 mm thick specimen and given here without guarantee (values marked *1 refer to a test specimen that is 3 mm thick).

*2: The value was not measured since this is a type of foaming material.

Physical Properties

High Functional Materials

Physical Properties of High Functional Materials

Evaluation Items		Product Types	Static-Dissipative Plates			Conductive Plates	Static-Dissipative and Electromagnetic Wave Shielding Plates	Metal-Free Plates		
			Press lamination		Continuous Press	Press lamination	Press lamination	Press lamination		
		Unit	TND77368	TND77665	ESND47802 ESND47302	CV930	TEND57600	TMC60331	TMC60601	
Physical Properties	Specific Gravity	—	1.41	1.40	1.40	1.35	1.40	1.40	1.40	
	Rockwell Hardness	M Scale	63	76	83	30	69	56	76	
		R Scale	117	122	123	88	119	116	122	
Mechanical Properties	Tensile Yield Stress	MPa	60	74	73	35	72	57	75	
	Nominal Tensile Strain at Break	%	8	7	7	19	8	20	7	
	Tensile Elasticity	MPa	3000	3300	3200	2100	3100	2800	3500	
	Charpy Notched Impact Strength	KJ/m ²	6.8	2.3	1.8	13.0	2.1	5.2	2.3	
	Flexural Stress	MPa	81	98	104	50	91	79	102	
	Flexural Elasticity	MPa	2800	3400	3500	2200	3300	2800	3600	
	Compressive Yield Stress	MPa	81	90	90	45	90	69	90	
	Compressive Elasticity	MPa	2300	2800	2800	1800	2800	2300	2900	
	Shear Fracture Stress ^{*1}	MPa	55	65	65	47	Unmeasurable	53	65	
Thermal Properties	Deflection Temperature under Load	°C	1.8MPa	74	65	62	69	61	68	
	Vicat Softening Temperature	°C	Method B (50 N)	80	72	70	76	71	77	
	Dimensional Change on Heating	%	Vertical	−3	−6	−2	−5	−5	−6	
			Horizontal	−2	−1	−1	−2	−2	−1	
	Linear Thermal Expansion Coefficient	×10 ^{−5} ·K ^{−1}		6.9	6.7	6.7	8.4	7.0	8.0	6.5
	Thermal Conductivity	W/m·K		0.20	0.18	0.20	0.25	0.17	0.20	0.18
	Specific Heat Capacity	J/g·K		1.15	1.11	1.21	1.35	1.05	1.08	1.10
	Flame Resistance	—		Self-extinguishing						
Electrical Properties	Surface Resistivity	Ω/□	10 ^{6~9}			10 ^{1~5}	10 ^{6~9}	10 ¹⁵ or more		
	Volume Resistivity	Ω·m	10 ¹³ Ω or more			^{*2} 10 ^{3~7}	10 ¹³ or more			
	Breakdown Strength	MV/m	18	29 or more	19	Unmeasurable	Unmeasurable	17	18	
	Permittivity (1 MHz)	—	3	3	3	Unmeasurable	Unmeasurable	3	3	
	Dissipation Factor (1 MHz)	—	0.144	0.026	0.014	Unmeasurable	Unmeasurable	0.024	0.016	
	Water Absorption	%	0.015	0.016	0.010	0.035	0.010	0.030	0.023	
Optical Properties	Total Light Transmittance	%	—	77	87 (transparent)	—	51	—	83	
	Hue (Color)	—	Ivory	Transparent	Transparent Yellow tinted	Black	Transparent	Ivory	Transparent	

• The above data are a series of test results for a 5 mm thick specimen and given here without guarantee (values marked *1 refer to a test specimen that is 3 mm thick).

*2: Testing method: JIS K 7194

*3: These are a series of test results for products that are less than 15 mm thick.