



TECHNICAL DATA SHEET

DURAPRO PC FR V0



1. DESCRIPTION

DuraPro PC-FR V0 is a UL 94 classified, flame-retardant polycarbonate compound engineered for demanding industrial applications requiring enhanced fire protection performance. Certified according to EN 45545-2 for railway applications (R22, R23, R24, Hazard Level HL3), this material is particularly suitable for interior components in rail vehicles, as well as other safety-critical electrical and electronic applications where electrical insulation properties, high tensile strength, and elevated temperature resistance are required.

2. FEATURES

- UL94 V0 / 5VA flame rating
- High heat resistance (VICAT B 115 °C)
- Suitable for electrical and electronic applications
- EN 45545-2 railway certified: HL3 according to the requirements R22, R23, R24 (for FDM-printed parts with a thickness of 1,5 to 3 mm)

3. PROPERTIES

TEST	METHOD	UNIT	VALUE
Melt volume-flow rate (MVR) 260 °C / 5,0 kg	ISO 1133	cm ³ /10 min	11
Molding shrinkage, parallel	ISO 2577	%	0.5–0.7
Molding shrinkage, normal	ISO 2577	%	0.5–0.7
Tensile modulus	ISO 527-1,-2	MPa	2650
Yield stress	ISO 527-1,-2	MPa	69
Yield strain	ISO 527-1,-2	%	5
Strain at break	ISO 527-1,-2	%	> 50
Stress at break	ISO 527-1,-2	MPa	53
Izod impact strength (23 °C)	ISO 180/U	kJ/m ²	N
Izod notched impact strength (23 °C)	ISO 180/A	kJ/m ²	40
Izod notched impact strength (-30 °C)	ISO 180/A	kJ/m ²	10
Ball indentation hardness	ISO 2039-1	N/mm ²	108
Temperature of deflection under load 1.8 Mpa	ISO 75-1,-2	°C	98
Temperature of deflection under load 0.45 Mpa	ISO 75-1,-2	°C	106
VICAT softening temperature B	ISO 306	°C	115
Coefficient of linear thermal expansion, parallel	ISO 11359-1,-2	10 ⁻⁴ /K	0.68
Coefficient of linear thermal expansion, normal	ISO 11359-1,-2	10 ⁻⁴ /K	0.72
Burning behavior UL 94 (1.5 mm)	UL 94		V-0
Burning behavior UL 94-5V (2.0 mm)	UL 94		5VB
Burning behavior UL 94-5V (3.0 mm)	UL 94		5VA
Fire protection for railway vehicles R22	EN 45545-2	mm	HL3 (1,5–3)
Fire protection for railway vehicles R23	EN 45545-2	mm	HL3 (1,5–3)
Fire protection for railway vehicles R24	EN 45545-2	mm	HL3 (1,5–3)
Thermal conductivity, normal	ISO 8302	W/(m·K)	0.2
Glow wire flammability index (GWFI)	IEC 60695-2-12	°C	750
Relative permittivity 100Hz	IEC 60250	-	3.2
Relative permittivity 1MHz	IEC 60250	-	3.1



TEST	METHOD	UNIT	VALUE
Dissipation factor 100Hz	IEC 60250	10 ⁻⁴	37
Dissipation factor 1MHz	IEC 60250	10 ⁻⁴	75
Volume resistivity	IEC 62631-3-1	Ohm·m	1E15
Surface resistivity	IEC 62631-3-2	Ohm	1E17
Electrical strength	IEC 60243-1	kV/mm	35
Comparative tracking index CTI	IEC 60112	Stufe	350
Water absorption (saturation value)	ISO 62	%	0.5
Water absorption (equilibrium value)	ISO 62	%	0.2
Density	ISO 1183-1	kg/m ³	1190

*Temperature resistance tested at a minimum wall thickness of 4 mm.

PRINT SETTINGS

Nozzle	260-290 °C
Heatbed	110 °C
Adhesive	recommended
Speed	max. 280 mm/s
Cooling	10-40 %
Enclosed chamber	Yes
Hardened nozzle	No
Max. volumetric flow rate	18 mm ³ /s

Recommended settings for printers with a 0.4 mm Nozzle. Max. 50% layerheight.
Optimal print settings may vary between different printers and also depend on environmental factors.

4. REQUIREMENTS ACCORDING TO EN 45545-2

REQUIREMENT SET	METHOD	UNIT	HAZARD LEVEL			VALUE
			HL1	HL2	HL3	
R22	ISO 4589-2	OI (%)	≥ 28	≥ 28	≥ 32	≥ 32
	ISO 5659-2	Ds max. (-)	≤ 600	≤ 300	≤ 150	50
	EN 17084	CIT _G (-)	≤ 1.2	≤ 0.9	≤ 0.75	0.01
R23	ISO 4589-2	OI (%)	≥ 28	≥ 28	≥ 32	≥ 32
	ISO 5659-2	Ds max. (-)	-	≤ 600	≤ 300	50
	EN 17084	CIT _G (-)	-	≤ 1.8	≤ 1.5	0.01



5. TEST RESULTS ACCORDING TO EN 45545-2

METHOD	CLASSIFICATION ACCORDING TO EN 45545-2	TEST SPECIMEN THICKNESS		TEST RESULT	
		VALUE	UNIT	VALUE	UNIT
EN ISO 4589-2 Oxygen index	T01 III - Sheet material, as delivered	1.5	(mm)	≥ 32	OI (%)
EN ISO 4589-2 Oxygen index	T01 III - Sheet material, as delivered	3.0	(mm)	≥ 32	Ds max. (-)
EN ISO 5659-2 Smoke density	T10.03 Irradiance 25 kW/m ²	1.5	(mm)	18	CIT _G (-)
EN 17084 Method 1	T11.02 Irradiance 25 kW/m ²	1.5	(mm)	< 0.01	OI (%)
EN ISO 5659-2 Smoke density	T10.03 Irradiance 25 kW/m ²	3.0	(mm)	50	Ds max. (-)
EN 17084 Method 1	T11.02 Irradiance 25 kW/m ²	3.0	(mm)	0.01	CIT _G (-)

6. CERTIFICATIONS & ADDITIONAL INFORMATION



Certifications depend on colors in final product. More info in the additional information sheet.

7. STORAGE AND SHELF LIFE

Store in a dry room at room temperature (18-27°C / 65-80°F). Keep out of direct heat and sunlight.

When stored correctly, this material has a shelf life of 2 years.

Additional info in our regulatory, additional information and chemical resistance data sheets.