HORIZON
Redefine Materials Frontier

REGEECORE

TECHNICAL DATA



REGEECORE®-ZRK

FLAME-RETARDANT PET STRUCTURAL CORE

REGEECORE®-ZRK Series is a flame-retardant, recyclable linear rigid PET (Polyethylene Terephthalate) foam developed as a specialized grade within the REGEECORE® family.Its homogeneous closed-cell structure provides excellent structural stability, preventing internal damage, warpage, and delamination during high-temperature and high-pressure processing. With outstanding dimensional stability and processability, it is compatible with vacuum infusion, RTM, compression molding, and autoclave applications.Featuring excellent thermoformability for curved composite panels and 100% recyclability, REGEECORE®-ZRK Series is an ideal solution for sustainable sandwich structures.

As the flame-retardant grade of the REGEECORE® family, this series delivers excellent fire performance and has passed the EN 45545-2 R1 HL3 test, with low smoke emission and toxicity release.It features high specific stiffness and strength, excellent fatigue and impact resistance, low water absorption, and good thermal and acoustic insulation properties. With a forming temperature of up to 150°C, it is suitable for various composite manufacturing processes.REGEECORE®-ZRK Series is widely used in railway interiors, carriage components, architectural interiors, equipment enclosures, and vehicle bodies.

MECHANICAL PROPERTIES

Property	Test Procedure	Unit	Statistical Value	HK80	HK100	HK150
Density	ISO 845	kg/m³	Max.	90	105	157
			Avg.	80	100	150
			Min.	75	95	143
Compressive Strength	ISO 844:2006	MPa	Avg.	0.95	1.5	2.75
			Min.	0.85	1.3	2.6
Compressive Modulus	ISO 844:2006	MPa	Avg.	65	110	170
			Min.	55	90	140
Tensile Strength	ASTM C297	MPa	Avg.	1.95	2.2	2.7
			Min.	1.8	1.95	2.55
Tensile Modulus	ASTM C297	MPa	Avg.	100	105	200
			Min.	90	95	180
Shear Strength	ISO 1922:2012	MPa	Avg.	0.58	0.85	1.4
			Min.	0.5	0.75	1.28
Shear Modulus	ISO 1922:2012	MPa	Avg.	20	26	50
			Min.	18	23	40
Flame spread	T02 IS0 5658-2	CFE kW/m²	Min.	50	50	50
Heat release rate	T03.01 ISO 5660-1:50kW/m²	MARHE kW/m²	Max.	3.2	3.6	3.5
Smoke density	T10.01 EN ISO 5659-2 50kW/m²	Ds4 dimensionless	Max.	0.2	0.3	0.4
	T10.02 EN ISO 5659-2 50kW/m²	VOF4 min	Max.	0.7	0.9	1.4
Toxicity index	T11.01 EN 17084 methodl:50kW/m²	CITG dimensionless	Max.	0.006	0.008	0.008

***Note:** (1) The above data are average values from routine production tests. Statistical minimum values required by classification societies are available upon request.
(2) Test direction: Out-of-plane direction.

PRODUCT CHARACTERISTICS

- **Excellent resin compatibility: Compatible with various resin systems and featuring outstanding chemical stability.**
- **Superior high-temperature resistance: Withstands processing temperatures up to 150°C.**
- **Excellent Flame-Retardant Performance: Low smoke and toxic gas emissions.**
- **Outstanding mechanical properties: Boasts high compressive, shear and tensile strength as well as modulus; its high-modulus characteristic effectively prevents deformation.**
- **Remarkable weight reduction effect: Used as core material for composite materials, it efficiently cuts down the weight of structural components while meeting performance requirements, reducing relevant costs accordingly.**
- **Eco-friendly and recyclable: 100% environmentally recyclable. As a thermoplastic plastic foam, it can be recycled and pelletized for circular production.**
- **Excellent hydrolysis resistance: Resistant to hydrolysis and damp-heat aging, suited for high-humidity marine environments.**

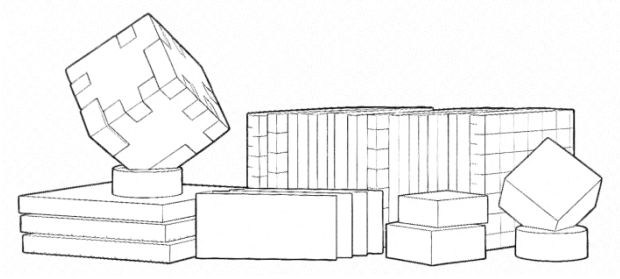
DIMENSIONS

Format	Specifications	Unit	ZRK80	ZRK100	ZRK150
Plain Sheet	L	mm	2500±10		
	W	mm	1020±10		
	THK.	mm	3-1250		

***Note:** The recommended storage life of REGEECORE®-ZRK foam core is 60 months under proper storage conditions. All technical data are based on tests conducted under specific conditions in accordance with relevant standards. Please verify product suitability for the intended application and ensure compliance with applicable regulations before using. All information is provided in good faith and is believed to be accurate at the time of publication. For the latest data, please contact our technical service department.

Disclaimer:

This data sheet may be subject to revision and changes due to development and changes of the material. The data is derived from tests and practical experience. If not stated as minimum values, the data is average data and should be treated as such. Relevant calculations should be verified by actual tests. The data is furnished without liability for the company and does not constitute any warranty or representation in respect of the material or its use. The company reserves the right to release new data sheets in replacement.



DONGYING HORIZON COMPOSITES CO., LTD.
Lightweight Materials Industrial Park, Hekou District,
Dongying, Shandong, China
E-MAIL: market@huixinherui.com
TEL: 0546-7719688

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