

castle

COMPOSITES

Data Sheet

PRODUCT AND COMPANY IDENTIFICATION

Product type: Polymer Capped Composite Decking
 Trade Name: "Ultraguard"
 Supplier : Castle Composites Limited
 Units 1-5, Nisbet Way
 Ravenstruther
 Lanark, ML11 7SF
 Phone No.: 01555 870003

NO.	Property	Test Method	Test results	Remark
1	Abrasion resistance	ASTM D4060-10	33mg(1000cycles)	
2	Brinell hardness	EN15534	8.2N/mm ²	
3	Boiling test	EN15534	Water absorption in weight: 1.10%	
4	Bond Strength	EN319	Average Bond Strength>2.3MPa No obvious abruption and damage after test	
5	Coefficient Linear Thermal Expansion	ASTM D696	38.9×10 ⁻⁶ mm/mm °C	
		EN15534	32.2×10 ⁻⁶ K ⁻¹	
6	Creep behaviour	EN15534	△ S:4.70mm, △ Sr:2.81mm	Span:350mm
7	Content of pentachlorophenol	CE (EN14041(2004))	2.99ppm	
8	Creep Recovery	ASTM D7032	Creep Recovery after 24h: 93%	
9	Degree of chalking	EN15534	Rating 0, no chalking.	
10	Fire Resistance	ASTM E84	Flame Spread Index(FSI): 85 Smoke Developed Index(SDI): 300	
11	Falling mass impact resistance	EN15534	Max Crack length(mm): No crack. Max Residual Indentation(mm): 0.14	
12	Formaldehyde Content	EN717-1	Non Detected	
		ASTM D6007-14	Non Detected	

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13	Flexural properties	EN15534	Bending Strength: 26.2Mpa, Modulus of elasticity: 3.10Gpa, Maximum load: 4537N, Deflection at 500N: 0.88mm	Span:350mm
		ASTM D6109	MOR:24.8MPa, MOE:3495MPa	Span:368mm
14	Heavy Metal Content	EPA3051	Sb:ND, As:ND, Se:ND, Sn:ND	
15	Heat reversion	EN15534 EN479	Test temperature: 100°C :0.17%	
16	Heat build-up	EN15534	$\Delta T = -2.7^\circ\text{C}$	
17	Impact Resistance	ASTM D4226	MFE>396J	
18	Lead Content Test	EUNo.628/2015	Non Detected	
19	Mould resistance	ASTM G21	Rating 0	
20	Moisture Content	EN15534 EN322	0.83%	
21	Moisture resistance under cyclic test conditions	EN15534	Original MOR: 27.4Mpa After exposure, MOR: 24.8Mpa, Decrease: 9.6%.	
22	Neutral salt spray test	ASTM B117-2011	After 200 hours tests, there was no visible change appeared on the surface: Front surface: $\Delta E^* = 1.22$, Grey Scale:4-5 Back surface: $\Delta E^* = 1.06$, Grey Scale:4-5	
		EN15534 ISO9227	$\Delta E^* = 1.42$, Grey Scale=4 (Exposure 96h)	
23	Pb, Cd, Hg, Cr ⁶⁺	RoHs-IEC62321	Pb:ND, Cd:ND, Hg:ND, Cr ⁶⁺ :ND	
24	Resistance to scratch test	ISO4586-2	Rate 2	
25	Resistance to indentation	EN15534	Apply 2000N load Brinell hardness: 72Mpa, Rate of elastic recovery: 65%	
26	Resistance to artificial weathering	EN15534 ISO4892-2	After 2000h exposure $\Delta E^* = 1.09$, Grey Scale=4-5	
27	Rockwell Hardness	ASTM D785	78.7R	

NO.	Property	Test Method	Test results	Remark
28	Slip Resistance	AS/NZS 4586	1. Wet Pendulum Testing: Longitudinal:30; Horizontal:42 2. Oil Ramp Testing: Longitudinal:Rating:R11; Horizontal:Rating:R11	
		CENTS12633(2014) CENTS16165(2012)	Pendulum Testing: Dry condition: PTV46 Wet condition: PTV34	
		EN15534-1, EN15534-4	Pendulum test:Longitudinal:44; Horizontal:56 Inclination plan test:Angle:25.0°, Rating:Class C	
		DIN51130	Oil-wet ramp test: Angle:19.7° Rating:R11	
		DIN51097	Wet-load ramp test: Front View:Angle:31.2° Rating:C Back View:Angle:29.0° Rating:C	
		EN15534 CEN/TS15676	Pendulum test:Longitudinal:59; Horizontal:69 Inclination plan test:Angle:38.2°, Rating:Class C	
29	Swelling and water absorption (24hours immersion)	EN15534	① Swelling: 0.06% in thickness, 0.03% in width, 0.03% in length. ② Water absorption: 0.49%	
30	Swelling and water absorption (28days immersion)	EN15534	① Swelling: 0.78% in thickness, 0.07% in width, 0.12% in length. ② Water absorption: 1.66%	
31	SRI Testing	ASTM C1549 ASTM C1371 ASTM E1980	19	
32	Surface Bond quality	EN319	>2.08MPa	
33	Thermal Resistance	ASTM C518-2010	Thermal conductivity: 0.1589W/(m·k) Thermal resistance: 0.0830(m ² ·K)/W	
34	Thermal conductivity	CE (EN14041(2004))	0.19738W/m·K	
35	UV Weathering test	ASTM G154	After 3000 hours test, Grey Scale3, $\Delta E^*=3.56$	
36	Uplift Resistance	ICC-ES AC174 ASTM E330	Average ultimate load ≥ 427 psf	
37	VOC&TVOC	ASTM D5116-11	Non Detected	
38	Water absorption	ASTM D1037- 12B(24h)	Water absorption(24h): 0.2%	