



## Roof Tile Manufacturer Warranty Performance Ratings

Fire ASTM E 108 UL 790	Class A or C Burning brand spread of flame; .CAL Wild Fire
UL 2218 Impact	Class 4 - Hail Impact
ASTM D3161 same as UL 997 Wind Uplift UL 580	Tolerated – speed @ 110mph - 220mph
Tolerated – speed @ 110mph - 220mph	Indistinguishable color change. No appreciable change in tensile strength.
Freeze-thaw ICC-ES Acceptance Criteria AC07 section 4.9	No indication of spalling, crazing, cracking, or other deleterious surface changes.
ICC-ES AC07 Section 4.4 Loads	Tolerated an applied load of 200 lbs.
ASTM D 471 Water Absorption	Virtually no water absorption.
ASTM D 3462 Nail Pull Through	140 lbs. Resistance at 32 F; 168 lbs. Resistance at 72 F
ASTM G21 Fungus (algae)	Does not propagate fungus growth
ASTM D 638 Tensile Strength	No meaningful reduction of strength.
TAS-100	The system tolerates 110 MPH blowing simulated rainwater
ASTM D6083 & D6694.	Accelerated Aging / Sustainability 50 plus yrs.



Compression resistance	15 mPa (2,175 psi)
Cross-breaking strength	10 mPa (1,450 psi)
Temperature range	-60° ... +80°C
Frost resistance	more than 500 cycles
Density	1,500 kg/m <sup>3</sup> (93.6 lb/ft <sup>3</sup> )
Flame spread	No flame spread
Abrasiveness	0.2 g/m <sup>3</sup>
Water absorption	0.06%
Fracture toughness	3.8 kgf/cm <sup>2</sup>
Biological stability	Resistant to moss and mold spread
Chemical stability	TAS-100The system tolerates 110 MPH blowing simulated rainwater
Chemical stability	Resistant to UV-radiation – doesn't lose its color
Heat conductivity	2800 J/m <sup>2</sup> sec
Category of impact on the organism	Harmless

