

**Fire Rated Enhanced Stealthskin™ (FR-ESSV) Panel Information Sheet**

**DESCRIPTION** Through testing and the experience of thousands of concealment sites constructed, we have determined that the type and placement of materials used for screening antennas play a vital role in their performance. All our concealment panels allow for superior antenna signal transmission compared to fiberglass without the durability problems of fiberbloom or cracking over time. Raycap's STEALTH® panels are engineered and manufactured to become part of the existing structure and withstand extreme weather conditions while maintaining their original appearance.

**APPLICATIONS** Raycap's STEALTH® FR-ESSV panels are generally specified for dark color and desert climate applications, with stringent fire rating requirements, FR-ESSV panels can be used to manufacture a variety of rooftop and tower type concealment products including screenwalls, wall replacements, side mounted boxes, clock towers, and bell towers. The panel can be factory textured to match most existing architectural appearances, such as brick, stucco, aggregate, split face block, as well as custom applications.

**RECOMMENDED FREQUENCIES** Raycap's STEALTH® generally recommends FR-ESSV panels for frequencies up to 3GHz. We have insertion loss lab testing for most panel and texture combinations up to 100 GHz at multiple incidence angles. Please contact us to help select the best concealment panel for your site.

**SIZES AND STYLES AVAILABLE** FR-ESSV panels are available in 4' x 8' and 4' x 10' standard sizes. Nominal panel thickness is 2.18". Panel weight is 1.5 lb/sf or a smooth/painted texture.

**PHYSICAL PROPERTIES** FR-ESSV panels are manufactured with a sandwich panel geometry. Fire rated Class "A" FRP (fiberglass reinforced plastic) skins are laminated to a extruded polystyrene core using an ICBO approved adhesive. Physical performance properties of the skins and core are listed to the right.

**FABRICATION/INSTALLATION** FR-ESSV panels can be fabricated into various sizes and shapes. Due to the installation critical design aspects of many of its applications, Raycap recommends that qualified designers or consultants design a total concealment system to support the panels.

**AVAILABILITY** Raycap maintains limited inventory of FR-ESSV panels and has custom manufacturing capability in its facilities in South Carolina.

**TECHNICAL SERVICES** Raycap can provide technical information and support to address questions when using FR-ESSV panels.

PHYSICAL PERFORMANCE PROPERTIES OF FRP SKINS			
PROPERTY	UNITS	TEST METHOD	RESULTS
Coefficient of Line a Thermal Expansion	10 <sup>-5</sup> /IN/IN/°F	ASTM D-696	1.7
Water Absorption (24 hr)	%	ASTM D-570	0.4
Tensile Modulus	psi x 10 <sup>6</sup>	ASTM D-638	1.1
Tensile Strength	psi	ASTM D-638	9,000
Elongation	%	ASTM D-638	1.8
Flexural Modulus	psi x 10 <sup>5</sup>	ASTM D-790	1.4
Flexural Strength	psi	ASTM D-790	13,500
Flash Ignition Temperature	°C	ASTM D-1929	400
Self ignition Temperature	°C	ASTM D-1929	430
IZOD Impact	Ft/lbs inch notch	ASTM D-256	8
Surface Burning Characteristics (Flame Spread / Smoke Developed)	-	ASTM E84	15/370

PHYSICAL PERFORMANCE PROPERTIES OF EXTRUDED POLYSTYRENE CORE			
PROPERTY	UNITS	TEST METHOD	RESULTS
Density	Lb/ft <sup>3</sup>	ASTM D-1622	1.5
Compressive Strength	Lb/in <sup>2</sup>	ASTM D-1621 (vertical)	20
Tensile Strength	Lb/in <sup>2</sup>	ASTM D-1623 (vertical)	50
Shear Strength	Lb/in <sup>2</sup>	ASTM C-273	25
Shear Modulus	Lb/in <sup>2</sup>	ASTM C-273	330
Flexural Strength	Lb/in <sup>2</sup>	ASTM C-203	50
Flexural Modulus	Lb/in <sup>2</sup>	ASTM -203	1,600
Water Absorption	% by volume	ASTM C-272	0.5
R-Value per inch	F ft <sup>2</sup> h/Btu	ASTM C-518	5.0
Surface Burning Characteristics (Flame Spread / Smoke Developed)	-	ASTM E84	15/165