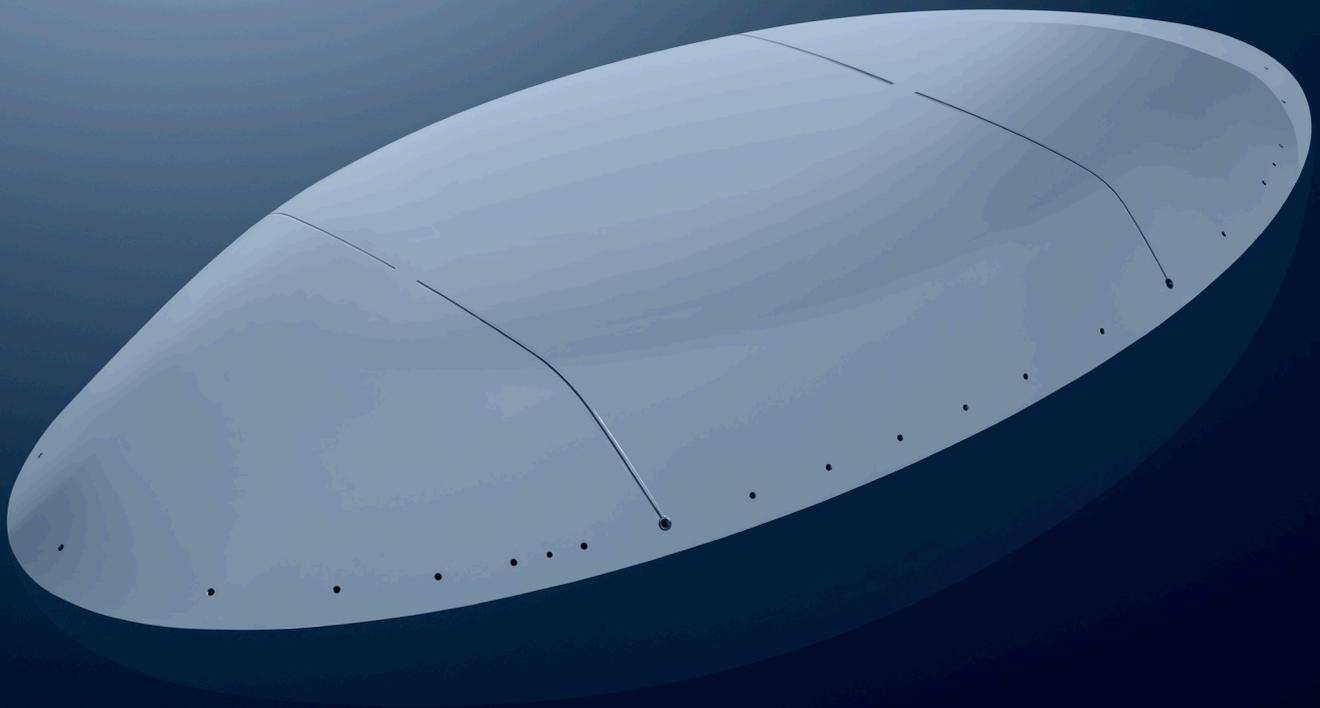


## ADVANCED COMPOSITES

# ULTRA PURE ADVANCED COMPOSITES FOR RADOMES

Technologically advanced triband satcom radome



Protective Fabrics  
Outdoor Fabrics  
Advanced Composites  
Advanced Armour

Geosynthetics  
Grass

 **TENCATE**  
materials that make a difference

# ULTRA PURE ADVANCED COMPOSITES FOR RADOMES

Technologically advanced triband satcom radome

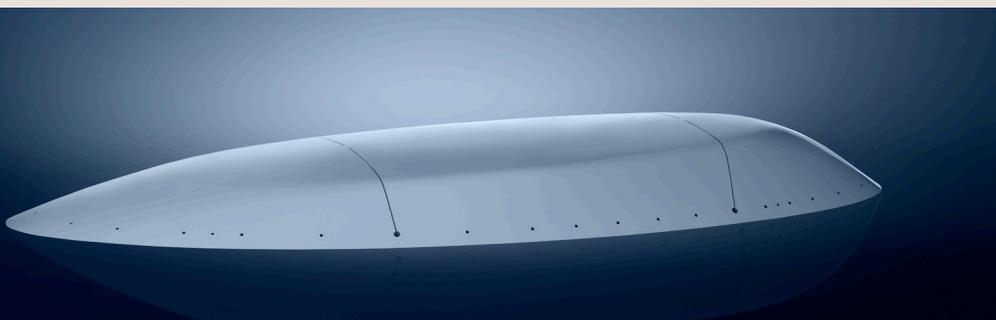
TenCate Advanced Composites is a leading supplier of advanced composites and resin systems for the radome industry. TenCate's cyanate ester and epoxy based prepregs, liquid resin systems, adhesives and syntactic foams, feature low dielectric constant, low loss tangent and low moisture absorption properties. This capability coupled with TenCate's segregated manufacturing facilities allows total isolation of conductive graphite from nonconductive (dielectric) materials, thus assuring superior quality and electrically pure products.

The General Dynamics LiveTV radome is a technologically advanced composite satcom radome. Designed to transmit data across three bandwidths (K, Ku and Ka), the radome achieves enhanced levels of speed and connectivity for in-flight wi-fi and two way communications.

TenCate Advanced Composites worked in partnership with General Dynamics, the radome designer and manufacturer, in providing a material solution that would allow the enclosed antennae to transmit and receive radio frequency signals across a broader range of bandwidths. Other design considerations included consistency in signal transmission across all parts, longevity, and also cost effectiveness.

TenCate TC250 is an epoxy based thermoset prepreg that offers an excellent balance of toughness, low dielectrics, mechanical property translation and hot/wet performance. Combined with a quartz fabric, this advanced composite material solution provided excellent mechanical performance whilst maintaining cost effectiveness.

	CYANATE ESTER QUARTZ FABRIC	LOW DIELECTRIC EPOXY / QUARTZ FABRIC	LOW DIELECTRIC EPOXY / GLASS FABRIC
<b>Electrical Performance</b>	<b>LOWEST</b> Dielectric Constant 3.00 to 3.20 Loss Tangent 0.001 to 0.006	<b>VERY LOW</b> Dielectric Constant 3.24 to 3.40 Loss Tangent 0.006 to 0.010	<b>LOW</b> Dielectric Constant 4.00 to 4.40 Loss Tangent 0.010 and above
<b>Laminate Impact Strength</b>	<b>VERY GOOD</b>	<b>VERY GOOD</b>	<b>MODERATE</b>
<b>Temperature Performance</b>	<b>HIGH</b> Tg 275° - 450°+F (135° - 240°C)	<b>MODERATE - HIGH</b> Tg 250° - 400°F (121° - 204°C)	<b>MODERATE - HIGH</b> Tg 250° - 400°F (121° - 204°C)
<b>Laminate Moisture Absorption</b>	<b>LOWEST</b> 0.1 - 0.6%	<b>VERY LOW</b> 0.6 - 0.8%	<b>MODERATE</b> 1.2 - 1.6%



North America  
South America

Europe  
Middle East  
Africa

Asia  
Australia

[www.tencate.com](http://www.tencate.com)

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