

Space Comm Systems Ltd Radomes (A-Sandwich)

The SCSL A-sandwich radome is a rigid, self-supporting enclosure designed to protect communications equipment while providing low RF attenuation. It features a gel coat exterior, foam core, and internal fibreglass layer with flowcoat finish. The thickness is optimized for frequency band-specific transmission requirements. The structure uses a modified hexagonal-pentagonal (hexi-penti) panel design for a truncated spherical shape, ensuring structural integrity and weather resistance. An integrated pony wall can be provided to elevate the radome, or specific mounting systems can be specified.

Key Features:

- **Radome Type:** A-Sandwich (3-layer: Inner skin, foam core, outer skin)
- **Design Geometry:** Modified Hexagonal-Pentagonal (Hexi-Penti) truncated sphere.
- **Sizes available:** 2.2m to 25m options.
- **Panel Configuration:** Flat flanged polygonal panels (hexagons and pentagons) bolted internally.
- **Joint Design:** Overlapping return flanges with stainless steel fasteners for structural continuity and minimal RF loss.
- **Core:** Polyurethane foam; thickness variable (typically 2.5-30 mm, determined by frequency for optimal passthrough)
- **Surface Finish:** Gel coat exterior for high UV protection, hydrophobicity, and corrosion resistance.

Parameter	Specification
Typical frequency ranges	Up to approximately 18 GHz, above this use SCSL PTFE radomes
Wind Capability	240 km/h (150 mph) standard, higher wind speeds possible on request
Temperature range	-50°C to +70°C (-58°F to +140°F)
Humidity	100% relative humidity
Design Life	20+ Years
Frequency Compatibility	Tuned for specific bands (e.g., L, S, C, X, Ku Band,); customizable
Access	Built in hatch, portico door options available
Mounting	Interfaces to a flat concrete surface as standard custom structures or mounting systems on request
Weight (approximate)	Size specific on request due to options available.
Environmental Rating	IP65, IP66 optional
Coating system	Customisable colour. Hydrophobic gel coat standard
Compliance	Designed to meet military/commercial standards (e.g., MIL-STD, FAA)

Applications and Benefits

- **Complete ground station protection system:** Radomes offer weather protection from all environments, and remove wind loadings from the antenna loadings. Radomes have the advantage of keeping the system secure, obfuscating pointing direction and the nature of any specialist equipment.
- **Design:** SCSL radomes all provide shipping capable panel sizes. Onsite build is straightforward. All design and performance parameters including RF, can be supplied at the quotation stage. All radomes are supplied with lightning arrest systems.
- **Size:** Various off the shelf designs to suit common antennas are available on short lead times. Custom designs sizes and colours are available on request. Optional accessories: Snow rope, A/C, Aircraft warning light, internal climbing systems

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