

SHIPBOARD RADOMES

ESSCO designs and manufactures shipboard radomes using a variety of reinforcements, matrices and core types, which we choose based on the specific application. We can design these radomes to meet all kinds of specifications, including low radar cross section (RCS) requirements and frequency-selective surface (FSS) technology.

APPLICATIONS

ESSCO shipboard radomes are used in:

- Naval radar applications
- High-data-rate communications systems
- Gun fire control systems
- Satellite communications
- Weather radar
- Telemetry applications

CONSTRUCTION AND MATERIALS

Our shipboard radomes are fabricated using a variety of laminate materials. Reinforcements for the composite skins include fiberglass, quartz glass, and Kevlar®, along with resin matrices such as polyester, epoxies and cyanate ester. We also use core materials such as honeycomb (e.g., arimid and fiberglass) and foams (e.g., polyisocyanate and thermo-formable foams).

Depending on the application, these parts are oven-cured at temperatures up to 400°F (204°C) or in autoclaves, which require high-pressure cures at high temperatures. Other materials are also available for special applications. Regardless of the application, we can select the right combination of laminate and core materials to meet your requirements.

ELECTROMAGNETIC PERFORMANCE

These radomes have excellent electromagnetic performance for their specific application, providing up to 98% transmission efficiency depending upon frequency.

We have developed sophisticated electromagnetic simulation capabilities that allow us to analyze the radome and the complex interaction of the enclosed antenna with the radome's electrically thick wall. Our in-house codes can properly simulate the overall far-field radiation pattern of the antenna and radome as a coupled system. This allows for high-fidelity simulations of the far-field patterns, gain, boresight errors and other factors related to the use of the radome with the selected antenna system.

Radomes
and
Mobile
Telecommunications
Systems



ESSCO

SHIPBOARD RADOMES

STANDARD SIZES

We can size our shipboard radomes for each customer's specific application. Please contact us to discuss your requirements, and we will provide the properly sized radome to meet your needs.

TYPICAL SHIPBOARD RADOME SPECIFICATIONS

Each of our shipboard radomes is different and requirements vary greatly. Please contact us to discuss your specific shipboard application.



14-ft (4.4m) dia sandwich radome for SATCOM application



AEGIS launch



8-ft (2.4m) dia shipboard SATCOM application



AEGIS docking cover, 15-ft x 15-ft (4.6m x 4.6m)

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