

MICROWAVE TRANSPARENT CERAMIC RADOME FOR GUIDED MISSILE



SCFS RADOME

Ceramic Slip Cast Fused Silica [SCFS] radomes transparent to radio signals are widely used as the nose cones of the guided missiles in pair with the specific antenna system of the missile at 5-15 GHz. SCFS can be applied upto 800°C that is generated due to airborne particle friction. The material has an excellent di-electric constant and tangent loss non-variant with temperature suitable for the application.



Designed Properties:

Density : 1.90-2.05 g/cc
Flexural strength : 55-70 MPa
Di-electric constant : 3.0-3.2
(at 10-15 GHz)
Tangent loss : 0.002-0.005
Max. temp. of use : 800°C

RBSN RADOME

Ceramic Reaction Bonded Silicon Nitride (RBSN) radomes are enhanced version of SCFS radomes as the material is 4-5 times stronger than SCFS. It can withstand 1300°C for long period and 1500°C for a short period. The di-electric constant is 5.0-5.3 and loss tangent 0.002-0.005 at 5-15 GHz. The radomes can be exclusively used for long range and high speed guided missile nose cones with coupled antenna system.



Designed Properties:

Density : 2.0-2.2 g/cc
Flexural strength : 180-200 MPa
Di-electric constant : 5.0-5.3
(at 10-15 GHz)
Tangent loss : 0.002-0.005
Max. temp. of use : 1300°C
(long duration)



Naskar Ceramic India is in a position to manufacture both SCFS and RBSN radomes fitted to INVAR metal bulkhead, of varied class and geometry upto 1200mm length and 600mm dia ready for application. The materials are tested and qualified by Research Center imarat (RCL, DRDO Hyderabad). Naskar Ceramic has the capability of producing 50 SCFS and 20 RBSN sintered radoms per month which can be augmented to the required level.

NASKAR CERAMIC

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