

COMPARATIVE STUDY FOR THE CRITICALITY OF STRUCTURAL AND THERMAL LOADS FOR CERAMIC RADOME

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Abstract

Radome is one of the most important sections of a missile. It houses the seeker. Choice of material and thickness of wall are controlled primarily by electronic requirements, while definition of shape is influenced by aerodynamic and packaging-space demands. After a preliminary radome design, it needs to be evaluated for its ability to withstand severe flight environments. Structural and thermal loads are the two most important flight environmental factors. The present paper discusses the evaluation of stresses due to structural and thermal loads and experimental verification. A comparative study is carried out to evaluate criticality of structural loads against thermal loads.

Keywords: Radome; Kinetic heating; Thermo structural testing; ceramic