# ToT of Radar Absorbing Paint

The Radar Cross Section (RCS) of an object is dominated by the radar energy returned from various scattering centers of complex shaped targets. The application of Radar Absorbing Paint on these scattering centers attenuates the back reflected radar energy is an effective way of reducing the RCS significantly. These Paints not only have the required functional properties of radar absorption at the desired frequency bands, but are also constrained to be thin and to carry minimum weight penalty. Further, they need to be designed and developed as per the nature of the substrate, and must satisfy the mechanical and environmental stability. In addition, Paint should be such that it can be readily applied in a simple and expeditious manner to achieve the functional thickness on any surface. The proper selection of filler materials and resin matrix is essential to develop such Paint for realization in practical use.

Defence Laboratory, Jodhpur has developed Polyurethane based Radar absorbing Paint using magnetic functional filler material for application on strategic targets for RCS reduction. The polyurethane resin system used in Radar Absorbing Paint has excellent weathering resistance, and capable of withstand very low and high temperature. The magnetic functional filler material with specific size and shape has been used in appropriate ratio in resin matrix to obtain maximum radar absorption properties. The developed paint has capability for its application on airborne as well as land based strategic targets.

**Advantages of Technology:** The developed Radar absorbing Paint has following advantages

- Exhibit more than 90% microwave absorption
- Room temperature drying and curing for application in field conditions
- Low and high temperature thermal stability
- Resistance to Hydraulic Oil, Water, Air Turbine Fuel
- Capable to withstand thermal shock cycling
- Sustained aerodynamic Vibration
- Can be applied on Al/Al alloy and CFRP composite surface without affecting the structural properties
- Easy application using spray gun on complex objects