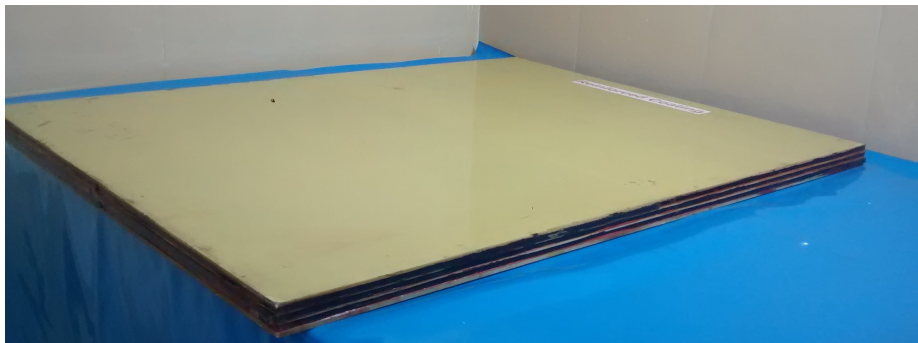


## **NMR-Reinforced Coating for Sound Isolation (NMR-RCSI)**

Reinforced coatings (RC) are installed between interhull spaces of submarines. These are sound insulating tiles which prevent acoustic energy emission through submarine hull. These coatings help in reducing self noise of the submarine caused by vibration and onboard machinery. Reinforced coatings are designed to function at pressures up to 6MPa. The RC is a multilayer tile with alternate layers of FRP and perforated rubber sheet. The FRP and Perforated Rubber sheets are adhesively bonded to each other using NMR 51K adhesive. The edges of the multilayer structure are sealed with Polyurethane sealant to prevent water penetration. The RC is fabricated in two forms 1) Flat panels for fitting on the flat surfaces 2) Curved panels for fitting on the submarine hull structure. The fitting of RC on to the structures is by mechanical bolting.



### **Flat Panel Reinforced Coating**

#### **Salient Features**

- ❖ Standard dimensions : Flat panel – 490mm x 375mm x 36mm  
Curved Panel- 490mm x 375mm x 36mm with 12-6m radius
- ❖ Weight : 8-10Kg
- ❖ Construction : Seven layer construction (Three perforated rubber Sheet sandwiched between stiff FRP layers)
- ❖ Fabrication method : Layer by layer Adhesive bonding of FRP and Perforated rubber layers using NMR 51K Adhesive  
Followed by edge sealing by NMRL developed PU Sealant
- ❖ Acoustic properties : Good sound isolation properties  
: Good structural vibration damping properties  
: Low compressibility up to 6MPa

#### **Application Areas**

- ✓ Interhull space of submarines
- ✓ Areas requiring sound isolation in underwater communication systems