

## TECHNICAL REQUIREMENTS FOR VENTILATION FANS

1. **Functional Requirement.** The Fans are used for following purpose on board ship:
  - (a) Supply of Fresh air to machinery compartments and hangar for ventilation purpose.
  - (b) Removal of exhaust air from machinery compartments, stores, battery rooms, sanitary compartments, galleys & pantries.
  - (c) For recirculation of machinery compartment air through sea water t& chilled Water coolers for cooling purpose.
  - (d) The Fan fitted in critical compartments are to be with flame proof gauges.
  
2. **Technical Requirements.**
  - (a) The fans shall be either centrifugal / Axial fans depending upon use.
  - (b) The fans shall be electrically driven
  - (c) The motors should be marine type suitable for 380 V, 3 PH, 3 Wire, 50 Hz. Electric motors to confirm as per EED-Q-071 Rev. 4. Motors shall have class F Insulation & shall be fully enclosed construction, Water tight to pressure of 0.1 Bar & should be rated for continuous operation.
  - (d) The shaft metal of the motor shall be steel to EN 57 or AISI 431.
  - (e) The Fan & Motor as assembly should be shockproof to NSS II".
  - (f) Impeller shall be made of sea water & high temperature resistance material.
  - (g) The Fan's shall operate in a satisfactory manner over its entire operating range, without exceeding the noise and vibration levels. Fan should not have sound level exceeding 75 db (A) Under free field condition 1 metre distance with ducted inlet & outlet.
  - (h) All Fans used in Magazines & Hangars are to be fitted with spark proof.
  
3. **Construction.**
  - (a) The Fan & its components including Cabling will be arranged and installed to permit ready accessibility for operation, inspection and maintenance.
  - (b) The covers are to be provided with an inspection door on the service side.
  - (c) The fans to be fully balanced & supported in enclosed ball bearings.
  - (d) Centrifugal fan shall be radial type with backward curved blades.
  - (e) Fan casing for centrifugal should be portable (Turn able).
  - (f) Direct on line shockproof starters of approved type& make (Naval Version) are to be supplied. The starters will incorporate single phasing protection in addition to over load & under load voltage protection.
  - (g) The cabling inside the Fan & Control panel shall be patronised LFH cables.
  - (h) The body of Fan shall be made up of Sea water resistant Aluminium alloy (Almg3 material). The Fan's shall be insulated for thermal & acoustic requirement. Impeller material should be sea water resistance.
  
4. **Control & Monitoring.** Indication of fan running status is to be provided on the control panel and the control panel will provide digital outputs for remote monitoring and control.