

PRE-QUALIFICATION CRITERIA FOR CYLINDER HEAD RH & LH CASTING
(OPN UPTO 220) TO DRG No. 20-06-16-5 & 20-06-34-5

1. The prospective vendors must be supplying or must have supplied large intricate aluminium engine casting to reputed engine manufactures.
2. The vendors, who are interested in supplying such castings, with zero/proof machining should have their own manufacturing facilities. The firm should have a manufacturing base, adequate financial strength as a well-documented quality system. The manufacturer should have adequate infrastructure like sufficient area of industrial shed, power backup, air compressors etc.
3. The casting manufacturer shall buy all input materials for liquid metal as well as for moulding and core making from reputed manufacturers only. Necessary material certificates for all input materials and additives should be available.
4. The vendors must have adequate trained, experienced and skilled manpower.
5. **THE FIRM SHOULD HAVE FOLLOWING FACILITIES COMPULSORY AT THEIR PREMISES FOR CASTINGS OF CYLINDER HEAD.**
 - a) Aluminium melting furnace with adequate capacity.
 - b) Transfer Ladles, holding (preferably with dosing facility) furnaces.
 - c) Capacity of manufacturing Die casting dies with simulation preferably/should have tie-up with reputed vendor.
 - d) Suitable core making facilities (like hot box, cold box and shell core) with latest core shooter and related mixers, core ovens etc.
 - e) Hydraulic operated gravity die casting machines.
 - f) The firm should have density meter and porosity detection system to check the effect of the degasification.
 - g) Heat treatment for T6 process wherever required (solutionising and ageing facilities.)
 - h) Vacuum Impregnation plant for sealing micro porosity.
 - i) The general quality requirement of the casting to be manufactured by the vendor shall confirm to the technical document TTM 27-75
 - j) Pressure testing facilities.

- k) Argon TIG welding facility.
- l) Abrasive blasting / surface cleaning facilities.
- m) Fettleing facilities like band saw, mechanical grinders etc.
- n) The firm should have degassing plant.

QC CRITERIA

Testing facilities and test equipment's and lab (preferably NABL accredited) should include following facilities.

- 1) Radiography testing equipment/should have tie-up with NABL accredited lab.
- 2) Sand lab for green sand and core sand testing and analysis.
- 3) Wet gravimetric chemical analysis.
- 4) Spectroscope
- 5) The firm should have Mechanical testing lab & Ultrasonic testing lab
- 6) Microscopes for micro structural analysis
- 7) Macro analysis facilities.
- 8) Firm should ensure the supply of items as per drawing dimension and technological requirements.
