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**Government of India
Ministry of Railways**

**QMS-22:2009
(Revision 0)**

**Schedule of Infrastructure, manufacturing & testing facilities
and quality control requirements**

for

Silico Manganese Liners

(Specn. No. WD-21-Casub 22 NLB-93 and 48-BD-08)

**Inspection & Liaison Directorate
Research Designs & Standards Organisation
Manak Nagar Lucknow – 226011**

March'2009

(Price Rs. 300/-)

1.0 SCOPE

1.1 This schedule covers the technical requirement for manufacture and supply of silico manganese liners to be fitted in casnub bogie and couplers.

2.0 REQUIREMENT

The vendor seeking approval shall have the required facilities as mentioned below:

2.1 General Infrastructure and manufacturing facilities

Manufacturer should have adequate covered accommodation for storing raw material, testing, finished items awaiting despatch and arranging inspection.

2.2 Machinery and Plant

Following machinery and plant of suitable capacity should be available.

2.2.1 Shearing machine of suitable capacity.

2.2.2 Heating furnace with temperature controller and recorder at least 1t capacity (either electrical or oil finish).

2.2.3 Tempering furnace with temp. controller and recorder of 1t capacity (electrical or oil finish).

2.2.4 Oil quenching bath with cooling arrangement and bath oil temp. indicator.

2.2.5 Hydraulic press for straining operation.

2.2.6 Pedestal grinder

3.0 TESTING FACILITIES

3.1 Hard testing machine (BHN) upto 500 capacity shall be available.

4.0 MEASURING INSTRUMENT

4.1 Suitable gauges for checking dimensional accuracy of the component.

4.2 Ensure that the instruments such as Vernier, micrometer are available.

5.0 QUALITY CONTROL REQUIREMENT

5.1 The firm should have acquire ISO 9000 series certification for the product for which an approval is sought should be broadly covered in the scope of the certification for manufacture and supply.

5.2 Quality manual of the firm for ISO 9000 should clearly indicate at any stage the control over manufacturing and testing of the said railway product.

5.3 Quality assurance plan for the product detailing various aspects like :

- (a) Organisational chart
 - (b) Flow process chart
 - (c) Stage inspection details
 - (d) Various parameters to be maintained to ensure control
 - (e) Policy of disposal of rejected castings should be implemented and record is maintained for documentary evidence.
- 5.4 A diploma holder must be head of the inspection/final control section with 5 years experience in the relevant field.
- 5.5 There exists a quality manual of the firm indicating the extent of control over production and testing.
- 5.5.1 There exists a system of documentation in respect of rejection at customer end, warranty replacement
- 5.6 System should exist for documentation of the following :
- 5.6.1 Incoming raw material with TC reference of supplier as well as internal test/audit checking from outside agency. It is desirable to have the facility for testing of raw material in house.
- 5.6.2 The raw material shall be purchased from authorised supplier. The record indicating the details of testing shall be available.
- 5.6.3 Stage inspection and test result.
- 5.6.4 Ensure that a system exists for calibration of equipments and record is maintained.