

**INTEGRAL COACH FACTORY , CHENNAI- 600 038****SCHEDULE OF TECHNICAL REQUIREMENTS FOR  
SS MEDIUM FABRICATED ITEMS CATEGORY**ICF/MD/SPEC-312  
ISSUE STATUS:01  
Rev.: 00  
DATE: 27/02/2017**IDENTIFICATION SHEET****No. of Pages – 1+5**

<b>Amendment Nos.</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Date Of Issue</b>	<b>02-08-25</b>				

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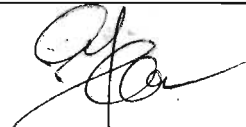
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**Amendment No-01**



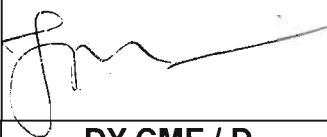

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**Pages - 1 of 1**

Clause amended as below:

Ref :E office No-304704

Page No.	Clause No.	Existing	Revised
2 of 5	2.2 (D)	Newly added	<p>A portable spectrometer should be available in-house for inspection of raw materials and assemblies, prior to manufacturing and during inspection by ICF or by ICF authorized inspection agencies.</p> <p>The manufacturer shall also cross verify the raw material and other sub- assemblies at different stages and maintain records.</p>

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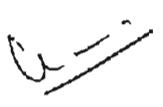
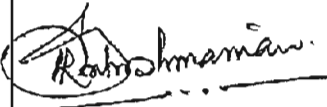

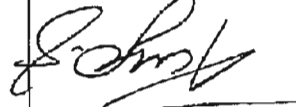
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## 1.0 SCOPE

This document covers the infrastructural requirements for manufacture and supply of finished SS medium fabricated items (as mentioned in annexure-I).

## 2.0 REQUIREMENTS

All firms seeking approval with ICF for supplying SS Medium fabricated items must fulfill the requirements given below.

### 2.1 AREA.

Firm should have minimum area as follows:

Covered area for working – minimum 200 Sq. Mtrs.

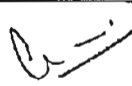
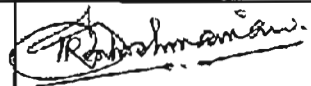
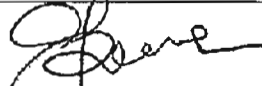
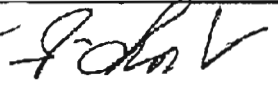
Covered area for storage of raw materials and finished products – 100 Sq. Mtrs.

### 2.2 MANUFACTURING FACILITIES:

a) Firm should have the following minimum in-house facilities.

Shearing machine	- 8mm th x 2000 mm W
Straightening/Rolling machine	- 8mm th x 600mm W
Press Brake	- 8mm th x 3000mm
Press	- 60 Tons
Radial drilling m/c	- upto 50mm dia
TIG Welding m/c	- 2 nos.
MIG Welding m/c	- 2 nos.
Polishing m/c	- 2 HP

Firm should have basic in-house facilities of Lathe, Drilling m/c, Portable Grinders with suitable capacity.

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b) Firm should have the following optional facilities for special operations in-house for approving items involving the corresponding process.

- |   |   |
|---|---|
| i. Tube bending facility                | - 0.5" to 3.0" dia                                    |
| ii. Laser cutting m/c                   | - 8mm x 3000 mm W (outsourcing with MOU is permitted) |
| iii. Powder Coating Facility            | - 3000 mm L x 1000 mm W                               |
| iv. CNC machining                       | - as per requirement                                  |
| v. Painting facility                    | - as per requirement                                  |
| vi. Alu. Fabrication facility           | - as per requirement                                  |
| vii. Facilities for Wood work, LP sheet | - as per requirement                                  |

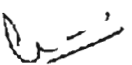
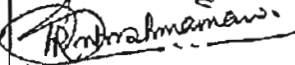
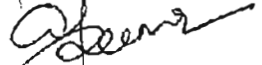
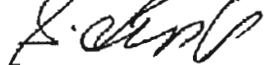
For process involving similar operations, if higher end machine is available with firm, lower end machine requirement can be avoided.

Similarly for all operations usage of alternate machines with same quality output, can be permitted

Firm should have the following calibrated, minimum in-house facilities for Quality Assurance.

- |   |                                   |
|---|-----------------------------------|
| Vernier caliper   | - (least count 0.02mm)            |
| Micrometer  | - (least count 0.01mm)            |
| Measuring gauges  | - Profile, GO, NO-GO gauges, etc. |
| Surface table with Height gauge                         | - (Suitable size)                 |
| Dye Penetrant testing kit                               |                                   |
| Facility for Macro etch test for fusion of fillet weld. |                                   |

c) Firm should have in-house facilities for Chemical & Mechanical Testing.

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## **3.0 MAN POWER**

Firm should have employed min. 15 permanent workers at their workshop.

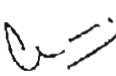
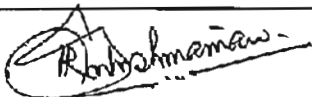
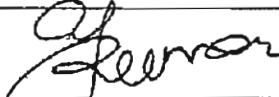
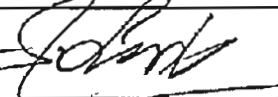
Supervisor	- Min. qualification DME
Quality incharge	- Min. qualification DME
Welders	- 2 nos. (ITI, AWTI/ICF, ATI/GUINDY or any other Certificate issued by authorised inspectors)
Fitters	- 2 nos. (ITI)
Skilled operators	- 4 nos.
Helpers	- 4 nos.

However, the monthly capacity of the firm for each item, will be with respect to the man power.

Regarding the qualification of the manpower ,firm has to follow the criteria fixed by ICF time to time, as required .


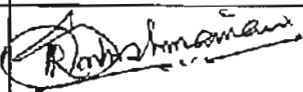
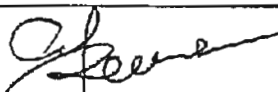
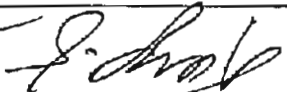
## **4.0 QUALITY CONTROL**

- 4.1 The manufacturer shall have ISO-9000 series Certification for SS Fabrication.
- 4.2 There shall be a system to ensure traceability of the product from raw material stage finished product stage.
- 4.3 Firm shall submit a QAP (standard or item specific) for fabrication, which should involve the following.
  - 4.3.1 Process flow chart
  - 4.3.2 Brief details of manufacturing of the product.
  - 4.3.3 Raw material inspection chart with sampling plan
  - 4.3.4 In-process inspection details and chart with sampling plan
  - 4.3.5 Final inspection chart with sampling plan
  - 4.3.6 Documents of system for rejection of materials.

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Page 4 of 5**5.0 DOCUMENTATION** (to be verified by the assessing official at the time of assessment)

- Incoming raw material register.
- Stage inspection details including finished products.
- Records of internal rejection and its analysis against action plan.
- Records of final products inspection by external agencies.
- Records of maintenance schedule of M&P.
- Records of training imparted in Production, Quality control, Safety parameters & Maintenance of machinery.

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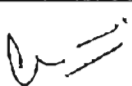
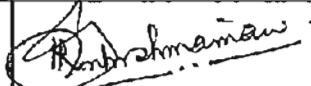
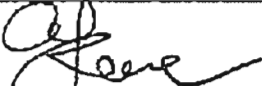

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## **ANNEXURE- I**

S. No.	VD SL.No.	DESCRIPTION OF SS MEDIUM FABRICATED ITEMS (TOTAL - 14 Nos.)
1	32	Body side sliding door (Alu)
2	33	SS sliding door for lug. room
3	35	SS Outer door assy. pivoted)
4	70	Battery box
5	72	Underslung water tank
6	73	Auxiliary roof water tank
7	80	Diesel fuel tank
8	94	Lav/ cubicle doors & generator / crew room doors.
9	95	Driver's cab door compl.
10	113	Lavatory inlay
11	117	Roof water tank
12	118	Wash basin
13	119	IC Door
14	132	Sliding door LHB coaches

The above items list may be revised (ADD/Remove) by the ICF time to time, as required.

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