

<p>Clause no. of uploaded specification</p>	<p>4</p>																																																																									
<p>Provisions of draft M&C/NDT/131/2009 Rev II September 2021 as uploaded on 27.09.2021</p>	<p>4. Manufacturing & Testing Facilities: The firm shall have following machineries & plant (M&P) for manufacturing and testing of parameters of the relevant equipment:</p> <table border="1" data-bbox="467 348 1461 1545"> <thead> <tr> <th>Sl. No.</th> <th>Item</th> <th>Quantity (min)</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Oscilloscope: Digital Real Time, Storage, 100MHz</td> <td>02</td> </tr> <tr> <td>2.</td> <td>Digital millimetres</td> <td>02</td> </tr> <tr> <td>3.</td> <td>DC Power Supply</td> <td>03</td> </tr> <tr> <td>4.</td> <td>Portable Drilling Machine</td> <td>01</td> </tr> <tr> <td>5.</td> <td>Hand Surface Grinding Machine</td> <td>01</td> </tr> <tr> <td>6.</td> <td>Dry Heat Chamber</td> <td>01</td> </tr> <tr> <td>7.</td> <td>Soldering Station, Temperature controlled</td> <td>03</td> </tr> <tr> <td>8.</td> <td>Block VI as per IS: 4904</td> <td>02</td> </tr> <tr> <td>9.</td> <td>Vernier Calipers</td> <td>02</td> </tr> <tr> <td>10.</td> <td>Step Gauge (2 mm - 9 mm)</td> <td>02</td> </tr> <tr> <td>11.</td> <td>Sensitivity setting Bocks for rail (for Rail Tester manufacturer)</td> <td>02 (01 no. for 52 Kg & 01 no. for 60 Kg rail section)</td> </tr> <tr> <td>12.</td> <td>Sensitivity setting Bocks for A.T. and F.B. welded rail joint (For ultrasonic testing equipment for welded rail joints manufacturer)</td> <td>02 (01no. for A.T. weld joint and 1 no for F.B. weld joint)</td> </tr> <tr> <td>13.</td> <td>Standard Rail piece (52 Kg & 60 Kg rail section) with bolt hole and 5 mm saw cut (As per Annexure D) for sensitivity setting of 37⁰ probes for SRT & DRT.</td> <td>01 each</td> </tr> <tr> <td>14.</td> <td>Calibration Blocks 50 x 50 x 50 mm or 50 x 50 x 60 mm</td> <td>02</td> </tr> <tr> <td>15.</td> <td>Standard axle with simulated defect (5 mm saw cut at journal) (for Axle tester manufacturer)</td> <td>01</td> </tr> <tr> <td>16.</td> <td>Standard Rail Track with simulated and standard defects (for Rail Tester manufacturer)</td> <td>01</td> </tr> <tr> <td>17.</td> <td>Centre lathe machine with accessories or CNC machine with accessories.</td> <td>01</td> </tr> <tr> <td>18.</td> <td>Weighting machine capacity 100Kg</td> <td>01</td> </tr> <tr> <td>19.</td> <td>Bench Grinder</td> <td>01</td> </tr> <tr> <td>20.</td> <td>Pressing machine</td> <td>01</td> </tr> <tr> <td>21.</td> <td>Shaping Machine</td> <td>01</td> </tr> <tr> <td>22.</td> <td>Painting Spray machine (for Rail testing trolley)</td> <td>01</td> </tr> <tr> <td>23.</td> <td>Electronic digital weighting machine capacity 5 Kg.</td> <td>01</td> </tr> </tbody> </table>		Sl. No.	Item	Quantity (min)	1.	Oscilloscope: Digital Real Time, Storage, 100MHz	02	2.	Digital millimetres	02	3.	DC Power Supply	03	4.	Portable Drilling Machine	01	5.	Hand Surface Grinding Machine	01	6.	Dry Heat Chamber	01	7.	Soldering Station, Temperature controlled	03	8.	Block VI as per IS: 4904	02	9.	Vernier Calipers	02	10.	Step Gauge (2 mm - 9 mm)	02	11.	Sensitivity setting Bocks for rail (for Rail Tester manufacturer)	02 (01 no. for 52 Kg & 01 no. for 60 Kg rail section)	12.	Sensitivity setting Bocks for A.T. and F.B. welded rail joint (For ultrasonic testing equipment for welded rail joints manufacturer)	02 (01no. for A.T. weld joint and 1 no for F.B. weld joint)	13.	Standard Rail piece (52 Kg & 60 Kg rail section) with bolt hole and 5 mm saw cut (As per Annexure D) for sensitivity setting of 37 ⁰ probes for SRT & DRT.	01 each	14.	Calibration Blocks 50 x 50 x 50 mm or 50 x 50 x 60 mm	02	15.	Standard axle with simulated defect (5 mm saw cut at journal) (for Axle tester manufacturer)	01	16.	Standard Rail Track with simulated and standard defects (for Rail Tester manufacturer)	01	17.	Centre lathe machine with accessories or CNC machine with accessories.	01	18.	Weighting machine capacity 100Kg	01	19.	Bench Grinder	01	20.	Pressing machine	01	21.	Shaping Machine	01	22.	Painting Spray machine (for Rail testing trolley)	01	23.	Electronic digital weighting machine capacity 5 Kg.	01
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<p>Comments of M/s Paras Electronics Hyderabad on the uploaded draft specification</p>	<p>i. S.No.- 2 - It is Digital multimeter ii. S.No.-13 - Since sensitivity setting standard is 5mm cut for both 52Kg and 60 Kg Rail, hence one standard test piece of 60Kg is sufficient.</p> <p>RDSO. Comment:</p> <p>i. Agreed. It is a typographical error and corrected accordingly. ii. Agreed, since simulated defect size and orientation i.e. 5 mm saw cut on bolt hole is same for both 52 Kg & 60 Kg rail and also manufacturing firms are not involved in testing of tracks and for sensitivity purpose only one Standard Rail piece of 60 Kg rail section with bolt hole & 5 mm saw cut (As per Annexure D) is sufficient.</p>																																																																									

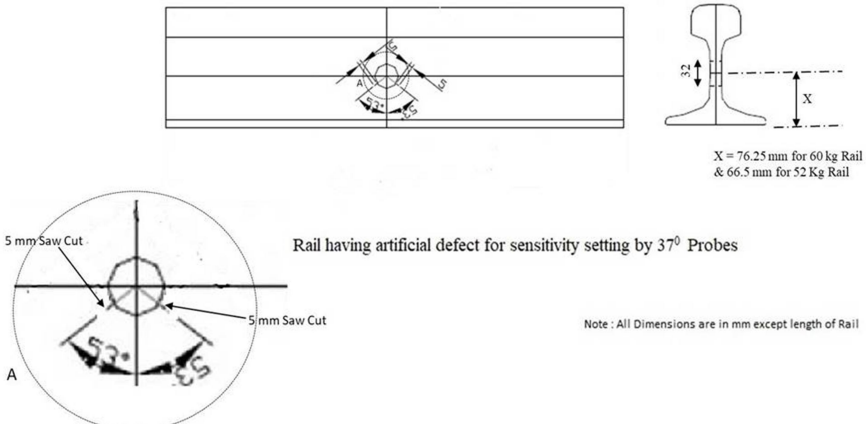
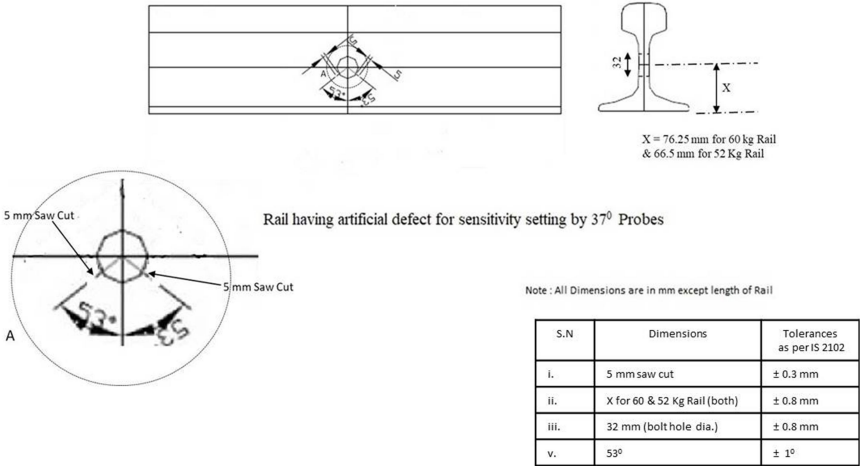
Modified draft technical specification as uploaded on 27.09.2021 after incorporating accepted comments.

4. Manufacturing & Testing Facilities:

The firm shall have following machineries & plant (M&P) for manufacturing and testing of parameters of the relevant equipment:

Sl. No.	Item	Quantity (min)
1.	Oscilloscope: Digital Real Time, Storage, 100MHz	02
2.	Digital millimetres multimeter	02
3.	DC Power Supply	03
4.	Portable Drilling Machine	01
5.	Hand Surface Grinding Machine	01
6.	Dry Heat Chamber	01
7.	Soldering Station, Temperature controlled	03
8.	Block V1 as per IS: 4904	02
9.	Vernier Calipers	02
10.	Step Gauge (2 mm - 9 mm)	02
11.	Sensitivity setting Bocks for rail (for Rail Tester manufacturer)	02 (01 no. for 52 Kg & 01 no. for 60 Kg rail section)
12.	Sensitivity setting Bocks for A.T. and F.B. welded rail joint (For ultrasonic testing equipment for welded rail joints manufacturer)	02 (01no. for A.T. weld joint and 1 no for F.B. weld joint)
13.	Standard Rail piece (52 Kg & 60 Kg rail section) with bolt hole and 5 mm saw cut (As per Annexure D) for sensitivity setting of 37 ⁰ probes for SRT & DRT. (for Rail Tester manufacturer)	01 each
14.	Calibration Blocks 50 x 50 x 50 mm or 50 x 50 x 60 mm	02
15.	Standard axle with simulated defect (5 mm saw cut at journal) (for Axle tester manufacturer)	01
16.	Standard Rail Track with simulated and standard defects (for Rail Tester manufacturer)	01
17.	Centre lathe machine with accessories or CNC machine with accessories.	01
18.	Weighting machine capacity 100Kg	01
19.	Bench Grinder	01
20.	Pressing machine	01
21.	Shaping Machine	01
22.	Painting Spray machine (for Rail testing trolley)	01
23.	Electronic digital weighting machine capacity 5 Kg.	01

Other changes

Clause no. of uploaded specification	Annexure D															
<p>Provisions of draft technical Specification No. RDSO/M&C/NDT/128/2007, (B-Scan) Rev-IV, August 2021 as uploaded on 27.09.2021</p>	 <p>Rail having artificial defect for sensitivity setting by 37° Probes</p> <p>Note : All Dimensions are in mm except length of Rail</p> <p>Fig.4 - Standard Rail piece with bolt hole and 5 mm saw</p>															
<p>RDSO Comment</p>	<p>Tolerances for dimensions as per IS: 2102 is added</p>															
<p>Modified draft</p>	 <p>Rail having artificial defect for sensitivity setting by 37° Probes</p> <p>Note : All Dimensions are in mm except length of Rail</p> <table border="1" data-bbox="1104 1176 1429 1323"> <thead> <tr> <th>S.N</th> <th>Dimensions</th> <th>Tolerances as per IS 2102</th> </tr> </thead> <tbody> <tr> <td>i.</td> <td>5 mm saw cut</td> <td>± 0.3 mm</td> </tr> <tr> <td>ii.</td> <td>X for 60 & 52 Kg Rail (both)</td> <td>± 0.8 mm</td> </tr> <tr> <td>iii.</td> <td>32 mm (bolt hole dia.)</td> <td>± 0.8 mm</td> </tr> <tr> <td>v.</td> <td>53°</td> <td>± 1°</td> </tr> </tbody> </table> <p>Fig.4 - Standard Rail piece with bolt hole and 5 mm saw</p>	S.N	Dimensions	Tolerances as per IS 2102	i.	5 mm saw cut	± 0.3 mm	ii.	X for 60 & 52 Kg Rail (both)	± 0.8 mm	iii.	32 mm (bolt hole dia.)	± 0.8 mm	v.	53°	± 1°
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i.	5 mm saw cut	± 0.3 mm														
ii.	X for 60 & 52 Kg Rail (both)	± 0.8 mm														
iii.	32 mm (bolt hole dia.)	± 0.8 mm														
v.	53°	± 1°														

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Provisions of draft technical Specification No. RDSO/M&C/NDT/128/2007, (B-Scan) Rev-IV, August 2021 as uploaded on 27.09.2021	<p>1. Foreword: Ultrasonic testing equipment viz Digital Ultrasonic single and double rail tester, Digital Ultrasonic flaw detector, Digital Ultrasonic Testing equipment for welded rail joints are being used for the detection of internal defects as well as service defects in rails, welds, wheels, axles and other miscellaneous components. These ultrasonic equipment are developed by RDSO with indigenous manufacturers for its manufacturing and supply to Indian Railways. The relevant specifications for the requirement of ultrasonic equipment are prepared by RDSO as per requirement depending upon the nature of manufacturing and service defects developed in the rails, rail-weld, axles, wheel and other rolling stock components</p>
RDSO Comment	Re-wording for better clarity.
Modified draft	<p>1. Foreword: Ultrasonic testing equipment viz Digital Ultrasonic single rail tester and double rail tester with 7 probes/channel testing capability per rail, Digital Ultrasonic flaw detector, Digital Ultrasonic Testing equipment for welded rail joints are being used for the detection of internal defects as well as service defects in rails, welds, wheels, axles and other miscellaneous components. These ultrasonic equipment are developed by RDSO with indigenous manufacturers for its manufacturing and supply to Indian Railways. The relevant specifications for the requirement of ultrasonic equipment are prepared by RDSO as per requirement depending upon the nature of manufacturing and service defects developed in the rails, rail-weld, axles, wheel and other rolling stock components. 10th Extraordinary TSC meeting (Item No. 1355) vide letter no. 2021/CE-II/TSC/10th Extraordinary dated: 26.05.2017 has recommended for Development of B-Scan USFD testing machines (SRT/DRT) with 9 probes/channel testing capability per rail to enable additional testing with 37 degree probes, and also additional provision for testing of scab rail with 45 degree probe (supplied fitted in loose test rig). To facilitate the firm's plant and machinery for manufacture of SRT & DRT with nine probes/channels STR is revised</p>