

# Reasoned Document for RDSO Spec. No. 16/95 Rev.1

Date: 10.10.2024

1	2	3	4	5														
SN	Clause No.	Description	Comments of M/s Nippon Steel	RDSO Remarks														
1	2.2.2	<div>2.2.2. Product Analysis</div> <div>The product analysis shall be carried out on the finished product. Permissible variation in case of such product analysis from the ladle analysis as obtained shall be as follows:-</div> <table><thead><tr><th>Element</th><th>Variation Percent</th></tr></thead><tbody><tr><td>Carbon</td><td>+0.03 / -0.00</td></tr><tr><td>Manganese</td><td>+0.06 / -0.00</td></tr><tr><td>Silicon</td><td>+0.04 / -0.00</td></tr><tr><td>Sulphur &amp; Phosphorus</td><td>+0.005 / -0.000</td></tr><tr><td>Chromium &amp; Nickel</td><td>+0.05 / -0.00</td></tr><tr><td>Copper &amp; Vanadium</td><td>+0.02 / -0.00</td></tr></tbody></table>	Element	Variation Percent	Carbon	+0.03 / -0.00	Manganese	+0.06 / -0.00	Silicon	+0.04 / -0.00	Sulphur & Phosphorus	+0.005 / -0.000	Chromium & Nickel	+0.05 / -0.00	Copper & Vanadium	+0.02 / -0.00	<div>Permissible variation in case of such product analysis from the limit specified under clause 2.2.1 for ladle analysis shall be as follows: -</div> <div>Sentence would like to be clarified as same way as IRS R-19/93. That helps to avoid misunderstanding.</div>	Permissible variation from the ladle analysis for product analysis in finished product has already been specified. Hence, no change is envisaged.
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2	9.1	All axles conforming to all the aforesaid tests shall be subjected to ultrasonic test and only those passing this test shall be accepted. The method of test and acceptance standard shall be as given in Appendix A.	<div>The following sentence shall be added:</div> <div>The manufacturer may choose any other alternative method of test, subject to approval of purchaser.</div> <div>Alternative method shall be based on the global standard like as EN13261 or AAR M- 101.</div> <div>Global standard like as EN13261 or AAR M-101 is reputed to guarantee quality for sonic inspection.</div>	Already incorporated in Clause No. 9.2 for Powered and Non-Powered Axles of Vande Bharat Design Coaches Like Ver-1, Ver-2, EMU-US/MEMU-US and Vande Metro. Hence, no change is envisaged.														
3	14	<div>14 PROTECTION AND PACKING</div> <div>14.1 Journals</div> <div>After inspection and acceptance the journals shall be carefully protected with three coats of Ready mixed Paint, brushing bituminous black to IS:9862 or with any other equivalent anti-rust compound approved by the Purchaser, allowing sufficient drying time between each coat. The journals shall then be further protected with minimum 5mm</div>	<div>The sentence or clause shall be added as follows:</div> <div>The manufacturer may use any other suitable alternate painting (surface protection) system, subject to approval of purchaser.</div> <div>Some of specified protection may cause difficulty to purchase in some suppliers. The best protection by each supplier shall be beneficial for both of purchaser and supplier.</div>	<div>A comment of firm is considered as acceptable. Hence the Clause No. 14 is being modified as below:</div> <div>14 PROTECTION AND PACKING</div> <div>14.1 Journals</div> <div>After inspection and acceptance the journals shall be carefully protected with three coats of Ready mixed Paint, brushing bituminous black to IS: 9862 or with any other equivalent anti-rust compound approved by the Purchaser, allowing sufficient drying time between each coat. The journals shall then be further protected with minimum 5mm thick well fitted High density Polyethylene to IS:7328 designated as HDPE-44-MB or equivalent High</div>														

	<p>thick well fitted High density Polyethylene to IS:7328 designated as HDPE-44-MB covers in two end face and surrounding the axle and collar, journal and shoulder in case of plain bearing type axles and with a minimum 5mm thick well fitted, and one piece High Density Polyethylene cover surrounding the journal and shoulder and secured with three PVC screws to suit the axle end as given in the relevant axle drawing in case of roller bearing type axles as shown in Figure2 &amp; 3.</p> <p><b>14.2 Axle Body, and Wheel Seats, Brake Disc Seat and Gear Seat etc.</b></p> <p>The axle body and, Wheel Seats, Brake Disc Seat and Gear Seat etc. shall be painted with one coat of zinc chromate primer to IS:2074 followed by a second coat of Black Japan to IS:341, allowing sufficient time for drying between each coat. All parts must be clean and free from rust and moisture at the time the coats are applied. The axle body and ,Wheel Seats, Brake Disc Seat and Gear Seat etc. shall then be further protected with minimum 5mm thick well fitted High Density Polyethylene to IS:7328 designated as HDPE-44-MB covering, secured with steel straps as shown in fig.4.</p>	<p><b>Density Polyethylene</b> covers in two end face and surrounding the axle and collar, journal and shoulder in case of plain bearing type axles and with a minimum 5mm thick well fitted, and one piece High Density Polyethylene cover surrounding the journal and shoulder and secured with three PVC screws to suit the axle end as given in the relevant axle drawing in case of roller bearing type axles as shown in Figure2 &amp; 3.</p> <p><b>14.2 Axle Body, and Wheel Seats, Brake Disc Seat and Gear Seat etc.</b> The axle body and, Wheel Seats, Brake Disc Seat and Gear Seat etc. shall be painted with one coat of zinc chromate primer to IS:2074 or with any other equivalent anti-rust compound approved by the Purchaser followed by a second coat of Black Japan to IS:341 or with any other equivalent anti-rust compound approved by the Purchaser, allowing sufficient time for drying between each coat. All parts must be clean and free from rust and moisture at the time the coats are applied. The axle body and ,Wheel Seats, Brake Disc Seat and Gear Seat etc. shall then be further protected with minimum 5mm thick well fitted High Density Polyethylene to IS:7328 designated as HDPE-44-MB covering or equivalent High Density Polyethylene, secured with steel straps as shown in fig.4.</p> <p><b>14.3 To have a uniformity of protection and packing instructions across the rolling stock, following specification for protection and packing of axles shall be followed:</b></p> <ol style="list-style-type: none"> <li>Protection and packing of semi-finished/rough axles shall be as per RWF specification No. RWF/M/SPECN-1/126/2019 alt. nil or latest.</li> <li>Protection and packing of finished axles shall be as per RWF specification No. RWF/M/SPECN-1/103/2008 alt 'a' or latest.</li> <li>However, due to the variability in axle dimensions across the rolling stock, the wooden box drawing (like LHB and BOXN) may be taken as reference for other type of axles.</li> </ol>
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