



**Government of India  
Ministry of Railways**

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ITEM SPECIFIC GUIDELINES  
AND SCHEDULE OF TECHNICAL REQUIREMENT FOR  
ELASTIC RAIL CLIP Mk-III, ERC-J & Mk-V

**Quality Assurance Civil Directorate**

**RESEARCH DESIGNS & STANDARDS  
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**Draft STR of Elastic Rail Clips for comments from stakeholders**

<b>Clause No.</b>	<b>Existing Requirements as per clause</b>	<b>Proposed Amendment in Requirement</b>
<b>A</b>	<b>ITEM SPECIFIC GUIDELINES</b>	
<b>i) to vi)</b>	i) In addition to the procedure for vendor ---- ----- including inspection and passing by RDSO after development.	<b>No change</b>
<b>vii)</b>	Initially minimum three vendors shall be upgraded together from “List of RDSO Vendors for Developmental Orders” to “List of Approved Vendors” so that there are always three or more vendors available in Approved Vendors list at all times. Till such time, minimum three eligible vendors are available in List of RDSO Vendors for Developmental Orders for up-gradation to Approved Vendor List, there shall be no separate Approved Vendor List.	<b>New para is added</b>
<b>B</b>	<b>SCHEDULE OF TECHNICAL REQUIRMENTS FOR APPROVAL OF FIRMS TO MANUFACTURE ELASTIC RAIL CLIPS Mk-III, V &amp; ERC-J</b>	
<b>1.</b>	SCOPE	<b>No Change</b>
<b>2.</b>	REQUIREMENTS: The vendors seeking approval shall comply all the below mentioned requirement.	<b>No Change</b>
<b>a)</b>	<b>MANUFACTURING FACILITIES</b>	
	2. (a) i to vii	<b>No Change</b>
<b>2 a) viii</b>	<b>Heating furnace:</b> Indirect oil fired walking beam type or Indirect gas fired walking beam type heating furnace should be available. An automatic temperature control device and continuous temperature recorder should also be fitted with. OR “Induction heating pusher type furnace fitted with accept / reject system using double colored Radiation Pyrometer should be available”.	<b>Heating furnace:</b> Indirect oil fired walking beam type or Indirect gas fired walking beam type heating furnace should be available. An automatic temperature control device <i>including auto rejection system alongwith temperature recorder in case temperature goes out of permissible range either way</i> should also be fitted with. OR “Induction heating pusher type furnace fitted with <i>auto rejection system alongwith temperature recorder in case temperature goes out of permissible range either way</i> using double colored Radiation Pyrometer should be available”.
	<b>Oil quenching tank:</b> Oil-quenching tank of adequate length, width and depth should be available fitted with a conveyor belt passing through the oil. Facility for cooling the oil by way of heat exchange with cooling tower along with	<b>Oil quenching tank:</b> Oil-quenching tank of adequate length, width and depth should be available fitted with a conveyor belt passing through the oil. Facility for cooling the oil by way of heat exchange with cooling tower

	continuous temperature recorder should be available such that the temperature of oil does not exceed 70° Centigrade. Oil tank should also be fitted with mechanical / motorized stirrer to maintain uniform temperature of oil throughout the tank. The speed of the conveyer belt shall facilitate the clip to be in oil for at least 12 minutes.	<i>including auto rejection system alongwith temperature recorder in case temperature goes out of permissible range either way</i> should be available such that the temperature of oil does not exceed 70° Centigrade. Oil tank should also be fitted with mechanical / motorized stirrer to maintain uniform temperature of oil throughout the tank. The speed of the conveyer belt shall facilitate the clip to be in oil for at least 12 minutes.
<b>2 a) xii</b>	<b>Xii Tempering furnace:</b> The tempering furnace shall be oil fired tunnel type or gas fired tunnel type or continuous Electrical tunnel type, fitted with conveyor system. Above furnace shall be fitted with thermo-couples to sense the temperature at three points along its length to ensure the constant temperature zone along length of the furnace. The speed of the conveyor should facilitate the clips to be in tempering furnace for minimum period of 50 minutes. The furnace shall be fitted with an automatic temperature control device and continuous temperature recorder. The furnace shall have an arrangement for free circulation of hot air.	<b>Xii Tempering furnace:</b> The tempering furnace shall be oil fired tunnel type or gas fired tunnel type or continuous Electrical tunnel type, fitted with conveyor system. Above furnace shall be fitted with thermo-couples to sense the temperature at three points along its length to ensure the constant temperature zone along length of the furnace. The speed of the conveyor should facilitate the clips to be in tempering furnace for minimum period of 50 minutes. The furnace shall be fitted with an automatic temperature control device <i>including auto rejection system alongwith temperature recorder in case temperature goes out of permissible range either way</i> . The furnace shall have an arrangement for free circulation of hot air.
Annexure A	<b>Summarized List of plant and machineries and testing equipments</b>	
1.	<b>Power Press</b>	<b>No Change</b>
2.	<b>Heating furnace</b> Indirect oil fired walking beam type or indirect gas fired walking beam type furnace fitted with an automatic temperature control device and continuous temperature recorder, Or Induction heating pusher type fitted with accept / reject system using double colored Radiation Pyrometer.	<b>Heating furnace:</b> Indirect oil fired walking beam type or Indirect gas fired walking beam type heating furnace should be available. An automatic temperature control device <i>including auto rejection system alongwith temperature recorder in case temperature goes out of permissible range either way</i> should also be fitted with. OR “Induction heating pusher type furnace fitted with <i>auto rejection system alongwith temperature recorder in case temperature goes out of permissible range either way</i> using double colored Radiation Pyrometer should be available”.
3.	Power Press for forming clip	<b>No Change</b>
4.	<b>Oil quenching tank:</b> Oil-quenching tank of adequate length, width and depth fitted with a conveyor belt passing through the oil. Facility for cooling the oil by way of heat exchange with cooling tower	<b>Oil quenching tank:</b> Oil-quenching tank of adequate length, width and depth should be available fitted with a conveyor belt passing through the oil. Facility for cooling the oil by way of

	along with continuous temperature recorder such that the temperature of oil does not exceed 70° Centigrade. Oil tank shall be fitted with mechanical / motorized stirrer to maintain uniform temperature of oil throughout the tank. The speed of the conveyer belt shall facilitate the clip to be in oil for at least 12 minutes.	heat exchange with cooling tower along with continuous temperature recorder <i>including auto rejection system alongwith temperature recorder in case temperature goes out of permissible range either way</i> should be available such that the temperature of oil does not exceed 70° Centigrade. Oil tank should also be fitted with mechanical / motorized stirrer to maintain uniform temperature of oil throughout the tank. The speed of the conveyer belt shall facilitate the clip to be in oil for at least 12 minutes.
5.	Tempering furnace : The tempering furnace oil fired tunnel type or gas fired tunnel type or continuous Electrical tunnel type fitted with conveyor system and thermo-couples to sense the temperature at three points along its length to ensure the constant temperature zone along length of the furnace. The speed of the conveyor shall facilitate the clips to be in tempering furnace for minimum period of 50 minutes. The furnace shall be fitted with an automatic temperature control device and continuous temperature recorder. The furnace shall have an arrangement for free circulation of hot air.	<b>Heating furnace:</b> Indirect oil fired walking beam type or Indirect gas fired walking beam type heating furnace should be available. An automatic temperature control device <i>including auto rejection system alongwith temperature recorder in case temperature goes out of permissible range either way</i> should also be fitted with. OR “Induction heating pusher type furnace fitted with <i>auto rejection system alongwith temperature recorder in case temperature goes out of permissible range either way</i> using double colored Radiation Pyrometer should be available”.
6 & 7		No Change
B	TESTING FACILITIES	No Change
C	MEASURING AND TESTING EQUIPMENT	No Change
Annexure-B-I	LIST OF PLANT & MACHINERY	No Change
Annexure B-II	LIST OF TESTING/MEASURING INSTRUMENT	No Change
Annexure C	PROFORMA FOR TECHNICAL CAPABILITY ASSESSMENT FOR MANUFACTURE AND SUPPLY OF Elastic Rail Clips Mk-III/V ERC-J	
1.0	SECTION – I : GENERAL INFORMATION	No Change
2.0	SECTION – II : TECHNICAL INFORMATION	<b>No Change</b>
2.1.1	Infrastructure for production and production capability of Elastic Rail Clips Mk-III/V ERC-J:	<b>No Change</b>
2.1.1	Magnetic Particle Crack Detecto	
2.1.2	Indirect Oil fired walking beam type or Indirect Gas fired walking beam type Heating Furnace / Electric Induction heating pusher type Furnace:	
	a) to d)	<b>No Change</b>
	e) Attachment for automatic temp. Control cum temp. indicator & continuous temperature recorder (indicate	e) Attachment for automatic temp. Control cum temp. indicator & continuous temperature recorder

	temp. range)	<i>including auto rejection system alongwith temperature recorder in case temperature goes out of permissible range either way</i> (indicate temp. range)
	f)	<b>No Change</b>
<b>2.1.3</b>	<b>Oil Quenching Bath with Conveyor Belt:</b>	
	a) to d)	<b>No Change</b>
	e) Auto. Temp. control device and continuous temperature recorder (indicate range of temp.)	e) Auto. Temp. control device and continuous temperature recorder <i>including auto rejection system alongwith temperature recorder in case temperature goes out of permissible range either way</i> (indicate range of temp.)
<b>2.1.4</b>	<b>Tempering Facility:</b>	
	<p>(a) Type of Tempering Furnace</p> <p>i) Oil fired tunnel type or gas fired tunnel type or Continuous Electrical tunnel type Is it conveyrised? Is it provided with sensing devices at 3 places? (At entry, center &amp; exit). Auto. Temp. control device and continuous temperature recorder (indicate range of temp.) For loading the clips into the furnace, does suitable supporting arrangements exist? What are approx. no. of clips which can be tempered at a time with the support arrangement duly permitting free circulation of air around the clips.</p> <p>(b) Nos. and Size</p> <p>(c) Auto. Temp. control device and continuous temperature recorder (indicate range of temperature)</p>	<p>(a) Type of Tempering Furnace</p> <p>i) Oil fired tunnel type or gas fired tunnel type or Continuous Electrical tunnel type Is it conveyrised? Is it provided with sensing devices at 3 places? (At entry, center &amp; exit). Auto. Temp. control device and continuous temperature recorder <i>including auto rejection system alongwith temperature recorder in case temperature goes out of permissible range either way</i> (indicate range of temp.) For loading the clips into the furnace, does suitable supporting arrangements exist? What are approx. no. of clips which can be tempered at a time with the support arrangement duly permitting free circulation of air around the clips.</p> <p>(b) Nos. and Size</p> <p>(c) Auto. Temp. control device and continuous temperature recorder <i>including auto rejection system alongwith temperature recorder in case temperature goes out of permissible range either way</i> (indicate range of temperature)</p>
<b>2.1.5 to 4.4 No Change</b>		