#### REASONED DOCUMENT IN RESPONSE TO UPLOADED DRAFT INDIAN RAILWAY STANDARD SPECIFICATION FOR ELASTIC RAIL CLIPS S.No.T-31- 2021

Para No.	Existing provision in Specification (IRST-31) of ERC	Modified provision in Specification of ERC ( Modification shown in red)	Comments /Suggestions by approved vendors	RDSO's Remarks
0. 0	FOREWORD:		,	
0.1	This specification was first adopted in 1976 and was revised in 1984, when new clause for the 'toe load' test was included. Subsequently the specification was amended in 1987 when the range of toe-load value of Elastic Rail Clip was changed from 645-775kg to 645-800kg. Subsequently in April 1988, the scope of specification was extended to flat toe Elastic Rail Clips. In 1989 the specification was further revised to enhance its scope to cover all types of Elastic Rail Clips such as ERC MK-II, ERC MK-III and amendment no.1 of September 1990 for ERC MK-IV.	This specification was first adopted in 1976 and was revised in 1984, when new clause for the 'toe load' test was included. Subsequently the specification was amended in 1987 when the range of toe-load value of Elastic Rail Clip was changed from 645-775kg to 645-800kg. Subsequently in April 1988, the scope of specification was extended to flat toe Elastic Rail Clips. In 1989 the specification was further revised to enhance its scope to cover all types of Elastic Rail Clips such as ERC MK-II, ERC MK-III and amendment no.1 of September 1990 for ERC MK-IV.	Nil	No Change proposed
0.2	To improve the quality and serviceability of clips, the specification was revised as third revision and issued in 1992 with a view to cover the specification and sources for raw material for use by the manufacturer of Elastic Rail Clips and to exercise checks on inclusion rating, grain size and heterogeneity of steel. Further, in this revision the sampling plan was also revised for tests under clause No.7.2, 7.6, 7.7 and 7.8 for which reference was drawn from IS:2500 (Part I)-1973.	To improve the quality and serviceability of clips, the specification was revised as third revision and issued in 1992 with a view to cover the specification and sources for raw material for use by the manufacturer of Elastic Rail Clips and to exercise checks on inclusion rating, grain size and heterogeneity of steel. Further, in this revision the sampling plan was also revised for tests under clause No.7.2, 7.6, 7.7 and 7.8 for which reference was drawn from IS:2500 (Part I)- 1973.	Nil	No Change proposed
0.3	Subsequently, Corrigendum no. 1 to the specification was issued in 1998 for amendment in clause 7.4.3. Later on, Corrigendum no. 2 to the specification was issued in 1999 in which drawing number, type of clip, diameter, approximate weight of clip, toe deflection, toeload range and other relevant parameters for ERC Mk-V was added in Annexure-V. Clauses 3,	Subsequently, Corrigendum no. 1 to the specification was issued in 1998 for amendment in clause 7.4.3. Later on, Corrigendum no. 2 to the specification was issued in 1999 in which drawing number, type of clip, diameter, approximate weight of clip, toe deflection, toe-load range and other relevant parameters for ERC Mk-V	Nil	No Change proposed

	4.8.2, 4.9, 5.1, 5.2, 6.1 were also revised. In addition to above, Annexure-I was deleted and Annexure-IV was re-worded. Subsequently, Corrigendum no. 3 to the specification was issued in January' 2016 to reword the clause 7.4.3 for bringing clarity.	was added in Annexure-V. Clauses 3, 4.8.2, 4.9, 5.1, 5.2, 6.1 were also revised. In addition to above, Annexure-I was deleted and Annexure-IV was re-worded. Subsequently, Corrigendum no. 3 to the specification was issued in January' 2016 to reword the clause 7.4.3 for bringing clarity.		
0.4	This specification was revised and Fourth revision was issued in 2018 to cover the entire corrigendum issued to this specification till date and to enhance the scope for manufacturing process of raw material, inclusion rating values, freedom for surface defects, inspection of raw material, magnetic particle flaw detection of bars, fatigue test, alternative packing of clips in polythene bags, and renaming of Annexure. ERC Mk-IV was removed from the scope of specification. In the reference documents, the IS codes were updated. The sampling plan was also incorporated as per the latest IS: 2500 (Part-1):2000 and reproduced in Annexure-III.	This specification was revised and Fourth revision was issued in 2018 to cover the entire corrigendum issued to this specification till date and to enhance the scope for manufacturing process of raw material, inclusion rating values, freedom for surface defects, inspection of raw material, magnetic particle flaw detection of bars, fatigue test, alternative packing of clips in polythene bags, and renaming of Annexure. ERC Mk-IV was removed from the scope of specification. In the reference documents, the IS codes were updated. The sampling plan was also incorporated as per the latest IS: 2500 (Part-1):2000 and reproduced in Annexure-III.	Nil	No Change proposed
0.5	This specification has been issued in 2021 under Fifth Revision with certain modifications in clause 1.1, 4.10, 6.2, 7.4.1, 7.6.2, 7.7, 7.8, 8 & Annexure-V in the present form. A new clause 7.10 (Stress test) and Annexure-XIV (Test scheme for the Stress test) has also been incorporated to have more clarity of this test. The specification of ERC-J (Provisional) Rev1994 along with latest corrigendum 2 of October 2016 has now been merged with this specification.	This specification has been issued in 2021 under Fifth Revision with certain modifications in clause 1.1, 4.10, 6.2, 7.4.1, 7.6.2, 7.7, 7.8, 8 & Annexure-V in the present form. A new clause 7.10 (Stress test) and Annexure-XIV (Test scheme for the Stress test) has also been incorporated to have more clarity of this test. The specification of ERC-J (Provisional) Rev1994 along with latest corrigendum 2 of October 2016 has now been merged with this specification.	Nil	No Change proposed
1.0	SCOPE:			
1.1	This standard covers the specification and the approvedsources for the raw material for the production of Elastic Rail Clips for the guidance of clip manufacturers. This standard also covers	This standard covers the specification and the approvedsources for the raw material for the production of Elastic Rail Clips for the guidance of clip manufacturers. This	Nil	No Change proposed

							to Letter no. C1/EF/Dev uz	iteu 00:05:2025
	testing Elastic R II, ERC I referred the qual impleme by the has be nominat 'inspecti with ma to as 'ma	procedure of ail Clips viz. El MK-III, ERC M as 'clips' whility of raw maentation of quimanufacturer en referred ed inspection agency/ornufacture and anufacturer'.	irement, inspection and fithe different designs of RC round, ERC flat, ERC MK-lk-V and ERC-J, hereinafter chicall for stricter control in terial, testing standards for ality assurance programme. Contract awarding party as 'purchaser' and its in agency/representative as fficer'. The firm entrusted its supply of clips, is referred	requirent procedu Rail Clips ERC MK-referred control testing quality manufactoen rominate agency/cagen	nent, inspere of the difference of the differenc	erent designs of Elastic and, ERC flat, ERC MK-II, and ERC-J, hereinafter which call for stricter ity of raw material, or implementation of programme by the ct awarding party has 'purchaser' and its inspection e as 'inspection firm entrusted with ply of clips, is referred		
1.2	procedu 7.1-11 d in appro amendn applicab the con	res laid dow lated 19.07.20 oved status") nents thereoule on the su- tracts floated	contained in RDSO's ISO in Document No. QO-D-D16 (titled "vendor-changes and subsequent versions/ f, shall be binding and ccessful vendor/vendors in by Railways to maintain pplied to Railways.	procedu No. QO- (titled "v status") amendm applicab vendor/v Railways	res laid down D-8.1-11 ver. vendor-change and su nents thereof, le on vendors in the stain quality o	ntained in RDSO's ISO in Document  3.3 dated 02.01.2025 es in approved bsequent versions/ shall be binding and the successful e contracts floated by f products supplied to	Nil	ISO document numberupdated as perlatest ISO document.
2.0	REFEREN	NCE DOCUME	NTS:	Ranways	·•			
2.1			to the following Indian	This star	ndard refers t	o the following Indian	Nil	No Change proposed
			These should be available			IS. These should be		
			works for reference:			nufactures' works for		
	S No.	IS Code No.	TITLE	reference S No.	e: IS Code	TITLE	-	
	1	IS:77-1976	Specification for Linseed	3 110.	No.	ITTLE		
		(Re-	oil, boiled, for paints.	1		Specification for Line		
		affirmed	(Second Revision0		(Re-	oil, boiled, for pa		
		2019)			affirmed	(Second Revision0		
	2	IS:1500-	Method for Brinell	_	2019)			
		2005 (Re-	Hardness test for metallic	2	IS:1500-	Method for Br		
		affirmed	materials. (Third Revision)		2005 (Re-	Hardness test for met	•	

	2010)			affirmed	materials. (Third Revision)	to Letter no. C1/E1/Dev ua	
2		Mothod for Walter			materiais. (Tilliu Revision)		
3	IS:1501:20	Method for Vickers		2010)	Nashad 6 30	-	
	02 (Re-	Hardness Test for Metallic	3	IS:1501:20	Method for Vickers		
	affirmed	Materials. (Third Revision)		02 (Re-	Hardness Test for Metallic		
	2007)			affirmed	Materials. (Third Revision)		
4	IS:1586	Metallic Materials -		2007)		_	
	(Part-2) :	Rockwell Hardness Test,	4	IS:1586	Metallic Materials -		
	2012 2018	Part 2 verification and		(Part-2) :	Rockwell Hardness Test,		
	(Fifth	calibration of testing		2012 2018	Part 2 verification and		
	Revision)	machines and indenters		(Fifth	calibration of testing		
	,	(Fifth Revision)		Revision)	machines and indenters		
5	IS:2500(Pa	Sampling procedure for		,	(Fifth Revision)		
-	rt 1)-2000	Inspection by 3	5	IS:2500(Pa	Sampling procedure for	1	
	(Re-	Attributes, Part 1sampling		rt 1)-2000	Inspection by 3		
	affirmed	scheme indexed by		(Re-	Attributes, Part 1sampling		
	2016)	acceptance quality limit		affirmed	scheme indexed by		
	2010)	(AQL) for lot by lot		2016)	acceptance quality limit		
		inspection. (Third		2010)	(AQL) for lot by lot		
					, , , ,		
_	16.4740	Revision)			inspection. (Third		
6	IS:4748-	Steels-Micrographic		10.4740	Revision)	_	
	2009 (Re-	determination of the	6	IS:4748-	Steels-Micrographic		
	affirmed	apparent grain		2009 (Re-	determination of the		
	2017)	size.(Second Revision)		affirmed	apparent grain		
7	IS:3195-	Steel for the manufacture		2017)	size.(Second Revision)	_	
	1992 (Re-	of volute and helical	7	IS:3195-	Steel for the manufacture		
	affirmed	springs (For Railway		1992 (Re-	of volute and helical		
	2017)	Rolling stock)-		affirmed	springs (For Railway		
		specification. (Third		2017)	Rolling stock)-		
		Revision)			specification. (Third		
8	IS:4163-	Steels-determination of			Revision)		
	2004 (Re-	content of nonmetallic	8	IS:4163-	Steels-determination of	]	
	affirmed	inclusions micrographic		2004 (Re-	content of nonmetallic		
	2017)	method using standard		affirmed	inclusions micrographic		
	,	diagrams. (Third Revision)		2017)	method using standard		
9	IS:6396-	Method of measuring		,	diagrams. (Third Revision)		
	2000 (Re-	decarburized depth of	9	IS:6396-	Method of measuring		
	affirmed	steel. (Second Revision)		2000 (Re-	decarburized depth of		
	2018)	Steel. (Second Revision)		affirmed	steel. (Second Revision)		
10	IS:7739	IS:7720 Dart E 1076 /Da		2018)	Steel. (Second Revision)		
10		IS:7739 Part 5-1976 (Re-	10		IS:7720 Part F 107C (Pa	-	
	Part 5-	affirmed 2018)	10	IS:7739	IS:7739 Part 5-1976 Re-		

	11	1976 (Reaffirmed 2018)	IS: 3703:2004	(Re-		Part 5- 1976 (Re- affirmed 2018)	affirmed 2018)			
		3703:2004 (Re- affirmed 2020)	affirmed 2020)	(ne	11	IS: 3703:2004 (Re- affirmed 2020)	IS: 3703:2004 affirmed 2020)	(Re-		
	well as wet ana relevant 1,2,3,8,9 or from as per National (RTC), if of IS: 22	finished produlysis for the methods of from outsilab accredite extant guide Test House required at a	hemical analysis of reduct can be done the laid down elements at IS codes (IS: 228 de Government laboued by Accreditation at eline issued by RDS or Regional Test Cony stage. The latest volume 3, 8, 9 should thereform	rough as per Part - ratory gency SO or Centre ersion	as well through element codes (IS Governmaccredite extant government extant government)	ion of the ch as finished   wet analysi s as per rel 5: 228 Part - 2 nent labora ed by Accred uideline issue use or Region at any stage	emical analysis of raw product can be done is for the laid down evant methods of IS 1,2,3,8,9) from outside tory or from lab litation agency as period by RDSO or National al Test Centre (RTC), if it. The latest version of 8, 9 should therefore			
2.2	shall be	taken as i	pecifications quoted I reference from the ation concerned.		A refere	hall be taken edition of	firm specifications quoted as reference from the the specification			No Change proposed
2.3	over rid where the another drawing	de those in these are no . Any special	n in this specification the above specification in conformity with requirements given will over ride the restification.	ntions, n one in the	The spe will ov specifica conform requiren clips will	cific provision er ride th tions, where ity with one nents given i	n in this specification ose in the above these are not in another. Any special in the drawing of the erelevant provisions of			No Change proposed
2.4	product	•			producti	on should	ant to the clip under be available for ufacturer's works.			No Change proposed
3.0	Quality RDSO a <sub>l</sub>	oproves vend	CUREMENT: Mechanical Directora lors for Spring Steel I : 3195. Spring Steel I	Round	Spring conform	ing to IS: 319!	CUREMENT:  ds of grade 55Si7  5, for manufacture of  Cs), shall be procured	Ltd. 2.Adi	dge Track & tower pvt. nath Industries INC desh Track(P)Ltd	No change has been proposed in this clause.

shall be procured from these vendors only. Vendors list are regularly updated by QA / Mechanical Dte. of RDSO. It can be accessed through RDSO website www.rdso.indianrailways.gov.in

#### **Corrigendum No.-2**

Spring Steel Rounds of grade 55 Si7 conforming to IS: 3195, for manufacture of Elastic Rail Clips (ERCs), shall be procured from RDSO approved / developmental vendors only. Vendors list can be accessed through website www.rdso.indianrailways.gov.in or www.ireps.gov.in

from RDSO approved /Developmental through website www.rdso.indianrailways.gov.in www.ireps.gov.in

vendors only. Vendors list can be accessed

4. Kamakashi Track Fasteners: 5. Simplex Casting Ltd. **6.Adinath Industries** 

7. Surya Coach Builders Pvt. Ltd.

8..R Rashmi Industries 9. .LNVS Infra Pvt. Ltd.

10..Vedkiran steel Industries Pvt. Ltd.

We suggest to cross check with the list of manufacturers & suppliers of spring steel round for ERC active and rolling this steel for ERC.

Delete and remove the name of those firms who have not been rolled/sold this spring steel for ERC since last more than one year, as this creates unnecessarily problem with the Zonal railways to convince them that all the firms in the list are not producing this steel for ERC and zonal railways impose LD charges on ERC vendors even on the grounds of non-availability of raw material which is beyond our control.

To our understanding only four firms are manufacturing this steel viz., RINL, BPSL, JSPL & Surva Alloys Pvt Ltd.

Steel producers should not be ERC manufacturers.

1.M/s Vaishno Mata Track.Faridabad 2.M/s Siddhartha Metal

**Fabricators** 3.M/s Fateh Chand Jain It has been taken from Corrigendum No.2 of existing IRS/T-31 and inserted in clause 3.0.

Thesuggestion of thefirms is not accepted, as they are commercial aspects having no relation with the specifications.

			We suggest to cross check with the list of manufacturers & suppliers of spring steel round for ERC active and rolling this steel for ERC.  Delete and remove the name of those firms who have not been rolled/sold this spring steel for ERC since last more than one year, as this creates unnecessarily problem with the Zonal railways to convince them that all the firms in the list are not producing this steel for ERC and zonal railways impose LD charges on ERC vendors even on the grounds of non-availability of raw material which is beyond our control.  To our understanding only four firms are manufacturing this steel viz., RINL, BPSL, JSPL & Surya Alloys Pvt Ltd.	
4.0	TECHNICAL SPECIFICATION OF THE RAW MATERIAL:			
4.1	Silico Manganese spring steel as rolled bars to Grade 55 Si7 of IS: 3195-1992 shall be used in the manufacture of clips. The technical specification of as rolled steel bars relate to supply condition of the bars in the as rolled and straightened condition for hot forming.	Silico Manganese spring steel as rolled bars to Grade 55 Si7 of IS: 3195-1992 shall be used in the manufacture of clips. The technical specification of as rolled steel bars relate to supply condition of the bars in the as rolled and straightened condition for hot forming	Nil	No Change proposed
4.2	Manufacturing process for steel:			
4.2.1	Steel making through basic oxygen, electric arc process shall be employed and steel made through open hearth route shall not be used. The steel shall be refined in the ladle furnace and vacuum degassed before using continuous	Steel making through basic oxygen, electric arc process shall be employed and steel made through open hearth route shall not be used. The steel shall be refined in the ladle furnace and vacuum degassed before	Nil	No Change proposed

					to Letter no. C1/Er/Dev us	ateu 00.05.2025
	process. The continuous	•	using continuous proce			
	have the facility of electr	omagnetic stirring.	casting machine should electromagnetic stirring	•		
4.2.2	The size of ingots, bill	lets or continuous cast	The size of ingots, billet		Nil	No Change proposed
	billets for any given size	of finished steel product	billets for any given si	ze of finished steel		
	shall be such that a min	imum reduction ratio of	product shall be such	n that a minimum		
	16:1 from the minimum	n crosssectional area of	reduction ratio of 16:1	from the minimum		
	the ingot billet or contin	nuous cast billets to the	crosssectional area of	the ingot billet or		
	maximum crosssectiona	I area of the product is	continuous cast billets	to the maximum		
	ensured.		crosssectional area c	of the product is		
			ensured.			
4.3	<b>Chemical Composition:</b>		Chemical Composition:		Nil	No Change proposed
	The ladle analysis of the		The ladle analysis of t			
		to following chemical	rolled bars shall con	•		
		IS: 3195-1992 for grade	chemical composition a	-		
	55 Si7 when tested spect	trographically	1992 for grade 55	Si7 when tested		
			spectrographically			N. O.
4.3.1	Ladle analysis:		Ladle analysis:		Nil	No Change proposed
	Carbon	0.50 - 0.60%	Carbon	0.50 - 0.60%		
	Manganese	0.80 - 1.00%	Manganese	0.80 - 1.00%		
	Silicon	1.50 - 2.00%	Silicon	1.50 - 2.00%		
		0.03(max.) %	Sulphur	0.03(max.) %		
	· ·	0.03(max.) %	Phosphorus	0.03(max.) %		
4.3.2	Product analysis:	, , ,	Product analysis:	, , ,	Nil	No Change proposed
	The variation for the p	roduct analysis shall be	The variation for the p	roduct analysis shall		
	within the following peri	missible range over ladle	be within the followin	g permissible range		
	sample analysis and Per	rmissible variations shall	over ladle sample anal	ysis and Permissible		
	not be applicable both	h over and under the	variations shall not be	applicable both over		
	specified limits in seve	ral determinations in a	and under the specific	ed limits in several		
	heat:		determinations in a hea	t:		
	Element	Permissible variation	Element	Permissible variation		
	Carbon	± 0.03%	Carbon	± 0.03%		
	Manganese	± 0.04%	Manganese	± 0.04%		
	Silicon	± 0.05%	Silicon	± 0.05%		
	Sulphur	+ 0.005%	Sulphur	+ 0.005%		
	Phosphorus	+ 0.005%	Phosphorus	+ 0.005%		
4.4	Grain Size:		Grain Size:		Nil	No Change proposed
	The grain size of as rolle	d bars shall be 6 or finer	The grain size of as roll	ed bars shall be 6 or		

	as per IS: 4748-2009.	finer as per IS: 4748-2009.	to Letter no. C1/EF/Dev da	
4.5	Inclusion Rating:	Inclusion Rating:	Nil	No Change proposed
7.3	The inclusion rating when determined as per IS:	The inclusion rating when determined as	1411	No change proposed
	4163-2004 shall not be worse than 2.0 (thin) and	per IS: 4163-2004 shall not be worse than		
	2.0 (thick) A, B, C, D as per IS: 4163-2004.	2.0 (thin) and 2.0 (thick) A, B, C, D as per IS:		
	210 (11101), 7, 9, 9, 9 05 05 05 101 1205 200 11	4163-2004.		
4.6	Hardness:	Hardness:	Nil	No Change proposed
	The hardness of as rolled bars when tested in	The hardness of as rolled bars when tested		
	accordance with IS: 1500-2005, the average of	in accordance with IS: 1500-2005, the		
	three readings shall be approximately 270 HBW	average of three readings shall be		
	or its equivalent in HRC or HV scales. This value is	approximately 270 HBW or its equivalent in		
	for general guidance only.	HRC or HV scales. This value is for general		
		guidance only.		
4.7	Depth of decarburization:	Depth of decarburization:	Nil	No Change proposed
	The average total depth of decarburization	The average total depth of decarburization		
	(partial + complete) tested in accordance with IS:	(partial + complete) tested in accordance		
	6396-2000 with magnification of x100 of 5	with IS: 6396-2000 with magnification of		
	deepest decarburized zones shall not be more	x100 of 5 deepest decarburized zones shall		
	than 0.15 mm.	not be more than 0.15 mm.		
4.8	Freedom from defects:			
4.8.1	The surface of the as rolled bars shall be	The surface of the as rolled bars shall be	Nil	No Change proposed
	reasonably smooth and free from distortion,	reasonably smooth and free from		
	twist and kinks, and shall be substantially	distortion, twist and kinks, and shall be		
	straight.	substantially straight.		
4.8.2	The as rolled bars shall be free from harmful	The as rolled bars shall be free from harmful	Nil	No Change proposed
	defects namely folds, laps, cracks, deep pits,	defects namely folds, laps, cracks, deep pits,		
	grooves, excessive scaling which may lead to	grooves, excessive scaling which may lead		
	cracking during hardening or impair the	to cracking during hardening or impair the		
	serviceability. Permissible depth of seam and lap	serviceability. Permissible depth of seam		
	in the rolled bar shall be d/100 or 0.25 mm	and lap in the rolled bar shall be d/100 or		
	whichever is less (d is bar diameter). It shall,	0.25 mm whichever is less (d is bar		
	however, to be ensured that during the	diameter). It shall, however, to be ensured		
	inspection of the raw material, a strict vigil is	that during the inspection of the raw		
	maintained and the raw material is purchased by	material, a strict vigil is maintained and the		
		raw material is purchased by the		
	material shall be free from harmful internal	manufacturers as stated in clause 3 only.		
	defects, such as piping and segregation which	The material shall be free from harmful		
	may impair serviceability.	internal defects, such as piping and		
		segregation which may impair serviceability.		

			to Letter no. C1/EF/Dev da	
4.9	Section:	Section:	Nil	No change proposed
	Section of as rolled bars shall be as per order.	Section of as rolled bars shall be as per		only rewording of
	The tolerance on the diameter shall be + 1.0%	order. The tolerance on the diameter of		paragraph has been
	and -0.8%	as rolled bars for 20.64mm & 23mm is as		done.
	Corrigendum No1	under:		
	Section of as rolled bars shall be as per order.	For dia. 20.64 mm: -0.17 mm, +0.20 mm		
	The tolerance on the diameter of as rolled bars	For dia. 23 mm: -0.19 mm, +0.23 mm		
	for 20.64mm & 23mm is as under:	The measurement of diameter shall be		
	For dia. 20.64 mm: 20.47 mm to 20.84mm	carried out with the help of Venire		
	For dia. 23 mm: 22.81mm to 23.23mm	callipers with digital display		
	The measurement of diameter shall be carried			
	out with the help of Venire calliper with a digital			
	display			
4.10	Marking:			
4.10.1	The bars supplied shall be distinctly marked with	The bars supplied shall be distinctly marked	Nil	No Change proposed
	paint or sticker at the extreme ends with	with paint or sticker at the extreme ends		
	different colours to be related with the heat	with different colours to be related with the		
	number of material by which steel may be traced	heat number of material by which steel may		
	to the cast from which it has been made. The	be traced to the cast from which it has been		
	bars of different heats shall not be mixed up and	made. The bars of different heats shall not		
	shall be stored in stacks heat wise	be mixed up and shall be stored in stacks		
		heat wise		
4.10.2	The bars should be supplied in bundles tied with	The bars should be supplied in bundles tied	Nil	No Change proposed
	binding wires and also with packing strips (18-33	with binding wires and also with packing		
	mm width) at minimum three locations having	strips (18-33 mm width) at minimum three		
	manufacturer's seal/name/logo/code. In	locations having manufacturer's		
	addition, a metal tag shall also be provided with	seal/name/logo/code. In addition, a metal		
	each bundle bearing the details of firm (code,	tag shall also be provided with each bundle		
	name etc), PO No., Heat No., date, grade, size	bearing the details of firm (code, name etc),		
	and length.	PO No., Heat No., date, grade, size and		
		length.		
4.11	Test certificate and raw material checking:			
4.11.1	The test certificate from the producer of steel	The test certificate from the producer of	,	The suggestion of the
	bars showing the followingshould be available	steel bars showing the followingshould be	Ltd.	firm is accepted and
	with the manufacturer.	available with the manufacturer.	2.M/s Vaishno Mata	all approved /
	(i) Heat number & Grade	(i) Heat number & Grade	Track,Faridabad.	developmental
	(ii) Colour code	(ii) Colour code	3.Adinath Industries INC	vendors of the spring
	(iii) Chemical analysis	(iii) Chemical analysis	4.Avdesh Track(P)Ltd	steel round will be
	(iv) Inclusion rating	(iv) Inclusion rating	5.M/s Siddhartha Metal	informed.
	(v) Grain size	(v) Grain size	Fabricators	

	/ N =		to Letter no. C1/EF/Dev dated vo.v5.2025
	(vi) Depth of decarburization (C, P&T)	(vi) Depth of decarburization (C,	6.M/s Fateh Chand Jain
	(vii) Freedom from harmful defects	P&T)	7.Kamakashi Track Fasteners:
	(viii) Section	(vii) Freedom from harmful defects	8.Simplex Casting Ltd.
	(ix) Hardness	(viii) Section	9.Adinath Industries
	(x) Weight of consignment.	(ix) Hardness	10. Surya Coach Builders Pvt.
		(x) Weight of consignment.	Ltd.
	The above particulars shall be furnished by the	(xi) Process Route	11.R Rashmi Industries
	manufacturer for each heat of the raw material	(xii) MPI test	12 LNVS Infra Pvt. Ltd.
	whenever requested by the inspecting agency.	(xiii) Austenite Quenched Hardness	13.Vedkiran steel Industries
	3 3 3 4 3 4 3 3 4 3 4 3 4 3 4 3 4 3 4 3	(xiv) Reduction Ratio	Pvt. Ltd.
		(xv) Gas Content (O2 & H2 in ppm)	The proposed amendments in
		()	Test certificate from the
		The above particulars shall be furnished by	producer of steel bars must be
		the manufacturer for each heat of the raw	informed to all the Spring steel
		material whenever requested by the	RDSO approved producers as
		inspecting agency	per vendor list.
		inspecting agency	per veridor list.
			Mo should not be made
			We should not be made responsible for such
			•
			requirement from steel
			producers as those are not in
			our control.
4.11.2	The bars shall be checked by the manufacturer	The bars shall be checked by the	Nil No Change proposed
	for the properties (iii) to (ix) of para 4.11.1 above	manufacturer for the properties (iii) to (ix)	
	at the rate of two sample bars per heat, (except	of para 4.11.1 above at the rate of two	
	for the diameter of the bar) and 20 sample bars	sample bars per heat, (except for the	
	per heat for the diameter. The observations shall	diameter of the bar) and 20 sample bars per	
	be recorded in the proforma given in Annexure-I	heat for the diameter. The observations	
	& Annexure-II respectively and shall be	shall be recorded in the proforma given in	
	compared with the test certificate and shall be	Annexure-I & Annexure-II respectively and	
	examined for acceptability with respect to	shall be compared with the test certificate	
	specification for raw material before its use in	and shall be examined for acceptability with	
	the manufacture of clips. The chemical analysis	respect to specification for raw material	
	(% value) of elements of raw material is	before its use in the manufacture of clips.	
	mentioned in the Test Certificate of raw material	The chemical analysis (% value) of elements	
	supplier. When this chemical analysis (% value)	of raw material is mentioned in the Test	
	of elements of raw material / finished product is	Certificate of raw material supplier. When	
	verified / checked by the inspecting agency /	this chemical analysis (% value) of elements	
	firm, then the observed values shall not vary	of raw material / finished product is verified	
	from the supplier's test certificate (ladle analysis)	/ checked by the inspecting agency / firm,	
L	mom the supplier a test certificate fladie alialysis)	/ checked by the hispecting agency / illill,	

value beyond the permissible limits given in clause 4.3.2 for acceptance of that heat.				00 20002 1100 0 27227201 020	1000 0010012020
A.11.3   Inspection of raw material is mandatory for inspecting officials. The manufacturer of product shall be allowed only after inspection of raw material by inspecting authority. It shall be the responsibility of the firm to get the raw material inspection of raw material by inspecting authority. It shall be the responsibility of the firm to get the raw material inspection of clips.    Corigendum No2			•		
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ii) Colour code iii) Chemical analysis iv) Inclusion rating v) Grain size vi) Depth of decarburization (C, P&T) vii) Freedom from harmful defects viii) Section/Dimension x) Reduction rati x) Reduction rati ii) Heat number & Grade iii) Colour code iii) Chemical analysis viii) Chemical analysis			<del>be submitted.</del>	Ltd.	
iii) Chemical analysis iv) Inclusion rating v) Grain size vi) Depth of decarburization (C, P&T) vii) Freedom from harmful defects viii) Section/Dimension ix) Hardness x) Weight of consignment. x) Reduction rati x) Reduction rati x) Reduction rati  ii) Colour code iii) Chemical analysis iii) Chemical analysis iii) Chemical analysis viii) Chemical analysis iii) Chemical analysis viii) Chemical analysis viv) Inclusion rating v) Grain size vi) Depth of decarburization (C, P&T) vii) Preedom from harmful defects viii) Section/Dimension ix) Hardness x) Weight of consignment. x) Reduction rati ERC vendors, and quality will also remain intact 5.M/s Siddhartha Metal Fabricators		i) Heat number & Grade		9.R Rashmi Industries	
iv) Inclusion rating v) Grain size vi) Depth of decarburization (C, P&T) vii) Freedom from harmful defects viii) Section/Dimension ix) Hardness x) Weight of consignment. x) Reduction rati  iii) Chemical analysis iv) Inclusion rating v) Grain size vi) Depth of decarburization (C, P&T) vii) Pepth of decarburization (C, P&T) viii) Freedom from harmful defects viii) Section/Dimension ix) Hardness x) Weight of consignment. x) Reduction rati  iii) Chemical analysis iv) Inclusion rating v) Grain size vi) Depth of decarburization (C, P&T) vii) Freedom from harmful defects viii) Section/Dimension ix) Hardness x) Weight of consignment. x) Reduction rati ERC vendors, and quality will also remain intact 5.M/s Siddhartha Metal Fabricators		ii) Colour code	i <del>) Heat number &amp; Grade</del>	10. LNVS Infra Pvt. Ltd.	
v) Grain size vi) Depth of decarburization (C, P&T) vii) Freedom from harmful defects viii) Section/Dimension ix) Hardness x) Weight of consignment. x) Reduction rati x) Reduction rati  vi) Inclusion rating vi) Holusion rating vi) Depth of decarburization (C, P&T) vii) Preedom from harmful defects viii) Section/Dimension ix) Hardness x) Weight of consignment. x) Reduction rati  vi) Inclusion rating vi) Depth of decarburization (C, P&T) vii) Preedom from harmful defects viii) Section/Dimension ix) Hardness x) Weight of consignment. x) Reduction rati  vi) Inclusion rating vi) Depth of decarburization (C, P&T) vii) Preedom from harmful defects viii) Section/Dimension ix) Hardness x) Weight of consignment. x) Reduction rati Fabricators		iii) Chemical analysis	,	11.Vedkiran steel Industries	
vi) Depth of decarburization (C, P&T) vii) Freedom from harmful defects viii) Section/Dimension ix) Hardness x) Weight of consignment. x) Reduction rati  vi) Hardness x) Weight of consignment. x) Reduction rati  vi) Grain size vi) Depth of decarburization (C, P&T) vii) Freedom from harmful defects viii) Section/Dimension ix) Hardness x) Weight of consignment. x) Reduction rati  vii) Freedom from harmful defects viii) Section/Dimension ix) Hardness x) Weight of consignment. x) Reduction rati  ERC vendors, and quality will also remain intact 5.M/s Siddhartha Metal Fabricators		iv) Inclusion rating	iii) Chemical analysis	Pvt. Ltd.	
vii) Freedom from harmful defects viii) Section/Dimension ix) Hardness x) Weight of consignment. x) Reduction rati  vii) Depth of decarburization (C, P&T) viii) Freedom from harmful defects v		v) Grain size	iv) Inclusion rating	We strongly propose to	
viii) Section/Dimension ix) Hardness x) Weight of consignment. x) Reduction rati  viii) Freedom from harmful defects viii) Section/Dimension ix) Hardness x) Weight of consignment. x) Reduction rati  viii) Freedom from harmful defects viii) Section/Dimension ix) Hardness x) Weight of consignment. x) Reduction rati  viii) Freedom from harmful defects viii) Section/Dimension ix) Hardness x) Weight of consignment. x) Reduction rati  ERC vendors, and quality will also remain intact 5.M/s Siddhartha Metal Fabricators		vi) Depth of decarburization (C, P&T)	<del>v) Grain size</del>	introduce the inspection of	
ix) Hardness x) Weight of consignment. x) Reduction rati  viii) Section/Dimension ix) Hardness x) Weight of consignment. x) Reduction rati  viii) Section/Dimension ix) Hardness x) Weight of consignment. x) Reduction rati  ERC vendors, and quality will also remain intact 5.M/s Siddhartha Metal Fabricators		vii) Freedom from harmful defects	vi)—Depth of decarburization (C, P&T)	spring steel round for ERC at	
x) Reduction rati  ix) Hardness x) Weight of consignment.  x) Reduction rati  spring steel. It will help us to trace the raw material used by ERC vendors, and quality will also remain intact 5.M/s Siddhartha Metal Fabricators		viii) Section/Dimension	vii) Freedom from harmful defects	the steel producers plant itself	
consignment.  x) Reduction rati  ERC vendors, and quality will also remain intact  5.M/s Siddhartha Metal Fabricators		ix) Hardness x) Weight of consignment.	viii) Section/Dimension	as it is being carried out for coil	
x) Reduction rati  ERC vendors, and quality will also remain intact  5.M/s Siddhartha Metal Fabricators		x) Reduction rati	ix) Hardness x) Weight of	spring steel. It will help us to	
also remain intact  5.M/s Siddhartha Metal Fabricators			<del>consignment.</del>	trace the raw material used by	
5.M/s Siddhartha Metal Fabricators			x) Reduction rati	ERC vendors, and quality will	
Fabricators				also remain intact	
				5.M/s Siddhartha Metal	
6.M/s Fateh Chand Jain				Fabricators	
				6.M/s Fateh Chand Jain	

			to Letter no. CT/ET/Bev de	
4.11A. 1	While carrying out inspection of rolled bars the inspecting official would pay special attention to following:  a) Size of ingots/billets used as verified from the records of the steel manufacturer. b) Dressing of complete billet by general surface grinding and freedom from surface defects c) Discarding of end portions at both ends of each billet and freedom from piping. d) The size of ingot used shall be checked, recorded and verified that minimum reduction ratio 16:1 is ensured for the rolled bars offered for inspection.	While carrying out inspection of rolled bars the inspecting official would pay special attention to following:  e)—Size of ingots/billets used as verified from the records of the steel manufacturer.  f)—Dressing of complete billet by general surface grinding and freedom from surface defects g)—Discarding of end portions at both ends of each billet and freedom from piping. h)—The size of ingot used shall be checked, recorded and verified that minimum reduction ratio 16:1 is ensured for the rolled bars offered for inspection.	We strongly propose to introduce the inspection of spring steel round for ERC at the steel producers plant itself as it is being carried out for coil spring steel. It will help us to trace the raw material used by ERC vendors are form the RDSO approved source only not from any other unapproved source.  Do	Suggestions are not acceptable as it is not practical to carry out inspections at the premises of the raw material manufacturer.
4.11A. 2	The inspecting official shall carry out the tests of properties mentioned in Para 4.11A (iii) to (ix), as per sampling plan given in Para 4.11A.5 of this document and maintain records. He may draw Page 2 of 5 any additional number of samples and carry- out tests at his discretion. He shall also have the right to cross check any of the above parameters by actual tests at his discretion and at the cost of the spring steel manufacturer.	The inspecting official shall carry out the tests of properties mentioned in Para 4.11A (iii) to (ix), as per sampling plan given in Para 4.11A.5 of this document and maintain records. He may draw Page 2 of 5 any additional number of samples and carryout tests at his discretion. He shall also have the right to cross check any of the above parameters by actual tests at his discretion and at the cost of the spring steel manufacturer.	Do	Suggestions are not acceptable as it is not practical to carry out inspections at the premises of the raw material manufacturer.

4.11A. The inspecting official shall examine various The inspecting official shall	examine various Do Suggestions are not
registers and records maintained by the spring registers and records maintained	
steel manufacturer to verify heat wise checks  spring steel manufacturer to	practical to carry out
carried out on various parameters and wise checks carried out on	·
manufacturing practices like production of ingots parameters and manufacturing	·
with wide end up and hot top cropping of each like production of ingots with wide end up and hot top cropping of each	• .
ingot/primary rolled billet etc.  and hot top cropping of each	h ingot/primary manufacturer.
rolled billet etc.	
4.11A. Records for all the above tests shall be made Records for all the above tests.	sts shall be Do Suggestions are not
4 available for scrutiny of inspecting official. made available for scrutiny	
Samples of the above test shall be preserved for official. Samples of the abo	
atleast 3 months for counter check by inspecting preserved for atleast 3 more	· · · · · · · · · · · · · · · · · · ·
official. check by inspecting official	·
	material
	manufacturer.
4.11A. Sampling (Random) of Spring Steel Rounds shall Sampling (Random) of Spring Steel Rounds shall	g Steel Rounds Do Suggestions are not
be as follows: shall be as follows:	acceptable as it is not
S Items Relevant Sampling S Items Rele	vant Sampling practical to carry out
no Specificati no Specificati	<del>cificati</del> inspections at the
on	premises of the raw
1 Chemical IS:228 2 bars per 4 Chemical IS:2	28 2 bars pe material
Analysis heat Analysis	heat manufacturer.
2 Hardness IS:1500 10 bars per 2 Hardness IS:1	500 10 bars p
heat	heat
3 Macro IS:7739 0.5% 3 Macro IS:7	7 <del>39</del> 0.5%
Examination   subject to   Examination	subject to
minimum	minimum
of 5 bars	of 5 bars
per heat.	<del>per heat.</del>
4 Depth of IS:6396 3 bars per 4 Depth of IS:6	896 3 bars per
Decarburisati heat Decarburisati	heat
on On On	
5 Inclusion IS:4163 3 bars per 5 Inclusion IS:4	163 3 bars pe
Content. heat Content.	heat
6 Grain size. ASTM- 3 bars per 6 Grain size. AST	<del>VI-</del> 3 bars pe
E112 heat E112	
7 Visual checks IS:3195 2% of 7 Visual checks IS:3	
for defects. black bars   for defects.	<del>black bar</del>
per heat.	<del>per heat.</del>
8 Verification IS:3195 5 bars per 8 Verification IS:3	<u> </u>

	of	heat		of		heat		
	dimensional	eat		<del>dimensional</del>		neac		
	tolerance			tolerance				
4 4 4 4			lin air a				D-	Companient and make
4.11A.		pick up two samples per		ecting official may		•	Do	Suggestions are not
6		l offered or part thereof		50 tonnes of ma				acceptable as it is not
		NABL accredited labs for		of and send the				practical to carry out
	-	chemical and metallurgical		<del>dited labs for co</del>	,			inspections at the
	properties at Spring St			nical and metallu	•			premises of the raw
	expense. This test sho	uld not form part of		<del>g Steel Manufact</del>	•			material
	purchase acceptance t	test but will only serve as a		hould not form p				manufacturer.
	counter check on Sprii	ng Steel Manufacturer's	accer	otance test but w	<del>ill only serve</del>	<del>as a</del>		
	quality control practic	e.		<del>ter check on Spri</del>				
			Manu	ufacturer's qualit	y control prac	tice.		
4.11A.	Rejection: In case the	material offered for		tion: In case the			Do	Suggestions are not
7		et any of the requirements	inspe	ection fails to med	et anv of the			acceptable as it is not
		ion, twice the size of the		rements laid dov	•	tion.		practical to carry out
	-	e drawn and tested for the		the size of the o	•			inspections at the
	•	he original sample had		n and tested for				premises of the raw
	-	he retest samples fail, the		n the original san				material
		e treated as failed. The		th the retest san		a. II Offic		manufacturer.
	•	en undertake to render the		olete heat shall b		halie		manaracturer.
				nanufacturer sha				
	heat unserviceable for	Railways use.	_	er the heat unser				
				er the neat unser	<del>viceable for K</del>	<del>anways</del>		
4.11A.	Procedure of Inspection	on of Paw material i o	use.	edure of Inspection	on of Paw ma	torial i o	Do	Suggestions are not
8	•	dia 20.64mm/23mm of		<del>g steel rounds of</del>			D0	acceptable as it is not
•				<del>s steer rounus or</del> a <del>de 55Si7 confor</del> i		•		I -
	grade 55Si7 conformir	ig to 15: 3195	<del>or gra</del>	ade 55317 comon	ming to is: 31	<del>95</del>		practical to carry out
	\ <del>-</del> 1 ·		١.	\ <del></del> 1 · · · · ·				inspections at the
	•	n shall be carried out by	H	) The inspectio		ried out		premises of the raw
	the RDSO.			by the RDSO.				material
	,	manufacturer has to	<del>                                     </del>	Raw material				manufacturer.
		vance intimation in writing,		<del>submit an ad</del>				
		ys prior to their rolling		writing, at lea	, ,			
		DSO, so that the inspecting		their rolling s	<del>chedule to RE</del>	<del>SO, so</del>		
	officials can b	e nominated by RDSO		that the inspe				
	accordingly.			nominated by	y RDSO accord	<del>lingly.</del>		
	c) The Raw mate	erial manufacturer can	j.	<del>The Raw mat</del>	erial manufac	<del>turer can</del>		
	offer the enti	re/partial quantity rolled or		offer the enti	re/partial qua	<del>ntity</del>		
		Il for inspection. Page 3 of		rolled or plan				
	5	, 0		inspection. Pa				
<u> </u>	<u> </u>		1			<u> </u>		

	d) The raw material manufa	acturer shall	k) The raw material manufacturer		
	offer the spring steel rou	und bars, size	shall offer the spring steel round		
	wise and heat wise for ir	rspection.	bars, size wise and heat wise for		
	e) The inspecting official w	ill check all the	inspection.		
	parameters as per Para 4	4.11A.5 above	l) The inspecting official will check all		
	and certify the manufact	turer's test	the parameters as per Para 4.11A.5		
	certificates (MTC) heatw	rise.	above and certify the		
	f) Inspecting official shall is	ssue Inspection	manufacturer's test certificates		
	Certificates (ICs) for the	-	(MTC) heatwise.		
	bars, heatwise and shall	paste a	m) Inspecting official shall issue		
	hologram on each bar.		Inspection Certificates (ICs) for the		
	g) g) The raw material man	ufacturer will	offered round bars, heatwise and		
	then supply the certified	l material to ERC	shall paste a hologram on each bar.		
	manufacturers against the	neir PO along	n) g) The raw material manufacturer		
	with the certified true co	opy of	will then supply the certified		
	manufacturer's test cert	ificates (MTC)	material to ERC manufacturers		
	and certified true copy o	of IC.	against their PO along with the		
			certified true copy of		
			manufacturer's test certificates		
			(MTC) and certified true copy of IC.		
5.0	MANUFACTURE OF CLIPS:				
5.1	The clips, except for ERC	Mk-V shall be The	e clips, except for ERC Mk-V shall be	Nil	No Change proposed
	manufactured from as rolled	silicomanganese ma	inufactured from as rolled		
	spring steel rounds as per techn	ical specification sili	comanganese spring steel rounds as per		
	(reference Para 4) by hot formi	ing and shall be ted	chnical specification (reference Para 4) by		
	subsequently oil hardened and t		t forming and shall be subsequently oil		
	uniform hardness across the se	•	rdened and tempered to give uniform		
	shall conform to the require	ements of the ha	rdness across the section. The clips shall		
	relevant drawing and te	ests stipulated co	nform to the requirements of the		
	hereinafter. For ERC Mk-V, inte	•	evant drawing and tests stipulated		
	shall be manufactured by using 2		reinafter. For ERC Mk-V, inter alia, the		
	material specified in clause 4	.1 to keep the clip	os shall be manufactured by using 23mm		
	central leg portion fit to be use	ed with existing dia	. rod of material specified in clause 4.1 to		
	design of sleeper, diameter in	the central leg kee	ep the central leg portion fit to be used		
	portion shall be reduced to 20.6		th existing design of sleeper, diameter in		
	be achieved by precise profiling	-	e central leg portion shall be reduced to		
	like Hydro copying turning ma	achine to avoid 20	64mm. This shall be achieved by precise		
	sharp edges/curves.	nro	ofiling using machines like Hydro copying		
1	5.1d. p 5d.855/ 5d. 1551	·		I	
	onarp cages, carries	tur	rning machine to avoid sharp ges/curves.		

The cut bars shall also be subjected to 100% crack detection by Magnetic Particle Crack Detector Machine as per IS 3703: 2004 before using them into production to ensure that the cut bars are free from harmful seams and other defects. Removal of surface seams by grinding shall be done provided the cut bar meets the specified limits of dimensional tolerances. The observations shall be recorded in the proforma given in Annexure-II A.

Existing clause 5.2 is now in clause 5.3 and newclause "Heat Treatment" is addedas clause 5.2, which is as under:

#### **Heat Treatment:**

The forging of the clip shall be carried out when the temperature of the cut bar ismore than 900°C. The forging time of the clip after coming out from induction furnace and tillimmersion in the quenching tank shall not be more than 20second. The temperature of quenching oil shall be maintained less than 70°C. The quenching tank shall be adequately dimensioned with capacity to hold morethan 20,000 liters of quenching oil and should be checked regularly for water anddirt content and condition of the filter. Furnace used for tempering shall beelectric continuous type equipped with independent thermocouple for each zoneto control temperature within ± 50C. The tempering should be done at thetemperature range of 400°C – 505°C.

1.Bridge Track & tower pvt. Ltd.

2.M/s Vaishno Mata Track,Faridabad.

3.Adinath Industries INC

4.Kamakashi Track Fasteners: 5.Simplex Casting Ltd.

**6.Adinath Industries** 

7. Surya Coach Builders Pvt. Ltd.

8.R Rashmi Industries
9. LNVS Infra Pvt. Ltd.

10.Vedkiran steel Industries Pvt. Ltd.

The capacity of quenching tank depends upon individual firm's production capacity thus it should be mentioned as adequate capacity and tempering furnace should be oil fired/Gas fired as proposed in the STR Electric Tempering should be continued to be optional as it will not give any advantage in improving the quality.

20000 litres quenching tank capacity and electric tempering furnace are not at all acceptable to us.

Our purpose is to maintain the temperature of Quenching oil >70° C, which we are maintaining with the help of cooling tower and heat exchanger of adequate capacity

1.Avdesh Track(P)Ltd

The comments of the firms are not accepted.

Oil fired or Gas Fired walking beam type heating furnaces have following drwabacks which adversely affect the quality of ERCs in regular production:

i) It is difficult to maintain uniform temperature in the oil/gas fired furnaces. ii)The soaking time in the oil/gas fired furnace is more than minutes. This leads to over burning of bars, reduction in section due to the over scaling and high depth decarburization. iii)Bars in the oil/gas fired furnace stick together with other bars.

To eliminate the above drawbacks and to improve the quality of ERC, Induction heating furnace is required.

iv) Oil/gas fired heating

furnaces have adverse

Environmental effect.

Similarly in the tempering process, the temperature control in different zones in the oil fired/gas fired tempering furnaces is

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	200
	cap
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	acc
	Ou
	ter
	>70
	ma
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	cap
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The capacity of quenching tank depends upon individual firm's production capacity thus it should be mentioned as adequate capacity and tempering furnace should be oil fired/Gas fired as proposed in the STR Electric Tempering should be continued to be optional as it will not give any advantage in improving the quality.

20000 litres quenching tank capacity and electric tempering furnace are not at all acceptable to us.

Our purpose is to maintain the temperature of Quenching oil >70° C, which we are maintaining with the help of cooling tower and heat exchanger of adequate capacity

It is not the Volume of oil but the cooling technology(heat exchanger and colling Tower)that define the temperature of oil.

# 1.M/s Siddhartha Metal Fabricators

#### 2.M/s Fateh Chand Jain

The capacity of quenching tank depends upon individual firm's production capacity thus it should mentioned adequate capacity and tempering furnace should be oil fired as proposed in the STR

difficult, which leads to variation in the hardness of clip. Therefore, Electrical tunnel type induction furnace with thyristorbased control system is necessary to ensure the desired temperature across the tunnel and uniform maintain hardness in the ERCs.

The quenching tank is used for quenching of ERC from 900°C toless than  $70^{\circ}$ C.The Martensitic structure in ERC is formed in the quenching tank. Hence the capacity quenching tank proposed 20000 L. This will help maintain the desired temperature. However. the

suggestions of the firms have been examined and necessary modifications have been made.

			to Letter no. C1/EF/Dev da	1104 00.00.12020
			20000 liters quenching tank	
			capacity and electric tempering	
			furnace are not at all	
			acceptable to us.	
			acceptable to us.	
5.3	Marking:	Existing clause5.2 is now in clause 5.3 and	1.Bridge Track & tower pvt.	The comments of the
5.5		clause 5.3 is now Clause 5.4	1	
	All the firms have been given code for inscription	clause 5.3 is now clause 5.4	Ltd.	firm have been
	of stamps. All clips shall bear clear inscription of		2.M/s Vaishno Mata	examined and
	stamp at the heel of the clip to indicate	Minimum 03 bars per hour shall <del>also</del> be	Track,Faridabad.	Annexure IIA has been
	manufacturers initial, the last one digit of the	subjected to <del>100%</del> crack detection	3.Adinath Industries INC	modified.
	year of manufacture and the lot number of the	byMagnetic Particle Crack Detector	4.Avdesh Track(P)Ltd	
	year. Example:	Machine as per IS 3703: 2004before	5.M/s Siddhartha Metal	
	AE9	usingthem intoduring production to ensure	Fabricators	
	1	that the cut bars are free from	6.M/s Fateh Chand Jain	
	AE Firms initial	harmfulseams and other defects. Removal	7.Kamakashi Track Fasteners:	
	9 last digit of year of manufacture	of surface seams by grinding shall be	8.Simplex Casting Ltd.	
	_ ,	l	9.Adinath Industries	
	1 Lot No.	doneprovided the cut bar meets the		
		specified limits of dimensional tolerances.	10. Surya Coach Builders Pvt.	
		Theobservations shall be recorded in the	Ltd.	
		proforma given in Annexure-II A.	11.R Rashmi Industries	
			13.Vedkiran steel Industries	
			Pvt. Ltd.	
			Amendment of 03 bars per	
			hour crack detection by MPI	
			machine from 100% should be	
			taken up with immediate effect	
			and should be communicated	
			through separate letter to	
			Inspection agency, RITES	
			URGENTLY so that the bottle	
			neck in production and process	
			inspection should be addressed	
			immediately and supplies	
			should not get affected.	
			Annexure-IIA should also be	
			corrected from 100% to 3 bars	
			per hour.	

			to Letter no. C1/EF/Dev da	
<del>5.3</del> 5.4	-	Marking: All the firms have been given code for inscription of stamps. All clips shall bear clear inscription of stamp at the heel of the clip to indicate manufacturers initial, the last one digit of the year of manufacture and the lot number of the year. Example: AE9 1 AE Firms initial 9 last digit of year of manufacture 1 Lot No.	Nil	No change is proposed in this clause.  Numbering of this clause is changed as clause 5.4
6.0	LOT AND SAMPLE SIZE FOR TESTING:			
6.1	For the purpose of testing the number of clips manufactured from the same heat and heat treated in similar manner will form one lot. The clips inspected by RDSO should be distinctly identifiable in the field. For ERC Mk-III & ERC Mk-V, a mark is to be made at the end face of straight leg with yellow paint and green paint respectively of approved quality, before giving one coat of boiled linseed oil as per clause 9 of specification.	For the purpose of testing the number of clips manufactured from the same heat and heat treated in similar manner will form one lot. The clips inspected by RDSO should be distinctly identifiable in the field. For ERC Mk-III & ERC Mk-V, a mark is to be made at the end face of straight leg with yellow paint and green paint respectively of approved quality, before giving one coat of boiled linseed oil as per clause 9 of specification.	1.Bridge Track & tower pvt. Ltd. 2.M/s Vaishno Mata Track,Faridabad. 3.Adinath Industries INC 4.Avdesh Track(P)Ltd 5.Kamakashi Track Fasteners: 6.Simplex Casting Ltd. 7.Adinath Industries 8.Surya Coach Builders Pvt. Ltd. 9.R Rashmi Industries 10. LNVS Infra Pvt. Ltd. 11.Vedkiran steel Industries Pvt. Ltd. For the purpose of testing the number of clips manufactured from the same heat and heat treated in similar manner will form one lot. The clips inspected by RDSO should be distinctly identifiable in the field. For ERC Mk-III & ERC Mk-V, a mark is to be made at the end face of straight leg with yellow paint and green paint	No change is proposed in this clause.  The comments of the firm have been examined and Para has been modified, accordingly.

manual the land of the manual the land of the manual the land of	
respectively of approved	
<del>quality,</del> before giving one coat	
of boiled linseed oil as per	
clause 9 of specification.	
We propose to remove the	
application of yellow and green	
paint at the end face of straight	
let of ERCs as this process	
cannot be mechanized and is	
quite labour oriented job	
unnecessarily causes delay in	
packing and production.	
1.M/s Siddhartha Metal	
Fabricators	
2.M/s Fateh Chand Jain	
For the purpose of testing the	
number of clips manufactured	
from the same heat and heat	
treated in similar manner will	
form one lot. The clips	
inspected by RDSO should be	
distinctly identifiable in the	
field. For ERC Mk-III & ERC Mk-	
V, a mark is to be made at the	
end face of straight leg with	
<del>yellow paint and green paint</del>	
respectively of approved	
<del>quality</del> , <del>before giving</del> one coat	
of boiled linseed oil as per	
clause 9 of specification.	
We propose to remove the	
application of yellow and green	
paint at the end face of straight	
let of ERCs as this process	
cannot be mechanized and is	
quite labour oriented job	
unnecessarily causes delay in	

		T	to Letter no. C1/EF/Dev da	1100 00.03.2023
			packing and production.	
6.2	For Hardness test, dimensional check and toe	For Hardness test, dimensional check and	1.Bridge Track & tower pvt.	The comments of the
	load tests, the sample size and the acceptance	toe load tests, the sample size and the	Ltd.	firms are not
	and rejection numbers for Inspection Level IV	acceptance and rejection numbers for	2.M/s Vaishno Mata	accepted.
	and AQL of 1.5% shall be as per IS: 2500 (Part I) -	Inspection Level IV and AQL of <del>1.5%</del> 2.5%	Track,Faridabad.	
	2000 and reproduced in Annexure- III of this	shall be as per IS: 2500 (Part I) - 2000 and	3.Adinath Industries INC	
	standard. 8 For "Application & Deflection" test,	reproduced in Annexure- III of this standard.	4.Avdesh Track(P)Ltd	The change in AQL
	all clips shall be driven at least one time into the		5.Kamakashi Track Fasteners:	level from 1.5% to
	application deflection block (RT-3745 Alt.1/RT-	For "Application & Deflection" test, all clips	6.Simplex Casting Ltd.	2.5% is in-line with the
	4710) and results shall be recorded in Annexure -	shall be driven at least one time into the	7.Adinath Industries	other products of
	X of this standard.	application deflection block (RT-3745	8. Surya Coach Builders Pvt.	track fittings.
	Corrigendum No-1	Alt.1/RT-4710) and results shall be recorded	Ltd.	
	For Hardness test, dimensional check, toe load	in Annexure - X of this standard.	9.R Rashmi Industries	
	tests and weight test, the sample size and the		10. LNVS Infra Pvt. Ltd.	
	acceptance and rejection numbers for Inspection		11.Vedkiran steel Industries	
	Level IV and AQL of 1.5% shall be as per IS: 2500		Pvt. Ltd.	
	(Part I) - 2000 and reproduced in Annexure- III of		ERC is bulk production item	
	this standard.		and is open die forging without	
	For "Application & Deflection" test, all clips shall		machining. Thus, we propose	
	be driven at least one time into the application		to change the AQL to 4% and	
	deflection block (RT-3745 Alt.1/RT-4710) and		further make the necessary	
	results shall be recorded in Annexure - X of this		amendments to all the	
	standard.		respective Annexures as per	
			AQL 4%	
			1.M/s Siddhartha Metal	The comments of the
			Fabricators	firms are accepted
			2.M/s Fateh Chand Jain	'
			Accepted ,Kindly make the	
			necessary amendments to all	
			the respective annexureas per	
			AQL 2.5%	
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			to Detter no. C1/D1/Dev da	1104 00:05:2025
6.3	For chemical analysis, depth of decarburization freedom from defect, examination of microstructure and inclusion rating, the sample size shall be as given under relevant clause.	f decarburization, freedom from defect,	Nil	No Change proposed
6.4	The test samples for different tests shall be drawn at random from each lot.	The test samples for different tests shall be drawn at random from each lot.	Nil	No Change proposed
6.5	The clips shall be offered for inspection as peletter given in Annexure-IV.	The clips shall be offered for inspection as per letter given in Annexure-IV.	Nil	No Change proposed
7.0	TESTS:	•		
7.1	Chemical analysis: One sample clip drawn from the production of each lot shall be tested for chemical analysis spectrographically for determination of Carbon, Silicon, Manganese Sulphur and Phosphorus. The sample shall conform to the requirement of chemical composition stipulated in Para 4.11.2. If the chemical composition does not conform to the specified chemical composition, the lot shall be rejected.	from the production of each lot shall be tested for chemical analysis spectrographically for determination of Carbon, Silicon, Manganese, Sulphur and Phosphorus. The sample shall conform to the requirement of chemical composition stipulated in Para 4.11.2. If the chemical	Nil	No Change proposed
	The sample clips shall be tested for Hardness in accordance with IS: 1586 (Part 2) - 2018 "Rockwell Hardness Test (B&C Scales) for steels or IS: 1501 (Part-I) - 2020 (Fifth Revision "Vickers Hardness Test for Steel" or IS: 1500 2005 "Brinell Hardness Test for Steel" and sha conform to the following requirements as the case may be:  Hardness Hardness Number HRC 40-44 HV 380-435 HBW 375-415	Hardness in accordance with IS: 1586 (Part 2) - 2018 "Rockwell Hardness Test (B&C Scales) for steels' or IS: 1501 (Part-I) - 2020 (Fifth Revision) "Vickers Hardness Test for Steel" or IS: 1500-2005 "Brinell Hardness	1.Bridge Track & tower pvt. Ltd. 2.M/s Vaishno Mata Track,Faridabad. 3.Adinath Industries INC 4.Avdesh Track(P)Ltd 5.M/s Siddhartha Metal Fabricators 6.M/s Fateh Chand Jain 7.Kamakashi Track Fasteners 8.Simplex Casting Ltd. 9.Adinath Industries 10. Surya Coach Builders Pvt. Ltd. 11.R Rashmi Industries	firms are not accepted.  The tolerance is given on the fixed value rather than on the range of the value.  Further, with the proper heat treatment of 55Si7 grade steel, the hardness in the range of 40-44 HRC can easily be
			12 LNVS Infra Pvt. Ltd. 13.Vedkiran steel Industries	achieved.The hardness range ha

Not Acceptable, based on our experiences or more than 4 decades, we propose to amend the rage of hardness as (40-44) ± HRC OR 42± HRC NO 42± General three since decades, we propose to amend the rage of hardness as (40-44) ± HRC OR 42± HRC NO 42± General three since decades, we propose to a mend the rage of hardness as (40-44) ± HRC OR 42± HRC NO 42± General three since decades, we propose to a mend the rage of hardness as (40-44) ± HRC OR 42± HRC OR 42± General three since decades, we propose to a mend the rage of hardness as (40-44) ± HRC OR 42± General three since decades, we propose to a mend the rage of hardness as (40-44) ± HRC OR 42± General three since decades, we propose to a mend the rage of hardness as (40-44) ± HRC OR 42± General three since decades, we propose to a mend the rage of hardness as (40-44) ± HRC OR 42± General three since decades, we propose to a mend the rage of hardness as (40-44) ± HRC OR 42± General three decades, we propose to a mend the rage of hardness as (40-44) ± HRC OR 42± General three decades, we propose to a mend the rage of hardness as (40-44) ± HRC OR 42± General three decades, we propose to a mend the rage of hardness as (40-44) ± HRC OR 42± General three decades, we propose the sample clips and the sample clips drawn accordingly will constitute the first sample.  7.3.2 Sample size will be 5% of that for Hardness Test, and the sample clips are will be 5% of that for Hardness Test, and the sample clips are will be 5% of that for Hardness Test, and the sample clips are will be 5% of that for Hardness Test, and the sample clips are will be 5% of that for Hardness Test, and the sample clips are will be 5% of that for Hardness Test, and the sample clips are will be 5% of that for Hardness Test, and the sample clips are will be 5% of that for Hardness Test, and the sample clips are will be 5% of that for Hardness Test, and the sample clips are will be 5% of that for Hardness				Pvt. Ltd.	historically been
### Reperiences of more than 4 decades, we propose to amend the rage of hardness as (40-44) ± 2 HRC OR 42±4 HRC  ### The proposed range by us do not affect the quality of ERCs and it would be considered as passed during testing instead of considering them fall with the tolerance as proposed and it would be considered as passed during testing instead of considering them fall with the tolerance as proposed and it would be considered as passed during testing instead of considering them fall with the tolerance as proposed and it would be considered as passed during testing instead of considering them fall with the tolerance as proposed and it would be considered as passed during testing instead of considering them fall with the tolerance as proposed and it would be considered as passed during testing instead of considering them fall with the tolerance as proposed and it would be considered as passed during testing instead of considering them fall with the tolerance as proposed and it would be considered as passed to the fall the tolerance as proposed and passed during testing instead of considering them fall with the tolerance as proposed and appropriate the tolerance as proposed and passed during testing instead of considering them fall with the tolerance as proposed and passed during testing instead of considering them fall with the tolerance as proposed and passed during testing instead of considering them fall with the tolerance as proposed and passed test for acceptance of the lot. In the sample clips tested in the first sample and passed test for acceptance of the lot. In case, more than one clip falls in the first sample. All the clips in the second sample of the vide the sample size is twice the sample size of the first sample, all the clips in the second sample of clips will be rejected. If only one clip falls in the clips in the second sample of clips will be rejected. If only one clip falls in the clips in the second sample of clips will be rejected. If only one clip falls in the clips in the second samp					
decades, we propose to amend the range of hardness as (40-44) ± 2 HR C R 42 ± 4 HR C  The proposed range by us do not affect the quality of ERCs and it would be considered as passed during testing instead of considering them fall with the tolerance as proposed above.  7.3.1 For decarburization test, the sample clips shall be microscopically examined at magnification x100 for decarburization as per IS: 6396-2000. The average total depth of decarburization (partial + complete) of five deepest decarburized zones of each sample clips shall not be more than d/100 or 0.25mm whichever is less for acceptance of material where 'd' is bar dia.  7.3.2 Sample size will be 5% of that for Hardness Test, and the sample clips drawn accordingly will constitute the first sample. All the sample clips tested in the first sample as second sample of clips will be drawn such that the sample clips in the second sample of the lot, i.e. in case one clip falls the lot will be rejected.  7.3.4 Freedom from Defects:				·	•
the rage of hardness as (40-44) ± 2 HRC OR 42 ± 1 HRC  The proposed range by us do not affect the quality of ERCs and it would be considered as passed during testing instead of considering them fall with the tolerance as proposed above.  7.3.1 For decarburization test, the sample clips shall be microscopically examined at magnification x100 for decarburization as per IS: 6396-2000. The average total depth of decarburization (partial + complete) of five deepest decarburized zones of each sample clips hall not be more than d/100 or 0.25mm whichever is less for acceptance of material where 'd' is bar dia.  7.3.2 Sample size will be 5% of that for Hardness Test, and the sample clips drawn accordingly will constitute the first sample must pass the test for acceptance of the lot. in case, more than one clip falls, the lot will be rejected. If only one clip falls in the first sample, a second sample of clips will be drawn such that the sample size is twice the sample size is twice the sample size is the test of an acceptance of the lot, i.e. in case one clip falls the lot will be rejected.  7.4 Freedom from Defects:				•	
### 2 HRC OR 42 ± 4 HRC  The proposed range by us do not affect the quality of ERCs and it would be considered as passed during testing instead of considering them fall with the tolerance as proposed above.  7.3.1 For decarburization test, the sample clips shall be microscopically examined at magnification x100 for decarburization as per is: 6396-2000. The average total depth of decarburization (partial + complete) of five deepest decarburization (partial + complete) of five deepest decarburization as per is: 6396-2000. The average total depth of decarburization (partial + complete) of acceptance of material where 'd' is bar dia.  7.3.2 Sample size will be 5% of that for Hardness Test, and the sample clips drawn accordingly will constitute the first sample clips tested in the first sample was passed during testing instead of considering them fall where 'd' is bar dia.  7.3.3 All he sample clips created in the first sample constitute the first sample constitute the first sample constitute the first sample was the test for acceptance of the lot. In case, more than one clip falls, the lot will be rejected. If only one clip falls in the first sample, a second sample of clips will be first sample, a second sample of clips will be first sample, a let rest for acceptance of the lot, in example size of the first sample, a second sample of clips should be tested and each clip should pass the test for acceptance of the lot, ie. in case one clip falls the lot will be rejected. If only one clip falls in the first sample, a second sample of clips will be drawn such that the sample size is twice the sample size of the first sample, a second sample of clips will be drawn such that the sample size of the first sample, a second sample of clips will be drawn such that the sample size of the first sample, a second sample of clips will be drawn such that the sample size of the first sample, a second sample of clips will be drawn such that the sample size is twice the sample size of the first sample, a second sample of clips will b					1990 5.
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7.3.1 Pocarburisation Test:  7.3.1 For decarburization test, the sample clips shall be microscopically examined at magnification (partial + complete) of five deepest decarburized zones of each sample clips shall on the more than d/100 or 0.25mm whichever is less for acceptance of material where 'd' is bar dia.  7.3.2 Sample size will be 5% of that for Hardness Test, and the sample clips clips drawn accordingly will constitute the first sample clips tested in the first sample continued pass the test for acceptance of the lot. In case, more than one clip fails, the lot will be rejected. If only one clip fails in the first sample, a second sample off clips will be drawn such that the sample all the clips in the second sample of clips should be tested and each clip should pess the test for acceptance of the lot, i.e. in case one clip fails the lot will be rejected.  7.3.4 Freedom from Defects:				<u>+</u> 2 HKC OK 42 <u>+</u> 4 HKC	
7.3 Decarburisation Test:  7.3.1 For decarburization test, the sample clips shall be microscopically examined at magnification (partial + complete) of five deepest decarburization (partial + complete) of five deepest decarburization of acceptance of material where 'd' is bar dia.  7.3.2 Sample size will be 5% of that for Hardness Test, and the sample clips stand the first sample clips stand the first sample clips stand the sample clips tested in the first sample ascend sample of clips will be drawn such that the sample size is twice the sample size of the first sample. All the clips in the second sample of clips should be tested and each clip should pass the test for acceptance of the lot, i.e. in case one clip fails the lot will be rejected.  7.4 Freedom from Defects:				The proposed range by us do	
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acceptance of material where 'd' is bar dia.  7.3.2 Sample size will be 5% of that for Hardness Test, and the sample clips drawn accordingly will constitute the first sample  7.3.3 All the sample clips tested in the first sample must pass the test for acceptance of the lot. In case, more than one clip fails, the lot will be rejected. If only one clip fails in the first sample, a second sample of clips will be drawn such that the sample size is twice the sample size of the first sample, a lith the clips in the second sample of clips should be tested and each clip should pass the test for acceptance of the lot, i.e. in case one clip fails the lot will be rejected.  7.4 Freedom from Defects:  Sample size is less for acceptance of material where 'd' is bar dia.  O.25mm whichever is less for acceptance of material where 'd' is bar dia.  Sample size will be 5% of that for Hardness Test, and the sample clips drawn accordingly will constitute the first sample.  Test, and the sample clips drawn accordingly will constitute the first sample.  Tand the sample clips drawn accordingly will constitute the first sample.  All the sample clips tested in the first sample.  All the sample clips tested in the first sample.  All the sample possible tested for acceptance of the lot. In case, more than one clip fails, the lot will be rejected. If only one clip fails in the first sample, a second sample of clips will be drawn such that the sample size is twice the sample size is twice the sample size of the first sample. All the first sample. All the clips in the second sample of clips will be drawn such that the sample size is twice the sample size of the first sample. All the clips in the second sample of clips will be drawn such that the sample size is twice the sample size of the first sample. All the first sample, a second sample of clips will be drawn such that the sample size is twice the sample size is twice the sample size is twice the sample size is the first sample. All the first sample, a second sample of clips will be firs		zones of each sample clip shall not be more than	five deepest decarburized zones of each		
7.3.2 Sample size will be 5% of that for Hardness Test, and the sample clips drawn accordingly will constitute the first sample  7.3.3 All the sample clips tested in the first sample must pass the test for acceptance of the lot. In case, more than one clip fails, the lot will be rejected. If only one clip fails in the first sample, a second sample of clips will be drawn such that the sample size is twice the sample size of the first sample, all the clips in the second sample of clips should be tested and each clip should pass the test for acceptance of the lot, i.e. in case one clip fails the lot will be rejected.  7.4 Freedom from Defects:  Sample size will be 5% of that for Hardness Nil  No Change proposed  Nil  No Change proposed  Nil  No Change proposed sample of clips tested in the first sample will be the first sample as second sample of clips fails, the lot will be rejected. If only one clip fails in the first sample, a second sample of clips will be drawn such that the sample size is twice the sample size of the first sample. All the clips in the second sample of clips should be tested and each clip should pass the test for acceptance of the lot, i.e. in case one clip fails the lot will be rejected.  7.4 Freedom from Defects:		d/100 or 0.25mm whichever is less for	sample clip shall not be more than d/100 or		
7.3.2 Sample size will be 5% of that for Hardness Test, and the sample clips drawn accordingly will constitute the first sample  7.3.3 All the sample clips tested in the first sample must pass the test for acceptance of the lot. In case, more than one clip fails, the lot will be rejected. If only one clip fails in the first sample, a second sample of clips will be drawn such that the sample size is twice the sample size of the first sample. All the clips in the second sample of clips should be tested and each clip should pass the test for acceptance of the lot, i.e. in case one clip fails the lot will be rejected.  7.4 Freedom from Defects:  Sample size will be 5% of that for Hardness Test, and the sample clips drawn accordingly will constitute the first sample  Test, and the sample clips drawn accordingly will constitute the first sample  Test, and the sample clips drawn accordingly will constitute the first sample  Test, and the sample clips drawn accordingly will constitute the first sample  Test, and the sample clips drawn accordingly will constitute the first sample  Test, and the sample clips drawn accordingly will constitute the first sample  Test, and the sample clips drawn accordingly will constitute the first sample  Test, and the sample clips drawn accordingly will constitute the first sample  Test, and the sample clips drawn accordingly will constitute the first sample  Test, and the sample clips drawn accordingly will constitute the first sample  Test, and the sample clips drawn accordingly will constitute the first sample  Test, and the sample clips drawn accordingly will constitute the first sample  Test, and the sample clips drawn accordingly will constitute the first sample  Test, and the sample clips drawn accordingly will constitute the first sample  Test, and the sample clips drawn accordingly will constitute the first sample  Test, and the sample clips drawn accordingly will constitute the first sample  Test, and the sample clips drawn accordingly will constitute the first sample  Test, and		acceptance of material where 'd' is bar dia.	0.25mm whichever is less for acceptance of		
and the sample clips drawn accordingly will constitute the first sample  7.3.3 All the sample clips tested in the first sample must pass the test for acceptance of the lot. In case, more than one clip fails, the lot will be rejected. If only one clip fails in the first sample, a second sample of clips will be drawn such that the sample size is twice the sample size of the first sample. All the clips in the second sample of clips should be tested and each clip should pass the test for acceptance of the lot, i.e. in case one clip fails the lot will be rejected.  7.4 Freedom from Defects:  All the sample clips drawn accordingly will constitute the first sample clips drawn accordingly will constitute the first sample was accordingly will constitute the first sample was condingly will constitute the first sample was condingly will constitute the first sample.  All the sample clips tested in the first sample was sample of clips tested in the first sample was pass the test for acceptance of the lot. In case, more than one clip fails, the lot will be rejected. If only one clip fails, the lot will be rejected. If only one clip fails in the first sample of clips will be drawn such that the sample size is twice the sample size of the first sample. All the clips in the second sample of clips should pass the test for acceptance of the lot, i.e. in case one clip fails the lot will be rejected.  7.4 Freedom from Defects:			material where 'd' is bar dia.		
constitute the first sample  7.3.3 All the sample clips tested in the first sample must pass the test for acceptance of the lot. In case, more than one clip fails, the lot will be rejected. If only one clip fails in the first sample, a second sample of clips will be drawn such that the sample size is twice the sample size of the first sample. All the clips in the second sample of clips should be tested and each clip should pass the test for acceptance of the lot, i.e. in case one clip fails the lot will be rejected.  7.4 Freedom from Defects:  All the sample clips tested in the first sample of clips tested in the first sample of clips tested in the first sample of clips tample must pass the test for acceptance of the lot. In case, more than one clip fails, the lot will be rejected. If only one clip fails in the first sample, a second sample of clips will be drawn such that the sample size is twice the sample size of the first sample. All the clips in the second sample of clips should pass the test for acceptance of the lot, i.e. in case one clip fails the lot will be rejected.  7.4 Freedom from Defects:	7.3.2	Sample size will be 5% of that for Hardness Test,	Sample size will be 5% of that for Hardness	Nil	No Change proposed
All the sample clips tested in the first sample must pass the test for acceptance of the lot. In case, more than one clip fails, the lot will be rejected. If only one clip fails in the first sample, a second sample of clips will be drawn such that the sample size is twice the sample size of the first sample. All the clips in the second sample of clips should be tested and each clip should pass the test for acceptance of the lot, i.e. in case one clip fails the lot will be rejected.  7.4 Freedom from Defects:  All the sample clips tested in the first sample in the first sample clips tested in the first sample. Nil  All the sample clips tested in the first sample in the first sample of clips sample must pass the test for acceptance of the lot. In case, more than one clip fails, the lot will be rejected. If only one clip fails, the lot will be rejected. If only one clip fails in the first sample of clips will be drawn such that the sample size is twice the sample size of the first sample. All the clips in the second sample of clips should be tested and each clip should pass the test for acceptance of the lot, i.e. in case one clip fails the lot will be rejected.		and the sample clips drawn accordingly will	Test, and the sample clips drawn		
must pass the test for acceptance of the lot. In case, more than one clip fails, the lot will be rejected. If only one clip fails in the first sample, a second sample of clips will be drawn such that the sample size is twice the sample size of the first sample. All the clips in the second sample of clips should be tested and each clip should pass the test for acceptance of the lot, i.e. in case one clip fails the lot will be rejected.  T.4 Freedom from Defects:  sample must pass the test for acceptance of the lot. In case, more than one clip fails, the lot. In case, more than one clip fails, the lot will be rejected. It only one clip fails in the first sample of clips will be drawn such that the sample size is twice the sample size of the first sample. All the clips in the second sample of clips should be tested and each clip should pass the test for acceptance of the lot, i.e. in case one clip fails the lot will be rejected.		constitute the first sample	accordingly will constitute the first sample		
case, more than one clip fails, the lot will be rejected. If only one clip fails in the first sample, a second sample of clips will be drawn such that the sample size is twice the sample size of the first sample. All the clips in the second sample of clips should be tested and each clip should pass the test for acceptance of the lot, i.e. in case one clip fails the lot will be rejected.  T.4 Freedom from Defects:  the lot. In case, more than one clip fails, the lot will be rejected. If only one clip fails in the first sample of clips will be drawn such that the sample size is twice the sample size of the first sample. All the clips in the second sample of clips should be tested and each clip should pass the test for acceptance of the lot, i.e. in case one clip fails the lot will be rejected.  T.4 Freedom from Defects:	7.3.3	All the sample clips tested in the first sample	All the sample clips tested in the first	Nil	No Change proposed
rejected. If only one clip fails in the first sample, a second sample of clips will be drawn such that the sample size is twice the sample size of the first sample. All the clips in the second sample of clips should be tested and each clip should pass the test for acceptance of the lot, i.e. in case one clip fails the lot will be rejected.  T.4 Freedom from Defects:  lot will be rejected. If only one clip fails in the first sample, a second sample of clips will be drawn such that the sample size is twice the sample size of the first sample. All the clips in the second sample of clips should be tested and each clip should pass the test for acceptance of the lot, i.e. in case one clip fails the lot will be rejected.		must pass the test for acceptance of the lot. In	sample must pass the test for acceptance of		
a second sample of clips will be drawn such that the sample size is twice the sample size of the first sample. All the clips in the second sample of clips should be tested and each clip should pass the test for acceptance of the lot, i.e. in case one clip fails the lot will be rejected.  The first sample, a second sample of clips will be drawn such that the sample size is twice the sample size of the first sample. All the clips in the second sample of clips should be tested and each clip should pass the test for acceptance of the lot, i.e. in case one clip fails the lot will be rejected.  The first sample, a second sample of clips will be drawn such that the sample size is twice the sample size of the first sample. All the clips in the second sample of clips the clips in the clips in the second sample of clips the clips in the second sample of clips the clips in the clips in the second sample of clips the clips in th		case, more than one clip fails, the lot will be	the lot. In case, more than one clip fails, the		
the sample size is twice the sample size of the first sample. All the clips in the second sample of clips should be tested and each clip should pass the test for acceptance of the lot, i.e. in case one clip fails the lot will be rejected.  7.4 Freedom from Defects:  will be drawn such that the sample size is twice the sample size of the first sample. All the clips in the second sample of clips should pass the clip should pass the test for acceptance of the lot, i.e. in case one clip fails the lot will be rejected.		rejected. If only one clip fails in the first sample,	lot will be rejected. If only one clip fails in		
first sample. All the clips in the second sample of clips should be tested and each clip should pass the test for acceptance of the lot, i.e. in case one clip fails the lot will be rejected.  7.4 Freedom from Defects:  twice the sample size of the first sample. All the clips in the second sample of clips should pass the clips in the second sample of clips should pass the test for acceptance of the lot, i.e. in case one clip fails the lot will be rejected.		a second sample of clips will be drawn such that	the first sample, a second sample of clips		
clips should be tested and each clip should pass the test for acceptance of the lot, i.e. in case one clip fails the lot will be rejected.  7.4 Freedom from Defects:  the clips in the second sample of clips should pass the test for acceptance of the lot, i.e. in case one clip fails the lot will be rejected.		the sample size is twice the sample size of the	will be drawn such that the sample size is		
the test for acceptance of the lot, i.e. in case one clip fails the lot will be rejected.  should be tested and each clip should pass the test for acceptance of the lot, i.e. in case one clip fails the lot will be rejected.  7.4 Freedom from Defects:		first sample. All the clips in the second sample of	twice the sample size of the first sample. All		
clip fails the lot will be rejected.  the test for acceptance of the lot, i.e. in case one clip fails the lot will be rejected.  7.4 Freedom from Defects:		clips should be tested and each clip should pass	the clips in the second sample of clips		
case one clip fails the lot will be rejected.  7.4 Freedom from Defects:		the test for acceptance of the lot, i.e. in case one	should be tested and each clip should pass		
7.4 Freedom from Defects:		clip fails the lot will be rejected.	the test for acceptance of the lot, i.e. in		
			case one clip fails the lot will be rejected.		
7.4.1 Sample clips will be checked for freedom from Sample clips will be checked for freedom Nil No Change proposed					
	7.4.1	Sample clips will be checked for freedom from	Sample clips will be checked for freedom	Nil	No Change proposed

	defects and should be free from harmful surface defects such as seams, laps, rough or jagged and imperfect edges. The sample clips shall also be examined for the heterogenity of steel and freedom from internal defects by the microetching process as per IS: 7739 (Part 5) 1976.	from defects and should be free from harmful surface defects such as seams, laps, rough or jagged and imperfect edges. The sample clips shall also be examined for the heterogenity of steel and freedom from internal defects by the micro-etching		
7.4.2	Sampling of clips and acceptance / rejection of the lot for freedom from defects will be as per 7.3.2 and 7.3.3 above.	process as per IS: 7739 (Part 5) 1976.  Sampling of clips and acceptance / rejection of the lot for freedom from defects will be as per 7.3.2 and 7.3.3 above.	Nil	No Change proposed
7.4.3	Examination of Micro Structure:	as per 7.3.2 and 7.3.3 above.		
7.4.3.1	Sample clips shall be microscopically examined for microstructure. Sample prepared for micro examination shall be etched with 2% nital. Microstructure of the clip should reveal tempered martensite structure across the section excluding the decarburized layer at 500X / 1000X magnification.	Sample clips shall be microscopically examined for microstructure. Sample prepared for micro examination shall be etched with 2% nital. Microstructure of the clip should reveal tempered martensite structure not less than 98% across the section excluding the decarburized layer at 500X / 1000X magnification	Ltd. 2.M/s Vaishno Mata Track,Faridabad. 3.Adinath Industries INC 4.Avdesh Track(P)Ltd	martensite structure is required across the complete cross section of the clip. Therefore, the provision of 98% is required. The suggestions are, therefore, not acceptable.
7.4.3.2	Sample size will be 5% of that for hardness test and the sample clips drawn accordingly will constitute the first sample. Samples thus drawn for microstructure examination will be the same	Sample size will be 5% of that for hardness test and the sample clips drawn accordingly will constitute the first sample. Samples thus drawn for microstructure examination		No Change proposed

	as selected for decarburization test and	will be the same as selected for		
	decarburization test samples shall also be	decarburization test and decarburization		
	examined for microstructure.	test samples shall also be examined for		
		microstructure.		
7.4.3.3	All the sample clips tested in the first sample	All the sample clips tested in the first	Nil	No Change proposed
71	must pass the test for acceptance of the lot. In	sample must pass the test for acceptance of		rto change proposed
	case, more than one clip fails, the lot will be	the lot. In case, more than one clip fails, the		
	rejected. If only one clip fails in the first sample,	lot will be rejected. If only one clip fails in		
	a second sample of clips will be drawn such that	the first sample, a second sample of clips		
	the sample size is twice the sample size of the	will be drawn such that the sample size is		
	first sample. All the clips in the second sample of	twice the sample size of the first sample. All		
	clips should be tested and each clip should pass	the clips in the second sample of clips		
	the test for acceptance of the lot i.e. in case one	should be tested and each clip should pass		
	clip fails the lot will be rejected. Test result of	the test for acceptance of the lot i.e. in case		
	samples of ERCs taken for microstructure	one clip fails the lot will be rejected. Test		
	examination shall be recorded in Annexure-VII.	result of samples of ERCs taken for		
	examination shall be recorded in Affilexure-vii.	microstructure examination shall be		
		recorded in Annexure-VII.		
7.5	Inclusion Rating:	Tecorded III Armexure-VII.		
7.5.1	<u> </u>	Naining was a second asian was visual for the took	NEL	No Change grouped
7.5.1	Minimum sample size required for the test shall	Minimum sample size required for the test	Nil	No Change proposed
	be six. The sample clips of the decarburization	shall be six. The sample clips of the		
	test and additional samples required to make up	decarburization test and additional samples		
	the number to six, depending upon the lot size,	required to make up the number to six,		
	shall be taken up for testing for inclusion rating.	depending upon the lot size, shall be taken		
	The inclusion rating in the material of clips when	up for testing for inclusion rating. The		
	determined as per IS: 4163- 2004 shall not be	inclusion rating in the material of clips when		
	worse than 2.0 (thin) and 2.0 (thick) A, B, C, D as	determined as per IS: 4163- 2004 shall not		
	per IS: 4163- 2004	be worse than 2.0 (thin) and 2.0 (thick) A, B,		
		C, D as per IS: 4163- 2004		
7.6	Dimensions:	I		
7.6.1	The sample clips shall be checked for the	The sample clips shall be checked for the	1.Bridge Track & tower pvt.	The comments of the
	dimensions by means of inspection gauges as per	dimensions by means of inspectiongauges		firms are not
	RDSO drawings, and shall meet with requirement	as per RDSO drawings, and shallmeet the	2.M/s Vaishno Mata	accepted.
	of dimensions and tolerance as provided in the	requirement of dimensions and tolerances as		
	drawings of Inspection gauges.	provided in the drawings of Inspection	3.Adinath Industries INC	Dimensional accuracy
	Corrigendum No1	gauges. The diameter of front arch position of		of the clip is required
	The sample clips shall be checked for the	ERC shall be checked by Vernier	5.Kamakashi Track Fasteners:	to ensure that the ERC
	dimensions by means of inspection gauges as per	calipershavingdigitaldisplay, in two		fulfils the desired
	RDSO drawings, and shall meet with requirement	perpendicular directions of the ERC at front		functional
	of dimensions and tolerance as provided in the	arch and averagevalue shall not be less than	8.Surya Coach Builders Pvt.	requirements and has

		to Letter no. C1/EF/Dev da	iteu 00.03.2023
drawings of Inspection gauges. The dia. of front	20.47mm for ERC Mk-III & ERC-J and 22.81	Ltd.	desired interaction
arch position of ERC shall be checked by Vernier	for ERCMk-V	9.R Rashmi Industries	with the other
calliper with a digital display in two		10. LNVS Infra Pvt. Ltd.	components of the
perpendicular directions of the ERC at front arch		11.Vedkiran steel Industries	track.
and average value shall not be less than		Pvt. Ltd.	
20.47mm for ERC Mk-III & ERC-J and 22.81 for		Dimensions of the clips should	
ERC Mk-V		be check through RDSO	
		approved gauges as per	
		drawings but during process	
		manufacturing and final	
		inspection only.	
		,	
		No foreign fastening permits to	
		check the dimensions of their	
		clips through any such	
		inspection gauges except to	
		use it for their internal	
		checking only.	
		oncoming only.	
		Therefore, we should also be	
		given dispensation for	
		dimension check to keep it for	
		in-house testing facility during	
		production, process & final	
		product inspection only and	
		not to be tested anywhere	
		after ERCs are Inspected and	
		passed by the inspection	
		agency and IC is issued.	
		Tolerances in dimensions	
		should be increased as	
		proposed below as will not	
		affect the quality of ERCs	
		1.M/s Siddhartha Metal	
		Fabricators	
		2.M/s Fateh Chand Jain	
		Dimensions of the clips should	
		be check through RDSO	
		approved gauges as per	

	T		to Letter no. C1/EF/Dev da	iteu 00.05.2025
			drawings but during process manufacturing and final	
			inspection only	
			No foreign fastening permits to	
			check the dimensions of their	
			clips through any such gauges	
			however they may use it for	
			their internal purpose.	
			their internal purpose.	
			Therefore we should also be	
			Therefore, we should also be	
			given dispensation for	
			dimension check to keep it for in-house testing facility during	
			production, process & final	
			production, process & illiai	
7.6.2	The sample clips shall also be examined for the	The sample clips shall also be examined for	1.Bridge Track & tower pvt.	No change is
7.0.2	flat bearing lengths of the major & minor axis of	the flat bearing lengths of the major &	Ltd.	proposed in this
	toe of the clip with the rail flange in the rail seat	minor axis of toe of the clip with the rail	2.M/s Vaishno Mata	clause.
	assembly or in fixture, which deflects the clip to	flange in the rail seat assembly or in fixture,	Track,Faridabad	ciause.
	the same extent as in the rail fastening assembly.	which deflects the clip to the same extent	3.Adinath Industries INC	The comments of the
	For this purpose, the major and minor axis of the	as in the rail fastening assembly. For this	4.Avdesh Track(P)Ltd	firms are not
	elliptical contact surface shall be measured to	purpose, the major and minor axis of the	5.M/s Siddhartha Metal	accepted.
	meet the requirements given in Annexure-V. For	elliptical contact surface shall be measured	Fabricators	acceptedi
	ensuring that the flat toe bearing area of the toe	to meet the requirements given in	6.M/s Fateh Chand Jain	The measurement of
	of the clip with rail flange slope surface at the	Annexure-V. For ensuring that the flat toe	7.Kamakashi Track Fasteners:	the flat bearing area in
	major and minor axis, a filer 0.05mm thick shall	bearing area of the toe of the clip with rail	8.Simplex Casting Ltd.	the clip can only be
	not pass under the toe of clip along the major	flange slope surface at the major and minor	9.Adinath Industries	done with the help of
	and minor axis of the clip. In case of ERC-J, the	axis, a filer 0.05mm thick shall not pass	10. Surya Coach Builders Pvt.	the filler gauge when
	clips shall be examined in a similar way as	under the toe of clip along the major and	Ltd.	fixed on the
	indicated above, but for the bearing length of	minor axis of the clip. In case of ERC-J, the	11.R Rashmi Industries	application and
	the toe on rail seat which shall be between 15-	clips shall be examined in a similar way as	12 LNVS Infra Pvt. Ltd.	deflection block.
	20mm.	indicated above, but for the bearing length	13.Vedkiran steel Industries	
		of the toe on rail seat which shall be	Pvt. Ltd.	
		between 15-20mm.	The sample clips shall also be	
			examined for the flat bearing	
			lengths of the major & minor	
			axis of toe of the clip with the	
			rail flange in the rail seat	

			and an alpha and the fitting and the last	
			assembly or in fixture, which	
			deflects the clip to the same	
			extent as in the rail fastening	
			assembly. For this purpose, the	
			major and minor axis of the	
			elliptical contact surface shall	
			be measured to meet the	
			requirements given in	
			Annexure-V. <del>For ensuring that</del>	
			the flat toe bearing area of the	
			toe of the clip with rail flange	
			slope surface at the major and	
			minor axis, a filer 0.05mm thick	
			shall not pass under the toe of	
			clip along the major and minor	
			axis of the clip. In case of ERC-J,	
			the clips shall be examined in a	
			similar way as indicated above,	
			but for the bearing length of	
			the toe on rail seat which shall	
			be between 15-20mm.	
7.7	Application and Deflection Test:	Application and Deflection Test:	1.Bridge Track & tower	No change is
	The sample clips shall be tested by driving into a	The sample clips shall be tested by driving	pvt.Ltd.	proposed in this
	fixture i.e. (Application Deflection Block as per	into a fixture i.e. (Application Deflection	2.M/s Vaishno Mata	clause.
	relevant clip RDSO drg.) through horizontal	Block as per relevant clip RDSO drg.)	Track,Faridabad.	0.000
	pushing by Hydraulic Jack or Power Press or	through horizontal pushing by Hydraulic	3.Adinath Industries INC	The comments of the
	using any suitable arrangement, which deflects	Jack or Power Press or using any suitable	4.Avdesh Track(P)Ltd	firms are not
	the clip to the same extent as in the rail	arrangement, which deflects the clip to the	5.Kamakashi Track Fasteners	accepted.
	fastening assembly. The clips shall then be	same extent as in the rail fastening	6.Simplex Casting Ltd.	deceptedi
	removed from the fixture and this process is to	assembly. The clips shall then be removed	7.Adinath Industries	This test is conducted
	be repeated successively thrice. On 3rd drive	from the fixture and this process is to be	8. Surya Coach Builders Pvt.	on the clip to check
	clips to be checked for flat bearing length as per	repeated successively thrice. On 3rd drive	Ltd.	the application,
	clause 7.6.2 and for Toe Load as per clause 7.8.	clips to be checked for flat bearing length as	9.R Rashmi Industries	deflection, brittleness
	clause 7.0.2 and for foe Load as per clause 7.0.	per clause 7.6.2 and for Toe Load as per	10 LNVS Infra Pvt. Ltd.	and proper heat
		clause 7.8.	11.Vedkiran steel Industries	treatment of the clip.
		clause 7.0.	Pvt. Ltd.	treatment of the clip.
			Application and Deflection	
			<b>Test:</b> The sample clips shall be	
			tested by driving into a fixture	
			i.e.(Application Deflection	

to Letter no. C1/EF/Dev dated 06.05.2025
Block as per relevant clip RDSO
drg.) through horizontal
pushing by Hydraulic Jack or
Power Press or using any
suitable arrangement, which
deflects the clip to the same
extent as in the rail fastening
assembly.
The clips shall then be removed
from the fixture and this
process is to be repeated
successively thrice. On 3rd
drive clips to be checked for
flat bearing length as per
clause 7.6.2 and for Toe Load
as per clause 7.8.
The clips must be fixed into
track with the help of
applicator and not with the
help of hammer as it effects
·
the quality and performance of
clips into track.
1.M/s Siddhartha Metal
Fabricators
2.M/s Fateh Chand Jain
The sample clips shall be tested
by driving into a fixture
i.e.(Application Deflection
Block as per relevant clip RDSO
drg.) through horizontal
pushing by Hydraulic Jack or
Power Press or using any
suitable arrangement, which
deflects the clip to the same
extent as in the rail fastening
assembly.
The clips shall then be removed
from the fixture and this
process is to be repeated
successively thrice. On 3rd

F	T		to Letter no. C1/EF/Dev da	1100 00.03.2023
			drive clips to be checked for	
			<del>flat bearing length as per</del>	
			clause 7.6.2 and for Toe Load	
			as per clause 7.8.	
7.8	Toe load test:	Toe load test:	1.Bridge Track & tower pvt.	The comments of the
	The sample clips shall be tested for load, with	The sample clips shall be tested for toe	Ltd.	firms are not
	the help of toe load testing arrangement	load, with the help of <del>toe load</del>	2.M/s Vaishno Mata	acceptable.The toe
	approved by purchaser / inspecting agency	testingarrangement approved by purchaser	Track,Faridabad.	load testing is
	orusing application deflection block of approved	/ inspecting agencyapplication	3.Adinath Industries INC	required in the final
	drawing at UTM of sufficient capacity. The toe	deflectionblock of approved drawing using	4.Avdesh Track(P)Ltd	inspection of ERC.
	load values of the different clips shall comply	UTM of sufficient capacity. The toe load	5.M/s Siddhartha Metal	
	with the requirements shown in Annexure-V.	valuesof the different clips shall comply	Fabricators	
	The clips shall then be checked for compliance	with the requirements shown in Annexure-	6.M/s Fateh Chand Jain	The comments
	with the dimensions and tolerances as per clause	V.The clips shall then be checked for	7.Kamakashi Track Fasteners:	regarding reduction in
	7.6.1	compliance with the dimensions	8.Simplex Casting Ltd.	toe load of ERC Mk-III
	7.0.1	andtolerances as per clause 7.6.	9.Adinath Industries	& Mk-V is not
		anatorerances as per clause 7.0.	10. Surya Coach Builders Pvt.	accepted.
			Ltd.	accepted.
			11.R Rashmi Industries	Toe load of various
			12 LNVS Infra Pvt. Ltd.	clips has been decided
			13. Vedkiran steel Industries	considering the
			Pvt. Ltd.	various factors of
				track parameters. Toe
			Since as per STR, RDSO	·
			approved and designed toe-	load beyond the specified range on
			load testing arrangement is	
			permitted in process inspection	either side affects the
			& UTM for final inspection, the	performance of the
			same should be mentioned	track adversely.
			here in the IRST-31	
			specification. UTM should be	
			used for cross verification	
			during final inspection/testing	
			as it reduces the working	
			productivity as it takes more	
			time than the RDSO approved	
			toe load arrangement which is	
			widely in use since last more	
			than 3 decades	
			1	

			to Letter no. C1/E1/Dev da	1104 00:02:2022
			As proposed by us the upper ceiling limit of Toe load values should be removed and the lower limit should be amended from 850kg to 750kg for ERC MK-III and from 1200 Kg to 1100 kg for ERC MK-V  None of the foreign fastenings claims upper range of toe load values. Rather your RFP for procurement of modern fastening itself says minimum	100 O O O O O O O O O O O O O O O O O O
			Toe load of 900kg only	
7.9	Fatigue Test: Four sample clips shall be tested for fatigue test, as per test scheme enclosed as <b>Annexure XII.</b> This test shall be carried out in case of complaint/ reference from the user or any similar potent reason (on need basis only) as decided by RDSO at the cost of firm. Fatigue testing shall be done in RDSO or Government laboratory or from lab accredited by Accreditation agency as per extant guideline issued by RDSO or National Test House or Regional Test Center (RTC), as per fatigue scheme enclosed as Annexure XII.	Fatigue Test: Four sample clips shall be tested for fatigue test, as per test scheme enclosed as <b>Annexure XII.</b> This test shall be carried out in case of complaint/ reference from the user or any similar potent reason (on need basis only) as decided by RDSO at the cost of firm. Fatigue testing shall be done in RDSO or Government laboratory or from lab accredited by Accreditation agency as per extant guideline issued by RDSO or National Test House or Regional Test Center (RTC), as per fatigue scheme enclosed as Annexure XII.	Nil	No Change proposed
7.10	Stress Test: This test shall be carried out at RDSO, only at the time of initial approval of firm in the category of Developmental Vendors. Out of eight samples, four sample clips having higher toe load shall be tested for stress test as per test scheme enclosed as Annexure - XIV. The value of the stress in the clip shall not be more than 148 Kg/mm2.	Stress Test: This test shall be carried out at RDSO, only at the time of initial approval of firm in the category of Developmental Vendors. Out of eight samples, four sample clips having higher toe load shall be tested for stress test as per test scheme enclosed as Annexure - XIV. The value of the stress in the clip shall not be more than 148 Kg/mm2.	Nil	No Change proposed
7.11	Corrigendum-1  The sample clips shall be checked for the weight by means of digital weighing machine,	The sample clips shall be checked for the weight by means of digital weighing Machineand shall meet with requirement	Nil	No comments on this clause have been received.

	and shall meet with requirement of weight as	of wei	ght as given	in Annexure-	V.		
	given in Annexure-V			in weight			
				re-offer the	Elastic Rail		
		Clip lo					
				after sortin	_		
				itten permis			
		-	_	ty. If, the			
				eight test, it	will be		
0.0	Nov. Dava Addad	rejecte				N::I	Navy Dava addad af
8.0	New Para Added	•	cess Inspecti		al al contra a	Nil	New Para added of In- process Inspection.
			•	inspection	_		However, this clause is
				lips shall be			being deleted from
		by	nomina		inspection		the specification.
		_	•	m quantity all be offer			
				. For offering			In-process inspection
				r than 3500	•		will be dealt
				nall obtain			separatelyas
			ssion of PCE	ian obtain	Wilteen		perexisting
				ons for the s	ame.#		instructions of Railway
		Speen	ying the reas				Board.
		Follow	ing minimur	n testsshall b	e carried		
			_	rocess inspe			
		SN	Item	Sampling	Freque		
				Procedur	ncy of		
				е	Inspecti		
					on		
		1	Checking	Random	03 bars		
			of length		per		
			of Cut		hour		
			bars				
		2	Turning	Random	03 bars		
			length		perhour		
		3	MPI test	Random	03 bars		
					per		
					hour		
		4	Forging	Random	Once		
			Temperat		every		

		ure		Hour	
	5	Checking	100%	at the	
		of dies		start of	
				the	
				shift.	
				If	
				product	
				ion per	
				shift is	
				more	
				than	
				4000	
				ERCs,	
				additio	
				nal	
				check in	
				the	
				middle	
				of the	
				shift	
	6	Quenchin	Random	Once	
		g		every	
		temperat		hour	
		ure and			
		duration			
	7	Quenchin	Random	02 ERCs	
		g		per	
		Hardness		hour	
	8	Temperin	Random	Once	
		g		every	
		temperat		hour	
		ure and			
		duration			
	9	Dimensio	Random	02 ERCs	
		n check		per	
	11			hour	
•				Hour	
	10	Hardness	Random	02 ERCs	

							***************************************
			finished ERC		hour		
		11	Documen	100%	Docum		
			tation		entatio		
					n		
					should		
					be		
					done		
					along		
					with		
					the		
					aforem		
					entione		
					d		
					inspecti		
					ons.		
8.0	FINAL INSPECTION / TESTING &	FINAL	INSPECTION	N / TI	STING &	Nil	No Change proposed.
9.0	DOCUMENTATION:		MENTATION:	•	3111 <b>10</b> Q		Para no. of Paragraph
3.0	The manufacturer shall carry out the final		anufacturer		ut the final		has been changed.
	inspection and testing internally in accordance		tion and	•			
	with the plan of testing given under 'Tests'		lance with th	_	•		
	clause 7 above except clause 7.9 Fatigue Test &		'Tests' clause				
	7.10 Stress test, and shall maintain the records		tigue Test & 7				
	as per Annexure-VI to XI to ensure that the clips	mainta	ain the record	ds as per An	nexure-VI to		
	have passed inspection criteria.	XI to	ensure that	the clips h	ave passed		
		inspec	tion criteria.				
9.0	PROTECTION: After inspection and approval, the	PROTE	CTION: Af	ter inspe	ction and	Nil	No Change proposed.
10.0	clips shall be cleaned off all rust and protected		val, the clips				Para no. of Paragraph
	with one coat of boiled Linseed oil as per IS: 77-		nd protected				has been changed.
	1976 or any other rust preventing compound		d oil as per I		•		
	approved by the purchaser.		reventing con	npound appr	oved by the		
		purcha	aser.				
10.0	PACKING:						
11.0		г				T	T., -,
<del>10.1</del>	The clips shall be packed in double gunny bags /		ips shall be				No Change proposed.
11.1	polythene bags, each bag containing 50 clips. In		polythene b	•			Para no. of Paragraph
	the consignment to be sent by the manufacturer,		s. In the cor	•	•		has been changed.
	not more than one gunny bag / polythene bags		anufacturer, r				
	shall be filled with less than 50 clips which	pag / p	oolythene bag	gs snail be fil	ied with less		

		<del>-</del>	to Ectter no. CT/ET/Dev at	
	should be clearly mentioned by the	than 50 clips which should be clearly		
	manufacturer in the dispatch particulars giving	mentioned by the manufacturer in the		
	the bag numbers (as painted thereon) and	dispatch particulars giving the bag numbers		
	number of clips. The packing shall be sound to	(as painted thereon) and number of clips.		
	ensure that there is no loss or damage to the	The packing shall be sound to ensure that		
	clips during transit.	there is no loss or damage to the clips		
		during transit.		
<del>10.2</del>	The gunny bags / polythene bags should not	The gunny bags / polythene bags should not	Nil	No Change proposed.
11.2	have any exterior stitching whatsoever, except	have any exterior stitching whatsoever,		Para no. of Paragraph
	for the edge to be sealed. The hesian thread	except for the edge to be sealed. The hesian		has been changed.
	used for 12 stitching the gunny bag / polythene	thread used for 12 stitching the gunny bag /		
	bag edge should be free from any knots except	polythene bag edge should be free from any		
	at the sealing point.	knots except at the sealing point.		
<del>11.0</del>	TEST FACILITIES:	TEST FACILITIES:	Nil	No Change proposed.
12.0	The manufacturer shall be required to install all	The manufacturer shall be required to		Para no. of Paragraph
	the necessary test facilities for inspection of clips	install all the necessary test facilities for		has been changed.
	in separate well lit, clean and properly ventilated	inspection of clips in separate well lit, clean		
	laboratory room provided with easily	and properly ventilated laboratory room		
	maintainable floor and platform.	provided with easily maintainable floor and		
		platform		
<del>12.0</del>	INSPECTION GAUGES:	INSPECTION GAUGES:	Nil	No Change proposed.
13.0	The inspection gauges for dimensional check	The inspection gauges for dimensional		Para no. of Paragraph
	should conform to RDSO drawings. The	check should conform to RDSO drawings.		has been changed.
	manufacturer shall submit two sets of inspection	The manufacturer shall submit two sets of		
	manufacturer shall submit two sets of inspection gauges for the approval of Inspecting officer. Out	inspection gauges for the approval of		
	·			
	gauges for the approval of Inspecting officer. Out	inspection gauges for the approval of		
	gauges for the approval of Inspecting officer. Out of these, one set of inspection gauges shall be	inspection gauges for the approval of Inspecting officer. Out of these, one set of		
	gauges for the approval of Inspecting officer. Out of these, one set of inspection gauges shall be used as master gauge and shall be preserved	inspection gauges for the approval of Inspecting officer. Out of these, one set of inspection gauges shall be used as master		
	gauges for the approval of Inspecting officer. Out of these, one set of inspection gauges shall be used as master gauge and shall be preserved safely by the clip manufacturer. The second set	inspection gauges for the approval of Inspecting officer. Out of these, one set of inspection gauges shall be used as master gauge and shall be preserved safely by the		
	gauges for the approval of Inspecting officer. Out of these, one set of inspection gauges shall be used as master gauge and shall be preserved safely by the clip manufacturer. The second set shall be used by the Inspecting Officer. For	inspection gauges for the approval of Inspecting officer. Out of these, one set of inspection gauges shall be used as master gauge and shall be preserved safely by the clip manufacturer. The second set shall be		
	gauges for the approval of Inspecting officer. Out of these, one set of inspection gauges shall be used as master gauge and shall be preserved safely by the clip manufacturer. The second set shall be used by the Inspecting Officer. For internal quality checks, the firm should use an	inspection gauges for the approval of Inspecting officer. Out of these, one set of inspection gauges shall be used as master gauge and shall be preserved safely by the clip manufacturer. The second set shall be used by the Inspecting Officer. For internal		
	gauges for the approval of Inspecting officer. Out of these, one set of inspection gauges shall be used as master gauge and shall be preserved safely by the clip manufacturer. The second set shall be used by the Inspecting Officer. For internal quality checks, the firm should use an additional set of gauges as per RDSO's gauge	inspection gauges for the approval of Inspecting officer. Out of these, one set of inspection gauges shall be used as master gauge and shall be preserved safely by the clip manufacturer. The second set shall be used by the Inspecting Officer. For internal quality checks, the firm should use an		
13.0	gauges for the approval of Inspecting officer. Out of these, one set of inspection gauges shall be used as master gauge and shall be preserved safely by the clip manufacturer. The second set shall be used by the Inspecting Officer. For internal quality checks, the firm should use an additional set of gauges as per RDSO's gauge	inspection gauges for the approval of Inspecting officer. Out of these, one set of inspection gauges shall be used as master gauge and shall be preserved safely by the clip manufacturer. The second set shall be used by the Inspecting Officer. For internal quality checks, the firm should use an additional set of gauges as per RDSO's	Nil	No Change proposed.
13.0 14.0	gauges for the approval of Inspecting officer. Out of these, one set of inspection gauges shall be used as master gauge and shall be preserved safely by the clip manufacturer. The second set shall be used by the Inspecting Officer. For internal quality checks, the firm should use an additional set of gauges as per RDSO's gauge drawing.	inspection gauges for the approval of Inspecting officer. Out of these, one set of inspection gauges shall be used as master gauge and shall be preserved safely by the clip manufacturer. The second set shall be used by the Inspecting Officer. For internal quality checks, the firm should use an additional set of gauges as per RDSO's gauge drawing.	Nil	No Change proposed. Para no. of Paragraph
	gauges for the approval of Inspecting officer. Out of these, one set of inspection gauges shall be used as master gauge and shall be preserved safely by the clip manufacturer. The second set shall be used by the Inspecting Officer. For internal quality checks, the firm should use an additional set of gauges as per RDSO's gauge drawing.  DISPOSAL OF REJECTED CLIPS:	inspection gauges for the approval of Inspecting officer. Out of these, one set of inspection gauges shall be used as master gauge and shall be preserved safely by the clip manufacturer. The second set shall be used by the Inspecting Officer. For internal quality checks, the firm should use an additional set of gauges as per RDSO's gauge drawing.  DISPOSAL OF REJECTED CLIPS:	Nil	
	gauges for the approval of Inspecting officer. Out of these, one set of inspection gauges shall be used as master gauge and shall be preserved safely by the clip manufacturer. The second set shall be used by the Inspecting Officer. For internal quality checks, the firm should use an additional set of gauges as per RDSO's gauge drawing.  DISPOSAL OF REJECTED CLIPS: The rejected clips shall be cut in two pieces by	inspection gauges for the approval of Inspecting officer. Out of these, one set of inspection gauges shall be used as master gauge and shall be preserved safely by the clip manufacturer. The second set shall be used by the Inspecting Officer. For internal quality checks, the firm should use an additional set of gauges as per RDSO's gauge drawing.  DISPOSAL OF REJECTED CLIPS: The rejected clips shall be cut in two pieces	Nil	Para no. of Paragraph
	gauges for the approval of Inspecting officer. Out of these, one set of inspection gauges shall be used as master gauge and shall be preserved safely by the clip manufacturer. The second set shall be used by the Inspecting Officer. For internal quality checks, the firm should use an additional set of gauges as per RDSO's gauge drawing.  DISPOSAL OF REJECTED CLIPS: The rejected clips shall be cut in two pieces by the manufacturer using oxyacetylene flame and	inspection gauges for the approval of Inspecting officer. Out of these, one set of inspection gauges shall be used as master gauge and shall be preserved safely by the clip manufacturer. The second set shall be used by the Inspecting Officer. For internal quality checks, the firm should use an additional set of gauges as per RDSO's gauge drawing.  DISPOSAL OF REJECTED CLIPS:  The rejected clips shall be cut in two pieces by the manufacturer using oxyacetylene	Nil	Para no. of Paragraph
14.0	gauges for the approval of Inspecting officer. Out of these, one set of inspection gauges shall be used as master gauge and shall be preserved safely by the clip manufacturer. The second set shall be used by the Inspecting Officer. For internal quality checks, the firm should use an additional set of gauges as per RDSO's gauge drawing.  DISPOSAL OF REJECTED CLIPS: The rejected clips shall be cut in two pieces by the manufacturer using oxyacetylene flame and shall then be disposed of as scrap	inspection gauges for the approval of Inspecting officer. Out of these, one set of inspection gauges shall be used as master gauge and shall be preserved safely by the clip manufacturer. The second set shall be used by the Inspecting Officer. For internal quality checks, the firm should use an additional set of gauges as per RDSO's gauge drawing.  DISPOSAL OF REJECTED CLIPS:  The rejected clips shall be cut in two pieces by the manufacturer using oxyacetylene	Nil	Para no. of Paragraph
14.0 14.0	gauges for the approval of Inspecting officer. Out of these, one set of inspection gauges shall be used as master gauge and shall be preserved safely by the clip manufacturer. The second set shall be used by the Inspecting Officer. For internal quality checks, the firm should use an additional set of gauges as per RDSO's gauge drawing.  DISPOSAL OF REJECTED CLIPS: The rejected clips shall be cut in two pieces by the manufacturer using oxyacetylene flame and shall then be disposed of as scrap	inspection gauges for the approval of Inspecting officer. Out of these, one set of inspection gauges shall be used as master gauge and shall be preserved safely by the clip manufacturer. The second set shall be used by the Inspecting Officer. For internal quality checks, the firm should use an additional set of gauges as per RDSO's gauge drawing.  DISPOSAL OF REJECTED CLIPS:  The rejected clips shall be cut in two pieces by the manufacturer using oxyacetylene flame and shall then be disposed of as scrap	Nil	Para no. of Paragraph

			to Letter no. C1/EF/Dev uz	10000012020
15.1	clips required for all tests and shall also provide	the clips required for all tests and shall also		Para no. of Paragraph
	necessary man-power and facilities for carrying	provide necessary man-power and facilities		has been changed.
	out tests at his works.	for carrying out tests at his works.		3
14.2	Purchaser/Inspecting officer shall have free	Purchaser/Inspecting officer shall have free	Nil	No Change proposed.
15.2	access to the works of manufacturer at all	access to the works of manufacturer at all		Para no. of Paragraph
	reasonable times and shall be at liberty to	reasonable times and shall be at liberty to		has been changed.
	inspect the manufacture at any stage and to call	inspect the manufacture at any stage and to		nas seen enangea.
	for any records, pertaining to manufacture,	call for any records, pertaining to		
	which shall be made available to him within	manufacture, which shall be made available		
		to him within reasonable time.		
45.0	reasonable time.	to nim within reasonable time.		
<del>15.0</del>	Corrigendum-2			
16.0				
	Consignee End Inspection of ERCs	Consignee End Inspection of ERCs	1.Bridge Track & tower pvt.	The comments of the
			Ltd.	firms are not
			2.2.M/s Vaishno Mata	accepted.
			Track,Faridabad.	
			3.Adinath Industries INC	The consignee end
			4.Avdesh Track(P)Ltd	policy is framed
			5.Kamakashi Track Fasteners:	separately to check
			6.Simplex Casting Ltd.	the quality of the ERC
			7.Adinath Industries	which was passed by
			8. Surya Coach Builders Pvt.	inspecting agency.
			Ltd.	
			9.R Rashmi Industries	
			10 LNVS Infra Pvt. Ltd.	
			11.Vedkiran steel Industries	
			Pvt. Ltd.	
			Since ERC is now being	
			manufactured/inspected and	
			passed through stage	
			inspection of raw material,	
			1	
			Process Inspection	
			methodology and final product	
			inspection, therefore this	
			consignee end inspection of	
			ERCs must be	
			dropped/deleted.	
			from the specification.	
			If at all testing is required, the	

	to Letter no. C1/EF/Dev dated 08.05.2025
	same should be initiated only
	on the samples of the specific
	firm against whom the
	problem or complaint has
	raised by the end user within
	the 30 days from the date of
	supply of material to the
	consignee.
	consignee.
	The consulting and testing
	The sampling and testing
	process based on sample sets
	of 30 nos. and thereby testing
	of 14 nos. for various tests is
	neither appropriate method
	nor acceptable.
	In case of any quality related
	complain from end user, Joint
	inspection should be carried
	out and testing should be done
	on the set of samples as per lot
	size according to the sampling
	plan IS:2500 (Part-I) -2000 level
	IV and AQL 4%
	TV dild AQL 470
	Rejection if any should be as
	Rejection if any should be as
	per lot wise quantity not as per
	whole quantity of whole IC.
	Only defective pcs are
	supposed to be replaced under
	and not the entire lot after
	joint inspection.
	No other sampling plan is
	acceptable to us.
	1.M/s Siddhartha Metal
	Fabricators
	2.M/s Fateh Chand Jain
	Since ERC is now being
	manufactured/inspected and
L	

			passed through stage	
			inspection of raw material,	
			Process Inspection	
			methodology and final product	
			inspection, therefore this	
			consignee end inspection of	
			ERCs must be	
			dropped/deleted.	
			from the specification.	
			If an all nearing the second	
			If at all testing is required, the	
			same should be initiated only	
			on the samples of the specific	
			firm against whom the problem or complaint has	
			raised by the end user within	
			the 30 days from the date of	
			supply of material to the	
			consignee.	
			consignee.	
			The sampling and testing	
			process based on sample sets	
			of 30 nos. and thereby testing	
			of 14 nos. for various tests is	
			neither appropriate method	
			nor acceptable.	
			In case of any quality related	
			complain from end user, Joint	
			inspection should be carried	
			out and testing should be done	
			on the set of samples as per lot	
			size according to the sampling	
			plan IS:2500 (Part-I) -2000 level	
			IV and AQL 2.5%	
			No other sampling plan is	
			acceptable to us.	
45.4	The Donahasan/Consistance as the second sector	The Durch con/Consists of the con/Consists of	NI:I	No Change Transcript
<del>15.1</del>	The Purchaser/Consignee or its nominated	The Purchaser/Consignee or its nominated	Nil	No Change proposed.

					to Letter no. C1/E1/DCV u	atcu 00.05.2025
16.1	representative shall	pick up and seal 02 sample	representative shall	pick up and seal 02		Para no. of Paragraph
	sets per lot in the pr	esence of firm's	sample sets per lot i	n the presence of firm's		has been changed.
	representative withi	in 01 month after receipt the	representative with	in 01 month after		
	material (ERC) at the	e consignee depot which	receipt the material	(ERC) at the consignee		
	shall be preserved in	n the consignee depot or	depot which shall be	e preserved in the		
	nominated location	for a period of one year from	consignee depot or	nominated location for		
	the date of receipt of	of material. One sample set	a period of one year	from the date of		
	shall comprise of 30	nos. ERCs picked randomly.	receipt of material.	One sample set shall		
			comprise of 30 nos.	ERCs picked randomly.		
<del>15.2</del>	If the firm's represen	ntative does not turn up	If the firm's represe	ntative does not turn up	Nil	No Change proposed.
16.2	within one month at	fter receipt of material (ERC)	within one month at	fter receipt of material		Para no. of Paragraph
	at the consignee end	d for joint sampling by	(ERC) at the consign	ee end for joint		has been changed.
	Purchaser/Consigne	e, the sampling shall be done	sampling by Purchas	ser/Consignee, the		
	by Purchaser/Consig	gnee solely.	sampling shall be do	one by		
			Purchaser/Consigne	e solely.		
<del>15.3</del>	The sealed sample s	et can be got tested by the	The sealed sample s	et can be got tested by	Nil	No Change proposed.
16.3	Purchaser/Consigne	e, from RDSO or NABL	the Purchaser/Consi	ignee, from RDSO or		Para no. of Paragraph
	accredited labs with	in 12 months from the date	NABL accredited lab	s within 12 months		has been changed.
	of receipt of materia	al with the approval of an	from the date of rec	eipt of material with		
	officer not below the	e level of JAG of the	the approval of an o	fficer not below the		
	concerned Zonal Rai	ilway or equivalent as per the	level of JAG of the co	oncerned Zonal Railway		
	observation during f	ield inspections / specific	or equivalent as per	the observation during		
	nature of complaint	regarding performance of	field inspections / sp	pecific nature of		
	ERC. 14 nos. ERCs fro	om the first sample set shall	complaint regarding	performance of ERC. 14		
	be tested for confor	mity as per following	nos. ERCs from the f	first sample set shall be		
	scheme:		tested for conformit	ty as per following		
			scheme:			
	No. of ERc	Test to be Conduct				
		for Conformity	No. of ERc	Test to be Conduct		
	14	Dimension		for Conformity		
	06	Hardness, depth of	14	Dimension		
		decarburization and	06	Hardness, depth of		
		freedom from surface		decarburization and		
		defects		freedom from surfa		
	08	Toe-load, flat bearing		defects		
		area, application &	08	Toe-load, flat bearing		
		deflection test		area, application &		
	_			deflection test		
<del>15.4</del>	A Ct	sting of samples, the supplier	After desision for to	-4:	Nil	No Change proposed
	After decision for te	sting of samples, the supplier	After decision for te	sting of samples, the	INII	No Change proposed.

			to Letter no. C1/Er/Dev da	iteu 00.03.2023
	sample set. Second sample shall be kept as	test of first sample set. Second sample shall		has been changed.
	standby as per the provisions of ISO Apex	be kept as standby as per the provisions of		
	documents.	ISO Apex documents.		
<del>15.5</del>	If the first sample set passes the tests, no further	If the first sample set passes the tests, no	Nil	No Change proposed.
16.5	action will be needed. In case the first sample set	further action will be needed. In case the		Para no. of Paragraph
	fails as per acceptance / rejection criteria, the	first sample set fails as per acceptance /		has been changed.
	corresponding lot shall be rejected. The	rejection criteria, the corresponding lot		
	supplier/firm shall remove the rejected lot from	shall be rejected. The supplier/firm shall		
	the consignee depot at their own cost, but only	remove the rejected lot from the consignee		
	after the supplier/firm has reimbursed payments	depot at their own cost, but only after the		
	already made if any by Purchaser/Consignee or	supplier/firm has reimbursed payments		
	an equivalent amount has been recovered for	already made if any by		
	this purpose. However, the Purchaser/Consignee	Purchaser/Consignee or an equivalent		
	shall not be liable to return the material that is	amount has been recovered for this		
	already put into track and the supplier/firm shall	purpose. However, the		
	have no claim for compensation. Page 4 of 5	Purchaser/Consignee shall not be liable to		
		return the material that is already put into		
		track and the supplier/firm shall have no		
		claim for compensation. Page 4 of 5		
<del>15.6</del>	The rejected lot shall be removed by the	The rejected lot shall be removed by the	Nil	No Change proposed.
16.6	supplier/firm within 03 months of date of	supplier/firm within 03 months of date of		Para no. of Paragraph
	rejection advice, failing which the	rejection advice, failing which the		has been changed.
	Purchaser/Consignee shall not be liable to return	Purchaser/Consignee shall not be liable to		
	the rejected lot and the supplier/firm shall have	return the rejected lot and the supplier/firm		
	no claim for compensation for such material. The	shall have no claim for compensation for		
	rejected clips shall be cut into two pieces by the	such material. The rejected clips shall be cut		
	supplier/firm using oxy-acetylene flame at their	into two pieces by the supplier/firm using		
	own cost before removing the rejected clips	oxy-acetylene flame at their own cost		
	from purchaser/consignee depot.	before removing the rejected clips from		
		purchaser/consignee depot.		
<del>15.7</del>	Financial recovery and Penal action shall be	Financial recovery and Penal action shall be	Nil	No Change proposed.
16.7	taken as per the provisions of ISO Apex	taken as per the provisions of ISO Apex		Para no. of Paragraph
	documents and Railway Board's extant policy	documents and Railway Board's extant		has been changed.
ı	1	policy		
		, ,		
<del>15.8</del>	Acceptance / Rejection of the sample: The	Acceptance / Rejection of the sample: The	Nil	No Change proposed.
<del>15.8</del> 16.8	Acceptance / Rejection of the sample: The sample set will be subjected to the tests as per Acceptance / Rejection criteria	, ,	Nil	No Change proposed. Para no. of Paragraph has been changed.

<del>15.8.1</del>	Dim	ensic	n ch	necki	ng o	f ERC	C: (De	efect	and	Non	-	Dim	ensic	on ch	ecki	ng of	f ERC	: (De	efect	and		Nil No Char	nge proposed.
16.8.1	conf												-con					-					. of Paragraph
	Р	М	D	М	М	SI	SI	SI	SI	D	Α	Р	М	D	М	М	SI	SI	SI	SI	D	has beer	n changed.
	а	ai	ia	aj	in	ip	ip	ip	ip	е	р	а	ai	ia	aj	in	ip	ip	ip	ip	е		
	r	n		О	О	g	g	g	g	t	pl	r	n		О	О	g	g	g	g	t		
	а	g		r	r	а	а	а	а	ai	ic	а	g		r	r	а	а	а	а	ai		
	m	а		а	Α	u	u	u	u	ls	а	m	а		а	Α	u	u	u	u	ls		
	е	u		хi	хi	g	g	g	g	а	ti	е	u		хi	хi	g	g	g	g	а		
	t	g		S	S	е	е	е	е	t	0	t	g		S	S	е	е	е	е	t		
	е	е				'L	1	′	′	F	n	е	е				'L	'	′	'	F		
	rs					<b>'</b>	M	N	R		ВІ	rs					,	M	N	R			
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	D	D	D	N	N	N	N	N	N	N	N	D	D	D	N	N C	N C	N C	N C	N C	N		
	e f			С	С	С	С	С	С	С	С	e f			С	C	C	C	C	C	С		
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	- More than defect. - More than whole set de - Defect in r of 14 pieces and lot shall	ERCs shall be three NC in 16 NC in the efective more than or will render to be rejected essful dimentole no. 1 to 8	e checked fo a piece will on e set will rem the ERC in the the whole se dission test as will be test	nder the e whole set et as failed per para ed for Toe	- All the 14 dimension. will constitute. More that whole set of - Defect in set of 14 pit failed and left. After succession of 15.8.1	NC: Non-core ERCs shall be - More than ute a defect. In 16 NC in the lefective more than of eces will rend ot shall be recessful dimerent, sample no. In the lefection of the lefective more than of the lefective	e checked for three NC in a e set will ren ne ERC in the der the whole jected. nsion test as 1 to 8 will be	a piece der the e whole e set as per		
<del>15.8.2</del> 16.8.2	Toe load, Ap	•	f ERC:		bearing are	application & ea checking o	f ERC:		Nil	No Change proposed. Para no. of Paragraph has been changed.
	Application	& Deflection	& Flat beari	ng area test.		& Deflection		•		nas been changed.
	Paramete rs	Toe load	Applicati on &	Flat bearing	Paramete	Toe load	Applicati	Flat		
			Deflectio n test	area	rs		on & Deflectio	bearing area		
	Whether	Defect, if	Applicati	Defect, if			n test			
	Defect or	the value	on test	value is	Whether	Defect, if	Applicati	Defect,		
	NC NC	is beyond the	shall be done on	beyond specified	Defect or NC	the value is beyond	on test shall be	value is beyond		
		specified	each	value in		the	done on	specifie		
		limit as	piece as	Annexure		specified	each	value ir		
	1 1	per	per Para	-V of		limit as	piece as	Annexu		

							to Detter no. CT/DT/Dev at	
Annexure	7.7 of	IRS/T-31		per	per Para	-V of		1
-V of	IRS/ T-31.	in more		Annexure	7.7 of	IRS/T-31		1
IRS/T-31		than		-V of	IRS/ T-31.	in more		1
in more	Non-	three		IRS/T-31	-, -	than		
than one	conformi	clips		in more	Non-	three		1
clip	ty during	clips		than one	conformi	clips		1
CIIP	applicati			clip	ty during	Clips		1
	on test			СПР				1
					applicati			1
	shall be				on test			
	consider				shall be			1
	ed as a				consider			1
	defect in				ed as a			1
	any of				defect in			1
	the				any of			1
	following				the			1
	condition				following			1
	s:				condition			
					s:			1
	- a)							
	When				- a)			
	any piece				When			1
	breaks				any piece			1
	during				breaks			1
	insertion				during			1
	or				insertion			
	extractio				or			1
	n in				extractio			
	applicati				n in			
	on block.				applicati			
					on block.			
	b) When							
	any piece				b) When			
	cannot				any piece			
	be driven				cannot			
	into the				be driven			
	applicati				into the			
	on block.				applicati			
					on block.			
	c) When							
	any piece				c) When			
l	any piece		11	I	<i>o,</i>	I		

		I						i		1
			bounces				any piece			
			back				bounces			
			while				back			
			driving				while			
			into				driving			
			applicati				into			
			on block.				applicati			
	ERC no.						on block.			
	01				ERC no.					
	upto ERC				01					
	no. 08				upto ER	С				
	- After succe	ssful Toe loa	d, Application	on &	no. 08					
	Deflection a				- After su	ccessful Toe lo	ad, Applicati	on &		
	15.8.2, ERC r					n and Flat bear	• •			
	Metallurgica	l and chemi	cal (M&C) te	sts.		.2, ERC no. 01	•	•		
	•		• •		for Meta	lurgical and ch	emical (M&C	tests.		
<del>15.8.3</del>	Metallurgica	al and chemi	ical (M&C) to	ests on ERC:		gical and chem			Nil	No Change proposed.
16.8.3	6 nos. ERCs s	shall be ched	ked for Hard	dness (HRC),	ERC: 6 no	s. ERCs shall be	e checked fo	•		Para no. of Paragraph
	depth of dec	carburization	n & surface c	ondition.	Hardness	(HRC), depth of	of decarburiz	ation &		has been changed.
					surface o	ondition.				
	Paramete	Hardness	Depth of	Surface						
	rs	(HRC)	decarburi	condition	Parame	te Hardness	Depth of	Surface		
			zation		rs	(HRC)	decarburi	condition		
	Whether	Defect, if	Defect, if	Defect, if			zation			
	Defect or	deviation	any piece	non	Whethe	r Defect, if	Defect, if	Defect,		
	NC	are	having	conformi	Defect	or deviation	any piece	non		
		beyond 2	value	ty with	NC	are	having	conforn		
		on either	beyond	para 7.4		beyond 2	value	ty with		
		side in	d/100 or	of IRS T-		on either	beyond	para 7.4		
		more	0.25mm	31 in		side in	d/100 or	of IRS T		
		than one		more		more	0.25mm	31 in		
		clip		than one		than one		more		
				clip		clip		than on		
	ERC no.							clip		
	01				ERC no.					
	upto ERC				01					
	no. 06				upto ER	С				
					no. 06					
						•	•			

17.0	New para Added	Warranty for Elastic Rail Clips:	1.Bridge Track & tower pvt.	The comments of the
		The warranty period of the supplied ERCs	Ltd.	firms have been
		shall be 48 months from the date of	2.M/s Vaishno Mata	examined. The
		issue of Inspection Certificate or 36 months	Track,Faridabad.	contention that the
		from the date of actual fitment in the	3.Adinath Industries INC	manufacturers are
		track, whichever is earlier.	4.Avdesh Track(P)Ltd	only service providers
			5.M/s Siddhartha Metal	/ job workers is not
			Fabricators	acceptable. The
			6.M/s Fateh Chand Jain	manufacturer has to
			From the stage of procurement	produce the ERCs
			of specific grade of raw	fulfilling all the quality
			material from RDSO approved	parameters to ensure
			sources only the ERCs are	longer life of the
			being manufactured based on	product.
			the drawing, design, and	
			specification of RDSO only.	
			The three-stage inspections	
			including process inspection	
			are all controlled by the railway	
			nominated agency. We are just	
			providing the services to Indian	
			Railways as Job workers.	
			Therefore, we are not in a	
			position to provide the	
			requisite warranty for ERCs.	
			The warranty issue should be	
			discussed in the meeting, with	
			RDSO/Rly Bd as it has serious	
			impact on the MSME firms	
			which is being misinterpreted	
			1.Kamakashi Track Fasteners	
			2.Simplex Casting Ltd.	
			3.Adinath Industries	
			4. Surya Coach Builders Pvt.	
			Ltd.	
			5.R Rashmi Industries	
			6 LNVS Infra Pvt. Ltd.	
			7. Vedkiran steel Industries	
			Pvt. Ltd.	

			to Letter no. C1/E1/Dev de	
			From the stage of procurement	
			of specific grade of raw	
			material from RDSO approved	
			sources only the ERCs are	
			being manufactured based on	
			the drawing, design, and	
			specification of RDSO only.	
			The three-stage inspection	
			including process inspection	
			are all controlled by the railway	
			nominated agency. We are just	
			providing the services to Indian	
			-	
			Railways as Job workers.	
			Therefore, we are not in a	
			position to provide the	
			requisite warranty for ERCs.	
			The warranty issue should be	
			discussed in the meeting, with	
			RDSO/Rly Bd as it has serious	
			impact on the MSME firms	
			which is being misinterpreted	
	Annexure-I	Annexure-I	Nil	No Change proposed
	IRST-31- 2021	IRST-31- 2021		
	No Change	No Change		
	Annexure-II	Annexure-II	Nil	No Chango proposed
	IRST-31- 2021	IRST-31- 2021	INII	No Change proposed
	No Change	No Change		
	Annexure-IIA	Annexure-IIA	Nil	No Change proposed
	IRST-31- 2021	IRST-31- 2021		0 1 1
	No Change	No Change		
	Annexure-III	Annexure-III	1.Bridge Track & tower pvt.	Firms' suggestions are
	IRST-31- 2021	IRST-31- 2021	Ltd.	not accepted.
			2.M/s Vaishno Mata	Acceptance quality
			Track,Faridabad.	level percentage has
			3.Adinath Industries INC	been changed from
			4.Avdesh Track(P)Ltd	1.5% to 2.5% in line
			5.M/s Siddhartha Metal	with the same for
L	1	I .		

	to Letter no. CT/EF/Dev da	ated 08.05.2025
	Fabricators	other track
	6.M/s Fateh Chand Jain	components.
	7.Kamakashi Track Fasteners:	
	8.Simplex Casting Ltd.	
	9.Adinath Industries	
	10. Surya Coach Builders Pvt.	
	Ltd.	
	11.R Rashmi Industries	
	12 LNVS Infra Pvt. Ltd.	
	13. Vedkiran steel Industries	
	Pvt. Ltd.	
	Firms haveproposed 4% AQL in	
Annexure-IV		No Change proposed.
IRST-31- 2021		. 0-1
No Change		
<u> </u>		
Annexure-V	1.Bridge Track & tower pvt.	Firms' suggestions are
	Ltd.	not accepted.
FLAT BEARING CONTACT LENGTH OF	-	The clips have to
DIFFERENT ELASTIC RAIL CLIPS:		provide the specified
	3.Adinath Industries INC	toe load to ensure
	4.Avdesh Track(P)Ltd	proper performance
	5.M/s Siddhartha Metal	of the track as a
	Fabricators	whole.
	6.M/s Fateh Chand Jain	
	7.Kamakashi Track Fasteners:	
	8.Simplex Casting Ltd.	
	9.Adinath Industries	
	10. Surya Coach Builders Pvt.	
	Ltd.	Modified Nominal
	11.R Rashmi Industries	Weight of Clips and
	12 LNVS Infra Pvt. Ltd.	their tolerances have
	13.Vedkiran steel Industries	been added in the
	Pvt. Ltd.	table of Annexure-V.
	Firmshave proposed reduced	
	toe load of all clips and	
	•	1
	minimum weight of all clips	
	IRST-31- 2021 No Change  Annexure-V TOE-LOAD, TOE-DEFLECTION, WEIGHT & FLAT BEARING CONTACT LENGTH OF	6.M/s Fateh Chand Jain 7.Kamakashi Track Fasteners: 8.Simplex Casting Ltd. 9.Adinath Industries 10. Surya Coach Builders Pvt. Ltd. 11.R Rashmi Industries 12 LNVS Infra Pvt. Ltd. 13.Vedkiran steel Industries Pvt. Ltd. Firms haveproposed 4% AQL in place of 1.5%. Nil  No Change  Annexure-V TOE-LOAD, TOE-DEFLECTION, WEIGHT & FLAT BEARING CONTACT LENGTH OF DIFFERENT ELASTIC RAIL CLIPS:  Annexure-V 4.Avdesh Track(P)Ltd 5.M/s Siddhartha Metal Fabricators 6.M/s Fateh Chand Jain 7.Kamakashi Track Fasteners: 8.Simplex Casting Ltd. 9.Adinath Industries 10. Surya Coach Builders Pvt. Ltd. 11.R Rashmi Industries 10. Surya Coach Builders Pvt. Ltd. 11.R Rashmi Industries 12 LNVS Infra Pvt. Ltd. 13.Vedkiran steel Industries Pvt. Ltd. Firmshave proposed reduced toe load of all clips and

	to Letter no. C1/EF/Dev dated 08.05.2025					
Annexure-VI	Annexure-VI	Nil	No Change proposed			
IRST-31- 2021	IRST-31- 2021					
No Change	No Change					
Annexure-VII	Annexure-VII	Nil	No Change proposed			
IRST-31- 2021	IRST-31- 2021		and an angle of a part of			
No Change	No Change					
No change	No Change					
Annexure-VIII	Annexure-VIII	1.Bridge Track & tower pvt.	Firms' suggestions are			
IRST-31- 2021	IRST-31- 2021	Ltd.	not accepted.			
		2.M/s Vaishno Mata	Defective numbers in			
		Track,Faridabad.	sample size is			
		3.Adinath Industries INC	governed by IS:2500			
		4.Avdesh Track(P)Ltd	with AQL 2.5%			
		5.M/s Siddhartha Metal				
		Fabricators				
		6.M/s Fateh Chand Jain				
		7.Kamakashi Track Fasteners:				
		8.Simplex Casting Ltd.				
		9.Adinath Industries				
		10. Surya Coach Builders Pvt.				
		Ltd.				
		11.R Rashmi Industries				
		12 LNVS Infra Pvt. Ltd.				
		13.Vedkiran steel Industries				
		Pvt. Ltd.				
		Firm has proposed to change				
		the value of no. of defective to				
		5 instead of 2				
Annexure-IX	Annexure-IX	Nil	No Chango proposed			
		INII	No Change proposed			
IRST-31- 2021	IRST-31- 2021					
No Change	No Change					
 Annexure-X	Annexure-X	Nil	No Change proposed			
IRST-31- 2021	IRST-31- 2021					
No Change	No Change					
Annexure-XI	Annexure-XI	Nil	No Change proposed			
IRST-31- 2021	IRST-31- 2021					
No Change	No Change					

				to Letter no. CT/EF/Dev dated 08.05.2025				
	Annexure-XII		Annexure-XII	Nil	No Change proposed			
	IRST-31- 2021		IRST-31- 2021					
	No Change	No Change						
	Annexure-XIII		Annexure-XIII	Nil	No Change proposed			
	IRST-31- 2021		IRST-31- 2021					
	No Change	No Change						
	Annexure-XIV		Annexure-XIV	Nil	No Change proposed			
	IRST-31- 2021		IRST-31- 2021					
	No Change	No Change						
	Annexure-XV IRST-31-2021		Annexure-XV IRST-31-2021	1.Bridge Track & tower pvt.	Firms' suggestions are			
				Ltd.	not accepted.			
				2.M/s Vaishno Mata	Defective numbers in			
				Track,Faridabad.	sample size is			
				3.Adinath Industries INC	governed by IS:2500			
				4.Avdesh Track(P)Ltd	with AQL 2.5%			
				5.M/s Siddhartha Metal	With 71QL 2.570			
				Fabricators				
				6.M/s Fateh Chand Jain				
				7.Kamakashi Track Fasteners:				
				8.Simplex Casting Ltd.				
				9.Adinath Industries				
				10. Surya Coach Builders Pvt. Ltd.				
				11.R Rashmi Industries				
				12 LNVS Infra Pvt. Ltd.				
				13.Vedkiran steel Industries				
				Pvt. Ltd.				
				Firm has proposed to change				
				the value of no. of defective to				
ala.				9 instead of 5	_,			
*					The suggestions of the			
					firmsare not accepted.			
	Being ERC a bulk production, an open d	lie forging wi	ithout machining product	, RDSO needs to allow the				
	tolerances in the specification of ERC as under:				Dimension and			
					tolerances given in the			
	Dimensions: Inspection Gauges Tolerances:				product & toe load is			
	Dimensions, inspection Gauges Tolerances	3.			the part of the design.			
	To a Com Enough 21 2 + 0.9 4 - 20.9 + 0.4				This was fixed through			
	Toe Gap From: $21.2 \pm 0.8$ to $20.8 \pm 0.4$							

	various different	trials	and
P3 Pin to Pin Distance for Centre leg from: 21 to 21.4			
	considera	ition of	the
Flat toe: Major Axis (Min) in MM from 28 to 26		ameters.	
Minor Axis (Min) in MM from 9.5 to 8			
Flat Bearing Area should not be the part of testing during consignee end testing It should be maintained only at			
the initial sample development as usual.			
It should only be measured with the help of GO/No-go inspection gauges			
<b>Hardness:</b> 40-44 HRC ± 2 HRC			
Toe Load: ERC MK-V 1100 Kgf minimum and no upper sealing limit.			
Toe Load: ERC MK-III 750 Kgf minimum and no upper sealing limit.			
Weight: From 904gm to -10gm for ERC MK-III From 1068gm to -10gm for ERC MK-V			
From 1000gm to Togin for Live Wix-V			