



**GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)**

**COMPENDIUM
OF
CORRECTION SLIPS
TO CODES & MANUALS
PERTAINING TO ENGG. DEPTT.**

(Incorporating all advance correction slips issued between 1st Jan 2013 to 30th June 2013)



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FOREWORD

The correction Slips (CSs) to various Codes and Manuals pertaining to the Engineering Department are being issued by various nodal authorities, which have been nominated by the Railway Board. There had been reports that the same were not reaching the concerned officials down line.

It was, therefore, decided by the Railway Board (M.E) vide letter No. 2004/ CE-II/CS/1 dated 05-02-04 that in addition to the issue of CSs by nodal authorities as per extant practice, the same shall also be compiled and published in the form of a booklet twice a year, generally i.e. on 30th June and 31st December by IRICEN and re-circulated to the Railways, containing the CSs issued during the preceding six months. In order to provide continuity, an abstract of previous volumes of Compendium of Correction slips has been included giving the details of Correction Slips to each of Codes & Manuals, contained in the respective volumes

This is the Ninth volume, Issue no 1, containing CSs issued during the period between 1st Jan 2013 to 30th June 2013. The pages have been printed on one side only, so as to facilitate tearing/pasting/updating the codes and manuals by the concerned officials. The contents are also available on the IRICEN website www.ircen.indianrailways.gov.in in members area.

**Director
IRICEN**

Pune
June 2013

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3	MANUAL FOR GLUED INSULATED RAIL JOINTS - 1998	14-20

No Correction Slips received to the following Codes & Manuals between
1st Jan 2013 to 30st June 2013

1	INDIAN RAILWAYS BRIDGE MANUAL – 1998	
2	INDIAN RAILWAYS WORKS MANUAL – 2000	
3	MANUAL OF INSTRUCTION ON LONG WELDED RAILS 1996 (Second Reprint – 2005)	
4	MANUAL FOR FLASH BUTT WELDING OF RAILS (Reprint 2012)	
5	MANUAL FOR FUSION WELDING OF RAILS BY THE ALUMINO-THERMIC PROCESS – 1988 (New Manual Rev. 2012)	
6	MANUAL FOR ULTRASONIC TESTING OF RAIL AND WELDS – 2012 (New Manual Revised 2012)	
7	INDIAN RAILWAYS TRACK MACHINE MANUAL – 2000	
8	MANUAL OF INSPECTION SCHEDULE FOR OFFICIALS OF ENGINEERING DEPARTMENT - 2000	
9	RAILWAYS (OPENING FOR PUBLIC CARRIAGE OF PASSENGERS) RULES, 2000	
10	INDIAN RAILWAYS CODE FOR THE ENGINEERING DEPARTMENT (Third Reprint – 1999	
11	GUIDELINES FOR EARTHWORK IN RAILWAY PROJECTS - 2003	

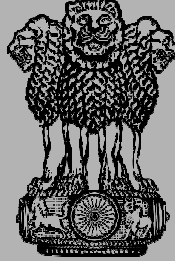
DISCLAIMER:- This compendium is compilation of different correction slips for reference purpose only. For any doubt or confirmation, original correction slips issued by RDSO /Railway Board may be referred.

**Abstract if previous and current volumes of Compendium of Correction Slips to
Codes & Manuals Pertaining to Engg. Deptt.**

SN	Code/Manual	Serial Number of Correction Slips/Addendum & Corrigendum / Errata											
		Last Correction Slips	Vol. 3 No. 1 Dec. 06	Vol. 3 No. 2 Dec 06	Vol. 4 No. 1 June 07	Vol. 4 No. 2 Dec. 07	Vol. 5 No. 1 June. 08	Vol 5 No. 2 Dec 08	Vol. 6 No. 1 June 09	Vol. 7 No. 1 June 10	Vol. 8 No. 1 June 12	Vol. 8 No. 2 Dec 12	Vol. 9 No. 1 June 13
1	INDIAN RAILWAYS PERMANENT WAY MANUAL (Second Reprint – 2004)	130 dt 16/11/2012	Nil	100	101 to 103	104 to 108	109 to 113	114 to 115	116 & 117	118 - 120	121- 129	130	131- 133
2	INDIAN RAILWAYS BRIDGE MANUAL – 1998	25 dt.17/12/2012	Nil	Nil	Nil	12	13 & 14	15 to 18	Nil	19 – 20	21-24	25	NIL
3	INDIAN RAILWAYS WORKS MANUAL – 2000	10 dt. 17/2/05	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	NIL	NIL	NIL
4	MANUAL OF INSTRUCTIONS ONLONG WELDED RAILS – 2006 (Second Reprint – 2005)	15 dt. 04/06/2012	9	10 & 11	Nil	Nil	Nil	Nil	12	13	14-15	NIL	NIL
5	MANUAL FOR FLASH BUTT WELDING OF RAILS (Reprint 2012)	New Manual Reprint 2012										1	NIL
6	MANUAL FOR FUSION WELDING OF RAILS BY THE ALUMINO-THERMIC PROCESS: IRS:T-12-2012 (Revised 2012)	Reissued in April 2013 incorporating CS-1											NIL
7	MANUAL FOR ULTRASONIC TESTING OF RAILS AND WELDS (Revised 2012 including C.S. from 1- 9)	New Manual Revised 2012										Nil	NIL

SN	Code/Manual	Serial Number of Correction Slips/Addendum & Corrigendum / Errata											
		Last Correct ion Slips	Vol. 3 No. 1 Dec. 06	Vol. 3 No. 2 Dec 06	Vol. 4 No. 1 June 07	Vol. 4 No. 2 Dec 07	Vol. 5 No. 1 June. 08	Vol 5 No. 2 Dec 08	Vol. 6 No. 1 June 09	Vol. 7 No. 1 June 10	Vol. 8 No. 1 June 12	Vol. 8 No. 2 Dec. 12	Vol. 9 No. 1 Dec. 13
8	MANUAL FOR GLUED INSULATED RAIL JOINTS – 1998	4 dt. 7/8/01	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	5
9	INDIAN RAILWAYS TRACK MACHINE MANUAL – 2000	13 dt. 25/09/2012	Nil	9 & 10	Nil	Nil	Nil	Nil	Nil	Nil	14-15	13*	NIL
10	MANUAL OF INSPECTIN SCHEDULES FOR OFFICIALS OF ENGINEERING DEPARTMENT – 2000	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	NIL
11	RAILWAYS (OPENING FOR PUBLIC CARRIAGE OF PASSENGERS) RULES, 2000	Corrigandum dt. 16/2/05	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	NIL
12	INDIAN RAILWAYS SCHEDULE OF DIMENSIONS 1676 mm GAUGE (BG) REVISED – 2004	11 dt 28/12/2012	1 & 2	Nil	Nil	3	Nil	Nil	5**	Nil	6-7	8-11	12
13	INDIAN RAILWAYS CODE FOR THE ENGINEERING DEPARTMENT (Fourth Reprint – 2012)	46 dt 04/10/2012	Fourth Reprint – 2012 incorporating CS up to 45 published in 2012									46	NIL
14	GUIDELINES FOR EARTHWORK IN RAILWAY PROJECTS - 2003	1 dt. 22/7/04	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	NIL

*11-12 NOT YET ISSUED
** 4 NOT YET ISSUED



सत्यमेव जयते

भारत सरकार
रेल मंत्रालय
(रेलवे बोर्ड)

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

भारतीय रेल
रेल पथ
नियमावली

INDIAN RAILWAYS
PERMANENT WAY
MANUAL

द्वितीय पुनर्मद्रण 2004

दिनांक 05-03-2005 के क्रमांक 93 तक के
समस्त अग्रिम शद्धि पत्र समाहित

Second Reprint 2004

Embodying all advance correction slips upto
Number 93 dated 05-03-2004

INDIAN RAILWAYS PERMANENT WAY MANUAL
ADVANCE CORRECTION SLIP NO. 131 dated 11.01.2013

The existing paras 277(a) (7), 429 and 502 of Indian Railways Permanent Way Manual shall be replaced with the following:-

Para 277 (a) (7) –Joggled fish plate with clamps or two far end bolts on good AT welds shall be provided on bridges having length of water way as 100m or more and on approaches upto 100m length .

Para 429 Maintenance of Thermit Welds on curve: Joggled fish plate with clamps or two Far end bolts on good AT welds shall be provided on curves of 3° or sharper.

Para 502 Alumino Thermic Welding of Rails:

(1) Alumino Thermic Welding of rails may be carried out in accordance with the detailed procedure laid down in the 'Manual for Fusion 'Welding of Rails by Alumino Thermic Process, September 1996". A thermit weld done in situ shall be joggle fish plated with four clamps and supported on wooden blocks till tested as good by USFD.

(2) Joggled fish plate with clamps or two far end bolts on good AT welds shall be provided on banks having height 5m or more.

(3) Joggled fish plates with far end tight bolt shall be provided on AT welds which have undertaken traffic equal to or more than 50% of stipulated fatigue life (GMT) of the rail.

(4)For bridges and curves, action as per para 277(a) (7) and para 429 shall be taken.

INDIAN RAILWAYS PERMANENT WAY MANUAL
ADVANCE CORRECTION SLIP No.132 dated 08.04.2013

1.0 The existing para 238(1) (b) (5) of Indian Railways Permanent Way Manual shall be replaced with the following:-

Para 238(1) (b) (5) - Deep screening of Track shall be done after 500 GMT or 10 years, whichever is earlier. However, deep screening shall also be carried out if the existing clean ballast cushion is less than 150 mm to ensure proper machine tamping.

2.0 The existing para 107 of Indian Railways Permanent Way Manual shall be replaced with the following:-

107 Inspection of Permanent Way - The important inspections to be carried out by the Assistant Engineer are summarized below:

(1) Trolley Inspection - The entire sub-division should be inspected by trolley once in two months on pro-rata basis systematically covering from one end to other end of his jurisdiction, as much inspection as possible being done by push trolley. Unimportant branch lines having less than 2 GMT traffic should be inspected once in 3 months. On sections having multiple lines running closely parallel, trolley inspection may be carried out on any of the lines. The inspection by trolley should be intensive, which should include checking of attendance of gang, gang work and equipment and examination of gang charts/diary books with reference to the prescribed schedule of track maintenance. During his inspection, he should check the work done by minimum one gang in each SSE/P. Way's jurisdiction every quarter and record the results of his inspection.

(2) Fast Train inspection - The entire subdivision should be covered either by Engine/Rear Window of a fast train or by TRC/OMS once in a month.

(3) Inspection of Level Crossings - He should inspect all the manned level crossings once in six months. He should examine the Gatemen's knowledge of rules, check the equipment, track, road approaches and all other safety aspects.

(4) Checking of curves - The Assistant Engineer shall check at least one curve in each SSE/P.Way's jurisdiction every quarter by verifying its versine and super-elevation. Priority shall be given for curves having persistent bad riding.

(5) Checking of Points and Crossings - He shall inspect once a year all points and crossings on passenger lines and 10 percent of the points and crossings on other lines.

(6) Monsoon Patrolling - When Monsoon Patrolling is introduced he should check the work of Patrolmen at night once in a month, either by Train or by Push Trolley or Motor Trolley.

(7) Track on Bridges - The track on Girder Bridges should be inspected as a part of the annual Bridge inspection, besides normal track inspections ..

(8) Review of Inspection by Sub-ordinates - He should scrutinize the records maintained by SSE/P.Way, such as records for Creep measurement, Inspection of Curve, Points and Crossing, SEJ and Buffer rail, Gap Survey and Section register during his regular trolley inspection, to see whether the schedules of inspection are being adhered to by the JE/SSE's and whether the necessary follow up action has been taken.

He should also test check the work of SSE/P.Way/USFD at least once in each round of testing in his jurisdiction.

(9) Inspections of LWR/CWR Track - The Assistant Engineer shall inspect the SEJs/Buffer rails provided in the LWR/CWR track once in every six months. He shall check the creep records of LWR/CWR regularly. The duties of the Assistant Engineer with reference to the maintenance of LWR/CWR are detailed in **Manual of instructions on Long Welded Rails**.

(10) Night foot plate inspection - He should carry out night inspection once in a month to check alertness of Gatemen/Station staff, patrolmen, stationary watchmen, observance of speed limits by drivers, visibility of signals/ engineering fixed signals/hectometer posts, riding quality etc. Inspection should preferably be done between 00:00 hrs to 04:00 hrs.

(11) Inspection of AT welding site - The Assistant Engineer shall inspect AT welding site as much as possible but at least once in a month.

3.0 Existing Para-108(2)(b) of IRPWM to be replaced by the following:

Para 108(2)(b) - Every sanctioned renewal work should be programmed in detail and labour organized in an efficient manner. Level and centre line pegs given by the JE/SSE should be test-checked by the Assistant Engineer. He should also inspect Track Renewal/Deep screening site in his section as much as possible but minimum once in a month.

4.0 New Para 108(2)(c) shall be added as following:

Para 108 (2)(c) - Inspection of ongoing works of construction and other organization e.g. RVNL, etc - He should inspect the works going on in his section as much as possible during Foot plate/Trolley inspection to check quality and safety of the running trains.

5.0 Existing Para - 123 shall be replaced by the following:

Para 123. Testing of Running Qualities of Track- (1) The SSE/P.Way shall devote sustained attention to Permanent way as regards safety, smooth running, economy and neatness.

(2) He should travel on the foot place of Engine/Rear brake-van/last Vehicle of fast trains at least once in a month, and take down notes of bad running kilometrages, and get them rectified.

(3) He should accompany each Track Recording/Oscillograph car runs over his section, take down kilometrages which are not running well and take action to rectify the defects.

(4) He should observe the behavior of track under passing trains to detect inadequate packing during routine inspections.

6.0 Existing Para- 124 shall be replaced by the following:

124. Routine inspection of Track-

(1) Inspection of Gangs/Trolley Inspection: (a) The Senior Section Engineer/P.Way (SSE/P.Way) should inspect the entire section by Push Trolley/Motor Trolley at least once in a month or more often as necessary in a systematic manner in which all gangs shall be inspected.

(b) In sections where no separate inspection is being carried out by sectional Junior Engineer (JE/P.Way), the inspection should be carried out by the SSE/P.Way In-charge every fortnight.

(c) During such inspections the SSE/P.Way should -

- (i) Check the quality of work done by gang earlier and ensure prompt action on items requiring attention;
- (ii) Arrange to give the programme of work to the gang;
- (iii) Record details of track maintenance work in gang chart and diaries;
- (iv) Check the attendance of gang;
- (v) Instruct men in methods of maintenance

(d) He should examine all the gang tools at least once in two months and arrange for repair and replacement as necessary.

(e) He should ensure that every man in the gang is aware of safety rules by examining them periodically at least once in two months.

(f) During his trolley inspection, he should also carry out the routine check and review of inspection done by his subordinates.

(2) Level Crossing Inspection- (a) He should ensure that all the level crossings are opened out as per schedule to examine the condition of rails, sleepers and fastenings and defects are rectified. (Refer Para 914).

(b) He shall ensure that all level crossings are inspected once in a month during push trolley inspection in a systematic manner by rotation with JE/P.Way. He shall see that the necessary stop boards, whistle boards, and other equipments are provided as laid down.

(c) He shall check the equipment with the Gateman during inspection.

(d) He shall examine their knowledge of safety rules during inspection.

(e) He shall arrange to take the census of all level crossings as per the schedules laid down.

(3) Points and Crossing Inspection- The SSE/P.Way in overall charge and his assistant should carry out the inspection of points and crossings in passenger and running lines once in three months by rotation and on other lines and yards lines once in six months by rotation. For Points and crossings laid on PSC sleepers, the detailed inspection as per Para 237/5 (Annexure2/6) should be done once in a year and all other in between inspections should be carried out as per proforma given in Annexure-2/6(A).

(4) Curve Inspection- The SSE/P.Way in overall charge and his Assistant should carry out checks of versines and super-elevations of each curve once in six months in systematic manner by rotation.

(5) Foot Inspection- SSE/P.Way shall carry out foot inspection as much as possible, on prorata basis so as to cover entire section at least once a year.

(6) Night foot plate inspection- He should carry out night foot plate inspection once in a month to check alertness of Gatemen/Station staff, patrolmen, stationary watchmen, observance of speed limits by drivers, visibility of signals/engineering fixed signals/hectometer posts, riding quality etc. Inspection should preferably be done between 00:00 hrs to 04:00 hrs.

(7) Inspection Records- The SSE/P. Way will maintain proper record of all the inspections carried out during the month as per the schedules on the proforma laid down and submit the same to the Divisional Engineer through Assistant Engineer every month bringing out the reasons for shortfall in adhering to schedules of inspections, if any.

7.0 Existing Para 124 (A) shall be deleted.

8.0 Existing para- 126 shall be replaced by the following:

Para 126. Check on Patrolling- He should arrange for patrolling of track as laid down, by deputing suitably selected men from gangs and arrange to supply them with Patrol books and equipments needed. The SSE/P.Way in overall charge will check the night patrolman once a fortnight by train and by trolley during the monsoon as per the schedules laid down by the administration

9.0 Existing Para -127 shall be replaced by the following :

Para 127. Execution of Works affecting Track - (1) Before commencing any work the SSE/P.Way in overall charge or his Assistant shall ensure that he is in possession of all necessary materials and tools. He shall ensure that Engineering Signals are exhibited at the specified distances according to rules and Flagmen are posted with necessary equipment.

(2) He should programme the works by organizing the labour in an efficient manner. He should maintain detailed accounts of materials received and issued to the work. He should exercise as much as possible checks but minimum once in a month on quality and quantum of work and submit progress reports on works periodically as may be prescribed.

(3) Quality of welding and avoidable fractures – The direct responsibility for quality of AT welding being done in the section shall rest on the SSE/ P. way in –charge of the section. He should carry out inspection of AT welding site as much as possible but at least once in a month. Responsibility for avoidable fractures taking place in the section shall also rest with the SSE/P.Way in-charge of the section, except in cases where the USFD testing was done and found good up to three months before the fractures.

(4) Inspection of ongoing work of construction and other organizations e.g. RVNL etc- He should inspect the works going on in his section as much as possible during Footplate/Trolley inspection to check quality and safety of the running trains.

10.0 The existing Para 129 shall be replaced by following:

Para 129. Inspection and Maintenance of LWR/CWR Track: The duties and responsibilities of the SSE/P.Way in overall charge is clearly laid down in Manual of Instructions on Long Welded Rails. All the LWRs should be inspected once in fortnight during two coldest and two hottest months, otherwise once in two months by rotation with JE/P.Way.

11.0 The word "Permanent Way Inspector" in Para No.118, 128, 130, 131, 132, 133, 134 and 135 shall be replaced by "SSE/P.Way".

12.0 Existing Para - 136 shall be replaced by the following:

Duties of JE/P.Way (not in overall charge)

Para 136. General responsibilities - The Junior Engineer (P.Way) is generally responsible for:

(a) Inspection and maintenance of track in his jurisdiction (sub-section) in a safe and satisfactory condition for traffic, including execution of all works incidental to track maintenance.

(b) Efficient execution of Special Works, such as Renewals, Directed Track Maintenance, Curve realignment and deep Screening, as per approved plans and specifications.

(c) He should work in the SSE/P.Way office and assist the SSE/P.Way in overall charge as required.

13.0 Existing Para-139 shall be replaced by the following-

Para 139. Routine Inspection of Track- (1) The Junior Engineer (P.Way) should inspect the entire section in his charge by push trolley at least once in a fortnight systematically. During Push Trolley inspection all gangs/MMUs, their work, equipments and knowledge about safety rules and other working instructions shall be checked. He shall spend as much time as possible with MMUs. Track patrolling by keymen shall be checked. He should carry out the inspection of gangs as detailed in Para 124(1) (b) & (c). He will spend as many days in the week as possible with the gangs. He should cover all the gangs within a fortnight. He should train the Permanent Way Supervisors, Mates, Key men, Gagmen and Gatemen in their duties. He should teach them the maintenance practices.

(2) He will carry out inspection of points and crossings on passenger and running lines once in three months by rotation and other lines and yard lines once in six months, by rotation with SSE/P.Way. For points and crossings laid on PSC sleepers, the detailed inspection as per Para 237/5 (Annexure 2/6) should be done once in a year and all other in between inspections should be carried *but* as per proforma given in Annexure-2/6(A) .

He will arrange for the rectification of defects noticed during the inspection.

(3) He, along with the SSE(P.Way) in overall charge, will arrange to check the versine and super-elevation of all the curves once in six months by rotation. He should take action to correct the curves based on the readings.

(4) He will arrange to inspect all the Level crossings in his jurisdiction once in a month, during Push Trolley inspection, in systematic manner, by rotation with SSE(P. Way). All level crossings will continue to be inspected once in a month alternatively between SSE(P.Way) and JE (P.Way) and equipment be checked. He will examine the Gatemen in rules periodically.

(5) JE/P. Way should inspect his entire section by loco/brake van/Rear window once in a month and take down notes of bad running kilometrages and get them rectified.

(6) Junior Engineer (P.Way) should inspect entire section on foot at least once in six months in a systematic manner (every month on pro rata basis so as to cover entire length of running track).

(7) JE/P.Way should accompany alternate run of TRC/OMS in his section.

(8) He should carry out night inspection once in a month to check alertness of Gatemen/Station staff, patrolmen, stationary watchmen, observance of speed limits by drivers, visibility of signals/ engineering fixed signals/hectometer posts, riding quality etc. Inspection should preferably be done between 00:00 hrs to 04:00 hrs.

(9) He should carry out at least two inspection of AT welding site in a month.

(10) He should inspect the ongoing work of construction and other organizations e.g. RVNL etc going on in his section as much as possible during Footplate/Trolley inspection, to check quality and safety of the running trains.

14.0 Existing Para 139 (A) shall be deleted.

15.0 Existing Para-144 shall be replaced by the following:

Para 144. Maintenance of LWR/CWR Track- Duties and the responsibilities of Junior Engineer (P.Way) in-charge of sub-section with reference to maintenance of L.W.R. are laid down in **Manual of Instructions on Long Welded Rails**. All the LWRs should be inspected once in fortnight during two coldest and two hottest months, otherwise once in two months by rotation with SSE/P.Way.

16.0 The word "Permanent Way Inspector" shall be replaced by "JE/P.Way" in Para No. 145.

17.0 Existing Para-223 shall be replaced by the following:

Para 223. Side drains, catch water drains and Water-ways: (a) The permanent way staff shall keep all side drains and catch water drain clear. They should ensure that the outfall of these drains and the water-ways of all Bridges and Culverts are kept free from obstruction. The spoils from cleaning drains or cuttings should not be deposited at a place from where it is likely to be washed back into the drains.

(b) The JE/P-way shall inspect all side drains, catch water drains, bridge waterways at least once in a year in the month of April prior to monsoon. The SSE/P.Way shall inspect all side drains, catch water drains, bridge waterways at least once in a year prior to monsoon.

(c) The Assistant Engineer shall ensure that all side drains, catch water drains, bridge waterways are properly inspected before onset of rains.

18.0 Existing Para-237(5)(a) shall be replaced by the following:

Para 237(5)(a) SSE/JE(P.Way)'s Inspection- The SSE/P.Way in overall charge and his Assistant should carry out the inspection of points and crossings in passenger and running lines once in three months by rotation and on other lines and yard lines once in six months by rotation. For Points and crossings on PSC sleepers, the detailed inspection as per Annexure 2/6 of IRPWM should be done once in a year and all other in between inspections should be carried out as per proforma given as Annexure-2/6 (A).

19.0 New annexure-2/6 (A) shall be added after annexure 2/6 of Para 237/5 (copy enclosed).

Annexure – 2/6(A)

For intermediate inspection of points and crossings on PSC sleepers.

Station: _____

Point _____ No.: _____

Location: _____

Type of Rail: _____

Date of Laying: _____

Date of laying reconditioned crossing: _____

1st

2nd

3rd

4th

Date of laying reconditioned switch:

LH 1st 2nd 3rd 4th

RH 1st 2nd 3rd 4th

Type of sleeper/assembly: _____

Angle of crossing: _____

Nominal gauge of turnout: _____

Left hand or right hand: _____

Laid on straight or on curve of radius: _____

Similar/contrary flexure: _____

Particulars	Details of inspection	Action with date and sign	Details of inspection	Action with date and sign
I. General				
1. Condition of ballast, packing and drainage.				
II. Switch assembly and lead portion:				
2. Condition of Tongue Rail:				
a) Whether chipped or cracked over 200 m length within 1000 mm from ATS LH RH				
b) Vertical wear Right hand:				
At point with 13 mm head width (as per Annexure 2/6/1)				
Left Hand				
At point with 13 mm head width (as per Annexure 2/6/1)				

<p>c) Lateral wear:</p> <p>To be measured at 13 mm to 15 mm below top of stock rail (as per Annexure 2/6/1)</p> <p>LH RH</p>				
<p>3. Condition of Stock Rail:</p> <p>a) Right hand:</p> <p>i) Vertical wear ii) Lateral wear iii) (To be measured at 13 mm to 15 mm below of stock rail (as per Annexure 2/6/1)</p>				
<p>b) Left hand:</p> <p>i) Vertical wear ii) Lateral wear</p> <p>(To be measured at 13 mm to 15 mm below of stock rail (as per Annexure 2/6/1)</p>				
<p>4. Gauge and cross level in switch portion:</p> <p>a) At ATS between the two stock rail: b) At 150 mm behind toe of switch (only gauge): i) For straight road ii) For turn out.</p>				
<p>III Crossing Assembly.</p> <p>5. Condition of crossing:</p> <p>a) Sign of propagation of crack (if any) in crossing assembly.</p>				
<p>6. Wear of CMS crossing: (Wear to be measured with straight edge)</p> <p>i) On left wing rail (opp. ANC).</p> <p>ii) On nose actual wear for 52 kg. section measured wear: 2.0 mm</p>				
<p>Actual wear per 60 kg. section measured wear: 2.5 mm</p> <p>3. On right wing rail (opp. ANC)</p>				
<p>7. Condition of check rail fitting bearing plate blocks, bolts and elastic fastings.</p>				
<p>8. Condition of welding of slide chairs and lugs.</p>				
<p>9. Condition of gapless joint in CMS Xing.</p>				
<p>10. Any other special feature/defects</p>				
<p>11. Signature of Inspecting official with date</p>				

INDIAN RAILWAYS PERMANENT WAY MANUAL
ADVANCE CORRECTION SLIP No.133 dated 04.06.2013

1.0 The existing para 202 (1) Group 'C' (vii) of Indian Railways Permanent Way Manual may be modified to read as under.-

Group 'C' (vii) - Chennai Beach-Thirumayilai-Tiruvanmiyur-Velachery.

2.0 A new sub-para (c) of para 1303(1) is added to Indian Railways Permanent Way Manual as under:-

Sub-para (c) - (i) Signalling and Interlocking works on Open Line undertaken by Railway Electrification Organisation shall be carried out as per instructions for Signalling works included in the Indian Railways Signal Engineering Manual (IRSEM). Applications to CRS for such signalling works shall be prepared, signed and submitted by an Officer not below the rank of Deputy Chief Signal & Telecom Engineer (RE). Dy.CSTE/RE shall also countersign the Safety Certificate.'

(ii) While such Signalling and Interlocking works are executed by Railway Electrification Organisation, Dy.CSTE/RE and Sr.DSTE Open Line of Division shall sign a joint certificate indicating that all Safety precautions and necessary checks as per extant instructions have been carried out for commissioning the Signalling and Telecom works.



सत्यमेव जयते

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS

**INDIAN RAILWAYS SCHEDULE OF
DIMENSIONS 1676 mm GAUGE (BG)
REVISED - 2004**

**RESEARCH DESIGNS AND STANDARDS ORGANISATION
LUCKNOW 226 001**

**Addendum & Corrigendum Slip to (ACS) No. 12
To
Indian Railways Schedule of Dimensions (B.G.) 2004**

**Amendment To Note (a) Below Para-2
Chapte-II: Station Yards at Page-10**

In Schedule-I of IRSOD, Revised 2004

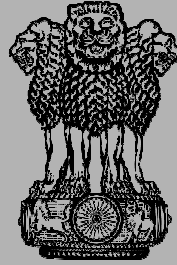
2. Maximum gradient in station yards unless special safety devices are adopted and/or special rules enforced to prevent accidents in accordance with approved special instructions:

- | | | |
|------|--------------------|--|
| (i) | For existing works | 1 in 400 |
| (ii) | For new works | 1 in 1200 (should be the desirable/
recommended gradient) |

Note: (a) No station yard shall be constructed nor shall any siding join a passenger line on a grade steeper than 1 in 260, except where it is unavoidable and then also only with the previous sanction of Railway Board, obtained through Commissioner of Railway Safety when a slip siding or other arrangement is made, sufficient to prevent accident.

The powers of condonation for gradient steeper than 1 in 1200 in case of new works' shall be as under:

- | | | |
|---|---|---|
| (I) Steeper Than 1 in 1200 and upto 1 in 400 | : | Personal approval of General Manager through COM of the Zonal Railway after making efforts for providing grade as flatter as possible |
| (i) Steeper than 1 in 400 and upto 1 in 260
Safety | : | Commissioner of Railway Safety |
| (iii) Steeper than 1 in 260 | : | Railway Board through chief commissioner of Railway safety. |



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**GOVERNMENT OF INDIA
(MINISTRY OF RAILWAYS)**

**MANUAL
FOR
GLUID INSULATED RAIL JOINTS
(1998)**

**RESEARCH DESIGNS AND STANDARDS ORGANISATION
LICKNOW – 226011**

Amendment & corrigendum Slip No. 5 of July 2012
To
Manual For Glued Insulated Rail Joints (1998)

1. Modified Annexure- A as attached
2. Following Annexure is deleted.
 - i) Annexure – D
3. Para-1.1 of manual be replaced with the following.

MATERIAL:

The requirement of material for fabrication of one glued joint is given in Annexure B. The input materials shall be procured from RDSO approved suppliers only. The list of approved suppliers of input materials is available in Master list of Approved Vendors issued by Quality Assurance (Civil) directorate of RDSO which is updated from time to time.

4. Para- 1.2 of manual be replaced with the following.

SPECIFICATIONS:

The material shall be as per specifications given in Annexure C.

5. Para- 2.1.4 of manual be replaced with the following.

Rails required for fabrication of glued joints shall be straight and USFD tested. These rails shall be issued by the consignee Zonal Railways to the manufacturer. Id/Service rails shall not be used for fabrication of glued joints. New rails need not to be USFD tested again by consignee Zonal Railways if they have received the same from rail manufacturing plant duly USFD tested.

6. Para 2.4.1 of manual be replaced with the following.

(A) Marking of Glued Joints (by manufacturer)- Every glued joint shall have distinctive mark indicating the glued joint number, month and year of manufacturing and the code of the manufacturer as shown below. This marking should be embossed on the gauge and non gauge face sides of the head of the rail of glued joint at 300 mm away from the one end of fish plate by punching without causing any damage to rail, in letters/digits of 6 mm height at a depth of 10mm from top of vertical face of rail, as indicated in figure 5.

XXXX MM YY AAA

The first four digits indicate the glued joint number starting from 0001 for first joint of every month, the next two digits month of manufacturing followed by last two digits of the year of manufacturing. The end letters shall be code of the manufacturer, assigned by the Quality Assurance (Civil) directorate of RDSO.

(B) Marking of Glued Joints (by inspecting authority)- Every glued joint shall have distinctive inspection mark of inspecting agency. This marking should be embossed on the gauge and non gauge face sides of the head of the rail of glued joint at 300 mm away from the another end of fish plate by punching without causing any damage to rail, in letters/digits of 6 mm height at a depth of 10mm from top of vertical face of rail, as indicated in figure 5.

7. Existing Para 4.3.2 of manual be replaced with the following-

MAINTENANCE

“Between two successive tamping of glued joints by track machine, proper maintenance attentions and inputs should be given to glued joints for their upkeep and proper function.”

8. Para C.1 (i) of Annexure 'C' of the manual be replaced with the following-

"Material and manufacturing process of fishplate shall conform to IRST-1 as amended from time to time."

9. New Para C.1 (iii) be added to Annexure 'C' of the manual as given below-

"Special fish plates to be used in fabrication of Glued Insulated Rail Joints shall be inspected by purchaser Railway or its nominated inspecting agency (M/s RITES) at the premises of fish plate manufacturer firm. Inspection shall be done as per Para 19 of IRST-1 as amended from time to time. After inspection every accepted fish plate shall be plainly stamped with the inspecting officers stamp at one end of each fish plate on its outer side in the presence of Inspecting officer. The inspection certificate of inspecting agency shall be sent by manufacturer of special fish plate along with the supply to glued joint manufacturer. The glued joint manufacturer will check the supply with respect to the details mentioned in Inspection Certificate of inspecting agency and then only put these in use."

10. Existing Para C.2 (i) & (ii) of manual be replaced with the following-

HTS bolts and nuts shall comply with the following specifications:-

- i) "HTS Bolts - Material and manufacturing process of Hex bolts shall be as per IS: 1363 confirming to property clause 10.9 of IS: 1367."
- ii) "HTS Nuts- Material and manufacturing process of Hex nuts shall be as per IS: 1363 confirming to property clause 12.0 of IS: 1367."

11. New Para C.2 (iii) be added to Annexure 'C' of the manual as given below-

"HTS HEX Bolts and Nuts to be used in fabrication of Glued Insulated Rail Joints shall be inspected by purchaser, Railway or its nominated inspecting agency (M/s RITES) at the premises of HTS HEX Bolts and Nuts manufacturer firm. The inspection certificate of inspecting agency shall be sent by manufacturer of HTS HEX Bolts and Nuts along with the supply to Glued Joint Manufacturer. The Glued Joint Manufacturer will check the supply with respect to the details mentioned in Inspection Certificate of inspecting agency and then only put these in use."

12. Para- C.5.1 (a),(b) & (c)of manual be replaced with the following.

GLASS- CLOTH CARRIER REINFORCEMENT

Glass- cloth carrier reinforcement shall conform to IS: 11273:1992 clause 4.5 type C for the properties not covered below:

- a) Nominal weight: 360 + 36 gm/sq.m
- b) Nominal thickness: 300 +30 microns
- c) Construction:
 - i) Ends per 100mm: 61 +2.5%
 - ii) Picks Weave per 100mm: 55.2 +2.5 % plain

13. Para C.5.1.2 of manual be replaced with the following.

GLUE: (for making insulating components)

Glue consists of resin and hardener. The nomenclature of resin & hardener manufactured by firms approved at present are as under:

Firm's name	Resin	Hardener
M/s ATUL Ltd	Epoxy resin lapox L-12	Epoxy hardener Lapox K-6
M/s HUNTSMAN Advanced Materials (INDIA) Pvt Ltd	ARALDITE LY-556	ARADURE HY-951 IN

Resin and hardener shall be mixed in the ratio of 10:1.

14. Para C.5.4.1 of manual be replaced with the following.

Quantity of raw material required for insulating components for 52kg G3(L) and 60kg G3(L) glued joint, with 10mm thick end-post drawing, shall be approximately as under:

S No	Insulating components	Qty. Reqd per joint	Fibre Glass cloth (gm)		LY-556 (gm)		HY-951 IN (gm)		L-12 (gm)		K-6 (gm)	
			52 kg	60 kg	52 kg	60 kg	52 kg	60 kg	52 kg	60 kg	52 kg	60 kg
1.	Insulating Liners	2	500	560	450	500	45	50	450	500	45	50
2.	End post	1	210	225	180	180	18	18	180	180	18	18
3.	Bushes/Sleeves	6	180	190	150	150	15	15	150	150	15	15

15. Para C.6 (i), (ii) and (iii) of manual be replaced with the following

C.6 SPECIFICATION AND QUALITY REQUIRED OF GLUE

The tangential shear strength of glue is claimed to be about 120 kg/sq.cm by the manufacturer.

- i) The Glue as developed by M/s Huntsman Advanced Materials (INDIA) Pvt Ltd for prefabricated type Glued Joints consists of ARALDITE XY 27 and hardener XY 28 IN to be mixed in proportion of 100:40. The approximate quantity of combined adhesive required for 52 Kg rail joint is 1.4Kg for G3 (L) and for 60Kg rail joint is 1.68Kg for G3 (L). The quantity may be estimated proportionately in case of G3 (S) type joints.
- ii) Similarly, the Glue as developed by M/S ATUL Ltd for Prefabricated type Glued Joints consists of Epoxy resin Lapox A-83 and Hardener Lapox K-83 to be mixed in proportion of 100:40. The approximate quantity of combined adhesive required for 52 Kg rail joint is 1.4 Kg for G3 (L) and for 60kg rail joint is 1.68 Kg for G3 (L). The quantity may be estimated proportionately in case of G3 (S) type joints.
- iii) Deleted.

16. New Para 4.5 to be added in Manual:

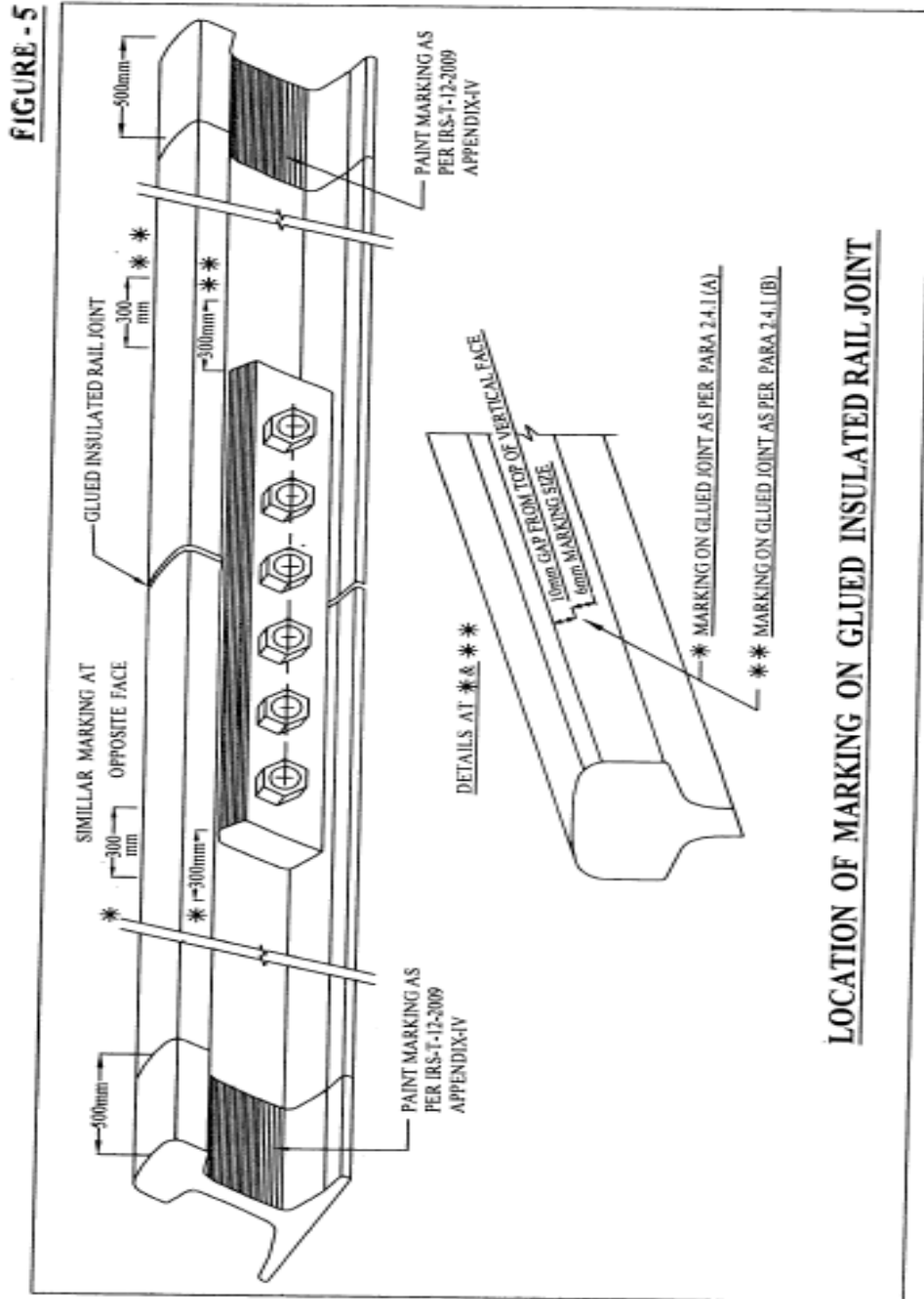
Life cycle of Glued Insulated Rail Joints is tentatively fixed at 200 Gross Million Tonnes of traffic.

17. New Para C.5.5 to be added in the Manual

Other components of input materials such as glue, glass cloth carrier reinforcement as mentioned at Para C.5.1, C.5.1.2, C.5.4.1 and C.6 of this manual to be used in fabrication of glued insulated rail joint shall be procured by the manufacturer of glued insulated rail joint from their approved sources mentioned in the current Master list of Approved Vendors issued by

Quality Assurance (Civil) Directorate of RDSO which is updated from time to time. While procuring these materials from their respective approved sources, glued joint manufacturer must obtain all the relevant inspection certificates/documents from their approved suppliers and preserve the same. Purchaser Railway/nominated inspecting agency (M/s RITES) while doing the inspection at the premises of glued joint manufacturer must ensure that these input materials used in fabrication of glued joints have been procured from their respective approved sources by verifying the related inspection certificate/documents and records maintained by glued joint manufacturer.

18. Figure- 5 of manual be replaced with as attached.



Guidelines regarding developmental inspection of firms by RDSO.

- A.1 Development inspection of glued joint will be under taken by RDSO after initial development of firm in normal course as per extant instruction or against developmental/educational order placed by Zonal Railway on any firm/or as per decision of competent authority. Separate approval shall be required for each drawing of the glued joints.
- A.1.1 The development of firm against developmental order by Zonal Railway shall be dealt as per extant instructions of Railway Board.
- A.2 After administrative clearance for development of firm, a technical capability assessment proforma will have to be downloaded by the firm/obtained from vendor registration system of RDSO. Firm shall be required to fill in the proforma in duplicate and submit the same to concerned directorate of RDSO for scrutiny alongwith the necessary charges.
- A.2.1 All the information in the proforma should be clear and to the point and no para should be left blank.
- A.3 The filled in proforma will be scrutinized in RDSO duly calling for any additional information if required.
- A.4 If the proforma details and clarifications given by the firm are acceptable, the works of the firm shall be inspected by RDSO officials for verification of the facilities. The date of inspection of firm's works shall be advised to the firm in advance.
- A.5 During the inspection, the inspecting officer shall have free access to all the sections of the firm's works. Firms shall be required to offer, to the inspecting officer, all necessary facilities to undertake the assessment inspection.
- A.6 After the assessment, if the firm's manufacturing capacity/facilities are found acceptable, the firm will be required to furnish two sets of templates/gauges (item 't' Annexure 'E') for approval by RDSO alongwith the templates/gauge approval charges.
- A.7 After approval of templates/gauges, the firm will undertake internal development and submit internal test report (ITR) for scrutiny to RDSO. For internal development, firm will procure rails from authorized source and preserve record for the same. In case, ITR submitted by the firm is found satisfactory, the firm shall be advised to deposit sample drawl & testing charges.
- A.8 After submission of charges, the firm will undertake manufacture of Glued joints in presence of RDSO representative and sample shall be drawn at random from the production undertaken and will be tested as per specified testing scheme given in chapter-3.

A.9 The firm shall bear the entire cost of preparation of samples and testing. The firm shall be required to pay the due charges in advance for development of their firm. The amount of charges shall be advised to the firm by RDSO.

A.10 After the samples are found satisfactory and other conditions fulfilled, the vendor shall be considered for approval. If the development is undertaken against developmental order, the firm will be given permission to undertake manufacture of ordered quantity. After satisfactory supply, it will be considered for approval.

A.11 General Instructions

A.11.1 The firm shall be required to procure all components of assembly of the joints from the firms approved by RDSO and should maintain the copies of test certificates wherever applicable.

A.11.2 Drawings and specification of the glued joints are priced documents and may be obtained either by downloading from RDSO website through RTGS/NEFT payment or from Director General (Track Design) RDSO, Lucknow on payment.

A.11.3 If the results of testing are not found satisfactory as per specifications, the firm will be required to improve upon the technique of production.

A.11.4 The firm is required to establish Quality Assurance Programme as per the proforma given in Annexure-F, and its satisfactory implementation in addition to manufacture of a minimum number of Glued joints as specified by RDSO.

A.11.5 After approval of test samples (after supply of ordered quantity in case of developmental order), the firm shall be brought as Part-II source in approved list of manufacture of Glued Joints for the particular rail section and all concerned shall be advised.

A.11.6 Based on the satisfactory and consistent quality of the firm's product, proven performance and successful implementation of QAP, the firm will be considered for up-gradation in Part-I in the approved list of manufacturer after fulfilling the criteria for up gradation as mentioned in General Guidelines for Vendor Development.

A.11.7 The approval shall be required to be renewed after a particular period as per the terms of the letter of approval and it shall be firm's responsibility to approach RDSO at least three months in advance for renewal of approval otherwise the approval is liable to lapse.