

**भारत सरकार GOVERNMENT OF INDIA**  
**रेल मंत्रालय MINISTRY OF RAILWAYS**  
**रेलवे बोर्ड RAILWAY BOARD**

**No.2022/M(N)/951/12 (E. 3408060)****Dated: 13.06.2024**

**The General Managers**  
**All Zonal Railways**

Sub: Revised Check Sheet for Joint Inspection of the Wagon Tiplers

Ref: (i) Railway Board's letter no. 98/M(N)/951/12 dated 27.11.2002 (Copy enclosed).  
(ii) RDSO's letter no MW/CS/TPL dated 30.05.2024 (Copy enclosed).

Vide letter under reference (i), detailed instructions for installation and maintenance of tiplers were communicated to Zonal Railways. Further several reports of damages to wagons by tiplers have been reported. RDSO was therefore requested to review the tipler inspection checklist. Accordingly, RDSO vide letter under reference (ii), has issued revised check sheet for joint inspections of the Wagon tiplers.

Zonal Railway are requested to inspect all tiplers, as per the revised checklist, and upload the details of inspection on IRFMM.

DA: as above

**Signed by**  
**Happy Walia**

**Date: 13-06-2024 13:27:35**

**(Happy Walia)**  
**EDME(Freight)**  
**Railway Board**

**Email: edmef@rb.railnet.gov.in**

**Copy to:**

1. **AM/Traffic, Railway Board** – For kind information please.
2. **PCMEs/All Zonal Railways** – For kind information and necessary action please.
3. **PCCMs/All Zonal Railways**- For kind information and necessary action please
4. **GM(FMMM)/CRIS**- To make provision in IRFMM as per revised checklist for tipler inspection.

**File No.RDSO-MW0CS(TPLR)/9/2020-O/o PED/SW/RDSO**



फैक्स/Fax : 91-0522-2452494  
टेलीफोन/Tele: 0522- 2465774  
[tippler.general.rdsi@gmail.com](mailto:tippler.general.rdsi@gmail.com)

No. MW/CS/TPL



भारत सरकार —रेल मंत्रालय  
अनुसंधान अभिकल्प और मानक संगठन  
लखनऊ — 226011

Government of India - Ministry of Railways  
Research Designs & Standards Organisation  
Lucknow – 226011

May 30<sup>th</sup>, 2024

**As per Circulation List**

**Sub: Revised Check Sheet for Joint inspection of the Wagon Tiplers.**

**Ref:** (i) Railway Board letter No. 2022/M(N)/951/12 (E:3408060) dated 02.05.2024.

(ii) RDSO letter No. MW/CS/TPL dated 03.05.2024.

(iii) NWR letter No. NWR/HQ/Mech./C&W/Frt./12 dated 24.05.2024

(iv) Railway Board letter No. 2024/Safety (Civil)/15/02/VC dated 15.02.2024

(v) This office letter No. MW/CS/TPL dated 16.02.2024.

1. Vide letter under reference (i) above, Railway Board has asked RDSO to review the wagon tippler inspection check sheet form the angle of practicability and issue the revised tippler inspection check sheet that can be followed in the field by Zonal Railways.
2. Accordingly, vide letter under reference (ii) above, Zonal Railways were requested for suggestions/comments on revision of exiting check sheet. Only North Western Railway has submitted their suggestions/comments on the revision of exiting check sheet.
3. Further, vide ref (iv) MoM of PCSOs conference held on 08.02.2024, para 1, It has been advised to define least acceptable value of angle of rotation for wagon tiplers.
4. Therefore, vide letter under reference (v) above, all OEMs of wagon tippler were asked for their comments on minimum tipping angle. OEMs have provided their comments based on design of tippler and commodity to be handled in the wagons.
5. Based on the response of NWR, and further analysis, existing check sheet has been revised. Also, OEMs of wagon tiplers have recommended for minimum angle of rotation between 140-155 degrees. Accordingly, it has been decided that minimum angle of rotation should not be less than 140 degrees. The actual value of minimum angle of rotation for different tippler designs, wagons and commodities can be decided by Zonal Railways based on trial to ensure complete unloading of material from the wagon. This has also been included in the revised check sheet.
6. The revised check sheet duly incorporating above points is enclosed herewith for uniform implementation by all Zonal Railways.

DA: As above

Digitally Signed by Arvind  
Kumar **(Arvind Kumar)**  
**Director/Wagon**  
Date: 30-05-2024 15:44:46  
**For Director General/Wagon**  
Reason: Approved

**Copy to:** For kind information please.

1. EDME/Freight, Railway Board, New Delhi.
2. ED Safety (Civil), Railway Board, New Delhi.

**File No.RDSO-MW0CS(TPLR)/9/2020-O/o PED/SW/RDSO**

**Circulation List:-**

**A. Principal Chief Mechanical Engineer:** For kind information and necessary action please.

- i. Central Railway, CST, Mumbai-400 001
- ii. Eastern Railway, Fairlie Place, Kolkata-700 001
- iii. East Central Railway, Hajipur, Bihar 844 101
- iv. East Coast Railway, Railway Complex, Bhubaneswar, Orissa-751 023
- v. Northern Railway, Baroda House, New Delhi-110 001
- vi. North Central Railway, Allahabad.-211 001
- vii. North Western Railway, Jaipur-302 006
- viii. North Eastern Railway, Gorakhpur-273 012
- ix. Southern Railway, Park Town, Chennai-600 003
- x. South Central Railway, Secunderabad-500 071
- xi. South Eastern Railway, Garden Reach, Kolkata-700 043
- xii. South East Central Railway, R.E. Complex, Bilaspur – 495 004
- xiii. South Western Railway, Hubli – 580 023
- xiv. Northeast Frontier Railway, Maligaon, Guwahati-781 011
- xv. Western Railway, Churchgate, Mumbai-400 020
- xvi. West Central Railway, Jabalpur-482 001

**B. Tipplers OEMs:** For information and necessary action please.

- i. M/s. Elecon Engineering Co. Ltd., Post Box No. 6, Anand Sojitra Road, Vallabh Vidya Nagar - 388120.
- ii. M/s. Metso Minerals (India) Pvt. Ltd., 1st Floor, DLF Building No. 10, Tower A, DLF Cybercity, Phase II, Gurgaon, Haryana, India.
- iii. M/s. TRF Ltd., 11, Station Road, Burmamines, Jamshedpur, 831007.
- iv. M/s. Larsen & Toubro Limited, Metallurgical & Material Handling, Godrej Water Side, Tower 2, 10th Floor, DP-5, Sector V, Salt Lake City, Kolkata-700091.
- v. M/s ThyssenKrupp Industries (India) Pvt. Ltd., Pimpri, Pune- 411018.
- vi. M/s Tenova India Pvt. Ltd., 94/3, TTK Road, Alwarpet, Chennai-603103, Tamilnadu.
- vii. M/s FLSmidth Pvt. Ltd., FLSmidth House, 34 Egatoor, Kelambakkam, (Rajiv Gandhi Salai-Chennai), Tamilnadu - 603103.
- viii. M/s Promac Engineering Industries Ltd., Kanakpura Road, Alahalli, Anjanapura Post, Bangalore-560108.
- ix. M/s McNally Bharat Engineering Company Limited, Ecospace, 11F/12 (Old Plot No. AA-II/BLK-3), New Town, Rajarhat, North 24 Parganas, Kolkata 700156, India.

**File No.RDSO-MW0CS(TPLR)/9/2020-O/o PED/SW/RDSO**

**Annexure-2 (Revised)**

**Check sheet for joint inspection of Wagon tippler**

Check sheet for joint inspections of the tippers (frequency of such joint inspection should not be more than six months) to conduct by Sr. DME (C&W)/DME (C&W) of the concerned division or AME (C&W) nominated by Sr.DME (C&W) and representative of the siding owner, as per Railway Board letter No.98/M (N)/951/12 dated 27.11.02 and Railway Board letter No.2022/M (N)/951/12 dated 02.05.2024 is as follows:

SN	Tippler Details	Observations
1	Railway and Division	
2	Name of the siding	
3	Make, Design, Model No. and Commissioning date of tippler	
4	RDSO Allotted No.	
5	Date of last Joint inspection	
6	Date of current joint inspection	

SN	Item		Check	Observations
1	End frame platform side beam	(i)	Steel work to be examined for damage or defects.	
		(ii)	Check & record the gap between the side beam and the wagon side stanchion, during tipping operation.	
		(iii)	Check the proper metal to metal contact between the side support beam and the side stanchions of the wagon.	
		(iv)	Check the hydraulic pressure of the side support hydraulic arrangement.	
		(v)	Check the condition of side support metal sheet.	
2	Drive gear	(i)	Check proper matching of rack and pinion tooth & tooth wear.	
		(ii)	Check whether coupling gives jerk during rotation. The tipping operation should be smooth & without any jerks.	
3	Top hydraulic clamp	(i)	Check the level of clamp pad. Whether sitting properly or not.	
		(ii)	Check the condition & thickness of clamp pad (thickness should not be less than 50 mm).	
		(iii)	Check the smoothness of clamp movement.	
		(iv)	Force exerted by top clamps should not exceed 1.5t per clamp pad. Check & record the equivalent pressure value generated by top clamps with the help of suitable device (OEMs need to provide the same).	
		(v)	Check for provision of a wagon bogie spring relief mechanism in the top clamp locks for permitting release of bogie springs.	
		(vii)	Unloading of material of the wagon should not be impeded due to top	

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SN	Item		Check	Observations
			clamping to any appreciable extent.	
4	Rail table of wagon tippler		Check the level and alignment of rail. The level of track on tippler table and that of approach rails should be the same so that the wagons do not experience any jerk during in-haul and out-haul.	
5	Devices for spotting and centring of wagon on tippler table		Check for proper function.	
6	Limit switches		Check for proper function.	
7	Devices to prevent any over run of the wagons in either direction		Check the proper function of:- <ul style="list-style-type: none"> <li>• Wheel gripper (to hold the wheel firmly and no damages to wheel from gripper bars).</li> <li>• Wheel choker.</li> </ul>	
8	Automatic devices to hold the tippler securely in any position in the event of failure of the drive unit		Check the proper function of fail-safe brake mechanism.	
9	In-haul & out-haul stop linkage	(i)	Check satisfactory working of stop movement.	
		(ii)	Check the gradient of out-haul and in-haul side. (Track conditions shall be maintained as per latest RDSO spec)	
		(iii)	Check the working of in-haul and out-haul wheel gripper/Retractable wheel chocks	
10	Side arm charger* Or Suitable Wagon placement & indexing system	(i)	Check damage/defects of steel work.	
		(ii)	Check proper matching of drive pinion & rack & tooth wear.	
		(iii)	Check the smooth movement and final position of arm hoist.	
		(iv)	Check the proper tightening of fastener & condition of track.	
		(v)	Check for proper functioning of limit switches & proximity switches.	
		(vi)	Check the smooth working of Drive unit. Any sudden jerks/slippages should not be generated during operation	
11	Damages to wagons		Damages during tipping & post tipping: <ul style="list-style-type: none"> <li>• Dents/nick on the side stanchions, top copings, wagon body, etc.</li> <li>• Displacement of bogie pivot or suspension springs.</li> <li>• Damages to air brake pipes.</li> <li>• Axle box adopter/EM pad shifting.</li> <li>• Failing of knuckle/knuckle pin/</li> </ul>	

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SN	Item		Check	Observations
			Coupler damages. • Any other damage.	
12	Wagon width tracker		Check for proper function.	
13	Emergency stopper		Check for proper function. (All emergency push button should be active and working in case of emergency).	
14	No tippler/handling equipment component should protrude more than 100mm from the rail level within the rails		Check & record actual condition.	
15	Minimum angle of rotation for unloading of commodities. #	(i)	The Minimum angle of rotation should be 140 degree. Record minimum prescribed angle of rotation and observe that with the prescribed minimum angle of rotation, material from wagon is completely unloaded.	
	Max. angle of rotation	(ii)	Check & record (Max. Angle of rotation should not exceed 160 degree for side discharge tippler).	
16	Event of failure of the drive unit		Check the working of fail-safe brake to hold the tippers securely in any position.	
17	Dust collection system		Check for proper function.	
18	IP based CCTV system		Should be in working condition.	
19	Tippling capacity		Tippling capacity should be minimum 25 tips per hour.	

Note: \*There should not be any loose shunting of the wagons. In-haul and out-haul arrangements consisting of side arm charger should be used for placement and removal of wagon on tippler table. The practice of shunting empty wagon after tippling by rake of loaded wagons is not acceptable as it results into large scale damages to CBC and bogies.

# Minimum angle of rotation should not be less than 140 degrees. The actual value of minimum angle of rotation for different tippler designs, wagons and commodities can be decided by Zonal Railways based on trial to ensure complete unloading of material from the wagon.

**Representative of the  
Siding owner**

**Sr. DME (C&W)/DME(C&W)/AME(C&W)**



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भारत सरकार GOVERNMENT OF INDIA  
रेल मंत्रालय MINISTRY OF RAILWAYS  
(रेलवे बोर्ड RAILWAY BOARD)

रेल भवन, नई दिल्ली-110001, दिनांक  
Rail Bhavan, New Delhi-110 001, dated

No.98/M(N)/951/12

New Delhi : 27.11.2002

The General Managers(Open Line)  
All Indian Railways

Sub. : Operation of private sidings - Installation and maintenance of tipplers.  
Ref. : Board's letter No. 87/M(N)/951/9 of dated 28.7.1988.

1. The issues of wagon damages caused during tipping, fly shunting without retarder and difficulty in assessing/ recovery of cost of damages from sidings has been engaging the attention of the Audit and the Board for quite some time. In the above context, please refer to above mentioned Board's letter wherein zonal railways were directed to ensure that no private siding using bulk handling system (tipplers) may be put in operation until a joint certificate is executed by the siding owner and Research Designs & Standards Organisation (RDSO) that the bulk handling system installed is as per RDSO approved design and commissioned to their satisfaction. However, it is observed that in spite of these instructions necessary paras/clauses have still not been included in the commercial agreement being executed between many zonal railways and the siding owners.

2. Further, it is observed that there is no system for periodic joint certification of the tippler fitness over many zonal railways. This may also result in damages to freight stock during tipping operation in case the tippler is not maintained properly.

3. It is also pointed out that now most of the freight stock is provided with CBC (Centre Buffer Coupler) and wagons with screw coupling have been phased out. A recent survey conducted by NCO reveals that many of the sidings having tipplers do not have the provision of retarders. Consequently, wagons get damaged during fly shunting in these sidings.

4. In view of above, zonal railways shall ensure inclusion of the following paras/clauses in the commercial agreement with siding owners :

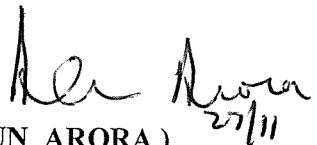
- ❖ In case any siding owner desires to install a wagon tippler or any other bulk handling system, the siding owner shall have to procure the same as well as the retarders as per RDSO specifications and from RDSO approved vendors only. It would be mandatory on part of the siding owner to make provision for retarders to ensure safety of wagons during loose shunting (for coupling) after tipping operations.
- ❖ The siding shall not be commissioned or put into operation until a joint certificate is issued by the Siding Owner and RDSO that the freight stock unloading system (tippler & retarders) installed are as per RDSO specification and commissioned to RDSO's satisfaction.

/Correspo-2002/

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- ❖ RDSO's approval shall have to be obtained for every individual installation. Approval once obtained for a particular installation shall not apply to any subsequent installation even if the supplier of the equipment and its design are the same.
  - ❖ Siding Owner shall always keep tippers and retarders in good fettle to avoid any damage to wagons due to defect in tippler / retarder. For periodic monitoring of the condition of tippler & retarder, a joint inspection shall be carried once in six months by DME/Sr.DME(C&W) of the concerned Division and representative of the Siding Owner and a joint fitness certificate shall be issued which shall remain valid for six months. In case the condition of tippler/retarder is found to be defective, tipping operation can remain suspended till such time it is repaired.
  - ❖ Siding Owner shall be liable to pay repair charges (labour & material costs) for the wagons damaged due to defect in tippler/retarder. The average repair expenses per wagon shall be assessed by joint inspection of tipped wagons by DME/Sr.DME(C&W) and the Siding Owner's representative. This joint inspection shall be carried out for three days once in six months and the average repair charges per wagon (VU) to be realized from Siding owners so arrived shall be valid for next six months."
  - ❖ Sidings provided with tippers, where there is no provision of retarders at present, shall make the same available within a year's time.
5. It is requested that necessary instructions may please be issued for incorporating above-mentioned paras/clauses in the commercial agreement being executed over your system to avoid damages to IR freight stock and to facilitate recovery of damage/deficiency charges from the siding owners.
6. Please acknowledge and confirm compliance

  
( ARUN ARORA )  
Director, Mech.Engg. (Frt)

**Copy to :**

- ✓ CCMs & CMEs(OL), All Indian Railways for information and necessary action please.
- ✓ Sr.EDS (Wagon)/RDSO for information and necessary action please.

/Correspo-2002/