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INTERIM SPEED CERTIFICATE FOR OPERATION

No.	TM/HM/S082/DUOMATIC/DFCCIL	Date	As Signed

प्रबन्ध निदेशक,
डेडीकेटेड फ्रेट कोरीडोर कॉर्पोरेशन ऑफ इण्डिया लि0
पाँचवा तल, प्रगति मैदान मेट्रो स्टेशन बिल्डिंग कॉम्पलेक्स
नई दिल्ली–110001

Sub:	Interim Speed Certificate of Duo-matic Two Sleepers Tamping Machine Model "09-32CSM" **(Transportation code- CSM Duo D)** supplied by M/s Plasser, India **with validity of two years** for operation upto maximum speed of 75kmph when running on its own power and 70kmph when running in train formation for operation over routes of Eastern & Western dedicated freight corridors of DFCCIL.
Ref:	DFCCIL Contract agreement no. (HQ/EN/PWC/PHASE I/PKG-PE-P6/D&B/11/Mitsui) dated 16.11.2020.

1.0 IMPORTANT PARAMETERS RELATED TO ROLLING STOCK

Type	**Final/ Provisional/ Oscillation Trial/ COCR Movement**	Interim	**Validity/ Period or Permanent**	**IR/ Sectional/ DFCCIL**	Two years / Routes of Eastern & Western DFCCIL.

Stock Name	Duo-matic Two Sleepers Tamping Machine Model 09-32 CSM	**Max. Axle Load (Empty)**	15t	**Max. Axle Load (Loaded)**	15t

Transportation Code	**CSM Duo D**	**GA Drg. No.**	M/s Plasser, India GA Drg. No. UD00.762-IN Ver.03

Bogie Arrgt. Drg. No.	M/s Plasser, India Drg. No. UD61.22000-SP1668/1676 Ver.01 for Drive Bogie and Drg. No. UD61.22100-SP1668/1676 Ver.01 for Running Bogie	**Suspension Arrgt. Drg. No.**	M/s Plasser, India Drg. No. UD62.3750-IND Ver.2

Commodity	Coal / Ore / Steel /Bagged / Oil /etc.	NA	**Gauge**	BG	

Type of Bogie	BOBO	**Type of Coupler**	Transition Coupler	**Wheel Dia. (mm)**	**New** 730 / **Worn** 710

Max. Permissible Speed for routes of Eastern & Western DFCCIL	**Own Power**	75kmph	**Train Formation**	70kmph

2.0 INTRODUCTION

2.1	Duo-matic Two Sleepers Tamping Machine Model "09-32CSM" as per their M/s Plasser, India GA Drg. No. UD00.762-IN Ver.03 is a self-propelled vehicle which is used for lifting, leveling, lining and tamping of plain track. The machine was permitted to run provisionally upto maximum speed of 60kmph when running on its own power as well as when running in train formation as a dead vehicle and as a last vehicle as per provisional speed certificate

	no. TM/HM/S082/DUOMATIC/DFCCIL dated 07.06.2023 and Amendment No. 1 dated 05.12.2023 against design speed of 80kmph when running on its own power and 100kmph when running in train formation. Subsequently the detailed oscillation trial was conducted and the machine has shown satisfactory running behaviour upto 85kmph on its own power and 80kmph when running in train formation and average emergency braking distance is **349.29 meters** & average stopping time is **31.5s** in EBD test at speed of 75kmph in self-propelled condition as per results contained in Oscillation trial report No. RDSO/2024/TG/MT-2143/F Rev.-0/Amendment–Nil Dated 03.07.2024.
2.2	The maximum axle load and wheel diameter of Duo-matic Two Sleepers Tamping Machine Model 09-32CSM are 15t and 730mm respectively. The design speed of Duo-matic Two Sleepers Tamping Machine is 80kmph when running on its own power and 100kmph when running in train formation.

3.0	Based on design features given in Annexure-A of the machine supplied by M/s Plasser, India and satisfactory test results as indicated in Report No. RDSO/2024/TG/MT-2143/F Rev.-0/Amendment–Nil Dated 03.07.2024, it is certified that the Duo-matic Two Sleepers Tamping Machine Model "09-32CSM" supplied by M/s Plasser, India GA Drg. No. UD00.762-IN Ver.03 **(Transportation Code- CSM Duo D)** may be permitted to run upto a maximum permissible speed of 75kmph when running on its own power and 70kmph when running in train formation as a dead vehicle and as a last vehicle for operation over routes of Eastern & Western dedicated freight corridors of DFCCIL, subject to the following conditions:-

3.1	**TRACK**				
3.1.1	**EASTERN & WESTERN DEDICATED FREIGHT CORRIDORS OF DFCCIL**				
3.1.1.1	**The track structure shall be of minimum standard-**				
	Rail Section	**Sleeper Density**	**Ballast Cushion**	**Max. Speed (Own Power)**	**Max. Speed (Train Formation)**
	60 kg (90 UTS)	1660 Nos./km PSC sleeper	300mm (200mm clean & rest in caked up condition on compacted and stable formation)	75kmph	70kmph
3.1.1.2	The minimum standard of track geometry maintenance shall be as per provisions of Indian Railways Permanent Way Manual, June-2020, containing track geometry standards under Para 522.				
3.1.1.3	For track maintained to lower standard than that mentioned above, the Chief Engineer/GGM (Engg.) concerned shall decide the lower maximum permissible speed on the basis of maintenance condition. In this connection, instructions issued by Railway Board's letter no. 65/WDO/SR/26 dated 19/20.10.1966 may be seen. When the Chief Engineer/GGM (Engg.) considers that the road bed is not compacted or there is improper drainage, he shall suitably restrict the maximum permissible speed depending upon the local conditions.				
3.1.1.4	The maximum permissible speed on curves shall be decided on the basis of the existing provisions of the Indian Railways Permanent Way Manual, June-2020. Maximum cant deficiency permitted would be 75mm.				
3.1.1.5	The welds shall be protected by joggled fish plates as per provisions of USFD Manual and Indian Railways Permanent Way Manual, June-2020 and other policy instructions of Railway Board. The maintenance of Rails and Rail joints shall be ensured as per provisions of Indian Railways Permanent Way Manual, June-2020. In addition, wherever condition warrants on account of corrosion on rail/weld collar, wear on rail, cupping of welds etc., necessary precautions shall be taken for fish plating/joggled fish plating.				
3.1.1.6	DFCCIL shall ensure further detailed examination of track as deemed fit based on age cum condition basis, overdue renewal and condition of formation etc. as per the provisions of Indian Railways Permanent Way Manual, June-2020 regarding permanent way renewals and may suitably restrict maximum speed of operation based on such examination.				

3.2	**BRIDGE STIPULATIONS**
3.2.1	**EASTERN & WESTERN DEDICATED FREIGHT CORRIDORS OF DFCCIL**
3.2.1.1	The clearance refers to "Standard RDSO Spans" bridges with standard design of girders, slabs, pipe culverts, piers and abutments etc. issued by RDSO for "DFC loading (32.5t axle

	load)".
3.2.1.2	Superstructures & Bearings of "Special Spans" (designed and constructed by DFCCIL based on site requirements), Arches and sub-structures (including foundation) of all bridges (Standard RDSO spans & Special Spans) are to be examined by DFCCIL and certified safe with respect to current Indian Railway Standard Codes with up to-date correction slips.
3.2.1.3	The clearance is subject to the following parameters of Duo-matic Two Sleepers Tamping Machine Model "09-32CSM" as per their M/s Plasser, India:-

Rolling Stock	**Maximum axle load (t)**	**Maximum tractive effort per axle (t)**	**Maximum braking force at rail level per axle(t)**	**Maximum CG height from rail level (mm)**
Duo-matic Two Sleepers Tamping Machine	15	2.2	3.0	1142

3.2.1.4	All Standard RDSO spans of DFC loading are fit for proposed speed of 75kmph when running on its own power and 70kmph when running in train formation as a dead vehicle for operation over routes of Eastern & Western dedicated freight corridors of DFCCIL.
3.2.1.5	During operation of Duo-matic Two Sleepers Tamping Machine Model "09-32CSM" with single/multiple locomotives and other rolling stocks the speed certificate issued by RDSO of the single/multiple locomotives/rolling stocks in empty/loaded condition shall be strictly complied with. Therefore, speed certificate of each single/multiple locomotive and rolling stocks in train formation should be examined carefully & speed restriction/strengthening/prohibition/ any other restriction should be imposed according to most restrictive rolling stock/locomotive/multiple locomotives in train formation.
3.2.1.6	Location of bridges on which speed restrictions are imposed should be notified by DFCCIL and incorporated in the working timetable.
3.2.1.7	The final speed on bridges shall also be governed by the track structure on the bridges. Therefore, the lower of the two speeds i.e. speed on particular bridges and speed for track structure over those particular bridges shall prevail as the running speed.
3.2.1.8	The above para have been arrived at considering bridges are in physically sound condition. In case the bridges are not in satisfactory physical condition, necessary speed restriction to be imposed by DFCCIL on condition basis.

3.3	**SIGNALLING STIPULATIONS**
3.3.1	Provisions of GR, SR, IRSOD, DFC-SSOD, SEM & all extant instructions issued from time to time as applicable shall be complied with.
3.3.2	In case of locomotive/rolling stocks /train (having this machine in its composition) having EBD of more than 1 km and non-provision of second distant signal/4 Aspect Automatic signalling in the section, action as per para 7.8.9 of IRSEM (issue July 2021) shall be taken.
3.3.3	While running through a station yard, speed of the Rolling stock shall be restricted to the maximum permissible speed as per standard of interlocking provided at the station or any other speed restriction whichever is severe.

3.4	**ROLLING STOCK STIPULATIONS**
3.4.1	Before initiating the operation of the Duo-matic Two Sleepers Tamping Machine Model "09-32CSM" **(Transportation code- CSM Duo D)** supplied by M/s Plasser, India the Chief Engineer/Track Machine of the concerned Railway/CGM (Civil Engg.) of the DFCCIL shall ensure the safety of the rolling stock and certify the track worthiness. He shall ensure the proper maintenance of the rolling stock.
3.4.2	Brake of the Duo-matic Two Sleepers Tamping Machine Model "09-32CSM" as per their M/s Plasser, India shall be in perfect working condition during the operation.

3.5	**TRACTION INSTALLATION**
3.5.1	**EASTERN & WESTERN DEDICATED FREIGHT CORRIDORS OF DFCCIL**
3.5.1.1	In 25 KV AC traction area, the GGM (Electrical) of the DFCCIL shall have to ensure that the minimum height of contact wire and electrical clearances as stipulated in provisions of Chapter VII of Eastern Corridor & Chapter XIV of Western Corridor, Electric Traction 'Standard Schedule of Dimensions' for dedicated freight corridors with latest Addendum & Corrigendum Slips is not violated and strictly followed to ensure its safe running.

3.5.1.2	In addition to above, the GGM (Electrical) of DFCCIL may impose any temporary speed restriction on the basis of personal knowledge, experience of the sectional OHE and the field conditions prevailing on the particular section.
3.5.1.3	When the Duo-matic Two Sleepers Tamping Machine Model "09-32CSM" is being moved, it shall be ensured that all the protruding parts are withdrawn and suitably locked, so that during the run there is no possibility of any infringement occurring to the standard moving dimensions.

3.6	**GENERAL STIPULATIONS**
3.6.1	The working of Maintenance Machine shall be as per provision of Indian Railways Permanent Way Manual, June-2020.
3.6.2	The profile of Duo-matic Two Sleepers Tamping Machine Model "09-32CSM" as per their M/s Plasser, India does not infringe with the Clauses of Chapter IV(D) of Indian Railway Schedule of Dimensions B.G. Revised 2022 and infringes clauses 4.1.2(ii) & 4.1.2(iii) of Chapter-IV for Eastern Dedicated Freight Corridor and clauses 11.1.2(ii) & 11.1.2(iii) of Chapter-XI for Western Dedicated Freight Corridor of "Standard Schedule of Dimensions of January" 2013. Railway Board has condoned these infringements vide their letter No.2023/CEDO/SD/RS/01/09 32CSMDFCCIL dated 15.03.2023.
3.6.3	All the permanent and temporary speed restrictions in force and those that shall be imposed from time to time due to track, bridges, curves, signalling and interlocking etc. shall also be observed. In this connection, the speed on curve shall be in accordance with para 3.1.1.4 for DFCCIL track of this speed certificate.
3.6.4	The machine when running in train formation as well as when running on its own power, a speed restriction of 15kmph shall be imposed on Diamond crossings. No speed restriction on main line route at points and crossing is required. Speed restriction on turnout side of points and crossing shall be applicable as per provision in Indian Railways Permanent Way Manual, June 2020.
3.6.5	Competent track machine staff who can apply the machine brakes in case of train parting shall escort the machine while running in train formation as a dead vehicle.
3.6.6	For the movement of the machine, in case of failure of the machine in block sections, the instructions of the para 708(4) of Indian Railways Track Machine Manual, September -2019 shall be followed.
3.6.7	This Interim Speed Certificate is valid for a period of two years for Duo-matic Two Sleepers Tamping Machine Model "09-32CSM" supplied by M/s Plasser, India coming under DFCCIL Contract agreement no. (HQ/EN/PWC/PHASE I/PKG-PE-P6/D&B/11/Mitsui) dated 16.11.2020.

ENCLOSURES:/ संलग्नक:

i)	Annexure-A
ii)	M/s. Plasser, India GA Drg. No. UD00.762-IN Ver.03.
iii)	Bogie arrangement: M/s Plasser, India Drg. No. UD61.22000-SP1668/1676 Ver.01 for Drive Bogie and Drg. No. UD61.22100-SP1668/1676 Ver.01 for Running Bogie.
iv)	Suspension arrangement: M/s. Plasser, India Drg. No. UD62.3750-IND Ver.2.
v)	DFCCIL letter No. HQ/ENWC/PWC(PnE)/1/2020(6106) dated 26.09.2022.
vi)	Railway Board"s letter No. 2023/CEDO/SD/RS/01/09-32CSM-DFCCIL dated 15.03.2023.
vii)	Railway Board's letter No. 65/WDO/SR/26 dated 19/20.10.1966.
viii)	Para 708(4) of Indian Railways Track Machine Manual, September -2019.
ix)	Para 704 of Indian Railways Track Machine Manual, September -2019.

Digitally Signed by Nitin Mehrotra
Date: 30-10-2024 11:45:53
Reason: Approved

(नितिन मेहरोत्रा)
कार्यकारी निदेशक मानक/चालन शक्ति

<u>प्रतिलिपि:</u>

1. सचिव, {यांत्रिक/विद्युत/इंजीनियरिंग(जी)}, रेलवे बोर्ड, रेल भवन, नई दिल्ली– 110001
2. मुख्य रेल संरक्षा आयुक्त, अशोक मार्ग, लखनऊ–226001
3. जी.जी.एम (मेकैनिकल/इंजी/यातायात/संकेत एवं दूर संचार) डेडीकेटेड फ्रेट कोरीडोर कॉर्पोरेशन ऑफ इण्डिया लि0 नई दिल्ली–110001.

ENCLOSURES:/ संलग्नक:

i)	Annexure-A
ii)	M/s. Plasser, India GA Drg. No. UD00.762-IN Ver.03.
iii)	Bogie arrangement: M/s Plasser, India Drg. No. UD61.22000-SP1668/1676 Ver.01 for Drive Bogie and Drg. No. UD61.22100-SP1668/1676 Ver.01 for Running Bogie.
iv)	Suspension arrangement: M/s. Plasser, India Drg. No. UD62.3750-IND Ver.2.
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vi)	Railway Board"s letter No. 2023/CEDO/SD/RS/01/09-32CSM-DFCCIL dated 15.03.2023.
vii)	Railway Board's letter No. 65/WDO/SR/26 dated 19/20.10.1966
viii)	Para 708(4) of Indian Railways Track Machine Manual, September -2019
ix)	Para 704 of Indian Railways Track Machine Manual, September -2019

(Signed)
(नितिन मेहरोत्रा)
कार्यकारी निदेशक मानक/चालन शक्ति

Annexure-A

Salient features of Duo-matic Two Sleepers Tamping Machine Model 09-32 CSM supplied by M/s Plasser, India.

SN	Description	Details
1.	Principal dimensions of rolling stock	M/s. Plasser, India GA Drg. No. UD00.762-IN Ver.03 a) Overall length : 20670mm b) Bogie centre distance : 13700mm c) Wheel base : 1830mm d) Max. axle load : 15t e) Max. design speed i) Own power : 80kmph ii) Train formation : 100kmph f) Weight of Machine : 67.5t
2.	Bogie details and wheel	M/s Plasser, India Drg. No. UD61.22000-SP1668/1676 Ver.01 for Drive Bogie and Drg. No. UD61.22100-SP1668/1676 Ver.01 for Running Bogie Wheel dia. New : 730 mm Worn : 710mm
3.	Suspension arrangement	M/s. Plasser, India Drg. No. UD62.3750-IND Ver.2
4.	Brake system details	Air Brake System as per M/s Plasser, India Drg. Nos. 56996-PS-E01 Ver.2
5.	Details of coupler and buffer	Coupler : RDSO's Drg.No.2000/8A/M Buffer : RDSO SKETCH- 98145
6.	Transmission	Engine Make: DEUTZ Model:BF8M-1015C Power:1470/COMII/EMR2/370KW
7.	Safety Items	As per Para 704 of Indian Railways Track Machine Manual, September -2019