

22-8

**NORTH CENTRAL RAILWAY  
JOINT SAFETY CERTIFICATE  
(No. 50/BOXNHAM (CC+8+2T)/NCR/2011)**

Based on RDSO's final speed certificate No. MW/SPD/BOXNHAM/22.82t, dated 11/21.02.2011, certified that following B.G. sections of North Central Railway are safe for regular operation of "Broad Gauge Bogie Open Wagon Type BOXNHAM" having maximum axle load of 22.82t to RDSO DRG. No. WD-10079-S-01 at a maximum permissible speed as indicated against each section tabulated below, subject to observance of all permanent and temporary speed restrictions in force and those will be imposed from time to time due to track, bridges, overhead equipment, signaling & interlocking, etc.

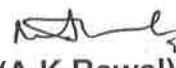
SN	Section		Line UP/DN/SL	Kilometer		Maximum Proposed Speed in loaded/empty	Maximum sectional speed existing in the section
	From	To		From	To		
1	MGS	GZB	UP & DN	677.28	1428.50	75/100	130
2	BINA	LAR	UP & DN	977.00	1037.81	75/100	120
3	LAR	AGC	UP & DN	1037.81	1343.27	75/100	130
4	AGC	PWL	UP & DN	1343.27	1479.40	75/100	150
5	MKP	BANSA	UP & DN	1256.72	1254.70	60/100	110
6	NYN	MKP	UP	1349.46	1256.72	60/100	110
7	MKP	NYN	DN	1256.72	1349.46	75/100	100
8	LINK	COI	SL	1347.84	1348.65	15/15	15
9	KID	BZM	SL	1308.47	1427.12	60/100	100
10	GOY	BZM	DN	1344.95	1333.58	60/100	110
11	BZM	GOY	UP	1333.58	1344.95	60/75	75
12	JHS	KID	SL	1127.60	1308.47	60/100	100
13	KID	MKP	SL	1308.47	1419.22	60/100	110
14	JHS	BZM	SL	1127.72	1333.58	60/100	110
15	CAR	CPU	SL	143.07	243.00	60/60	60
16	LKO	CNB	S/L	69.86	71.00	60/100	100
17	CNB	LKO	N/L	69.86	71.00	60/100	100
18	CNB	GMC	UP	1019.00	1021.66	60/100	130
19	GMC	CNB	DN	1021.66	1019.00	60/100	130
20	ETUE	MTI	SL	1251.94	1254.94	60/60	60
21	ALJN	HGJ	SL	167.74	153.00	60/100	100
22	KTT	MTJ	UP/DN	1244.2	1243.00	60/100	130
23	TDL	JAB	SL	1248.51	1269.02	60/100	100
24	IDH	AGC	SL	1344.72	1343.27	30/30	30
25	MTJ	AWR	SL	1397.06	1515.90	75/75	75
26	BXN	JAB	SL	1.00	86.82	60/100	110
27	AF	BKI	SL	0.00	148.40	60/100	110

Para No.	Details of important paras' of RDSO Speed Certificate	Railway Remarks
<b>2.1</b>	<b>Track</b>	
2.1.1	The track shall be to a minimum standard of 60 Kg rail (90UTS) on sleeper with M+ 7 density and depth of ballast cushion below sleeper of 300 mm, which may consist of at least 150mm clean and the rest in caked up condition on compacted and stable formation. Maximum permissible speed up to 75 kmph for loaded condition and 100 kmph in empty condition.	Complied, track certificate enclosed along with Annexure-A.
2.1.2	The track shall be to a minimum standard of 52 Kg rail (72UTS) on sleeper with M+ 7 density and depth of ballast cushion below sleeper of 250 mm, which may consist of at least 100mm clean and the rest in caked up condition on compacted and stable formation. Maximum permissible speed up to 60 kmph for loaded condition and 100 kmph in empty condition.	Complied, track certificate enclosed along with Annexure-A.
2.1.3	The track shall be to a minimum standard of 90R rail on sleeper with M+ 4 density and depth of ballast cushion below sleeper of 200 mm, which may consist of at least 75mm clean and the rest in caked up condition on compacted and stable formation. Maximum permissible speed up to 30 kmph in loaded condition (on provisional basis and the same is subject to review based on results of Pilot Project) and 100 kmph in empty condition.	Complied, track certificate enclosed along with Annexure-A.
2.1.4	Wherever condition warrants on account of corrosion on rail/weld collar, wear of rail, cupping in the welds necessary precautions should be taken for fish plating/joggle fish plating of the rail/weld.	Ensured
2.1.5	Zonal Railways may impose such further restrictions of speed as deemed fit, based on the age and condition of track and the extent of the rail fractures/weld failures/defect generation rate occurring in the sections.	Ensured
2.1.6	The maximum permissible speed on curves to be decided on the basis of the existing provision of Indian Railway Permanent Way Manual Reprint-2004 but speed in empty condition should not be more than 90 kmph.	Ensured
2.1.7	For track of lower standard than that mentioned above, the Chief Engineer shall decide the maximum permissible speed on the basis of maintenance condition in terms of Railway Board's letter No. 65/WDO/SR/26 dated 19/20.10.1966. When the Chief Engineer considers that the roadbed is not compacted or there is improper drainage, he may suitably restrict the maximum permissible speed depending upon the local conditions. This shall be applicable to loaded as well as empty wagons.	Ensured
<b>2.2</b>	<b>Bridges</b>	
2.2.1	The clearance refers to bridges with standard design of girders, slabs, pipe culverts, piers and abutments etc. issued by RDSO for BGML, RBG and MGB-1987 standard loadings. However, the bearings of span 76.2m (clear) designed for BGML standard loading as per RDSO's drawing No.BA-11154 should be strengthened by providing two additional anchor bolts, so as to make the span fit for 60 kmph.	Strengthening of bearings of all 78.8m (effective) BGML spans have been completed.
2.2.2	Superstructures & bearings of non-standard spans including Arches and sub-structures of all bridges are to be examined under the directions of the Chief Bridge Engineer concerned and certified safe by him in terms of current IRS Bridge Rules Steel Bridge Code, Concrete Bridge Code, Arch Bridge Code,	Complied, details in bridge certificate along with Annexure-B.

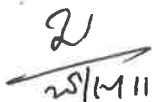
	Bridge Sub-Structures and Foundation Code etc read with up to date correction slips.	
2.2.3	In loaded condition, the following restrictions are applicable:	
(i)	For single headed operation, track on bridges and approaches of BGML spans 78.8m (effective) shall be strengthened or modified in such a way so as to allow for dispersion cannot be allowed as per clause 2.8.3.2 of IRS Bridge Rules. In cases where dispersion cannot be allowed as per clause 2.8.3.2 such as due to provision of SEJ in bridges etc., the bridge superstructure including bearings and sub-structure shall be checked for longitudinal force without dispersion and certified safe by the Chief Bridge Engineer concerned.	Complied, details in bridge certificate along with Annexure-B.
(ii)	For double headed operation, track on bridges and approaches of BGML spans 47.3m, 63.0m and 78.8m (all effective) shall be strengthened or modified in such a way so as to allow for dispersion of longitudinal force as per clause 2.8.3.2 of IRS Bridge Rules. In cases where dispersion cannot be allowed as per clause 2.8.3.2 such as due to provision of SEJ in bridges etc., the bridge superstructure including bearing and sub-structure shall be checked for longitudinal force without dispersion and certified safe by the Chief Bridge engineer concerned.	Complied, details in bridge certificate along with Annexure-B.
2.2.4	Other specific restrictions are applicable which are indicated in relevant Speed Certificates of hauling single/multiple locomotives issued by RDSO.	Ensured.
2.2.5	(i) In loaded condition following restriction will be applicable	
	a) RBG/MBG/BGML span 47.25m (effective) is restricted to 75 kmph.	Ensured.
	b) RBG/MBG/BGML span 63.0m & 78.8m (effective) is restricted to 60 kmph.	
	(ii) This clearance is subject to the following parameters of BOXNHAM wagon	
	(i) Max. axle load (loaded) = 22.82 t	Noted
	(ii) Max. axle load (empty) = 5.78 t	
	(iii) Maximum CG Height from rail level(empty) = 1052mm.	
	(iv) Maximum CG Height from rail level(loaded) = 1660mm.	
	(v) Maximum braking force at rail level per axle = 10% per axle load.	
2.2.6	Directive of Railway Board regarding operation of BOXNHAM with 22.82 t (CC+8t+2t) axle load will be same, as for BOXN (CC+8t+2t), communicated vide Railway Board's letter no. 2003/CE-II/TS/5 Vol-I dt. 04.05.2005 shall be strictly adhered to.	Ensured
2.2.7	Zonal Railways to certify the adequacy of existing bridges for permitting rolling stock based on physical condition of bridges by keeping them under observations considered necessary by the Chief Bridge Engineer of Railway.	Ensured
2.2.8	Location of bridges on which speed restrictions are imposed shall be notified by the Railways and incorporated in the working timetable.	Noted
2.2.9	The directives of RDSO for operation of (CC+8t+2t), axle load 22.82t communicated vide RDSO's letter no. CBS/Golden/Q/Strength dated 21/27.07.2009 shall also be followed.	Ensured
<b>2.3</b>	<b>Signaling</b>	
2.3.1	Provisions of GR, SR, SEM & all extant instructions issued from time to time shall be complied with.	Shall be complied
2.3.2	On the sections where EBD of more than 1 km is to be	Ensured


	catered for, second distant signal or automatic signaling should be available failing which suitable speed restriction is to be imposed.	E B D G 441 m.
<b>2.4</b>	<b>Rolling Stock</b>	
2.4.1	Before starting the operation, CME of the Railway will certify the track worthiness and safety of the rolling stock. He will also ensure proper maintenance of the rolling stocks.	Ensured
2.4.2	For movement of wagon on any private or assisted siding for loading or unloading the consignments, the Chief Engineer of Railway shall be referred to.	Ensured
<b>2.5</b>	<b>General</b>	
2.5.1	All the permanent and temporary speed restrictions in force and those that may be imposed from time to time due to track, bridges, curves, signalling and interlocking etc. shall be observed.	Shall be observed
2.5.2	The design of BOXNHAM wagon does not infringe to chapter IV(A) of Indian Railway Schedule of Dimensions B.G. revised 2004.	Noted.
2.5.3	The validity of this speed certificate for operation of BOXNHAM wagon with 22.82t axle load (CC+8t+2t) loading shall be up to the currency of the pilot project as stipulated by Railway by Railway Board.	Noted
2.5.4	Conditions stipulated in Railway Board's letter no. 2005/CE-II/TS/7 dated 01.05.2006 for operation of 22.32t/22.82t axle load shall be applicable.	Ensured.

  
 (S.K.Ahmad) 20/12/2011  
 Chief Mechanical Engineer

  
 (A.K.Rawal) 21/12/2011  
 Chief Electrical Engineer

  
 (Anand Kumar) 27/12/11  
 Chief Signal & Tele. Engineer

  
 (U.K.Singh)  
 Chief Operations Manager

  
 (A.S.Garud) 30/12/11  
 Principal Chief Engineer