



QM-C-7.1/BOGIE LWLH25/0001/B
INSPECTION CHECK SHEET FOR LWLH25 BOGIE BOLSTER

- 1 Name of Manufacturer :
- 2 Address of works :
- 3 Date of offer :
- 4 RDSO File No :
- 5 Description of material :
- 6 Drawing and Alt. No :
- 7 Specification and grade :
- 8 P.O. No :
- 9 Total quantity Ordered :
- 10 Quantity Earlier passed :
- 11 Quantity now offered :
- 12 Consignee :
- 13 D.P :

- a. Date of inspection
- b. Quantity accepted
- c. Quantity rejected
- d. Balance order

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RDSO Representative
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Note:
 These check sheets do not detail all the dimensions or technical requirements of respective Bogie assemblies/components.
 These check sheets are issued only for General Guidance & assistance of inspecting officials. Notwithstanding the above, the inspecting officials are advised to refer to relevant drawings and/or relevant specifications to confirm conformity to the specified dimensions and technical details.

1. A) Detail of Bolster castings offered

S.No. of BolsterCasting Offered	Heat No.	Date of Cast	Date of heat clearance by RDSO	Date of heat Treatment

B) Detail of weld repair of Bolstercastings

S.No. of BolsterCastings repaired	Heat No.	DPT done yes/no	heat Treatment done

Detail of DPT Agents Used in Crack Detection of Bolster		
Agent	Make	Expiry Date
CLEANER		
PENETRANT		
DEVLOPER		

C) Visual/Physical Examination

	Specified	Observations				
Surface defect	Inclusion, sand fusion, blow holes, folds, cracks, misruns, surface imperfections, unfused chaplets, porosity.					
Surface finish	Surface finish check by SCRATA Comparators.					
Marking Details	As per drawing WD - 13012 - S/10					
Weighment Details (5%)	Specified Bolster weight - 630 ± 4.5%					

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1. Chemical, Micro-examination & Mechanical Properties Test

A) Chemical Composition (As Per M&C Heat Clearance Register)

Element\ Heat No.										
C - 0.32 (Max.)										
Mn- 1.2(Max.) *										
P - 0.04 (Max)										
S - 0.04 (Max)										
Si - 1.50 (Max.)										
CE - 0.72 (Max)										

* Normally Manganese recommended is 0.9% max. with max. carbon as 0.32%, For each reduction of 0.01% carbon below the max. specified, an increase of 0.04% manganese above the max. Specified amount may be permitted to a max. of 1.2%.

B) Micro-examination(As Per M&C Heat Clearance Register)

Grain Size ASTM 4 or finer										
Microstructure Normalized / Normalized & Tempered and should be Non- dendritic										

C) MECHANICAL PROPERTIES (AS PER THE HEAT REGISTER)

Specified ValueMpa)										
UTS-551(Min)										
YS-344.4(Min)										
El in 2 inch %-24 (Min)										
RA%-36 (Min)										
IMP-20.3 J at -7° C (Min)										
Hardness-137-228 BHN										

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2. GAUGING FOR INDIVIDUAL BOLSTER CASTING - 5%

S.NO.	DESCRIPTION	GAUGE DRAWING NO.	OBSERVATION			
1	Limit gauge for lateral lug gap (GO/ NO GO)					
2	Snubber pocket width check (GO/NO GO)					
3	Pocket & Lug alignment check (GO/NO GO)					
4	Lug Edge distance check (GO/NO GO)					
5	Bolster top spring height gauge					
6	Bolster top side bearer height check					
7	Spring spigot location check					
8	Snubber pocket angle check					
9	Wedge wing profile check					
10	Bolster spigot height check					
11	Span squareness & co - axiality check					
12	Co - planarity check					

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3. LUG ANALYSIS TEST

Break one lug from any Bolster

	M&C Heat Register		RDSO Observation	
Specified Value	Bolster Sl. No.		Bolster Sl. No.	
	Heat No.		Heat No.	
1. Chemical				
C - 0.32 (Max.)				
Mn- 1.20 (Max.)*				
P - 0.04 (Max)				
S - 0.04 (Max)				
Si - 1.50 (Max.)				
CE - 0.72 (Max.)**				
2. Grain Size ASTM 4 or finer				
3. Microstructure Normalized / Normalized & Tempered (should be Non - dendrites)				

Final Observation:

1. Chemical Composition is as per STR and RDSO observed values are comparable with M & C heat clearance register.
2. Checked H.T. Register & confirmed that all the serial no. offered have been properly heat treated as per H.T. register.
3. * Normally Manganese recommended is 0.9% max. with max. carbon as 0.32%, For each reduction of 0.01% carbon below the max. specified, an increase of 0.04% manganese above the max. Specified amount may be permitted to a max. of 1.2%.

4. ** $[Carbon\ Equivalent\ (CE) = C + \frac{Mn+Si}{6} + \frac{Cr+Mo+V}{5} + \frac{Ni+Cu}{15}]$

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5. RADIOGRAPHIC TEST

Bolster Locations as per specification (1 in 100 Bogies)

Casting SL. No.	Location	Accepted level of severity as per ASTM E - 446 -81 or E - 71	Observation
	Location-1	Gas porosity , sand inclusion & Shrinkage - Level 3 (In CB& CD cat.) Shrinkage -Level 4 (In CA&CC cat.)	
	Location-1		
	Location-2		
	Location-2		
	Location - 3	Gas porosity , sand inclusion & Shrinkage - Level 4 (In CB& CD cat.) (In CA& CC cat.)	
	Location - 3		

6. LOAD TESTING REPORT (WD - 40 - LWLH25 - BOGIE)

Static Load Test for Bolster (1 in 100 Bogies) Load location as per specification:-

Load S. No.	Type of test load for bolster	Amount of load to be applied (T)	Allowable deflection (mm)	Observed deflection (mm)	Allowable permanent set (mm)	Observed permanent set (mm)
a)	Transverse loading (F3)	45.800	3.60		---	---
b)	Transverse loading (F3)	87.100	---	---	0.64	
c)	Vertical loading at centre plate (F1)	67.600	3.30		---	---
d)	Vertical loading at centre plate (F1)	130.700	---	---	0.64	
e)	Vertical loading(Ultimate) at center plate (F1)	239.500 (Minimum)	Observation at ultimate load test			

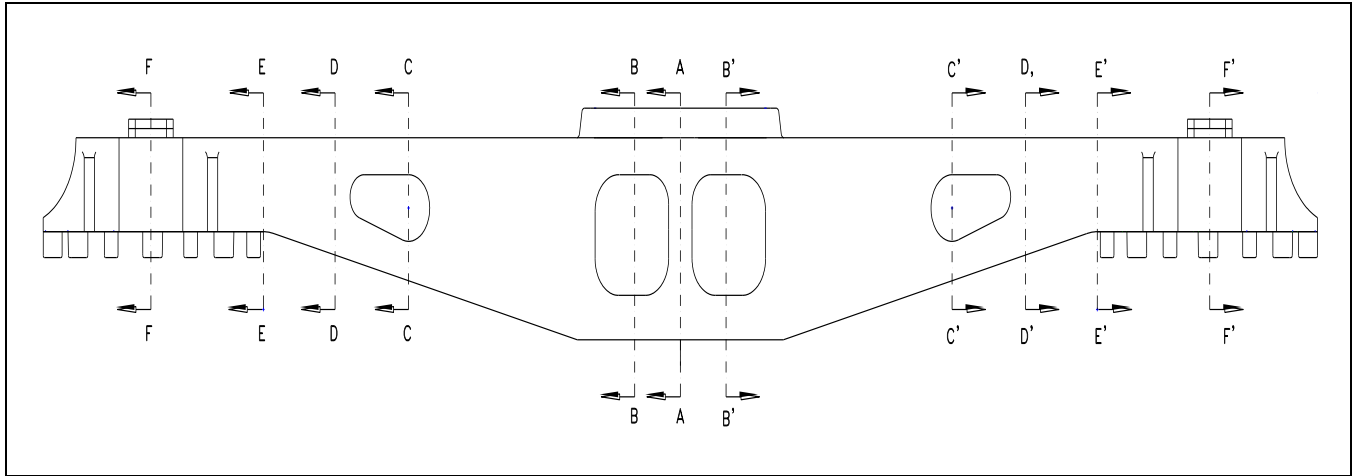
NOTE: - Suitable crack detection test to be carried out before and after static load testing.

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7. Sectioning Test- Bolster(1 in 100 Bogies)



A - A	T1	46			<p style="text-align: center;">SECTION A-A</p>	
	T2	30				
	T3	20				
	T4	20				
	T5	30				
	T6	30				
	T7	46				
	T8	46				
	T9	30				
B - B	T1	30	B - B	B' - B'	<p style="text-align: center;">SECTION B-B SECTION B'-B'</p>	
	T2	20				
	T3	35				
	T4	35				
	T5	36				
	T6	36				
	T7	20				
	T8	35				
	B' - B'	T9	35			
		T10	30			

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C - C	T1	25	C - C	C' - C'	<p style="text-align: center;">SECTION C-C SECTION C'-C'</p>
	T2	20			
	T3	20			
	C' - C'	T4	30		
		T5	30		
		T6	26		
		T7	30		
		T8	30		
D - D	T1	23	D - D	D' - D'	<p style="text-align: center;">SECTION D-D SECTION D'-D'</p>
	T2	16			
	T3	20			
	D' - D'	T4	20		
		T5	16		
		T6	26		
E - E	T1	21.5	E - E	E' - E'	<p style="text-align: center;">SECTION E-E SECTION E'-E'</p>
	T2	20			
	T3	18			
	E' - E'	T4	18		
		T5	14		
		T6	14		
		T7	30		
F - F	T1	18	F - F	F' - F'	<p style="text-align: center;">SECTION F-F SECTION F'-F'</p>
	T2	14			
	T3	19			
	F' - F'	T4	20		
		T5	14		

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