107 L3T-111

रेल डिब्बा कारखाना, रायबरेली
RAIL COACH FACTORY, RAEBARELI

FORM NO: RCF/RBL/QMF 8001
VERSION: 2012-01-01

ROLLING STOCK CERTIFICATE

Rolling Stock Certificate No.: RCF/RBL/QC/RSC

Date: 07/05/2014

SHELL	L	W	A	C	C	N	-	3	1	3	9	/	2	0	1	3	DATE OF DISPATCH	0	1	0	4	2	0	1	4
RLY	C	R		TYPE	L	W	A	C	C	N		Coach No.	1	4	1	0	9	/	C						

1. Railway Board's Order No : **2013/M(C)/142/3 dated 03.03.2014**
2. Tare Weight of Coach : 45.6 Tonnes
3. Carrying Capacity :(a) Seating : 72 (b) Sleeping : 72 (c) Luggage : NIL
4. **SHELL LEADING DIMENSIONS:**

S NO	DESCRIPTION	DIMENSION (MM)
1.	Maximum length over body	23700
2.	Maximum width over body	3240
3.	Maximum height from Rail Level	4250
4.	CBC height/Buffer height from Rail level 1105 +0/-15	1) 1104 (NPPE) 2) 1105 (PPE)

5. **TRACEABILITY OF SHELL ITEMS:**

S NO	ITEM	MAKE/SUPPLIER	SERIAL NO			
1.	Buffers	N.A.				
2.	Centre Buffer Coupler	M/s ESCORTS	PP END	3022	NPP END	3023

6. **AIRBRAKE TEST REPORT:**

S NO	ITEM	DESCRIPTION	SPEC. VALUE	OBSERVED
1.	Full brake application	➢ Reduce pressure of BP from 5.0 to 3.4 kg/cm². ➢ Max. pressure in BC ➢ All Brake are applied	6 – 10 sec. 3.0 ±0.15 kg/cm². OK	8 sec. 3.0 kg/cm² OK
2.	Insensitivity	➢ Exhaust BP @ 0.3 kg/cm²/min.	No brake application	OK
3.	Sensitivity	➢ Exhaust BP @ 0.1 kg/cm²/Sec, after 02 Sec.	Brake must apply	OK

7. **PAINTING DETAILS:**

S NO	DESCRIPTION	TYPE OF PAINT	MAKE	AVERAGE GLOSS VALUE
1.	Paint	P.U.	Akzo Nobel	90.31/89.11
2.	Insulation	Satisfactory		

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RLY	C	R		TYPE	L	W	A	C	C	N		Coach No.	1	4	1	0	9	/	C

8. DETAIL OF BOGIES :

ITEMS	PP SIDE				NPP SIDE			
Bogie No	137013				137012			
Bogie Type	Fiat				Fiat			
Axle No	T-2286		RWF-109546		G-8546		RWF-109758	
Wheel Dia	918.00	918.00	918.00	918.00	918.00	918.00	918.00	918.00
Wheel Disc No	246-51782/ZB13	201-46820/ZB13	001-51782/ZB13	235-48743/ZB13	045-48028/ZB13	089-51782/ZB13	334-50843/ZB13	022-51781/ZB13
R B Nos.	78523	79821	79763	79063	7881	79194	78708	78865
CT R B Make	SKF		SKF		SKF		SKF	

9. SECONDARY SUSPENSION LOAD DEFLECTION VALUES

DESCRIPTION	BOGIE PP SIDE				BOGIE NPP SIDE			
	SECONDARY 1		SECONDARY 2		SECONDARY 1		SECONDARY 2	
	OUTER	INNER	OUTER	INNER	OUTER	INNER	OUTER	INNER
Make & Nos.	DN-4-13-1664	G-5-13-5162	DN-4-13-1678	G-5-13-530	DN-4-13-1628	G-5-13-5090	DN-4-13-1674	G-5-13-5210
Compressed Ht. at Tested Load	511	464	511	464	506	466	512	466
Alignment deviation (mm)	10	15	10	10	5	12	10	15

10. TRACEABILITY OF BOGIE ITEMS:

S NO	ITEM	SERIAL NO		MAKE
		NPP SIDE	PP SIDE	
1.	Primary outer Spring	L&S-03-13	L&S-03-13	L&S
2.	Primary Inner Spring	L&S-6-12	L&S-6-12	L&S
3.	Primary Damper			SACHS
4.	Secondary Damper			SACHS
5.	Lateral Damper			GEREP
6.	Yaw Damper	-----	------	SV
7.	Brake Cylinder & Caliper	A-14210B,A-14211B A-14209B,A-14212B	A-14331B,A-14329B A-14320B,A-14332B	FAV
8.	Brake Disc			FTI
9.	Ball Joint Control Arm			SGA
10.	Lateral Bump Stop			GMT
11.	Ball Joint Traction Lever			SGA
12.	Traction Centre Elastic			SARITA
13.	Secondary Rubber Pad			TECSPAK
14.	Rubber Spring			GMT
15.	Ball Joint Roll Link			JVR

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RLY	C	R		TYPE	L	W	A	C	C	N		Coach No.	1	4	1	0	9	/	C

11. TRACEABILITY OF FURNISHING ITEMS:

S NO	ITEM	MAKE/SUPPLIER	SERIAL NO
1.	Air Brake Module	M/s Faively,Harita,Hasur,Tamilnadu	N13044B
2.	Pull box	M/s Faively,Harita,Hasur,Tamilnadu	
3.	DV	M/s Faively,Harita,Hasur,Tamilnadu	13125547B
4.	PVC	M/s Responsive,Colaba,Mumbai	
5.	UIC Vestibule (PPE)	M/s COMCEN New Delhi	
6.	UIC Vestibule (NPPE)	M/s COMCEN New Delhi	
7.	Foot Step	M/s JVR Ludhiana	
8.	Decoupling arrangement	M/s SECO	
9.	Body Side Window	M/s Rail Tech Kapurthala,Punjab,	
10.	Emergency Window	, M/s Rail Tech Kapurthala,Punjab	
11.	Lavatory Window	M/s Rail Tech Kapurthala,Punjab,	
12.	Roof Ceiling	M/s KAE Engineers Pvt.Ltd. ESIPL UK	
13.	Non-AC Area Ceiling	M/s Amirchand Engg.Works,Jalandhar	
14.	Supply Air Duct	M/s Hanspal coach products Kapurthala	
15.	Body Side Doors	M/s JBM,JVR Ludhiana	
16.	Compartment Door (PPE)	M/s Rail Tech Kapurthala,Punjab	
17.	Compartment Door (NPPE)	M/s Rail Tech Kapurthala,Punjab	
18.	Vestibule Door(PPE)	M/s JBM Faridabad	
19.	Vestibule Door(NPPE)	M/s JBM Faridabad	
20.	CDTS	M/s Darshan Enterprises New Delhi	
21.	Auxiliary Water Tank	M/s Amit Engg.Mohali Punjab	
22.	Under Slung Water Tank(450 L)	M/s Shivalik Fasteners, Mohali Punjab	
23.	Under Slung Water Tank (2X685L)	M/s Shivalik Fasteners, Mohali Punjab	
24.	Flexible Faucet	M/s Hindustan Fibre Ltd. Vadodra,Gujrat	
25.	Lotah Filler Tap	M/s Metco New Delhi	
26.	Lavatory Modoules	M/s Hindustan Fibre Ltd. Vadodra,Gujrat	
27.	Lavatory Doors	M/s Hindustan Fibre Ltd. Vadodra,Gujrat	
28.	Waste Bin Arrangement	M/s Hindustan Fibre Ltd. Vadodra,Gujrat	
29.	Fire Extinguisher	M/s Hindustan Fibre Ltd. Vadodra,Gujrat	
30.	Side Wall panel	M/s KAE Engineers Pvt.Ltd. satarganj UK	
31.	Seat & Berth	M/s Mohan rail componants Pvt.Ltd. kapurthala	
32.	Light Luggage Rack	M/s Virendra Steel Entreprises,Chandigarh	
33.	Snack Table	M/s International tractor Ltd Hoshiarpur	

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SHELL	L	W	A	C	C	N	-	3	1	3	9	/	2	0	1	3	DATE OF DISPATCH	0	1	0	4	2	0	1	4

RLY	C	R		TYPE	L	W	A	C	C	N		Coach No.	1	4	1	0	9	/	C

12. MODIFICATION (IF ANY) : NIL

13. DEVIATION (IF ANY) : NIL

14. ITEM FITTED ON THE COACH ON TRIAL : NIL

S NO	ITEM PARTICULARS	PURPOSE	REPORT Frequency	REFERENCE & PERIOD OF TRIAL

15. WARRANTY:

S NO	COMPONENTS	WARRANTY
1	Brake blocks, wheels, push gravity cocks, flushing valves, moldings, window glasses, mirrors, roller blinds, curtain & bulbs etc. (items which are consumable in nature)	NIL
2	Other coach furnishing sub assemblies(bought out items)	24 months date of dispatch of coach or 30 months from date of supply of material whichever is earlier.

NOTE:

1. This warranty covers free supply of parts which wear out and falls within warranty period of normal service.
2. This doesn't covers faults arising out of accident, non standard maintenance practices, abnormal use or mishandling, vandal activity, arson & deficient/pilferage etc.
3. This doesn't cover any consequential liabilities or damages/loss incurred by anybody; furthermore, it shall in no case extend to repayment, return of the coach or replacement of complete coach. .
4. Whether a defective part is to be replaced or repaired shall be at the discretion of RCF/RBL.
5. For any complaint/suggestion please contact on qualityrcfrbl@gmail.com.

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RCF/RBL
Dy CME/Fur
उप मु० यां० अभि०/फर.
RCF/RBL(LLJ)
रे. डि.का. रायबरेली (लालगंज)

SSE/QC
RCF/RBL
सीनिय[illegible] इंजीनियर (क्वालिटी [illegible]ल)
रेल डिब्बा कारख[illegible]
Sr. Section Enginee[illegible]rol)
Rail Coach Factory, Ra[illegible]ganj)

103 3T-111

Govt. of India- Ministry of Railways
(RAIL COACH FACTORY-RAEBARELI)

RCF/RBL/QEF7001
VER.2014:00

FOR ELECTRICAL ITEMS

ROLLING STOCK CERTIFICATE OF LHB/EOG AC COACHES

ELECTRICAL TEST CERTIFICATE FOR LHB/EOG AC COACHES

TYPE COACH	LWACCN	**SHELL/COACH NO**	14109/C
RAILWAY	CR	**DATE OF DESPATCH**	

Sr no	Description of tests		Remarks
1.0	REFERENCE SPECIFICATION : L 446		
1.1	AIR CONDITIONING TEST : ELPS/TP/AC 01.		
1.2	CODE OF PREACTICE OF WIRING : ELPS/SPEC/EOG/AC-01		
2.0	INSULATION RESISTANCE : Setting of insulation monitoring relay at 30K ohms as per TD 111 of M/s LHB.		
	Observed status : HEALTHY		
3.0	AIR DELIVERY MEASUREMENT	OBSERVED VALUE	OK
3.1	Fresh Air	**29.70** Cub mtr/min	OK
3.2	Return Air	**61.91** Cub mtr/min	OK
3.3	Exhaust Air	**6.05** Cub mtr/min	OK
3.4	Conditioned Air	**155.29** Cub mtr/min	OK
4.0	**PRE COOLING TEST: Max 01 hr.** Time taken to pre cool from 45 deg centigrade to 24/22 deg C during OFF LOAD condition PP Side :**22.5 deg C** NPP Side :**22.0 deg C**		OK
5.0	**PULL DOWN TEST: Max 02 hrs.** Time taken to pull down from 45 deg C to 24/22 deg C during FULL LOAD condition . PP Side :**20.9 deg C** NPP Side :**21.8 deg C**		OK

Senior Section Engineer
Quality control / Electrical
RCF, Raebareli

Govt. of India- Ministry of Railways
(RAIL COACH FACTORY-RAEBARELI)

FOR ELECTRICAL ITEMS

ROLLING STOCK CERTIFICATE OF LHB/EOG AC COACHES

ELECTRICAL TEST CERTIFICATE FOR LHB EOG AC COACHES		
Sr no	**Description of test**	**Remarks**
6.0	HUMIDITY CONTROL	OK
7.0	PUMP EQUIPMENTS	OK
8.0	WORKING OF EXHAUST FANS OVER LAVATORIES	OK
9.0	WORKING OF COMPOSITE PANTRY	OK
10.0	COMPARTMENT LIGHT	OK
11.0	PUBLIC ADDRESSING SYSTEM **(PAS)**	OK
12.0	WHEEL SLIDE PROTECTION SYSTEM **(WSP)**	OK
13.0	WORKING OF 60KVA TRANSFORMER	OK
14.0	WORKING OF REGULATED BATTERY CHARGER	OK
15.0	WORKING OF EMERGENCY BATTERY CHARGER	OK
16.0	SAFETIES :	OK
16.1	THERMOSTAT :	OK
16.2	ROTARY 07 SET POINTS (NORMAL CONDITION)	OK
16.3	MID SET POINTS (SENSORS FAILED CONDITIONS)	OK
16.4	HYGROSTAT	OK
16.5	CONTROL CIRCUIT	OK
16.6	POWER CIRCUIT	OK
17.0	REFRIGERANT USED **R 407C**	OK

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ROLLING STOCK CERTIFICATE OF LHB/EOG AC COACHES

Sr no	Description	Drg/Spec no.	Quantity per Coach
01.	Roof mounted AC package unit for LHB AC coaches Make :**INTEC** Sr no of RMPU (NPP side) : **14.B.0057** Sr no of RMPU (PP side) :**14.B.064** Sr no of Microprocessor.:**AE.14.01.00048**	As per rdso/pe/spes/ac/0061/ rev-1/2005	**02**
02.	Switch board cabinet Make: **ISG** Sr no :**005-13/11**	As per spec no . EDTS073,REV-D,AM-6	**01**
03.	Pump equipment with PLC controller & pump box Make :**KIND** Sr no PA:**070993** Sr no.1 :**130705877** Sr no.2 : **130705878** Sr no.CPA: **1307040**	As per spec EDTS 186,Rev-a, Am- 2	**01**
04.	Double inlet centrifugal blower 415V/03Ph /50Hz /120W/450 cum mtr/hr discharge for exhausting air from lavatory & switch board cabinet Make :**INTEG**	EDTS331, TYPE-1 CORR.-1&2	**02**
05.	Vestibule Light Fitting Single	LW 76004,Alt-b	**07**
06.	Ceiling light fitting DOUBLE w/o diffuser.	LW 76011,Alt -c	**09**
07.	Ceiling light fitting with NL w/o diffuser w/o item 2&3	LW 76013,Alt -c	**09**
08.	Emergency light system for EOG type coaches (AEL)	EDTS 151,Rev –c Am-1 & 2	**04**
09.	Lavatory light fitting assly	LW 76001,Alt nil	**04**
10.	WC gauge signal light	LW 76006,Alt-c	**02**

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(RAIL COACH FACTORY-RAEBARELI)

ROLLING STOCK CERTIFICATE OF LHB/EOG AC COACHES

Sr no	Description	Drg/Spec no.	Quantity per Coach
11.	Passenger alarm coach indication light	LW 76005,Alt-e	**02**
12.	Fluorescent lamp 18W	RDSO/PE/SPEC/ D/TL 0011-2000,Rev I, Sec-I , 07/2001	**34**
13.	Diffuser complete w/o item 1& 2.	LW 76012,Alt-a	**25**
14.	Razor socket for WC 110/240V.	EDML 047 ,Rev nil	**04**
15.	Terminal strip	EDML 034,Rev-a	**01**
16.	Terminal connector	EDML 037,Rev`a'	**04**
17.	Single switch 06A/250V/AC ONE WAY ,complete with steel plate & cover frame	EDML 047,Rev nil, Item 1.	**09**
18.	Single switch 16A/250V/AC ONE WAY complete with steel plate & cover frame	EDML 045,Rev nil ,Item 2.	**09**
19.	PA system for LHB coaches Make :**AHUJA**	EDTS 173,Rev-a Am-1,2&3	**01 set**
20.	70AH/110V,54 Cells,02V each ,maintenance free pure lead acid tin monoblock ,battery set with 09 modules 12V each. , factory pre charged. Make :**HBL** Lug date :**06/13**	EDTS 129,Rev nil	**01 set**
21.	Battery box for LHB coaches.	1 10113 0 76 700 005 w/o item 5,22 ,23 ,26 & 27.	**01**

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ROLLING STOCK CERTIFICATE OF LHB/EOG AC COACHES

Sr no	Description	Drg/Spec no.	Quantity per Coach
22.	Battery fuse box +ve Make :**NEC**	As per LW 71001,Alt-F	**01**
23.	Battery fuse box –ve Make : **NEC**	As per LW 71002,Alt-F	**01**
24.	Regulated battery charger Make :**AAL** Sr no :**BCHO 61403157**	As per RDSO/pe/spec/ac/0129, Rev.-1 (2009)	**01**
25.	Emergency battery charger Make :**BHASIN** Sr no :**06130082**	EDTS 163,Rev `c' corg.-2&3	**01**
26.	60KVA transformer Make :**VIMAL** Sr no :**1977-2012/13**	As per rdso/pe/spec/ac/0080/rev-0 (2007)/Am-1&2/Corr. 1,2&3	**01**
27.	ZS coupling 400A/750V/03Ph/50hz. Make : **S INTERNATIONAL**	As per spec No EDTS 105,Rev`e' Am-2	**02 sets**
28.	Feeder junction boxes. Make :**NEC,ISG**	EDML 020,Rev-I	**02**
29.	Wheel set earthling equipment. Make : **CHANDA & CHANDA**	EDTS101,REV-C,AM-1	**02**
30.	Wheel Slide Protection System (WSP) Make :**FAIVELEY** Sr no :**46/14/314**	M/s :	**01 set**
31.	PANTRY EQUIPMENTS : Hot Case & Bottle cooler cum deep freezer Make :**VISHAL GAS SERVICE**	As per spec no EDTS 139, Rev- E ,Sec II.	**01**

SEE/RCF/RBL	**SSE/EL/QC**

वरिष्ठ विद्युत अभियन्ता
रेल कोच फैक्टरी, रायबरेली, लखनऊ
Sr. Electrical Engineer / RCF / RBL / Lucknow

वरिष्ठ खण्ड अभियन्ता
विद्युत उत्पादन–गुणवत्ता
रेल कोच फैक्टरी / लालगंज / रायबरेली
Sr. Section Engineer
Electric Production - Quality
RCF / RBL / LLJ

RAIL COACH FACTORY, KAPURTHALA

Form No. : QMF 9454; Version: 03
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Date: 09-11-2013

Shell No.:- RCF/RBL

RLY		Type	LACCN	Coach No.	

6.0 Wheel & Axle details:

Items	PP Side				Non PP Side			
Bogie No.	137012				137013			
Frame No.	ECBT-781				ECBT-818			
Bolster No.	083/GT/ASR				080/GT/ASR			
Axle No.	G-8546		RWF-109758		T-2286		RWF-109546	
Wheel Diameter	918.00	918.00	918.00	918.00	918.00	918.00	918.00	918.00
Wheel Disc No.	045-48028/ZB13	089-51782/ZB13	334-50843/ZB13	022-51781/ZB13	246-51782/ZB13	201-46820/ZB13	001-51782/ZB13	235-48743/ZB13
R.B. Nos.	78881	79194	78708	78865	78523	79821	79763	79063
R. B. Make	SKF		SKF		SKF		SKF	
RB Type	CARTRIDGE TAPER ROLLER BEARING							

6.1 Secondary suspension load deflection Values:

Description	Bogie PP side				Bogie NPP side			
	Secondary 1		Secondary 2		Secondary 1		Secondary 2	
	Outer	Inner	Outer	Inner	Outer	Inner	Outer	Inner
Make & nos.	DN-4-13-1628	G-5-13-5090	DN-4-13-1674	G-5-13-5210	DN-4-13-1664	G-5-13-5162	DN-4-13-1678	G-5-13-530
Compressed ht. at tested load	506	466	512	466	511	464	511	464
Align deviation	5	12	10	15	10	15	10	10

6.2 Component traceability:

SNO	ITEM	PP Side Bogie	NPP side Bogie	Make
1	Primary Outer Spring batch no.	L&S-03-13	L&S-03-13	L&S
2	Primary inner Spring batch no	L&S-6-12	L&S-6-12	L&S
3	Primary Damper			SACHS
4	Secondary damper			SACHS
5	Lateral Damper			GEREP
6	Brake cylinder & Caliper			------
7	Brake Disc			FTI
8	Ball joint Control arm			SGA
9	Lateral Bump stop			GMT
10	Traction center make			SARITA
11	Traction lever make			SARITA
12	Ball joint traction lever			SGA
13	Ball joint Traction centre			SGA
14	Secondary rubber pad			TECSPAK
15	Rubber spring			GMT
16	Anti roll bar make			SARITA
17	Roll link make			JVR
18	Fork make			SARITA

15/4/14
SSE/Loco/Engg