

Government of India
Ministry of Railways
Research Designs & Standards Organisation
Manak Nagar, Lucknow-226 011

No. EL/4.6.7/J3

Dated : 1/11.2.1992

SPECIAL MAINTENANCE INSTRUCTIONS NO. ELRS/SMI/140

1. OBJECT

Railways have reported a premature failure of Hose suspension rubber sandwich block of traction motor 253 BX/BW/4601 A2 of BC AC EMUs if the clearance in the bogie, sandwich block are not maintained within the stipulated limits.

2. WORK TO BE CARRIED OUT

The multiple bonded sandwich bolts absorb the shocks load due to change of tractive efforts and vibration in service. The actual measurement of sandwich block, bogie transom bracket should be verified whenever traction motor disassembled from bogie either for overhaul purpose or due to other service problems. A cyclic check on the overall dimensions of sandwich block should be done to ensure the related dimensions are within the stipulated limits after two years of service and it should be replaced after four years of service. Replace the sandwich unit parts if they have reached the condemning limits.

3. PARTICULARS OF SANDWICH UNIT

	Description	New dimensions	Condemning dimensions
3.1	Free height of sandwich unit.	157/158 mm	153.5 mm
3.2	Two, top and bottom spring bolder plates (2 x 38.1)	26.2 mm	-
3.3	Two, extreme top & bottom spring plates (2x9.5 mm)	19.0 mm	18.0 mm
3.4	Overall free assembled height	252.2 mm	247.7 mm

...2/-

- 3.5 Ten percent of the units, which have completed two years of service, should be tested for load deflection characteristics according to GEL-932 enclosed.

Any permanent set beyond the allowable limit (153.5 mm) but within the limits of stiffness given in GEL-932, should be compensated for by using shims between the top spring plate and the top spring holder plates. All such cases with details should be reported RDSO/Lucknow, if any.

4. REFERENCE DRAWINGS & SPECIFICATION

Drawing No. SKEL-3148 & GEL-932

5. INSPECTION OF TRACTION MOTOR NOSE DIMENSIONS BETWEEN WEARING PLATES

New Dimensions - $\frac{241.30 \text{ mm}}{242.06 \text{ mm}}$

Condemning dimensions. - 243.5 mm

Replace wearing plates if dimensions between them measure 243.5 mm or more.

6. INSPECTION OF DIMENSIONS BETWEEN BOGIE TRANSOM NOSES

New dimensions - $\frac{240.506 \text{ mm}}{239.710 \text{ mm}}$

Condemning dimensions - 243.5 mm

Attend transom bracket on priority if dimensions between them exceeds 244.0 mm, otherwise cracks start developing in transom bracket.

7. APPLICATION

Traction Motor type 253 BX/BW/4601 AZ.
- (BG AC EMU)

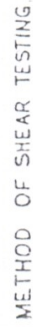
8. PERIODICITY OF IMPLEMENTATION

After each overhaul, AOH & POH.

9. AGENCY OF IMPLEMENTATION
All AC EMU Car Sheds, Repair & POH Shops.

10. DISTRIBUTION
As per list attached.

APPEND.



BOND/SHEAR TEST:- CLAMPING STEEL END-PIECE 'A' IN A FIXTURE VERTICALLY, APPLY VERTICAL LOAD TO END PLATE 'B'. DEFLECT THE MOUNTING EQ. TO THE WIDTH OF THE UNIT (82.5 mm) REPEAT THE TEST BY REVERSING THE UNIT & ALSO BY CLAMPING PLATE 'B' & APPLYING LOAD AT END PLATE 'A'. IT SHOULD NOT SHOW PEELING OFF OR ANY OTHER DEFECT.

THE RUBBER SHALL BEAR THE FOLLOWING MARKING HERE MOUNCED

- IN 3 TO 6 mm. RAISED LETTERS
- 1- IFS: R 43/79 (EMU)
2- MANUFACTURERS NAME OR INITIALS OR TRADE MARK.
3- QUARTER/YEAR OF MANUFACTURE.
4- SERIAL NO.

NOTES -

1. DIMENSIONS SHOWN, THUS * ARE WITH RUBBER-SKIN
2. ALL DIMENSIONS IN MM
3. REDRAWN TO REPLACE LOST ORIGINAL

DETAIL OF INSERT 'C'

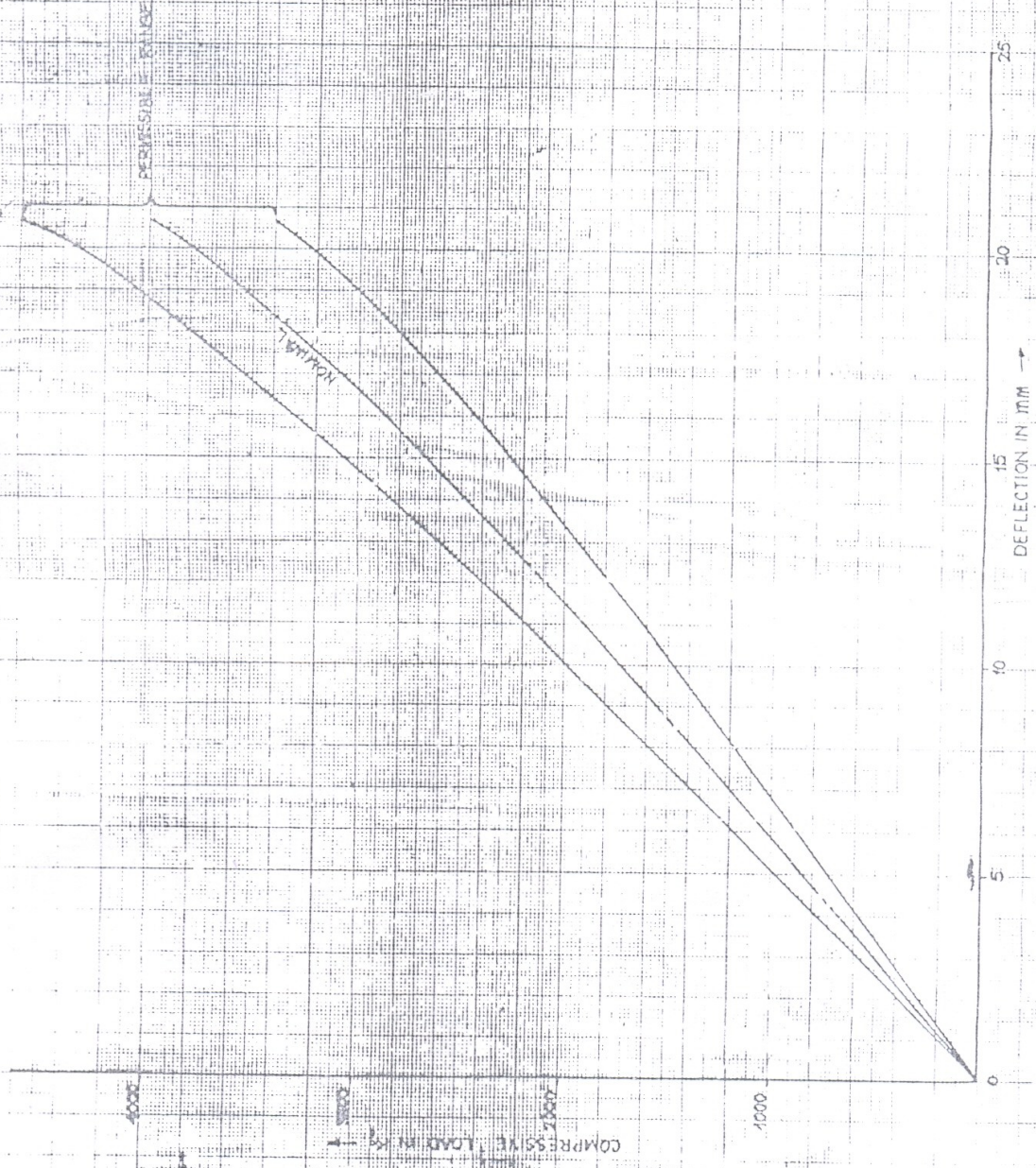
PROVISIONAL

REF:- BHEL DRG. NO. F4625241	SCALE: N.T.S	APPD:
------------------------------	--------------	-------

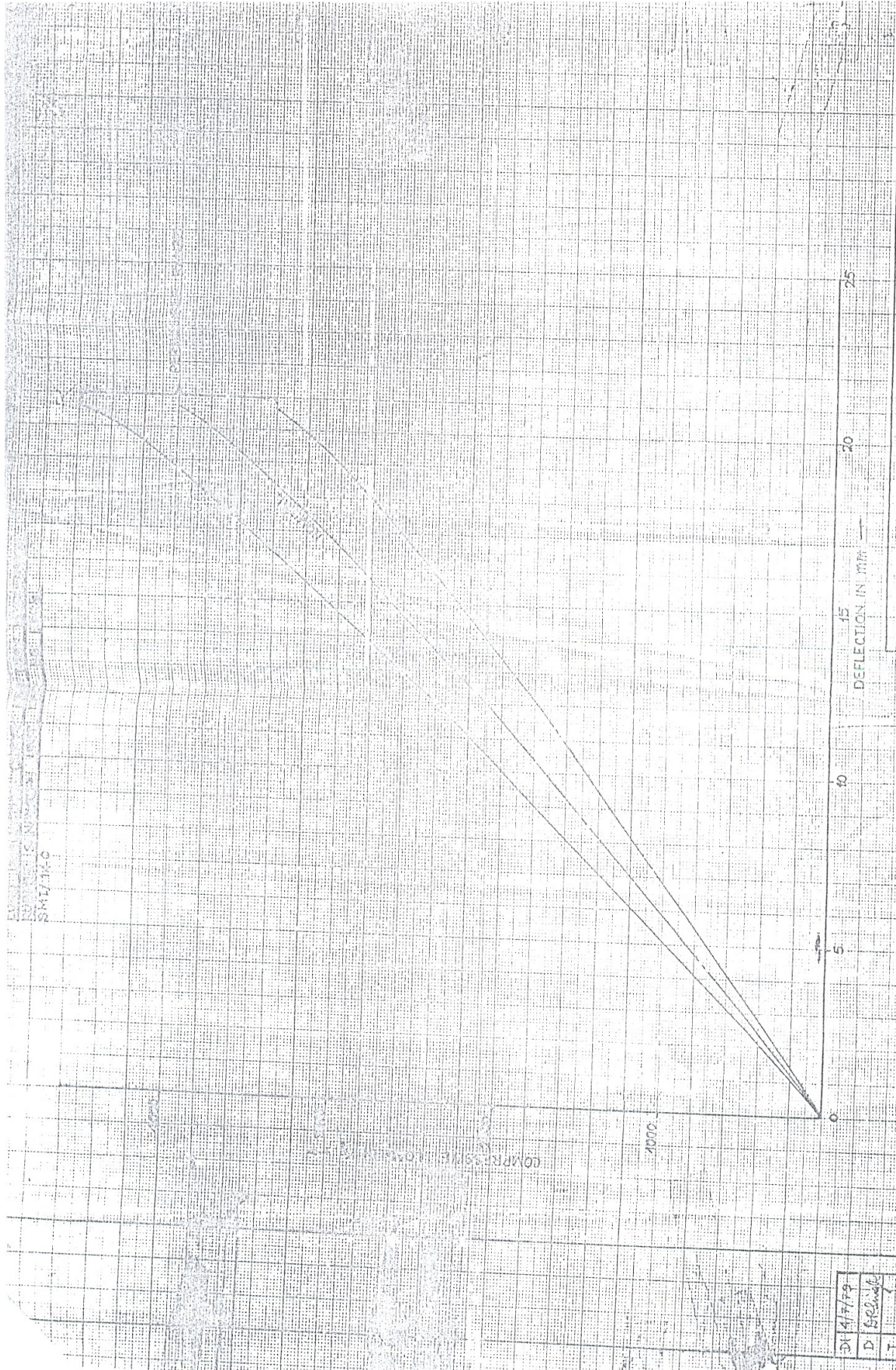
BONDED RUBBER SANDWICH MOUNTING FOR
NOSE SUSPENSION OF TRACTION MOTOR
AC/DC EMUS

R. D. S. O. ELEC. DTE. SKEL-3148

LOAD DATA FOR CURVE
RURER SAN MARI INT. PTP. EOL. 1944
SMI/140



DI 4/7/79
D 4/7/79
T
C



DA 4/7/79
D. B. B. B.
T.
C. B. B.

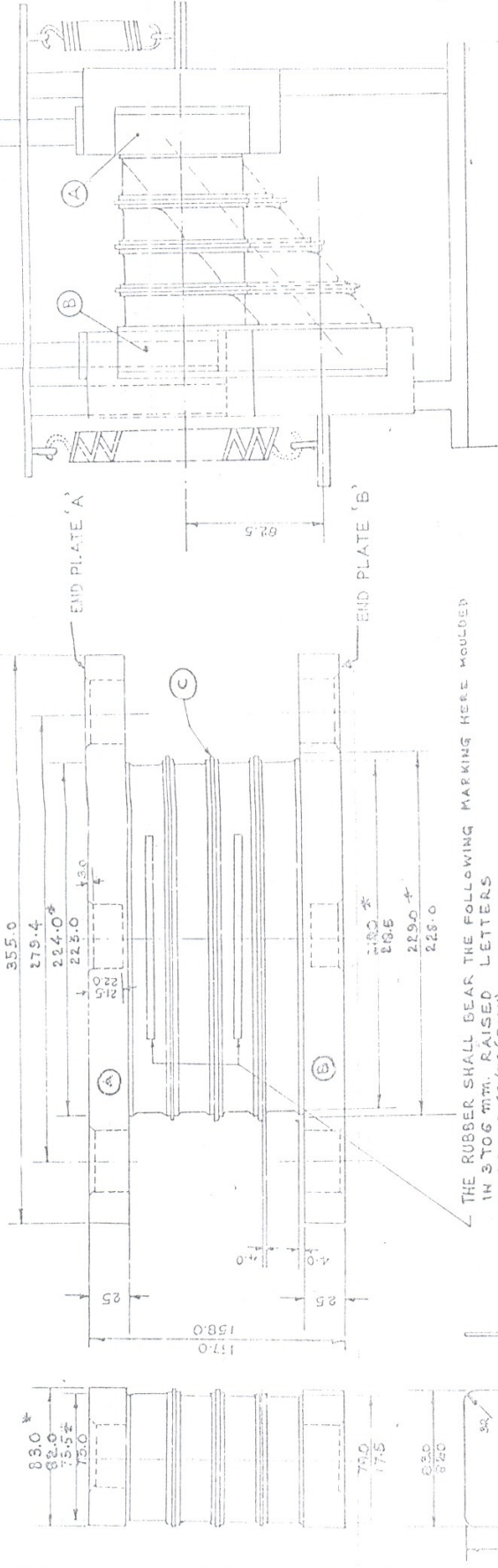
R. D. S. O., ELEC. DTE.

GEL. 932.

APPENDIX-C

4 HOLES DRILLED 41-54 TO LINE UP ACROSS ASSEMBLY & COUNTER SUNK TO DEPTH SHOWN.

2 HOLES 41-54 & COUNTER SUNK TO DEPTH SHOWN.



THE RUBBER SHALL BEAR THE FOLLOWING MARKING HERE MOUNTED IN 3706 mm. RAISED LETTERS
 1- IRS: R 49/79 (EMU)
 2- MANUFACTURER'S NAME OR INITIALS OR TRADE MARK.
 3- QUARTER/YEAR OF MANUFACTURE.
 4- SERIAL NO.

METHOD OF SHEAR TESTING

BOND/SHEAR TEST:- CLAMPING STEEL END-PLATE 'A' IN A FIXTURE VERTICALLY. APPLY VERTICAL LOAD ON TOP OF END PLATE 'B'. DEFLECT THE MOUNTING EQUAL TO THE WIDTH OF THE UNIT (82.5 mm) REPEAT THE TEST BY REVERSING THE UNIT & ALSO BY CLAMPING END PLATE 'B' & APPLYING LOAD AT END PLATE 'A'. RUBBER SHOULD NOT SHOW PEELING OFF OR ANY OTHER DEFECT.

PROVISIONAL

REF:- BHEI DRG. NO. F4C25241	SCALE: N.T.S.	APPD:-
BONDED RUBBER SANDWICH MOUNTING FOR NOSE SUSPENSION OF TRACTION MOTOR FOR AC/DC EMUS		
R. D. S. O. ELEC. DTE.		SKEL-3148.

NOTES:-

- 1- DIMENSIONS SHOWN THUS * ARE WITH RUBBER-SKIN.
- 2- ALL DIMENSIONS IN mm.
- 3- REDRAWN TO REPLACE LOST ORIGINAL.

DETAIL OF INSERT 'C'

3703.5

100