

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

No. EL/2.2.25

05-1997

SPECIAL MAINTENANCE INSTRUCTIONS NO. RDSO/ELRS/SMI/189
WEARING STRIPS FOR PANTOGRAPH AM12 TYPE AND OF SIMILAR
DESIGN

- MATERIAL SPECIFICATION This supersedes RDSO SMI No.
- GENERAL REQUIREMENTS 85 dated.14.09.1981

1. Object

- 1.1 In order to ensure that the steel used for the manufacture of main and End wearing Strips of Pantograph is of correct grade meeting the requirements for presence of various constituents, this SMI lays down the basic guide lines and general requirements of pantograph strips with correct chemical composition and hardness of the material.

2. INSTRUCTIONS

- 2.1 All the user Railways, Production units and POH Shop are advised to ascertain that the steel used in the fabrication of pantograph main and end wearing strips conforms to the following requirements:

2.2 Main Wearing strip:-

- 2.2.1 Reference Specification = IS 3885 (PtI) 1992.

- 2.2.2 Grade-4.

- 2.2.3 Designation-55517

- 2.2.4 Oil hardening type

- 2.2.5 constituent percentage-

Carbon	-	0.5 to 0.6
Silicon	-	1.5 to 2.0
Maganese	-	0.8 to 1.0
Sulphur	-	0.050 max
Phosphorous -	0.050	max.
Hardness	-	245 Brinell max.

- 2.2.6 The permissibe variation in the case of product analysis, from the limit specified above shall be as follows:-

Carbon	-	±	0.03
Maganese	-	±	0.04
Silicon	-	±	0.05
Sulphur	-	+	0.005
Phosphorous -	+		0.005

2.3 End Wearing Strip:-

2.3.1 Reference Specification No. IS 513-1994.

2.3.2 Grade- Ordinary (o)

2.3.3 Constituent percentage

Carbon	-	0.15 max.
Manganese	-	0.60 max.
Sulphur	-	0.055 max.
Phosphorous	-	0.055 max.
Hardness	-	Min. 60 to max. 75 (HRB) Rockwell Hardness Scale B

2.3.4 The maximum permissible variation in the case of product analysis from the limit specified in para 2.3.3 shall be as follows :

Carbon	-	0.02
Manganese	-	0.03
Sulphur	-	0.005
Phosphorous -		0.005

2.4 The surface of the strips shall be smooth with radiused edge, free from distortion, twists and kinks, the edge radius shall normally be approximately equal to thickness of the material.

2.5 For any ordered quantity, the supplier shall submit the test result of chemical analysis of the product and this should meet the requirements of product as stipulated in para 2.2.5 and 2.3.3

2.6 Brinell hardness shall be checked on each main wearing strip before use. the hardness in any case should not be more than 245 BHN.

2.7 Both main wearing strips and end wearing strips shall be checked for conformity with the requirements of dimensions and tolerances as mentioned in RDSO/Drg. No. SK. EL. 4329(Alt.1) and SK. EL. 4402

2.8 Each strip shall have a stamp with the name or trade mark of the manufacturer, grade and designation of the steel on the opposite face of the current collecting surface. This will facilitate the follow-up of the performance of the strips.

3. INSTRUCTION DRAWING

RDSO Drawing No. SK. EL. 4329 (Alt.1) and SK. EL. 4402 shall be followed for dimensional checks.

4. APPLICATION

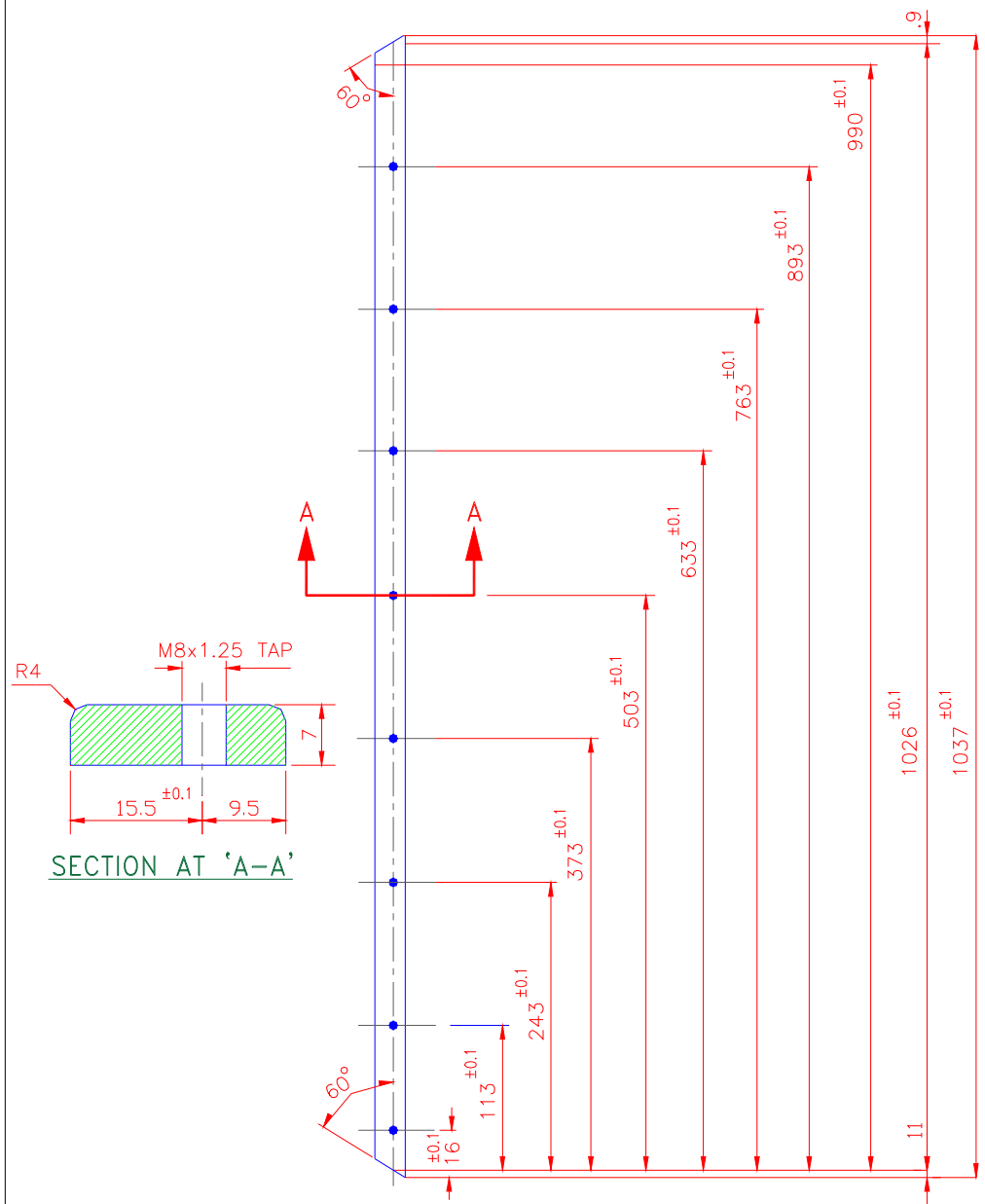
All electric locomotives and EMUs fitted with pantograph AM12 type or of similar design.

5. AGENCY FOR IMPLEMENTATION

All electric loco sheds, EMU car sheds and POH shops.

Encl: SK. EL. 4329(Alt.1)

SK. EL. 4402



NOTE:—

ALL DIMENSIONS ARE IN MM.

1	18.11.96	DIMENSIONS CORRECTED TOLERANCE ADDED
ALT.No.	DATE	PARTICULARS OF ALT.

REF:—

SCALE:— NTS.

APPROVED BY:—

[Signature]

FIXING DIMENSIONS OF PANTOGRAPH MAIN WEARING STRIP

Dt.	19.1.95
D	
T	
C	

RDSO. ELEC. DTE.

SKEL - 4329

(ALT-1)

