



भारत सरकार  
रेल मंत्रालय

**GOVERNMENT OF INDIA  
MINISTRY OF RAILWAYS**

डीजल विद्युत लोकोमोटिव में प्रयोग होने वाली कर्षण मशीनों में  
प्रयोग किये जाने वाले कार्बन ब्लॉक, ग्लू तथा टैपिंग चूर्ण  
को किट के रूप में क्रय की विशिष्टि

**SPECIFICATION FOR PROCUREMENT OF CARBON BLOCK,  
GLUE & TAMPING POWDER AS A KIT APPLICABLE FOR  
TRACTION MACHINES OF DIESEL ELECTRIC LOCOMOTIVES**

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**Specification for procurement of Carbon Block, Glue and Tamping Powder as a kit****1. INTRODUCTION:**

Carbon brushes for various traction machines of diesel-electric locomotives are manufactured by DMW/PTA. The carbon blocks for this purpose are purchased from M/s Assam Carbon Products Ltd. and M/s Mersen India Pvt. Ltd. Railways have been complaining regarding the problem of premature uprooting of copper pigtail from these brushes. This issue was discussed in 41<sup>st</sup> DMG meeting wherein it was decided to source the tamping powder, glue and carbon block as a kit from the same source, i.e. from the manufacturers / suppliers of the carbon block.

**2. OBJECTIVE:**

The objective of the specification is to lay down guidelines for procurement of carbon block, glue and tamping powder as a kit.

**3. SCOPE OF SUPPLY:**

- 3.1.** The scope covers supply of carbon blocks, tamping powder and glue. All these items are to be supplied as a kit in the required proportion and in staggered supply due to limited shelf life of tamping powder and glue.
- 3.2** Presently, carbon blocks are being procured from M/s Assam Carbon Products Ltd. & M/s Mersen India Pvt. Ltd. The recommended proportion of tamping powder & glue with respect to type of block has been worked out & is furnished at **Table-A** for guidance.
- 3.3** The present specification has been prepared considering the two approved carbon block suppliers to IR. In case any new firm wish to supply carbon block for IR application, firm shall have to furnish all data given in the **Table A&B** and get approval of RDSO to be able to qualify for supply of carbon block, glue & tamping powder.
- 3.4** Quantity of tamping powder and glue shown in the **Table-A** is indicative. Sufficient working allowances should be added to the estimated quantity while tendering. The relevant part nos., for tamping powder & glue are given in **Table-B** for both the firms:

**TABLE-A**

Sl. No.	DMW reference Drawing No.	Machine / Application	Block size in mm (ACPL / Mersen)	No. of brush/block (ACPL / Mersen)	Quantity of tamping powder / block	Quantity of glue / block
1	CB17RF	TG 5GT740 PAI	120x68x23	4	Quantity to be decided by the	Quantity to be decided by the
2	CB18RF	TG GT586	120x68x23	4		
3	CB20RF (A&B)	TG 10931 AZ / TG 10919 AZ	A-127x68x26.5 B-120x68x26.5	4		

4	CB 21RF	TM 165M / GE752 / TM 4907	98x59x23	2	consumer / purchaser	consumer / purchaser
5	CB 23RF	TM 761 PA3	122X53X23	3		
6	CB36RF	TM 761 PA3	122X61X23	3		
7	CB 24RF	TM 253 BX / AZ / TM 4601 AZ	163x47x30	3		
8	CB 38	AG 51	146x68x30	12		
9	CB 44RF	DY 3423	146x69x29	9		
10	CB 46	AG 3101 AZ / AY	125x56x38	12		
11	CB 47	Aux Gen & DB 5GY27 & 5GY19	95x57x30	8		
12	CB 55 (Mersen)	TM5002	11x51x54 (CL)	0.5 (Mersen)		
13	CB 57	TA 10102CW / DW	124x52x27	3		
14	CB 59RF	TM 5002AZ / BY	59x51x11	0.5		
15	CB 60	Main Alternator TA-17 of HHP locos	114x69x31	8		
16	CB 61	Companion Alternator CA-6 of HHP locos	118x43.5x23	8		
17	CB 62	DB Blower motor (HHP locos)	87x55.5x25	4		
18	CB 63RF	TM 7362A	124x46x23	2		
19	CB 64RF (Item No.1)	TM 4303 AZ&CZ	98x56x25	2		
20	CB 64RF (Item No.2)	TM 4303BY/DY	98x59x25	2		
21	CB 68	DB Grid Motor (Imported)	110x21x25	2		

**TABLE-B**

Firm's name →	M/s Assam Carbon Products Ltd.		M/s Mersen India Pvt. Ltd.		M/s Assam Carbon Products Ltd.			M/s Mersen India Pvt. Ltd.		
Items → Parameters ↓	Tamping Powder				Glue					
Type of Powder	Silver Coated Copper Tamping Powder		Graphite Copper Tamping Powder		NA			NA		
Packing Condition	Powder should be supplied in sealed condition				It contains 02 different components to be mixed in the volume ratio of 1(Part 1) : 0.02(Part 2)			It contains 02 different components to be mixed in prescribed proportions		
Part No.	FLFS00001		CL613301		PS000001 (Components of Part 1 & 2)			Part A: Glue:112226 Part B: Solvent:116103		
Condition	Sealed	Open	Sealed	Open	Sealed	Open & Un-mixed	Mixed	Sealed	Open & Un-mixed	Mixed
Shelf Life	06 months	01 day	12 months	20-30 days	06 months	06 months	04 days	12 months	12 months	05 days

- 3.5** The requirement of carbon block, tamping powder and glue should be tendered as a kit so that the offers are evaluated as a kit. Since the tamping powder /glue have a limited shelf life, the supply of these items should be staggered in such a way so as to limit the inventory.

**4. TESTING:**

**4.1 Testing of Tamping Powder:**

The tamping powder shall be tested against the parameters given below:

<b>M/s Assam Carbon Products Ltd.</b>			
<b>Sl.No.</b>	<b>Type of test</b>	<b>Acceptance Criteria for Tamping Powder</b>	<b>Specification of Testing</b>
1.	<b>Bulk Density</b>	1.80-2.40 gm/cc	IS-4848, 1981
2.	<b>Flow Rate</b>	24-40 sec for 50 gms powder	IS-4840, 2006
3.	<b>Sieve Analysis</b>	Above #40	Nil
		Passed through #40 and retained on #100	Min 75%
		Passed through #100 and retained on #200	Max20%
		Passed through #200	Max5%
<b>M/s Mersen India Pvt. Ltd.</b>			
1.	<b>Bulk Density</b>	2.20-2.90 gm/cc	IS-4848,1981
2.	<b>Copper Content</b>	80-95%	IS-440,1964
3.	<b>Grain Size</b>	650 microns (Max.)	BS-410

**4.2 Testing of Glue:**

The glue shall be accepted on the test certificate issued by the OEM conforming to their specification or the firm shall produce an under taking for its suitability.

**4.3 Testing of Carbon block:**

The Carbon block shall be tested against IS 13584-1993.