

RAIL COACH FACTORY KAPURTHALA

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MD35131

Dated: 13.06.2016

18.7.16

Sub: issue of specification no MDTS28271 Rev-01 schedule of technical requirements of Ready Mixed Anti Spatter Compound Cum Flux.

Please find enclosed a copy of specification no. MDTS28271 Rev-01 schedule of technical requirements of Ready Mixed Anti Spatter Compound Cum Flux for Use in Manual Metal Arc & CO<sub>2</sub> Welding, for information and necessary action at your end.

  
18.7.16  
Dy CME/D-2

CQM, CPLE, CWE(FUR), CMM/HSQ, CMM/TKJ, Dy CMM/Fur/LHB, Dy CCMT, Dy CPLE-III

SSE/LIB. Design

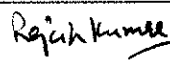
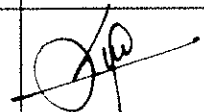
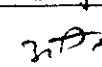
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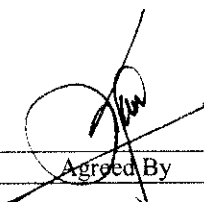
Copy to kind information to:

CDE

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Designation	Name	Signature	Date	Level
SSE/FUR	Rajesh Kumar Sharma		18/7/16	Prepared
Dy.CME/D-2	Suraj Prakash		18.7.16	Agreed & Reviewed
CDE	A.K.Kathpal		19.7.16	Approved

Issue/Rev	Details of Changes	Date
01	1. Packing of material at S. No. 6 revised as under: The material should be available in 1 kg /2 kg/ 5kg packing only instead of 0.5 kg, 1kg and 2kg.	18.07.2016

Prepared By Rajesh Kumar Agreed By 

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### 1. Scope:-

This standard covers application procedure, shelf life, packaging etc. of anti spatter compound along with acceptance criteria.

### 2. Requirement:-

During welding normal spatter generates and sticks to the parent metal surface. Removal of such spatters after each run requires rigorous grinding and chipping. Apart from consumption of man hours it destroys the surface finish of the parent metal over a considerable area beyond weldment. Use of this compound before every weld pass will prevent the spatter to stick to the parent metal surface strongly and can be removed easily by simple wire brushing. Besides by using this material, some amount of grain refinement is possible and a cleaner weld deposit with higher impact toughness can be obtained.

### 3. Acceptance Criteria:

During procurement, the chemical and physical properties along with performance should be assessed as given below:

- 3.1 The composition should be such that it should not effect the parent metal composition beyond tolerance limit and no harmful crack or any type of inclusion will generate due to its use. The composition should be non-polluting and non-toxic. It should be available in emulsion form applicable easily on top surface of the parent metal either by brushing or spraying. The board chemical composition of anti spatter compound shall be as given below :

i)	Al <sub>2</sub> O <sub>3</sub>	-	7-10%
ii)	SiO <sub>2</sub>	-	14-20%
iii)	CaO	-	32-38%
iv)	MgO	-	0.1-0.15%
v)	Fe <sub>2</sub> O <sub>3</sub>	-	0.4-0.6%
vi)	K <sub>2</sub> O/Na <sub>2</sub> O	-	0.4-0.55%
vii)	Other Oxides	-	3.5% (max.)

### 3.2 Physical Properties:

i)	Basicity Index min.	-	1.3
ii)	Density of emulsion	-	1.33 gm/cc for brushing 1.20 gm/cc for spraying
iii)	Drying time	-	6-10minutes (at 27± 2°C and 65% relative humidity)
iv)	Loss of Ignition of flux	-	10%

Prepared By *Rajesh Kumar*

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Note :- 1. Basicity Index =  $\text{MgO} + \text{K}_2\text{O} + \text{Na}_2\text{O} + \text{CaO} + \frac{1}{2} \text{Fe}_2\text{O}_3 \div (\text{SiO}_2 + \frac{1}{2} \text{Al}_2\text{O}_3)$

For determining Loss of Ignition, some amount of emulsion is to be dried up completely at 150°C till constant weight. Then a known quantity, say 100 gm of this dried mass is to be taken and subjected to high temperature of 800/900°C for 1 hr. and weighed. The process is to be repeated till constant weight. The difference of weight in percentage should give the Loss of Ignition.

#### 4. Performance Assessment:

- i. The spatter should be easily removable by light brushing only.
- ii. There should not be excessive fume and the fumes generated should not be toxic or obnoxious.
- iii. Due to application of the compound, striking of the arc should not be difficult and it should not break in the recommended current range of the particular electrode.
- iv. Due to application of this compound, weld defects like porosity, crack etc. should appear in the weld metal.

#### 5. Application Procedure:

Anti spatter compound is a ready mixed emulsion for direct use. It should be applied on the work piece in and adjacent to weld groove about the 100 mm width either by brushing or spraying with the help of a spray gun prior to start of welding. It takes about 10 minutes (depending on the humidity and ambient, of the temperature) to dry up. Once dried completely, the welding can be started over it. After each pass, spatters are removed by wire brushing and fresh coating is to be applied particularly on the areas where the previous coating has been destroyed. This process is to be repeated till the welding is completed.

**Thinner:** - The anti spatter compound should be a ready mixed emulsion for direct use. However, if the emulsion gets thicker due to long storage, then a thinner liquid should be used to bring the emulsion to suitable density for proper application. The thinner liquid of suitable composition should be supplied by the same supplier.

**Spray Gun:** - Any standard spray gun suitable for spray painting can be used for application of this material.

**Brush:** - Any standard hair brush suitable for painting can be used for application of this material.

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#### 6. Packing:-

It should be available in air tight plastic container so as to minimize evaporation loss and atmospheric contamination during storage. The lid should be closed tightly after use to prevent free contact with moisture. The material should be available in 1 kg/ 2 kg /5kg packing only. Date of manufacture, batch no., grade etc. and other relevant details should be printed on the label of the packing. It should also be clearly written on the label to be non-toxic and non-polluting.

#### 7. Shelf Life:-

The material should be suitable for use for at least 2 years from the date of receipt in store. After opening the pack, it should be available for use without any problem for at least 15 days.

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