



Engineering Material Specification

Material Name

Specification Number

ENAMEL, WATER BORNE ELECTROCOAT - ACRYLIC

ESA-M64J17-A

1. SCOPE

The material defined by this specification is a heat curing electrocoating enamel.

2. APPLICATION

This material was released originally for use on lined service brake shoes.

3. REQUIREMENTS

3.1 COMPOSITION

This material shall be a water based, lightly tinted, modified acrylic enamel.

3.1.1 Non-Volatile (FLTM BI 2-1)

3.1.1.1 Charging Material Weight, min 28%

3.1.1.2 Feed Material Weight, min 50%

3.1.2 Volatile Deionized Water

3.2 WEIGHT PER VOLUME (At $23 \pm 2^{\circ}\text{C}$)

3.2.1 Charging Material Weight 8.4 - 8.6 lb/gal (1.01 - 1.03 kg/l)

3.2.2 Feed Material Weight 8.5 - 8.7 lb/gal (1.02 - 1.04 kg/l)

3.3 FLASH POINT (ASTM D 56)

3.3.1 Charging Material, min 72°C

3.3.2 Feed Material, min 72°C

3.4 STABILITY

No more than 5% increase in viscosity after 72 h beyond initial viscosity of material reduced to 7 - 8% solids.

3.5 THROWING POWER, min 3 in (77 mm)
(FLTM BI 20-2, Method "B")

Date	Para. No.	Revisions	Approval
1979 01 10		Metricated and Retyped CAM2 823385	Joseph [signature] 1/17/79
1974 10 04		Released W2E-6	E.P. Franz 11-28-76

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**3.6 FILM CHARACTERISTICS**

3.6.1	Thickness	0.0005 - 0.001 in (13 - 25 μ m)
3.6.2	Salt Spray Resistance (ASTM B 117)	No red rust after 24 h.

3.7 BATH CHARACTERISTICS

The bath shall have the following characteristics after being reduced as indicated. The tank charging enamel only shall be used in the initial bath makeup and it shall be reduced according to the weight ratio shown below:

29 lb (13 kg) tank charging enamel
71 lb (32 kg) deionized water

3.7.1	pH at 26.7°C	8.4
3.7.2	Non-Volatile Weight, min (FLTM BI 2-1)	8%
3.7.3	Specific Resistance, ohm-cm ³	600-1500
3.7.4	Milliequivalents of Solubilizing Agent	
3.7.4.1	Bath: Per 100 g	8.8 - 13.6
3.7.4.2	Solids: Per 100 g	100 - 170

3.8 SUPPLIER'S RESPONSIBILITY

Material supplied to this specification must be equivalent to that originally approved. Changes in formulation or processing shall not be made without prior approval as described in Supplier Procedure I-A.

4. APPROVAL OF SUPPLIERS

Suppliers to this specification must be approved by the affected product engineering office. Procedure for gaining approval of a specific material to a new/existing ES-M specification is contained in Supplier Procedure I-A. Approved new suppliers will be added to the Engineering Materials Approved Source List.

5. GENERAL INFORMATION

This information is for direction of the user and is not a requirement for the supplier.

- 5.1 Unless otherwise specified, the tank charging enamel shall not be used in lieu of the tank feed material or a serious imbalance in solubilizing agent will result.
- 5.2 Only full drums of paint should be added to the premix tank.
- 5.3 The applied enamel film requires curing by a bake cycle of 20 min at 177°C.

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