

SPECIFICATION

FOR

SILICONE PRIMER SUITABLE FOR APPLICATION
OF POTTING COMPOUND FOR TRACTION MOTOR
TYPE 6FRA- 6068 & 6FXA-7059 OF 3-PHASE
ELECTRIC LOCOMOTIVES

Approved by

**RAJIV
KUMAR
BARNWAL**

CEE/TM

Digitally signed by RAJIV KUMAR BARNWAL
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postalCode=713331, street=OFFICE OF CEE / TM
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serialNumber=c4c235d7288d9f4080fb614e443504
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ou=ELECTRICAL, o=CHITTARANJAN LOCOMOTIVE
WORKS, cn=RAJIV KUMAR BARNWAL
Date: 2022.08.22 12:45:10 +05'30'

**SPECIFICATION FOR SILICONE PRIMER SUITABLE
FOR APPLICATION OF POTTING COMPOUND FOR
TRACTION MOTOR TYPE 6FRA- 6068 & 6FXA-7059
OF 3-PHASE ELECTRIC LOCOMOTIVES**

**CHITTARANJAN
LOCOMOTIVE WORKS,
WEST BENGAL, INDIA
NO.: 4TMS.096.095 Alt.1
First Date of Issue : 31/05/2021**

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Prepared & checked
by

SSE/TMDO

**PRADIP
KUMAR
MANDAL**

Digitally signed by
PRADIP KUMAR
MANDAL
Date: 2022.08.18
17:12:21 +05'30'

Reviewed by

DY.CEE/TMD

**RANJAN
KUMAR
PRAMANIK**

Digitally signed by
RANJAN KUMAR
PRAMANIK
Date: 2022.08.19
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Signature Not
Verified

Digitally signed by
PRADIP KUMAR
MANDAL
Date: 2022.09.06
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Reason: IREPS-CRIS
Location: New Delhi

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1.0 SCOPE

This specification covers the technical requirement Silicone Primer suitable for application of potting compound for traction motor type 6FRA- 6068 & 6FXA-7059 of 3-phase electric locomotives for H- and C- class insulation of 3-phase traction motor. The material shall comply with this specification instructions in chemical composition, mechanical properties and all other listed requirements.

2.0 GENERAL



Silicone Primer is a solution of reactive siloxanes and silanes in an organic solvent. The primer composition can be applied to the substrate as such or diluted. During evaporation of the solvent and on exposure to atmospheric humidity at ambient temperature a rigid primer film is formed which firmly adheres to the substrate. Application of a silicone rubber into the primed substrate and subsequent vulcanization will then result in a tight bond between the silicone rubber and the substrate.

3.0 REQUIREMENT

Typical General Characteristics	Inspection Method	Value
Colour		Clear, yellow
Active Substance content		Approx 17 wt-%
Viscosity .Kinematic	DIN 51562	1mm square/s
Density at 20°C, at 1013 hPa	DIN 51757	0.76g/cm square
Flash point	ISO 13736	3°C
Ignition temperature(liquid)	EN 14522	370°C

4.0 TESTS

All the test specified in the specification shall be carried out preferably at manufacturer's works. The manufacturer shall arrange all the necessary machinery, apparatus, labour and assistance required for conducting the tests without Extra cost. If any testing facility is not available at firm's premises, the test has to be done from any Govt. approved NABL lab at own (Firm's) cost.

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5.0 APPLICATION

Silicone Primer suitable for application of potting compound /Silicone Rubber compound is a Bonding agent preferably used with addition-curing silicone rubbers. Application of a silicone rubber onto the primed substrate and subsequent vulcanization will then result in a tight bond between the silicone rubber and the substrate. The primer composition can be applied to the substrate as such or diluted. During evaporation of the solvent and on exposure to atmospheric humidity at ambient temperature a rigid primer film is formed which firmly adheres to the substrate.

Silicone Primer is especially suited for bonding addition-curing silicone rubbers to metallic and non-metallic substrates. The primer can be applied by spraying, immersion or dipping, blade coating or brushing. The primer can be applied as such or diluted with mineral spirits or an alcohol such as ethanol or 2-propanol. In any case, the primer film should be applied as thin as possible and free of air bubbles. Usually the best results can be achieved with a primer layer between 1 and 10 μm thickness corresponding to a coating weight of 5 to 50 g/m^2 . In most cases it is helpful to dilute the primer in organic solvents like white spirits in ratio of 1:1 to 1: 10.

Evaporation of the solvent should be done at ambient temperature. The formation of a consistent primer film which firmly adheres to the substrate requires a certain atmospheric humidity. Higher or lower humidity will reduce or prolong the necessary reaction time. As a guiding value an evaporation or drying time of 1 -2 h at ambient temperature and 40 % relative humidity should be applied to allow for a formation of a consistent primer film. In some cases the adhesion can be improved by heating the primed substrate at 100 – 150 $^{\circ}\text{C}$ for up to one hour after evaporation of the solvent at room temperature.

6.0 REFERENCE TO ABB STANDARDS

This specification is equivalent to M/s Wacker's TDS/ Specification for Primer G 790 or Equivalent.

7.0 SHELF LIFE

Shelf life of the material in the original sealed drum at a room temperature 25 $^{\circ}\text{C}$ should be ≥ 12 months.

8.0 PACKING

The materials shall be suitably supplied in Drum of 5/20/25 kgs. The material shall be suitably packed so as to ensure safe transportation of material without any damage.

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9.0 MARKING

The material shall be labelled securely and indelibly (e.g. with an adhesive label on an appendage) with the following information –

- a) Name of the manufacturer, purchase order reference and date.
- b) Name, quantity, batch no., date of manufacture & expiry date of the material.
- c) Special precaution for storage, if applicable for the material.

10.0 SPECIAL INSTRUCTION

If any deviation in properties of requirement, firm may seek approval from Dy.CEE/TMD of the same submitting detail justification regarding pot life, viscosity, colour, etc. Firm should submit detail procedure of their product along with offer.

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