

**SAUDI STANDARDS, METROLOGY AND
QUALITY ORGANIZATION**

Project No. 33502 /2023

SF epoxy filler (to complete the flooring range)

ICS 87.040.00

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SF epoxy filler (to complete the flooring range)

1. SCOPE AND FIELD OF APPLICATION

This SASO standard specifies the requirements for two components solvent-free Epoxy Filler, designed for both interior and exterior applications on various types of substrates. These fillers are intended to fill cracks, holes, hollows and similar irregularities on both ferrous and non-ferrous substrates.

2. COMPLEMENTARY REFERENCES

- 2.1 **SASO ISO4618:2014** “Paints and varnishes” - Terms and Definitions.
- 2.2 **SASO/ISO 15528:2015** “Paints and Varnishes” – Sampling.
- 2.3 **SASO ISO 1513:2014** “Paints and Varnishes” – Examination and Preparation of samples for Testing
- 2.4 **SASO ISO 2811-4** “Paint and varnish” - Determining the density of paints, using a pressure.
- 2.5 **SASO ISO 3251** “Paint and Varnishes” -Determination of Non-Volatile matter of Paints, Varnishes and Binder for Paint and Varnishes.
- 2.6 **SASO ISO 2431** “Paint and Varnishes” Determination of flow time by use of flow cup.
- 2.7 **SASO ISO 9117-4:** “Paint and Varnishes” – Drying test – Part 4: Test using a mechanical recorder.
- 2.8 **SASO ISO 6503:** “Paint and Varnishes” – Determination of Total Lead – Flame Atomic Absorption Spectrometric Method.
- 2.9 **ISO 2812-1/2007** - “Determination of Resistance to liquids-Part1”
- 2.10 **SASO ASTM C 413/2006** – “Test method for Absorption of Chemical Resistance Mortars, Grout, and Monolithic Surfacing & Polymer Concrete.
- 2.11 **SASO ISO 4624/2006** – “Paints & Varnish”-Pull-off Test for Adhesion”
- 2.12 **SASO ASTM C 579/2006** – Test method for Compressive Strength of Chemical Resistance Mortars, Grout, and Monolithic Surfacing & Polymer Concrete.
- 2.13 **SASO ASTM C 579/2008** - Test Method for Tensile Strength and Modulus of Elasticity of Chemical Resistance Mortars, Grouts, Monolithic Surfacing & polymer Concrete.
- 2.14 **ASTM D 2240:** Shore D Hardness (Durometer Hardness)
- 2.15 **SASO-ISO 6272-2** “Paint and Varnishes - Rapid Deformation-Impact Resistance test

2.1^٦ SASO 868/1994 “Paints and Varnishes - Determination of Flash Point”.

3. DEFINITIONS

3.1 **Filler:** A filler is a material used to fill a space, gap, or void.

3.2 **Pigment:** Particles insoluble in paint, which give to the thin dry layer the Properties in color, opacity (relative variation) and protection from rust.

3.3 Vehicle

The vehicle shall consist of a suitable binder or mixture based on the type of the primer, thereof, a suitable solvent or mixture of solvent and additives will be used.

4. REQUIREMENTS

The following requirements shall be fulfilled by the two-component polyamide or polyamine cured solvent free epoxy filler.

4.1 Composition

4.1.1) **Base Component:** The base component of the paint consisting the liquid epoxy resin, pigments, extenders and suitable additives.

4.1.2) **Hardener Component:** The hardener shall consist of a blend of Polyamide or Polyamine resins and suitable additives.

4.2 Vehicle

The vehicle shall consist of a liquid epoxy resin.

4.3 Pigments

Any suitable pigments and extenders may be used, provided the resulting product conforms to the requirements of this standard.

4.3 Conditions in container

The paint shall be free of grits, skins or lumps and shall show no more pigment settling or caking than can readily be reincorporated to a smooth homogeneous state. The paint shall mix readily with a suitable thinner, in accordance with the manufacturer's recommendations, to a smooth homogeneous state.

4.3 Pot Life

The mixed paint should have a pot life of minimum one hour when tested at (23±2°C).

4.4 Non-Volatile Content

The non-volatile content shall not be less than 98% of the total mass of the mixed paint (Base + Hardener) when tested as per clause 2.5.

4.5 Consistency

The paint shall be in such a condition that stirring, after the addition of hardener to the base paint, readily produces a smooth, uniform mixture of good consistency suitable for knife application.

4.6 Drying Time

The paint when applied at $(23 \pm 2^{\circ}\text{C})$ and relative humidity of not more than $(50\% \pm 5)$ the paint shall become surface dry in not more than 8 hours, and shall become hard dry in not more than 18 hours when tested as per 2.7

Full cure after 7 days.

4.7 Application Properties

The paint shall have satisfactory application properties when used as per the manufacturer's recommendations and shall give a film free from surface defects such as running and sagging.

4.8 Appearance of dried film

The dried paint film shall have a smooth finish, free from sagging or wrinkling and shall not be inferior to a film prepared in the same way and at the same time from the reference sample.

4.9 Lead Content

The lead content of the paint shall not exceed 0.009% of the total mass of the paint when tested as per clause 2.8

4.10 Water Absorption

The coating when tested as per clause 2.9 shall show water absorption not more than 0.5%.

4.11 Chemical Resistance

The coating when tested as per clause 2.10 shall be resistant to the following chemicals and materials;

Hot Distilled Water

Ethanol 50% (v/v)

Acidic Solution up to 30% concentration

Alkaline Solution up to 30% concentration

Detergents

Fuel Oil
Gasoline
Hydraulic Fluid
Tea and Coffee Stain
Vegetable Oils
Paint Thinner

4.12 Adhesion Strength – Pull-off

The epoxy filler when tested as per clause 2.11 shall show adhesion strength not less than 2N/mm².

4.13 Compressive Strength

The coating, when tested as per clause 2.12 shall show compressive strength not less than 60 N/mm².

4.14 Flexural Strength

The coating when tested as per clause 2.13 shall show flexural strength of not less than 40 N/mm².

4.15 Tensile Strength

The coating when tested as per clause 2.14 shall show Tensile Strength of not less than 20 N/mm².

4.16 Shore D Hardness (ASTM D2240)

4.17 Impact Resistance

The mixed paint when applied by putty knife/scalper to get a DFT of 500 µm, in accordance with the manufacturer's instructions, on an abraded & degreased panel shall withstand a direct impact of 500 gms weight from 400 mm height. There should not be any cracking or peeling of the paint. The test panel shall be cured for 7 days at (23±2)°C & at a relative humidity of not more than (50% ±5) and tested as per clause 2.16.

4.18 FLASH POINT (may be required)

The flash point shall not be less than 90°C when tested as per clause 2.17

5. Properties keeping at storage

The paint shall attain its properties, being kept in its original airtight containers at ($23 \pm 2^{\circ}\text{C}$) or at manufacturer's recommendations storage conditions, for a period not less than 12 months without the formation of peeling on the surface within this period. At precipitation, the paint shall be homogenized.

6. Sampling

A representative sample of not less than 1 liter according to item 2/2 shall be taken from the paint in accordance with Saudi Standard mentioned in 2/3.

7. Test Methods:

The following tests shall be carried out on samples according to item (2).

- 7.1 Examination of the apparent state of paint in the container (packing and data)
- 7.2 conditions in container
- 7.3 Pot life
- 7.4 Non-Volatile Content
- 7.5 Consistency
- 7.6 Drying Time
- 7.7 Appearance of dried film
- 7.10 Specific gravity
- 7.11 Lead Content
- 7.12 Water Absorption
- 7.13 Chemical Resistance
- 7.14 Flexibility and Adhesion
- 7.15 Adhesion – Pull-off
- 7.16 Compressive Strength
- 7.17 Flexural Strength
- 7.18 Tensile Strength
- 7.19 Shore D Hardness
- 7.20 Impact Test
- 7.21 Flash point

٨. PACKAGING

The paint shall be packed in clean, dry, airtight suitable containers to accommodate the mixing of two pack product.

9- MARKING

Each container shall be legibly and indelibly marked with the following information in Arabic or (Arabic and English).

- 6.1) Name, Type and Color of the Paint.
- 6.2) Name of Manufacturer and / or Trademark.
- 6.3) Country of Origin and whether manufactured under license to a named Brand / Manufacturer.
- 6.4) Batch Number.
- 6.5) Date of Production in Month and Year.
- 2.6) Mass and / or Volume of the Paint.
- 6.7) Application Instructions.
- 6.8) Warning relating to flammability and toxicity where required.

4) REFERENCES:

- 1. Relative products specification.
- 2. Indian Standard: Mastic Filler, Epoxy Based-Specification.