

## SYSTEM “GLASSFLAKE” FOR PROTECTION OF EQUIPMENTS OF THE SULPHUR PURIFICATION FACILITIES

### Description:

The system includes ground coat and composition structure for multi-layer cover on base of two types of resins:

Type 1 - vinyl-ester resin of new-varnish type

Type 2 - vinyl-ester resin for special new-varnish type

The composition structure for multilayer cover contains mainly the resins, additives, pigments and a special type of “C”-glass made glass flakes with thickness of 3-5 microns and size of the particles 10-4000 microns.

Hardeners for the materials of the system - organic peroxides.

### Designation:

The materials of the system “glassflake” are designed for internal protection of the metal surfaces of sulphur purification facilities (gas outlets and others) against the aggressive influence of high temperatures (140-230°C) of the blast-furnace gases, received by the combustion of coals, mazut (sulphuric dioxide, nitric oxides, carbon dioxide, sulphuric and sulphuretted acid, chlorine-hydrogen etc.)

Thicknesses of protective system “glassflake” depending on the specific parameters (temperature, structure) of the fume gases - 1-3 mm.

Method of applying - non-air, brush, roll.

Requirement for preliminary preparation of metal surface - blasting up to a SA 2,5 level on DIN EN ISO 12944:44

Basic physical and mechanical indicators of the surface of the “glassflake” system

Density of the material, g/cm<sup>3</sup> - 1,2 - 1,6

Theoretical consumption ratio for 1 mm.kg./m<sup>2</sup> - 1,4 - 1,6

Compressive strength, MPa - 80

Tensile strength, MPa - 40

Bending strength, MPa - 60

Hardness on Barcole, not less than - 35

Ratio of linear thermal expansion -  $1,9 - 2 \times \text{cm}^{-1}/\text{cm}^{-1} \times \text{°C}^{-1}$

Eraseability on Taber, %, in loss of weight 1000 g/1000 vol. - 0,017

Maximum working temperature:

Vinyl-ester glassflake type **1** - +180°C continuously and 200°C periodically

Vinyl-ester glassflake type **2** - +230°C continuously and 250°C periodically

Water resistance on weight modification, % - 0,03 - 0,06

Diffusion ratio - 0,008 g/m<sup>2</sup> x mm. Hg/24h

### **Resistance of the systems “glassflake”**

Fume gases - oxygen, carbon dioxide, sulphuric dioxide, nitric dioxides, water.

Fluid phase - sulphuric acid, salt acid, fluorine-hydrogen acid.

### **Use of the protective systems “glassflake”**

Internal protection of the metal surfaces of facilities - gas outlets, metal chimneys, contact coolers, scrubbers, absorbers.