

**PRODUCT DESCRIPTION:**

ZFES is a two-component, solvent-bone, modified ethylsilicate zinc-rich primer. The mixing ratio is 1.5 (binder):10 (zinc base) by weight.

**RECOMMENDED USE:**

As an anticorrosive protective coating of structural steel in atmospheric conditions of all climatic regions, types of atmosphere, and category of location according to GOST 15150-69. ZFES has good resistance sea and fresh water, salt solutions (pH=6.0-9.0), petrol and related products. It can be applied in coating systems of hot and potable water supply systems and cargo holds of shipping and storage of grain and other products with humidity less than 15%.

ZFES is applied as:

- a primer in coating systems;
- a single coating.

It is recommended to use as a primer in the coating systems with ALUMOTAN (TU 2312-018-12288779-99), FERROTAN (TU 2312-036-12288779-2003), POLYTON-UR (TU 2312-029-12288779-2002), and other coatings based on epoxy, polyurethane, vinyl and vinyl copolymers.

The welding of structural steel with 20-30 microns coating is acceptable.

**CERTIFICATES/APPROVALS:**

State Registration Certificate No. RU.66.01.31.001.П.002576.08.07/ 03 August, 2007.

**Construction engineering:** GOST 9.401-91, Recommendations of Gosstroy R 1-2004 (SNIP 2.03.11-85), RDGM-01-02 by the Trust Gidromontazh.

**Transport engineering:** STO 001-2006 of Transstroy LLC, STO 483-2010 (friction coatings).

**Oil & Gas:** Resolution MVK № 347 P, 23 October 2000.

**Power engineering:** RD 153-34.1-40.504-00, ORGRES, RAO "UES of Russia" OJSC

**Shipbuilding:** YAKUT 25-069-2001

Conclusions of OJSC TSNIIS, Central Scientific and Research Design Institute n.a. Melnikov; Institute of Power Resources Transport, FGUP FNPS NIIPH, IC «Lakokraska», CRISM "Prometey", Certificate of IPEE RAN A.N. Severtsov Institute of Ecology and Evolution of the Russian Academy of Sciences (Research and Test Center in Nha Trang, Vietnam).

**TECHNICAL DATA:**

<b>Coating</b>	
Color/Finish	Grey/Flat
Content of zinc by weight of dry film	90 %
Dry film thickness per coat (typical)	40 – 50 microns
Adhesion, GOST 15140-78	1 grade, not more
Impact resistance, GOST 47-65-73	50 cm, not less
Bend test (cylindrical mandrel), GOST R 52740-2007	10 mm, not more
Resistance to dry heat (continuous / short-term)	up to 150 °C / 200 °C
<b>Primer</b>	
Specific gravity	1.85 – 2.05 g/ml
Viscosity	thixotropic
Non-volatile-matter content (Wt), %	66.0 – 70.0
Pot-life	8 h, not less
Drying time up to degree No 3 GOST 19007-73 ("touch-dry") at (23±2) °C and (65±5) % RH	20 minutes, not more
Calculated coverage	285 g/m <sup>2</sup> (50 microns)

**SURFACE PREPARATION:**

- Remove oil and grease to achieve degree №2, GOST 9.402-2004;
  - Blast slag and rust to achieve degree №2, GOST 9.402-2004 (Sa 2 1/2 or Sa 2, ISO 8501-1:2007);
  - Clean the surface carefully from abrasive and dust.
- Preparation of ZFES coating before topcoating:
- Remove oil and grease with suitable surface-active substances (pH between 6 to 8) followed by fresh water hosing; applying of white-spirit is acceptable.

- Clean the surface carefully from abrasive and dust.

## APPLICATION:

- Stir the zinc base thoroughly;
- Add the total contents of the binder to the zinc base (mixing ratio is 10 (zinc base):1.5 (binder) and continue the mixing until a complete uniform color is achieved.

Add recommended thinner to achieve workable consistency:

- from 20 to 50 s for airless spray;
  - from 20 to 30 s for air spray;
- if it is necessary.

ZFES is recommended to apply for shop and field painting at the temperature from -15 °C to +40°C and from 30 to 80% RH (from 30% to 80% is the best).

Every next coat of ZFES is recommended to be painted after drying of the previous coat up to "touch-dry".

Minimum recoating interval at temperature (20±2)°C and (60±5) % RH to topcoat is 24 h, not less; for FERROTAN, ALUMOTAN and POLYTON-UR is 6 h not less;

To avoid bubbling it is recommended to be applied topcoats in two coats the first must be applied as thin film the second – by typical thickness.

The curing time to exploit in liquids is 7 days.

### **Airless spray**

Recommended Thinner SOLV-ES (TU 2319-080-12288779-2009) up to 5 %  
by weight

Nozzle size 0.015" – 0.021" (0.38 – 0.53 mm)

Nozzle pressure 10 - 20 MPa (100 - 200 barp)

### **Air spray**

Recommended Thinner SOLV-ES (TU 2319-080-12288779-2009) up to 10 %  
by weight

Nozzle size 1.8 – 2.2 mm

Nozzle pressure 0.3 – 0.4 MPa (3 - 4 bar)

### **Brush / Roller**

Recommended Thinner SOLV-ES (TU 2319-080-12288779-2009) up to 5 %  
by weight

**Equipment cleaner** P-4, SOLV-ES, 646.

## STORAGE AND HANDLING:

Shipping weight is:

- 25 kg (21.69 kg of the zinc base in 20 l metal can and 3.31 kg of the binder in 5 l plastic can);
- 1.5 kg (1.3 kg of the zinc base in 1.0 l metal can and 0.2 kg of the binder in 0.27 l plastic can).

Store in dry, shaded conditions away from sources of heat, moisture and ignition, at the temperature from -40 °C to +30°C; GOST 9980.5-2009.

Guaranteed shelf life in the manufacturer's package units is 6 months from the date of packaging.

## SAFETY PRECAUTIONS:

ZFES has the fourth class of hazard, GOST 12.1007-76. It is necessary to follow all local or national safety regulations.

Coating ZFES is non-flammable and not toxic; and can be applied indoor.



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