

ALFAPOL VK (M)2: INSTRUCTIONS FOR USE

V20 PK1 FLOOR LEVELLING DRY CEMENT MIX FOR SEA SHIPS

DESIGNATION AND SCOPE

ALFAPOL VK (m)2 is used in making deck coating in residential and office premises of sea vessels, river vessels and offshore oil platforms. It is used for making lightweight screeds and slopes on metal (decks of steel, aluminium and galvanized steel) and mineral substrates (premises of ground facilities). It can be used in floating floor structures.

ALFAPOL VK (m)2 deck flooring meets the fire safety specification for use as an underlying layer of floors in residential and office premises of sea vessels, river vessels, and other floating structures.

It complies with the fire test provisions for determining flammability as a base for flooring ships and drilling platforms as specified in IMO Resolution A.687 (17) and approved in the Russian Maritime Register of Shipping.

FEATURES

Modified Portland cement-based **ALFAPOL VK (m)2** compound reinforced with reinforcing fibres makes it possible to create durable layers of deck coatings.

- It is designed for internal premises of sea vessels and river vessels
- It is resistant to medium distributed mechanical loads
- Fire safety (NG Category)
- Mechanized or manual application
- Environment safe
- It is used under any finishing and polymer coatings as a levelling layer
- Topcoats can be applied after 5 days
- Technological passage is possible in 10-12 hours at an air temperature of 20 °C and a relative humidity of 60%

GENERAL GUIDELINES

When using, it is necessary to follow SP 29.13330.2017 of the updated edition of SNiP 2.03.13-88 *Floors* and SP 71.13330.2017 of the updated edition of SNiP 3.04.01-87 *Insulation and Finishing Coatings, Section 4 Construction of Floors*. Thickness of the coating shall be determined by the project.

Substrate temperature shall be not less than + 10 °C, relative air humidity shall be 60% for the entire period of work. Any decrease in the temperature of the substrate and air in the room slows down setting of the **ALFAPOL VK (m)2** mixture.

The surface of the underlayment shall be clean, free of dust, oil, paint and other substances that reduce adhesion of the compound.

Metal substrates:

- They shall be securely fixed to the supporting structures of a vessel and have no deformations and shifts;
- No traces of corrosion are allowed;

Concrete substrate:

- Age of the concrete substrate, minimal: 1-3 months
- Age of the cement-sand screed, minimal: 28 days
- Compressive strength, minimal: 20 MPa
- Moisture in the substrate, maximal: 5%

The substrate shall ensure crack-free taking of all types of loads and force effects that may occur during operation.

PREPARING THE SUBSTRATE

Metal substrates

They shall be subjected to abrasive processing (sanding or shot blasting) to remove traces of dirt and corrosion, and then dedusted with an industrial vacuum cleaner. Install gaskets of damping materials with a thickness of at least 5 mm at junctions with walls, columns and other supporting structures, as

well as in spots where utilities pass.

Steel substrates shall be primed with **ALFAGRUNT IK** compound in one layer. Aluminium and galvanized substrates shall be first primed with ALFAPOL EP-1G epoxy primer and sprinkled with quartz sand of fraction 0.1-0.4 mm. After the primer layer hardened with sand, remove all the unadhered particles with an industrial vacuum cleaner, and prime with **ALFAGRUNT IK** compound in one layer.

Concrete substrate

Remove any cement laitance, abrasive unstable, loose and peeling areas of the substrate, mill it and clean the substrate from dust with an industrial vacuum cleaner. Install gaskets of damping materials with a thickness of at least 5 mm at junctions with walls and columns, as well as in spots where utilities pass.

3 - 4 hours before laying the floor coating, fill up cracks and large potholes in the floor substrate (pre-treated, dedusted and primed) with **ALFAPOL VK (m)2** mortar. Metal fragments protruding from the substrate must be cleaned of corrosion and treated with a metal primer.

Thoroughly prime 2-3 times the prepared surface with **ALFAGRUNT CONCENTRATE** compound. Each layer of the primer must be absorbed into the substrate and cured within 2-4 hours under normal conditions (temperature + 20 °C and 60% relative humidity). After the second priming (on a completely dry primer), test absorbency of the substrate by pouring a small amount of water in several places. If water is not absorbed into the substrate for about half an hour, the priming is considered complete.

PREPARING THE MORTAR

Pour 4.5-5 litres of pure water into a forced-action mortar mixer, fill a bag of **ALFAPOL VK dry mix (m)** and a bag of expanded clay crushed stone of 16.25 kg. Mix until consistency of wet prime.

COATING PROCESS

The manufacturer recommends to carry out a test laying of the mixture (1 set) to find the right amount of water in the mixture, to better match the existing substrate, priming, temperature, humidity and other conditions. In case of visible stratification of the mixture, it is recommended to reduce amount of water by 5-10%.

Pour a prepared mixture onto a prepared base, level it on guide rails using a floating rule, ensure a required thickness of the layer, and smooth it by hand using a trowel or a concrete finishing machine (helicopter).

Expansion joints and shrinkage joints that exist in the base must be reproduced in the coating.

In the absence of joints in the substrate, it is necessary to make saws in the **ALFAPOL VB (m)2** coating with an interval of approximately 6*6m. The joints must be made in a time interval of 24 to 48 hours after the moment the floor coating poured. The joints can be tight filled with polyurethane sealant 7 days after the floor covering poured, after the joints have been preliminary cleaned and dedusted.

Consumption of components (per 1m³ of mortar)

ALFAPOL VK (m) - 800 kg
Expanded-clay aggregate 0-5.1 mm, 520 kg
Water 140 - 150 litres

It is not recommended to keep the mixture in a mortar mixer more than 20 minutes to avoid setting. The mortar mass begins hardening in 30-40 minutes at an air temperature of 20 °C and a relative air humidity of 60%.

CONDITIONS FOR STRENGTHENING

During work and in the first hours of curing of the coating, avoid drafts and local overheating of individual sections of the floor (including heating of individual sections of the floor with sunlight through windows, stained-glass windows, or heating devices). The coating should be protected from drying out in hot seasons.

Technological passage on the coating is possible in 10-12 hours at an air temperature of 20 °C and a relative humidity of 60%. The material gains 30-50% of the grade strength after 3 days, the material gains 50-80% of the grade strength after 7 days. The coating gains its final strength after 28 days.

SUBSEQUENT COATING

Making of ceramic tile cladding is allowed in five days, linoleum and vinyl flooring - in seven days. Applying polymer coatings, as well as painting (impregnation) shall be performed following the relevant Instructions for these coatings, but not earlier than 12-15 days after the floor poured, with control of the moisture content of the **ALFAPOL VK (m)2** coating. Remove the laitance mechanically before applying roll and polymer coatings.

SAFETY

Follow the standard dust protection procedures (use a respirator) when working. The cement mortar has an alkaline reaction and should be washed off from the skin with water. If the cement mortar or dry mix contacts with your eyes, rinse it with plenty of clean water seek medical attention, if required.

PACKAGE AND STORAGE

The product is supplied as a set: **ALFAPOL VK (m)** dry mix in polypropylene bags of 25 kg, and expanded clay crushed stone in polypropylene bags 16.25 kg.

ALFAPOL VC (m) dry mix shall be stored in the sealed original package in a dry room on pallets at temperatures below + 5 °C, without humidification of the product. The product can be shipped by all types of vehicles that can ensure protecting the dry mixture from getting wet.

The warranty shelf life of the product in the unopened original package under normal conditions is 6 months.

RESPONSIBILITY

The manufacturer is not responsible for improper use of the product, for not following the technological procedure when working with the product, as well as for its use for the purposes different from intended one.

In the case of doubts about correctness of use of the product, please, test it individually (ref. this instruction on test laying) or contact ALFAPOL, LLC manufacturer for consultation. Recommendations that are not confirmed in writing cannot be deemed as a basis for unconditional liability of the material manufacturer.

SPECIFICATION

Application temperature: +10 °C to +25 °C

Mixing water quantity per 25kg bag: 4.5 - 5 l

Solution usability time: 40 minutes

Single layer thickness: 10 to 100 mm

Material consumption per 1m³: 1320 kg

ALFAPOL VK (m) - 800 kg

Expanded-clay aggregate 0-5.1 mm - 520 kg

Compressive strength at the age of 28 days, minimal: 25 MPa

Flexural tensile strength, 28 days, minimal: 5 MPa

Concrete adhesion strength, minimal: 0.6 MPa

Frost resistance, brand: F200

Mortar mobility grade, minimal: Pk1

Thermal conductivity: 0.96 W/m°C

Radiation safety standard (NRB-99/2009): Class 1

Fraction, maximal: 5.1 mm

Flammability category, GOST 30244-94: NG

Hardened coating density: 1450±50 kg/m³

Option for technological passage: 10-12 hours

Application of tiled facings - after 5 days, linoleums - 7 days;

polymer coatings (under normal conditions), not earlier than: 12-15 days

Store after the date of manufacture: 6 months