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# FESCOTOP F90K HIGH-PERFORMANCE CONCRETE


## Product description

Fescotop F90K is a cement-based fibre-reinforced corundum hard concrete. Polymer modification in the product improves adhesion, allowing the product to be used without separate adhesion mortars. Hard concrete can be used on a hardened concrete floor or on fresh concrete casting. Fescotop F90K Hard concrete is intended for applications requiring heavy wear-resistant and corrosive-resistant compact concrete surfaces. Suitable for use in parking garages, driving ramps, industrial production and storage facilities, transport routes, and repair of deteriorated and worn concrete floors.

- Wear resistance class A3
- Standard colour: concrete grey
- Maximum grain size 3 mm,
- Compressive strength class C 60

*The minimum delivery lot for a big bags is 3000 kg.*

## Applications

- Layer thickness 10 - 20 mm, partial levelling max. 50 mm
- Suitable for use on hardened or fresh concrete casting
- In parking halls for heavy wear areas
- Repair of deteriorated and worn concrete floors such as parking garages, car shelters, driving ramps, storage and production facilities
- Floors for industrial and heavy industry storage and production facilities

**The product is listed in the portal for building products that can be used in Nordic Swan Ecolabelled buildings.**

## Instructions

# Base

- Concrete base with a minimum strength of C25/30.
- The tensile strength of the subconcrete must be > 1.5 MPa. In the dimensioning of the surface slab, adhesion to the base is a key factor in preventing the shrinking of the surface slab from detaching from the base.
- The temperature of the substructure should be between +5°C and +25°C.
- Loose layers, cement glue and other impurities have been mechanically removed to ensure adhesion between the product and the base. The base must be milled.
- The concrete base must be moistened to matte wet on the previous day, and there must be no loose water.
- The reinforcement steels have been cleaned of loose rust and, if necessary, they have been treated with Fescon Bedding mortar TL.

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## Primer: hardened concrete floor

- Liquid adhesion primers are not used with the product.
- The slurry method is used to pre-treat the base. Mix a 25 kg sack of the product with 3.0 to 4.0 litres of water and apply the slurry mass to the matt moistened base by brushing hard. The layer thickness should be approximately 3–5 mm (6–10 kg/m$^2$ of dry product).
- Slurry treatment must not dry out. The hard concrete surface is made on a wet-to-wet basis.

## Priming: fresh concrete casting

- Liquid adhesion primers or slurry treatment are not used on a fresh concrete casting. Wet-to-wet method.
- Possible inclinations must be in the subconcrete, in which case a layer of hard concrete is spread on top of the casting.
- Fresh concrete casting must not dry before the application of hard concrete.

## Mixing and application

- The workspace must be protected from strong wind, sunlight and rain.
- During concreting and product hardening, the temperature should be between +5°C and +25°C.
- A bag (25 kg) of dry powder is mixed with 2.5 to 3.0 litres of clean water.
- An excessive amount of water reduces the strength values of the product, increases the risk of separation and prolongs the drying time of the product.
- The product is mixed into a uniform mass using a paddle mixer. A grout whisk may be used when mixing smaller quantities. The product can also be mixed with a pipe mixer and spread with a grout pump.
- When mixing with a grout whisk, allow the mass to stand for about 5 minutes, after which a short remix is made.
- The product is applied by hand or by pumping onto the base, sealed and straightened by a liner. The surface of hard concrete shall be prepared to the level required by the application. The surface rub is started when the product can withstand walking.
- On large surfaces, the layer thickness is 10–20 mm, with a maximum of 50 mm in partitioning.
- The working time is approximately 1 h from water addition.
- Wash the tools immediately with water after the work is completed.
- Dried product can be removed mechanically.

## Coating

- The product does not need to be coated.

## Aftercare

- Aftercare consists of keeping the surfaces moist for 7 days after casting, depending on the conditions and work site, by spraying with water, using plastic film or Fesco aftercare substance.
- Especially in the spring, aftercare should be started at the right time and carried out carefully, since in the spring the relative humidity of the air is often less than 40% RH. Low relative humidity combined with sunlight and wind dries the surface very quickly.

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## Other considerations

- When casting large uniform areas, the risk of cracking increases, in which case a sufficient number of shrinkage joints must be planned for the floor structure in accordance with instructions BY45/BLY 7 Betonilattiat (Concrete floors) 2014.
- When casting thick layer strengths, special attention should be paid to aftercare.
- However, at sites that will be deployed rapidly, aftercare must be carried out in accordance with the product instructions.
- Expansion joints must be sawn in accordance with the subconcrete.
- Can be polished and used as a so-called design surface.
- When working on a hardened and old concrete floor, all cracks must be repaired before the hard concrete surface is made, so that the cracks do not form on the hard concrete surface as well.

### Waste handling

Storage and handling of waste
See the separate storage and disposal instructions https://www.fescon.fi/en/material-bank

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# Technical information

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|---|---|
| **Material usage** | Approx. 2,0 kg/m$^2$/mm |
| **Water requirement** | 2,5 - 3,0 l / 25 kg |
| **Finished compound** | 12 - 13 l / 25 kg |
| **Type** | Powder |
| **Binder** | Special cement |
| **Colour** | Concrete grey |
| **Maximum grain size** | 3 mm |
| **Package size** | 25 kg and 1000 kg |
| **Storage** | Storage time in a dry location approx. 12 months |
| **Layer thickness** | Layer thickness 10 - 20 mm, partial levelling max. 50 mm |
| **Fibre** | Fiber reinforced |
| **Additives** | Polymer-emulsified additives for durability and workability |
| **Usage temperature** | +5°C...+25°C |
| **Workability time** | Approx. 1 h |
| **Walkable** | Approx. 3 - 4 h |
| **Strength class** | C 60 (EN 13813) |
| **Compressive strength** | Approx. 60 Mpa (28 days, +20°C, RH 50 %) |
| **Strength development** | 1 day: approx. 20 - 30 MPa (EN 196-1)<br>7 days: approx. 40 - 50 MPa<br>28 days: approx. 50 - 60 MPa |
| **Flexural bond strength** | F 5 (EN 13813) |
| **Wear resistance** | A3 (Böhme-test 3.0 cm$^3$ / 50 cm$^2$) |
| **Frost resistance** | Frostproof |
| **Waterproofness** | Water-resistant |

Limitation of liability, product use notes and restrictions: Please familiarize yourself with Fescon Oy's general terms of delivery and the design and work instructions related to the product.