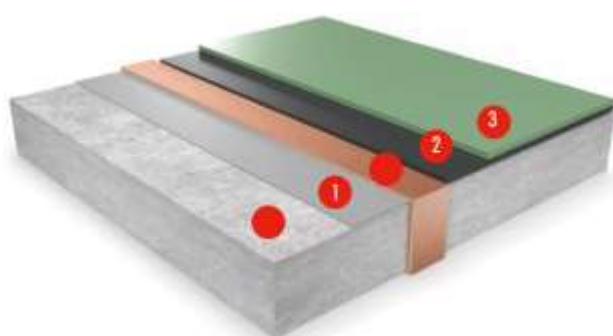


Peran ESD SL20 – Application Instruction Guide

1. Description.

Peran ESD SL20 is an epoxy, antistatic, self-levelling flooring system with smooth and glossy finish.

System consists of:



- Prepared Substrate
- Primer
- Conductive Grid
- Peran ESD Primer WB
- Peran ESD SL20

1. **Primer, e.g. Protop 1000 or Flowprime or Flowprime LW**
a solvent-free, 2-component epoxy primers.

2. **Peran ESD Primer WB**
a 2-component waterborne epoxy resin conductive primer used as intermediate layer within electrostatic dissipative systems.

3. **Peran ESD SL20**
a 2-component, solvent-free, pigmented epoxy resin with conductive properties that provides even and glossy finish.

Specification – material consumption:

1. Primer (some of possible options)

- Flowprime ~0.30 – 0.50 kg/m²
or
- Flowprime LW ~0.20 – 0.30 kg/m²
or
- Protop 1000 ~0.30 – 0.50 kg/m²
or
- Hydraseal DPM ~0.22 – 0.33 kg/m²

2. Conductive Primer

- Peran ESD Primer WB ~0.1 – 0.15 kg/m²

3. Main Layer

Peran ESD SL20
for ~1.5 mm: 2.0 kg/m²
for ~2 mm: 2.7 kg/m²

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2. Substrate requirements

Concrete substrate should be made in accordance with EN 13670. Concrete mix should be prepared in accordance with EN 206-1. The thickness of concrete slab as well as type and quantity of reinforcement has to be calculated according to required maximum load and traffic intensity. Substrate must be protected against external hydrostatic pressure (e.g. groundwater ingress). Required floor slopes should be shaped in a concrete substrate.

Concrete substrate requirements:

- Substrate class min. C20/25
- Surface bond strength min. 1.5 MPa
- Compressive strength min. 25 MPa
- Curing time min. 28 days*

* It can be allowed to apply floor systems on substrates that have been cured for less than 28 days as long as concrete surface has gained sufficient bond and compressive strength (see point 6). Floor cannot be exposed to full load before concrete substrate reaches its specified bearing capacity and nominal strength parameters.

- Surface moisture content max. 5% * (TRAMEX)

- Relative humidity of concrete (acc. to BS 8203) max. 83% *

*In case of higher moisture content Hydraseal DPM damp proof membrane should be used. Other solutions should be discussed with CPG Technical Department.

- Surface level assessment at any floor spot (acc. to DIN18202) max. ± 2 mm / 1m *
- gap under 2 m steel beam

*If there are specific requirement as to the flooring evenness, the concrete slab should be made according to those requirements, or the additional levelling layer application has to be considered.

The concrete substrate should be homogeneous, without scratches, cracks and voids. Areas of inadequate strength as well as all contaminants that could limit the adhesion of the flooring system should be removed. The necessary surface repairs must be carried out before final system application.

Quality assessment and final inspection of concrete slab should be conducted in the presence of a committee that includes representatives of Investor, Concrete Substrate Applicator and Floor System Applicator.

3. Application conditions

Recommended temperatures during floor application process:

- Substrate **+10°C - +25°C**
- Ambient **+15°C - +25°C**

In abovementioned temperatures resin flow is optimized for best application effect and assumed material consumptions can be maintained.

Remaining conditions:

- Air humidity max. ambient relative humidity for most products: **75%**
- Substrate temperature during application and initial resin curing min. **3°C higher than current dew point temperature**

4. Concrete substrate preparation.

Before application of system, substrate needs to be free of laitance and other contaminants that could reduce bond strength of applied coatings. Surface should be prepared by mechanical means – e.g. by shotblasting, grinding, milling etc. All cracks and floor damage has to be repaired before installation of flooring e.g. with epoxy screed using **Peran STC** as the resin or levelled with an epoxy scratch-coat (e.g. **Peran STC** mixed with fine dry sand).

In case of any doubts, contact local CPG Technical Department.

5. Application details.

5.1. Priming

Primer options:

1. Protop 1000

Primer can be applied onto concrete substrate of humidity up to 5% (TRAMEX)

- A: 10.7 kg
- B: 4.3 kg

~0.30 – 0.50 kg/m² per coat
(depending on substrate porosity)

2. Hydraseal DPM

Primer can be applied onto concrete substrate of humidity over 5% (TRAMEX)

- A: 8.47 kg
- B: 3.53 kg

Mixing proportions

Consumptions

1. One-coat
substrates of RH <5,2% TRAMEX/ <85% BS8203
Hydraseal DPM (Red or Natural): **~0.33 kg/m²**

2. Two-coat
substrates of RH ≤100% BS8203
Hydraseal DPM (Red): **~0.28 kg/m²**
Hydraseal DPM (Yellow): **~0.22 kg/m²**

In both cases, kiln dry Silica Sand/Quartz scatter is required into the final wet coating to allow application of screed finishes:
For a resin screed topping: 0,2-0,8 mm grade (or similar) **~0.5 kg/m²**
For a cement screed topping: 1-2 mm grade (or similar) **~2 kg/m²**

Mixing instructions

Stir Base A before adding Hardener B. Carefully empty Hardener B into Base A. Mix using a low-speed mixer and helical spinner and ensure that the material is thoroughly mixed, taking care not to entrain air. Finally pour the material into another container and mix for a further minute before application.

1. Protop 1000

2. Hydraseal DPM

Tools

To spread the primer prepare specific tools:



1. rubber squeegee

and

2. paint roller

Application

Pour mixed material onto the substrate in stripes and distribute with rubber squeegee, followed by evening out using a medium-pile paint roller. Make sure that cured layer is continuous, without dry patches and free from pinholes and that the primer is worked down into all the irregularities of the substrate.

Porous substrates might require more than one priming coat.

Pour mixed material onto the substrate in stripes and distribute with rubber squeegee, followed by evening out using a medium-pile paint roller. Make sure that cured layer is continuous, without dry patches and free from pinholes and that the primer is worked down into all the irregularities of the substrate.

Wait till first layer of primer becomes tack-free before overcoating.

Final coating should be scattered with appropriate sand grade (see Coverage paragraph above) whilst still wet.

Primer options

3. Flowprime

Primer can be applied onto concrete substrate of **humidity up to 5% (TRAMEX)**

- A: 9.4 kg
- B: 4.7 kg

Mixing proportions

- A: 20 kg
- B: 5 kg

Consumptions

~0.30 – 0.50 kg/m²

~0.20 – 0.30 kg/m²

Mixing instructions

Stir Base A before adding Hardener B. Carefully empty Hardener B into Base A. Mix using a low-speed mixer and helical spinner and ensure that the material is thoroughly mixed, taking care not to entrain air. Finally pour the material into another container and mix for a further minute before application.

Tools

To spread the primer prepare specific tools:



1. rubber squeegee



and



2. paint roller

Application

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Pour mixed material onto the substrate in stripes and distribute with rubber squeegee, followed by evening out using a medium-pile paint roller. Make sure that cured layer is continuous, without dry patches and free from pinholes and that the primer is worked down into all the irregularities of the substrate.

Porous substrates might require more than one priming coat.

5.2. Conductive grid

Peran ESD SL20 does not require a copper grid connection when applied over **Peran ESD Primer WB**. Only the areas separated by slab joints need a wire connection to ensure proper conductivity of entire floor. Follow the joint transition connection and earthing guide below.

Floor joint transitions need to be connected in such way that would allow re-cutting the joint and its sealing without damaging the conductive grid. To do that, create small cut in concrete base perpendicular to the joint, couple centimetres deep (forming “tunnel” across the joint). Place electric wire of minimum 1,5 mm² diameter size in the cut. Connect the wire on both sides of the joint to copper grid using pre-cut tape strips. Fill the cut to match substrate level with epoxy-based, thixotropic mortar.

5.3. Earthing

It is recommended to create at least two earthing points in each room. Area size served by singular earthing point should not exceed 300 m². There are two ways to connect copper grid with earth:

- **Using electric stranded wire of minimum 2,5 mm² diameter:**

Create small cut near earthing point to hide the wire. Remove ~15 cm of insulation layer from the wire and spread individual strands to form fan shape. Connect the strands with the grid using copper tape strips. Place other end of the wire inside the cut made earlier and connect it to the earthing point. Fill the cut to match substrate level with epoxy-based, thixotropic mortar.

- **Using steel anchor:**

Place the anchor in concrete base. Place copper tape strips on both sides so they adhere to the anchor and are connected to the grid. Press the tapes to the base with proper sized washer and use nut to secure it. Protect the anchor thread from being stained with resin.

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5.4. Conductive primer – Peran ESD Primer WB

Conductive primer

Peran ESD Primer WB

Mixing proportions

- A: 1.72 kg
- B: 8.28 kg

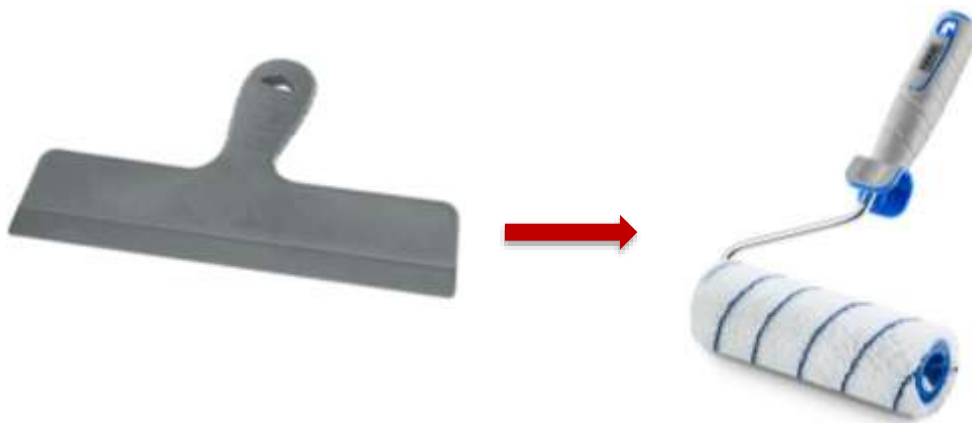
Consumptions

~0.10 - 0.15 kg/m²

Mixing instructions

Stir Hardener B before adding Base A. Carefully empty Base A into Hardener B. Mix using a low-speed mixer and helical spinner and ensure that the material is thoroughly mixed, taking care not to entrain air. Finally pour the material into another container and mix for a further minute before application.

Tools



1. rubber squeegee

and

2. paint roller

Application

Spread the material evenly onto the substrate using squeegee and even it out with medium-bristled nylon roller. Take extra care that applied layer is uniform and continuous.

NOTE: Once cured, Peran ESD Primer WB conductivity must be verified in accordance with EN 61340-4-1. $R_g \leq 5 \cdot 10^4 \text{ Ohm}$ ($\leq 5 \text{ kOhm}$) is required for proper function of system without copper grid.

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5.5. Main layer - Peran ESD SL20

Main Layer

Peran ESD SL20

Mixing proportions

- A: 11.3 kg
- B: 2.7 kg

Consumptions

for ~1.5 mm: 2.0 kg/m²
for ~2 mm: 2.7 kg/m²

Mixing instructions

Stir Base A for minimum 2 minutes using slow-speed mixer to homogenize, before adding Hardener B. Carefully empty Hardener B into Base A. Mix for 2 minutes using a low-speed and a twin-propeller mixer to reduce air entrapment in the mix and to ensure that the material is thoroughly mixed. Finally pour the material into another container and mix for a further minute before application

Tools

Mixing:



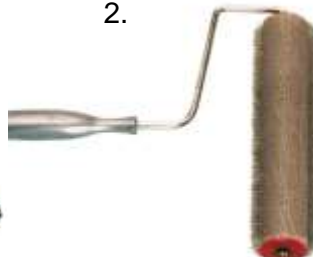
Twin-propeller mixer e.g. **Gröne 0860-850120** or **Festool 769033**

To spread main layer prepare tooth blade⁽¹⁾, spikeroller⁽²⁾ and spike slipper⁽³⁾:

1.



2.



3.



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Peran ESD SL20

Application

Distribute the material evenly onto the surface primed with Peran ESD Primer WB using gauged rake or notched trowel.

Note: For 1.5 mm application use Polyplan tooth blade no 78 (guided at 45 degree angle) and for 2.0 mm use Polyplan tooth blade no 67 (guided perpendicular).

Wait for 2-3 minutes and use spiked roller to remove air bubbles from the surface. Guide the roller along and across the floor plane for best results.

6. General information.

- Small differences in colour of separate batches are possible. When using materials from different batches, check if their colours match.
- All material components should be brought to the same temperature as the application area (recommended +15 °C - +25 °C).
- Application of subsequent layer is possible within their respective overcoat windows. See individual TDS for more information.

System curing times:

	+10 °C	+20 °C	+30 °C
Light foot traffic after	48 hours	24 hours	12 hours
Full traffic after	4 days	72 hours	36 hours
Full cure after	12 days	7 days	5 days

Lower ambient temperatures may extend this time window.

- Protect finished floor from stains and dirt until it is fully cured. Do not wash or cover tightly the uncured resin.
- Use and maintain the finished flooring system as described in **Flowcrete Resin Flooring Cleaning and Maintenance Guide**.

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