1. General Information

1.1 Surface Condition and Application Requirements

The moisture content of the substrate to which epoxy floor coatings will be applied must be **below 5% by weight**, and the relative humidity of the ambient air must **not exceed 60%.**

During application, **the surface temperature must be between +10°C and +30°C**, and the ambient temperature must also be between **+10°C and +30°C.**

Dew point conditions must be checked prior to application. In order to prevent condensation, **the substrate temperature must be at least 3°C above the dew point temperature.**

If these conditions are not achieved, the reaction time and adhesion performance of the epoxy system may vary depending on the environmental conditions, and the expected performance may not be obtained.

The surface to be treated must be dry and free from dust, dirt, weak or loose particles, cement laitance, oil, and grease. **Application must not be carried out on wet or frozen surfaces.**

Concrete substrates must be clean and dry, with **a minimum compressive strength of 25 N/mm²** and **a minimum tensile (pull-off) strength of 1.5 N/mm².**

For newly poured concrete surfaces, the epoxy application should be carried out **after a minimum curing period of 28 days.** This period may vary depending on the condition of the concrete and the environmental conditions.

Metal surfaces must be dry and clean. Prior to application, metal surfaces should be cleaned by **sandblasting** to remove rust, dirt, and oil completely.

For ceramic substrates, the **glazed surface layer must be removed** prior to application.

1.2 Surface Preparation and Repair

Prior to application, cement laitance and weak surface layers of the concrete must be removed using professional equipment such as **concrete grinding machines and Blastrac shot blasting machines.**

Where necessary, **concrete milling machines** and **floor grinding machines** should also be used.

If the surface contains existing floor coatings, paints, or surface hardeners, these layers must be removed **until sound concrete substrate is reached.**

All dust, debris, and residues generated during mechanical preparation must be removed using **industrial vacuum cleaning equipment.**

Any contaminants such as oil, grease, or other residues that cannot be removed mechanically must be cleaned using **appropriate chemical cleaners.**

Cracks in the concrete surface should be opened in an **inverted "V" shape**, and cavities, holes, or other surface defects must be properly opened, cleaned, and repaired using **ALEF EP 610 EPOXY MORTAR** repair mortar.

After all preparation works are completed and the surface is properly roughened, it must be thoroughly cleaned from dust using **brushes and industrial vacuum cleaners** prior to application.

1.3 Cove Base and Joint Applications

Cove base (fillet) and joint applications shall be carried out if deemed necessary or upon request.

Cove bases will be formed at the junction between the floor and the wall, using epoxy material, with a height of 5–10 cm, and shaped with a 45° chamfer, in the same color as the floor coating.

Joint cutting shall be performed at appropriate intervals to relieve stresses that may occur in the concrete after casting.

Joint gaps will be filled using polyurethane-based joint sealant.

Cove bases and joints will be measured upon completion of the works, and the cost will be calculated and invoiced based on linear meter (lm) measurements according to the unit price.

1.4 Floor Line Markings

Floor line markings will be carried out if deemed necessary or upon request.

Lines will be applied in predefined **RAL colors and thicknesses**, in accordance with occupational safety requirements and area organization standards.

- Indoor floor markings will be applied using **ALEF EP 310 RAL TOP COAT solvent-free epoxy paint.**
- Outdoor floor markings will be applied using **ALEF AC 330 RAL UV 2K TOP COAT UV-resistant acrylic polyurethane paint.**

Floor markings will be measured after completion, and invoicing will be calculated based on **linear meter (lm)** measurements according to the unit price.

1.5 Epoxy Coating on Walls and Columns

Painting of walls and columns will be carried out if deemed necessary or upon request.

All coating works will be applied in predefined **RAL colors**, in accordance with project specifications, using **solvent-free epoxy paint systems.**

Surface irregularities on walls and columns will first be corrected using **epoxy putty**, followed by the application of **epoxy primer.**

After priming, **ALEF EP 310 RAL TOP COAT solvent-free epoxy paint** with special additives will be applied as the final coating layer.

The application areas will be measured upon completion, and the cost will be calculated and invoiced based on **square meter (m^2)** measurements according to the unit price.

2. Antistatic Conductive Epoxy Floor Coating

Antistatic (ESD), fully conductive epoxy floor coating with **high mechanical and chemical resistance, dust-free, liquid-impermeable, self-levelling**, and **solvent-free epoxy-based formulation.**

The finished surface is **smooth and glossy** and available in **RAL colors.**

Surface resistance: $2.5 \times 10^4 – 1.0 \times 10^6$ Ω

Coating Thickness: 2 – 2.5 mm

2.1 Application Details

Surface Preparation and Cleaning

Prior to application, cement laitance and weak concrete layers must be removed using professional equipment such as **concrete grinding machines** and **Blastrac shot blasting machines.**

If the surface contains existing floor coatings or other materials, they must be removed **until sound concrete substrate is reached.**

All dust, debris, and residues generated during preparation must be removed using **industrial vacuum cleaning equipment.**

After all preparation works are completed and the surface is properly roughened, the substrate must be thoroughly cleaned from dust using **brushes and industrial vacuum cleaners** before application.

ALEF EP 115 PRIMER
(Solvent-Free Standard Multi-Purpose Epoxy Primer)

ALEF EP 115 PRIMER (Component A and B) must be mixed at a ratio of **A:B = 15:5 by weight**.

The mixture should be blended using a **variable-speed mixer for 2–3 minutes** until a homogeneous consistency is obtained, and then **left to rest for 1 minute**.

The prepared mixture is applied evenly to the substrate using a **flat steel trowel**.

Depending on the surface and ambient temperature, **16–24 hours** should be allowed before applying the next layer.

Consumption: **0.400 kg/m²**

ALEF 602 QUARTZ SAND 0.2–0.5
(Quartz Sand)

After the above process, **0.2–0.5 mm quartz sand is broadcast onto the wet epoxy primer**.

Once the primer has cured, **light grinding is carried out** and loose sand particles that have not adhered to the surface are removed.

The surface is then **cleaned with an industrial vacuum cleaner**.

Consumption: **1.5 kg/m²**

ALEF ESD 615 COPPER TAPE
(Conductive Copper Tape for Grounding)

After the epoxy primer and quartz sand application, **ALEF ESD 615 COPPER TAPE conductive copper tape is installed on the floor to establish the grounding system**.

Consumption: **Applied at intervals of 4–6 meters where required**

ALEF ESD 510 EP CONDUCTIVE PRIMER
(Solvent-Free Antistatic ESD Conductive Epoxy Primer)

ALEF ESD 510 EP CONDUCTIVE PRIMER (Component A and B) must be mixed at a **ratio of A:B = 12:5 by weight**.

The mixture is blended using a **variable-speed mixer for 2–3 minutes** until homogeneous and then **left to rest for 1 minute**.

The prepared mixture is applied **in a single coat using a flat trowel**, followed by **rolling with a paint roller** to ensure even distribution.

Depending on the **surface and ambient temperature**, **16–24 hours** curing time should be allowed before the next layer.

Consumption: **0.500 kg/m²**

ALEF ESD 520 EP CONDUCTIVE SELF LEVELING RAL TOP COAT
(Solvent-Free Antistatic ESD Fully Conductive Epoxy Self-Leveling Top Coat)

After the conductive epoxy primer application, the **final coating layer is applied**.

ALEF ESD 520 EP CONDUCTIVE SELF LEVELING TOP COAT (Component A and B) must be mixed at a **ratio of A:B = 15:5 by weight**.

The mixture is blended using a **variable-speed mixer at low speed for 2–3 minutes** until homogeneous and then **left to rest for 1 minute**.

The prepared mixture is **spread onto the surface using a notched trowel**, and then **rolled in two directions using a spiked roller** to remove trapped air and ensure proper leveling.

Depending on **surface and ambient temperature**, **16–24 hours curing time** should be allowed.

Consumption: **1.5 – 2.0 kg/m²**

2.2 Precautions During Application

During application, there must be **no air drafts or water leakage** on the surface.

The substrate to be treated must be protected against **water, moisture, liquids, dust, oil, and chemical contaminants.**

The **ambient temperature must not fall below +10°C** during application.

The application area must be **closed to pedestrian and vehicle traffic**. Other personnel must **not be allowed to enter the application area or walk on the floor surface.**

Foreign materials must not be dropped onto the floor during application.

Windows and doors should be kept **closed to prevent direct air drafts and dust** from entering the area.

If the application is carried out in enclosed spaces, **adequate ventilation must be provided**; however, **direct air circulation over the surface should be avoided.**

The materials used during the application have **no harmful effects on human health**, and after curing they **do not emit any odor or hazardous substances.**

2.3 Curing Process Recommendations

In general, when applying epoxy floor coatings, an average curing time of approximately **24 hours should be allowed between each layer** to ensure the completion of the chemical reaction and proper drying.

The curing time may vary depending on **ambient temperature, relative humidity, material properties, and environmental conditions.**

After completion of the epoxy flooring system, the floor can generally be opened to light use on the following day.

However, the coating requires a **minimum of 7 days to reach its full mechanical and chemical resistance.**

During this period, the surface must **not be exposed to heavy loads or chemical substances** and should be protected from **liquids, water, moisture, and oils**

3. Material Technical Properties

ALEF EP 115 PRIMER

(Solvent-Free Multi-Purpose Standard Epoxy Primer)

Two-component, solvent-free, **low viscosity epoxy primer** with **high mechanical and chemical resistance**, designed for multi-purpose applications.

Packaging

- **Component A:**
  15 kg tin container
  (Epoxy Resin, transparent liquid)
- **Component B:**
  5 kg tin container
  (Epoxy Hardener, transparent yellowish liquid)
- **A + B Components:**
  20 kg set

Material Density

- **Component A:** 1.60 kg/L (+23°C)
  (DIN EN ISO 2811-1)
- **Component B:** 1.00 kg/L

Mixed Density

~ 1.45 kg/L

Solid Content

~ 100% by weight

Viscosity (Mixed)

800 – 1000 mPa·s

(DIN EN ISO 2555)

Mixing Ratio

Component A : Component B = **15 : 5 (by weight)**

Compressive Strength (Mortar)

75 N/mm²

(7 days / +23°C)

(DIN EN 196-1)

(Mortar mixture prepared using ALEF EP 115 Primer and sand in a ratio of 1:5.)

Flexural Strength (Mortar)

30 N/mm²

Adhesion Strength

> 3.5 N/mm² *(Concrete failure)*

(DIN EN 13892-8)

Shore D Hardness
78
(7 days / +23°C)
(DIN 53505)

Pot Life
30 minutes at +20°C

Touch Dry Time
8 hours at +20°C

Curing Time

- **+10°C:** 24 hours – 4 days
- **+20°C:** 12 hours – 2 days
- **+30°C:** 8 hours – 24 hours

Application Temperature
Application temperature must be between **+10°C and +30°C**.

VOC Content
0 g/L
(TS EN ISO 11890-2)
Our products are formulated **without solvents and do not pose harmful effects to human health or the environment**.

Shelf Life and Storage
Shelf life is **12 months from the date of manufacture**.
Products must be stored in their **original, unopened, and undamaged packaging**, in **dry conditions**, protected from **direct sunlight**, and at temperatures between **+10°C and +30°C**.

ALEF ESD 510 EP CONDUCTIVE PRIMER

(Antistatic ESD Conductive Solvent-Free Epoxy Primer)

Two-component, solvent-free, **epoxy resin–based highly electrostatic conductive primer** designed for use in **ESD flooring systems**.

Packaging

- **Component A:**
  12 kg tin container
  (Antistatic conductive epoxy, black liquid)
- **Component B:**
  5 kg tin container
  (Epoxy hardener, transparent yellowish liquid)
- **Component A + B:**
  17 kg set

Material Density

- **Component A:** 1.55 kg/L (+23°C)
  (DIN EN ISO 2811-1)
- **Component B:** 1.00 kg/L

Mixed Density

~ **1.40 kg/L**

Solid Content

~ **100% by weight**

Viscosity (Mixed)

1000 – 1100 mPa·s

(DIN EN ISO 2555)

Mixing Ratio

Component A : Component B = **12 : 5 (by weight)**

Adhesion Strength

> 3.5 N/mm² *(Concrete failure)*

(DIN EN 13892-8)

Electrostatic Performance

Re: $10^3 – 10^4$ Ω

(IEC 61340-4-1)

Curing Time

(Waiting time before application of ALEF ESD 520 EP CONDUCTIVE SELF LEVELING RAL TOP COAT)

Temperature	Minimum	Maximum
+10°C	24 hours	4 days
+20°C	12 hours	2 days

Temperature	Minimum	Maximum
+30°C	8 hours	24 hours

Chemical Resistance
Resistant to **many chemical substances**.
For detailed information, **please contact us**.

Pot Life
30 minutes at +20°C

Application Temperature
Application temperature must be between **+10°C and +30°C**.

VOC Content
< 50 g/L
Complies with **LEED requirements**.
(TS EN ISO 11890-2)
Our products are formulated **without solvents and do not pose harmful effects on human health or the environment**.
For information about our **VOC: 0 g/L products**, please contact us.

Shelf Life and Storage
Shelf life is **12 months from the date of manufacture**.
Products must be stored in their **original, unopened, and undamaged packaging**, in **dry conditions**, protected from **direct sunlight**, and at temperatures between **+10°C and +30°C**.

ALEF ESD 520 EP CONDUCTIVE SELF LEVELING RAL TOP COAT

(Antistatic ESD Fully Conductive Solvent-Free Epoxy Self-Leveling Top Coat)

Two-component, solvent-free, **electrostatically fully conductive epoxy-based self-leveling colored top coat** designed for **ESD flooring systems**.

Packaging

- **Component A:**
  15 kg tin container
  (Antistatic epoxy self-leveling, available in RAL XXXX colors, liquid)
- **Component B:**
  5 kg tin container
  (Epoxy hardener, transparent whitish liquid)
- **Component A + B:**
  20 kg set

Material Density

- **Component A:** 1.70 kg/L
  (DIN EN ISO 2811-1)
- **Component B:** 1.03 kg/L

Mixed Density
~ 1.54 kg/L

Solid Content
~ 100% by weight

Viscosity (Mixed)
2000 – 2200 mPa·s
(DIN EN ISO 2555)

Mixing Ratio
Component A : Component B = **15 : 5 (by weight)**

Compressive Strength
50 N/mm²
(7 days / +23°C)
(DIN EN 196-1)

Flexural Strength
30 N/mm²

Adhesion Strength
> 4.0 N/mm² *(Concrete failure)*
(DIN EN 13892-8)

Shore D Hardness

80
(3 days / +23°C)
(DIN 53505)

Abrasion Resistance
30 mg
(CS 10 / 1000 / 1000)
(7 days / +23°C)
(EN ISO 5470-1)

Electrostatic Performance
(Final performance of the entire coating system)
Surface Resistance
Rs: **$2.5 \times 10^4 – 1.0 \times 10^6$ Ω**
Re: **$2.5 \times 10^4 – 1.0 \times 10^6$ Ω**
(DIN IEC 61340-4-1)
Grounding Resistance
Rg: **$2.5 \times 10^4 – 1.0 \times 10^6$ Ω**
Body Voltage Generation
< 100 V
(EN 61340-4-5)
These values may vary depending on **environmental conditions (temperature and humidity)** and the **measurement equipment used**.

Chemical Resistance
Resistant to **many chemical substances**.
For detailed information, **please contact us**.

Pot Life
30 minutes at +20°C

Curing Time

- **+10°C:** 24 hours – 3 days
- **+20°C:** 20 hours – 2 days
- **+30°C:** 16 hours – 1 day

Curing times are **approximate values provided for mechanical strength development**.
They may vary depending on **environmental conditions, substrate and ambient temperature, and relative humidity**.

Full Curing Time

- **+10°C:** 9 days
- **+20°C:** 7 days
- **+30°C:** 5 days

Full curing times are **approximate values for achieving complete physical and chemical resistance**.
They may vary depending on **environmental conditions, particularly temperature and relative humidity**.

Application Temperature
Application temperature must be between **+10°C and +30°C**.

VOC Content
< 50 g/L
Complies with **LEED requirements**
(TS EN ISO 11890-2)
Our products are formulated **without solvents and do not pose harmful effects on human health or the environment**.
For information regarding our **VOC: 0 g/L products**, please contact us.

Shelf Life and Storage
Shelf life is **12 months from the date of manufacture**.
Products must be stored in their **original, unopened, and undamaged packaging**, in **dry conditions**, protected from **direct sunlight**, and at temperatures between **+10°C and +30°C**