

INDOOR

2023





## ElaProof Indoor Solutions

renovation and new construction sites





## ElaProof **Indoor air Solutions** - Professionals choice for renovation and new construction sites

The indoor air quality of homes, workplaces and recreational facilities has a major impact on the comfort and well-being of the people who use the facilities. Ensuring clean and healthy indoor air is paramount in new construction and renovation. Physical factors affecting indoor air include e.g., indoor temperature, humidity, air movement and traction, and indoor radon radiation. The temperature and traction of the premises affect the comfort in the indoor environment, but radon radiation, for example, causes harm to health. Sealing joints and air leaks, as well as radon protection and the prevention of VOCs, are often the most critical aspects of building maintenance. ElaProof Indoor air solutions offers a wide range of safe products for new and refurbished construction - for a healthy indoor air.

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### For healthy indoor air!



### IAR System Indoor air sealing and radon protection of structures

ElaProof Indoor is a ready-to-use 1-component water-based sealant (polymer emulsion) for indoor air sealing, radon sealing and waterproofing of various structures and buildings. The excellent elasticity and adhesion of the product to various surfaces enable safe and secure sealing. The product has an M1 emission rating issued by the Building Information Foundation. According to the classification, the best M1 category includes build-ing materials used indoors, which emit very little of any compounds into the room. In addition, the product has a pan-European Emicode EC 1 certificate for indoor use products and CE markings. ElaProof Indoor is listed in the Nordic Ecolabelling construction product database and can be used in Swan-labeled buildings.

These installation instructions describe the use of the ElaProof Indoor sealing system for sealing structures and joints. The product is also suitable as a radon barrier, waterproofing and primer under new coatings. The guide is suitable for new and renovation construction.

The IAR system includes:

- ElaProof Indoor sealing compound
- ElaProof Primer
- ElaProof Base Fabric

ElaProof Indoor sealant is suitable for use on a variety of surfaces, including concrete, metal, wood, masonry, cementitious screeds, building boards and fabric. Its adhesion to polyethylene is weak. Due to the water-based nature of the product, the drying material shrinks as the water evaporates.

If the contractor does not have sufficient experience in using the product, it is recommended to accept the model work. If necessary, the material supplier arranges user training.

In addition to the instructions of the material supplier, the instructions are followed where applicable, SisäRYL 2000 and MaalausRYL 2000.

These installation instructions are not a plan for repairs but need to be clarified on a site-by-site basis suitability and draw up their own plans.

Radon gas permeability has been studied in Sweden with RISE - SP Method 3873. Based on the measurement, ElaProof prevents radon gas leakage of more than 98 percentage. Vahanen Rakennusfysiikka Oy has tested the air tightness of ElaProof with tracer experiments.

### **ElaProof Indoor installation instructions**

### **CONDITIONS AND STORAGE**

ElaProof should be installed at temperatures above +  $10^{\circ}$ C. Surface temperatures must also be at least +  $10^{\circ}$ C. The product temperature must be +10 to +  $30^{\circ}$ C when the product cures and films. Do not freeze during transport or storage, or store in direct sunlight or at temperatures above +  $40^{\circ}$ C.

The product should be stored in sealed packages to prevent water evaporation.

### SURFACE

The suitability of the base and structures for air sealing must be ensured. The suitability of ElaProof Indoor for the platform should be tested on site. The substrate must be solid, strong, uniform and not cracked so that there is no air path from the substrate outside the seal. Cavities and crevices larger than 2 mm in the substrate are filled or levelled with ElaProof Indoor up to a thickness of 10 mm or other elastic compound (no acrylic), polyurethane or filler. The moisture content of the concrete substrate should not exceed 90% RH.

#### SURFACE CLEANING

All non-adhesive layers are removed from the surface. The surface must be free of dirt, dust, loose water, and other loose material. The surface is cleaned of cement adhesive, for example by sanding.

#### **PRIMING THE SUBSTRATE**

ElaProof Primer is used on porous surfaces to ensure adhesion. ElaProof Primer is diluted with water in a ratio of 1 part primer to 2 parts water (1:2). The consumption of the primer depends on the substrate and is applied in such a way that all the substance is absorbed into the substrate. The primer is allowed to dry for 1-4 h depending on the conditions. ElaProof Primer is especially used on porous, dusty, or otherwise difficult to clean surfaces. It is a good idea to test the suitability of the primer on the substrate separately before installation, for example by triangulation and tensile strength tests on the installed coating model.

#### **INSTALLATION**

ElaProof Indoor must be mixed thoroughly before installation. It is recommended to install ElaProof Indoor first to seal the joints and then to treat the planar surfaces. Careful installation work ensures a functional result.

### 1. JOINTS

The sealing principles of the connections are shown in the drawing ElaProof Indoor air sealing details.

For joints with possible movements, ElaProof Base Fabric is used. In structures where there is no movement, such as in old structures where drying shrinkages and depressions have already occurred, the installation can be done without a base fabric. However, we still recommend the use of a base fabric.

The seal is overlapped on the surfaces to be sealed

- on concrete surfaces at least 30 mm

- on wooden surfaces at least 15 mm

### **USING A BASE FABRIC FOR SEALING**

Apply a large amount of ElaProof Indoor sealing compound to the cleaned, flat surface with a spatula or brush so that the compound adheres to the substrate throughout. In structures where movements are possible, the ElaProof Base Fabric is pressed into the wet mass, for example with a spatula, so that no air is left between the base fabric and the base. Apply a 2nd coat of ElaProof Indoor on top of the base fabric so that the base fabric stays in place and is covered throughout. Second coat ElaProof Indoor is easiest to apply after the first coat has dried. The joints of the base fabric are overlapped by at least 30 mm and the base fabric is glued with ElaProof Indoor to the underlying support fabric. Particular attention must be paid to the tightness of corners and bushings.

### **SEALING WITHOUT BASE FABRIC**

In structures where no movement occurs, the sealing is done twice with ElaProof Indoor sealing compound to a minimum thickness of 0.5 mm of the final dry film. Apply a large amount of ElaProof Indoor sealing compound to the cleaned, flat surface with a spatula or brush so that the compound adheres to the substrate throughout. The first layer is allowed to dry before installing the second sealing layer. Particular attention must be paid to the tightness of corners and bushings.

The surface is touch dry after 3-4 h and walk-resistant after 15 h after installation (20 °C, RH 45 %, 1  $l/m^2$ ).

### 2. SEALING OF PLANAR SURFACES

ElaProof Indoor is applied to the flat surfaces with a trowel, roller, brush, or spray. More layers may be required to provide sufficient film thickness on the wall, ceiling, or other floating surfaces. It is recommended to apply the next coat after at least 3 hours.

The recommended material consumption is a total of 1.0 - 1.4 l / m2. The surface is touch dry after 3-4 h and walk-resistant after 15 h after installation (20 ° C, RH 45%, 1 l / m<sup>2</sup>).

### REQUIREMENT

Successful airtightness requires a dry film thickness of at least 0.5 mm, which on a flat surface corresponds to a material consumption of 0.8 l /  $m^2$ . The finished coating must be well adhered to the substrate throughout. The material should be well bonded and there should be no holes in the coating.

Verification of success for airtightness usually requires quality assurance, which can be carried out, for example with marker tests in accordance with Finnish RT Card - RT 14-11197.

CLEANING OF TOOLS

Clean tools with water.



### **Outer wall-floor connection sealing**



### **DRAWING IN PRINCIPLE 1:2**

**DET A, 1:1** 



Filling the floor and wall joint gap (up to 2-5 mm) with elastic compound (not acrylic). ElaProof Indoor commits up to 10 mm thick. Larger cracks with polyurethane foam. Use a base tape if necessary.



The edges of the seal are delimited with tape, which is removed before the product has dried.



## Sealing the inside of the external wall-window connection

### **DRAWING IN PRINCIPLE 1:2**



### **Sealing of Grommets**



### **DRAWING IN PRINCIPLE 1:2**



### Please, remember that ...

### Sufficient dry film thickness guarantees successful sealing!

For indoor air sealing	1	For Radon sealing	1
		min. <b>0.8 mm</b>	ı J

### The images in the brochure can be downloaded in dwg format from elaproof.com.









### For healthy indoor air!

IEC System

Cross section of the structure of contaminant encapsulation and compaction

- 🔜 A Concrete
  - **B -** Primer Viasol EP-T703
    - **C** ElaProof Indoor
- **D** ElaProof Base fabric
- **E** Encapsulation Viasol PU-C500

**F** - Floor covering



## Encapsulation and sealing of floor contaminants with ElaProof IEC System

The transport of VOCs and PAHs into indoor air, which cause indoor air problems and health problems, can be stopped by encapsulation. The ElaProof IEC System (Indoor Encapsulation System) offers two options for this. The repair method proposal in this brochure is indicative and deals with the encapsulation treatment of concrete floors against moisture rising from the substrate or VOCs and PAHs. The contaminant management system presented in the repair method proposal has been tested by Vahanen Rakennusfysiikka Oy. All parts of the system meet the M1 indoor air rating.

The repair method proposal is not a remediation plan. The overall design of the coating is always the responsibility of the site-specific designer.

### ElaProof IEC system repair method proposal

CONTROL OF CONTAMINANTS AND MOISTURE RISING FROM THE SUBSTRATE

#### **PLATFORM REPAIR**

Adequate tensile and compressive strength is a key factor in the performance of encapsulants. The concrete or screed substrate must be durable and have sufficient compressive strength. The tensile strength of the substrate material is checked in accordance with EN 1542 and the tensile strength must be> 1.5 N /  $mm^2$  (1.5 MPa). The compressive strength shall be checked in accordance with EN 12504-2 and the compressive strength shall be> 25 N /  $mm^2$  (25 MPa).

The substrate must be clean, sufficiently dry, and free of all contaminants such as dirt, oil, grease, weak coatings and surface treatments. If necessary, the weak layers are removed by sufficiently efficient mechanical methods such as grinding, milling, or blasting. In the case of encapsulation, the best result is achieved if it is carried out on a clean concrete surface with a roughness equivalent to a wood-ground concrete surface.

After cleaning, any cracks in the concrete floor are injected with an injection resin that meets the EN 1504-5 standard, eg HYDROPOX EP1.

#### **DIFFUSION PROTECTION / PRIMING**

For all applications, the cleaned substrate is first treated with VIASOL EP-T703 Epoxy Primer. The maximum allowable humidity of the concrete substrate can be 97% RH. At the time of priming, the concrete surface must be free of moisture and no water in the pores of the concrete. For applications related to the management of contaminants, VIASOL EP-T703 epoxy primer is used for min.  $300 \text{ g} / \text{m}^2$ .

If moisture is expected to rise from the direction of the substrate, we recommend applying a second coat of VIASOL EP-T703. If necessary, a second application should be made within 12-24 hours. Second floor sales min. 200 g / m<sup>2</sup>, where the total consumption of the diffusion barrier is min. 500 g / m<sup>2</sup>.

Mix components A and B of VIASOL EP-T703 epoxy primer with a mixer, mixing time 2-3 minutes. Use a whisk in the mixer that does not take air into the primer during mixing, eg COLLOMIX KR series wire whisks.

Pour the mixture on the floor and apply with a steel spatula or rubber spatula. The primer applied to the roll is then rolled with a short pile roll to form a unitary film layer. If necessary, the epoxy primer can be raised to a height of approx. 50 mm on the wall to improve the adhesion of the sealing treatment.

All further treatments on the epoxy primer must be carried out within 12-24 hours of applying the last coat of epoxy primer. If further treatment is carried out after the above-mentioned interval, the surface of the epoxy primer must be opened by grinding or, alternatively, quartz sand with a grain size of 0.3-0.8 mm can be sprinkled on the epoxy primer. 800 g /  $m^2$ .

#### SEALINGS

Seals for all structural joints and boundaries, such as floor and wall joints, bushings, columns, etc., are made with a combination of ELAPROOF INDOOR + ELAPROOF BASE FABRIC.

ELAPROOF INDOOR must be mixed before starting the seals. Use a whisk in the mixer that does not take air into the sealant when mixing, e.g., COLLOMIX KR series wire whisks.

Apply ELAPROOF INDOOR sealant with a brush and press ELAPROOF SUPPORT FABRIC onto the fresh compound so that all air escapes under the support fabric. Apply a second coat of ELAPROOF INDOOR.

Compaction of one linear meter (1 m) requires approx. 0.15 l of ELAPROOF INDOOR.

If the sealable bushings make it possible to thread the preformed bushing over the bushing into a collar, the bushings can be shaped, if necessary, by cutting N1 or N2 category geo-textile, if ELAPROOF BASE FABRIC is not wide enough to make the bushing.

Allow the ELAPROOF INDOOR seal to dry for min. 5 h before further treatments.

#### **CLOSURE OF CONTAMINANTS**

The actual sealing of VOCs and PAHs is carried out with VIASOL PU-C500 Polyurethane coating. The sales of VIASOL PU-C500 coating in the control of contaminants is min. 1,000 g / m<sup>2</sup>. If you want to leave the encapsulation as the last surface, apply VIASOL PU-C500 min. 2,200 g / m<sup>2</sup> and VIASOL PU-S6000 top-coat is applied as the final wear layer on top of the coating.

First mix VIASOL PU-C500 Polyurethane Coating Component A for 1-2 minutes. Then mix components A and B with a mixer, mixing time 2-3 minutes. Use a whisk in the mixer that does not take air into the primer during mixing, eg COLLOMIX KR series wire whisks.

Pour VIASOL PU-C500 onto the substrate and apply with an adjusting or toothed trowel, leaving the required layer thickness on the substrate. Spike the coating after application, especially if the coating remains the last surface. After application, make sure that the VIASOL PU-C500 coating extends completely over the floor surface of the ELAPROOF INDOOR seal installed at the joint between the floor and the wall.

Any further treatments for VIASOL PU-C500 should be completed within 24 hours of application. If the above time is exceeded, the surface of the VIASOL PU-C500 coating must be roughened, e.g., with net sanding.

Note! VIASOL PU-C500 Coated Contaminant Management System Cannot Be Used to Control Contaminants Containing Petroleum Hydrocarbons!

#### **OTHER SURFACE TREATMENTS**

The 1,000 g /  $m^2$  VIASOL PU-C500 coating control system can be covered with ceramic tile and floating or adhesive floor coverings. Ceramic tiles are fixed with a cement-based fixing mortar that meets at least the requirements of EN 12004 standard C2, S1.

When using floating or adhesive floor coverings, the contaminant management system must be leveled with a self-leveling low-alkali floor level that meets the EN 13813 standard.

Adhesion of fixing mortars or cement / gypsum-based floor screeds to the surface of the contaminant management system can be carried out with special primers suitable for the purpose, eg CASCO FLOOR EXPERT VD SUPER, when the layer thickness of the mortar bed or floor screed is <10 mm.

In thicker mortar beds or in the layer thicknesses of the floor screed, it is recommended to apply the adhesion by sanding, in which case sand with a grain size of 0.3-0.8 mm or 0.7-1.2 mm is sprinkled on a fresh VIASOL PU-C500 coating of approx.  $3 \text{ kg} / \text{m}^2$ .

After the coating has dried, the excess sand is removed, and the necessary further treatment is carried out. Exposure areas exposed to sand must not be present!

### Closure of contaminants by encapsulation as the last surface ELACOAT TOP COAT / RAL



- 1. Concrete floor
- 2. Wall
- 3. If necessary, a suitable primer
- 4. Appropriate leveling compound if necessary
- 5. Priming Viasol EP-T703
- 6. Sealing floor and wall joints ElaProof Indoor + ElaProof Base fabric
- 7. Body mass Viasol PU-C500, 2mm
- 8. Topcoat Viasol PU-S88N / PU-S6000 / ELACOAT TopCoat / ELACOAT TopCoat RAL

The structural designer is responsible for the suitability of the structure for the site.







### Closure of contaminants by encapsulation other coating as floor surface





- 1. Concrete floor
- 2. Wall
- 3. If necessary, correct any unevenness in the floor / wall folds before recording with a suitable leveling compound
- 4. Priming Viasol EP-T703
- 5. Sealing floor and wall joints ElaProof Indoor + ElaProof Base fabric
- 6. Body mass Viasol PU-C500
- 7. Suitable primer
- 8. Suitable floor leveler or mortar
- 9. New floor covering
  - ElaProof Indoor + ElaProof+Sand Floor Covering or ElaProof Art & Deco products + ELACOAT Top Coat
  - Ceramic tile
  - Parquet / laminate
  - Floor covering to be glued to the substrate

The structural designer is responsible for the suitability of the structure for the site.





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**Manufacturer of ElaProof** 



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