

# PREPARATION OF THE ROOF FLOOR AND USE OF A PRIMER

Everything starts with a good preparation, and when working on a flat roof this is no different.  
What should you pay attention to prior to commencing the work?  
What primer is the most suitable for what application?  
What needs a primer and what certainly does not?



# A GOOD PREPARATION OF THE ROOF WORK HELPS TO:

- achieve a good bonding of the vapour barrier on the substrate and, consequently, good wind resistance of the roof pack
- correctly apply the top layers
- facilitate the work in general
- achieve proper drainage of the roof surface. Indeed, stagnant water has a negative effect on the life time of the roofing membrane and, therefore, is to be avoided.

## 1 - Checklist of points requiring attention prior to commencing the roof work

We have put together a short checklist of points requiring your attention, while also proposing corrective measures. Obviously, the roof floor must be free of construction rubble, material residues, dirt, sand, dust and such. Any contamination must be removed from the roof. Additionally, it is recommended that you check the following points:

### 1.1 - Is the roof floor sufficiently dry?

The surface must be air dry or free of visible moisture.

If not:

- dry the substrate with the torch
- mop up moisture in lower roof elements such as cannelures and gutters
- drain moisture using the holes in the cannelures or concrete elements at the lowest point

### 1.2 - Does the cement coating have adequate cohesion?

Make sure the structure of the substrate is solid. The cohesion and levelness of the cement coating is important to achieve adequate adhesion of the roofing. Remove any incoherent or uneven cement coating by blasting (dust-free), bush hammering, etching or sanding.

### 1.3 - Is the roof floor sufficiently air-tight?

The air-tightness determines the wind resistance of the roof complex. You may want to consider additional precautions with respect to attaching the roof pack.

### 1.4 - Is the roof floor sufficiently level?

Watch out for joints and sagging of the roof floor in the event of small thickness (steel deck) and/or large spans. Any major unevenness must be filled up. This can be done by applying block bitumen, roofing membranes, levelling mortar, vermiculite mortar or PU adhesive.

### 1.5 - Is the roof floor sufficiently sound?

When applying a torch-on vapour barrier, the roughness of the substrate must be less than the thickness of the vapour barrier so as to prevent perforation during execution. If in doubt, use a sufficiently thick membrane or level the roof floor. You can use table 10 (technical information sheet 215) as a guideline.

### 1.6 - Does the roof have sufficient slope?

Avoid stagnant water: In the case of new construction the roof floor ideally has a minimum slope of 2% and the slope in the gutters ideally is at least 1%. Slope insulation provides an additional incline, if necessary.

### 1.7 - Is there sufficient capacity for rainwater discharge?

The water must be discharged fast enough so as not to compromise the stability of the roof structure.

- Rule of thumb: Make sure there is 1 cm<sup>2</sup> of discharge for every m<sup>2</sup> of roof surface area. Take account of the total receiving surface area, i.e. both the projected horizontal surface area of the flat roofs, but also half of any adjacent ascending facades.
- If there is only 1 discharge point per roof surface, an emergency drain has to be installed.

### Caution!

- When using a concrete substrate (cellular concrete, foamed concrete, insulating mortar,...), keep in mind that they have a higher moisture content, thus requiring a longer drying time.

### Tip!

- A wooden or steel support can be visually inspected for the presence of moisture. For a concrete support, it is best to heat up a section of the roof using the torch: In case the concrete does not turn dark, the support is sufficiently dry, but if the concrete turns dark, it means the substrate is still moist.
- For more information regarding the dimensioning and calculation of the number of drains, please consult the IKO Guide Roof drains and outlets.

## 2 - Why apply a primer?

Before applying the waterproofing membranes, the substrate must be treated with a bonding varnish, also referred to as primer.

This is important because it ensures:

- adequate bonding so as to achieve good wind resistance
- greater ease of use. A primer allows the next layer to bond faster and better.
- the fixing of dust for adequate bonding of the vapour barrier or the waterproofing
- less water absorption by the support because the pores of the surface are closed. The roof can be dried more quickly after a rain shower.
- re-activation of the old bituminous waterproofing layer in case of renovation

## 3 - What needs a primer? What does not?

The prepared roof surface and the accompanying accessories typically need a primer in order to achieve adequate adhesion to the bonded, torch-on or poured bituminous layers above. A primer is always applied according to the method of placement and the substrate.

### 3.1 - Method of placement

Method of placement	IKO pro Quick primer	IKO pro ECO primer	IKO pro Bitumen primer	IKO pro SA Bitumen primer	No primer
Torch-on application	●	●	●		
Self-adhesive				●	
Mechanically fixed					●
Loose-laid and ballasted					●
Cold-applied with PU roof adhesive					●
Cold-applied with bitumen adhesive	●	●	●		
Applied with hot bitumen	●	●	●		

### 3.2 - Substrate

Support Substrate	Apply Primer?
Concrete	Yes
Steel – Not painted	Yes, take precautions for infiltration through the seams in the roof floor
Steel – Painted	No
Wood	Yes, take precautions for infiltration through the seams in the roof floor
Old bituminous roofing (renovation)	Yes, if no additional insulation

### 3.3 - Accessories (e.g. downpipe covers)

Accessory Substrate	Apply Primer?
Galvanized	Yes
Painted	No
Plastic	Consult accessory manufacturer
Lead	Yes, see guideline below

#### Tip!

- For applying a primer to accessories, use the 500 ml IKO pro Quick Primer Spray (spray can).
- Lead downpipe covers are typically greased and have to be prepared in the proper manner.

1	Do not flame the lead adhesive roofing sheet of the discharge too hard, but precisely hard enough to allow the grease to flow onto the lead
2	Polish the discharge with a non-synthetic cloth (otherwise the cloth would melt)
3	Roughen with a steel wire brush
4	Slightly flame again to remove lead particles
5	Apply a bit of IKO pro Quick Primer
6	When applying an APP roofing membrane, the adhesion must be double-checked by pulling back the roofing membrane after torching slightly
7	Finally torch again the roofing and push down onto the adhesive roofing sheet

In order to ensure 100% compatibility with the chosen waterproofing system, at IKO we recommend working with prefabricated water drains such as the IKO power Drain. These are quick to install, efficient and compatible with the roof structure. These drains do not require any additional pre-treatment and guarantee reliable quality. Consult our IKO Guide Roof drains and outlets for more information.

#### 4 - What IKO primer should you use?

IKO pro Bitumen primer	IKO pro Quick primer	IKO pro Eco primer	IKO pro SA bitumenprimer
Penetrates deep into the substrate	Dries quickly	Ecological/economical alternative to bitumen primer	Required for self-adhesive structure
All-round usage	Suitable for smaller roofs	Suitable for warmer weather conditions	

#### Caution!

- Substrates composed of polystyrene are sensitive to solvents. In this case, the IKO pro ECO Primer must be applied.
- In case of renovation with additional insulation (fixed with PU adhesive) on the existing roof sealing, it is not appropriate to apply a primer
- To avoid eventual risk of odour nuisance in the building, it is best to apply the IKO pro ECO primer.

#### 5 - Execution

The primer can be applied with a roller, brush or sprayer:

Substrate	Number of m <sup>2</sup> per litre	Number of litres per m <sup>2</sup>	Control in Practise Number of Cans per 100 m <sup>2</sup>	
			5-l Packaging	25-l Packaging
Metal	10 - 15 m <sup>2</sup> /l	0,07 - 0,10 l/m <sup>2</sup> 7 - 10 l/100 m <sup>2</sup>	1,4 - 2 cans	0,28 - 0,4 cans
Concrete	3 - 4 m <sup>2</sup> /l	0,25 - 0,30 l/m <sup>2</sup> 25 - 30 l/100m <sup>2</sup>	5 - 6 cans	1 - 1,2 cans
Old bitumen	Approx. 5 m <sup>2</sup> /l	Approx. 0,20 l/m <sup>2</sup> Approx. 20 l/100 m <sup>2</sup>	ca. 4 cans	Approx. 0,8 cans
Wood	10 - 12 m <sup>2</sup> /l	0,085 - 0,10 l/m <sup>2</sup> 8,5 - 10 l/100 m <sup>2</sup>	1,7 - 2 cans	0,34 - 0,4 cans

Observe the drying time of the primer before proceeding:

IKO pro Bitumen primer	IKO pro Quick primer	IKO pro ECO primer	IKO pro SA bitumen primer
Drying time 2 to 3 hour	Drying time 20 to 25 min	Drying time 2 to 3 hours	Drying time 1 hour

#### Tip for control of drying time

- Touch dry: A dry primer will retain its structure after touching it with the finger

#### Attention

- Frost-proof storage is recommended
- Primer packaging must be sealed completely and removed from the roof after use for reasons of fire safety
- The MSDS must be available during transport.



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