

Advice Sheet 1: **Negative Side Basement Waterproofing**
A Step by Step Guide using Köster Mineral System

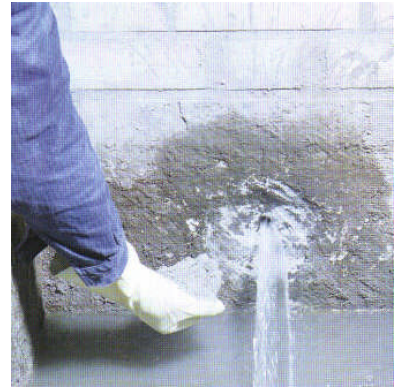
Step 1- The Structure

Köster Mineral System can be applied on to concrete, brickwork, paintable blockwork, floor screed and cement mortar (in joints). All old plasters and coatings should be removed, along with any salt contaminations and loose mortar. It should be verified that the structure is strong enough to resist the local water pressure once the basement is sealed. The floor should be of a strong concrete construction not for example loose bricks laid on mud.

Step 2 – Initial Sealing

The area to be waterproofed needs to be free of standing water and all active leakages must initially be sealed with **Köster Waterstop** and **Köster KD System**.

Köster Waterstop can seal even fast flowing water leakages. The dry powder is mixed with clean water to create a mortar. Add a small amount of water to create a very stiff waterproofing “bullet”, wait until the material is starting to cure and plug heavy leakages holding “bullet” firmly in place for 30 seconds.

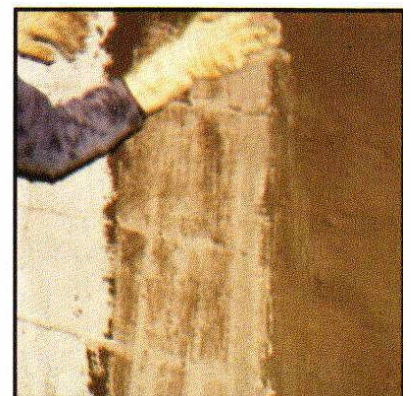


Alternatively add a larger amount of water to create a fast setting trowelable mortar, this is better for sealing seeping wall / floor junctions or mortar joints. **Köster Waterstop** starts to react after approx. 30 seconds and will cure in about 2 min.

For sealing of actively leaking surfaces **KD System** is used. **KD System** is a three component wet on wet system which seals actively leaking surfaces instantly.

Mix the **KD1 Base** with clean water to make a slurry and apply to the damp area with a masonry brush.

Next using a gloved hand gently rub the **KD2 Powder** into the surface of the freshly applied **KD1 Base**. This instantly cures the **KD1**. Any excess powder can then be gently removed with a brush.



Next apply **KD3 Sealer** with a normal paint brush, this drives the special crystals present in **KD1** and **KD2** deep into the substrate.

Immediately after application of the **KD3 Sealer** apply a second coat of **KD1 Base**. Normally a third coat of **KD1 Base** is required after half an hour, however if being used as part of the **köster Mineral System**. The 1st coat of **NB1 Grey** will take the place of the third coat of **KD1 Base**.

The **KD2 Powder** can also be used as an instantly reacting waterplug to seal larger in-rushes of water. **KD2 Powder** reacts so quickly that it is impossible to mix with water. Simply take a large handful of the dry powder, apply firm pressure between hands to compress the material then force it on to the leak holding in position with firm pressure for 5 – 10 seconds.

Any unreacted **KD2 Powder** should be brushed away from the surface.

Step 3 – Surface Profiling / Fillet

Once all actively leaking areas have been sealed then general surface preparation can be continued. Fill any voids and flush point walls with **Köster Repair Mortar Plus** modified with **SB-Bonding Emulsion**.

Continue with the same mixture to create a triangular fillet at all wall floor junctions. The fillet must be min. 40mm wide x 40mm deep and should run for the entire length of the junction. This fillet should be left to cure for at least 2 hours before the next step is taken.

Step 4 – Priming

Apply a generous coating of **Köster Polysil TG500**. This unique liquid is applied with a hand pump sprayer, it has the effect of hardening mineral surfaces, blocking salts within the structure and at the same time providing a good surface for the following layers to adhere to. Allow to dry for at least 20 minutes



Step 5 – NB1 Grey First Coat

NB1 Grey is mixed with clean water to form a slurry consistency in accordance with the details on the data sheet. It is then applied with a thick masonry brush in an even layer. Usage approx.(1.5kg/sq.m.)

As soon as the **NB1** is applied, spray the still fresh surface with **Polysil TG500**, this hardens the **NB1 Grey**. Leave overnight.



Step 6 – Inspection / KD System

Carefully inspect the 1st application of **NB1 Grey**. If there are any actively leaking areas that were missed on step 2, but have now become apparent, these must be treated with **KD-System**, so that the area is completely sealed prior to continuing with step 7.

Step 7 – NB1 Grey Second Coat

NB1 Grey is mixed with clean water to form a slurry consistency in accordance with the details on the data sheet. It is then applied with a thick masonry brush in an even layer. Usage approx.(1.5kg/sq.m.)

As soon as the **NB1** is applied, spray the still fresh surface with **Polysil TG500**, this hardens the **NB1 Grey**. Leave overnight.



Step 7 – Special Finishes

Basement areas are often very humid, with poor ventilation / heating. Therefore it is always advisable to apply a moisture balancing restoration plaster such as **Köster Restoration Plaster 2 “Light and Fast”**.

Restoration Plasters produce a fairly rough open textured finish, for a smoother finish a thin layer of **Köster Plaster Coat** may be applied over the **Restoration plaster**.

If **Restoration Plaster** is not required, the 2nd coat of **NB1 Grey** may be overcoated with **NB2 White**. This off-white sealing slurry is applied in a similar way to the **NB1**, providing an additional waterproofing layer whilst also having a light colour that in some situations would be acceptable as a final finish.

For a bright white finish it is possible to overpaint the **NB1 Grey**, **NB2 White** or **Restoration Plaster** with a breathable paint finish such as **Köster Silicone Paint White**.

Plaster board is not generally recommended for basement areas, but if it is to be used it should be mounted on a framework standing off the wall, any such framework must not be mechanically fixed through the waterproofing layers.

Floors should be covered with a screed or other covering so as to reduce the impact of foot traffic on the **NB1 Grey**.

Köster Products referred to in this advise sheet:-

<u>Product Code</u>	<u>Product name</u>
5.03	Repair Mortar Plus
4.01	Polysil TG500
3.14	Waterstop
3.021	NB1 Grey
3.022	NB2 White
2.11	SB Bonding Emulsion
3.011	KD1 Base
3.012	KD2 Blitz
3.013	KD3 Sealer
5.065	Restoration Plaster 2 “Light and Fast”
5.06	Restoration Plaster Coat
4.16	Silicone Paint White



For further information or guidance on any Köster products, please contact Aquatecnic:-
Tel: 0845 2268283 (local rate) or 01387 270252 e-mail: info@aquatecnic.net
web: www.aquatecnic.net

All information provided on aquatecnic advice sheets is designed to be a general guide to the procedures that may be suitable for any given waterproofing situation. They do not replace the manufacturers official data sheets, which should always be read before work commences. Aquatecnic limited are always happy to provide project specific advice should this be required.