

TECHNICAL GUIDANCE NOTES

KOSTER CRISIN 76 CONCENTRATE AND KOSTER CRISIN CREAM

August 2020

DESCRIPTION

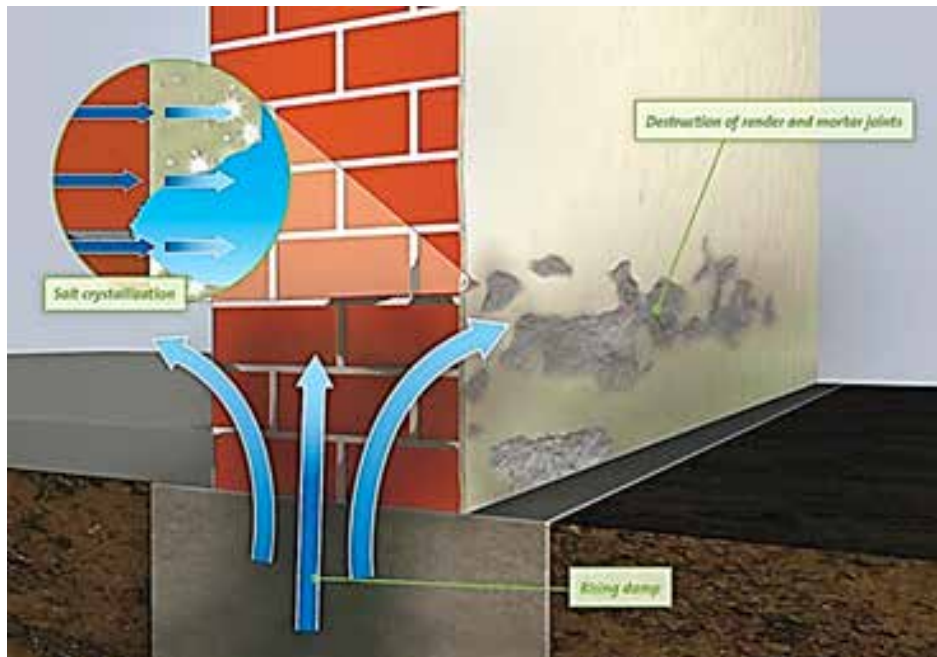
In masonry that is affected by rising damp, moisture is continuously drawn upwards through the capillary action of the wall. The water evaporates on the surface and more moisture follows.

This process will usually lead to an increase in the concentration of salts on the surface of the wall.

Most evaporation takes place between the dry top area and the damp lower part of the wall. Often the first signs of damage will appear in this area.

This can show as peeling paint, blown and crumbling plaster or excessive salt contamination. Often the only cure is to install a chemical damp proof barrier and a salt resisting plaster.

Note: Rising damp is the most commonly misdiagnosed form of dampness in buildings. There can be many reasons for high damp readings at the base of a wall, such as leaking gutters, bad pointing or condensation. A correct diagnosis / assessment by a trained and competent surveyor is important in establishing the most suitable remedial solution.



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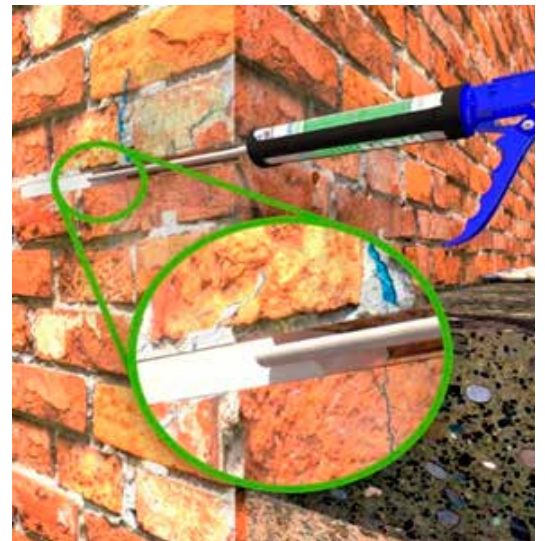
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Koster Crisin systems have been developed to form a physical, flexible barrier within the pore structure in order to combat the rise of capillary moisture within walls. Pores with a radius between 0.1 microns and 100 microns are capillary active and responsible for rising damp. Most damp proof treatments work by hydrophobing the wall. Crisin products are hydrophobic (water repellent), but also contain a synthetic resin that elastically blocks or narrows capillaries to the point where they are no longer active for the passage of water. Both Crisin products have WTA approval for walls with a moisture content of up to 95%



Koster Crisin 76 Concentrate is a unique, solvent free synthetic resin which can be used regardless of the salt or moisture content of the wall. It will not dilute, nor can its effectiveness be reduced by acids, alkalis or salts held in the wall. Crisin 76 is supplied in cartridges, together with Koster Suction Angles and Koster Capillary Rods. This patented system allows the resin to be drawn into the capillaries of the wall and to spread in a consistent manner, delivering a high dosage of the elastic resin and forming a physical barrier that will last for the lifetime of the building.



Koster Crisin Cream has been developed from the same chemistry as the Koster Crisin 76 Concentrate but in the form of a convenient and easy to use cream. The Koster Cream is solvent free and contains hydrophobing ingredients as well as a capillary narrowing synthetic resin. It can be used in walls that have very high moisture levels and salt contamination. The cream contains 85% active ingredients.

The cream is simply pumped into the boreholes using a sealant gun and left to slowly spread throughout the capillary network, displacing water, hydrophobing and narrowing the water pathways. It does not slump and offers a simplified application technique over the concentrate version.

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Application Images – Koster Crisin 76 Concentrate

PREPARATION (Both Systems)

It is important to ensure that the area is prepared thoroughly prior to any treatments taking place. You need to install the horizontal barrier (DPC) at a height of approximately 100mm above ground level, normally into a horizontal mortar joint. Checking the height of external or internal ground level is also important.

A suitable preparation would be: -

1. All traces of internal plaster should be removed, as a minimum to 300mm above the last sign of damage or 1.5m – whichever is higher. Ensure the wall is clean and free of salts – brush and vacuum them up.
2. Using the consumption chart in this document, mark out then drill holes using a 14mm drill bit. Drill to the following depths.
 - Crisin Concentrate, bore hole length = wall thickness minus 50mm
 - Crisin Cream, bore hole length = wall thickness minus 30mm
3. The boreholes should be drilled horizontally and not angled.
4. Once all holes have been drilled, remove any debris using compressed air or water. You could also clean mechanically with a wire "bottle brush".

METHOD OF APPLICATION - For Koster Crisin 76 Concentrate

Following on from proper preparation as noted above: -

1. Koster Capillary Rods are installed so that they protrude 7 cm from the borehole. Capillary rods can be cut and joined together using a small piece of wire.
2. The suction angles are installed so that the capillary rods reach into the supply chamber of the Koster Suction Angles.
3. Unscrew the caps of the cartridges and replace with the application nozzles (supplied).
4. The cartridges are then installed into the suction angles. The cartridges can take between 3 and 7 days to empty. If the level in the cartridge stops moving for 24 hours, then the capillaries at that point have reached saturation and no more material is required.



1) Setting out and insertion of Koster Capillary Rods. Protruding from the borehole by 7cm.



2) Insert the ends of the Koster Capillary rods into the Koster Suction Angles and push into the boreholes.



3) Attach the nozzles to the Koster Crisin cartridges and fix into the Koster Suction Angles. Leave in place until they are empty.



4) Remove cartridges and suction angles, trim capillary rods flush with wall and push about 1cm further back into borehole before filling with Koster KB- Fix 5

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Application Images – Koster Crisin Cream

METHOD OF APPLICATION - For Koster Crisin Cream

Following on from proper preparation as noted above: -

1. Cut the end off a Koster Crisin Cream foil pack and insert into a suitable sealant gun (sausage gun) and attach the nozzle. Alternatively use a pump-up sprayer (with the spray nozzle removed) filling as required from a 10 Litre drum.
2. If using a sealant gun, attach the Koster Extension piece (plastic hose) to the nozzle and ensure it is long enough to reach to the end of the bore hole.
3. Starting at the back of the bore hole, slowly inject the Koster Crisin Cream ensuring you are completely filling the hole as you draw the extension piece out.
4. Once the hole is completely full, move on until all holes are filled.

COMPLETION

Regardless of which system you use, following injection works seal up the bore holes using Koster KB Fix 5 – fast setting mortar.

Once all injection works have been completed, re-plastering should be done using a hydrophobic and salt encapsulating plaster such as the Koster Restoration Plasters.



1) Setting out and drilling of 14mm boreholes



2) Injection using a caulk gun, long injection nozzle and the 600ml foil packs



3) Alternative Method: Using a hand pumped sprayer to inject the Koster Crisin Cream



4) Material can be seen inside the boreholes post injection. Fill boreholes with Koster KB Fix 5

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CONSUMPTION TABLE

| Koster Crisin Cream 600ml Foil packs | | |
|--------------------------------------|--|----------------------|
| Thickness of the wall | Amount of Koster Crisin Cream required per metre | Spacing of boreholes |
| 10 - 20cm | 0.27L | 10cm |
| 25 - 30cm | 0.42L | 10cm |
| 30 - 35cm | 0.50L | 10cm |
| 35 - 40cm | 0.58L | 10cm |
| 40 - 45cm | 0.65L | 10cm |
| 45 - 50cm | 0.73L | 10cm |
| 50 - 55cm | 0.81L | 10cm |
| 55 - 60cm | 0.88L | 10cm |
| 60 - 65cm | 0.96L | 10cm |
| 65 - 70cm | 1.04L | 10cm |
| 70 - 75cm | 1.11L | 10cm |
| 75 - 80cm | 1.19L | 10cm |

Notes: For part cartridges on thinner walls, the Crisin 76 that's not required should be decanted into a clean container before placing the cartridge. After use the empty cartridges can be refilled with the saved material and placed at another borehole.

| Koster Crisin Cream 600ml Foil packs | | |
|--------------------------------------|--|----------------------|
| Thickness of the wall | Amount of Koster Crisin Cream required per metre | Spacing of boreholes |
| 10 - 20cm | 0.27L | 10cm |
| 25 - 30cm | 0.42L | 10cm |
| 30 - 35cm | 0.50L | 10cm |
| 35 - 40cm | 0.58L | 10cm |
| 40 - 45cm | 0.65L | 10cm |
| 45 - 50cm | 0.73L | 10cm |
| 50 - 55cm | 0.81L | 10cm |
| 55 - 60cm | 0.88L | 10cm |
| 60 - 65cm | 0.96L | 10cm |
| 65 - 70cm | 1.04L | 10cm |
| 70 - 75cm | 1.11L | 10cm |
| 75 - 80cm | 1.19L | 10cm |

Once you have established the total amount of Koster Crisin Cream required in Litres, divide by the unit size of 0.6 (600ml foil packs) or 10 (10 Litre Buckets) to establish how many packs you need.

Example - 12m of 43cm thick wall
 0.65L x 12m = 7.8 Litres Required
 Divide 7.8 Litres by 0.6 = 13 x 600ml foil packs.

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ENVIRONMENTAL

Koster Bauchemie are always exploring new ways to ensure we are as environmentally considerate as possible, through our manufacture, supply, packaging and in our day to day activities. One way we can showcase this is through the Koster Crisin Cream system.

Compared to the old 310ml rigid cartridges, a single 600ml foil pack of the Crisin Cream contains nearly double the material and once used, collapses down to almost nothing.

This means significantly less plastic going to landfill. Koster have also reduced the comparative price of the 600ml foil packs relative to the old 310ml cartridges meaning you can now save money and help the environment at the same time.



AVAILABLE MATERIALS

Unit Size

Consumption

Main Materials

- Koster Crisin 76 Concentrate
- Koster Crisin Cream

200 ml Cartridge
5L or 10 L Drum
600 ml Foil Pack
10 L Drum

Refer to consumption table below
Refer to consumption table below

Accessories

- Koster Suction Angles
- Koster Capillary Rods
- Installation Tool for Capillary Rods
- Extension for Crisin Cream Cartridges

per unit
450 mm long
per unit
100 cm long

1 per borehole
Dependent on wall thickness
One per job
If Required (long boreholes)

Optional Finishing materials

- Koster Restoration Plaster Grey/White
- Koster Restoration Plaster Key Coarse
- Koster Fine Plaster
- Koster Polysil TG500

25 kg Bag
25 kg Bag
25 kg Bag
10 kg Drum

12kg/m²/cm layer thickness
3kg/m²
1.4kg/m²/mm
150g/m²

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FURTHER INFORMATION

Please follow these links for videos which may be of interest: -

"Rising Damp chemical DPC (damp proof course)"

This video demonstrates installation of the Crisin 76 system and ancillary products.

*This is the old Crisin 76, rather than the newer Crisin 76 Concentrate, but the application methods are the same. <https://youtu.be/YEy3lvy3pbg>

"Rising Moisture and Salt Damage: Use KÖSTER Restoration Plasters"
- Presented by Paul Osselmann, this gives a technical look at the salt blocking properties of Koster Restoration Plaster. <https://youtu.be/GR2aAsS-4QA>

"Restoration Plaster" - An insight into the application. <https://youtu.be/x8MzujrITUg>

*Note, they are not using the Restoration Plaster Key Course in this video. Instead they are using the main restoration plaster with the addition of the Koster SB Bonding Emulsion for the Key coat. Either way is acceptable, but the Restoration Plaster Key is much quicker to dry.

Please also seek guidance from the individual materials Technical Data Sheets or speak with a member of the Koster Aquatecnic technical team.

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