

## RESTORATION RENDER AND PLASTER WORK

Durable protection against expansive salts



# REMOVING THE THREAT OF EXPANSIVE SALTS

## Restoration Render and Plaster

The main function of refurbishment plasters is to safely store salts deposited from continuous moisture penetration, movement and evaporation, preventing damage due to hygroscopic moisture absorption and expansive crystallisation. For successful external restoration and waterproofing,

application of a Restoration Render is also recommended on the internal surface of the walls.

- The Restoration Render also acts as a water repellent, so that the salts it contains do not reach the surface, even when moisture vapour passes through it.

- The Render acts as a storage container for the salts. When any moisture diffuses out through the Restoration Render, it leaves the salts that were dissolved in it behind.
- The salt resistance of Restoration Render systems is so high that one 20 mm thick layer is sufficient, even where the classification is of a "Medium" level of salt content in the water. (according to German WTA guidelines).
- Remmers refurbishment plasters/renders can be used without additional waterproofing up to a substrate moisture content of < 40%.

### Refurbishment plaster systems for this problem work in two ways:

- They move the evaporation point from the masonry surface to within the plaster layer.
- The salts dissolved in the moisture in the walls can also then safely be deposited and stored within the new refurbishment plaster, without any damage possibilities.

## REMEDIAL MEASURES ARE DEPENDENT ON THE SALT CONTENT CLASSIFICATION

Salt	Salt content level in weight %			Salt content level	System	Layer thickness in mm
	< 0,2	0,2 – 0,5	> 0,5			
Chlorides	< 0,2	0,2 – 0,5	> 0,5	Low to medium System 1	1. Preparatory Mortar 2. Restoration Render	min. 5 min. 20
Nitrates	< 0,1	0,1 – 0,3	> 0,3			
Sulphates	< 0,5	0,5 – 1,5	> 1,5	High System 2	1. Preparatory Mortar 2. Undercoat Render 3. Restoration Render	min. 5 min. 10 min. 15
Classification	Low stress	Medium stress	High stress			

## A SAFE EVAPORATION ZONE AND SAFE SALT STORAGE

Plasters can only meet these requirements if their pore volume and structure is designed with the latest mortar technology. Active capillary network forming agents and capillary wall barrier pore formers, are

both included in the formulations, so that these 'salt storage areas' are specially produced in the hardening finishes. The capillary water migration in the capillary pore system of the masonry can then be

controlled as required, in conjunction with any necessary waterproofing, by using the refurbishment render system as a safe evaporation zone and a safe salt storage container.

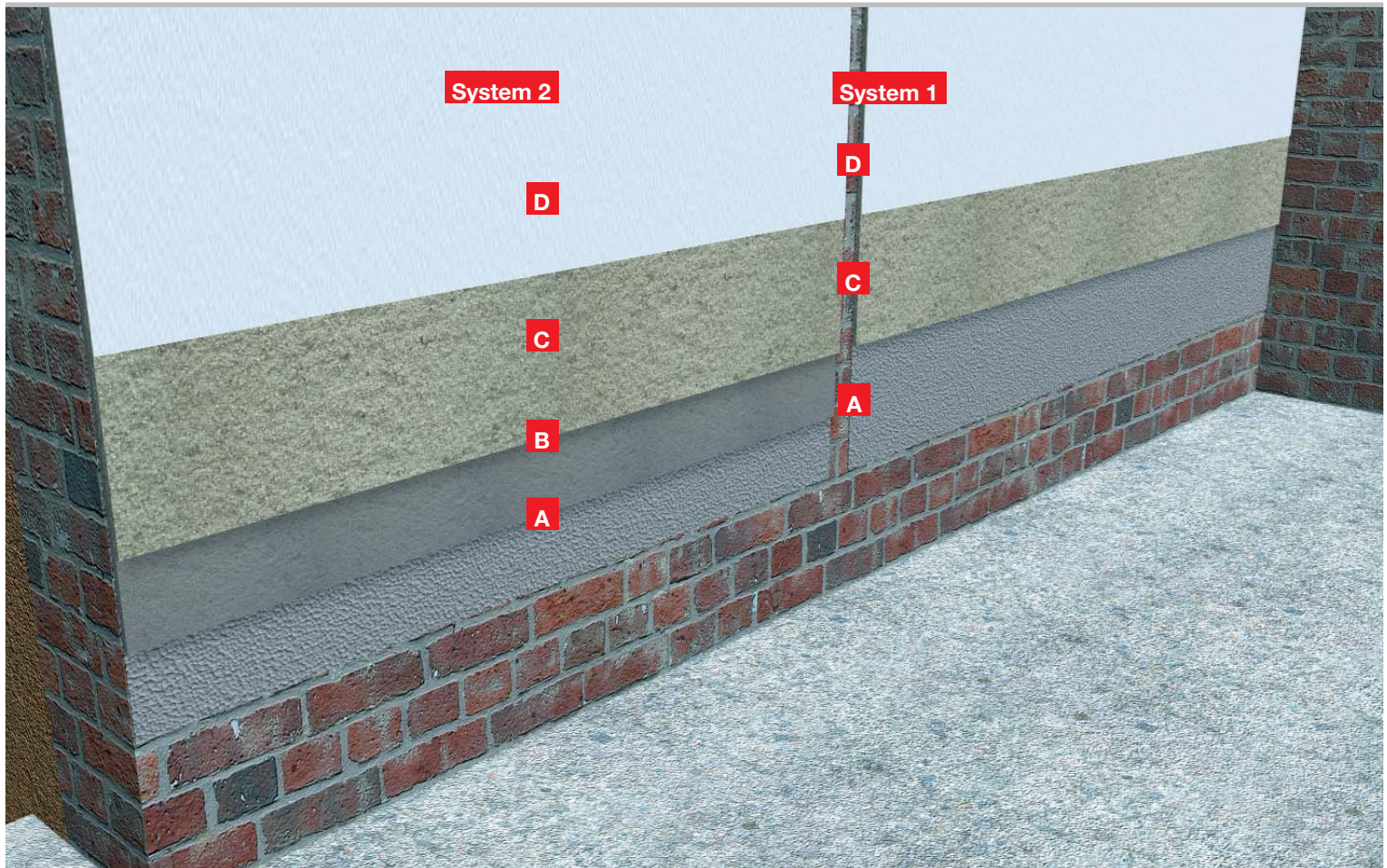
Remmers Refurbishment Renders/Plasters perform these functions extremely well. In several parameters they exceed the official requirements including:

- Salt storage capacity
- High sulphate resistance
- Fibre reinforced for crack-free drying



# SOLUTIONS FOR ALL TYPES OF AGGRESSIVE SALTS

Restoration Render and Plaster



**A PREPARATORY MORTAR**

**B UNDERCOAT RENDER**

**C RESTORATION RENDER**

**D FINE RENDER**

Since 2005 refurbishment plaster systems have been described and regulated in EN 998-1. This standard refers to the German WTA data sheet 2-9-05/D “Refurbishment plaster systems”. This specifies the technical

requirements and also gives clear advice on how to plan and install these systems. The level of salt stress from chlorides, nitrates and sulphates identified in the building condition survey and analysis is classified in one

of three levels “low”, “medium” or “high”, dependent on the percentage salt content. Refurbishment Render/Plaster systems also act as a moisture-regulating protection system for the internal waterproofing.



**APPLYING RESTOATION RENDER**

The appropriate Plaster System is applied with minimum 24 hours between layers. Intermediate layers must be prepared for the next layer by scratching and scoring when wet.



**SCRATCHING RESTORATION RENDER SURFACES**

The stiffened Restoration Render surface is prepared for application of the following finishing plaster with a special float.



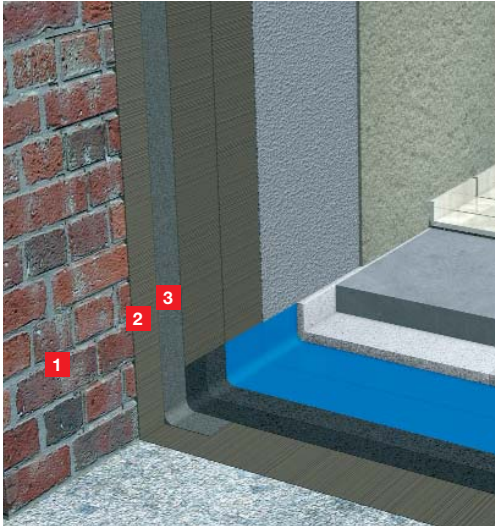
**APPLYING FINE RENDER**

The Fine Render is applied on the prepared surface at a maximum layer thickness of 5 mm then floated to level and profile.



# FROM A GOOD FOUNDATION TO THE FINISHING PLASTER

## Internal waterproofing and tanking – The Kiesol system



The Kiesol waterproofing systems can be installed on almost any masonry substrate.

The right procedure for the application of internal waterproofing always begins with sound substrate preparation.

All loose or friable materials, including any old coatings or other contaminants, must be removed. Paints and plasters must be removed for at least 80 cm above the water damaged areas. Joints that have

deteriorated or are damaged by salts, must be raked out to a minimum depth of 20 mm. When the substrate is correctly prepared, a clean and roughened masonry surface is provided. The adhesion between the individual components of the Kiesol system is outstanding and the system as a whole, bonds effectively and durably with the masonry.

## WATERPROOFING EVEN AT A LEVEL OF MOISTURE PENETRATION > 40%

### The sequence of operations



#### THE 1ST WATERPROOFING LAYER WITH SULFATEX GROUT

The 1st layer of waterproofing slurry is applied on the bond coat and levelling/coving layers.



#### THE 2ND WATERPROOFING LAYER WITH SULFATEX GROUT

The 2nd layer of slurry is applied on the 1st layer 'wet on wet'. Additional layers if required for the exposure conditions are applied in the same way 'wet on wet'.



#### APPLY THE 'SPRITZ' BOND COAT USING PREPARATORY MORTAR

This 'Spritz' Bond Coat is sprayed over the entire surface of the slurry, once it has initially stiffened.

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