

A photograph of a row of multi-story residential buildings with brick and rendered facades, viewed from a low angle looking up. The sky is overcast with soft light.

Brick and rendered facades

Professional, methodical
facade repair



Repairing facades the methodical way

With tried-and-tested solutions
from Remmers

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Brick facades

Durable and attractive

A history of brickwork

The story of one of humanity's oldest building materials

Alongside wood, stone and plant fibres, bricks are one of the oldest building materials to be used by humankind. Clay-rich mud is mixed with sand, shaped, and fired in an oven. The first bricks were shaped by hand, giving them irregular dimensions.



approx. 7500 BCE

Dating from around 7500 BCE, the oldest bricks (made of clay) were discovered in 1952 during archaeological digs in Jericho.



approx. 3000 BCE

Smoothed bricks first began to appear in Mesopotamia in around 6300 BCE. The method of shaping clay into bricks and firing them became widespread at the start of the third century BCE.



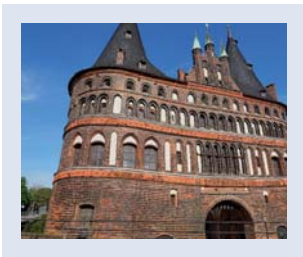
approx. 600 BCE

The Ishtar Gate was built during the reign of King Nebuchadnezzar II (604 to 562 BCE) and is now kept at Berlin's Pergamon Museum. It is an impressive example of the level of perfection achieved in Babylonian times in brick firing and glazing techniques.



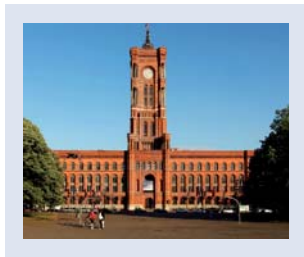
approx. 100 BCE – 400 CE

The Romans popularised the use of fired bricks for construction throughout the Roman Empire. They typically used thin bricks, which can still be seen to this day on buildings dating back to the Roman era. However, in their original state, they would have been covered with render or cladding.



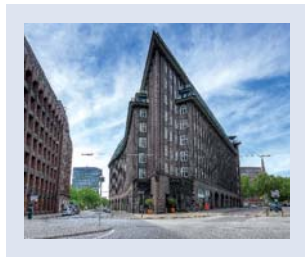
approx. 12th – 15th century

During the Gothic era, a unique architectural style known as Brick Gothic evolved in northern Germany. This came about as a result of the lack of natural stone suitable for building.



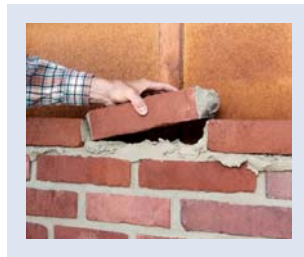
around the late 19th century

Up until the Gothic Revival in the 19th century, most brickwork was hidden beneath render.



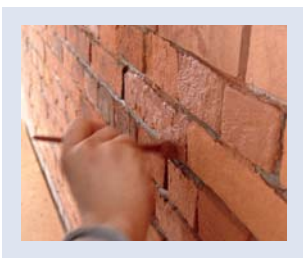
the 1920s

The 20th century also saw its share of notable brick buildings, in particular in the Brick Expressionism style. The larger cities of northern Germany and the Ruhr area became home to several especially impressive buildings, as did the Netherlands.



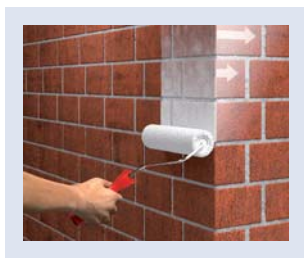
from around 1960

This era saw the end of the single-layer brick facades that had been widely used right into the post-war period. Instead, faced brickwork began to grow in popularity.



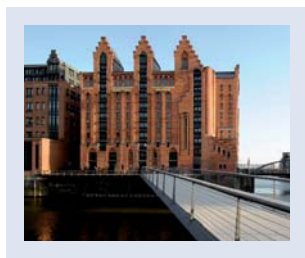
from 1963

Remmers began to develop its extensive range of products for the maintenance and repair of brick facades.



2000

Remmers patented its Funcosil facade cream for effective protection of brick facades against driving rain. A new generation of protective agents revolutionised the market.



2010

The Bernhard Remmers Prize was awarded in 2010 for the outstanding restoration of Kaispeicher B, the oldest building in Hamburg's "Speicherstadt" warehouse district.



2017

The Elbe Philharmonic Concert Hall was opened. Remmers used a system solution to repair the existing facade and apply a hydrophobic treatment.



Remmers cleaning products

Because dirt means damage

Not only is encrusted dirt unappealing to look at, it also leaves facades vulnerable. Because of their large internal surface area, layers of dirt are proficient at absorbing moisture and harmful substances. These generally react on the underside of the dirt layer and cause damage, even if this cannot be seen beneath the encrusted grime.

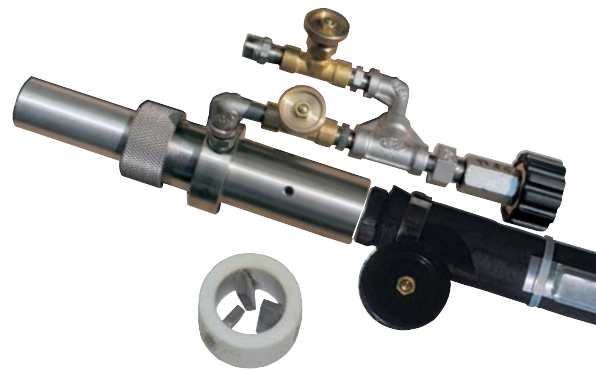
Chemical cleaning

Acidic cleaners always function according to the same basic principle: the acidic component penetrates or infiltrates behind the dirt layer and loosens it, while the surfactants enable wetting of the surface, encapsulate the dirt and allow it to be washed off. Remmers BFA works differently – and its straightforward mode of action makes it a winner. It can be used to remove all kinds of biological contamination, as well as for preventive protection against new dirt deposits.

Remmers solution	Range of use	Art. no.
Clean WR	Removes lime and mortar skin	0675
Clean AC	Removes mortar residues and limestone	0672
Clean SL	Removes grime, encrusted dirt, dust, oil and grease deposits	0671
Clean FP	Removes heavy urban soiling	0666
AGE	Biodegradable stripping agent	1368
Green Growth Remover*	Removes green growth	0676
BFA*	For removing biological contamination and for preventive protection	0673

* Use biocides safely. Always read the label and product information before use.

Remmers rotec Soft Whirl Jet

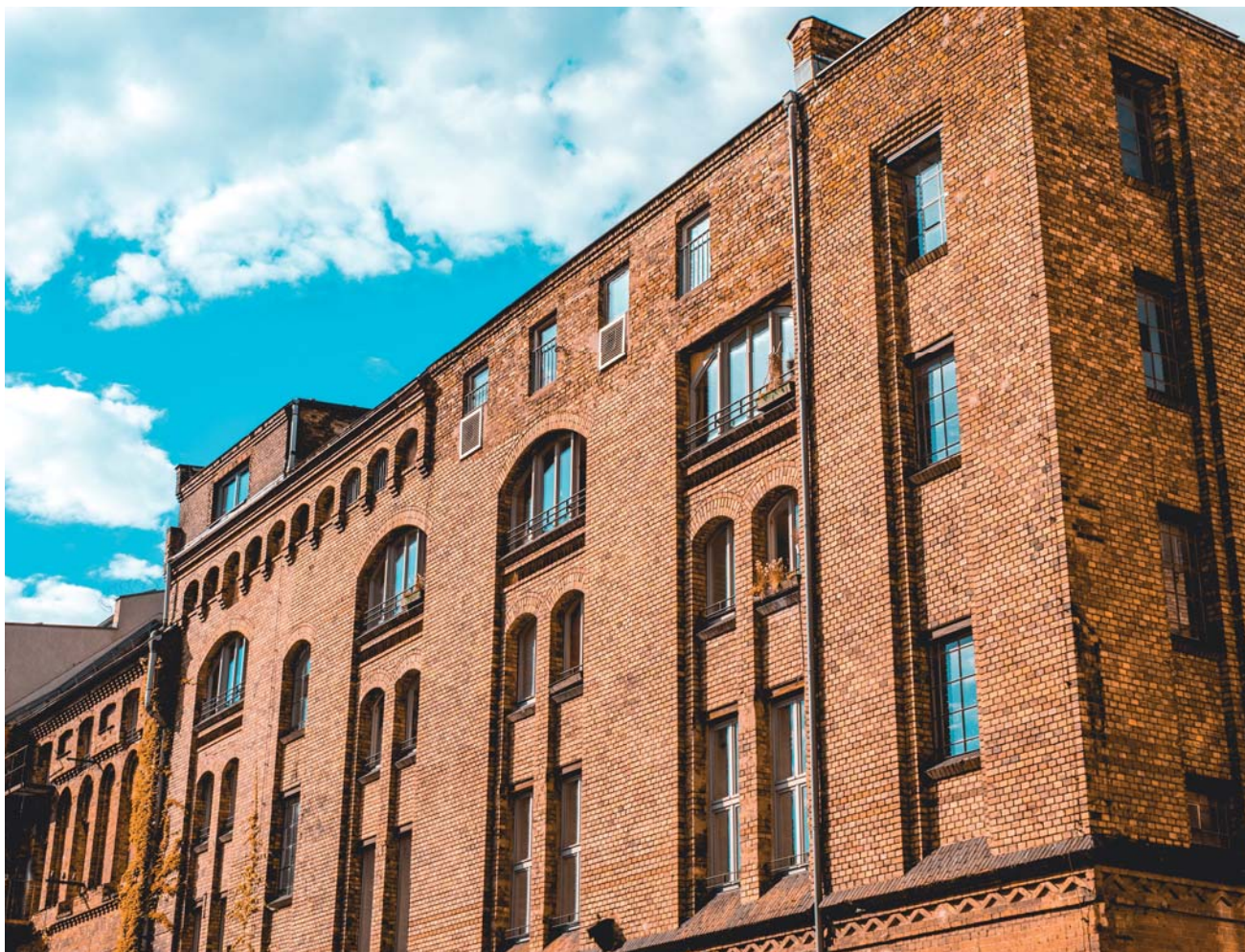


Mechanical cleaning

In the Soft Whirl Jet, a mixture of air, water and blasting material is spun around, meaning that the blasting particles strike the surface of the building material not at right angles but instead at a much flatter angle, gliding over the surface rather than being blasted straight at it. This means that dirt can be removed in an exceptionally gentle way, while the level and intensity of cleaning can be freely chosen.

Any result can be achieved, from “preservation of the patina” right through to “as good as new”. The rotec Soft Whirl Jet from Remmers is a direct refinement of the “JOS” method, with a significant reduction in nozzle wear at the same level of cleaning efficiency. The physical properties of the rotec glass powder, such as its degree of hardness and the grain shape, size and fraction, are adapted to this technique and play an important part in delivering optimum results.

Remmers solution	Range of use	Art. no.
rotec Turbine	Exceptionally gentle cleaning of all types of dirt	5243
rotec Set (1 turbine + 5 spacer rings)	rotec Soft Whirl Jet	5244



Remmers spiral anchor system

Simple, permanent crack repair

Cracks in masonry can be caused by a wealth of factors, such as temperature changes, subsidence and vibration, to name but a few. Regardless of the cause, a crack in the brickwork always constitutes a significant disruption to the static system, which must be repaired.

The Remmers spiral anchor system joins masonry sections back together in a simple and highly efficient manner, thus restoring the integrity of the structure. The spiral anchors are placed in the joints of the masonry being repaired, meaning that only minimal intervention is required. As a result, even cracked stone can be reused – which is also one of the reasons why spiral anchors are a popular solution for the conservation of listed buildings. This method enables cracks in facades, as well as in lintels, openings and arches, to be repaired efficiently and effectively.



Spiral Anchor Mortar

Machine-compatible joint mortar with high sulphate resistance	
Range of use:	Embedding spiral anchors for reinforcing cracked masonry
Grain size:	1 mm
Raw density of fresh mortar:	Approx. 2.0 kg/dm ³
Compressive strength (28 days):	≥ 20 N/mm ² (M 20) ≥ 30 N/mm ² (M 30)
Adhesive shear strength:	Approx. 0.15 N/mm ² (table value EN 771)
Water absorption:	≤ 0.25 kg/(m ² min ^{0.5})
Water requirement:	Approx. 14 – 14.5% (m/m), equals approx. 3.5 l / 25 kg
Application:	Collomix® stirrer KR (4292), Cox Ultrapoint TM (4321), jointer
Processing time:	Approx. 60 min. at +20 °C
Application rate:	Approx. 1.7 kg/l (cavity volume)

Packaging unit	25 kg
grey (M 20)	1028 ■
grey (M 30)	1030 ■





1 Remove the joint mortar

Clear out the horizontal joints of the brickwork at predetermined points for an equal length to the left and right of the crack and to a depth of approx. 6 cm.



2 Clean the joint

Clean out the joint and carefully remove all loose parts that could interfere with adhesion. Pre-wet.



3 First layer of mortar

Apply the first layer of Spiral Anchor Mortar into the joint and press it in along the back wall of the joint using a mortar gun.



4 Insert the spiral anchor

Push the spiral anchor into the mortar bed using a jointer.



5 Second layer of mortar

Apply the second layer of Spiral Anchor Mortar and press it in using a mortar gun. If necessary, compress again with a jointer.



6 Plug the cracks

To consolidate the structure, the crack must be closed with mortar after plugging it with a suitable round cord.



7 Fill the cracks

Fill the crack with injection mortar with a low-pressure handgun, moving from top to bottom.



8 Repair cracks in the stone

Close cracks in stone or bricks by filling with RM/Restoration Mortar.



9 New joints

Point the joints with FM/Joint Mortar in the colour that matches the original joints.



Remmers stone substitution system

Why replace when you can repair?

The Remmers Restoration Mortar system has been specially developed for the substitution of missing stone on mineral building materials, eliminating the need to replace defective bricks. Compared to laborious stone replacement, the use of Remmers Restoration Mortar enables broken-off edges, spalling, damaged surfaces or cracks to be repaired more quickly and easily, without any reduction in durability. In addition, the end result is usually less noticeable too.

With three different grain sizes and an almost completely free choice of colour, as well as the ability to mix mortars of different colours together, Remmers Restoration Mortar can be tailored to virtually any brickwork.



RM

Mineral stone substitution mortar	
Range of use:	<ul style="list-style-type: none"> Restoration, substitution and reprofiling of mineral substrates such as natural stone, brick, concrete and artificial stone Reproduction of ornamental elements by tamping
Bulk density:	Approx. 1.7 kg/dm ³
Compressive strength (28 days):	≤ 13 N/mm ² (normal) ≤ 8 N/mm ² (soft)
Adhesive pull strength (28 days):	Approx. 0.5 N/mm ²
Elastic modulus (DIN 1048):	Approx. 11 kN/mm ² (normal) Approx. 7 kN/mm ² (soft)
Shrinkage deformation:	Approx. -0.3 mm/m (7 days) Approx. -0.7 mm/m (28 days)
Application:	Collomix® stirrer KR HF 140 (4294), filling knife, modelling spatula
Application rate:	Approx. 1.6 kg/l (cavity volume)

Packaging unit 30 kg	Strength	Grain size	Art. no.
medium grey (not hydrophobic)	normal	≤ 0.5 mm	0748
antique white (not hydrophobic)	normal	≤ 0.5 mm	0750
yellow ochre (not hydrophobic)	normal	≤ 0.5 mm	0751
red-brown (not hydrophobic)	normal	≤ 0.5 mm	0752
turquoise-grey (not hydrophobic)	normal	≤ 0.5 mm	0753
Baumb. sandstone (not hydrophobic)	normal	≤ 0.5 mm	0754
yellow-green (not hydrophobic)	normal	≤ 0.5 mm	0755
beige (not hydrophobic)	normal	≤ 0.5 mm	0756
brick red (not hydrophobic)	normal	≤ 0.5 mm	0757
light beige (not hydrophobic)	normal	≤ 0.5 mm	0758
anthracite (not hydrophobic)	normal	≤ 0.5 mm	0759
marl (not hydrophobic)	normal	≤ 0.5 mm	0760
light yellow (not hydrophobic)	normal	≤ 0.5 mm	0761
red sandstone (not hydrophobic)	normal	≤ 0.5 mm	0762
brick orange (not hydrophobic)	normal	≤ 0.5 mm	0763
cream (not hydrophobic)	normal	≤ 0.5 mm	0764
grey (not hydrophobic)	normal	≤ 0.5 mm	0765
light grey (not hydrophobic)	normal	≤ 0.5 mm	0766
Cotta sandstone (not hydrophobic)	normal	≤ 0.5 mm	0767
grey-white (not hydrophobic)	normal	≤ 0.5 mm	0768
special colour *	normal	≤ 0.2 mm	0742
special colour *	normal	≤ 0.5 mm	0746
special colour *	normal	≤ 2.0 mm	0749
special colour *	soft	≤ 0.2 mm	0786
special colour *	soft	≤ 0.5 mm	0787
special colour *	soft	≤ 2.0 mm	0788
special configurations **			0769

RM pro

Mineral stone substitution mortar (can be feathered out to zero)	
Range of use:	<ul style="list-style-type: none"> Restoration, substitution and reprofiling of mineral substrates such as natural stone, brick, concrete and artificial stone Reproduction of ornamental elements by tamping
Bulk density:	Approx. 1.5 – 1.7 kg/dm ³
Compressive strength (28 days):	≤ 13 N/mm ² (normal) ≤ 8 N/mm ² (soft)
Adhesive pull strength (28 days):	> 1.0 N/mm ²
Elastic modulus (DIN 1048):	Approx. 11 kN/mm ² (normal) Approx. 5 kN/mm ² (soft)
Shrinkage deformation:	Approx. -0.2 mm/m (7 days) Approx. -0.6 mm/m (28 days)
Application:	Collomix® stirrer KR HF 140 (4294), filling knife, modelling spatula
Application rate:	Approx. 1.6 kg/l (cavity volume)

Packaging unit 30 kg	Strength	Grain size	Art. no.
special colour *	normal	≤ 0.2 mm	0597
special colour *	normal	≤ 0.5 mm	0598
special colour *	normal	≤ 2.0 mm	0599
special colour *	soft	≤ 0.2 mm	0591
special colour *	soft	≤ 0.5 mm	0592
special colour *	soft	≤ 2.0 mm	0593
special configurations **			0596

* Can be made hydrophobic

** Special configurations of composition and properties. Minimum purchase 1000 kg.

Remmers joint mortar

Joints that match the bricks

Joints can make up as much as 20% of a brick facade. The shape and colour of these joints therefore have a significant impact on the overall appearance. They also have a technical function in the structure. Their physical and mechanical properties – and above all their reaction to water – play a crucial role in determining the functionality and durability of the brick facade. A sound joint network is essential for ensuring that the facade is impermeable to driving rain.

Moisture penetrating into the structure exposes it to frost damage and reduces its heat insulating capacity – both must be avoided. The Remmers joint mortars cover a wide range of binder systems, grain sizes and strength classes, as well as choices of colour and hydrophobic or hydrophilic properties. As a result, they can be selected to fit the individual requirements of each application.

	FM NB ^[basic] / FM NB PH	FM SAN	FM TK / TK PH
	Lime-cement joint mortar for new builds	Lime-cement joint mortar for repairs	Trass-lime-cement joint mortar
Range of use:	<ul style="list-style-type: none"> Creation of joints on brick and natural stone masonry Joints from 5 to 30 mm 	<ul style="list-style-type: none"> Repair of joints on brick and natural stone masonry Joints from 5 to 30 mm 	<ul style="list-style-type: none"> Masonry exposed to sulphate Joints from 8 to 30 mm
Binder:	Lime-cement	Lime-cement	Trass-lime
Strength:	M 10	M 5	M 5
Dynamic elasticity modulus (28 days):	≥ 10,000 N/mm ²	≥ 7000 N/mm ²	≥ 5000 N/mm ² (FM TK) ≥ 7000 N/mm ² (FM TK PH)
Open porosity:	Approx. 30% by volume	Approx. 30% by volume	Approx. 30% by volume
Application:	Collomix® stirrer KR (4292), jointer	Collomix® stirrer KR (4292), jointer	Collomix® stirrer KR (4292), jointer
Application rate:	Approx. 1.6 kg/l	Approx. 1.6 kg/l	Approx. 1.6 kg/l (FM TK) Approx. 1.7 kg/l (FM TK PH)

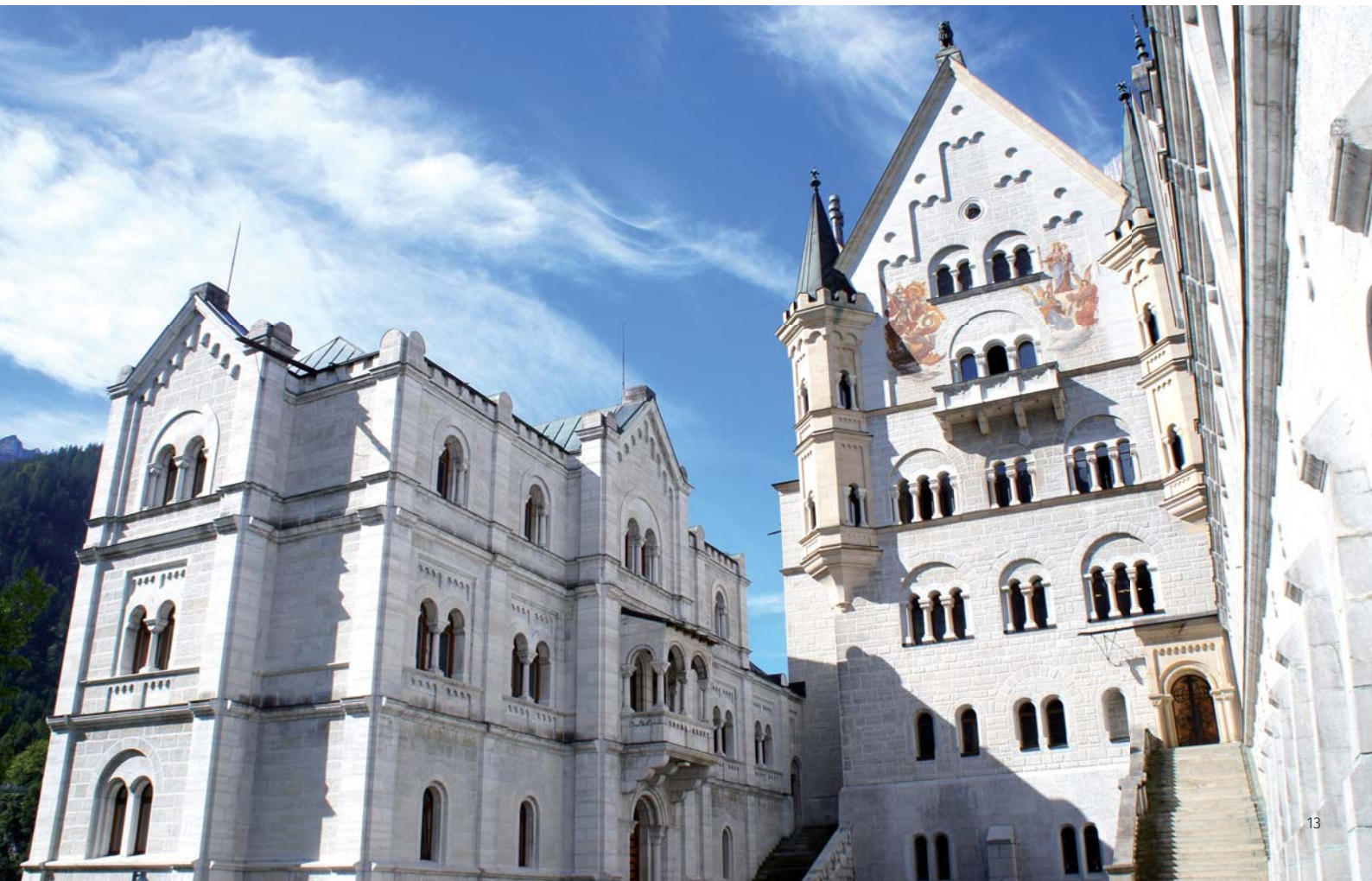
Packaging unit 30 kg	Grain size	Art. no.	Grain size	Art. no.	Grain size	Art. no.
antique white (not hydrophobic)	≤ 1.0 mm	1027	≤ 1.0 mm	1065		
grey (not hydrophobic)	≤ 1.0 mm	1033	≤ 1.0 mm	1066		
trass grey (not hydrophobic)					≤ 1.0 mm	1026
anthracite (not hydrophobic)	≤ 1.0 mm	1034	≤ 1.0 mm	1067		
beige (not hydrophobic)	≤ 1.0 mm	1035	≤ 1.0 mm	1069		
special colour (not hydrophobic)	≤ 1.0 mm	1036	≤ 1.0 mm	1061*	≤ 1.0 mm	1022
special colour (not hydrophobic)					≤ 2.0 mm	1023
antique white (pore hydrophobic)	≤ 1.0 mm	1017				
grey (pore hydrophobic)	≤ 1.0 mm	1000				
trass grey (pore hydrophobic)					≤ 1.0 mm	1024
anthracite (pore hydrophobic)	≤ 1.0 mm	1001				
beige (pore hydrophobic)	≤ 1.0 mm	1005				
special colour (pore hydrophobic)	≤ 1.0 mm	1006			≤ 1.0 mm	1018
special colour (pore hydrophobic)					≤ 2.0 mm	1019

* Can be made pore hydrophobic

	FM MG / MG PH	FM ZF	FM Historic
	Lime-cement joint mortar, machine-compatible	Cement-free joint mortar	Joint mortar with an object-specific formulation
Range of use:	<ul style="list-style-type: none"> Machine-compatible jointing of brick and natural stone masonry Joints from 5 to 30 mm 	<ul style="list-style-type: none"> Low-strength masonry Joints from 10 to 30 mm 	<ul style="list-style-type: none"> Reconstruction of historic materials
Binder:	Lime-cement	NHL* (cement-free)	Object-specific
Strength:	M 5	M 1	Object-specific
Dyn. elasticity modulus (28 days):	≥ 7000 N/mm ²	Approx. 4500 N/mm ²	According to the restoration goals
Open porosity:	Approx. 30% by volume	Approx. 40% by volume	According to the restoration goals
Application:	Mixer, suitable conveying pump, trowel, jointer, profiling tool	Collomix® stirrer KR (4292), jointer	Collomix® stirrer KR (4292), jointer
Application rate:	Approx. 1.6 kg/l	Approx. 1.6 kg/l (grain: ≤ 1.0 mm) Approx. 1.7 kg/l (grain: ≤ 2.0 mm)	Object- and formulation-specific

Packaging unit 30 kg	Grain size	Art. no.	Grain size	Art. no.	Grain size	Art. no.
special colour (not hydrophobic)	≤ 1.0 mm	1048	≤ 1.0 mm	1045		
special colour (not hydrophobic)			≤ 2.0 mm	1046		
special colour (pore hydrophobic)	≤ 1.0 mm	1049				
special configurations					≤ 1.0 mm	0573**

* Natural hydraulic lime
** Minimum purchase 1000 kg





Remmers brickwork mortar pointing

Simply perfect brick facades

Thanks to the mortar quality and the special application technique, pointed joints have especially good and long-lasting flank adhesion. The method is highly efficient as there is no need to clear out the old joint, meaning that the steps of chiselling and cutting out the joint can be skipped too. This eliminates the risk of damage to the stone edges.

In comparison with conventional jointing methods, the mortar application process used here is much less laborious too. In addition, narrow joints and even small cracks can be securely sealed with mortar.

The bottom line: a reduction of around 25% in costs and time compared to conventional repointing, with no decrease in durability.

Remmers brickwork mortar pointing consists of two key elements:

- Repointing using a fine-grained, sulphate-resistant, tempered mortar without removing the old joint
- Applying a water-repellent treatment to the facade

Funcosil SNL

Clear, hydrophobising, solvent-based impregnation	
Range of use:	<ul style="list-style-type: none"> Driving rain protection for facades Pre- and after-impregnation for brickwork pointing Reduction of susceptibility to dirt and green discolouration
Active ingredient:	Low molecular weight (silane/siloxane)
Active ingredient content:	Approx. 7% by mass
Carrier material:	Dearomatised hydrocarbons
Consistency:	Liquid
Density:	Approx. 0.8 g/cm ³
Flashpoint:	> 30 °C
Application:	GLORIA® CleanMaster PERFORMANCE PF50 (4666) or other pressure sprayers, GLORIA® CleanMaster EXTREME EX100 (4665) or other manual sprayers, Kana® KanaClassic corner brush (4541), surface brush (4540) and mortar brush (4517)
Application rate:	Approx. 0.6 l/m ² (pre-impregnation) Approx. 0.4 l/m ² (after-impregnation)

Packaging unit	1 l	5 l	10 l	30 l	200 l	1000 l
0602	▪	▪	▪	▪	▪	▪

FM FS

Mortar for brick jointing	
Range of use:	Repointing of brick/clinker facades in the facade mortar system
Grain size:	≤ 1.0 mm
Strength:	M 10
Bulk density:	1.5 kg/l
Adhesive strength:	> 1 N/mm ²
Water absorption:	< 0.1 kg/(m ² h ^{0.5})
Application:	Collomix® stirrer KR 140 HF (4294), washboy set (4978), red sponge float (4935), yellow sponge float (4936)
Processing time:	Approx. 2 hours
Application rate:	Approx. 3.0 kg/m ² (mortar/FM FS)

Packaging unit		25 kg
grey	0435	▪
special colour	0437	▪



1 Pre-impregnation

Use a sprayer to generously apply Funcosil SNL in a flow coating procedure without applying pressure.



2 Applying the mortar

After approx. 4 days, apply FM FS over the entire surface area using a rubberised trowel. Remove excess material by pulling off firmly.



3 Compacting and levelling out

Then, compact and level out the mortar using a red sponge float.



4 Cleaning

Wait approx. 30 to 60 minutes after applying the mortar, then clean the surface using a slotted sponge float (diagonal motion).



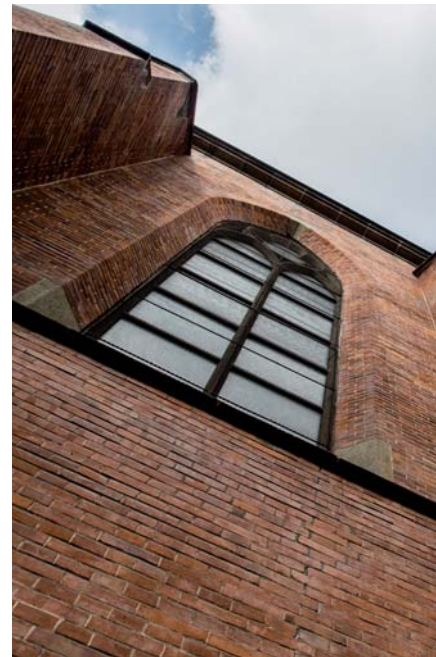
5 Final cleaning

In the early stages of the material setting, carry out final cleaning using clean, clear water.



6 After-impregnation

After 8 days, impregnate the entire surface area of the dry facade with Funcosil SNL again.



Funcosil impregnation agent

Secure protection for dry masonry

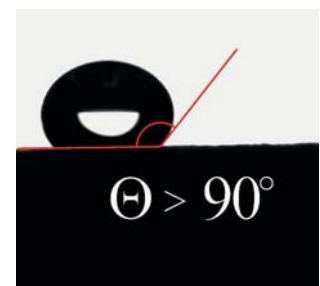
Water plays a central role in the weathering processes of mineral building materials. The goal of hydrophobic impregnation is a significant reduction in the capillary water absorption that occurs, for example, when a wall is exposed to driving rain or splashing water. It is a sensible precaution for preventing damage (prophylactic treatment) in cases where the capillary absorption of precipitation or splashing water could cause or accelerate the deterioration process, or where associated damage is already visible.

The reduction in the moisture content also improves the thermal insulation of the facade masonry. Hydrophobisation with Funcosil protects your bricks against damage and saves valuable energy. Irrespective of the composition of the active ingredient, the effect of a hydrophobising impregnation is based on the reduction of the adhesive forces between pore walls and penetrating water molecules. With this interaction diminished, the capillary suction that normally prevails is then transformed into capillary depression. The possible variations and properties of hydrophobising agents based on organic silicon are vast.

The choice must therefore be made in accordance with the requirements of the substrate. In their early days, hydrophobising agents were always liquid and were therefore not especially suited to weakly absorbent brickwork. Remmers has now solved this problem with the Funcosil FC cream technology, which gives all substrates the time to absorb the necessary protective agents.



Hydrophilic (water-attracting) material



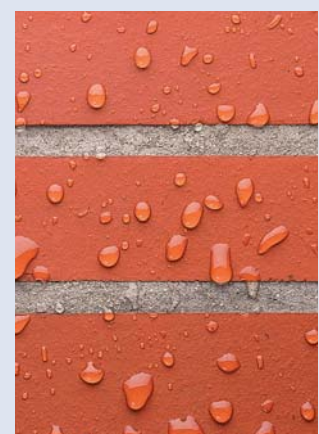
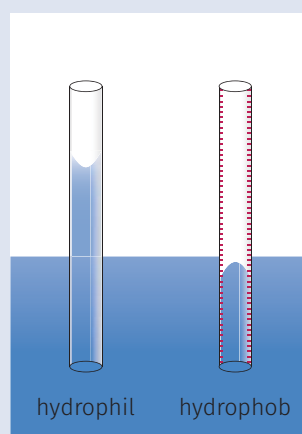
Hydrophobic (water-repelling) material

The angle of contact or angle of surface wetting is the angle that a liquid forms on the surface of a solid. If the angle of contact is greater than 90 degrees, the surface is hydrophobic.

What causes hydrophobisation?

A thin glass tube is placed into a water basin, which causes the water in the glass tube to rise up. The mechanism behind this is capillary forces. If the glass tube is now made hydrophobic, the effect is reversed; water is no longer “sucked in” but is instead pushed out.

This is the result of a nano-scale layer of the Funcosil impregnation, just one molecule thick, acting on the surfaces of the pores, with practically no restriction of the vapour diffusion. Air and vapour can permeate through just as before.



	Funcosil FC	Funcosil SNL	Funcosil SN
	Hydrophobic impregnation in cream form	Clear, hydrophobic, solvent-based impregnation	Hydrophobic impregnation for building materials that are sensitive to solvents
Range of use:	Protection against driving rain for facades, in particular for weakly absorbent substrates	<ul style="list-style-type: none"> ■ Driving rain protection on facades ■ Pre- and after-impregnation for brickwork pointing ■ Reduction of susceptibility to dirt and green discolouration 	Protection against driving rain for facades, in particular if adjacent to or containing components that are sensitive to solvents
Active ingredient:	Emulsified silanes	Low molecular (silane/siloxane)	Low molecular (silane/siloxane)
Active ingredient content:	Approx. 40% by mass	Approx. 7% by mass	Approx. 7% by mass
Carrier material:	Dearomatised hydrocarbons/water	Dearomatised hydrocarbons	water-free isopropyl alcohol
Consistency:	Cream form	Liquid	liquid
Density:	Approx. 0.84 g/cm ³	Approx. 0.8 g/cm ³	Approx. 0.8 g/cm ³
Flashpoint:	> 61 °C	> 30 °C	< 21 °C
Application:	Collomix® stirrer LX (4296), Kana® KanaClassic corner brush (4541), surface brush (4540), paint roller FC (4913), airless spraying equipment	GLORIA® CleanMaster PERFORMANCE PF50 (4666) and other pressure sprayers, GLORIA® CleanMaster EXTREME EX100 (4665) and other manual sprayers, Kana® KanaClassic corner brush (4541), surface brush (4540) and mortar brush (4517)	Gloria CleanMaster PERFORMANCE PF 50 (4666), Gloria CleanMaster EXTREME EX 100 (4665), Kana® KanaClassic corner brush (4541), surface brush (4540)
Application rate:	Approx. 0.15 – 0.2 l/m ² depending on the substrate	Approx. 0.3 – 1.5 l/m ² depending on the substrate	Approx. 0.3 – 1.0 l/m ² depending on the substrate

Packaging unit		0.75 l	1 l	5 l	10 l	12.5 l	30 l	200 l	1000 l
Funcosil FC	0711	■		■		■			
Funcosil SNL	0602		■	■	■		■	■	■
Funcosil SN	0604			■			■		





Remmers Graffiti Protection

BAST listed, preventive, semi-permanent anti-graffiti system

Remmers Graffiti Protection is a mixture of special silane/siloxane and wax compounds. This combination of constituents makes the substrate water-repellent, while building a separating layer on the surface at the same time. The wax component is microporous, so that the treated surface still allows diffusion. Graffiti and paint smears can be easily removed from the treated surface using a hot-water high-pressure cleaner (hygrothermal cleaning). Remmers Graffiti Protection is a semi-permanent protection system, as the wax component must be replaced once the graffiti has been removed. This can be done in a simple after-treatment operation.

Remmers Graffiti Protection is listed in Anti-Graffiti System Category C in the code of the German Anti-Graffiti Association, and is also RAL certified and BAST listed (directory of tested anti-graffiti systems (AGS) for use on concrete surfaces on buildings and components of federal transport routes).

Graffiti Protection

Semi-permanent anti-graffiti impregnation		
Range of use:	Anti-graffiti impregnation for mineral building materials such as brick, natural stone, concrete, sand-lime brick	
Active ingredient:	Alkyl alkoxy silane / wax	
Active ingredient content:	> 10% by mass	
Carrier material:	Water	
Consistency:	Liquid	
Density:	Approx. 0.8 g/cm ³	
Application:	Gloria 410 / 405 T Profiline (4667) or other liquid pumps	
Application rate:	Approx. 0.1 – 0.8 l/m ² (depending on the substrate)	
Packaging unit	5 l	30 l
0685	■	■





Rendered facades

Preservation and reconstruction

Render on facades

Weather protection and design options

In its early days, render was used as a form of weather protection that could also cover different materials to give a uniform appearance. Over time, render primarily began to be used for its versatility and its ability to be adapted to a wide range of applications.

For instance, as well as having its own natural colour, render can also be made virtually any colour desired, either by painting over it or by adding pigments that colour the render itself. Render can also be used to create sculpted and ornamental elements on facade surfaces. The ageing process of a rendered facade is highly complex. Rain and condensation, the absorption and release of salts, and thermal stresses gradually attack the facade. This can

cause cracks, peeling paint, sanding of the render and even detachment of the render and paint layers. Particularly at risk are dark regions, areas where the material changes, plaster structures such as cornice strips and ornamental modelling, and coatings with different expansion behaviour or a waterproofing effect.

If it is well designed and provided with constructive measures such as roof overhangs, anti-water-shock moulding, stone plinths and – above all – regular maintenance, a rendered facade can enjoy a long life.

Remmers offers the perfect systems for all these requirements.



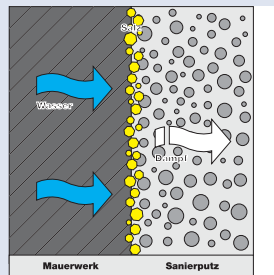
Rendering polluted substrates

Durable special renders that benefit the whole building

Restoration render systems have two main tasks:

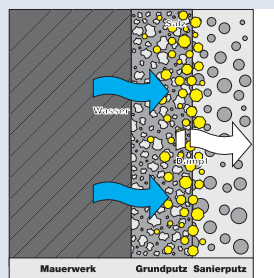
Restoration render mode of action: single-layer (restoration render)

Shifting of the evaporation plane for moisture contained in the masonry from the render surface into the render layer. Restoration renders are water-repellent and have excellent diffusion capability.



Restoration render system mode of action: two-layer (undercoat and restoration render)

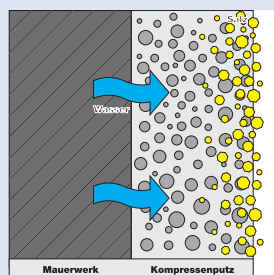
Deposition of salts coming out of the masonry without damaging the render. The undercoat render is not water-repellent so that the salts can move through it, and with a pore volume of more than 50% there is plenty of space to collect the salts without causing damage.



Dehumidifying and compress renders work differently:

Compress render mode of action

Unlike restoration render, there is no water-repelling effect here in order to promote the removal of moisture and salts. The render has an even larger pore volume in order to collect or let through as much salt and moisture as possible and release it into the air quickly and efficiently.



Buildings change over time: dirt and pollutants gradually build up on the facades, and moisture penetrates through. When renovation time comes around, the facade is then cleaned, but usually this is not enough. Over the years, salts have built up that impede cleaning.

If the render is replaced in these cases, the undercoat and finishing coat of render must be configured such that they can resist this potential damage for as long as possible. The tried-and-tested Remmers restoration render systems are ideally suited to these applications.

The restoration render is permanently water-repellent and thus has excellent diffusion capability. This allows the masonry to dry but holds the salts back so that they do not migrate to the surface. If a large amount of salt is present, the substrate can be evened out using a (porous) undercoat render that gives the salts the chance to crystallise without causing damage.

Alternatively, the Remmers compression render can be used to obtain a true dehumidifying render that is breathable and open to diffusion. This provides long-lasting moisture regulation and, with a pore volume of more than 60%, has plenty of space for storing salts.



	SP Level	SP Top White	Compress Render
	Salt-storing pore undercoat render in accordance with WTA	Restoration render for masonry containing moisture and salt in accordance with WTA	Salt-storing render/sacrificial render in accordance with WTA
Range of use:	<ul style="list-style-type: none"> Walls and masonry exposed to moisture and damaging salts Old buildings, cellars and facades Salt removal and moisture reduction Condensate buffer and protective layer on interior waterproofing 	<ul style="list-style-type: none"> Repair, renovation and restoration of wall surfaces and masonry containing water and damaging salts according to WTA Interior walls of cellars, old buildings and facades In combination with SP Level (Art. 0401) for heavy salt loads Can be applied in one layer as undercoat and finishing render 	<ul style="list-style-type: none"> Salt removal and moisture reduction Sacrificial layer as per WTA on salt-polluted substrates Buffer layer under renders reconstructed according to historical formulations Old buildings, cellars and facades
Bulk density:	Approx. 1.0 kg/dm ³	Approx. 0.9 kg/dm ³	Approx. 0.7 kg/dm ³
Compressive strength:	CS III	CS II	CS II
Adhesive strength:	≥ 0.08 N/mm ²	≥ 0.08 N/mm ²	≥ 0.08 N/mm ²
Porosity:	> 50% by volume	> 50% by volume	> 60% by volume
Water penetration depth:	> 5.0 mm	< 5.0 mm	> 10 mm after 24 h
Water absorption:	> 1.0 kg/m ²	≥ 0.3 kg/m ²	not determined
Processing time:	Approx. 60 min.	Approx. 60 min.	Approx. 60 min.
Application:	Compulsory mixer (double stirrer), finishing trowel -FLEXIS ONE- (4233), smoothing trowel (4436), aluminium darby with wooden handle (4429), render comb (4130), red sponge float (4935), trowel (4004), trowel (4117), trowel duo (4118), XXL coating knife (4437), grated scraper 4231	Compulsory mixer (double stirrer), finishing trowel -FLEXIS ONE- (4233), smoothing trowel (4436), aluminium darby with wooden handle (4429), render comb (4130), red sponge float (4935), trowel (4004), trowel (4117), trowel duo (4118), XXL coating knife (4437), grated scraper 4231	Compulsory mixer (double stirrer), trowel (4004), trowel (4117), trowel duo (4118), finishing trowel (4436), XXL coating knife (4437), aluminium darby with wooden handle (4429)
Application rate:	Approx. 9.5 kg/m ² /cm (thickness)	Approx. 8.5 kg/m ² /cm (thickness)	Approx. 6.0 kg/m ² /cm (thickness)
Packaging unit	20 kg	20 kg	16 kg
grey	0401		1077
antique white		0402	
special colour			1073

Stucco restoration and repair

Individual handicraft for the modern era



Stucco elements give a special look to facades, conjuring up a noble history of traditional handicraft. Building facades finished with stucco adorn many a historic town skyline. Of course, stucco encompasses not just the opulent ornaments of Baroque and Rococo architecture, but also simple cornices, window jambs, pilaster strips and the like. With regard to their production, stucco cornices are traditionally formed on site but can also be manufactured as precast profiles and ornaments.

For both methods, Remmers offers solutions that meet all the modern requirements concerning workability, speed of application and durability.

Stucco GZ

Stucco FZ

Stucco GF

	Fast-setting mortar for production or filling of stucco cores	Fast-setting mortar for fine-texture decoration of surfaces on new and old stucco	Fast-setting pourable mortar for production of stucco elements
Range of use:	<ul style="list-style-type: none"> Production or filling of stucco cores, profiles and cornices Repair and restoration of facades/stucco facades 	<ul style="list-style-type: none"> Coating stucco cores made of coarse sculptor's mortar Repairing old, cement-bound stucco components Creating smooth, sharp-edged profiles 	<ul style="list-style-type: none"> On-site production of stucco elements in a casting procedure
Bulk density:	Approx. 1.25 kg/dm ³	Approx. 1.50 kg/dm ³	Approx. 1.25 kg/dm ³
Compressive strength:	> 5.0 N/mm ² (M5)	> 5.0 N/mm ² (M5)	Approx. 5.0 N/mm ² (M5)
Water absorption:	< 1.0 kg/m ²	< 1.0 kg/m ²	< 1.0 kg/m ²
Processing time:	Approx. 30 min.	Approx. 20 min.	Approx. 15 min.
Grain size:	< 1.5 mm	< 0.5 mm	< 1.5 mm
Application:	Collomix® stirrer KR HF 120 (4292), trowel (4004), template, trowel (4117), trowel duo (4118)	Collomix® stirrer KR HF 120 (4292), trowel (4004), template, trowel (4117), trowel duo (4118)	Collomix® stirrer KR HF 120 (4292), trowel (4004)
Application rate:	Approx. 1.1 kg/m ² /mm (thickness)	Approx. 1.3 kg/m ² /mm (thickness)	Approx. 1.1 kg/l (cavity volume)

Packaging unit 25 kg	Art. no.	Art. no.	Art. no.
light grey	0511		0521
antique white		0512	

Renovating old rendered surfaces

The quick and simple route to perfect facades

Old render often does not need to be removed entirely, even if it has a few cracks. In such cases, the most effective solution is to apply a thin layer of new render to the facade. To make sure that the existing cracks do not return, it must be determined whether the cause of the crack is still active. If the culprit is still there, it must be remedied before the render is repaired. To reduce the likelihood of new cracks even further, a protection measure is incorporated into the restoration render system in the form of a fibreglass mesh.

The combination of Remmers VM Fill as a reinforcement render and Remmers VM Fill rapid as a finishing coat that can be felted has been successfully used to repair cracked

rendered facades for many years. If the render is not cracked but its surface is looking a little damaged, weathered and unsightly, Remmers SP Top Q2 can be used for the repairs as an alternative to VM Fill rapid.



	VM Fill	VM Fill rapid	SP Top Q2
	Universal cementing and reinforcement mortar	Fast-setting cementing and repair mortar, filler and thin-layer render	Mineral fine render
Range of use:	<ul style="list-style-type: none"> Repairing cracked render and bonded thermal insulation systems on facades Render for plinths 	<ul style="list-style-type: none"> Repairing cracked render and bonded thermal insulation systems on facades Render for plinths 	<ul style="list-style-type: none"> Surface and thin-layer render
Bulk density:	1.4 kg/dm ³	1.4 kg/dm ³	1.2 kg/dm ³
Compressive strength:	> 5.0 N/mm ²	> 10.0 N/mm ²	1.5 – 5.0 N/mm ²
Water absorption:	< 0.2 kg/(m ² *h ^{0.5})	< 0.2 kg/(m ² *h ^{0.5})	≤ 0.5 kg/(m ² *h ^{0.5})
Processing time:	Approx. 3 hours	Approx. 45 min.	Approx. 2 hours
Grain size:	≤ 0.5 mm	≤ 0.5 mm	≤ 0.5 mm
Application:	Collomix® stirrer KR (4292), red sponge float (4935), yellow sponge float (4936)	Collomix® stirrer KR (4292), trowel (4004, 4117, 4118), red sponge float (4935), yellow sponge float (4936)	Compulsory mixer (double stirrer), finishing trowel -FLEXIS ONE- (4233), trowel (4436), aluminium darby with wooden handle (4429), plaster comb (4130), red sponge float (4935), trowel (4004, 4117, 4118), grated scraper (4231)
Application rate:	Approx. 1.2 kg/m ² /mm (thickness)	Approx. 1.3 kg/m ² /mm (thickness)	Approx. 1.3 kg/m ² /mm (thickness)
Packaging unit 25 kg	Art. no.	Art. no.	Art. no.
antique white	0517	0519	0408
special colour			0524



Reconstructing historic rendered facades

From lime mortar to natural cement

The use of traditional materials and techniques is fundamental to the restoration of historic monuments and buildings. As long as the influence of salt and moisture can be kept to a minimum, the primary objective of restoration is to use traditional materials and to adjust the historical formulations so that they can still be used on the structure at hand.

With the Remmers Historic Mortar System, old mortar compositions can be recovered for virtually all kinds of historical formulations, from dry-slaked lime mortar to natural cement mortar and from classical stone render to crushed-

brick concrete from the mid-20th century. We conduct individual analyses in each case and use these as the basis for our formulation, along with our extensive experience stemming from more than 65 years of activity in the field of historic building preservation. We bring all our knowledge to every situation in order to preserve historical render textures and formulations and to combat the loss of the associated historical mortars.

You can find more detailed information in our brochure on the preservation of buildings and historic monuments, or on our website www.remmers.com

Paint systems on render

Classical or modern, the perfect protection every time

As well as adding colour, facade paints help to protect the building structure. They do this mainly by keeping moisture and harmful substances away from the underlying building material, while also helping to preserve its diffusion properties. This can be achieved with two different types of paint. Conventional silicate or mineral paints such as Remmers Color SH embody the spirit of high-quality design and resilience, thanks to their use of water glass as a mineral binder, and their wide range of possible applications on exceptional historic buildings, especially those of the early modern period. The outstanding properties of

silicone resin paints such as Remmers Color LA are all thanks to their microporous structure, which is reflected in their excellent characteristic values such as a diffusion resistance factor of around 150. This corresponds to an sd value of significantly below 0.10 m and is on a par with the values of conventional single-component silicone paints. At the same time, the capillary water uptake of these paints is extremely low. This means that they essentially act as a sort of “Gore-Tex” protection for the rendered facade. This tried-and-tested solution for outdoor clothing also turns out to be perfect for facades.

Color SH

Mineral paint with quartzite structure	
Range of use:	<ul style="list-style-type: none"> ■ Porous, mineral building materials ■ Renovation of old silicate, lime and cement coatings
Binder:	Potassium water glass
Colours:	White, Remmers colour collection in the tone scales 4, 5 and 6
Water vapour permeability:	$sd \leq 0.04 \text{ m}$
Water absorption:	$< 0.2 \text{ kg}/(\text{m}^2 \cdot \text{h}^{0.5})$
Density:	Approx. $1.4 \text{ g}/\text{cm}^3$
pH value:	Approx. 12 – 13
Application:	Patent disperser (4747), Collomix® stirrer LX (4296), brush (4541), Kana® KanaClassic corner brush (4541), surface brush (4540), paint roller FC (4913), airless spraying equipment
Application rate:	$0.2 \text{ l}/\text{m}^2$ (per coat) 2 coats required

Packaging unit	12.5 l	
white	0630	■
special colour	0634	■

Color LA

“True” silicone resin paint with film protection for surfaces at risk of infestation with algae or fungi	
Range of use:	<ul style="list-style-type: none"> ■ Porous, mineral building materials in outdoor areas ■ Load-bearing silicate, silicone and matt dispersion coatings ■ Synthetic resin renders
Binder:	Silicone resin emulsion
Colours:	White, clear, colour collection
Water vapour permeability:	$sd \leq 0.05 \text{ m}$
Water absorption:	$< 0.1 \text{ kg}/(\text{m}^2 \cdot \text{h}^{0.5})$
Density:	Approx. $1.45 - 1.53 \text{ g}/\text{cm}^3$ (depending on the colour)
pH value:	Approx. 8.5
Application:	Patent disperser (4747), Collomix® stirrer LX (4296), brush (4541), Kana® KanaClassic corner brush (4541), surface brush (4540), paint roller FC (4913), airless spraying equipment
Application rate:	Approx. $0.2 - 0.25 \text{ l}/\text{m}^2$ (per coat) 2 coats required

Packaging unit	5 l	12.5 l
white	6400	■
clear	6410	■
colour collection	6430	■
special colour	6429	■

