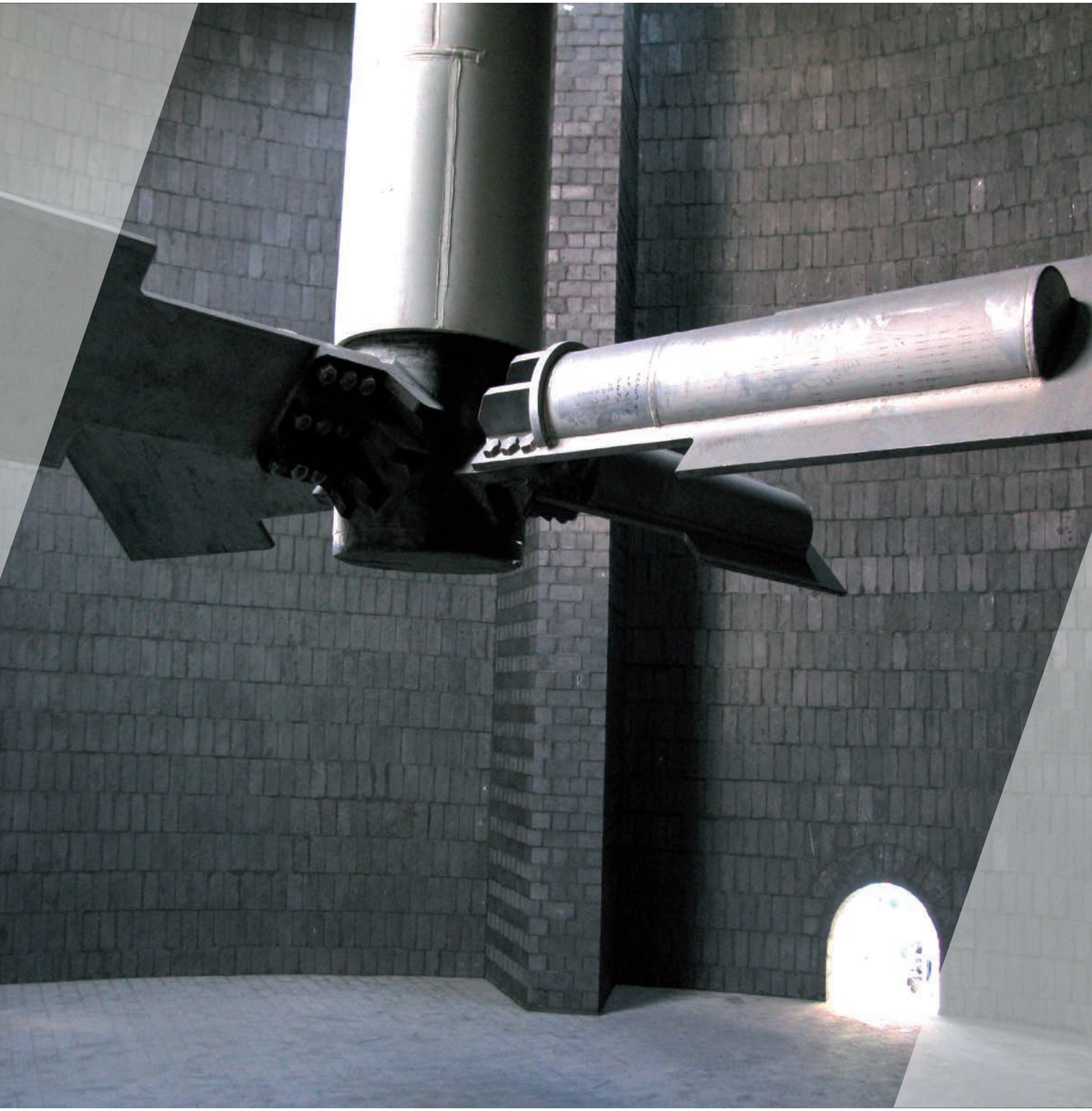
REMA TIP TOP

//ONE BRAND //ONE SOURCE //ONE SYSTEM



REMA TIP TOP BRICK LINING SYSTEMS

REMA TIP TOP
BRICK LINING SYSTEMS

From professional advice on materials, construction and material production to qualified installation - competent service from a single source.

REMA TIP TOP brick and tile linings reliably protect your plant, process vessels and storage tanks against chemical attack and corrosion.

In chemical process technologies or flue gas cleaning, in addition to exposure to chemicals, high thermal and mechanical wear often occur. Under such extreme conditions, our proven lining systems themselves need additional effective protection, to be able to perform their task safely and over the long term.

We ensure this protection by a well engineered system of acid-proof brick linings – always exactly suited to the plant's specific conditions.

Combined system build-ups are matched perfectly to the membrane – whether rubber lining or synthetic resin-based coating – consisting of acid-proof bricks, carbon bricks, graphite or insulating bricks or wear-resistant ceramics, ensuring maximum service life and a effective cost return.

On the basis of exact analysis of chemical and thermal exposure and mechanical or abrasive stresses, and by means of heat transfer calculations, suitable build-ups using appropriate materials will be engineered, matching the overall process condition.

Apart from tiles, standard formats and shaped bricks, our bedding and jointing mortars ensure the construction of the combined system.
Whether they are process vessels, pickling plants, autoclaves, sulfuric acid towers, reactors in phosphoric acid plants or bleaching towers, we have a broad and versatile portfolio of mortar materials which cover a wide range of applications.

- bonding agents based on furane or phenolic resins
- unsaturated polyester resins
- vinyl ester resins
- epoxy resins
- or potassium silicate

In combination with high-quality inert fillers on quartz or carbon basis, they ensure optimum adhesion to the impermeable membrane layer and a strong bond, always with the maximum chemical resistance.

Depending on the level of exposure, products from the CHEMOKITT Series or the worldwide proven Asplit® Series will be used. The synthetic mortars known for over 60 years under the name Asplit® are solely produced by TIP TOP Oberflächenschutz Elbe GmbH.

Often high-alloy stainless steels are not suitable under certain process conditions. In that case our long-term proven acid proof brick linings are the ideal solution to achieve an economical service life of your plant.

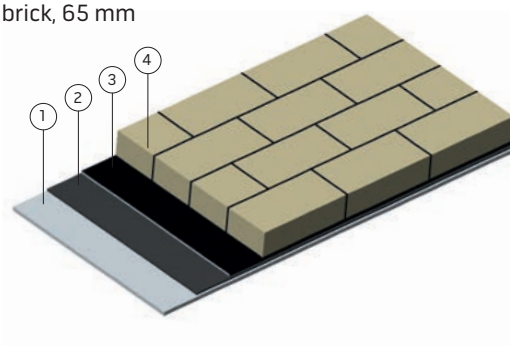
Brick lined pickling line - CHEMOKITT FU 1310

REMA TIP TOP
BRICK LINING SYSTEMS

Brick lined hydrochloric acid pickling line

Build up of brick lining system

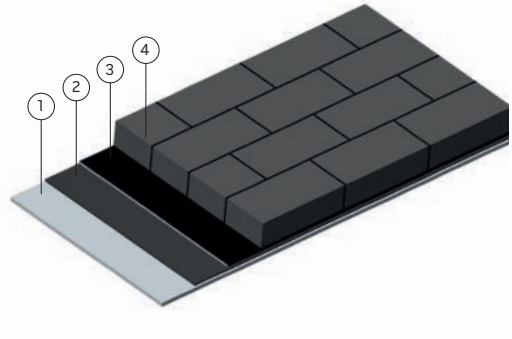
1. Steel, blasted
2. CHEMOLINE 70 CN
3. CHEMOKITT FU 1310
4. Acid proof brick, 65 mm



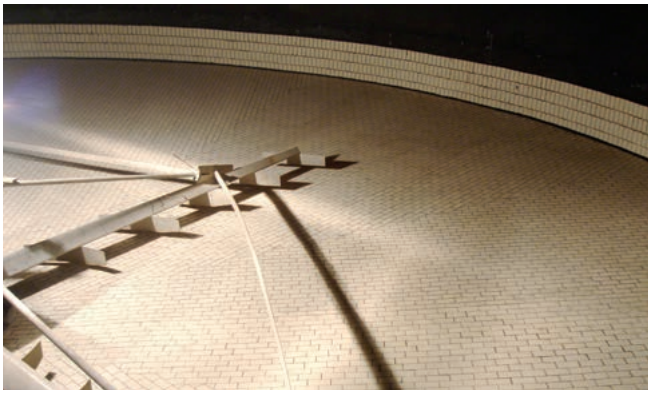
Vessel in the phosphoric acid industry

Build up of brick lining system

1. Steel, blasted
2. CHEMOLINE 4B
3. CHEMOKITT FU 1320
4. Carbon bricks, 65 mm



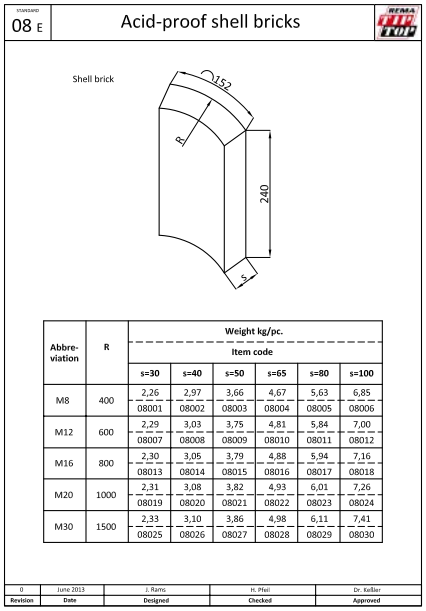
Brick lined pump tank in a sulphuric acid plant – Asplit HB Mortar



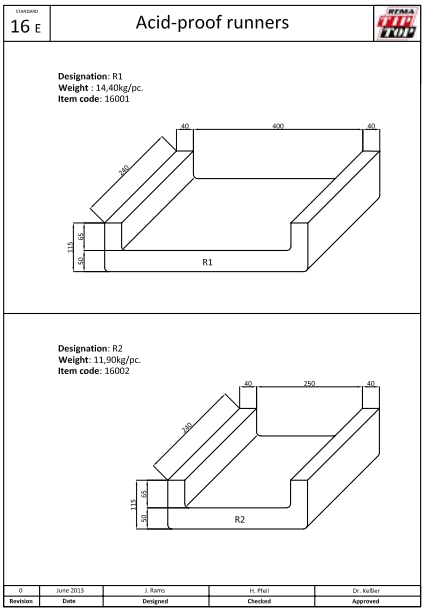
Brick lining in a clarifier as mechanical protection for the rubber lining - CHEMOKITT FU 1310

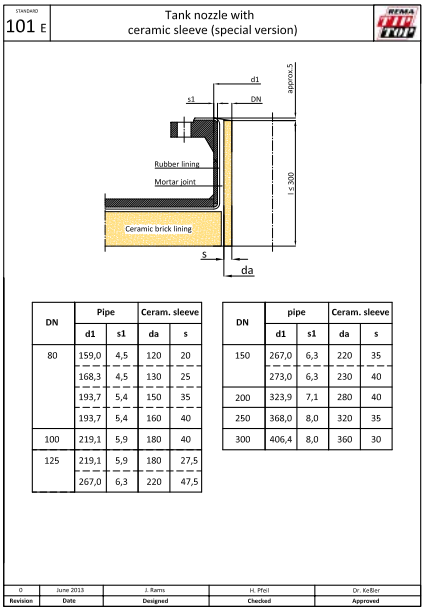
REMA TIP TOP
BRICK LINING SYSTEMS

At REMA TIP TOP, all available brick formats and qualities are cataloged as shown in the following sketches. Using the latest CAD technology, we are furthermore able to present promptly complex constructions and meet customer requirements down to the last detail.



Abbre-viation	R	Weight kg/pc. Item code					
		s=30	s=40	s=50	s=65	s=80	s=100
M8	400	2,26 08001	2,97 08002	3,66 08003	4,67 08004	5,63 08005	6,85 08006
M12	600	2,29 08007	3,03 08008	3,75 08009	4,81 08010	5,84 08011	7,00 08012
M16	800	2,30 08013	3,05 08014	3,79 08015	4,88 08016	5,94 08017	7,16 08018
M20	1000	2,31 08019	3,08 08020	3,82 08021	4,93 08022	6,01 08023	7,26 08024
M30	1500	2,33 08025	3,10 08026	3,86 08027	4,98 08028	6,11 08029	7,41 08030

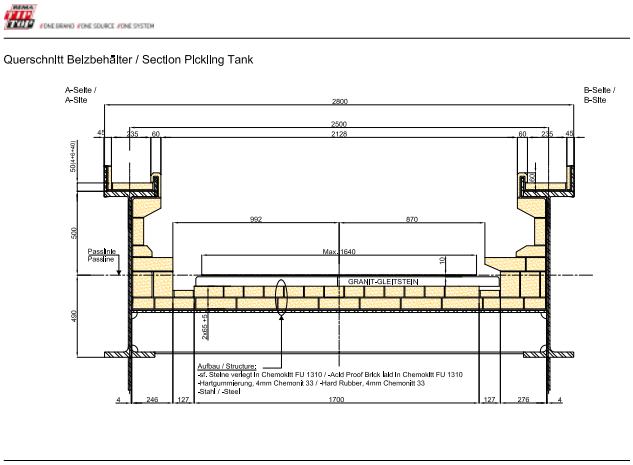




DN	Pipe d1	Pipe s1	Ceram. sleeve da	Ceram. sleeve s
80	159,0	4,5	120	20
	168,3	4,5	130	25
	193,7	5,4	150	35
	193,7	5,4	160	40
100	219,1	5,9	180	40
125	219,1	5,9	180	27,5
	267,0	6,3	220	47,5

DN	pipe d1	pipe s1	Ceram. sleeve da	Ceram. sleeve s
150	267,0	6,3	220	35
	273,0	6,3	230	40
200	323,9	7,1	280	40
250	368,0	8,0	320	35
300	406,4	8,0	360	30

Whether you want to use a cleaning device to remove gypsum deposits in an absorber or operate a quench with a 700 °C flue gas inlet temperature or plan a sulfuric acid drying tower with a ceramic self-supporting dome, we are able to offer you a customized solution to meet your needs, consisting of rubber linings or coatings combined with REMA TIP TOP brick linings – both long-lasting and cost effective.



Above and beyond protection against thermal and mechanical stresses, brick linings offer improved chemical resistance since they prevent the direct contact of the medium to the impermeable membrane layer.

Besides the optimal material choice consisting of CHEMOLINE or CHEMONIT rubber linings, respectively coatings such as COROFLAKE or LINING in combination with high-quality bricks and mortars only achieve a truly high quality lining through the design tailored to suit the most complicated geometries.

Our experienced constructors design every detail based on CAD drawings and define exactly how every single brick ties into one another to support the complete acid-proof lining, which represents quality – brick by brick.

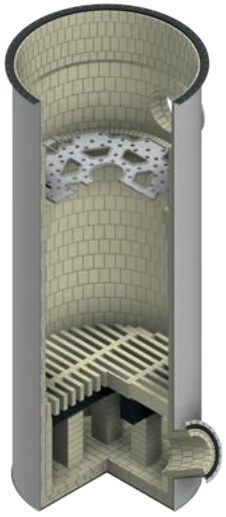
Efficient site planning minimizes assembly times, the flexibility that characterizes our project management and how we handle projects on-site – these are things we practice in nearly all countries of the globe.

A functional lining quality is achieved in many small steps:

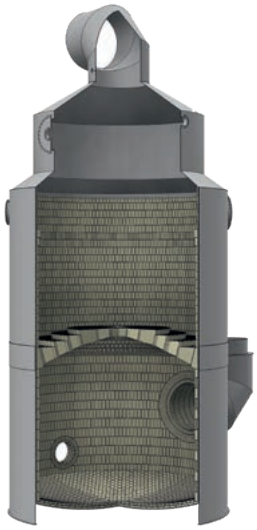
- own research and development
- own production with products matched to one another
- professional advice and design
- premium quality installation and site management

→ REMA TIP TOP service from a single source

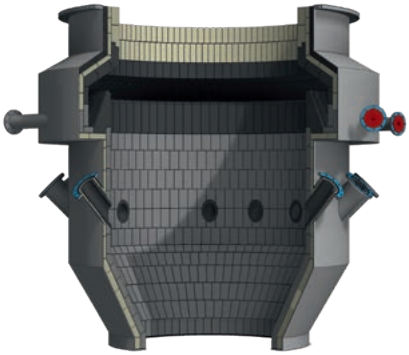
EXAMPLES OF TIP TOP BRICK LINING OBJECTS



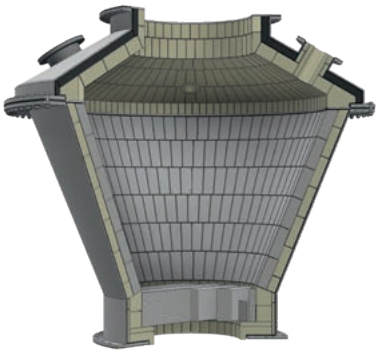
Air drying tower
Installed materials:
- CHEMOLINE 4B Soft rubber lining
- Acid proof ceramic bricks
- Acid proof ceramic grid beams
- Asplit HB potassium silicate mortar



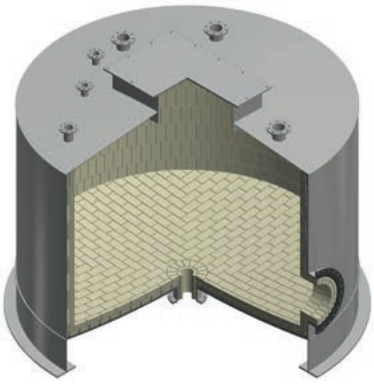
Drying tower in a sulphuric acid plant
Installed materials:
- Acid proof ceramic bricks
- TIP TOP self supporting dome
- Asplit HB potassium silicate mortar



Radial flow scrubber
Installed materials:
- CHEMONIT 33 Hard rubber lining
- Acid proof ceramic bricks
- Carbon bricks
- Graphite bricks
- Asplit HB potassium silicate mortar
- Asplit CN Phenolic mortar



Venturi scrubber
Installed materials:
- CHEMONIT 31 Hard rubber lining
- CHEMOLINE 4A Soft rubber lining
- Acid proof ceramic bricks
- Carbon bricks
- CHEMOKITT FU 1310
- Asplit CN Phenolic mortar
- Asplit HB potassium silicate mortar



Pump tank in a sulphuric acid plant
Installed materials:
- Acid proof ceramic bricks
- Asplit HB potassium silicate mortar

Agitated vessel in the chemical indutry
Installed materials:
- CHEMOLINE 4CN Soft rubber lining
- Acid proof ceramic bricks and tiles
- Asplit CN Phenolic mortar

CHEMOKITT SYNTHETIC RESIN MORTAR

Product	Polymer/ Binding agents	Application
CHEMOKITT FU 1310	Furane resin	CHEMOKITT FU 1310 is a two-component, cold curing synthetic resin mortar, based on furane resin with mineral fillers. CHEMOKITT FU 1310 is suitable as bedding and jointing mortar for ceramic tiles, bricks and shaped pieces, especially at high chemical exposure to acids, alkalis or organic solvents and high temperature and mechanical stresses. Main applications are tiling and brick linings in equipment for the chemical industry, waste water and process water treatment, in channels, pits and sumps, power plants, warehouses and workshops, neutralization- and pickling lines.
CHEMOKITT FU 1320	Furane resin	CHEMOKITT FU 1320 is a two-component, cold curing synthetic resin mortar, based on furane resin with carbon fillers. The cured, silicate-free resin is electrically dissipating. CHEMOKITT FU 1320 is suitable as bedding and jointing mortar for tiles, bricks and shaped pieces made of acid-resistant ceramic, carbon or graphite material. CHEMOKITT FU 1320 is particularly suitable for high chemical loads of acids, including hydrofluoric acid, strong lyes and organic solvents at high temperature stresses. Main applications are tiling and brick linings in equipment for the chemical industry, waste water and process water treatment, in the phosphoric acid and sulphuric acid industry, in flue gas desulfurization plants, neutralization- and pickling lines. Due to its good electrical dissipation, CHEMOKITT FU 1320 is recommended for areas, where sparking shall be avoided due to the possible risk of explosion.
CHEMOKITT UP 1320	Polyester resin, Vinyl ester resin	CHEMOKITT UP 1320 is a three-component, cold curing synthetic resin mortar, based on a combination of unsaturated polyester and vinyl ester resin, with carbon filler. The cured resin mortar is electrically dissipating. CHEMOKITT UP 1320 is suitable as bedding and jointing mortar for tiles, bricks and shaped pieces, especially at high chemical stresses resulting from strong acids and mixed acids such as nitric-hydrofluoric acid mixtures. Main applications are tiling and brick linings in equipment for the chemical industry, metal industry, channels, pits, neutralization- and pickling lines.
CHEMOKITT VE 1310	Vinyl ester resin	CHEMOKITT VE 1310 is a 2-component cold-hardening synthetic resin mortar based on vinyl resin with mineral fillers. CHEMOKITT VE 1310 is suitable for use as a bedding and jointing mortar for tiles, bricks and shaped pieces, particularly when these are exposed to chemical stresses due to acids, solvents and oxidizing media while undergoing high temperatures and mechanical loading. The main applications are tilings and brick linings in chemical industry equipment, in waste and process water preparation, in the cellulose industry and in pickling tanks.
CHEMOKITT VE 1311	Vinyl ester resin	CHEMOKITT VE 1311 is a two-component, cold curing synthetic resin mortar, based on a vinyl ester resin with mineral fillers. CHEMOKITT VE 1311 is suitable as bedding and jointing mortar for tiles, bricks and shaped pieces, especially for chemical stresses resulting from acids, solvents and oxidizing media. Furthermore, CHEMOKITT VE 1311 has a high temperature and a high mechanical stress resistance. Main applications are tiling and brick linings in equipment for the chemical industry, waste water and process water treatment, the pulp and paper industry and in pickling lines.

Asplit® SYNTHETIC RESIN MORTAR

Product	Polymer/ Binding agents	Application
Asplit® CN	Modified phenolic resin	Asplit® CN is a two-component, cold curing synthetic resin mortar, based on a modified phenolic resin with carbon fillers. Asplit® CN is suitable for bedding and jointing of tiles, bricks and shaped pieces made of ceramic or carbon for the production of chemical, thermal and mechanically resistant coatings and protective linings.
Asplit® CN 916	Modified phenolic resin	Asplit® CN 916 is a two-component, cold curing synthetic resin mortar, based on a modified phenolic resin with carbon fillers. Asplit® CN 916 is suitable for bedding and jointing of tiles, bricks and shaped pieces made of ceramic or carbon for the production of chemical, thermal and mechanically resistant coatings and protective linings.
Asplit® FN	Modified furane resin	Asplit® FN is a two-component, cold curing synthetic resin mortar, based on a modified furanee resin with inert carbon fillers. Asplit® FN is suitable for bedding and jointing of tiles, bricks and shaped pieces made of ceramic or carbon for the production of chemical, thermal and mechanically resistant coatings and protective linings. Asplit® FN is particularly suitable for brick linings of chemical equipment (reactors, columns, scrubbers etc.) which are exposed to high temperatures and aggressive chemicals.
Asplit® VP 788	Modified furane resin	Asplit® VP 788 is a two-component, cold curing synthetic resin mortar, based on a modified furanee resin with carbon filler. Asplit® VP 788 is suitable for bedding and jointing of tiles, bricks and shaped pieces made of ceramic or carbon for the production of chemical, thermal and mechanically resistant coatings and protective linings.
Asplit® VEQ	Novolac Vinylester-resin	Asplit® VEQ is a two-component, cold curing synthetic resin mortar, based on a Novolac vinyl ester resin with mineral fillers. This system is also available with carbon or graphite fillers called Asplit VEC. Asplit® VEQ is used for bedding and jointing of tiles and bricks for the construction of chemically, thermally and mechanically resistant floorings and vessel linings. Particularly noteworthy is the excellent resistance to oxidizing media.
Asplit® HB	Potassium silicate	Asplit® HB is a halogen-free potassium silicate mortar made of two components. Asplit® HB is suitable for jointing of acid proof bricks, tiles, special fabricated pieces, for constructing apparatus in the sulfuric acid industry and chimney linings.
Asplit® HES	Potassium silicate	Asplit® HES is a halogen-free potassium silicate mortar, which is prepared with water and hardens by chemical reaction. Binder and hardener are present in the mortar powder. Asplit® HES is used as mortar for fireclay-tubes in domestic chimneys. Furthermore it is suitable for full and open joining of acid-proof bricks, tiles, special fabricated pieces for chimneys and apparatus linings.
Asplit® HSP	Potassium silicate	Asplit® HSP is a halogen-free potassium silicate mortar, which is prepared with water and hardens by chemical reaction. Asplit® HSP is especially developed for spraying application (similar to jetcrete). Binder and hardener are present in the mortar powder. Asplit® HSP is used as corrosion protection lining on larger buildings and tank surfaces that are dimensionally stable and free of torsion.
Asplit® K14	Potassium silicate	Asplit® K14 is a potassium silicate mortar with corresponding chemical and increased thermal resistance compared to conventional potassium silicate mortars. Asplit® K14 is used as heat- and chemical-resistant construction material for brick lining of refractory and acid-resistant bricks. It is suitable for all refractory brick linings where fireclay mortar cannot be used.

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