A grayscale photograph of a large industrial tunnel. The tunnel's interior is lined with a material that shows concentric circular patterns, likely from a rotating process. In the center of the tunnel, there is a large circular opening covered by a metal grate. Light is streaming through the grate, creating a bright glow. Below the grate, there are several smaller, horizontal openings. The overall scene is industrial and technical.

**Coating, rubber coating
and lining systems**



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Coating, rubber coating and lining systems from GBT: Basics of process safety

In everyday operation, process components and plant parts are exposed to high chemical, thermal and mechanical stresses. To guarantee long-term operational and process safety also under these extreme conditions, the use of appropriate coating systems, and frequently also a process optimisation, is necessary.

For almost 100 years, coating and lining systems, as well as industrial rubber lining and acid-resistant brickwork of the GBT Company Group, have been providing solid and permanent protection against many aggressive influences. Designed precisely for the individual areas

of use, our products and processes guarantee absolute reliability and long-term operational safety.

AREAS OF USE

Automotive industry and paintshops

All major automotive manufacturers and suppliers place their trust in coatings from GBT. The system BÜCOLIT® V25 has become the worldwide standard for the electrical insulation of trays for cathodic dip coating.

- Cathodic dip coating
- Conveyor systems
- Process containers
- Supply and exhaust air systems

Power stations and waste incineration facilities

In flue gas cleaning, the plant components are stained with acids and alkali. The harmful substances in the flue gas and dust lead to poor flow areas in combination with locally concentrated temperature fluctuations. BÜCOLIT® coating systems by GBT counter this double strain. Thanks to its number of variants, it can be precisely tailored to the different areas of use.

- Flue gas ducts, absorbers
- Flue gas scrubbers
- Electrical filters, fabric filters
- Chimneys, fireplaces
- Ventilator housing, impellers
- Ash silos, bunkers, chemical containers



Chemicals industry

BÜCOLIT® coating systems convince through their enormous resistance to aggressive materials. This high resistance makes them ideal for a variety of forms used in the chemicals industry. Such as for:

- Storage and process containers
- Drip trays and cups
- Floor surfaces
- Pump sumps
- FGFR containers and pipelines

Cement industry

In the combustion of RDF in cement production, a considerable amount of hydrochloric acids are released. There is also condensation from chlorine and HCl. Their diffusion leads to harmful acid formation which attacks the anchors and steel surfaces. GBT counters these extremely aggressive factors with coating systems which have been especially designed for the needs of the cement industry.

- Raw and clean gas ducts
- Electrical and fabric filters
- Fans, ventilators and sound dampers
- Heat exchangers, rotary kilns and gas fireplaces
- Raw meal mills and trough screw conveyors
- Cyclones, clinker and spray coolers
- Peripherals containers



Steel industry

For the iron and steel industry, GBT develops and applies both acid-resistant lining systems as well as coating for surface treatment facilities, acid recovery and gas cleaning.

- Apparatus, containers and fittings for acid recovery
- Normal and stainless steel pickling lines
- Trays and surfaces
- Concrete protection from thermoplastics and glass-fibre reinforced plastics (GFRP)
- Rubber coating
- Collecting basins and trays
- Absorbers, gas ducts
- Acid-resistant brickwork



BÜCOLIT® COATING SYSTEMS

SPRAY COATING

The BÜCOLIT® coating systems made of highly resistant vinyl ester resins are reinforced by a flake core. Thanks to their spraying ability, they can be applied very economically. Specially developed filling material is added as a reinforcing material.

In this way, exactly the spray coating which has the optimum properties for the intended application can be selected from a diverse

range. Depending on the application characteristics, different coating features can be realised in this way.

General system properties

- very good diffusion resistance
- especially economical with large, geometrically simple surfaces
- high chemical resistance, heat resistance and thermal stability
- short application time, fast hardening
- especially developed in flue gas cleaning
- can be used in new and old plants

Product range

BÜCOLIT® V590C

(Novolac vinyl ester resin with graphite)

- very good chemical resistance to aliphatic and aromatic solvents, as well as sulphur and hydrofluoric acid
- Use in potentially explosive areas and plants through conductive design
- good chemical resistance and high diffusion resistance in combination with mechanical properties
- heat resistant up to 180 °C dry and 70 °C wet



BÜCOLIT® COATING SYSTEMS

BÜCOLIT® V590F

(Bisphenol A vinyl ester resin with mineral flakes)

- good chemical resistance
- comparably low demands on the subsurface
- high diffusion resistance in combination with mechanical properties
- can also be applied to concrete
- particularly suitable with respect to hydrochloride solutions
- heat resistant up to 120 °C dry and 70 °C wet

BÜCOLIT® V590G

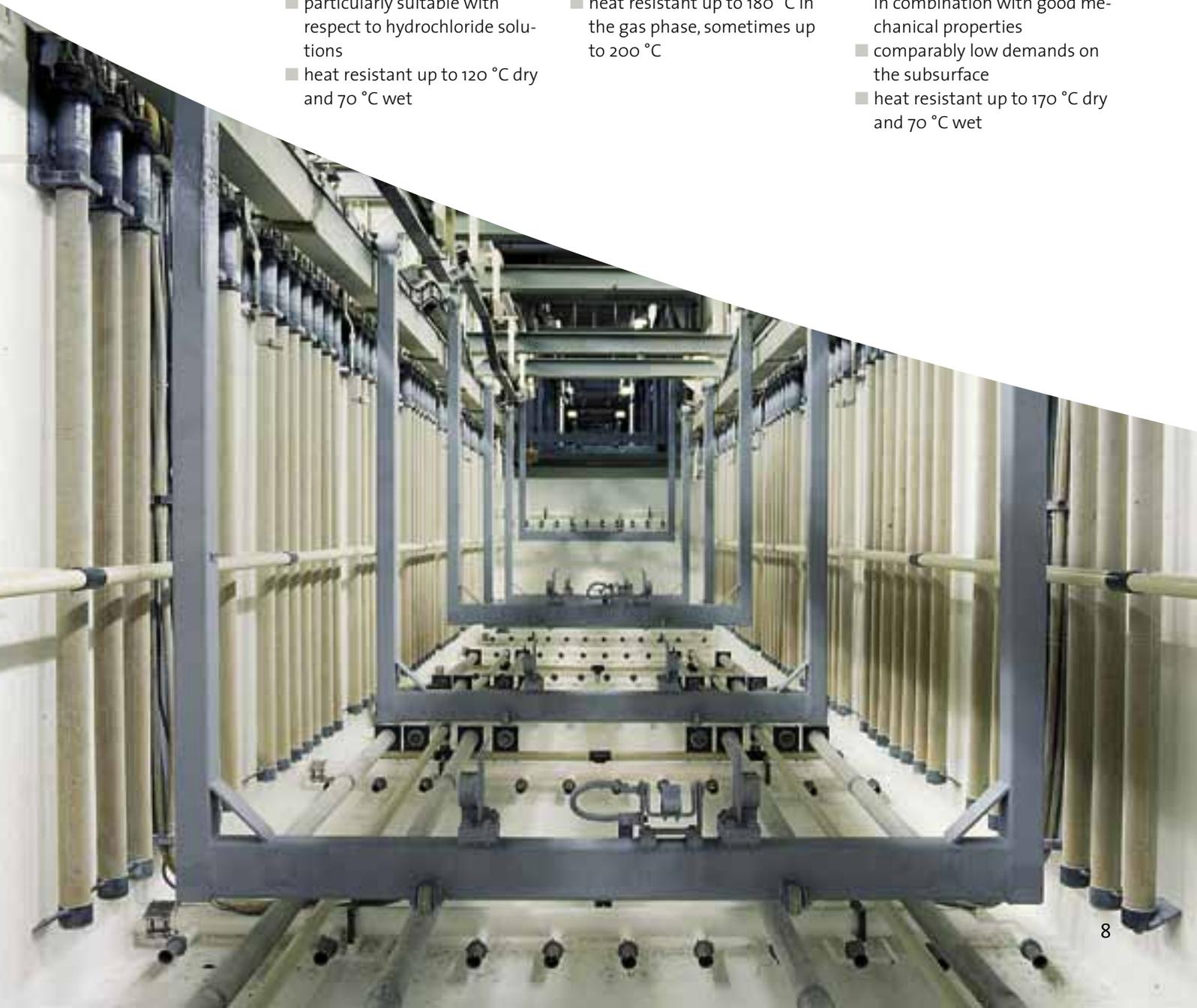
(Novolac vinyl ester resin with mineral flakes)

- DIBt-approved system
- high heat distortion resistance
- very good chemical resistance and very high diffusion resistance in combination with mechanical properties
- complies with DIN 28 054-4
- heat resistant up to 180 °C in the gas phase, sometimes up to 200 °C

BÜCOLIT® V590HTF

(flexibilised vinyl ester resin with mineral flakes)

- specifically for use in flue gas ducts, quenching and chimneys
- temperature change speeds of up to 15 K / min are possible
- excellent resistance to acids and solvents
- very high diffusion resistance in combination with good mechanical properties
- comparably low demands on the subsurface
- heat resistant up to 170 °C dry and 70 °C wet



BÜCOLIT® V590HTS

(modified vinyl ester resin with C-glass flakes)

- very good chemical resistance and very high diffusion resistance in combination with mechanical properties
- very high chemical resistance
- excellent permeation behaviour
- comparably low demands on the subsurface
- specifically for use in ducts and heat exchangers with high H₂SO₄ concentrations
- heat resistant up to 230 °C dry and 70 °C wet

BÜCOLIT® V25A, combined laminate/ spray system

(Bisphenol A vinyl ester resin / ISO / NPG polyester with mineral flakes / E-glass mats)

- excellent and durable electrical insulation properties
- very high diffusion resistance, therefore extremely durable
- worldwide standard for the electrical insulation of anodic and cathodic paint basins
- combines the advantages of a laminate and spray coating
- compatible with, and resistant to, paint, approved by all major paint manufacturers

- short processing times also guarantee short downtime during repairs
- also suitable in the container and apparatus for low inorganic, concentrated acids and alkalis, or for organic acids and solvents
- heat resistant to solvents up to 60 °C and 100 °C dry



BÜCOLIT® COATING SYSTEMS

LAMINATE AND TROWEL COATING

Laminate coating and trowel coating from GBT develop their strengths especially in the coating and lining of complex surface geometries. They have very good mechanical properties, excellent diffusion resistance and outstanding durability. This makes them ideal for protecting against a variety of chemical, thermal and mechanical stresses. Laminate and trowel coatings from GBT are applied in the hand-laying method.

Reinforcing materials

- Textile glass mats (E glass and ECR glass mats)
- Textile glass mats (glass mats and ECR glass mats)
- Combined systems (mixed and honeycomb fabric)
- C glass flakes
- Corundum (Al₂O₃)

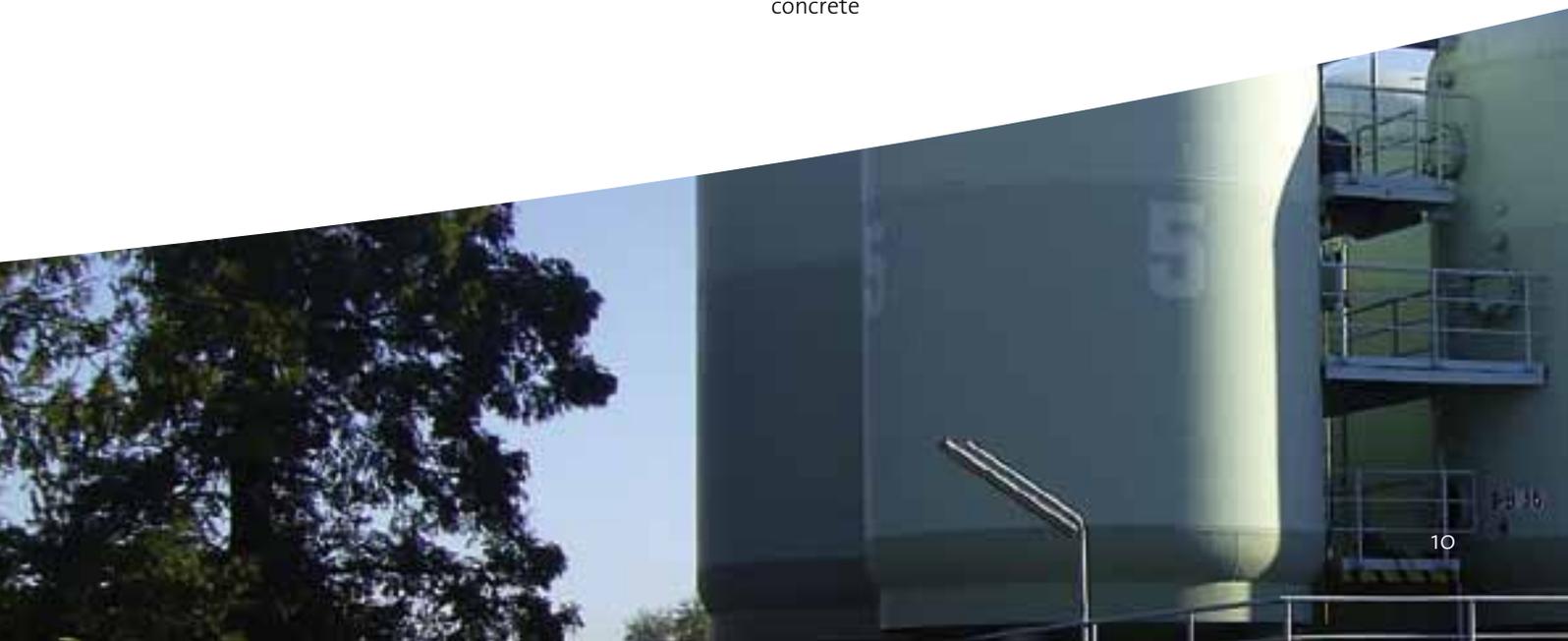
PRODUCT RANGE LAMINATE COATING

BÜCOLIT® V25 (ISO / NPG polyester resin with E-glass mats)

- excellent and durable insulation properties
- very high diffusion resistance, therefore extremely durable
- used by all relevant painting plant manufacturers and automobile groups
- compatible with, and resistant to, paint, approved by all major paint manufacturers
- short processing times also guarantee short downtime during repairs
- also suitable in the container and apparatus for low inorganic, concentrated acids and alkalis, or for organic acids and solvents
- heat resistant to solvents up to 60 °C and 100 °C dry
- conductive design according to DIN 51953 is possible
- very good adhesion to hard PVC
- heat resistant up to 100 °C
- can also be applied to concrete

BÜCOLIT® V47-36 (Novolac vinyl ester resin with ECR glass mats)

- especially suitable for process apparatus, such as storage and process containers, thickeners and decanters
- very good chemical resistance and high diffusion resistance in combination with mechanical properties
- comparably low demands on the subsurface
- approved and used by all major German plant manufacturers
- DIBT-approved system
- heat resistant up to 180 °C in the gas phase, sometimes up to 200 °C



BÜCOLIT® Lining 74

(Novolac vinyl ester resin with glass mats)

- very good mechanical resistance
- covers over cracks up to at least 0.2 mm
- permanently liquid tight
- very high chemical resistance to concentrated acids and alkali, among other things
- ideal complement to double walled leak protection lining BÜCOCONTROL®

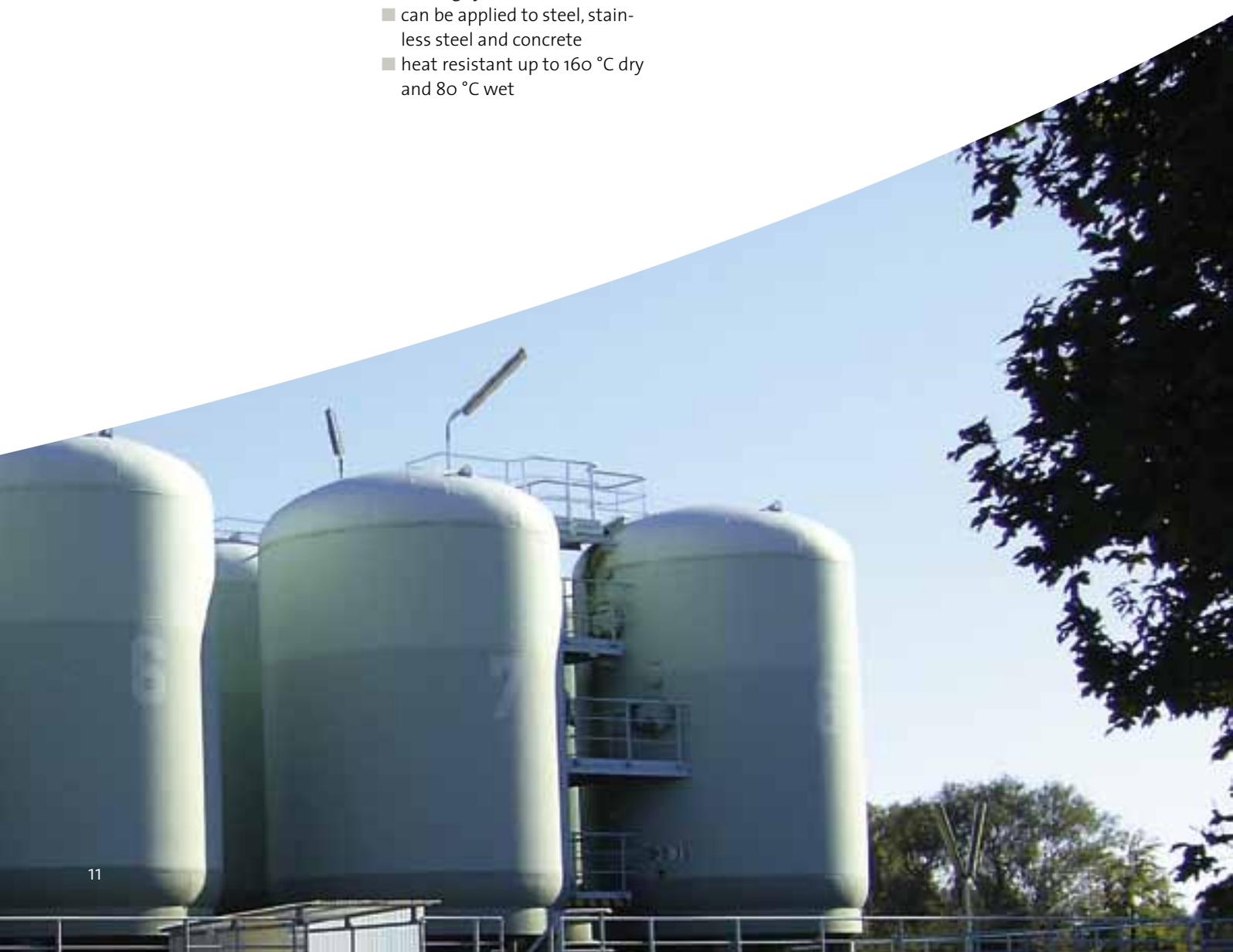
PRODUCT RANGE TROWEL COATING

BÜCOLIT® V47-46 AR

Trowel

(Novolac vinyl ester resin, corundum Al₂O₃)

- high abrasive resistance
- very good chemical resistance and high diffusion resistance
- high heat resistance and thermal stability
- ideal complement to BÜCOLIT coating systems
- can be applied to steel, stainless steel and concrete
- heat resistant up to 160 °C dry and 80 °C wet



DOUBLE WALLED COATING

Double walled coatings of GBT were mainly developed for complying with WHG requirements for the permanent monitoring of leaks, and are used in tanks, drip trays and pump sumps. Their double wall achieved by a 3D distance fabric provides the GBT coating with excellent properties for insulation, diffusion resistance and operational safety. At the same time, these systems are considered as optimum protection from scrubbers and filters in flue gas cleaning systems.

General product properties

- high resistance to aggressive media
- thermally insulating
- easy to inspect during operation and after application
- Leakage monitoring using excessive or negative pressure
- easy to install even with poor accessibility

- suitable for both new plants and also retrofitting
- long life through the deviation of diffusing materials
- indefinitely repairable
- a 3D E glass fabric is used as distance fabric

BÜCOCONTROL®

The laminate coating BÜCOCONTROL® was developed for fitting containers, container floors, trays and pump sumps with a leak-monitored double wall. To monitor leaks, a defined pressure is applied to the monitoring area via leakage indicators. In the case of leakage, the pressure drop can be determined immediately.

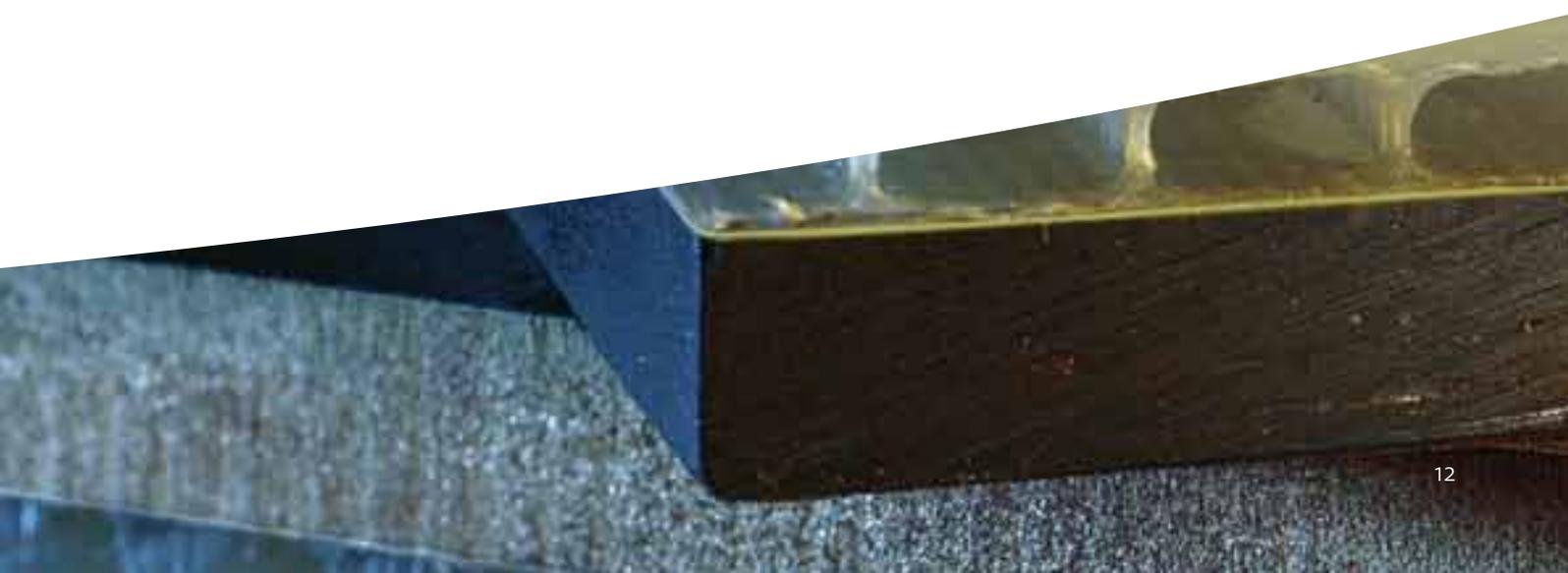
BÜCOCONTROL® offers maximum safety with minimum structural requirements. Due to the laminar structure, the system can also be quickly and easily adapted to the

complex geometric forms without difficulty. Furthermore, it is indefinitely repairable.

BÜCOCONTROL® is thus a technically advanced, financially attractive option for fulfilling the legal requirements in the production, handling and use of water-polluting substances. BÜCOCONTROL® has DIBt approval for steel and concrete containers.

Properties

- very good chemical resistance
- very good mechanical properties
- high diffusion resistance
- derivation of diffusion products over the leak monitoring space
- very long life
- conductive design according to DIN 51 953 is possible
- Leakage monitoring based on pressure and vacuum measurement



BÜCO THERM®

The double walled coating system BÜCO THERM® is based on Novolac vinyl ester resin and is mainly used for coating flue gas transporting system components, such as those in power stations and waste incineration facilities – such as electronic filters, scrubbers, ducts and chimneys.

BÜCO THERM® acts as an internal insulation and reduces the external temperature in non-insulated components.

Three-dimensional E glass fabric is also used as distance fabric.

Due the rear ventilation brought about by the distance fabric, the potentially corrosive areas are no longer exposed to attack by water diffusion – instead, the diffusion products are discharged to the monitoring space.

Properties

- high heat resistance, diffusion resistance and thermal stability
- very good chemical resistance

- high resistance to aggressive media
- Possibility to derive diffusion products over the leak monitoring space
- External insulation partly not necessary
- Possibility of permanent leak monitoring from the outside
- conductive design according to DIN 51 953 is possible



RUBBER COATING

With HAW Linings GmbH, the GBT Company Group has the inventor of industrial rubber lining in its ranks. For new and renewed rubber lining, HAW has a very extensive range of advanced and proven lining materials as hard and soft rubber lining based on natural or synthetic rubber.

General product properties

- chemically resistant to concentrated acids, alkali and solvents
- abrasion-resistant
- very good mechanical properties
- comparably low demands on the subsurface
- high heat resistance and thermal stability
- high diffusion resistance
- covers over cracks

SOFT RUBBER COATING PRODUCT RANGE

HAW-Wo6 (bromobutyl rubber BIIR, self-vulcanising)

- good chemical resistance and high diffusion resistance
- self-vulcanising
- specifically for use on construction sites
- resistant to alkaline and acid solutions, oxidisers and medium concentrations and polar solvents
- heat-resistant to a maximum of 100 °C

Areas of use:

- Flue gas scrubbers in power stations and waste incineration facilities
- Phosphoric acid plants
- Storage tanks
- Reaction containers and pipelines



HAW-Wo8

(bromobutyl rubber BIIR)

- very good chemical resistance
- trouble-free use with vacuum load
- resistant to nitric acid (up to 30%), acid mixtures and hypochlorides
- heat-resistant to a maximum of 125 °C

Areas of use:

- Raw gas inlets in flue gas scrubbers
- Reaction and storage containers with aggressive chemical exposure

HAW-W12

(chlorosulphonated polyethylene CSM/PVC)

- resistant to alkali, acid and oxidising materials
- heat-resistant to a maximum of 80 °C
- vulcanised in an autoclave
- specifically for use in transport containers with changing load strain

Areas of use:

- Chlorine industry
- Transport containers with changing load strain

HARD RUBBER COATING PROJECT RANGE

HAW-H22

(Isoprene rubber IR)

- graphite-filled
- vulcanised in an autoclave
- heat-resistant to a maximum of 125 °C
- also suitable as lining on stainless steel
- very high diffusion resistance

Areas of use:

- Reaction and process containers
- Pipe bundle heat exchanger
- Components made of stainless steel

HAW-H90

(Isoprene rubber IR)

- graphite-filled
- vulcanised in an autoclave
- heat-resistant to a maximum of 100 °C

Areas of use:

- Reaction and process containers
- Pipelines in the chemical industry

HAW-H94

(Polyisoprene / styrene-butadiene rubber IR / SBR)

- graphite-filled
- can also be vulcanised on-site using hot water or hot steam
- heat-resistant to a maximum of 100 °C

Areas of use:

- Flue gas scrubbers in waste incineration facilities
- Storage tanks
- Reaction containers which are operated at high temperatures

PHENOLIC RESIN LINING

BORNUMHARZ®

(lining based on phenolic resin)

- graphite-filled lining material based on phenolic resin
- electrically conductive
- very good chemical resistance to solvents
- heat-resistant to a maximum of 120 °C

Areas of use:

- Acid plants with proportions of solvent
- Media in potentially explosive areas
- Reactors

PLASTIC LINING

For areas of use in which conventional coating and rubber lining systems reach their limits due to massive chemical and thermal demands, GBT offers innovative and high strength corrosion protection systems based on fluoroplastics. Fluoroplastics such as, PTFE, PVDF, ECTFE, PFA, FEP and MFA are processed and applied – either as loose shirt lining or as a fixed composite system

GBT offers a selection of advanced systems for wear protection, as well as corrosion protection such as the extremely resistant BÜCOPROTECT UHMW-PE system which is specifically for use in the bulk goods industry.

BÜCOLIT® PFA

BÜCOLIT® PFA is a highly chemical resistant film liner based on a fluoroplastic. The system consists of a primer, a conductive top layer as corrosion protection and the film liner.

The system is the ideal solution for the most severe corrosion protection of process apparatus and plant components made of steel, such as those in flue gas ducts, heat exchangers and process containers.

Properties

- very good chemical resistance
- heat-resistant up to 250 °C in the gas phase
- anti-adhesive properties
- is fixed as a “loose shirt lining” on the steel base
- vacuum-resistant to -50 mbar
- in 1.5 and 2.3 mm thicknesses

Areas of use:

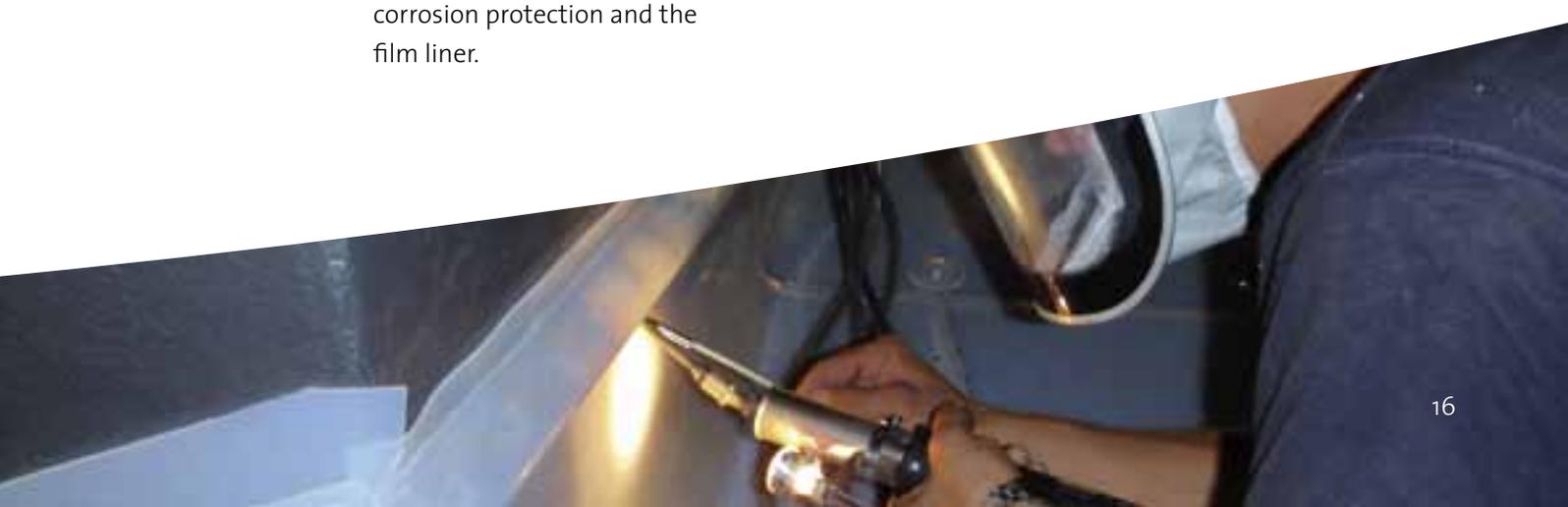
- Flue gas ducts
- Heat exchanger
- Process containers

BÜCOPROTECT UHMW-PE

The bulk goods lining system BÜCOPROTECT UHMW-PE is a plastic lining based on a tough elastic and ultra-high molecular polyethylene. Its special structure lends itself to many outstanding features for this very demanding application. The highly resilient system is fixed to the subsurface as a “loose panel lining” with welded stainless steel bolts and special fasteners.

Properties

- excellent abrasion resistance and gliding properties
- good chemical resistance
- anti-adhesive properties
- is fixed as a “loose plate lining” on steel and concrete
- low moisture absorption
- available in thicknesses of 8 to 30 mm



Areas of use:

- Coal bunkers
- Mining operations
- Treatment plants
- Plaster and cement plants
- Bulk goods ships
- Mechanical engineering

BRICKWORK

To protect outside components against very high chemical and thermal stress, even before mechanical attacks, they are also lined with bricks. Here, ceramic, acid-resistant stones and tiles, as well as carbon bricks are used.

As an intermediate layer, the proven BÜCOLIT® coating systems or rubber coatings of the HAW family are used.

The laying and jointing of the stones and tiles made of ceramic or carbon is done with BÜCO®-SPLIT FN.

System properties

- very high chemical resistance, especially against solvents and slightly oxidised materials
- optimal adhesion on carbon and ceramic stones
- good mechanical properties
- heat-resistant to a maximum of 250 °C

Areas of use:

- Gas scrubbers
- Reactors
- Process container
- Picklers
- Columns

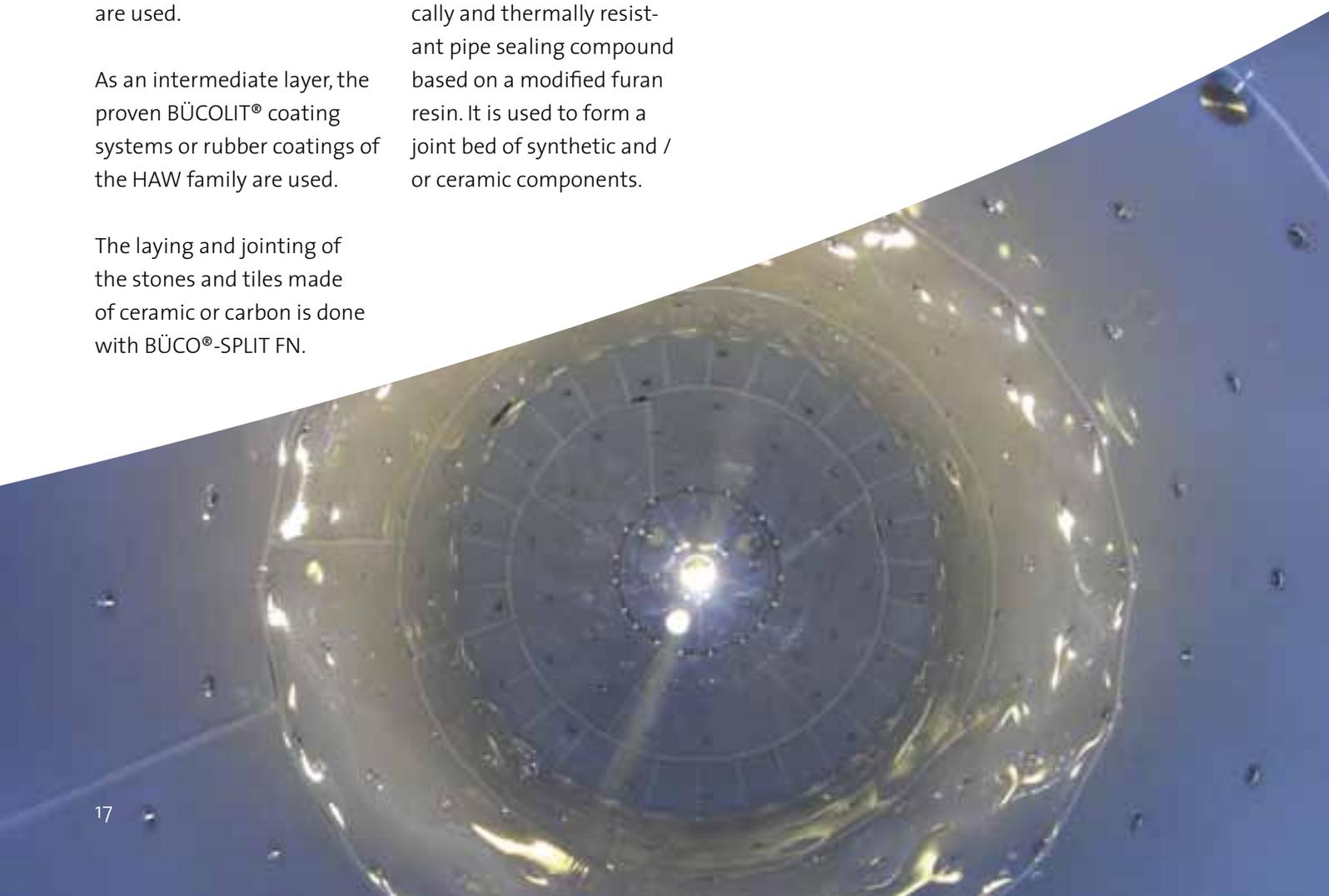
BÜCO®-SPLIT FN

BÜCO®-SPLIT FN is a chemically and thermally resistant pipe sealing compound based on a modified furan resin. It is used to form a joint bed of synthetic and / or ceramic components.

The material is used everywhere, where bricks, blocks or moulded components need to be introduced because of increased stress, as a protective lining in the process plant components.

Properties

- very high chemical resistance
- optimal adhesion on carbon and ceramic stones
- good mechanical properties



The GBT Company Group: Specialists in cooperation

A whole is more than the sum of its parts. One plus one is much more than two – especially when new, joint strengths are created from the connection of individual efforts, when specialists link their knowledge to new expertise and when distinct knowledge inspires the enthusiasm to try something new. Just like in the GBT Company Group.

More than 100 years of experience are connected in the company group with the dynamics of a rapidly growing cooperation of specialists, making a service system that sets an example throughout the market in terms of density and range.

Six sites in Germany and Europe, partner companies and representations in the USA, China, India and Switzerland – this is the group's basic geographic data.

More than 300 employees from 15 nations – this shows the open-mindedness and flexibility of our community and stands for transfer of knowledge without limits.

Dedication and success in the most demanding sectors of industrial plant engineering, as well as plant development and coating technology; this is proof of the wide-ranging expertise under the GBT Company Group umbrella.

This is how our services connect perfectly with the high demands of our customers. Now we've come full circle – for what really matters are good connections.





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