MC-DUR PowerCoat

Heavy-duty PU/cement hybrid floor coatings for extreme loads

EXPERTISE
FLOOR COATING

BE SURE. BUILD SURE.

MC-DUR PowerCoat
Extreme resistance for industrial floors

Whether it's cleaning with superheated steam, mechanical shock from forklift trucks or impact from falling tools – day in, day out, industrial floors have to withstand a multitude of extreme – and often concurrent – stress loads. However, conventional purpose-built floors are usually designed with a focus on one predominant performance feature, so they are not able to provide the wider range of performance characteristic.

MC-DUR PowerCoat, on the other hand, offers a durable solution covering all the usage-related stress loads to which industrial floors can become exposed. This PU/cement hybrid floor system offers exceptionally high resistance to chemical attack, mechanical impact and thermal shock. Moreover, it has been specifically designed to permanently withstand a variety of such extremes occurring simultaneously.

- ✔ **High mechanical resilience**
- ✔ **High chemical resistance**
- ✔ **High temperature resistance**

MC's PU/cement hybrid floor coating system

The MC-DUR PowerCoat is a four-component system based on a polymer emulsion consisting of an aqueous poly emulsion and a polymeric hardener component. Mixing with the mineral component (powder) creates a self-levelling coating or mortar that can be worked into an extremely robust and durable PU/cement hybrid floor. The fourth component is the colour, which is simply added to the mixture on site in the form of a paste to achieve the desired shade.

MC-DUR PowerCoat 200
Primer and sealer

MC-DUR PowerCoat 240
Self-levelling PU flow coating offering high chemical resistance

MC-DUR PowerCoat 280
PU mortar coating offering high chemical resistance suitable for squeegee application

MC-DUR PowerCoat Color
Colour paste, available in Red, Green, Yellow and Grey

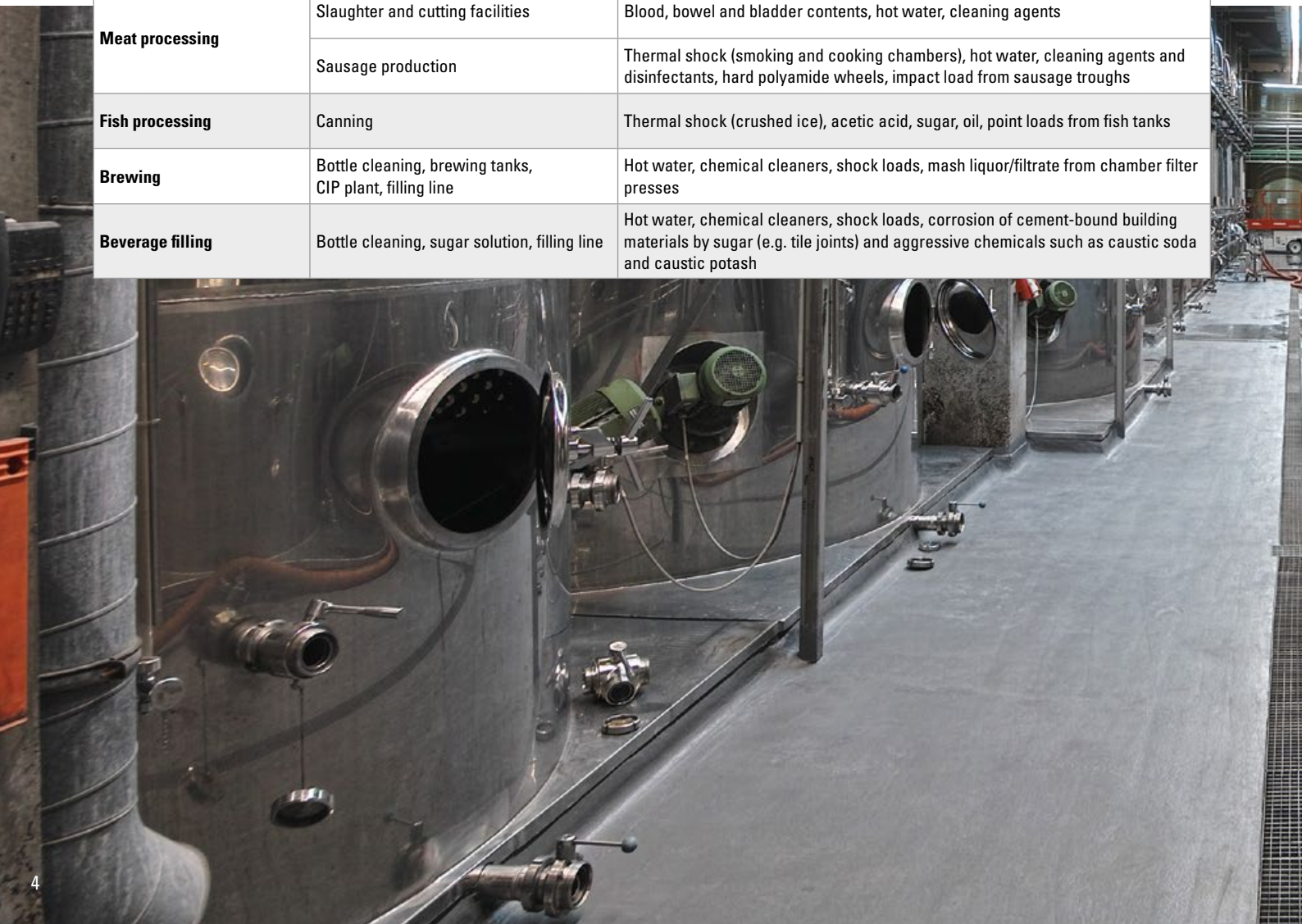
Colour deviations may arise due to factors related to printing and material.

Technical product information

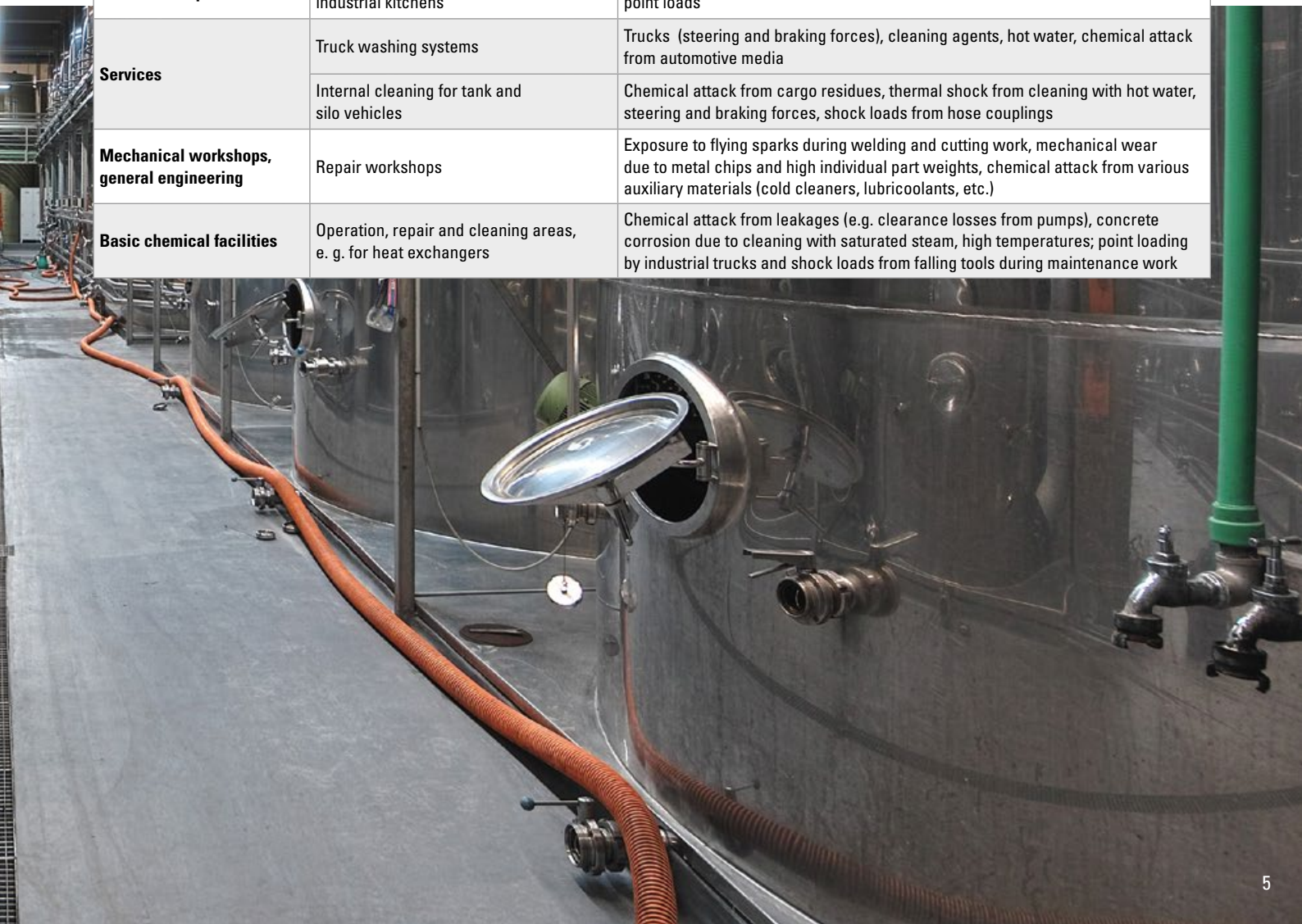
Areas of application
Highly resistant even under the toughest conditions

The profile of properties characterising the products of the MC-DUR PowerCoat range means they are particularly suitable for areas of application where one or several simultaneous major forms of attack or stress load occur. In the overview table below you will find examples of some areas of application in which MC-DUR PowerCoat is particularly suitable as a durable industrial flooring solution.

Branch of industry	System component	Exposure
Milk processing	Raw milk receiving	Truck (steering and braking forces), lactic acid, cleaning agents, hose couplings, hot water
	Cheese-making	Lactic acid, cleaning agents, hot water
Powder food production	Spray drying facilities	High temperatures, hot water
Meat processing	Slaughter and cutting facilities	Blood, bowel and bladder contents, hot water, cleaning agents
	Sausage production	Thermal shock (smoking and cooking chambers), hot water, cleaning agents and disinfectants, hard polyamide wheels, impact load from sausage troughs
Fish processing	Canning	Thermal shock (crushed ice), acetic acid, sugar, oil, point loads from fish tanks
Brewing	Bottle cleaning, brewing tanks, CIP plant, filling line	Hot water, chemical cleaners, shock loads, mash liquor/filtrate from chamber filter presses
Beverage filling	Bottle cleaning, sugar solution, filling line	Hot water, chemical cleaners, shock loads, corrosion of cement-bound building materials by sugar (e.g. tile joints) and aggressive chemicals such as caustic soda and caustic potash



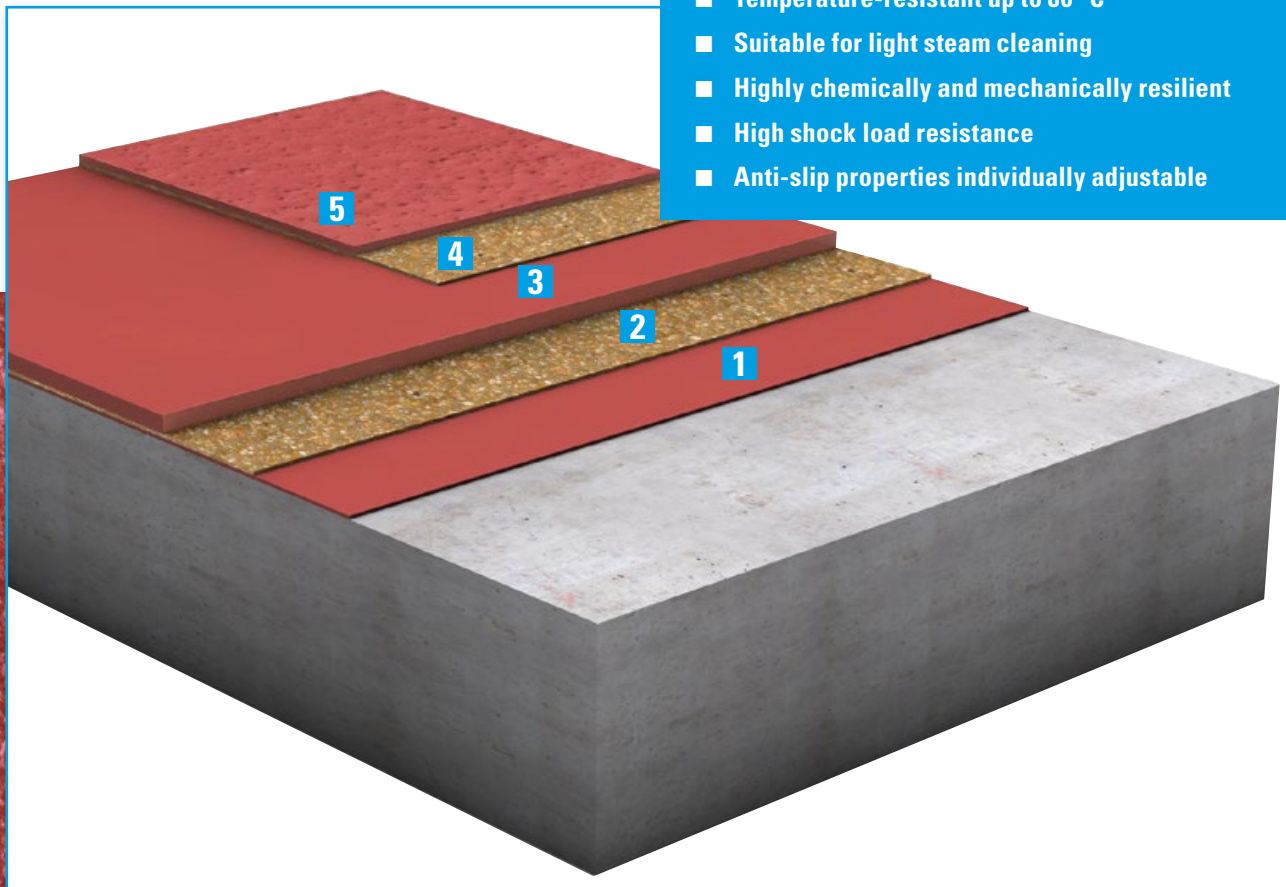
Branch of industry	System component	Exposure
Wine production	Filling lines	Chemical attack from organic acids; water, chemical cleaners
	Tanks	Thermal stress from sterilisation with saturated steam
Confectionery production	Compounding areas	Corrosion of cement-bound building materials by sugar (e. g. tile joints), hot water, sugar solutions at high temperatures
Sugar refining	Production areas	Corrosion of cement-bound building materials by sugar (e. g. tile joints), hot water, sugar solutions at high temperatures, mechanical loading
Jam and marmalade production	Fruit and ingredients processing, sterilisation, loading	Fruit acids, sugar solutions, hot water and chemical cleaners, industrial trucks
Fruit juice production	Production, filling	Fruit acids, sugar solutions, hot water and chemical cleaners, industrial trucks
Baking	Oven zone, dough preparation	Hot oven trolleys, point loads from dough troughs
Convenience products	Oven zone, cooking areas in industrial kitchens	Extreme temperatures, thermal shock (e. g. when emptying boiling pans), point loads
Services	Truck washing systems	Trucks (steering and braking forces), cleaning agents, hot water, chemical attack from automotive media
	Internal cleaning for tank and silo vehicles	Chemical attack from cargo residues, thermal shock from cleaning with hot water, steering and braking forces, shock loads from hose couplings
Mechanical workshops, general engineering	Repair workshops	Exposure to flying sparks during welding and cutting work, mechanical wear due to metal chips and high individual part weights, chemical attack from various auxiliary materials (cold cleaners, lubricoolants, etc.)
Basic chemical facilities	Operation, repair and cleaning areas, e. g. for heat exchangers	Chemical attack from leakages (e.g. clearance losses from pumps), concrete corrosion due to cleaning with saturated steam, high temperatures; point loading by industrial trucks and shock loads from falling tools during maintenance work



MC-DUR PowerCoat 240
Heavy-duty flow coating

Self-levelling PU/cement hybrid floor coating in a layer thickness of 4 - 6 mm. The system remains fully functional over the long term under heavy mechanical loading and thermal stress values up to 80 °C.

- Layer thickness 4 - 6 mm
- Self-levelling
- Temperature-resistant up to 80 °C
- Suitable for light steam cleaning
- Highly chemically and mechanically resilient
- High shock load resistance
- Anti-slip properties individually adjustable

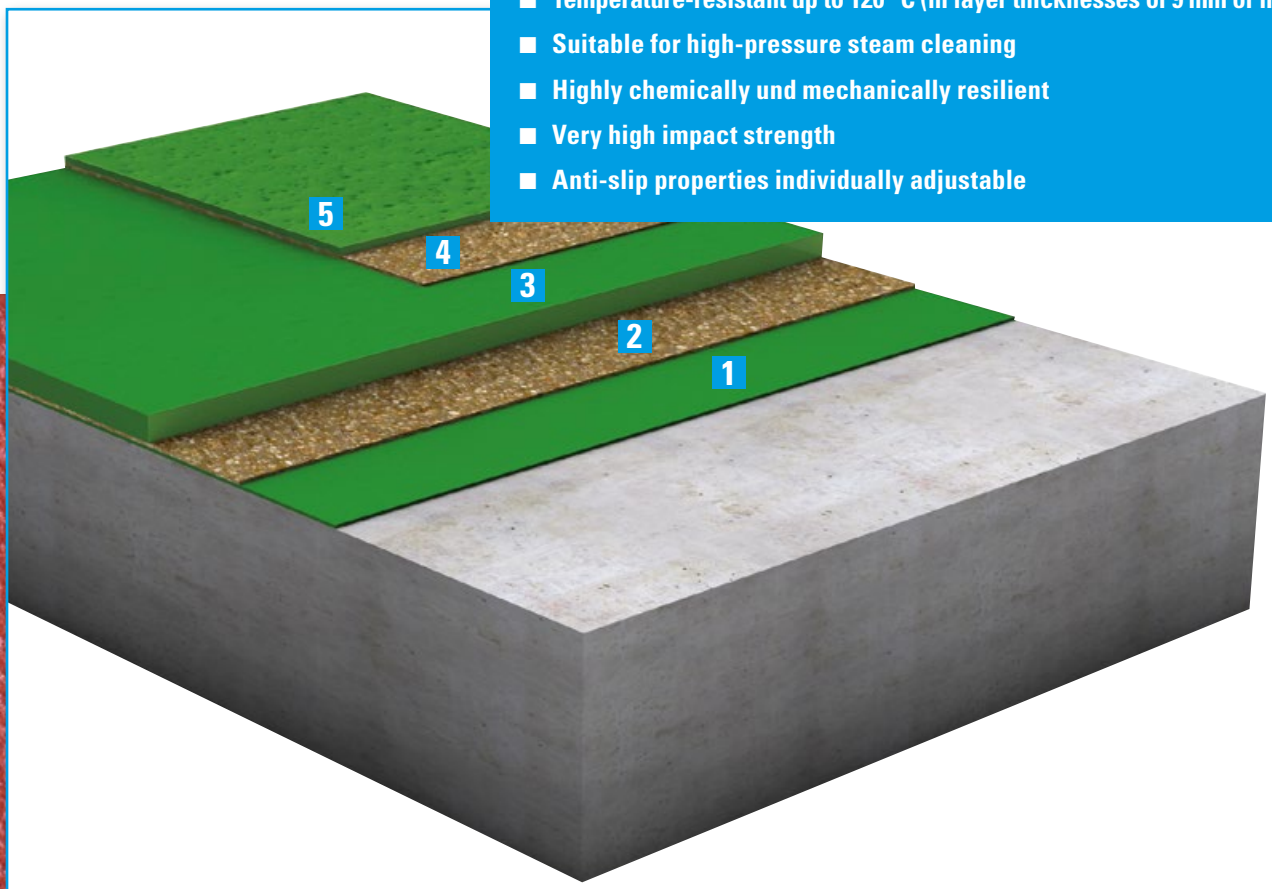


SYSTEM STRUCTURE	PRODUCT	CONSUMPTION
1 Primer	MC-DUR PowerCoat 200	approx. 400 g/m²
2 Traction scattering	Quartz sand, grain size 0.5 - 1.2 mm	1,000 - 2,000 g/m²
3 Coating	MC-DUR PowerCoat 240	2,000 g/m² per mm layer thickness
OPTIMUM ANTI-SLIP PROPERTIES		
4 Traction scattering	e. g. quartz sand, grain size 0.5 - 1.2 mm	5,000 g/m²
5 Final top coat/sealer	MC-DUR PowerCoat 200	600 - 800 g/m²

MC-DUR PowerCoat 280
Exceptionally heavy-duty floor coating mortar

In the case of particularly high thermal and mechanical resistance requirements, MC-DUR PowerCoat 280 with layer thicknesses starting at 8 mm offers precisely the maximum durability and reliability needed. This exceptionally resilient system remains intact and stable even at temperatures of up to 120 °C.

- **Layer thickness 8 - 12 mm**
- **Suitable for squeegee application**
- **Temperature-resistant up to 120 °C (in layer thicknesses of 9 mm or more)**
- **Suitable for high-pressure steam cleaning**
- **Highly chemically und mechanically resilient**
- **Very high impact strength**
- **Anti-slip properties individually adjustable**

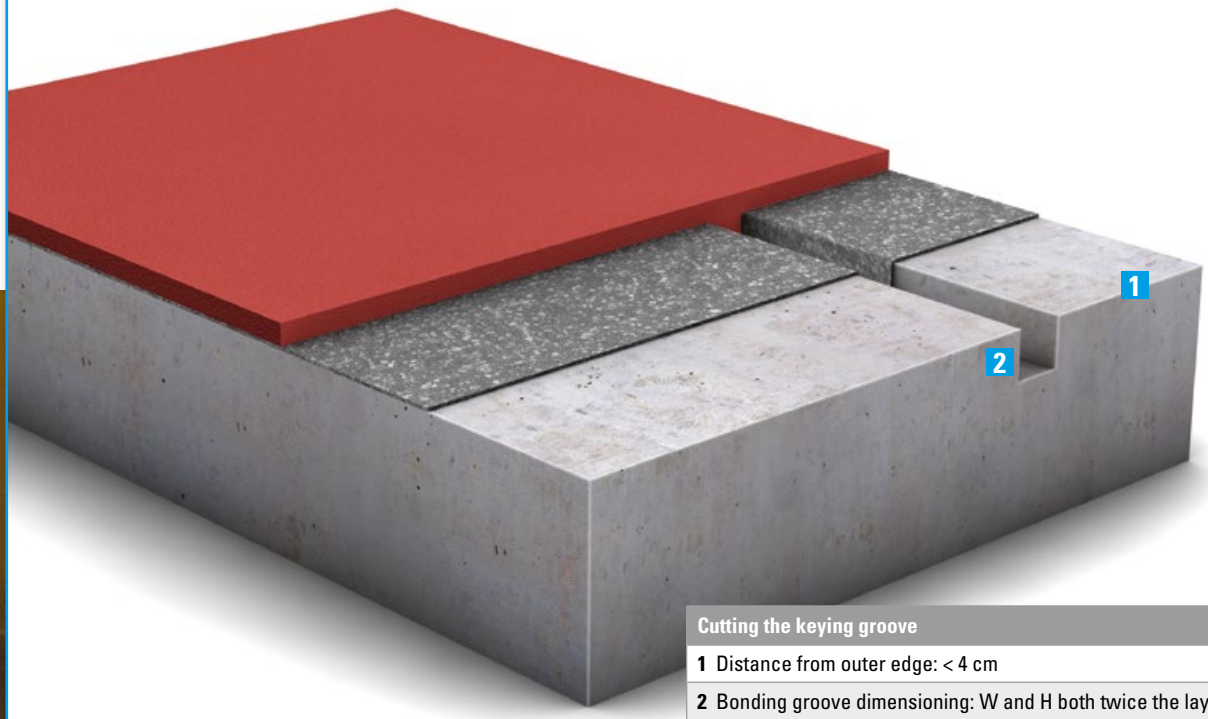


SYSTEM STRUCTURE	PRODUCT	CONSUMPTION
1 Primer	MC-DUR PowerCoat 200	approx. 400 g/m²
2 Traction scattering	Quartz sand, grain size 0.5 - 1.2 mm	1,000 - 2,000 g/m²
3 Coating	MC-DUR PowerCoat 280	2,100 g/m² per mm layer thickness
OPTIMUM ANTI-SLIP PROPERTIES		
4 Traction scattering	e. g. quartz sand, grain size 0.5 - 1.2 mm	5,000 g/m²
5 Final top coat/sealer	MC-DUR PowerCoat 200	600 - 800 g/m²

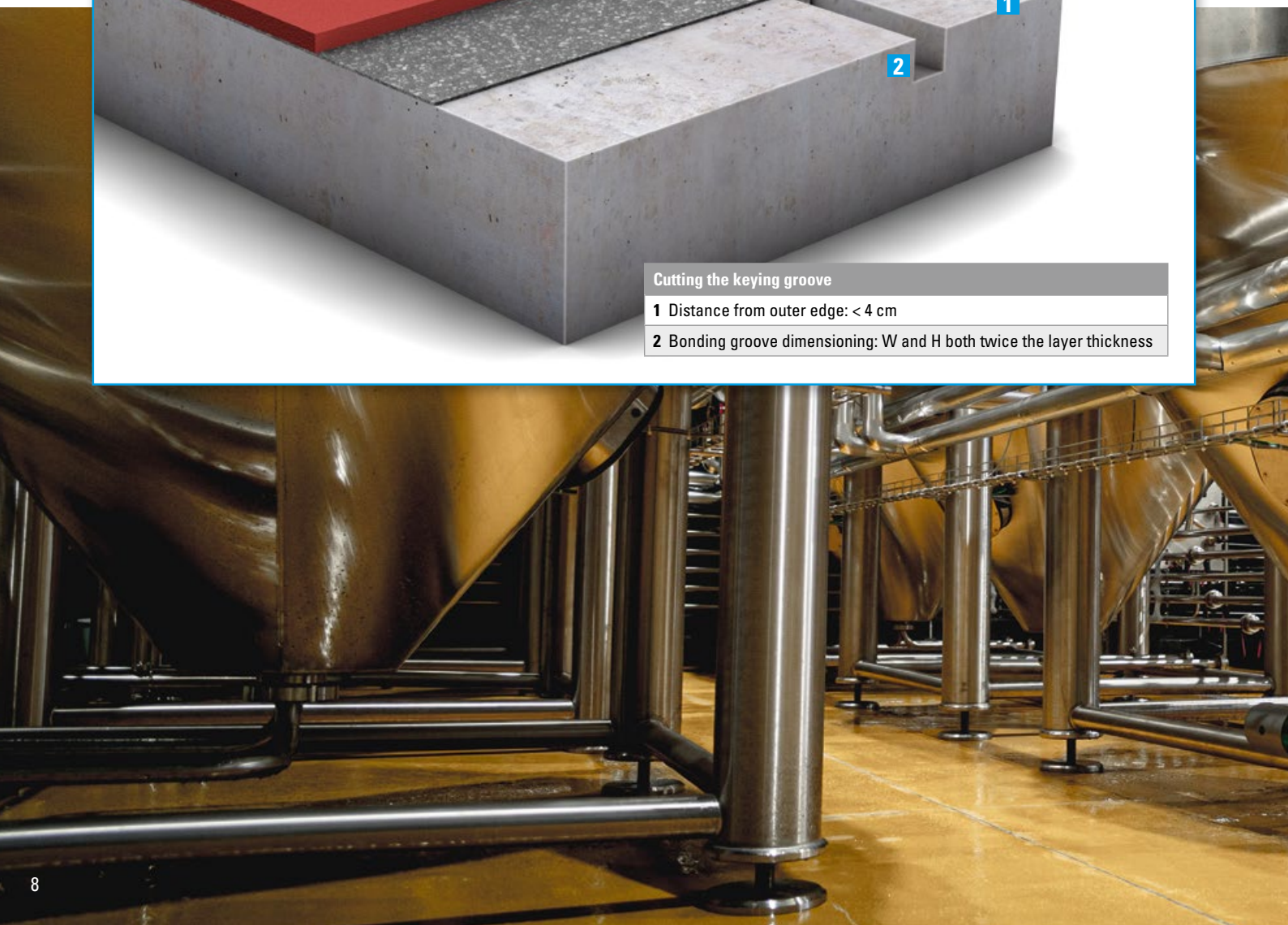
Application details

Bonding grooves

To ensure an effective and intimate bond with the substrate, MC-DUR PowerCoat needs to be bonded into the concrete. The most effective method is to cut a groove into the substrate as close as possible, and parallel to the outer edges of the coated area.

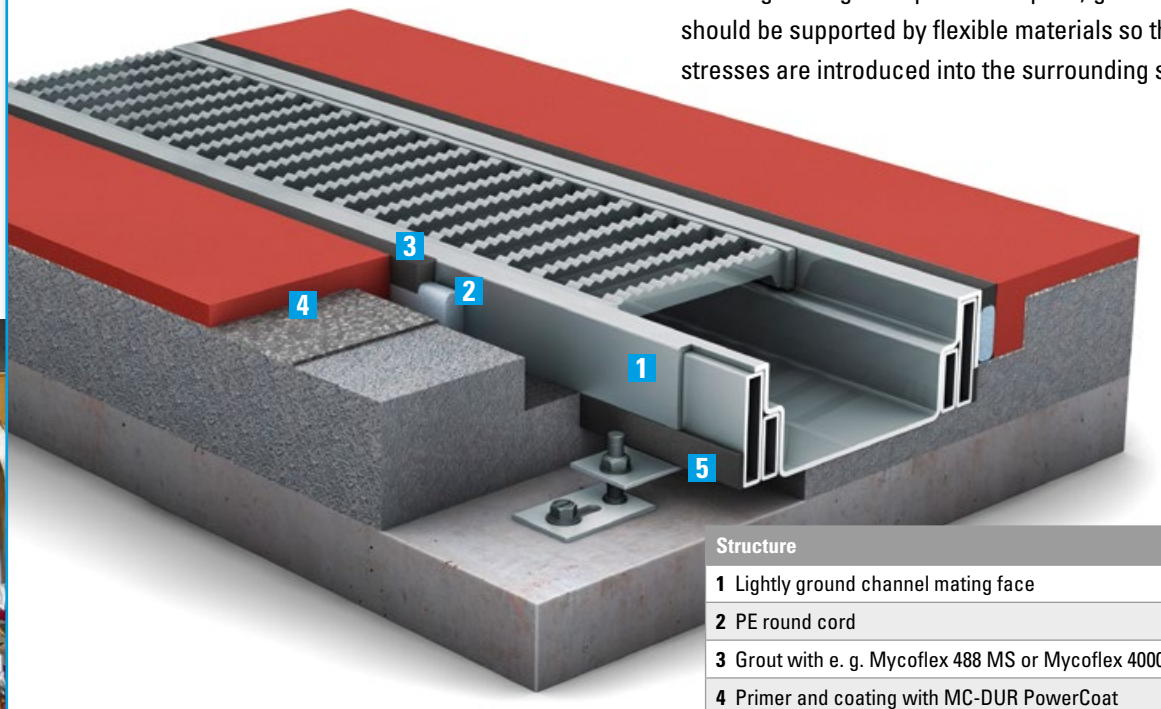


Cutting the keying groove
1 Distance from outer edge: < 4 cm
2 Bonding groove dimensioning: W and H both twice the layer thickness



Connection to drainage elements

When considering liquids discharged into drainage systems, it is important to be aware not just of the temperature but also the discharge time. This is because thermal expansion of the drainage system may prove to be an important factor in the design of the flooring system. In the case of prolonged discharge of high-temperature liquids, gutters and floor inlets should be supported by flexible materials so that no additional stresses are introduced into the surrounding substrate.

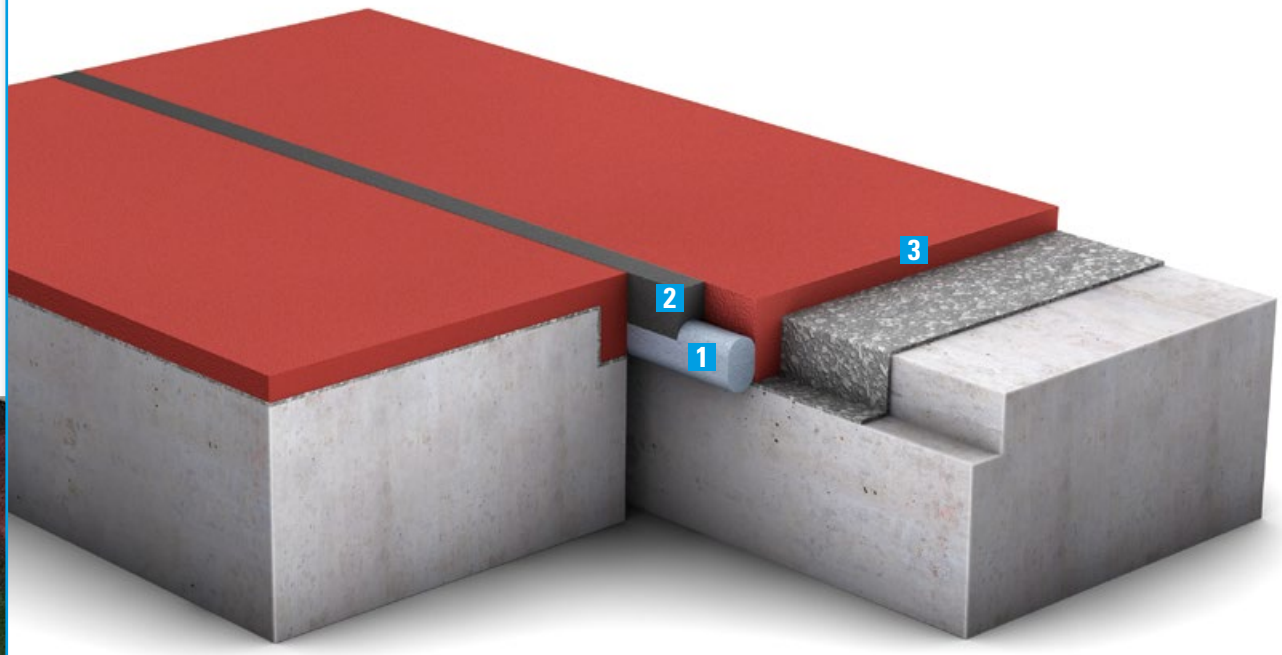


Structure
1 Lightly ground channel mating face
2 PE round cord
3 Grout with e. g. Mycoflex 488 MS or Mycoflex 4000 VE
4 Primer and coating with MC-DUR PowerCoat
5 Flexible bond, e. g. sponge rubber tape

Application details

Expansion joints

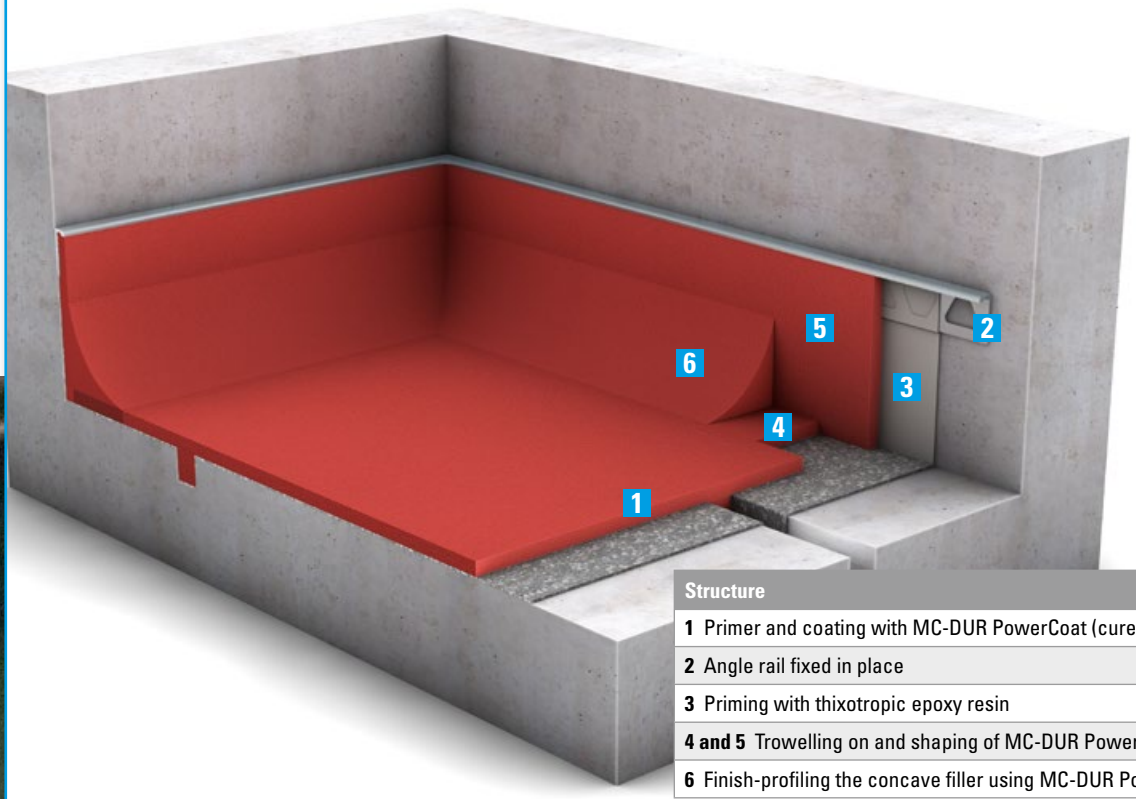
Expansion joints in the substrate must always be repeated/ matched in the coating. They can be sealed with a joint sealant.



Structure
1 PE round cord
2 Grout with e. g. Mycoflex 488 MS or Mycoflex 4000 VE
3 Primer and coating with MC-DUR PowerCoat

Fillets

In order to maintain hygienic conditions, e. g. in food processing and pharmaceutical applications, transitions from the floor to walls and other rising components require the provision of fillet joints.



Structure
1 Primer and coating with MC-DUR PowerCoat (cured)
2 Angle rail fixed in place
3 Priming with thixotropic epoxy resin
4 and 5 Trowelling on and shaping of MC-DUR PowerCoat 280 mortar
6 Finish-profiling the concave filler using MC-DUR PowerCoat 200

MC-DUR PowerCoat

Heavy-duty PU/cement hybrid floor coatings for extreme loads

- High mechanical resilience
- High chemical resistance
- High temperature resistance
- Anti-slip properties individually adjustable

MC-Bauchemie Müller GmbH & Co. KG
Segment Flooring
Am Kruppwald 1-8
46238 Bottrop
Germany

IN@mc-bauchemie.com
mc-bauchemie.com

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Contact details

akut 240271 EN