

Technical Manual for the CP 30 AquaBlock Waterproofing System



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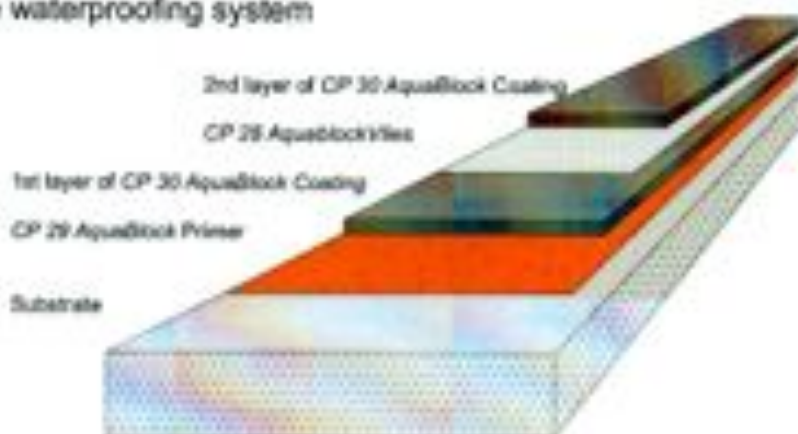
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1. System description

The CP 30 AquaBlock Waterproofing System includes the following components:

- CP 29 AquaBlock Primer
- CP 28 AquaBlock Fleece
- CP 30 AquaBlock Coating

Figure 1: Structure of the waterproofing system



The main component of the system is the liquid applied *SilicoTec* waterproofing coat which is based on a solvent-free, ready-to-use silicone rubber emulsion.

Depending on the type of substrate, it is necessary to pretreat it with *SilicoTec* primer before applying the waterproofing coat. The system has a dual function; it can either be applied on tight roofs as a UV protection layer or be used as a primary sealing coat to ensure waterproofness of the roof.

When used for waterproofing, it is necessary to install the CP 28 AquaBlock Fleece as a reinforcing layer. The system is suitable for application on non-accessible roofs.

1.1. Technical data of CP 30 AquaBlock waterproofing system:

Basis	Silicone
Minimum layer thickness	1,5 mm
Drying-time*	2 mm / 24 hours
Water vapour diffusion resistance coefficient μ	ca. 1200
S_d value (2 mm thickness)	ca. 2,4 m
Resistance to wind loads	$\geq 50\text{kPa}$
Fire behaviour acc. to DIN EN 13501-1:	E
Resistance to flying brands and radiant heat acc. to DIN EN 13501-5:	Flacke
Statement on dangerous substance	Does not contain any
Resistance to slipperiness	No performance determined
Levels of use categories according to ETAG 005 with relation to:	
Roof slope:	S1 to S4
User loads:	P1, P2
Surface temperature range:	TL3 to TH3
Climatic zones:	M, S
Service life:	W2

1.2. Suitable substrates and general measures

The CP 30 AquaBlock waterproofing system can be used on:

- mineral substrates, e.g. concrete, screed, fibre cement, roof tiles
- bituminous substrates, e.g. roofing membranes and coatings
- acrylic roof coatings
- metals, e.g. copper, zinc, aluminium, stainless steel, brass
- plastic materials, e.g. connections to vent pipes, drains or skylight curbs
- thermal insulation layers made e.g. of PUR, EPS
- wooden materials, e.g. solid wood, OSB, plywood

The roofs to be waterproofed must have a minimum slope of 2 % to ensure that a dry layer thickness of 1.5 mm CP 30 AquaBlock Coating is sufficient. In the case of roofs with lower slopes, it is necessary to observe a dry layer thickness of more than 2 mm. The substrate must be sound, clean, free of dust and grease as well as dry or only slightly damp (max. 5 % residual moisture). Mechanically remove moss, algae and lichen as well as any loose particles and coatings.

Any screwed connections, pipe penetrations and butt joints / overlapping edges, upstands and parapets, joints as well as connections to vent pipes and skylight curbs etc. must be precoated with CP 30 AquaBlock Coating. After embedding the fleece, the second waterproofing coat is applied. For detailed information refer to chapter 4.

In the case of old, asbestos-containing roofing materials make sure to observe the regulations of TRGS 519.

2. Substrate preparation

2.1. Absorbent substrates

Mechanically clean mineral substrates and wood. Pre-treatment with CP 29 AquaBlock Primer is only necessary on green (younger than 6 months) or slightly damp concrete. In the case of substrates which - despite mechanical pre-treatment and cleaning - are still slightly powdery or dusty, CP 29 AquaBlock Primer coat must be applied to bind the residual dust. Highly absorbent or powdering substrates need to be primed twice.

The required amount of a primer:	approx. 70-150 g/m ²
Drying time depending on the weather condition:	between 0.5 and 4 hours

2.2. Bitumen

Bituminous substrates must have a minimum age of 6 months to avoid interaction with the CP 30 AquaBlock Coating. Cut open any blisters in the existing bituminous materials, clean them and fill the depressions, e.g. with flexible slurry or with a torch-on bitumen membrane. When repairing old bitumen membranes, carefully remove any loose stone chips and sand as well as the weather-worn upper bitumen layer. Afterwards, apply a precoat of CP 30 AquaBlock Primer to bind any remaining dust.

The required amount of a primer:	approx. 70-100 g/m ²
Drying time depending on the weather condition:	between 0.5 and 6 hours

Please note:

Primer activates the surface of the bitumen material but it does not strengthen its entire structure. Bituminous priming coats are not suitable!

2.3. Metals

Mechanically remove corroded spots as well as loose paint coats on metals. Completely remove any oxide layers (patina) and clean with a solvent-based cleaner such as spirit. A priming coat is not required.

2.4. Plastics

After mechanical roughening with fine sand paper (grit 100-120), clean the plastic materials with a solvent-based cleaner such as spirit. Afterwards apply CP 29 AquaBlock Primer priming coat.

The required amount of a primer:	approx. 50-80 g/m ²
Drying time depending on the weather condition:	between 0.5 and 2 hours

Please note:

Before using the CP 30 AquaBlock Coating on plastic and elastomeric roofing membranes, please contact us for advice.

If the CP 30 AquaBlock Coating waterproofing coat gets into contact with transparent plastics such as Plexiglas, Makrolon (polycarbonate), PETG etc., this may damage the plastic material (e.g. dulling, crack formation) and must therefore be avoided

2.5. Moisture-saturated insulation

When renovating a leaky roof with a soaked-through insulation layer, make sure that the roof layers can later dry out after application of the CP 30 AquaBlock Coating. For this purpose, perforate the old waterproofing layer and additionally install a sufficient number of flat roof vents if necessary, depending on the extent of moisture penetration. CP 30 AquaBlock Coating permits water vapour diffusion and thus also supports the later drying process of the roof structure.

Nevertheless, depending on the intensity of solar radiation, blisters may occur in the SilicoTec waterproofing coat due to the resulting water vapour pressure. This process can go on over several years. Alternatively, the soaked-through insulation must be dried out or exchanged before applying the waterproofing coat.

3. Application

3.1. General instructions for use

CP 30 AquaBlock Coating coat is ready for use and can be applied directly by paint brush, roller, ceiling brush or by using the airless spraying technique.

The consumption can be calculated as follows:

1 mm dry layer = 1.3 mm wet layer = 1.8 kg/m²

- Priming coat – if applied - must be completely dry before the application the waterproofing coat.
- Use the product only in dry weather, with ambient and material temperatures of +10°C to +30°C and below 75 % relative air humidity.
- The substrate temperature must be between +5°C and +50°C. When working in cold weather, make sure that the substrate temperature is at least 3°C above the dew point. Otherwise, a separating moisture film will form.
- When working at substrate temperatures above 30°C and direct sun radiation, apply the waterproofing coat in several layers (max. 1 mm wet layer thickness per coat). Allow to dry completely before applying the next coat; otherwise blisters may occur.
- Tools can be cleaned and any product residues removed with water when still fresh.
- Use up opened buckets quickly.

The fresh coat must be protected against water and rain until it has sufficiently dried. At 20°C and 50 % relative air humidity, the coat is rainproof after approx. 4 hours. Complete drying time depends on the layer thickness applied. The drying speed is normally approx. 2 mm per 24 hours. At lower temperatures and/or higher air humidity, drying will be delayed.

3.2. Application by airless spraying

Machine parameters:

Feed pressure: 80-200 bars, depending on hose length and delivery height

Nozzle: fan nozzle 0.19 in, 30° (distance nozzle to substrate greater than 30 cm)

fan nozzle 0.17 in, 50° (distance nozzle to substrate smaller than 30 cm)

Filter: mesh 150-200

Uniformly apply the product in crosswise movements "wet-on-wet" with the desired layer thickness so that an even and closed film is produced. Regularly check the layer thickness before a start of skin formation. When exposed to direct sunshine and higher temperatures, skin formation starts within a few minutes!

Please note:

Using too big of a nozzle or a too small spraying distance between nozzle and surface, may result in a textured surface with small craters. This may lead to the formation of leaky areas.

3.3. CP 30 AquaBlock Coating used for surface protection

When using CP 30 AquaBlock Coating to protect a still tight roof area against UV radiation and weathering, a wet layer of 1.0 to 1.5 mm thickness is sufficient. The seams and joints of bituminous roofing membranes or fiber cement boards must first be covered with SilcoTec coat. The final coat can be applied after a drying time of 10 to 12 hours.

3.4. CP 30 AquaBlock Coating used for waterproofing

When using CP 30 AquaBlock Coating for waterproofing according to the requirements of the ETA, it is necessary to apply two coats and embed the CP 28 AquaBlock Fleece into the first coat.

Brush or spray the first coat onto the prepared and, if necessary, primed substrate with a wet layer thickness of approx. 1.0 mm. Next, roll the fleece free of blisters and folds into the fresh coat with an overlap of 10 cm. Always align the overlapping seams in the direction of water flow. Apply only as much of a CP 30 AquaBlock Coating as can be covered with the fleece before a start of skin formation. Soak a short-pile roller in CP 30 AquaBlock Coating and roll the fleece down into the first coat so that it is fully soaked.

Wait until the first layer has fully dried (waiting time approx. 24 hours, sometimes longer depending on the weather) before applying the second coat. Brush or spray on the second coat with a wet layer thickness of 1.5 to 2 mm. Check whether the coat is ready for foot traffic. The dry layer thickness of the total system must not be less than 1.5 mm.

To ensure better control, it is also possible to apply the two coats with different colours.

3.5. Producing service walkways

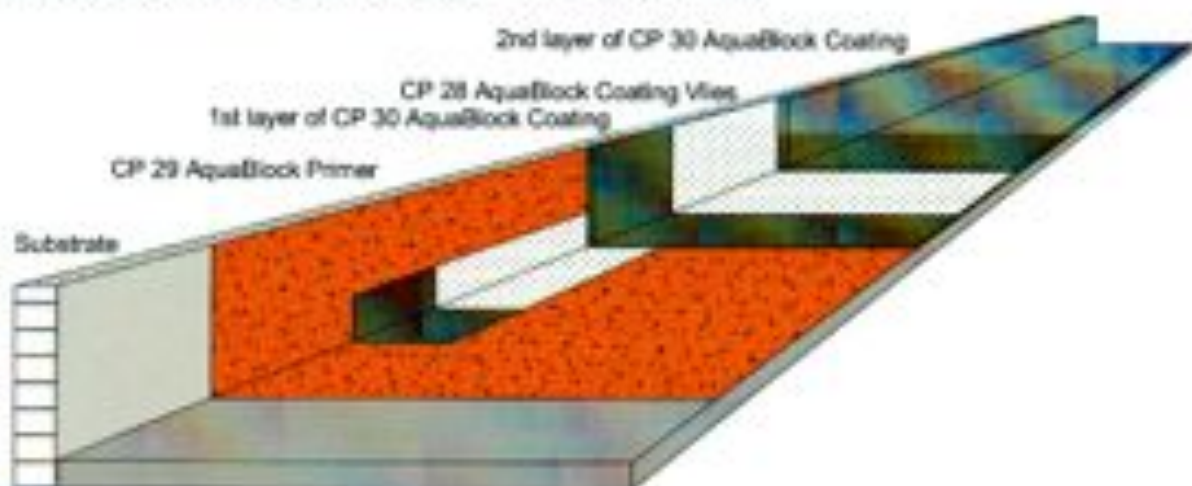
After complete through-drying of the waterproofing coat, additional walkways for roof maintenance and inspection can be produced with the help of CP 30 AquaBlock Coating on top of the waterproofing coat. It is recommended to use a contrasting colour for these areas and a layer thickness of 1.0 mm. Sprinkle quartz sand (e.g. grit 0.1-0.4 mm) into the fresh coat of the walkways to prevent slipping.

4. Execution of construction details

4.1. Connection to vertical / horizontal areas

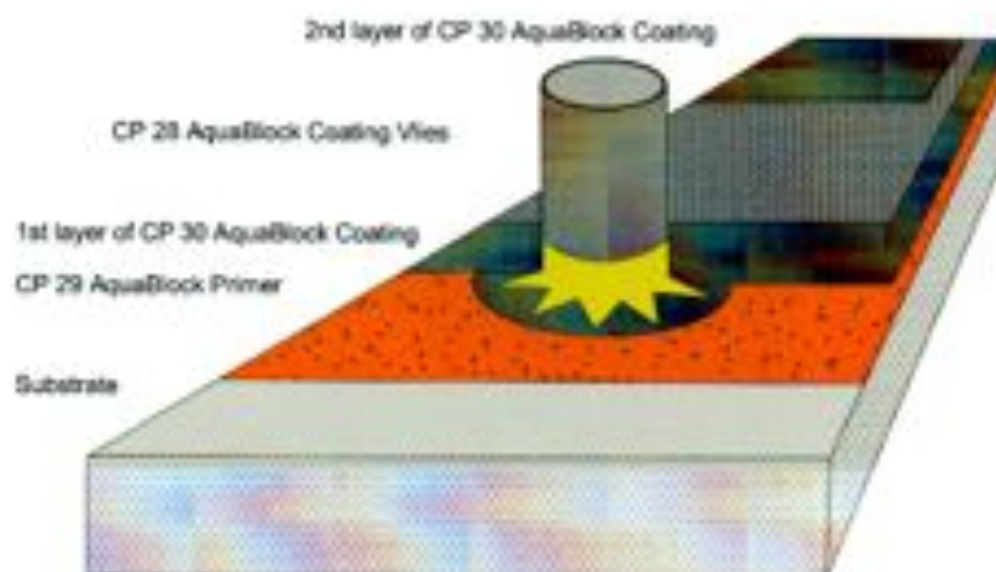
Brush or spray the CP 30 AquaBlock Coating waterproofing coat onto the substrate with a wet layer thickness of approx. 1 mm. Embed the CP 28 AquaBlock Fleece (strip of 20 cm width) without blisters and fold into the fresh coat so that approx. 10 cm run in vertical and approx. 10 cm in horizontal direction. Then press the fleece slightly down into the coat with a short-pile paint roller soaked in CP 30 AquaBlock Coating until the fleece is completely saturated. Afterwards, continue as described in paragraph 3.4 above.

Figure 2: Connection to rising structural components



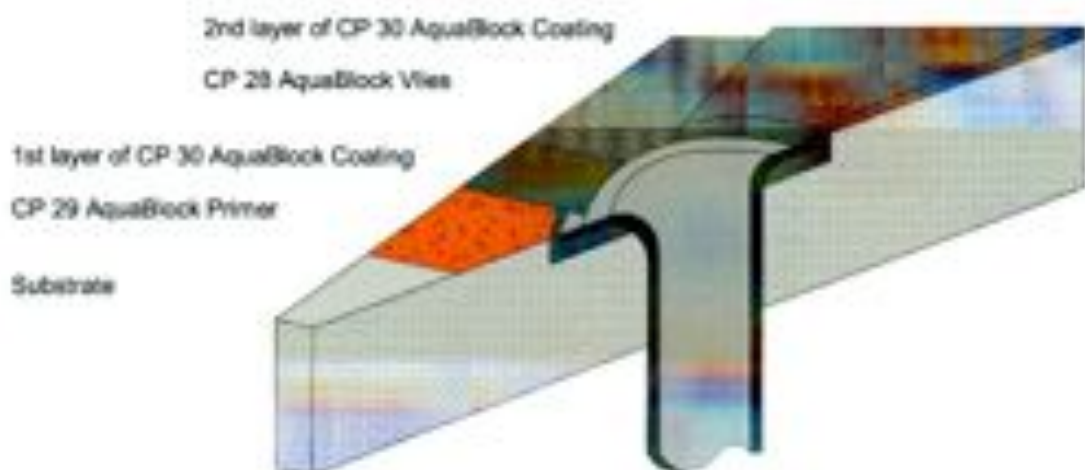
4.2. Roof penetrations / vent pipes etc.

Apply CP 30 AquaBlock Coating by brushing or spraying with a wet layer thickness of approx. 1 mm. Embed the CP 28 AquaBlock Fleece (20 cm wide strip) without blisters and fold into the fresh coat in such a way that approx. 10 cm are placed vertically and approx. 10 cm horizontally. Then press the fleece slightly down into the coat with a short-pile paint roller soaked in CP 30 AquaBlock Coating until the fleece is completely saturated. Afterwards, continue as described in paragraph 3.4 above.

Figure 3: Connection to roof penetrations

4.3. Drain pipes / drainage elements / gullies

Apply CP 30 AquaBlock Coating in the area around the drain opening with a layer thickness of approx. 1 mm. Insert the drainage element into the fresh coat. Next, apply CP 30 AquaBlock Coating of approx. 2 mm thickness onto the drainage element and the adjoining substrate. Embed the CP 28 AquaBlock Fleece free of blisters and fold so that it overlaps the transition zone between drain opening and substrate. Then press the fleece slightly down with a short-pile paint roller soaked in CP 30 AquaBlock Coating until the fleece is completely saturated. Afterwards, continue as described in paragraph 3.4.

Figure 4: Connection to drain pipes

5. Safe handling and environmental protection

5.1. Occupational health and safety

CP 30 AquaBlock Coating and CP 29 AquaBlock Primer are solvent-free, dispersion-based products. Their application does not require special safety measures and precautions. When applying the product by spraying, wear appropriate protective equipment such as breathing protection, safety glasses and gloves. Pay attention to wind direction and to swirling spray mist. For further information refer to the Safety Data Sheets

5.2. Disposal

The products must not be discharged into surface waters, sewer systems or soil. Return the emptied containers (scraped clean and open) for recycling. The respective disposal codes of the European Waste Catalogue (EWC) can be enquired from us.

5.3. Collection and use of rainwater for fishponds

The dispersion-based CP 30 AquaBlock waterproofing system contains surfactants and emulsifiers. These will be washed out by the first rain showers and may kill sensitive fish species when the water is discharged into fishponds. For this reason, either clean the roof thoroughly with plenty of water after the waterproofing coat has completely dried or do not discharge the water into the fishpond in the first few months. Instead, collect and use the water for other purposes until it has been naturally purified by the rain.

Please contact us for more detailed information on this topic.

6. Maintenance

Within the framework of regular maintenance, please check in particular whether:

- the drains are still in good working order and the water is properly drained off
- moss, leaves, twigs etc. have accumulated on the roof and need to be removed
- damage or any other kind of impairment affects the durable tightness of the roof

7. Reparation

Any repair work that might be necessary is carried out after thorough cleaning of the affected area and only by applying a new CP 30 AquaBlock Coating.

Figure 4: Reparation



Carefully cut off any loose parts, clean the spot and allow it to dry. Roughen the damaged spot and its surrounding area (10-15 cm) with fine sand paper (grit 100-120) and clean it. Afterwards, continue the waterproofing process as described in paragraph 3.4.

When repairing small spots, make sure to round the corners of the fleece insert.

8. Further information

- When using SilicoTec on substrates with an excessive amount of residual moisture, blisters may form in the waterproofing coat.
- For further information please also refer DIN 18 531, parts 1 and 4
- Technical Data Sheets of other Henkel products used

The above information, in particular proposals for the application and use of our products, is based on our knowledge and experience. As materials and working conditions may vary with each intended application and thus are beyond our influence, we strongly recommend that the user always conducts sufficient tests to ensure our products are suitable for the intended method and application. Legal liability cannot be accepted; neither based on the content of this Technical Data Sheet nor any verbal advice given, unless there is evidence of carelessness or gross negligence on our part.
This Technical Manual supersedes all previous issues.