



# AQUASCUD SYSTEM 420



**FLEXIBLE LIQUID SYSTEMS**



## PRODUCT DESCRIPTION

AQUASCUD System 420 is a waterproofing system, offering a definitive solution and without having to resort to demolition, for balconies, terraces, roof decks and all flat surfaces, even with flooring installed.

It is a fast, practical and extremely flexible waterproof protective shield with CORE CURING TECHNOLOGY for effective curing even under low temperature conditions and partially damp surfaces.

AQUASCUD System 420 consists of:

- AQUASCUD 420, flexible two-component waterproofing compound;
- AQUASCUD JOIN, elasticised staff bead;
- AQUASCUD JOIN BT, adhesive staff bead;
- BI FLEX SYSTEM, elastic tape with epoxy adhesive;
- AQUASCUD LINE, a draining gutter profile to finish and protect flooring edges
- AQUASCUD BASIC: elasticised microporous water-repellent polypropylene membrane, which is roughened thanks to special processing, allowing perfect adhesion to the waterproof coating;

## PRODUCT APPLICATION

- Waterproofing of flat roofs, balconies, terraces and sloped floors, with flooring already installed, with waterproofing surface that can remain exposed protected by coatings (tiles, concrete floors, green roofs, etc.)
- Substrates in general, also lightened with expanded clay

## ADVANTAGES

- Fast drying even in low temperature conditions (all within 24 hours)
- For waterproofing without demolition
- Resistant to U.V. radiation
- Low environmental impact thanks to reduced CO<sub>2</sub> emissions, very low Volatile Organic Compound emissions (VOC), components obtained from recycling processes
- No demolition and disposal, applicable on existing floor and surfaces with micro-cracks
- Final intervention less than 3mm thick
- Allows for direct application of the flooring
- Excellent adhesion to all cement, masonry, ceramic and marble surfaces
- Excellent protection of screed against the action of un/freezing and efflorescence
- The product helps earning points for LEED certification
- Effective curing on set surfaces, even partially wet
- Reduced risk of damage in case of sudden contact after work with rain, fog

## PREPARATION AND APPLICATION

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The preparation and installation data refer to normal environmental conditions (temperature +20°C; relative humidity 60%).

### Preparing the surfaces

Remove all dirt and any other material that could compromise adhesion of AQUASCUD.

Restore very irregular surfaces with FLEXOMIX 30 mortar (see the related technical data sheet).

If the surfaces are old or dusty, apply PROFIX 30 primer with a roller, a brush or by spray (see related technical data sheet).

For substrates that are not completely dry but adequately cured, the surface relative humidity must not exceed 5% (measured using a Storch type electric hygrometer).

If the substrate is partially soaked in water, with relative surface humidity between 5% and 10% (measured using a Storch type electric hygrometer), apply BI MORTAR ULTRA SEAL (see relevant technical data sheet).

### Preparation of installation parts and set-ups

- **JOINTS** Any deformation joints (expansion and contraction/splitting) and construction joints on the surface must be covered by means of GARVO joint cover strips (see relevant technical data sheet); in case of structural joints, use BI FLEX System (see relevant technical data sheet)

- **CORNERS AND CONNECTIONS** In case of insulation joints, fill all wall/floor corners by means of AQUASCUD JOIN (see relevant technical data sheet) staff bead, placing the rubber-coated part in contact with the surface using AQUASCUD sealing material. Alternatively, it is possible to use the AQUASCUD JOIN BT adhesive strip (see relevant technical data sheet) laid on a cured AQUASCUD layer. At low-height situations use AQUASCUD JOIN BT or, alternatively, BI MASTIC adhesive mastic (see relevant technical data sheet)

- **DRAINS** Prepare the connections to the drains by using the relative DRAIN MANIFOLD

- **GUTTER** Along the external perimeter, set up the AQUASCUD LINE draining gutter profile and relative special pieces (see relative data sheet) to finish and protect the tiled edge

- **ELASTIC REINFORCEMENT** Prepare the AQUASCUD BASIC membrane, pre-cut to the required measurements, so that it can be applied with the first coat of waterproofing mixture

### Preparing the mixture

Stir the liquid component in its container, then pour it into a bucket.

Gradually add the AQUASCUD powder component while continuing to stir; mix for 2÷3 minutes with a whip-fitted drill

until the mixture is smooth and free of lumps.

If necessary, it tolerates the addition of water up to maximum 4% of the liquid component, equal to about a glass per package.

## Application

Apply the first thick layer of AQUASCUD 420 on the surface, a minimum thickness of 1÷1.5 mm using a special Volteco 3.5 mm NOTCHED FLOAT and/or the Volteco NOTCHED or ROLLER SQUEEGEE, making sure the product penetrates well into the substrate and covers the surface completely (average consumption: 2-2.5 kg/m<sup>2</sup> depending on the flatness of the surface).

Place the AQUASCUD BASIC membrane on the first coat of mixture in the following manner: proceed in sectors, immediately laying AQUASCUD BASIC out on the fresh AQUASCUD 420 mixture, making it adhere uniformly to the surface by pressing with the Volteco NEEDLE ROLLER.

AQUASCUD BASIC membrane becomes darker when it is rolled on. This indicates correct application and proper impregnation and adhesion.

Overlap the edges of the AQUASCUD BASIC membrane by at least 10 cm and weld them together with the AQUASCUD mixture.

Where the horizontal and vertical surfaces join, make sure the AQUASCUD BASIC membrane adheres to the horizontal edge of the previously laid AQUASCUD JOIN joint band.

Never fold AQUASCUD BASIC vertically, always join it to the AQUASCUD JOIN joint band.

The AQUASCUD BASIC membrane must be interrupted in the centre line of the tape with GARVO or BI FLEX System at the joints treated.

If there is an AQUASCUD LINE gutter profile along the perimeter, overlap AQUASCUD BASIC by at least 6 cm over the profile anchoring flap.

Wait at least 2 hours (ambient temperature +20 °C; ambient humidity 60%) before using NOTCHED TROWEL 3.5 mm or NOTCHED SQUEEGEE to apply a second layer, at least 1 mm thick, of the AQUASCUD 420 mixture (average consumption 1.75÷2 kg/m<sup>2</sup>), being careful to evenly cover the AQUASCUD BASIC membrane.

When fresh, smooth with ROUNDED PLASTERING TROWEL.

It is recommended to apply the second layer of AQUASCUD 420 only when the previous one is completely dry and hardened.

For applications on balconies or on small surfaces (less than approximately 4 m<sup>2</sup>), it is possible to omit the use of the AQUASCUD BASIC membrane.

Always apply the AQUASCUD BASIC membrane on a substrate with marked cracks.

## Finishing

Ceramics must be laid on AQUASCUD System 420 after at least 16 hours, with a large grout gap and C2-type adhesive (preferably with an S1 and S2 deformation class).

Line grouting works must be carried out with CG2 class cement-based grouting mortars.

AQUASCUD System 420 can be left exposed if subjected to occasional foot traffic.



References available at [www.volteco.com](http://www.volteco.com)

## CONSUMPTION AND YIELD

3,6÷4 kg/m<sup>2</sup> depending on the roughness of the surface.

## PACKAGING AND STORAGE

AQUASCUD 420 is supplied in 20.7 kg packages (15 kg in powder + 5.7 kg in liquid).

The product must be stored in a dry place without being exposed to frost and heat (at a temperature ranging from +5°C to +40°C) or direct exposure to the sun before being applied.

| ACCESSORIES      | -  |
|------------------|--|
| AQUASCUD JOIN    | Elasticised staff bead<br>25 m package   |
| AQUASCUD JOIN BT | Staff bead with adhesive butyl rubber<br>20 m package                            |
| BI FLEX SYSTEM   | Elastic tape<br>Packs of 15, 20 or 40 m<br>Epoxy adhesive<br>Packs of 5 or 10 kg |
| AQUASCUD BASIC   | Water-repellent elasticised microporous membrane<br>30 m <sup>2</sup> package    |

| <b>ACCESSORIES</b>                       |  |
|--|--|
| AQUASCUD LINE                            | Draining profile with gutter (version H.0 and H.10)<br>13.5 m package        |
| <b>SPECIAL PIECES</b>                    |  |
| JOIN BT 90° Corner / JOIN BT 270° Corner | Pre-shaped staff bead, with adhesive butyl rubber<br>10 pc package           |
| DRAIN/EXHAUST MANIFOLD                   | Rubber textile element Ø 80 mm and Ø 100 mm<br>2 pc package                  |
| SQUARE GARVO                             | Rubber textile element 40x40 cm<br>Single package                            |
| AQUASCUD CORNER 90°                      | Corner for AQUASCUD LINE (version H.0 and H.10)<br>Single package            |
| AQUASCUD CORNER 270°                     | Corner for AQUASCUD LINE (version H.10)<br>Single package                    |
| AQUASCUD FIXY                            | Connecting joints for AQUASCUD LINE (version H.0 and H.10)<br>Single package |
| <b>APPLICATION TOOLS</b>                 |  |
| NEEDLE ROLLER - 7 kg                     | -  |
| PLASTIVO ROLLER                          | -  |
| ROUNDED PLASTERING TROWEL                | -  |
| NOTCHED TROWEL 3.5 mm                    | -  |
| NOTCHED SQUEEGEE                         | -  |

## WARNINGS - IMPORTANT NOTES

Do not add water, cement or aggregates and do not alter the required mixing ratio in any way.

The product must be used within 20 minutes after mixing.

Do not use AQUASCUD 420 in thicknesses greater than 2 mm per coat.

To help achieve the minimum thickness in each coat of the product, it is recommended to use the 3.5 mm NOTCHED TROWEL or NOTCHED SQUEEGEE as thickness regulators.

Wait at least 7 days for the substrate to cure in case of application on traditional screeds that have just been made.

Do not apply the product if the temperature is higher than +30°C or lower than +5°C or if it is expected to drop below this temperature within 24 hours.

The curing times will be longer in the presence of rain and/or fog and/or a low temperature.

The application of AQUASCUD on surfaces exposed to direct sunlight leads to a drastic reduction of the workability time. In this case the addition of water is tolerated as specified in the paragraph "Preparing the mixture".

Applying AQUASCUD on a humid surface that is extensively exposed to the sun can cause the formation of vapour blisters on the surface.

These do not alter the final characteristics of the product.

Vapour blisters can also form if the 2nd layer is applied on the 1st layer if it has not cured enough or is too thin.

Protect wet product from rain.

Set-up suitable anti-root protection in the case of roof gardens.

AQUASCUD BASIC can remain free of AQUASCUD protection mixture up to a maximum of 7 days.

Wait at least 16 hours after the second coat before applying any type of protective or finishing layer.

If more than 28 days have passed since the second coating, an additional layer must be applied to ensure the subsequent coating adheres well.

## PHYSICAL AND TECHNICAL SPECIFICATIONS

| Specification              | Values                    |
|----------------------------|---------------------------|
| Appearance                 | Grey powder - white latex |
| Working temperature        | -5 °C +60 °C              |
| Liquid/powder mixing ratio | 0,38/1                    |
| Workability time at +20 °C | 20'                       |
| Maximum aggregate size     | 0.7 mm                    |
| Specific weight            | > 1.7 kg/l                |

| Feature  | Test method             | Performance requirements | Declared performance    |
|--|-------------------------|--------------------------|-------------------------|
| Crack Bridging Ability (+23 °C)                      | UNI EN 14891 Met. A.8.2 | > 0.75 mm                | > 1.5 mm                |
| Crack Bridging Ability (-5 °C)                       | UNI EN 14891 Met. A.8.3 | > 0.75 mm                | > 1.5 mm                |
| Crack Bridging Ability (+23 °C)(with Aquascud Basic) | UNI EN 14891 Met. A.8.2 | > 0.75 mm                | > 2 mm                  |
| Crack Bridging Ability (-5 °C)(with Aquascud Basic)  | UNI EN 14891 Met. A.8.3 | > 0.75 mm                | > 2 mm                  |
| Initial adhesion                                     | UNI EN 14891 Met. A.6.2 | > 0.5 N/mm <sup>2</sup>  | > 0.5 N/mm <sup>2</sup> |
| Adhesion after immersion in water                    | UNI EN 14891 Met. A.6.3 | > 0.5 N/mm <sup>2</sup>  | > 0.5 N/mm <sup>2</sup> |
| Adhesion after heat application                      | UNI EN 14891 Met. A.6.5 | > 0.5 N/mm <sup>2</sup>  | > 0.5 N/mm <sup>2</sup> |
| Adhesion after un/freezing cycles                    | UNI EN 14891 Met. A.6.6 | > 0.5 N/mm <sup>2</sup>  | > 0.5 N/mm <sup>2</sup> |
| Adhesion after immersion in alkaline water           | UNI EN 14891 Met. A.6.9 | > 0.5 N/mm <sup>2</sup>  | > 0.5 N/mm <sup>2</sup> |
| Water impermeability                                 | UNI EN 14891 Met. A.7   | 150 KPa                  | 150 KPa                 |

| Feature     | Certifying body            | Test method                      | Certified performance (**) |
|-------------|----------------------------|----------------------------------|----------------------------|
| VOC content | Eurofins 392-2019-00444401 | Directive 42/2004/EC ISO 11890-2 | 1,1 g/l                    |

| Parameters subject to company Quality Control | Values AQUASCUD BASIC | Values AQUASCUD JOIN     |
|---|-----------------------|--------------------------|
| Water impermeability                          | -                     | No passage up to 100 kPa |
| Elongation at breaking point                  | > 40%                 | > 20%                    |
| Resistance at breaking point                  | > 0.6 kN/m            | > 267 N/5 cm             |

### Initial requirements UNI 11928-1:2023

| Feature                                    | Test method          | Performance requirements | Declared performance |
|--|----------------------|--------------------------|----------------------|
| Reaction to fire                           | UNI EN 13501-1       | F                        | F                    |
| Watertightness (water passage with 60 KPa) | UNI EN 1928 (60 KPa) | No passage               | No passage           |

| Feature  | Test method     | Performance requirements                          | Declared performance                              |
|--|-----------------|---|---|
| Water vapour transmission properties               | UNI EN ISO 7789 | Class   | Class I   |
| Direct tensile adhesion, concrete type MC (0.40)   | UNI EN 1542     | ≥ 0.5 N/mm <sup>2</sup>                           | ≥ 0,6 N/mm <sup>2</sup>                           |
| Impact resistance                                  | UNI EN 6272-1   | Class   | Class II  |
| Static punching                                    | UNI EN 12730    | ≥ 50 N  | ≥ 50 N  |
| Dynamic crack bridging (23 °C)                     | UNI EN 1062-7   | Class B2  | Class B2  |
| Dynamic crack bridging at low temperatures (-5 °C) | UNI EN 1062-7   | Class B1  | Class B2  |
| Slipping resistance                                | UNI EN 13036-4  | Class   | Class III   |
| Capillary absorption                               | UNI EN 1062-1   | $W \leq 0.1 \text{ Kg/m}^2 \cdot \text{h}^{-0.5}$ | $W \leq 0.1 \text{ Kg/m}^2 \cdot \text{h}^{-0.5}$ |

### Durability UNI 11928-1:2023

| Feature  | Test method   | Performance requirements                  | Declared performance                      |
|--|---|---|---|
| Heat ageing resistance 7 days at 70±3 °C (Watertightness)          | point 4.1 of EN 1062-11:2003                                | No passage                                | No passage                                |
| Acceptance criteria after exposure                                 | UNI EN ISO 4628-2<br>UNI EN ISO 4628-4<br>UNI EN ISO 4628-5 | No swelling<br>No cracking<br>No spalling | No swelling<br>No cracking<br>No spalling |
| Acceptance criteria after exposure                                 | UNI EN ISO 4628-2<br>UNI EN ISO 4628-4<br>UNI EN ISO 4628-5 | No swelling<br>No cracking<br>No spalling | No swelling<br>No cracking<br>No spalling |
| Frost/thaw Without thawing salts 20 cycles (Adhesion to substrate) | UNI EN 13687-3  | ≥ 0.5 N/mm <sup>2</sup>                   | ≥ 0,6 N/mm <sup>2</sup>                   |
| UV (400 MJ/m <sup>2</sup> , 2460 hours) and Spray (492 hours)      | UNI EN ISO 4892-3   |   |   |
| Acceptance criteria after exposure                                 | UNI EN ISO 4628-2<br>UNI EN ISO 4628-4<br>UNI EN ISO 4628-5 | No swelling<br>No cracking<br>No spalling | No swelling<br>No cracking<br>No spalling |
| Hazardous substances   |   |   | See safety data sheets                    |

The quoted data are obtained in a laboratory at +20 °C and 60% RH.

## WATCH VIDEOS AND INSIGHTS

Safety Data Sheets    Declaration of performance    Specifications    Technical drawings and BIM    EPD Declaration    YouTube Video



## SAFETY

Refer to the related Safety Data Sheet.

|  |  |
|--|--|
|   | <b>VOLTECO S.p.a</b><br>Via delle Industrie, 47 - 31050 Ponzano Veneto (I) |
| <b>18</b><br><b>0024-CPR-2018/10/09</b><br><b>EN 14891:2012</b><br><b>AQUASCUD 420</b>   |  |
| Two-component liquid waterproofing product modified with polymer (CM 01) for outdoor applications under ceramic tiles (applied with class C2 adhesive in compliance with EN 12004)   |  |
| Initial tensile adhesion strength: $\geq 0,5 \text{ N/mm}^2$<br>Tensile adhesion strength after water contact: $\geq 0,5 \text{ N/mm}^2$<br>Tensile adhesion strength after heat ageing: $\geq 0,5 \text{ N/mm}^2$<br>Tensile adhesion strength after freeze-thaw cycles: $\geq 0,5 \text{ N/mm}^2$<br>Tensile adhesion strength after contact with lime water: $\geq 0,5 \text{ N/mm}^2$<br>Water impermeability: No penetration and $\leq 20 \text{ g}$ weight gain<br>Crack bridging ability under standard conditions (23°C): $\geq 0,75 \text{ mm}$<br>Crack bridging ability at low temperatures (-5°C): $\geq 0,75 \text{ mm}$<br>Hazardous substances: See SDS |  |

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