



# Method Statement

*Ref. #: DCP10/08-A-2021*



## Aquathane R100

(Polyurethane liquid membrane for waterproofing and protection)



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## Section A : General Comments

### General Notes:

The information below is a detailed overview for the application of DCP's **Aquathane R100** waterproofing and protection system and should be read in conjunction with the relevant technical data sheet prior to application. All DCP Products should be applied by experienced specialist contractors.

All the points below assume correct preparation of the relevant surface.

### High Temperature Working:

Application temperature ranges from 5°C to 35°C, and relative humidity must not exceed 95%. Substrate's temperature must be at least 3°C above measured dew point temperatures, if any.

It is suggested that, for temperatures above 35°C, the following guidelines are adopted as good working practice:

- i. Unmixed materials and equipment should be stored in a cool shaded area and away from direct sunlight.
- ii. Avoid application during peak temperature of the day.
- iii. Plan for enough materials, tools and labor to ensure continuous applicant process.
- iv. Ensure proper and adequate ventilation.

### Low temperature working:

It is suggested that, for temperatures below 10°C, the following guidelines are adopted as good working practice:

- i. Unmixed materials should be stored in a warm.
- ii. Cold temperatures will affect the properties of the adhesive.
- iii. Avoid applying the waterproofing membrane if the temperature is around 5°C and falling.
- iv. Do not apply under rain or snow, and avoid dew points conditions during application.

### System Products:

Primer: **Aquathane Primer PU**, or **Aquathane Primer W**

Sealant: **Flexseal PU425/PU440**

Main Membrane: **Aquathane R100**

Reinforcing Geotextile: **DonFlash H**

### Tools and Equipment:

It is suggested that the following list of equipment are adopted as a minimum requirement

- |                              |   |   |
|------------------------------|---|---|
| <i>Personal protection</i>   | : | <i>Protective overalls</i>              |
|                              | : | <i>Goggles or a face mask</i>           |
|                              | : | <i>Good quality gloves</i>              |
|                              | : | <i>Safety shoes</i>                     |
|                              | : | <i>Safety helmet</i>                    |
| <i>Preparation equipment</i> | : | <i>Stiff wire brush (Fig.1)</i>         |
|                              | : | <i>Soft brush (Fig.2)</i>               |
|                              | : | <i>Air compressor with hose (Fig.3)</i> |
| <i>Application equipment</i> | : | <i>Brush (Fig.4)</i>                    |
|                              | : | <i>Roller (Fig.5)</i>                   |
|                              | : | <i>Airless spray (Fig.6)</i>            |



Fig.1: Stiff wire brush



Fig.2: Soft brush



Fig.3: Air compressor with hose



Fig.4: Brush



Fig.5: Roller



Fig.6: Airless spray machine

## Section B : Application

### 1.0 Substrate Preparation

- 1.1 New concrete or cementitious substrates should be at least 28 days old. Maximum moisture content should not exceed 5%. Perform relative humidity test using in situ devices according to ASTM F2170.



*Testing Moisture Content*

- 1.2 All waterproofing products, except cementitious waterproofing, require the substrate to be technically dry (very low in moisture content).
- 1.3 The substrate (new or existing) should be clean, sound, smooth, and free from contamination such as mortar and paint splashes, curing compounds, oil, and grease.
- 1.4 Oil and grease contamination must be completely removed by grinding down to sound, clean concrete. Alternatively, grit blasting techniques can be used to provide the required substrate.
- 1.5 Excess laitance deposits are best removed by grit blasting or wire brushing followed by vacuum cleaning to remove dust debris. All preparation equipment should be of a type approved by DCP.
- 1.6 Ensure the substrate surface is dry, smooth, and any surface imperfections are repaired with a suitable cementitious repair mortar. Consult the DCP's Technical Department for specific recommendations.



*Repair of surface imperfections using cementitious repair mortar*

- 1.7 Cracks in the substrate over 2.5 mm in width should be treated using one component flexible sealant **Flexseal PU425 or PU440**.



*Repair of cracks using Flexseal PU245 or PU440*

- 1.8 Where these methods are considered impracticable, alternative methods may be considered but a clean, sound and dry substrate must still result. In particular, it is essential that the substrate does not suffer from conditions of rising damp. Any alternative preparations must be approved by DCP prior to commencement of work, as the final performance of the system relies upon the performance of sound and level substrates.

## **2.0 Priming**

- 2.1 Substrates are primed using solvent-based polyurethane primer **Aquathane Primer PU** or water-based epoxy primer **Aquathane Primer W**.
- 2.2 Immediately prior to priming, the substrate should be thoroughly cleaned to remove any remaining traces of dust or other loose material.
- 2.3 Concrete substrates should be primed with **Aquathane Primers** only. Use a brush or a roller to apply the primer.
- 2.4 **Aquathane Primer PU Application:**
- 2.4.1 **Aquathane Primer PU** is a low viscosity polyurethane based primer that is designed to enhance the adhesion of Aquathane Range of waterproofing membrane with porous concrete substrates.
- 2.4.2 **Aquathane Primer PU** will penetrate, stabilize and seal the concrete surface in depth. Porous substrates may require a second primer coat – when the first coat is directly absorbed into the substrate – but minimum over coating times must still be observed.

- 2.4.3 Apply **Aquathane Primer PU** at a rate of (0.1 - 0.2) Ltr/m<sup>2</sup>, depending on the substrate porosity, using brush or rollers.



*Application of Aquathane Primer PU*

- 2.4.4 After applying **Aquathane Primer PU**, application should wait 4-24 hours in order to apply the **Aquathane R100** main membrane.
- 2.4.5 Apply the main membrane within a maximum of 7 days after **Aquathane Primer PU** application.
- 2.5 **Aquathane Primer W** Application:
- 2.5.1 **Aquathane Primer W** is a medium viscosity water based epoxy primer. It is applied over sound concrete surface, non-porous substrates and where substrates have a high humidity level or risk of rising damp. **Aquathane Primer W**, will create a slight film sealing the concrete and increasing the adhesion.
- 2.5.2 **Aquathane Primer W** should be applied immediately to the prepared substrate at a rate of 0.16 ltr/m<sup>2</sup> using brush or rollers. Ensure full coverage, but care should be taken to avoid over application or 'puddling'..



*Application of Aquathane Primer W*

- 2.5.3 After applying **Aquathane Primer W**, application should wait at least 12 - 24 hours in order to apply the **Aquathane R100** main membrane.
- 2.5.4 Apply the main membrane within a maximum of 2 days after **Aquathane Primer W** application.

*Note: It is recommended to test the adhesion between the substrates and **Aquathane R100** on small area onsite prior to proceeding the works in order to ensure that the substrate is well prepared and compatible with the product and primer. If it rains after primer and before main coat application, another coat of the primer should be applied.*



### 3.0 Dilatation Joints and Inner Angles

- 3.1 Dilatation joints and inner angles should be treated with **Flexseal PU425 or PU440**. A coving detail must be formed at all corners and normal PVC pipes minimum 1 cm x 1 cm fillet.



*Application of Flexseal PU425/440 in joints*

### 4.0 Application

- 4.1 Stir the material in the bucket well before use.
- 4.2 Apply the first coat with brush or roller at a rate of 0.7 – 0.8 kg/m<sup>2</sup>. Do not leave more than 24 hours between two coats of **Aquathane R100**.
- 4.3 Reinforcement geotextile **DonFlash H** is recommended to be placed at all corners and angle changes (e.g. floor to wall connection), with 30 cm strip to be placed over the first coat while still wet (Refer to the “Application Details” section).
- 4.4 After the first layer is tack free, apply the second coat of **Aquathane R100** with brush or roller at a rate of 0.7 - 0.8 kg/m<sup>2</sup>, perpendicular to the first coat, recoat time should be between 8 to 24 hours from the first coat.



*Application of Aquathane R100*

#### Notes:

- For spraying with airless spray machine, Aquathane R100 can be diluted by 5 - 10% using DCP Solvent PU (consult DCP's technical department for further details).
- If the substrate is susceptible to cracking, and for extra crack bridging ability, it is recommended to use **DonFlash H** as a reinforcement layer between the coats for the whole application area.



### Consumption of Aquathane R100

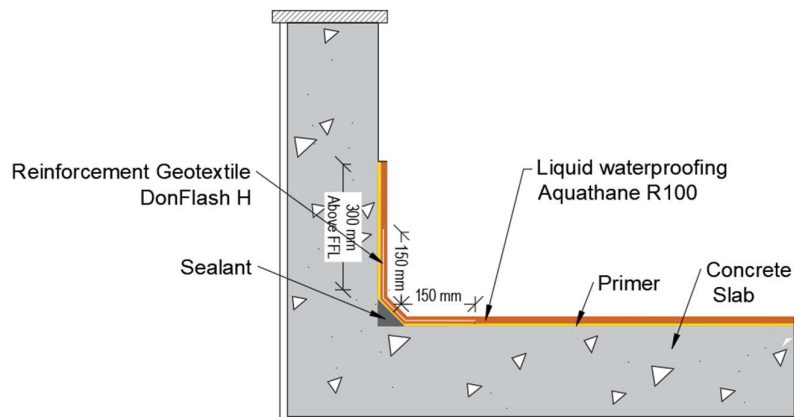
- First coat: 0.7 - 0.8 kg/m<sup>2</sup>.
- Second coat: 0.7 - 0.8 kg/m<sup>2</sup>.
- Total consumption: 1.4 - 1.6 kg/m<sup>2</sup> to provide 1 mm dry film thickness.

4.5 In the case where there will be tiling over **Aquathane R100** using a cementitious Tile Adhesive, the following procedure is recommended:

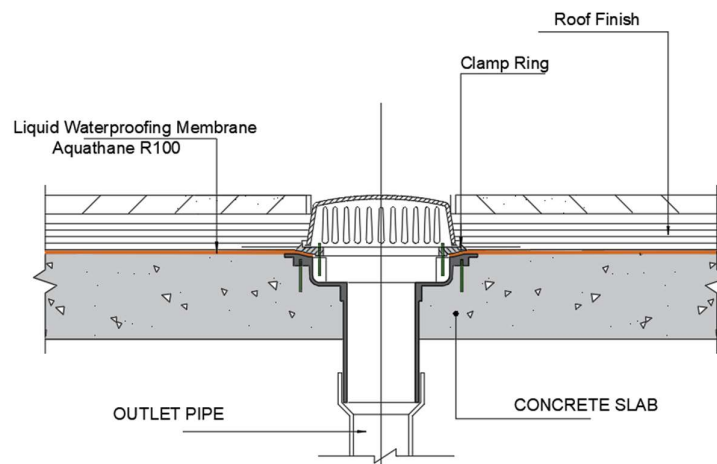
- 4.5.1 After the application of the second coat of **Aquathane R100**, while still wet broadcast silica sand over the second coat.
- 4.5.2 2 - 4 kg/m<sup>2</sup> of silica sand shall adequate to cover the surface of the second coat.
- 4.5.3 Once the coat is dry, make sure to remove any loose silica sand from the surface.
- 4.5.4 Apply cementitious tile adhesive directly over the broadcasted surface.

## 5.0 Application Details

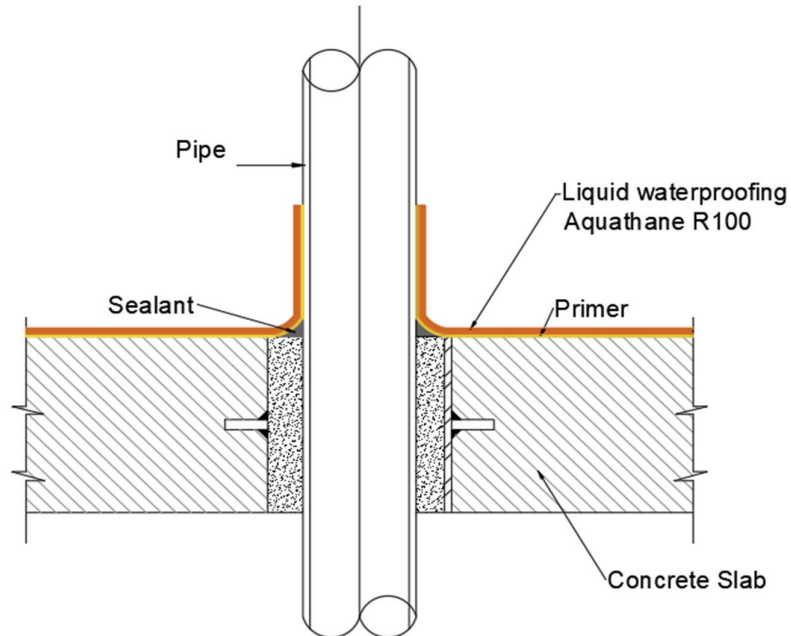
### Parapet Flashing



### Rain Water Outlet



## Pipe Through Slab



### 6.0 Cleaning

- 6.1 Tools and equipment can be cleaned with a paper towel and wiped by using **DCP Solvent PU**.
- 6.2 **Aquathane R100** has a shelf life of 12 months from the date of manufacture if stored in the original unopened pails at temperatures between 5°C and 25°C.
- 6.3 If these conditions are exceeded, DCP Technical Department should be contacted for advice.

### 7.0 Limitations

- 7.1 Only white and light grey colours can be used for exposed areas.
- 7.2 Do not use on unsound substrates.
- 7.3 Not recommended for waterproofing of swimming pools surfaces in contact with chemically treated water.
- 7.4 Since **Aquathane R100** cures with moisture, low humidity conditions will extend the tack-free time and recoat time.



## Section C : Cautions

### Health and safety

**Strongcoat SL1** should not come into contact with skin and eyes. In case of contact with eyes wash immediately with plenty of water and seek medical advice promptly. Apply in well-ventilated areas. In closed areas use force ventilated on and carbon active masks.

### Fire:

**Aquathane Primer W** and **Flexseal PU440** are nonflammable.

**Aquathane R100** contains volatile flammable solvents.

**Aquathane Primer PU** and **DCP Solvent** are flammable. Do not use near a naked flame and do not smoke during use.

**For further information on refer to the Material Safety Data Sheet.**

## Section D : Approval and Variations

This method statement is offered by DCP as a 'standard proposal' for the application of **Aquathane R100**. It remains the responsibility of the Engineer to determine the correct method for any given application. Where alternative methods are to be used, these must be submitted to DCP for approval, in writing, prior to commencement of any work. DCP will not accept responsibility or liability for variations to the above method statement under any other condition.