



Method Statement

Ref. #: DCP00/08-0163-B-2022



DonProof PU-H50

(Spray applied, polyuria/polyurethane hybrid membrane for waterproofing and protection)



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Section A : General Comments

General Notes:

The information below is a detailed overview of the application of DCP's **DonProof PU-H50** 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 the correct preparation of the relevant surface.

High-Temperature Working:

Application temperature ranges from 3°C to 40°C and relative humidity must not exceed 80%. The substrate's temperature must be at least 3°C above the measured dew point temperature 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 place and away from direct sunlight.
- ii. Avoid application during the peak temperature of the day.
- iii. Ensure proper and adequate ventilation.
- iv. Plan for enough materials, tools, and labor to ensure a continuous application process.

Low-Temperature Working:

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

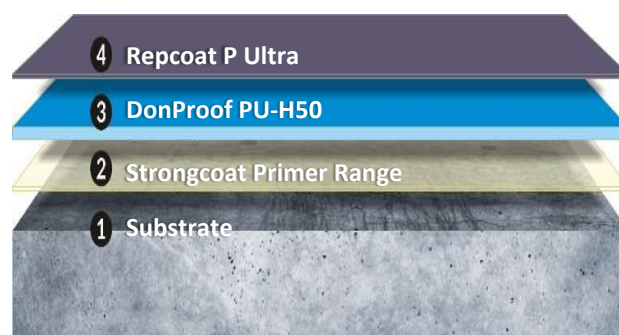
- i. Unmixed materials should be stored in a warm.
- ii. Cold temperatures will affect the properties of the material.
- iii. Avoid applying the material if the temperature is around 5°C and falling.
- iv. Do not apply under rain or snow, and avoid dew points conditions during application.

System Products:

Primer: **Strongcoat Primer Range, Strongcoat DPM** [if required]

Waterproofing Membrane: **DonProof PU-H50**

UV Protection Coat: **Recoat P Ultra**



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>Concrete vacuum (Fig.1)</i> | |
| | : | <i>Grit blasting machine (Fig.2)</i> | |
| | : | <i>Brush (Fig.3)</i> | |
| | : | <i>Grinding machine (Fig.4)</i> | |
| <i>Mixing equipment</i> | : | <i>Power-whisk fitted in a heavy-duty slow speed electric drill (Fig.5)</i> | |
| | : | <i>Empty bucket (25 litre) (Fig.6)</i> | |
| <i>Application equipment</i> | : | <i>Roller (Fig.7)</i> | |
| | : | <i>Two Component spray machine with a hose (Fig.8)</i> | |
- [For more details refer to the Applications section (Fig.5 – 8)]*



Fig.1: Concrete vacuum



Fig.2: Grit blasting machine



Fig.3: Brush



Fig.4: Grinding machine



Fig.5: Power-whisk fitted in a heavy-duty slow speed electric drill



Fig.6: Empty bucket



Fig.7: Roller



Fig.8: Two Component spray machine with a hose

Section B: Application

1.0 Substrate Preparation

1.1 Concrete Substrates

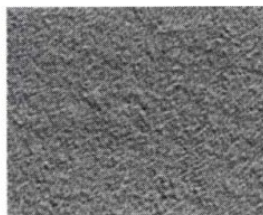
1.1.1 New concrete or cementitious substrates should be at least 28 days old. Maximum relative humidity should not exceed 80%. Perform a relative humidity test using in situ devices according to ASTM F2170.



1.1.2 The substrate (new or existing) should be dry, smooth, clean, sound, and free from any contamination such as mortar and paint splashes, curing compounds, silicones, oil, and grease.

1.1.3 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.

1.1.4 Concrete surface should achieve a minimum surface roughness of (CSP 3 to 6), in accordance with the following ICRI recommendations:



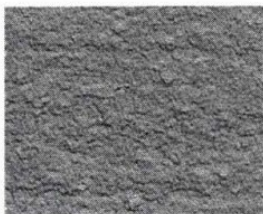
CSP 1
(acid etched)



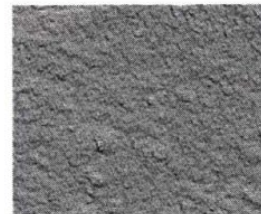
CSP 2
(grinding)



CSP 3
(light shotblast)



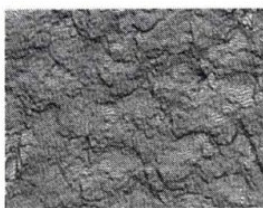
CSP 4
(light scarification)



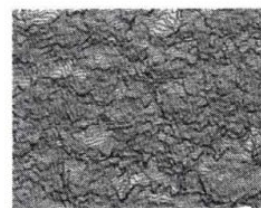
CSP 5
(medium shotblast)



CSP 6
(medium scarification)



CSP 7
(heavy abrasive blast)



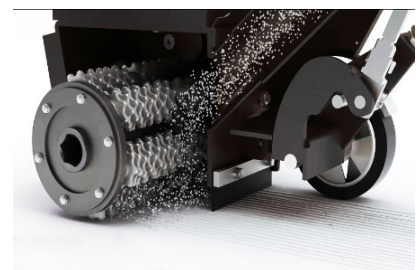
CSP 8
(scabbled)



CSP 9
(heavy scarification)

1.1.5 The processes to eliminate the laitance on the concrete and to open the pore of it, are:

- **Grinding/Milling:** Using a rotary machine with specialty grinding wheels with tungsten carbide; this method is suitable for removing concrete paste and other hard substances. It causes surface erosion by rubbing with stones or hard sanding discs. This removes the softest parts of the surface, for example, surface laitance, which sometimes occurs during concrete pouring or curing. But is not suitable for soft existing coatings or when the friction caused by heat meets this product.
- **Shot blasting:** involves the projection or direct impact of steel grit of different sizes on the concrete's surface. This process produces very little dust. Some water cleaning or vacuuming may be required after the use of this method. This is effective for the removal of concrete surface paste, sealers, and hard coatings. Speed and number of passes over an area determine the depth of removal. Edging and small spaces are not susceptible to this type of removal without small specially designed equipment.
- **Sandblasting:** It uses sand or a type of abrasive shot by compressed air through a nozzle. Sandblasting is recommended for horizontal, vertical, and overhead use. This method is recommended for the removal of the surface of concrete, existing sealers, and hard coatings. The creation of dust may be prohibited by environmental regulation. Vacuum mechanisms are available to remove dust from the air. Wet sandblasting is available that complies with environmental regulations. This method of surface preparation, while highly effective, has lost utility where environmental regulation has restricted its use.
- **Scarifying:** Generally, employs a rotary machine. This method utilizes specialty blades or impact devices to break the surface of concrete or coatings. Several passes over the same area may be required to remove the existing surface completely. In the case of elastomeric surface coatings, blade shaving may be the only effective method of removal where water use is a problem. Most sealers and coatings will not allow removal by acid etching. Most elastomeric coatings tend to "bounce" shot blasting.



Notes:

- *Applicator must decide in each case the most suitable method, depending on the conditions of the substrate or surface or the desired result (always in combination with the primer to be used).*
- *To complete these processes prior to application, the substrate must be cleaned using aspiration equipment, thus avoiding the need to use water as this could hamper adherence of the membrane.*

1.1.6 A Surface defects and imperfections such as voids, small cracks, and blowholes should be repaired before application using **Quickmast 341** epoxy paste to prevent material flowing into them.

1.1.7 Substrate should be free of any standing water and does not suffer from conditions of rising damp, as this will negatively affect the membrane's adhesion.

1.1.8 If the substrate is known to suffer from rising damp, a damp-proof membrane should be used (**Strongcoat DPM**).



1.2 Metal Substrates

1.2.1 Most metallic surfaces (pre-lacquered metal sheets, copper, zinc, galvanized sheets, etc.) will require blast cleaning using either a dry blast of silica sand or water/wet blasting.

1.2.2 Subsequent cleaning of these metals should be carried out using pressurized water or acetone-based solvents to simultaneously clean and remove any grease from the surface.



1.2.3 In many cases, the surface passivation is required before application of the products.

1.2.4 All steel surfaces should be grit blasted to reach a bright, near white finish meeting the requirement of Swedish Standard SA 2 1/2 or according to the SSPC- SP10.

1.2.5 After the abrasion process, and before the waterproofing system application, is necessary to apply corrosion inhibitor products.



1.3 Ceramic Substrates

1.3.1 A dry-cleaning method should be used to avoid water penetration inside the tiling, and between the intermediate layers, with which evaporation is very slow.

1.3.2 The ceramic floor surface is sanded to achieve open pores of the ceramic surface.

1.3.3 If water is used for cleaning, the humidity of the substrate or water retained inside the material's layers should be check, to decide when to continue the application.

1.3.4 All tile joints or sores should be checked, grouted and repaired where required.



- 1.4 Laminated Substrates (bituminous sheets, torch, and felt) \
 - 1.1.1 **DonProof PU-H50** should be applied in several thin coats over the existing material before the regular application with the required performance.
 - 1.1.2 The preparation method will be dependent on the surface finishing of the bituminous sheet:
 - Fine finish sheet backing: general surface cleaning should be performed before applying the primer.
 - Asphalt with a protective film to reflect the sun rays: the film should be removed if possible, as in many cases the heat and pressure generated by the application of the polyurea membrane tear this film away.
 - Asphalts with a protective rough finish: cleaning can be directly carried out.
- 1.5 Painted Substrates
 - 1.5.1 Any peeling or unstuck material on roofs or surfaces with old acrylic paint or waterproofing must be removed by sanding (the dry sanding method is recommended).
 - 1.5.2 The use of a water pressure cleaning requires drying and verification of the humidity levels before applying the membrane.
 - 1.5.3 In all cases, the level of humidity or water retained within these paints and the substrate must be checked due to fractures and peeling or the cleaning process.
- 1.6 Joints and moving cracks:
 - 1.6.1 **DonProof PU-H50** shouldn't be installed over any non-filled/sealed joints or moving cracks.
 - 1.6.2 Open up and clean the existing joints in between the concrete slab and vacuum thoroughly.
 - 1.6.3 All dust, loose and friable material must be removed from all joint voids before application of any joint sealant.
 - 1.6.4 All existing joints such as (expansion, isolation, construction, and control joints) as well as all moving cracks, must be sealed using **Flexseal PU425/PU440**.

2.0 Priming

Priming is done to seal the substrate and significantly improve the adhesion between **DonProof PU-H50** and all kinds of non-porous substrates such as steel, ceramic tiles, bitumen, EPDM, PVC, and asphalt sheets. Adequate evaluation of the substrate conditions will determine the type of priming required, reducing the risk of failures. The choice of primer depends on the substrate surface.

DonProof PU-H50 is designed to be used with **Strongcoat Primer** or **Strongcoat Primer S**, whereas for surfaces with a relative humidity greater than 80% and below 85% **Strongcoat DPM** is recommended.

- 2.1 Immediately prior to priming, the substrate should be thoroughly cleaned to remove any remaining traces of dust or other loose material.

Strongcoat Primer or **Strongcoat Primer S** [For application onto concrete substrates]

- Stir individual components of **Strongcoat Primer S** and ensure that the bottom and sides are thoroughly scraped.

- Transfer the entire content of the hardener into the base and mix for 2 - 3 minutes using a slow-speed mixer fitted with a suitable paddle.
- Apply one coat of the mixed primer, use a brush or short hair lambs wool roller for application to the prepared substrate and allow to cure.
- **Strongcoat Primer** can be applied at a rate of (5 m²/kg per coat) to achieve a dry film thickness of 200 microns per coat.
- **Strongcoat Primer S** can be applied at a rate of (5 m²/kg per coat) to achieve a dry film thickness of 175 microns per coat.



Note: Avoid any primer ponding on the floor.

- If a second coat is required, apply a second coat of the primer within its overcoating time.
- Allow to dry fully for 24 hours before applying **DonProof PU-H50**.
- The primer should be protected from damp, condensation, and water for at least 24 hours.

Strongcoat DPM [For application onto surfaces with high relative humidity/rising damp]

- Stir individual components of **Strongcoat DPM** and ensure that the bottom and sides are thoroughly scraped.
- Transfer the entire content of the hardener into the base and mix for 2 - 3 minutes using a slow-speed mixer fitted with a suitable paddle.
- Use brush or short hair lambs wool roller for application to the prepared surface.
- Prime with 1 - 2 coats of **Strongcoat DPM** depending on surface relative humidity at a rate of (5 m²/kg per coat) to achieve a dry film thickness of 200 microns per coat and allow to dry.
- After the applied layer of **Strongcoat DPM** has been applied and left to cure, apply **Strongcoat Primer or Strongcoat Primer S** as mentioned above.
- Allow to dry fully for 24 hours before applying **DonProof PU-H50**.



Notes:

- *It is recommended to test the adhesion between the substrates and **DonProof PU-H50** on small area on site prior to proceeding with the works in order to ensure that the substrate is well prepared and compatible with the product and primer.*
- *For other types of substrates (Ceramic, Metal, Bituminous, etc.) consult DCP for the best priming options.*



3.0 Application

- 3.1 Stir/mix **DonProof PU-H50** individual components well before use using a drum stirrer to homogenize the pigment and disperse any settlement. Failing to do so may cause color variances, foaming, sticky coating, and negatively affect the performance.
- 3.2 Prevent exposing the material to moisture once opened.

Application machine:

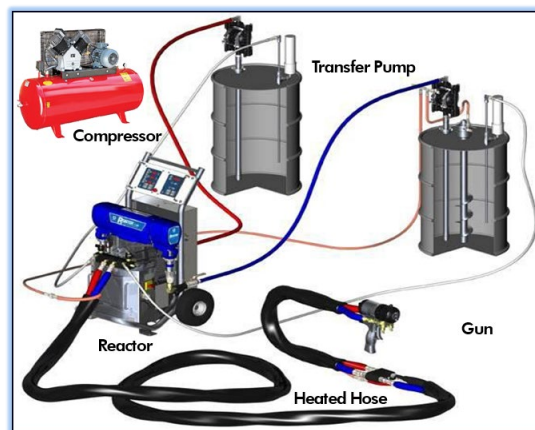
DonProof PU-H50 is hot spray applied; the machine should have the below properties:

- Two components high-pressure heated spray machine (2.500 - 3.000 psi).
- Heater temperature of 70 – 75°C.
- Hose temperature of ±70°C.
- The material transfer pumps shall have 2 times the volume output of spray equipment/gun combination.

	Component A	Component B
Density: ISO 1675	1.11 ± 0.03 g/cm ³	1.09 ± 0.03 g/cm ³
Viscosity: ISO 2555 (@12 rpm)	850 ± 50 cps	1500 ± 400 cps
Mix ratio:		
by weight	100	102
by volume	100	100

Note: Consult DCP's Technical Department for specific recommendations for the application machine.

- 3.3 Insert the pumps into the drums and connect the hoses to the equipment.



- 3.4 Set up the hoses and machine temperatures, both components must be heated up to approximately 70 °C.
- 3.5 Start the equipment following the spray machine manufacturer instructions.

- 3.6 **DonProof PU-H50** should always be spray applied perpendicular to the substrate regardless of whether the surface is horizontal or vertical. Otherwise, it will cause gaps in the layer and an incomplete seal. Apply crossed coat continuously as needed to achieve the desired thickness.



- 3.7 Apply crossed coat continuously as needed to achieve the desired thickness according to the final use.
- 3.8 When utilising a cross-hatch spray pattern, the minimum suggested application thickness for **DonProof PU-H50** is typically 1.5mm.
- 3.9 Recommended consumption is approximate: 1.7 kg/m² to provide 1.5 mm dry film thickness.



- 3.10 To prevent the risk of cracks in the solid membrane, do not exceed 3-4 mm thickness in one single coat.
- 3.11 After being applied, the material is suitable for light foot traffic after about 3 hours, and is completely functional after about 2-3 days according to the final use or technical requirements.

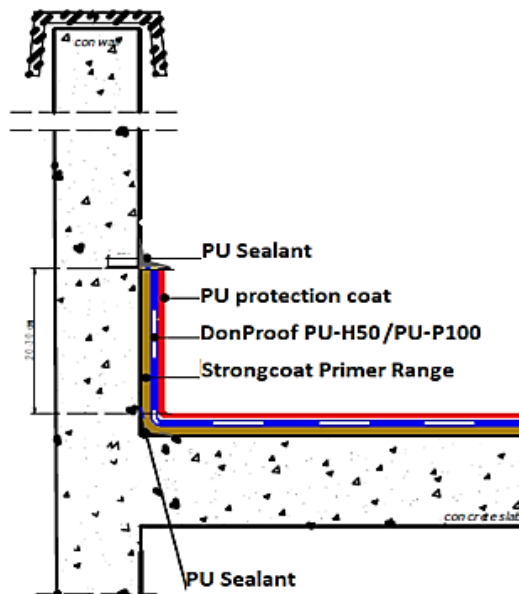


4.0 Protection Coat Application

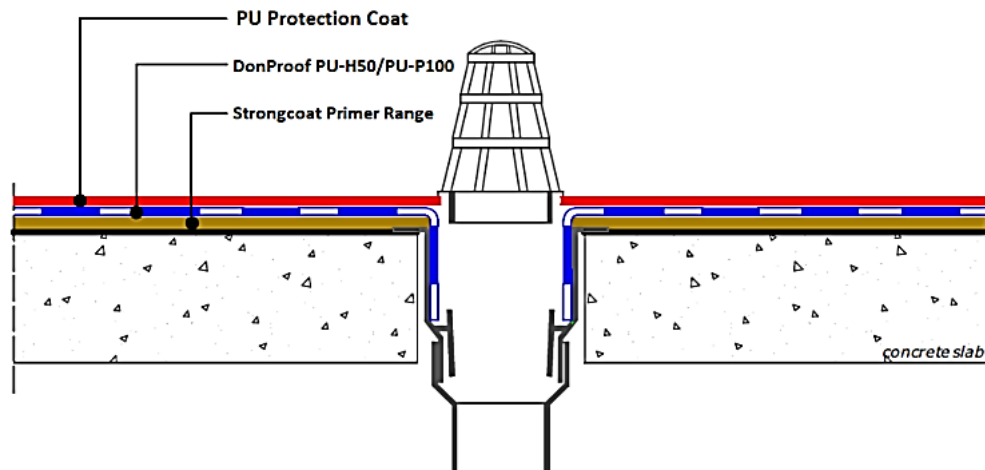
- 4.1 As with all aromatic coatings, **DonProof PU-H50** should be sealed with a suitable polyurethane protection coat such as **Recoat P Ultra** to prevent yellowing due to UV rays exposure. However, this will not cause any negative effect on the physical properties of the product.
- 4.2 Consult DCP's Technical Department for specific recommendations to guarantee the durability

5.0 Application Details

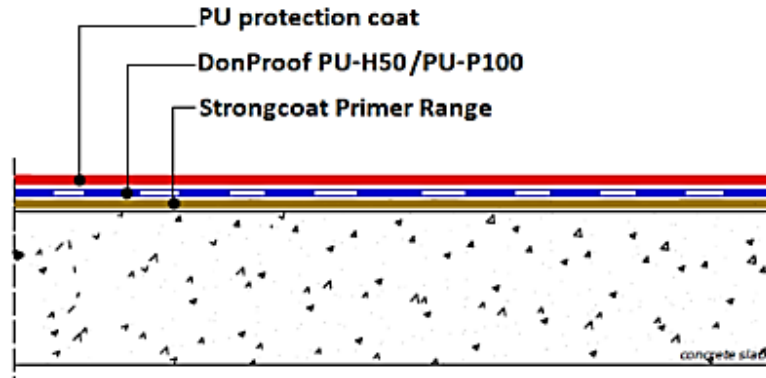
Parapet Flashing



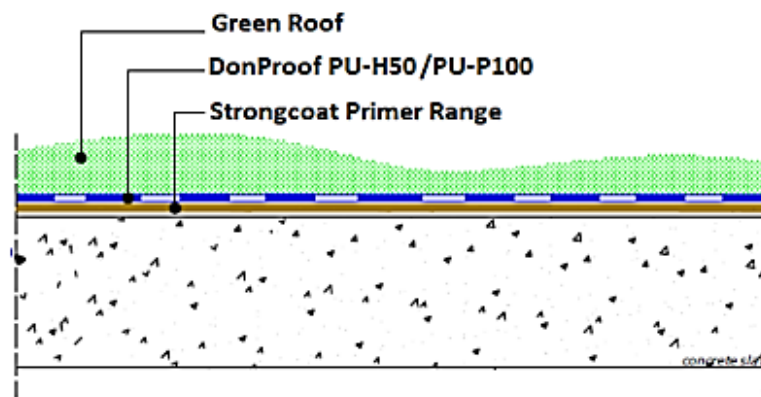
Rain Water Outlet



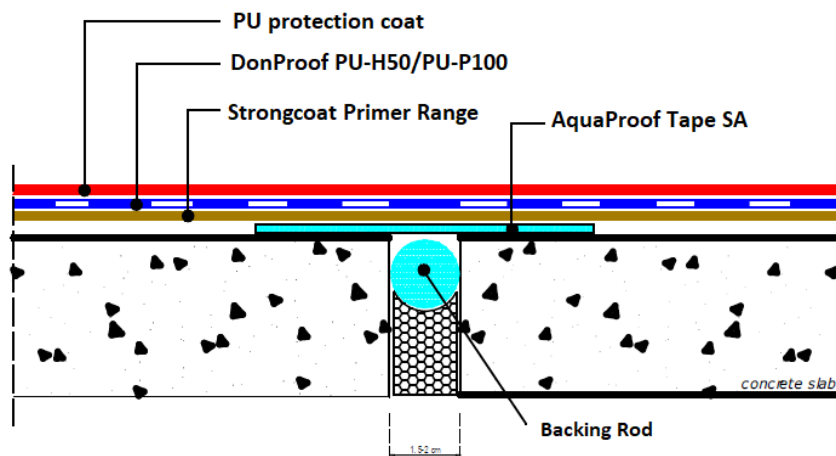
Concrete Surface



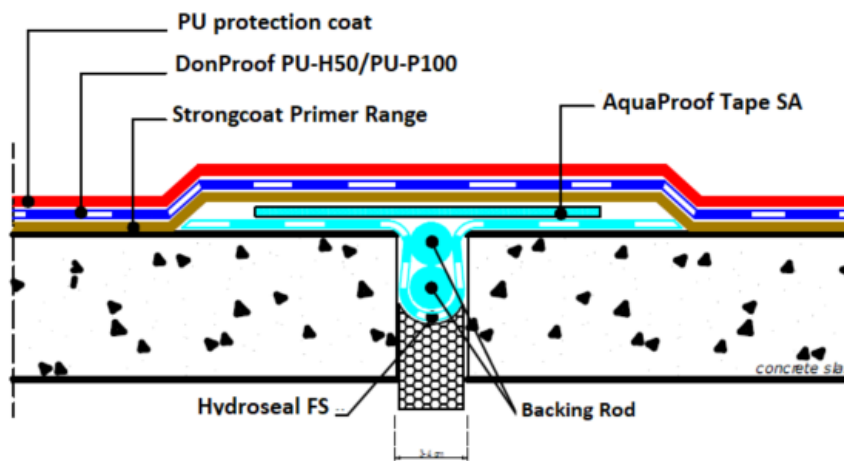
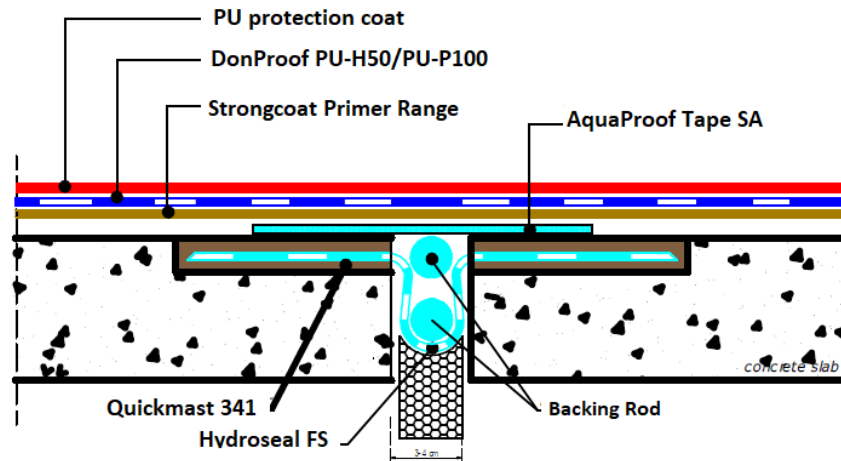
Green Roof



Joints



High Movement expansion Joints



6.0 Cleaning

6.1 Tools and equipment can be cleaned with water.

7.0 Limitations

7.1 Special care should be taken to provide an unbroken coating at external corners and similarly exposed protrusions.

7.2 **DonProof PU-H50** doesn't require any special curing but must be protected from rain, and water until the coating has been cured.

7.3 Application should not be carried out when there is standing or running water.



Section C: Cautions

Health and safety

- Apply in well-ventilated areas. In closed areas use force ventilation and wear approved respirators when necessary.
- **DonProof PU-H50** 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.
- Vapor and atomized liquids are harmful.
- Use rubber gloves, remove them immediately after contamination. Wear clean body covering.
- Use respiratory protection when handling or spraying use an air-purifying respirator.
- Wash thoroughly with soap and water after work and before eating, drinking, or smoking.
- Wear safety goggles to prevent splashing and exposure to particles in the air.
- Waste generation should be avoided or minimized. Incinerate under controlled conditions in accordance with local laws and national regulations

Fire:

DonProof PU-H50 is nonflammable. Do not use near-high heat or open flame.

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 **DonProof PU-H50**. 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.