

# AQUELLA™ 100

## High Performance, Spray Applied Waterproofing for Underground Soil-Retaining Walls

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### Product Description

AQUELLA™ 100 is a sprayable membrane for the waterproofing and protective coating for underground soil-retaining walls such as diaphragm walls, contiguous bore pile walls with tightly-spaced rebar protruding out of the walls. It is spray-applied in a sandwich system between two cast concrete structures.

### Product Advantages

#### Functional

- Penetrative – penetrate within concrete structure
- Cracks Healing – Blocking fine cracks and micro-fissures in the concrete
- Good sealability around penetrations on the wall
- Withstands negative or positive hydrostatic pressure

#### Durable

- Suitable for applications below and above ground water table.
- Protects concrete against seawater and chemicals.
- Weather-resistant

#### Economical

- Fast and flexible application, brush on or spray equipment.
- Apply to dampened substrates or substrates with standing water.
- Standard equipment and maintenance

ITEMS	TYPICAL PROPERTIES	TEST METHOD
Hydrostatic Pressure Resistance	≥7 bar	ASTM D5385
Crack Bridging Capability up to 3.2 mm	Pass	ASTM C1305
Adhesion to concrete substrate	≥2.5 MPa	ASTM D4541
Tensile Strength Elongation	Tensile Strength ≥ 1.5 MPa Elongation ≥ 200%	ASTM D412
Tensile Strength and Elongation after Heat Aging	≤ +/- 10%	DIN 16726
Resistance to Chemicals	Pass	DIN 16726, Modified

## Installation

### Substrate Preparation

- Concrete should be structurally sound, cured 28 days and render 7 days.
- Surfaces should be smooth and free from dust, laitance, loose matter, oil or other contaminants.
- Surfaces should be jet-washed with clean water.
- Pre-dampen the application surface with clean water before application.
- Substrate must be dried temporarily before the application and curing of AQUELLA™ 100 in order for the system to be effective, either by PU grouting or by use of water plug.
- Moisture content of the substrate at any range is acceptable, as long as there is no continuous ingress of water out from the wall.
- Fill large defects, voids, honeycombing, gaps, large pinholes and other coarse surface faults with a high-strength-non-shrink cementitious repair mortar. Allow repairs to cure and dry fully.
- Cracks in walls shall be repaired before the installation of waterproofing commences.
- Dry cracks wider than 0.2mm in the structural concrete shall be repaired. Where it is considered impractical to repair major cracking in this manner, the concrete shall be partially or completely broken out and recast.
- Repair concrete surface with AQUATEK™ Plug XF or appropriate repair grout to stop the water leakage before application.

### Pre-Mixing

- Part A: Mix 20 kg powder of with 7-8 litres of water, using an electrical mixer (400-600 rpm) to mix for 2-3 minutes. The material should be mixed to a thick, creamy, lump-free consistency. Do not over mix. After mixing, the product will experience false set. Remix every 5 minutes to extend the pot life. DO NOT ADD WATER.
- Part B & C: Shake the liquid well and pour around 75% into a clean mixing container. Slowly add the powder while mixing. Mix until a homogenous slurry, free from all lumps, if formed. Scrape any unmixed material from the side of container with a trowel and mix in. Finally, add the appropriate amount of the remaining liquid to achieve the required consistency for application. DO NOT USE PART MIXES. DO NOT ADD WATER, CEMENT, SAND OR OTHER MATERIALS. It is recommended that mechanical mixing (400-500 rpm) should be used for 2-3 mins to ensure proper dispersion of the components.

### Application

- Part A: For vertical applications in the presence of positive or negative water pressure, apply Part A in 2 coats of 0.6 – 0.75 kg/m<sup>2</sup> mixture with a brush or spray gun.
- Part B & C: Apply in 2 coats of 1.0 – 1.25 kg/m<sup>2</sup> mixture with a brush or spray gun. Apply the first coat when Part A is tack free. Before applying the second coat in alternate direction, leave the first coat to cure until tack free condition for approximately 0.5 to 2 hours depending on thickness and environmental conditions.
- If overcoating is done more than 24 hours after applying the previous coat, or the previous coat has already dried out, the surface must be pre-wetted again.

## Coat Thickness & Consumption

	PART A	PART B & C
Thickness per coat (min. 2 coats)	0.4 – 0.5 mm	0.8 – 1.0 mm
Coat Consumption (min. 2 coats)	0.6 – 0.75 kg/m <sup>2</sup>	1.0 – 1.25 kg/m <sup>2</sup>

## Storage

Do not store product exposed to weather. 12 months of shelf-life under dry storage conditions free from moisture.

## Health & Safety

Read and understand the product label and Safety Data Sheet (SDS) for each system component. All users should acquaint themselves with this information prior to working with the products and follow the precautionary statements. SDSs can be obtained by contacting your local GCP representative.

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