Technical Data Sheet
DRYflex 2 Part A

DRYflex 2

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Drytech™
Waterproofing System Engineering

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Waterproofing Bi-component Acrylic Resin

DESCRIPTION

DRYflex 2 is a nontoxic aqueous green colour solution of multi-functional acrylic monomers.
The compound gels in a few seconds or some minutes when associated with an activator/hardener, at the time of use, in the presence or absence of water, the volume of the gel increases or decreases in a reversible manner whilst keeping everything watertight.

FIELDS OF APPLICATION

DRYflex 2 is used in waterproofing works for sealing or veiling waterproofing or in combination with the DRYset system in the Drytech White Tank System. It is approved for use in drinking water treatment plants.
Used in constructions that, in the presence of water, require a very fluid, hydrophilic product with controlled setting times to be injected through holes or injection profiles for the purpose of:

- treating infiltrations and water inflows;
- treating the ground;
- treating underground constructions;
- treating constructions below the water table.

PRESENTATION

DRYflex 2 consists of three products:

Part A: DRYflex 2, the resin.
Parte A1: Accelerator, catalyst liquid for an adjustable time from 10 sec. to 45 min.
Parte B: Hardener powder to be diluted in water.

PHYSICAL-CHEMICAL CHARACTERISTICS	
Density	1.18 ± 0,05 kg/l
pH	6.5 – 6.8
Viscosity	25 - 40 cps

PREPARATION

At the time of application the following components must be prepared:
Component A: mixture of DRYflex 2 Part A and DRYflex Accelerator.
Component B: DRYflex B diluted in 20 litres of water.

IMPORTANT: The addition of accelerator must be done immediately before use. The resin DRYflex 2 mixed with the accelerant should be used within a few hours, otherwise the injection mixture loses its initial characteristics and reactivity of the final gel is less consistent.

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Waterproofing Bi-component Acrylic Resin / Tests and certifications (DOP n. 17R2)

Requirements	Standard	Description	DRYflex 2
Basic requirements	EN1504-5 table 3C	U(S2) = expected use - concrete waterproofing injections W(1) = minimum crack thickness, 0.1 mm (1/2/3/4) = may be injected in dry, damp, wet and full of water cracks (5/40) = temperature of utilisation 5-40°C	Compliant
Impermeability to water	EN 14068	at $2x10^5$ and $7x10^5$ Pa	Compliant
Viscosity	EN ISO 3219	20-30 mPa.s	Compliant
Reactivity	EN ISO 9514	Gelling time between 10 sec and 30 min.	Compliant
Durability, dilatation and expansion	EN 14498	Expansion must reach a constant level, in accordance with standard EN 14498 – state of conditioning A	Compliant
Sensitivity to cycles	EN 14498	No modification of the expansion rate	Compliant
Compatibility with cement	EN 12637-1	Variation of the resistance properties ≤ 20%	Compliant
Behaviour to corrosion	EN 1504-5 table 3C	Without corrosive effects	Compliant Self-certified
Behaviour to fire	BS6853 BS EN ISO 4589-2	Smoke emission <0.005 m^2/g in accordance with BS6853: 1999 Annex D8.3 Inflammability: oxygen index >90, in accordance with BS EN ISO 4589-2: 1996: Part 2	Compliant Self-certified
Compatibility with drinking water	BS 6920-1: 2000	Smell and taste of the water: < 1 aspect of the water: colour < 0.6 turbidity: < 0.09 presence of micro-organisms: < 0.4 mg/l content of harmful substances to public health morphology of cells: satisfactory colour of culture media: normal single-layer confluence: 100% release of metals: compliant with the standard	Compliant Self-certified
Toxicity	VwVws 17/5/1999	Class of danger for the waters: (WGK) 1 (1 = low risk; 5 = high risk) Toxicity mammals LD_{50}: > 2000 mg/kg Aquatic toxicity EC: > 1000 mg/kg Biodegradability: Biodegradable In accordance with OECD 301 B Bio-accumulativity: non bio-accumulative	Compliant Self-certified

DRYflex resin was subjected to compliancy tests by independent Institutes, acknowledged by the EU.
The true and complete version of the certificates may be requested from Drytech SA, Bedano CH, +41 91 960 23 40.

Waterproofing Bi-component Acrylic Resin / Tests and Certifications

Basic requirements	EN1504-5 tabella 3C

This resin has been specifically designed for concrete waterproofing injections.
Thanks to its viscosity, it can be used in cracks with a thickness of 0.1, which is the minimum value considered by this standard. It can be injected into cracks in any of the following conditions: dry, damp, wet or waterlogged.
The resin also remains stable in hot climates and can be used at temperatures of between 5 and 40°C

Watertightness	EN 14068

The resin polymerizes without changing in volume and tends to swell up in the presence of water, guaranteeing watertightness even in the presence of a high water head.
Pressure resistance is assessed in accordance with the EN 14068 standard, which requires sample pieces of concrete, with a crack running through it filled with the product to be tested, to be subjected to cycles of pressure.

Viscosity	EN ISO 3219

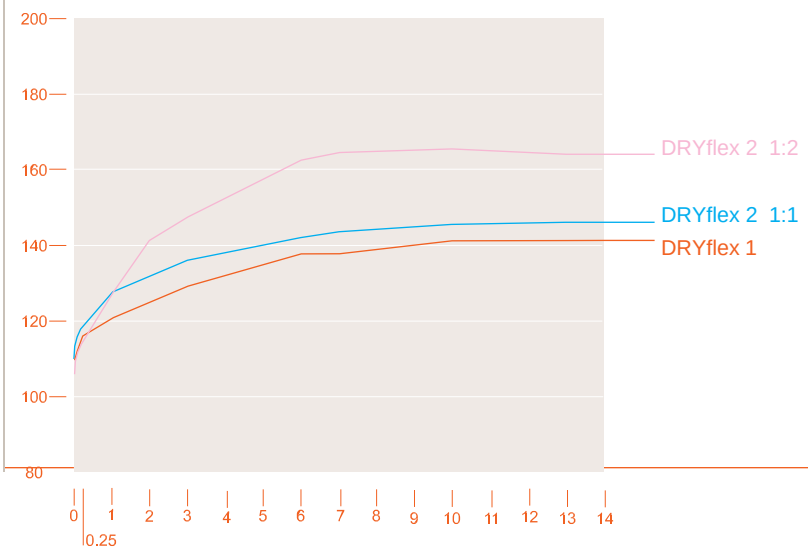
Low viscosity is an important parameter because it allows resin to penetrate more deeply into cracks or hollows, even in concrete with a low degree of porosity.

Reactivity	EN ISO 9514

The ability to adjust the setting time is also an important factor. Long setting times allow the resin to spread, whilst shorter setting times are needed, in the presence of running water, to allow the product to set without being washed away.

Durability, dilatation and expansion	EN 14498

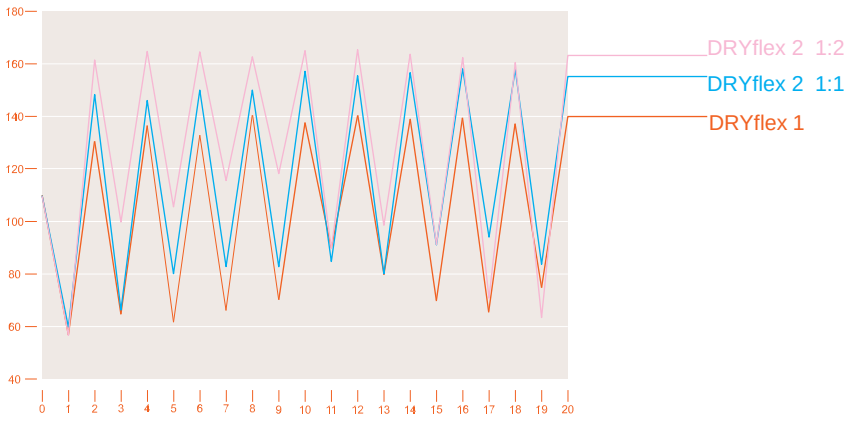
The ability to absorb water guarantees the saturation of hollow areas, but to prevent extrusion phenomena it must not be excessive and must reach a constant maximum level.
This characteristic is tested on samples of gel, 160x40x5 mm in size, prepared in accordance with the EN 14498 standard. The weight and size of the prepared samples are recorded. The samples are immersed in water and their weight and size are measured at defined intervals. The test lasts 14 days, on completion of which swelling of the sample must have reached a constant maximum value.



Waterproofing Bi-component Acrylic Resin / Tests and Certifications

Sensitivity to cycles	EN 14498

This is one of the most critical parameters for hydrogel. It must be capable of absorbing water and returning to its initial volume, after drying out, to guarantee watertightness over time. The cycles defined by the standard simulate the way the resin will behave over numerous years of use.
Some products available on the market suffer permanent shrinkage if they become dry and this cannot guarantee watertightness.
This characteristic is tested on samples of gel, 160x40x5 mm in size, prepared in accordance with the EN 14498 standard. In this case though the samples are placed alternately for 6 days in water and 1 day in a stove at 50°C. On completion of 10 cycles, the test samples must maintain the initial rate of expansion.



Compatibility with concrete	EN 12637-1

As it is designed for concrete waterproofing, the resin must be compatible with the components found in concrete. Tests are conducted in accordance with the EN 12637-1 standard (6.2 and 7.3.1) on test samples with a thickness of 15 mm. 3 test samples are immersed in water and 3 in a solution of calcium hydroxide. After maximum 28 days of immersion the expansion must have joined a constant level and the weight be at least +10% of the initial value.

Corrosion behaviour	EN 1504-5 table 3C

The resin must be resistant to corrosion in the presence of reinforcement rods or other metallic elements such as pipes. Our products have been subjected to the strictest tests to prove their non-corrosive nature.

Fire behaviour	BS6853 BS EN ISO 4589-2

The product guarantees safety even in the event of a fire as it is not flammable and does not produce toxic gases. Other waterproofing products used are comburent and above all produce highly toxic smoke.

Compatibility with drinking water	BS 6920-1: 2000

Our products can be used to waterproof structures in contact with drinking water as they do not release harmful substances and do not alter the smell or taste of water.

Toxicity	VwVws 17/5/1999

The non-toxic nature of the product not only guarantees safety during its installation and the use of the waterproofed structure, it also guarantees no risk of pollution in the event of accidental spillage of the unreacted product.

STORAGE

Store the material at a temperature of about 18-20°C.
The mixture of component B has a shelf life of short duration.
For DRYflex B-1 this is of about 7 days in winter and in summer up to 3 days.

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