

DARAWELD[®] BA3

Bonding Agent

Product Description

DARAWELD[®]BA3 is a liquid, water-based dispersion, based on a styrene-acrylic polymer system. It is used to modify cementitious mixes significantly increasing bond, tensile and flexural strengths, whilst improving resistance to abrasion, chemical attack, water and vapour transmission.

Uses

- Heavy duty trowelled floors
- High strength bonding of concrete
- Waterproof renders for tiling and brickwork
- Resurfacing old concrete or granolithic floors. Self levelling floor screeds
- High strength repair and patching mixes
- Mortar lining of areas subject to abrasive or mild chemical action, effluent ducts, tanks, etc
- Waterproof slurry coats to level and seal walls, floors and tanks

Typical Properties

DARAWELD BA3	
Appearance	white liquid
Specific Gravity	1.03 at 20 °C

Advantages

- DARAWELD BA3 dramatically improves adhesive, compressive and tensile strengths of cementitious mixes.
- Greatly increased impact and abrasion resistance
- Self levelling, flowing consistency mixes can be produced to enable placement under difficult conditions.
- Mixes containing DARAWELD BA3 have low permeability, and are suitable for waterproof sealing and lining of tanks, pools, etc.
- Chemical resistance to oils, grease, salt solutions and mild acids is very good.

Method of Use

Surface Preparation: In all situations the surface to be treated or coated, must be clean, sound, and free from dirt, dust and other loose particles. All oil and grease contaminants must be removed.

It is recommended that edges of concrete repair areas be squared off/cut back to allow for maximum adhesion and structural soundness of the repair. Surface preparation of exposed steel should ensure that the surface to be coated is rust-free before application.

Concrete surfaces should be saturated with water before application, to minimise absorption into the substrate. Free standing water must be removed.

Alternatively, if the substrate is porous and particularly for flooring applications, it is recommended that the surface be sealed with DARAWELD BA3, diluted with 2 parts of water.

In the majority of applications using wet mixes, bond coats are not required, but for semi-dry mortars, a bonding coat should be used.

Never allow bond coats to dry before applying the mortar screed, render or repair material. If this happens then scratch mark the coating and apply a further wet bond coat.

Dosage

DARAWELD BA3 can be used neat or diluted with water. Levels quoted in the "Application" section are given only as a guide. Dosage will vary depending upon the application.

Application

1. **Bond Coating Objective:** Bond/adhesion coat for concrete, brick and masonry surfaces, to accept cementitious renders, screeds or repair mixes. Waterproof slurry coating for concrete surfaces.

Mix Design

Cement, OPC/SRC: 50 kg

DARAWELD BA3 : 16 litres

Coverage: 1-2kg/m² equivalent to 0.4 litres DARAWELD BA3 per m²

Application:

Mix the cement into the DARAWELD BA3 until cohesive. Use a stiff brush to apply thick coat to the wetted surface. Work well into the surface. Application of concrete renders and mortars should take place while the bond coat is still wet. DO NOT apply over dry bond coats, in this case hand scabble the dry coat before applying a further bond coat. Bond coats remain 'tacky' for approximately 20 minutes depending on ambient temperature.

Typical Properties:

Bond strength, Slant Shear Method:

BS 6319, Part 4: 25.5 N/mm²

2. Water proof Slurry Objectives: Water proof slurry render for sealing basements, tunnels, reservoir, pipes and areas where water seepage is undesirable. Protection of metal against corrosion.

Mix Design:

Cement, OPC/SRC: 50 kg

Sand 0 – 0.3mm: 25 kg

DARAWELD BA3: 25 litres

Coverage: 2-3 kg/m² equivalent to 0.6 litre DARAWELD BA3 per m²

Application

Apply the polymer modified slurry mix to the well dampened substrate using a brush or trowel and spread evenly at a thickness of 0.5mm–2mm. Leave the first coat for 6–24 hours until it has hardened sufficiently before applying a further application at the same thickness. Use the appropriate number of coats to ensure complete coverage.

Typical Properties:

Bond Strength, Slant Shear Method:

BS 6319, Part 4: 24.0 N/mm²

Flexural Strength, BS 6319 Part 3: 11.0 N/mm²

Compressive Strength, BS 6319 Part 2: 50.2 N/mm²

3. Concrete/Flooring Repairs Objective: Trowelled repair mortars of plastic consistency to provide impact and abrasion resistant patching to flooring, stairways, walls column, etc.

Mix Design:

Floor Repair thickness:	15-25mm	10-20mm
Cement, OPC:	50 kg	50 kg
Sand Grade M:	100 kg	100 kg
Gravel 3mm:	100 kg	100 kg
DARAWELD BA3:	15 litres	10 litres
Water:	7 litres	10 litres

Application:

Dampen/wet the prepared substrate, apply a bond coat and while still WET place the screed, repair or render mix using wooden float to apply and compact. Repair mixes are best placed at a semi-dry consistency, rammed into place. Finish with a steel float. Good curing is essential to prevent drying and cracking.

TYPICAL PROPERTIES	COAT 1	COAT 2
Abrasion and Impact Resistance	High	Medium
Compressive Strength, BS 6319, Part 2	65.0 N/mm ²	67.3 N/mm ²
Flexural Strength BS 6319, Part 3	12.7 N/mm ²	13.0 N/mm ²

4. **Polymer Concrete Objective:** Production of flooring grade wet concrete mixes with improved adhesion and flexural strength, without excessive air entrainment.

MIX DETAILS	MIX 1	MIX 2
	Control	DARAWELD BA3
Dosage	0	20 % by weight of cement
W/C	0.70	0.53

Application:

DARAWELD BA3 must be incorporated into the concrete mix at the mixing/batching plant because of its high range water reducing effect. Concretes produced in this way behave similarly to conventional concrete although they have a slightly shorter usable life.

Also there is a tendency for any residues left in the mixer to dry quickly and should therefore be cleaned as soon as possible.

TYPICAL PROPERTIES	MIX 1	MIX 2
Initial Slump	90 mm	160 mm
Air Content	1.8 %	2.8 %
Compressive Strength, BS 6319, Part 2, N/mm ² at 3 days	17.5	25.5
at 7 days	24.5	34.5
at 28 days	32.0	45.5
Flexural Strength BS 6319, Part 3, N/mm ²	3.7	6.9

The placement technique is the same as for normal cohesive concrete mix designs, and depends on the size of pour, extent of reinforcement, degree of vibration available, etc.

Curing

Through curing is essential on all exposed surfaces, particularly in dry or windy conditions. One or two coats of a membrane sealer will provide curing. Alternative methods such as water misting, polythene sheeting and similar techniques are also suitable.

Health and Safety

For further information see the DARAWELD BA3 SDS (Safety Data Sheet) or consult GCP.

Packaging

DARAWELD BA3 is supplied in 25 litre and 210 litre free, non-returnable containers.

Storage

DARAWELD BA3 is a stable non-flammable product. DARAWELD BA3 should be stored in original containers or suitable closed tanks, preferably out of direct sunlight and protected from extremes of temperature.

Storage Life in Manufacturer's Drums:

12 months from date of manufacture.

Technical Service

The Technical Service Department of GCP Applied Technologies is available to assist you in the correct and best use of our products. These resources and advice are at your disposal entirely without obligation. Please contact:

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