



# EP 315

Epoxy based structural bonding agent

**Pack Size**

**30Kgs & 6 Kgs**

## TDS Technical Data Sheet

### Product Description

EP 315 is a solvent free, two-component, epoxy based structural bonding agent with long pot life for use at high temperatures. It is moisture tolerant and can bond wet or dry materials to damp or dry substrates. Complies with ASTM C 881-78 Type II, Grade 2 Class B+C.

### Uses

EP 315 may only be used by experienced professionals.

As a structural bonding agent and adhesive for:

- Concrete elements (including bonding fresh to hardened concrete)
- Hard natural stone
- Ceramics, fibre-cement
- Mortar, bricks, masonry, render
- Steel, iron, aluminium
- Wood
- Polyester / fibreglass and epoxy resin materials
- Glass

### Advantages

- Easy to mix and apply
- Solvent free
- Very good adhesion to many construction materials
- Suitable for dry and damp concrete substrates
- Workable at low temperatures
- High initial and ultimate mechanical strengths
- Longer pot life
- Thickness up to 1 mm
- Impermeable to liquids and water vapour
- Hardens without shrinkage
- Different coloured parts (for mixing control)
- No primer needed

## Product Information

Product declaration ASTM C881-78, Type II, Grade 2, Class B+C

Chemical base	Epoxy resin and selected fillers
Shelf life	12 months from date of production
Storage conditions	The product must be stored in original, unopened and undamaged sealed packaging in dry conditions at temperatures between +5 °C and +40°C. Protect from direct sunshine.
Colour	Part A+B mixed concrete grey Part A white Part B dark grey
Density	~1.70 kg/L (Part A+B mixed, at +27 °C)
Viscosity	≤ 5 m·Pa·s

## Technical Information

Compressive strength	Curing time Compressive strength 3 d ≥ 35 MPa 7 d ≥ 55 MPa (ASTM D695) All values at curing temperature +30 °C
Tensile strength	≥ 18 MPa (14 days / +30 °C)
Tensile adhesion strength	≥ 10 MPa (14 days, moist cure / +30 °C)

## Application Information

Mixing ratio	Part A : Part B = 2 : 1 (by weight)
Consumption	~0.3–0.5 kg/m <sup>2</sup> This figure is theoretical and does not allow for any additional material due to surface porosity, surface profile, variations in level or wastage etc.
Ambient air temperature	+5 °C min. / +40 °C max.
Dew point	Beware of condensation. Steel substrate temperature during application must be at least +3 °C above dew point.
Substrate temperature	+5 °C min. / +40 °C max.
Substrate moisture content	Cementitious substrates must be dry or matt damp (no standing water). Brush the adhesive well into the substrate if matt damp.
Pot life	4 hours at +30 °C (FIP 5.1) The potlife begins when the resin and hardener are mixed. It is shorter at high temperatures and longer at low temperatures. The greater the quantity mixed, the shorter the potlife. To obtain longer workability at high temperatures, the mixed adhesive may be divided into portions. Another method is to chill parts A+B before mixing them (not below +5 °C).
Open time	> 7 hours at +30 °C

## Important Considerations

- EP 315 resins are formulated to have low creep under permanent loading. However due to the creep behaviour of all polymer materials under load, when using adhesive for structural applications, the long term structural design load must account for creep.
- Generally the long term structural design load must be lower than 20-25 % of the failure load. A structural engineer must be consulted for design calculations for specific structural applications.
- When using multiple units during application, do not mix the following unit until the previous one has been used in order to avoid a reduction in workability and handling time.
- For heavy components positioned vertically or overhead, provide temporary support.

## Application Instructions

### SUBSTRATE QUALITY

#### Concrete / masonry / mortar / stone

Concrete and mortar must be at least 3-6 weeks old. Substrate surfaces must be sound, clean, dry or matt damp. Free from standing water, ice, dirt, oil, grease, coatings, laitance, efflorescence, old surface treatments, all loose particles and any other surface contaminants that could affect adhesion of the bonding agent.

#### Steel

Surfaces must be clean, dry, free from oil, grease, coatings, rust, scale, all loose particles and any other surface contaminants that could affect adhesion of the bonding agent.

#### Wood

Substrate surfaces must be sound, clean, dry and free from dirt, oil, grease, coatings, all loose particles and any other surface contaminants that could affect adhesion of the bonding agent.

#### Polyester / epoxy / ceramics / glass

Surfaces must be clean, dry, free from oil, grease and any other surface contaminants that could affect adhesion of the bonding agent.

### SUBSTRATE PREPARATION

#### Concrete / masonry / mortar / stone

Substrates must be prepared mechanically using suitable abrasive blast cleaning, needle gunning, light scabbling, bush hammering, grinding or other suitable equipment to achieve an open textured gripping surface profile.

#### Steel

Surfaces must be prepared mechanically using suitable abrasive blast cleaning, grinding, rotating wire brush or other suitable equipment to achieve a bright metal finish with a surface profile to satisfy the necessary tensile adhesion strength requirement. Avoid dew point conditions before and during application.

#### Wood

Surfaces must be prepared by planing, sanding or other suitable equipment.

#### Polyester / epoxy

Surfaces must be prepared by abrading using suitable equipment.

#### Ceramics / glass

Surfaces must be prepared by abrading using suitable equipment. Do not apply to siliconised substrates.

#### All substrates

All dust and loose material must be completely removed from all substrate surfaces before application of the product by vacuum / dust removal equipment.

### MIXING

Prior to mixing all parts, mix part A (resin) and part B (hardener) briefly using a mixing spindle attached to a slow speed electric mixer (max. 300 rpm). Add part B (hardener) to part A and mix parts A+B continuously for at least 3 minutes until a uniformly coloured smooth consistency mix has been achieved. To ensure thorough mixing, pour materials into a clean container and mix again for approximately 1 minute. Over mixing must be avoided to minimise air entrainment. Mix full units only. Mixing time for A+B = 4.0 minutes. Mix only the quantity which can be used within its pot life.

### APPLICATION METHOD / TOOLS

EP 315 to the prepared substrate by brush, roller, spray or trowel ensuring uniform and complete coverage. For optimum adhesion, it is recommended to apply adhesive to both substrates that require bonding. On damp prepared concrete substrates, always apply by brush and work the product well into the substrate. For bonding wet fresh concrete to hardened prepared concrete, place the concrete whilst the EP 315 layer is still 'tacky'. If the product becomes glossy and loses 'tackiness', apply another coat of EP 315 and proceed to place concrete.

### Data Reliability

All technical data provided in this document are based on laboratory tests. Actual performance may vary due to factors beyond our control.

### Regional Compliance

Product specifications may vary based on local regulations. Please refer to the local Product Data Sheet for precise information.

### Legal Disclaimer

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