

# MasterStrength I444

Thixotropic paste epoxy binder and adhesive

## Material Description

**MasterStrength I444** is a two pack, thixotropic epoxy binder which is ideal as a structural adhesive, bonding agent and binder for epoxy mortars. It is supplied as a solvent-free, smooth, non-sag paste. **MasterStrength I444** is suited to applications in the water treatment industry and is approved for contact with potable water, tested to the latest AS/NZS 4020-18.

## Areas of Application

- Application to horizontal or vertical surfaces to fill rough surfaces to 5mm.
- Use as a general purpose adhesive for bonding and or repairing most materials.
- Structural bonding Master Builders Solutions repair mortars and concrete on vertical surfaces.
- Bonding metal to metal, concrete, timber etc.
- Patching and repairing cracks and defects in concrete and masonry with clearances of up to 5mm.
- Mix with aggregates to provide a repair mortar or trowelable skim coat.

## Characteristics and Benefits

- High bond strength – tenacious adhesion to correctly prepared surfaces, including concrete, steel & timber.
- Excellent chemical resistance – maximum protection against penetration or attack by water, mineral acids, oils, fats, fuels and strong alkali and salt solutions
- High early and ultimate strengths – a hard, tough adhesive which sets rapidly which helps to reduce production shutdown.
- Non shrink – suitable for use in critical, precision applications.
- Easy to use – on horizontal, vertical or overhead surfaces because of its paste consistency.
- Solvent free - low VOC
- Multi-purpose - Can be applied to wet and damp surfaces
- Approved to AS/NZS 4020:2018 (tested to the maximum exposure level) - suitable for contact with potable water.

## Properties

### Chemical Resistance

**MasterStrength I444** resists most common organic and inorganic acids in diluted form. Also resistant to alkalis, water, oils, grease, etc. Chemical resistance depends on the chemicals involved, their concentration, temperature and degree of exposure. Good housekeeping practices such as immediate clean-up of all spillage will greatly extend the service life.

|   | Part A             | Part B      | Mixed             |
|---|--------------------|-------------|-------------------|
| Supply form                               | thick paste        | thin liquid | thixotropic paste |
| Colour                                    | light grey         | clear       | light grey        |
| Mix ratio (v/v)                           | 3 : 1              |             |                   |
| Specific gravity                          | 1.13               |             |                   |
| Volume solids                             | 100%               |             |                   |
| Application temperatures                  | 5°C - 35°C         |             |                   |
| <b>Typical –at 23°C</b>                   |                    |             |                   |
| Compressive Strength                      | Binder only        | 24 hours    | 56 MPa            |
| Compressive Strength                      | Binder only        | 7 days      | 92 MPa            |
| Compressive Strength                      | 1:1 with F5 Filler | 7 days      | 88 MPa            |
| Compressive Strength                      | 1:2 with F5 Filler | 7 days      | 78 MPa            |
| Tensile Strength                          | 7 days             |             | 60 MPa            |
| Bond Strength                             | 7 days             |             |                   |
| - Concrete to concrete. Concrete fails at |                    |             | 2.9 MPa           |
| - Steel to steel                          | 7 days             |             | 16 MPa            |
| Compressive Modulus                       | 7 days             |             | 3.0 GPa           |
| Heat Deflection Temperature               |                    |             | 72°C              |

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## Application

### Surface Preparation

Concrete should be well cured, at least 28 days old and have a minimum compressive strength of 25MPa. Clean surface thoroughly to remove all contaminants such as dirt, oil, grease, wax, rust and loose coatings. Remove laitance and roughen surface to ensure good bonding by chipping, scabbling, grit blasting to obtain a CSP 4 or greater.

Allow to dry thoroughly, for maximum absorption and adhesion.

### Mixing

Proportion part kits accurately, mix only what can be used in less than 30 minutes. Thoroughly stir Part A, add Part B (3:1 parts by volume respectively) and blend thoroughly using a slow speed mixer fitted with a suitable paddle, until a streak free uniform grey colour is achieved.

### Method of Use

As an adhesive - immediately spread the mixture over the surface and promptly place other surface to be adhered into tight contact. Use clamps where necessary until hardened. As a patching mortar – wipe trowel frequently with a cloth dampened with Thinners to aid finishing.

Kiln dried sand or MasterTop F5 aggregate may be added to repair mortar at a thickness greater than 5mm, or where a stiffer mix is required. The maximum aggregate size should approximate to 1/3 of the depth.

As a wet to dry bond coat – on vertical or sloping surfaces, trowel mixed **MasterStrength I444** over prepared surface at 3-4m<sup>2</sup> per litre depending on surface profile. Mix and apply cementitious material before **MasterStrength I444** “tacks off”.

Apply mortar or concrete to **MasterStrength I444** after 40 – 80 minutes, depending on ambient conditions. Applied mortar or concrete should be cured as per manufacturer’s instructions.

As a primer (for MasterSeal traffic and Roof applications) – on vertical or sloping surfaces apply at a rate of 3-6m<sup>2</sup> per litre depending on surface profile (a CSP 2-3 maybe suitable for this application) and apply in an even coat.

If application of the membrane will not proceed whilst the **MasterStrength I444** is still tacky a light application of MasterTop Filler F5 should be broadcast into the still wet primer to give a mechanical key to subsequent coatings.

As a skim coat – on vertical surfaces trowel mixed

**MasterStrength I444** over prepared surface to fill the pin holes, profile etc. MasterTop F5 or alternative fillers may be mixed into **MasterStrength I444** to achieve the desired result depending on thickness and finish required.

## Estimating Data

One litre of **MasterStrength I444** will cover approximately 1m<sup>2</sup> at 1mm of thickness.

| MasterStrength I444 wet film thickness |                                 |                |                       |                              |
|--|---------------------------------|----------------|-----------------------|------------------------------|
| L                                      | Thickness in mm /m <sup>2</sup> | m <sup>3</sup> | pails /m <sup>3</sup> | m <sup>2</sup> /mm thickness |
| 1                                      | 1mm                             | (0.001)        | 1000                  | 1 m <sup>2</sup>             |
| 5                                      | 5mm                             | (0.005)        | 200                   | 5 m <sup>2</sup>             |

## Packaging

**MasterStrength I444** is packed in a 1 litre kit (larger 5L kits are available on request) Part A 0.75 litre Part B 0.25 litre.

## Storage & Shelf Life

**MasterStrength I444** has a shelf life of 24 months. Store out of direct sunlight, clear of the ground on pallets protected from rainfall.

## Precautions

For the full health and safety hazard information and how to safely handle and use this product, make sure that you obtain a copy of the Safety Data Sheet (SDS) from our office or website.

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## Disclaimer

MasterStrength-I444-ANZ-V2-I125

### STATEMENT OF RESPONSIBILITY

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