

# RIW TOUGHSEAL ECO

Toughseal ECO is a solvent free polymer modified epoxide coating, supplied as a two part pack of base and hardener in pre-measured proportions. LEED v4 Environmental Quality Low VOC Compliant.

## BENEFITS

- | Water and water vapour barrier
- | Water and water-vapour barrier
- | Abrasion resistant
- | Seamless membrane
- | High substrate adhesion
- | Chemically and UV resistant
- | Low VOC content

## APPLICATIONS

- | Ground floors
- | Computer floors
- | Plant rooms and Bunded Areas
- | Basement and Sub-structures
- | Superstructures
- | Swimming pool / wet rooms and other wet areas

## APPLIED TO

- | Concrete
- | Masonry
- | Steel

# RIW TOUGHSEAL ECO

## TYPICAL USES

Toughseal ECO is typically used to provide a water and water-vapour proof barrier, or to give protection against abrasion, fresh and salt water, carbon dioxide, alkalis and dilute mineral acids. It is resistant to U.V. light and atmospheric attack but should perhaps not be used where aesthetics are important. Suitable uses for Toughseal ECO include, raised access floors, ground floor slabs, swimming pool wet areas and shower areas, plant rooms, sewage plants and marine applications. Toughseal ECO is compliant with LEED v4 EQ Credit requirements for Low-Emitting and Low Content VOC Materials. When dressed with a suitable aggregate it will provide a slip retardant wearing surface or a waterproof key for tile bedding or renders. The coating can be used to protect iron and steel against corrosion and concrete against carbonation. Toughseal ECO should not be used in contact with potable water systems.

## DURABILITY

Subject to normal conditions of use Toughseal ECO, when covered, will provide an effective barrier to the transmission of liquid water and water-vapour for the life of the structure.

## SPECIFICATION

J30 - Liquid Applied Tanking/Damp Proofing in accordance with NBS Clauses.

Please consult RIW for further information.

## INDEPENDENT AUTHORITY

Toughseal ECO has been tested in accordance with BS 476: Part 7: 1997, "Fire tests on building materials and structures, method for classification of the surface spread of flame of products", and is Classified as Class 1.

CE and UKCA Marked to BS EN 1504-2.

For Declaration of Performance see:

<http://www.riw.co.uk/technical-downloads/ce-marking>

Compliant with LEED v4 and v4.1 BETA VOC standards, contact the RIW office for more details

## ANCILLARY PRODUCTS

**Cementfill FC** - Cement based waterproof fairing coat and repair mortar for filling minor holes, voids and defects.

**Cementfill HB** - Cement based waterproof high build repair mortar for profiling and providing fillets.

**Cleaning Solvent** - a liquid for cleaning tools, equipment, etc. (must not be used as 'thinners')

**Flexiseal Pro** - a flexible liquid applied membrane for use over Toughseal ECO when reinforcing joints etc - see separate data sheet.

**Toughseal Reinforcement Tape** - a tape for use over Toughseal ECO when reinforcing joints etc internally, prior to tiling.

## CONSTRUCTION

All construction should conform with the Building Regulations, Codes of Practice and British Standards in current use at the time the building is being constructed. In particular, it is recommended that reference is made to BS 8102:2022.

### PREPARATION

**All surfaces:** Should be smooth, clean, dry (to a depth of 1-2mm), sound and free from frost, oil, grease, condensation and other contamination. Any voids or hollows must be made good to a flush finish with a suitable filler. Any sharp edges or high points should be eliminated. External corners should be chamfered or rounded where required, to assist application.

**Concrete surfaces:** Horizontal surfaces should preferably be smooth, however lightly tamped (3-4 mm peak to trough profile), brushed or floated surfaces may also be acceptable. Surface laitance should be removed by suitable means where necessary.

**Masonry:** Should be sound with joints flush pointed or 'bagged out' with Cementfill or similar before the membrane is applied. Open textured surfaces should be sealed with Cementfill FC or a sand/cement slurry to provide a suitable surface. If existing surfaces are very rough, they may require rendering.

**Metal Surfaces:** Should be wire brushed or sand blasted, and pre-treated with a steel primer, prior to application of the membrane. Corroded metal should also be treated with an anti-corrosive primer. Toughseal ECO is compatible with all commonly encountered steel primers, including alkyd, chlorinated rubber and epoxy based materials. Consult RIW for galvanised steel and/or other treatments.

## PERFORMANCE & COMPOSITION

Form	Two part epoxy coating
Colour	Black or Grey
Specific Gravity	1.15g/ml (mixed product)
Solids content	100% (w/w)
Flash Point	200°C (Base) 130°C (Hardener)
Water vapour transmission rate ASTM D1653	Black - 2.41 g/m <sup>2</sup> /24 hr Grey - 2.25 g/m <sup>2</sup> /24hr
Water vapour permeability ASTM D1653	Black - 0.1144 g/m <sup>2</sup> /24hr/mmHg Grey - 0.1068 g/m <sup>2</sup> / 24hr/mmHg
Coverage*	4m <sup>2</sup> /litre/coat
Number of coats	Two
DFT of coating	0.50mm for two coats
Curing time	Touch dry: 6 hours min 7 days (full chemical resistance)
Overcoating time	Minimum: when touch dry Maximum: 7 days
Application temperature limits	5-35°C
Preparation of liquid	Stir well by mechanical means
Pot life	20 mins at 20°C
Shelf life (Temperate climate)	12 months
<b>PHYSICAL/CHEMICAL RESISTANCE (SPILLAGES)</b>	
U.V. Light	High
Heat (Dry)	130°C
Heat (in water)	80°C
<b>SOLVENTS</b>	
White spirit/Diesel/ Petrol	Resistant
<b>INORGANIC ACIDS</b>	
10% Sulphuric acid	Resistant
10% Nitric acid	Resistant
10% Hydrochloric acid	Resistant
<b>INORGANIC CHEMICALS</b>	
Ammonia solution	Resistant
50% Sodium hydroxide	Resistant

Further details on resistance to immersion, and on other chemicals, is available from the RIW Technical Department. The above performance figures are typical and should not be considered a product specification. \*Figures quoted are theoretical coverage areas. Actual coverage may vary depending on nature of substrate.

## APPLICATION

**General:** Application of Toughseal ECO should not be attempted in temperatures below 5 °C. Toughseal ECO should not be thinned and should be applied as supplied.

The base component of Toughseal ECO should be mechanically stirred for 3 minutes, and then the hardener component added and mixed thoroughly until a uniform colour is achieved.

Do not split base or hardener components. Toughseal ECO should be applied immediately after mixing. Apply in two coats at a minimum application rate of 4m<sup>2</sup>/litre per coat.

Good ventilation is necessary to obtain a proper cure. At 20 °C, Toughseal ECO will require 6 hours minimum before overcoating. Curing will stop at temperatures below 5 °C. The second coat should be applied within seven (7) days of the first, if this is not possible advice should be sought from the RIW Technical Department.

Reinforcement at angles, joints, pipes etc, should be carried out using Flexiseal Pro, over the Toughseal ECO at a rate of 1m<sup>2</sup>/kg (within seven days of application) or Toughseal Reinforcement Tape, as appropriate.

**Manual:** Toughseal ECO should be applied using a stiff brush or medium pile roller.

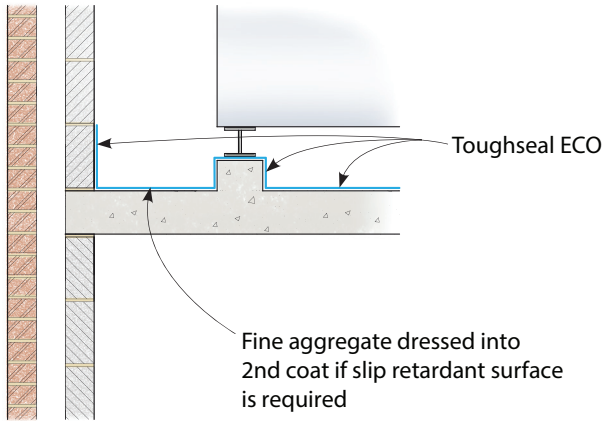
**Spray:** For details of specialist applicators, please consult the Technical Department.

## SPECIFIC USES

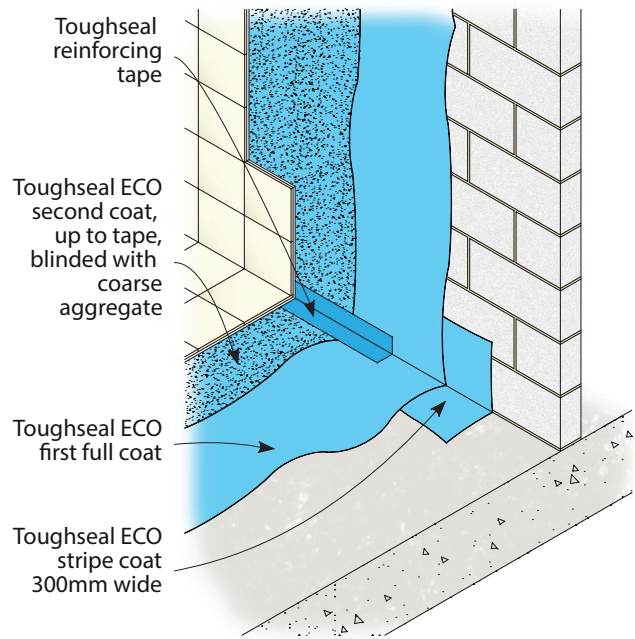
**Plant Rooms & Wearing Surfaces:** (Detail 1). Toughseal ECO can be used as a waterproof and chemically resistant wearing surface to plant rooms, bunded areas, pedestrian walkways etc. The second coat should be blinded with a suitable fine aggregate (see back page) if required at a rate of 1m<sup>2</sup> /kg to provide slip retardant properties. Blinding should be carried out before the membrane begins to "skin over".

**Tile Bedding/Render Key:** (Detail 2). Toughseal ECO can be used to provide a water and water vapour barrier behind tiles, render or beneath thin levelling screeds. Reinforce the first coat of Toughseal ECO, if required, with Toughseal Reinforcing Tape (see General Ancillaries brochure), prior to the application of the second coat. The second coat of the membrane should be blinded with a suitable course aggregate (see back page) at a rate of 1m<sup>2</sup> /kg to provide a key for the finishes. Blinding should be carried out before the membrane begins to "skin over".

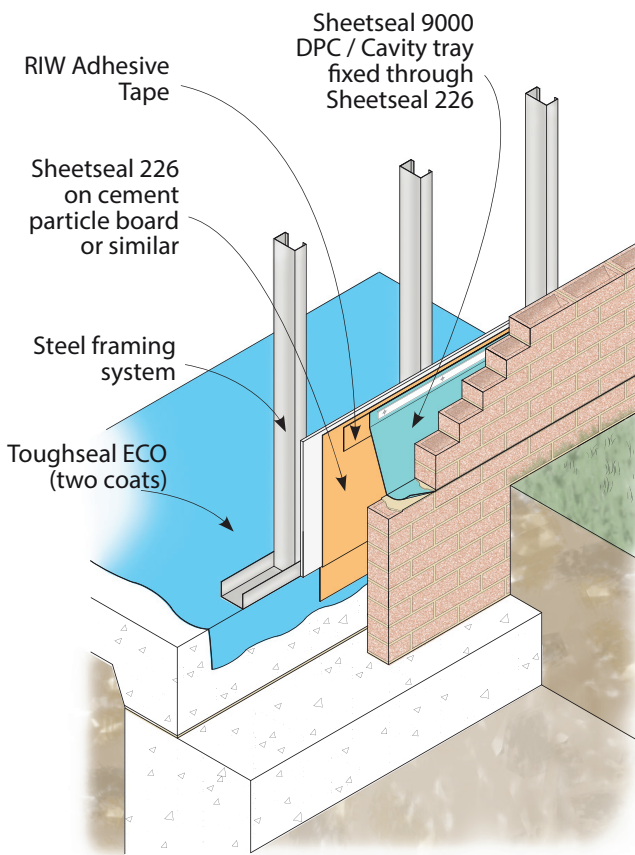
**Surface Applied Damp Proof Membrane:** (Detail 3). Toughseal ECO may be used as a surface applied damp proof membrane under raised access floors and/or floor finishes at ground level. In this situation the material relies very heavily on a good bond with the substrate to resist water pressure so surface preparation should therefore be of a high standard.



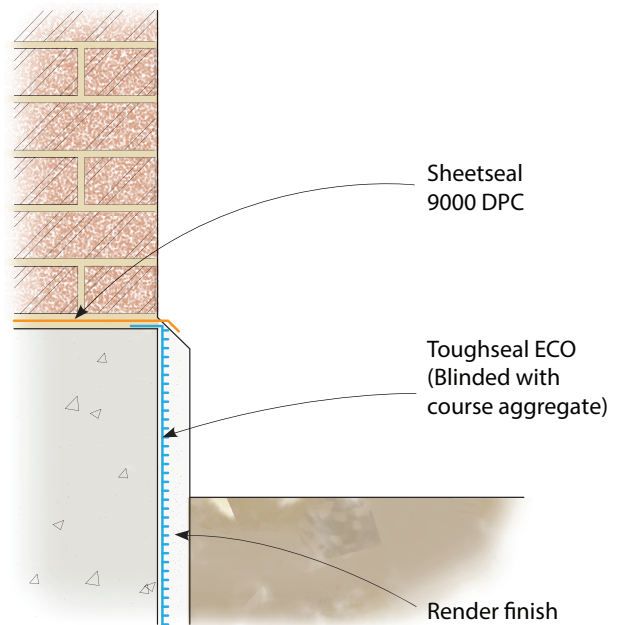
**Detail 1 - Plant room detail, horizontal wearing surface**



**Detail 2 - Tile Bedding/Render Key**



**Detail 3 - Ground Floor DPM**



**Plinth detail**

## SAFETY

Toughseal ECO products can affect sensitive skins. Gloves or barrier cream should always be used by operatives and hands should be thoroughly washed at the end of each working period. Normal levels of air change are acceptable, however wear a suitable respirator if application is in an enclosed space. Do not allow the products to enter watercourses. Full health and safety instructions are contained on the product material safety data sheets, and these must be referred to before use.

For details of Cleaning Solvent see separate material safety data sheets.

## SUPPLY

### AVAILABILITY

All RIW products can be obtained through Builders merchants or approved stockists. A list of approved stockists is available from RIW's offices.

### PACKAGING

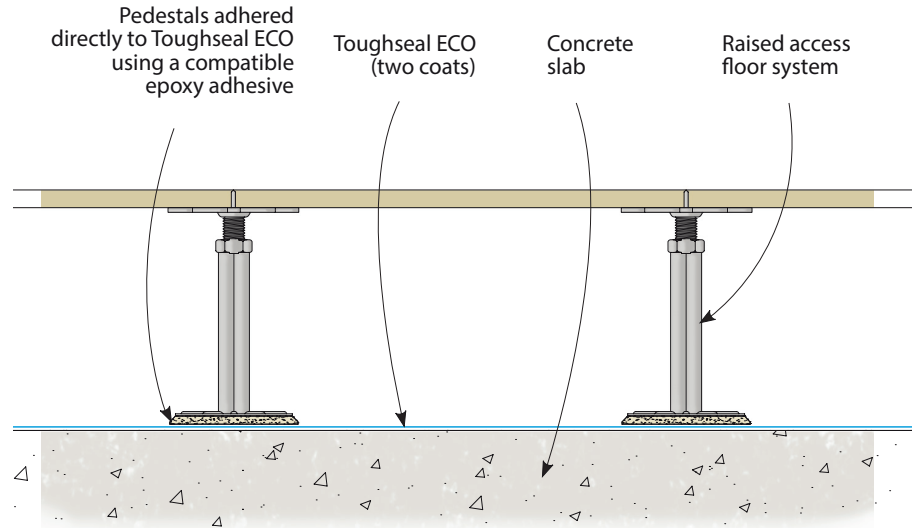
Toughseal ECO (two part)	5 & 20 litre packs
Cleaning Solvent	5 litre containers
Toughseal Reinforcement Tape	100mm wide rolls x 20m long

### STORAGE

Keep in a cool, dry, well ventilated area. Keep containers tightly closed. Store in correctly labelled containers. The shelf life of the product when unopened and stored correctly is 12 months.

## TECHNICAL SERVICES

The RIW Technical Department is available to advise on individual projects and to prepare or assist in the preparation of specifications and drawings. A list of experienced applicators of RIW materials is available from RIW's offices.



## Raised access floor

## AGGREGATE

### COURSE AGGREGATE

To provide a 'key' for following wet trades, such as tiling or rendering, a crushed, angular and dried aggregate graded to 0.9-1.4 mm or 1-3 mm (or similar) would be suitable.

### FINE AGGREGATE

To provide a 'slip-retardant' finished surface, a kiln dried silica or quartz sand graded to 0.5-0.1 mm (or similar) would be preferred.

The information in this literature was correct at the time of going to press. However, we are committed to continually improving our products and reserve the right to change product specifications.

For the latest information, please consult RIW. Conditions of use are beyond our control, therefore we cannot warrant the results to be obtained.

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**waterproof** RIW