

# RIW TOUGHSEAL

Toughseal is a solvent free polymer modified epoxide coating, supplied as a two part pack of base and hardener in pre-measured proportions.

## BENEFITS

- l Water and water vapour barrier
- l Abrasion resistant
- l Jointless membrane
- l High substrate adhesion
- l Chemically resistant
- l Class 1 Fire rating
- l U.V. resistant

## APPLICATIONS

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

## APPLIED TO

- l Concrete
- l Masonry
- l Steel

# RIW TOUGHSEAL

## TYPICAL USES

Toughseal 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 include, raised access floors, ground floor slabs, swimming pool wet areas and shower areas, plant rooms, sewage plants and marine applications. 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 should not be used in contact with potable water systems.

## DURABILITY

Subject to normal conditions of use Toughseal, 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 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.



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**13**  
0086-CPR-597751

EN 1504-2: Surface Protection Systems - Coating  
Protection against Ingress (PIC) Rigid trafficked  
system

Water Vapour Permeability: SD<0.1 Class 3  
Adhesion strength: 2.68 MPa

## 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.

**Aggregate, Grade 1-** a coarse grit to provide a 'key' for following wet trades, such as tiling or rendering.

**Aggregate, Grade 2-** a fine grit to provide a 'slip-retardant' finished surface.

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

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

**Toughseal Reinforcement Tape-** a tape for use over Toughseal 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 8102:2009.

### 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 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)<br>130°C (Hardener)   |
| Water vapour transmission rate<br>ASTM D1653    | Black - 2.41 g/m <sup>2</sup> /24 hr<br>Grey - 2.25 g/m <sup>2</sup> /24hr               |
| Water vapour permeability<br>ASTM D1653         | Black - 0.1144 g/m <sup>2</sup> /24hr/mmHg<br>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<br>7 days (full chemical resistance)                              |
| Overcoating time                                | Minimum: when touch dry<br>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<br>(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/<br>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 should not be attempted in temperatures below 5°C. Toughseal should not be thinned and should be applied as supplied.

The base component of Toughseal 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 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 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, over the Toughseal at a rate of 1m<sup>2</sup>/kg (within seven days of application) or Toughseal Reinforcement Tape, as appropriate.

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

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

## SPECIFIC USES

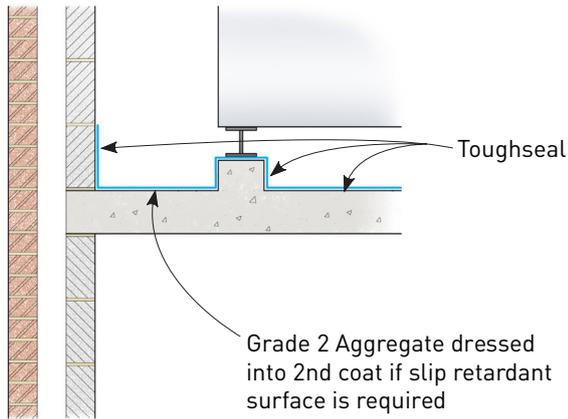
**Plant Rooms & Wearing Surfaces:** (Detail 1).

Toughseal 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 Aggregate Grade 2 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".

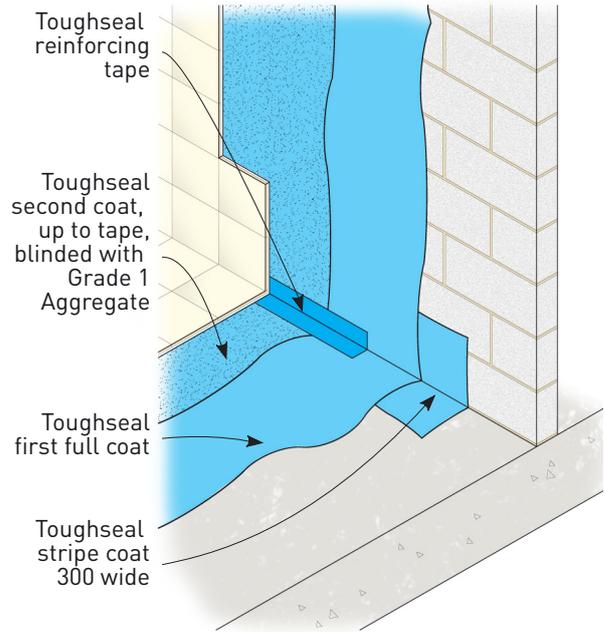
**Tile Bedding/Render Key:** (Detail 2). Toughseal can be used to provide a water and water vapour barrier behind tiles, render or beneath thin levelling screeds. Reinforce the first coat of Toughseal, if required, with Toughseal Reinforcing Tape, prior to the application of the second coat. The second coat of the membrane should be blinded with Aggregate Grade 1 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". For tiling onto timber/plasterboard substrates, refer to Tilesafe data.

**Surface Applied Damp Proof Membrane:** (Detail 3).

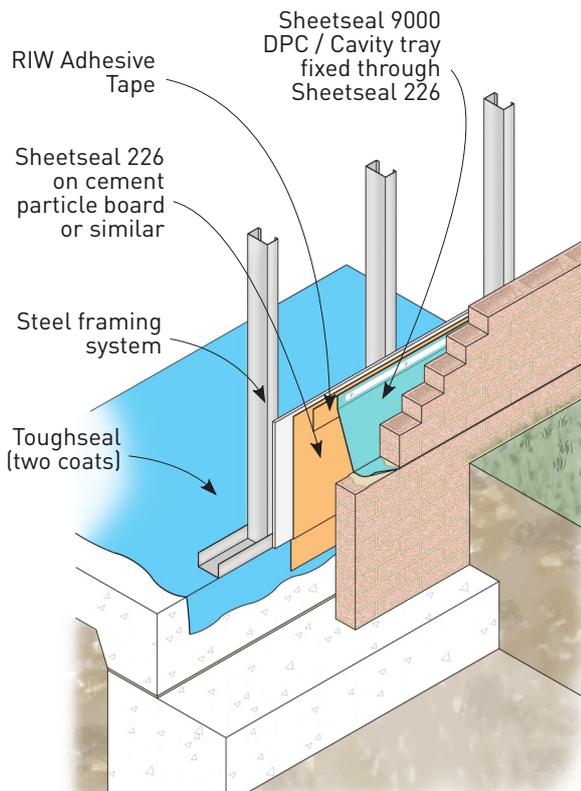
Toughseal may be used as a surface applied damp proof membrane under raised access floors and/or floor finishes at ground level. In this situation the material relies very heavily on a good bond with the substrate to resist water pressure so surface preparation should therefore be of a high standard.



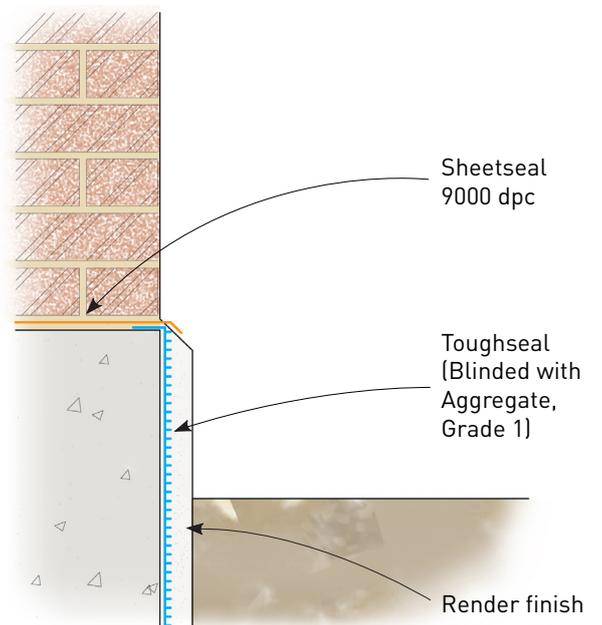
**Detail 1 - Plant room detail, horizontal wearing surface**



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



**Detail 3 - Ground Floor DPM**

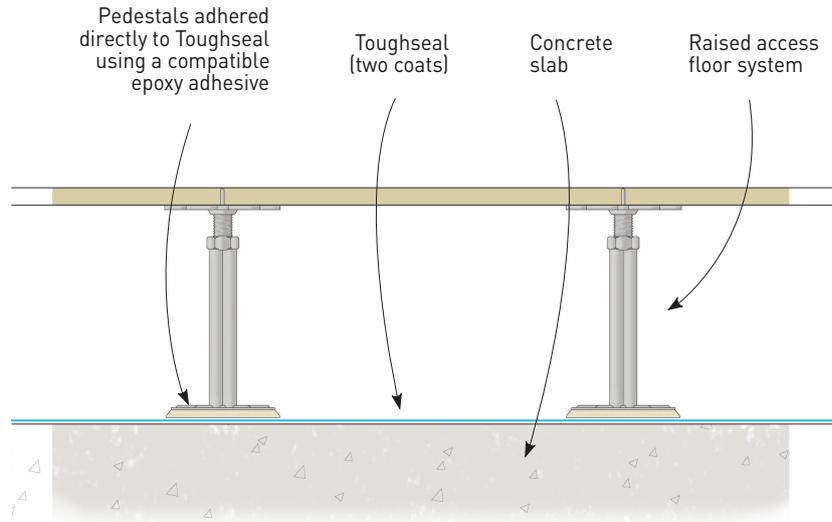


**Plinth detail**

## SAFETY

Toughseal 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 Aggregates and Cleaning Solvent see separate material safety data sheets.



## Raised access floor

## 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 (two part)         | 5 & 20 litre packs |
| Aggregate (Grades 1 & 2)     | 25kg bags          |
| Cleaning Solvent             | 5 litre containers |
| Toughseal Reinforcement Tape | 15m rolls          |

### STORAGE

The shelf life of unopened containers stored in dry warm conditions 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.

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.

## RIW

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**waterproof** RIW