

# RIW DOUBLE DRAIN

Double Drain is a cold applied combination of impermeable high density polyethylene sheet and permeable geotextile filter fabric.

## BENEFITS

- └ Prevents ground water reaching structure
- └ Isolates structure from surrounding earth
- └ Eliminates necessity for granular backfill
- └ High drainage capacity
- └ High impact resistance, providing protection to the primary membrane

## APPLICATIONS

- └ Basement and Sub-structures
- └ Retaining walls
- └ Reservoirs
- └ Podiums

## APPLIED TO

- └ Concrete
- └ Masonry
- └ Primary membrane

# RIW DOUBLE DRAIN

## TYPICAL USES

Double Drain is typically used to isolate the structure from the surrounding soil and relieve hydrostatic pressure by promoting the flow of ground water away from the face of the structure (see Detail 1). Double Drain will not only provide excellent protection to the primary membrane against backfilling and root penetration, but can also increase the structures thermal insulation. Typical installations include external tanking, retaining walls, reservoirs and podium deck/terrace areas.

## DURABILITY

Subject to normal conditions of use, Double Drain provides effective protection to the primary membrane against backfilling, and will promote drainage of water away from the building for the life of the structure. Sub-soil drainage systems must be maintainable and able to discharge water away from the structure.

## SPECIFICATION

J40 - Flexible Sheet tanking/Damp Proofing in accordance with NBS Clauses.  
Double Drain may also be specified in R12 or R16 if preferred.  
Please consult RIW for further information.

## INDEPENDENT AUTHORITY



**RIW Limited**  
**Arc House, Terrace Road South, Binfield,**  
**Bracknell, Berkshire, RG42 4PZ, England**  
**13**  
0171-CPR-1215

EN 13252: Geotextile related product for drainage (D)  
in drainage systems

Tensile strength properties (minimum):

MD 9.0kN/m

CMD 7.0kN/m

Compression creep (EN ISO 25619-1): 1.2mm

Water flow capacity (EN ISO 12958): 1.3 l/sm

Resistance to oxidation (ENV ISO 13438)

100% residual

Durability: Cover within 4 months of installation

Predicted to be durable for a minimum of 25 years in natural soil with  $4 < \text{pH} < 9$  and soil temperature  $< 25^{\circ}\text{C}$

## PERFORMANCE & COMPOSITION

Form	0.5mm thick high density profiled polyethylene sheet
Colour	Black
Filter material	Polypropylene fabric
Overall thickness	8 mm
Roll size	2m x 15m long rolls
Weight	0.58 kg/m <sup>2</sup>
Laps:	70mm
Water vapour resistance of polyethylene sheet	1800 m <sup>2</sup> .s. GPa/kg
Permeability of filter fabric	130mm/s
Tensile strength	>7 kN/mm <sup>2</sup>
Elongation at break	>10%
Maximum drainage capacity	2.3 litres/sec/m length
Working temperature	-50°C to 80°C
Maximum compressive strength	200 kN/m <sup>2</sup>
Deformation under long term loading	25% maximum (at 50 kN/m <sup>2</sup> )

The above performance figures are typical values and should not be considered a product specification.

## ANCILLARY PRODUCTS

RIW supply a range of ancillary products for use with Double Drain which include:

**Adhesive Tape** - a 150mm double sided tape for adhering the Double Drain to the primary membrane or prepared substrate.

**Top Edging Strip** - a medium density profiled polyethylene sheet which protects the top edge of the Double Drain and prevents clogging.

**X Cramps** - a fixing aid for locating and mechanically securing the system to the substrate.

**Roof Drain** - suitable for use as part of a 'green roof system'.

## CONSTRUCTION

### GENERAL

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 BS8102:2009.

### PREPARATION

**All surfaces:** Should be clean, dry and free from contaminants before applying the Double Drain.

### APPLICATION

**General:** Double Drain should be applied to the outer face of the structure, with the geotextile filter fabric facing outwards. The product may be applied vertically or horizontally, as preferred.

**Walls:** Apply horizontal bands of the Adhesive Tape to the structure at the proposed top edge of the Double Drain (normally 50mm below ground level) and at 2 metre centres below. Unroll a few metres of the Double Drain horizontally, hold straight, and draw tight to avoid wrinkling. Apply pressure to the product along the wall, to seal to the Adhesive Tape. See also X-Cramps below.

**Horizontal surfaces:** Roll out the product, to cover the required area, and overlap as below.

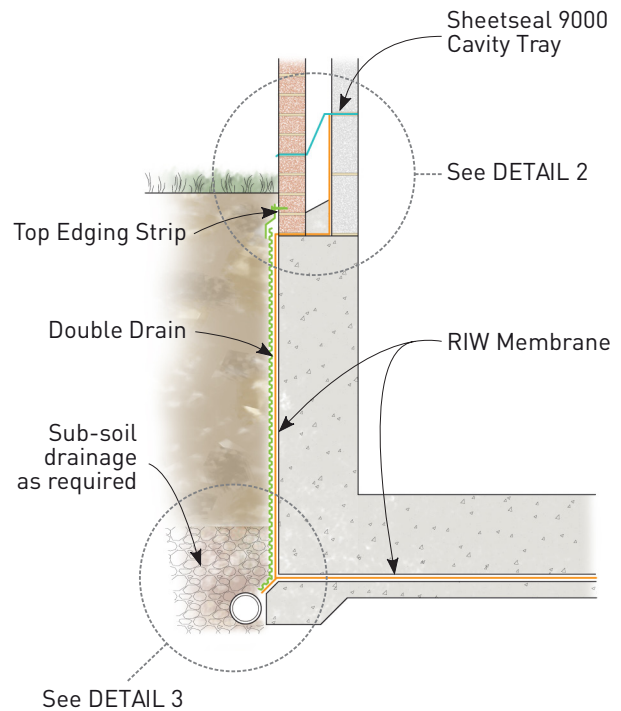
**Overlapping:** Peel back the filter fabric from 75mm from the vertical edge of the existing Double Drain. Lap the next roll onto the existing by 70mm. Overlay the filter fabric previously released onto the newly installed Double Drain and stick down with 75mm square patches of the Adhesive Tape at two (2) metre centres. This method can be repeated for horizontal overlaps, where required. (The lower sheet should always be installed under the upper sheet).

**Upper edge:** Top Edging Strip is used to protect the top edge of the membrane, and is fixed to the structure using nails. Obviously, these must not be allowed to puncture the primary membrane (see Detail 2). Sheetseal 226 may be used to 'seal' the edges if required, please consult Technical Department for further information.

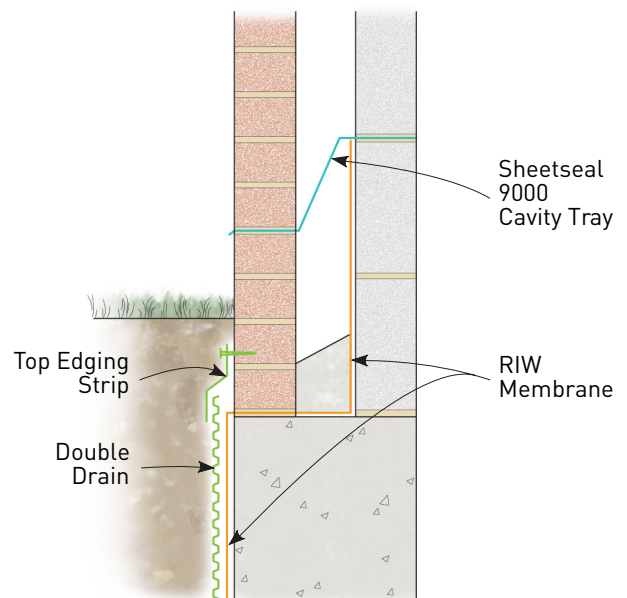
**Lower edge:** A perforated land drain should be installed, as part of a sub-soil drainage system, up against the lower edge of the Double Drain. Peel back the filter fabric as necessary, wrap it over the land drain, and hold in place with granular fill prior to backfilling (see Detail 3).

**Service entries:** A secure link between the Double Drain and the primary membrane can be achieved by using Cavity Drain Sealing Rope.

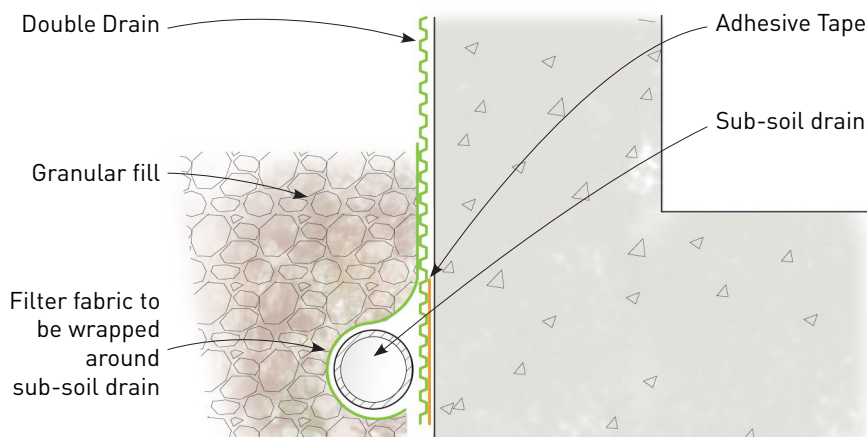
**X-Cramps:** Provided there is not a primary membrane on the surface, then Double Drain can be fixed using X-Cramps and nails at 250mm centres along the top edge only (nails not supplied).



**Detail 1 - External Drainage**



**Detail 2 - Top of Wall**



**Detail 3 - Bottom of Wall**

## SPECIFIC USES

Double Drain can normally be used as an alternative to Protection Board. Not only will the Double Drain provide protection, it will also deflect the majority of ground water away from the primary membrane. It will isolate the structure from the surrounding earth and relieve hydrostatic pressure, all of which will enhance the performance of the primary membrane.

## SAFETY

Full health and safety instructions are contained on the product material safety data sheets and these must be referred to before use.

## 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

Double Drain	2m wide x 15m long rolls
Adhesive Tape	150mm wide x 15m long rolls
Top Edging Strip	2m lengths
X-Cramps	Bags of 60

## STORAGE

There are no special requirements but rolls should be kept upright, under cover and protected from extremes of temperature.

## TECHNICAL SERVICES

The 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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# DOUBLE DRAIN ANCILLARIES

## X CRAMP

### DESCRIPTION

X Cramp is manufactured from black polyethylene. The 'X' Cramp fits precisely between four of Double Drain's studs and therefore transmits loading from the Double Drain to the nail very effectively. It has a hole size of 3.5mm diameter and the X Cramp has the same height as the net stud height.

### APPLICATION

X Cramps are used to fix Double Drain to external basement walls which are without membranes. For best fit and fixing strength, remove filter fabric from the area of Double Drain to be fixed, place and fix the X Cramp, then replace filter fabric.

### PACKAGING

60 No. per bag

## ADHESIVE TAPE

### DESCRIPTION

Adhesive Tape is a double-sided bitumen/rubber self-adhesive tape with a removable silicone release paper one side and a thin polyethylene removable sheet on the other. Adhesive Tape is used to temporarily adhere Double Drain to the primary vertical membrane, prior to backfilling. It is also used in patches to re-adhere the filter fabric in place at overlaps.

### APPLICATION

Remove release papers, and place between primary membrane and Double Drain. The product can be easily cut with a craft knife or similar.

### PACKAGING

150mm wide x 15 metre long rolls

## TOP EDGING STRIP

### DESCRIPTION

Top Edging Strip is manufactured from black medium density polyethylene. It has an L - shaped profile of size 10 x 42 mm and is supplied in lengths of 2 metres. Top Edging strip covers the air gap at the top edge of Double Drain. It also provides a good edge for render on the wall above, if required.

Top Edging Strip prevents earth from entering the air gap. It also resists water penetration, but is not defined as waterproof.

### APPLICATION

Top Edging Strip is tough but pliable, even in low temperatures. It is predrilled with 3 mm diameter holes at 200mm centres, and can be easily cut with a craft knife or scissors.

## PERFORMANCE & COMPOSITION

Profile	L-shaped 10 x 42mm
Thickness	2.5mm
Weight	110g/m
Colour	Black

### PACKAGING

2 metre length

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