

The Irish Agrément Board is designated by Government to issue European Technical Approvals.

Irish Agrément Board Certificates establish proof that the certified products are 'proper materials' suitable for their intended use under Irish site conditions, and in accordance with the Building Regulations 1997 to 2002.

The Irish Agrément Board operates in association with the National Standards Authority of Ireland (NSAI) as the National Member of UEAtc.

DRAFT



PRODUCT DESCRIPTION

This certificate relates to Rhinoplast Super Radon Barrier, which is a co-polymer virgin grade LDPE/MDPE blown film membrane with a unit mass weight of 356g/m². The product is used as part of radon/gas protection systems in buildings.

USE

Radon (incl. Rn-222, Rn-220, RnD) is a naturally occurring radioactive gas, which enters buildings from the underlying soil. The gas can accumulate within a building to such a concentration as to constitute a health hazard.

Radon is excluded from buildings using passive and active systems. The provision of a suitable protection system, designed and installed by competent personnel, will substantially reduce the risk of a building having radon activity.

Passive control systems consist of a radon resisting membrane extending across the whole of the building, including the floor and walls. These systems should also incorporate an underfloor ventilated sump or sumps, which can be subsequently converted into an active control system by the use of suitable ventilation fans.

A radon resisting membrane when installed in accordance with this Certificate will also act as a damp proof membrane to protect the building against the ingress of moisture from the ground.

MANUFACTURE AND MARKETING

The product is marketed by:

Principal Building Products Ltd
Railmill Way, Rotherham S32 3XH
United Kingdom

The product is manufactured under contract in the UK on behalf of Principal Building Products Ltd.

The product is distributed in Ireland by:

Tradecraft
Unit 5, Baldonnell Business Park
Baldonnell, Co.Dublin
Tel: 00353 (1) 458 6233
Fax: 00353 (1) 458 6235
Email: sales@tradecraft.ie
Web: www.tradecraft.ie

1.1 ASSESSMENT

In the opinion of the Irish Agrément Board (IAB), the Rhinoplast Super Radon Barrier is satisfactory for the purposes defined above, and meets the requirements of the Building Regulations 1997 to 2002 as indicated in Section 1.2 of this Certificate.

1.2 BUILDING REGULATIONS 1997 - 2002

REQUIREMENTS

D1 & D3 - Materials and Workmanship

D3 - The Rhinoplast Super Radon Barrier, as certified in this Irish Agrément Board Certificate, is comprised of 'proper materials' fit for their intended use. (See Part 4 of this Certificate)

D1 - The Rhinoplast Super Radon Barrier, used in accordance with this Irish Agrément Board Certificate, meets the requirements for workmanship.

A1 - Loading

The Rhinoplast Super Radon Barrier installed in accordance with this Irish Agrément Board Certificate will not adversely affect the designed safety and deflection characteristics of a building.

B3 (3) - Internal Fire Spread

The Rhinoplast Super Radon Barrier installed in accordance with this Irish Agrément Board Certificate will not adversely affect the control of fire and smoke within concealed spaces in the structure or fabric of a properly designed building.

C3 - Dangerous Substances

The Rhinoplast Super Radon Barrier, when used as an integral part of a radon protection system, will meet this requirement with respect to radon gas.

C4 - Resistance to weather and ground moisture

The Rhinoplast Super Radon Barrier, when used in accordance with Part 3 of this Certificate, will meet this requirement.

2.1 PRODUCT DESCRIPTION

The Rhinoplast Super Radon Barrier is a co-polymer virgin grade LDPE/MDPE blown film membrane with a unit mass weight of 356g/m². A product specification is shown in Table 1.

Table 1

		Value/Units
Weight		356 g/m ²
Thickness		375 µm
Tensile Strength	MD	21.5 Mpa
	CD	29.4 Mpa
Elongation at max load	MD & CD	> 800%
Dart Impact Strength		1.012 kg
Tear resistance	MD	248 N/mm
	CD	303 N/mm
Low temperature flexibility		-25°C
Radon permeability		4x10 ⁻¹² m ² /s
Moisture vapour transmission		0.16g/m ² /day
Standard roll width		4m
Standard roll length		12.5, 20, 25m
Standard roll weight		17.8, 28.48, 35.60 kg
Colour		Yellow

2.1.1 Ancillary Products

- Rhinoplast Joint Strip
- Girth Tape
- Top Hats
- Radon Sumps
- Gastite Self-adhesive Membrane

2.2 MANUFACTURE

The Rhinoplast Super Radon Barrier is manufactured by an extrusion and blowing process.

2.2.1 Product Quality Control

Quality control checks are carried out on the raw material, during production and on the final product. Quality control checks include:

- Dimensions
- Density
- Tensile strength
- Tear strength
- Vapour permeability
- Weight of rolls

The manufacturer is certified to ISO 9001:2000 by Quay Audit Ltd (Certificate No. 401189)

2.3 MARKING

Rolls are supplied individually or on pallets, in wrappers bearing the manufacturer's name and product description, IAB Identification mark, IAB Certificate number and essential instructions for storage and installation.

2.4 INSTALLATION

2.4.1 General

Guidance on the design of radon protection systems for new and existing buildings is given in the DOELG Document: 'Radon in Buildings', and in the BRE (UK) Document: 'Radon - Guidance on protective measures for new dwellings'.

2.4.2 New Work - Design Details

The Rhinoplast Super Radon Barrier can be used in most common floor constructions. It is installed in a similar way to damp proof membranes, but with much greater attention to sealing, detailing and workmanship. The radon resisting membrane will also perform the same function as a damp proof membrane. (Figures 2, 3, 4, 5 and 6 show details of the use of Rhinoplast Super Radon Barrier in different floor constructions).

To be fully effective, a radon-resisting membrane must bridge cavities in walls and in doing so should form a cavity tray. Where necessary narrow strips of membrane can be used to seal walls and cavities. All designed cavities must be properly closed.

To avoid creating slip planes in masonry walls a damp proof course should not be laid on the same course of blockwork as the Rhinoplast Super Radon Barrier (see the recommendations in IS 325: Part 2: 1995).

Consideration must be given to the positioning of a radon resisting membrane in relation to thermal insulation. The recommendations contained in IS 325: Part 2: 1995 and the BRE Report. 'Thermal insulation - avoiding risks' should be followed.

The integrity of a radon resisting membrane must be maintained during installation. The Rhinoplast Super Radon Barrier is resistant to puncturing and tearing, but where damage occurs this must be repaired by covering with a second layer of membrane sealed to the original using Radon sealant tape.

Installation of the Rhinoplast Super Radon Barrier must be in accordance with the recommendations of IS 325: Part 2: 1995, clause 11 of BS CP 102: 1973: 'Code of

Practice for protection of buildings against water from the ground', and the requirements of this Certificate. Additional guidance on the use of damp proof membrane materials is given in BS 8000: Part 4: 1989 'Code of Practice for waterproofing'.

A surface blinding of soft sand (50mm min.), should be used to prevent puncture of the membrane during installation. A further protection over the membrane is afforded by using high-density insulation (25kg/m³).

Sheets must be clean and free from dirt and grease before application, and in view of the difficulty of achieving gas tight seals under wet or dirty site conditions it is recommended that special care is taken with this aspect of the installation.

Where service ducts or pipes penetrate the membrane, gas tight joints are effected using sealant tape and top hat units with retention clips.

Pipes, steel stanchions and concrete columns can be sealed using the approved adhesive bituminous gas resisting membrane with an overlap of 150 mm on each surface and rolled firmly. Steel, concrete and masonry surfaces should be primed, in accordance with the primer manufacturer's instructions, prior to the adhesive membrane being laid. This method can also be adopted to seal pipe collars. (Figure 1 shows a detail of sealing around a steel stanchion).

The membrane must be covered by a screed, high-density insulation, or other protective layer as soon as possible after installation. Care should be taken to ensure that the membrane is not stretched or displaced when placing concrete or other protective layer over it. Great care should be taken to avoid bridging (i.e. creating areas of unsupported membrane) during screeding operations, for example at internal angles.

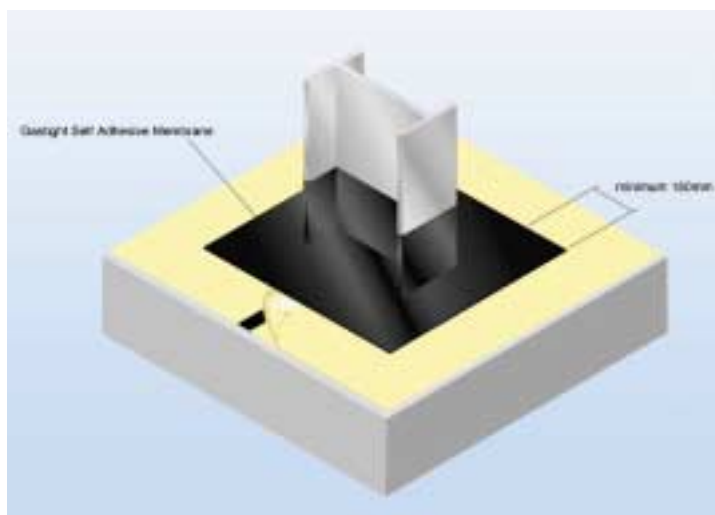


Figure 1: Sealing around a steel stanchion.

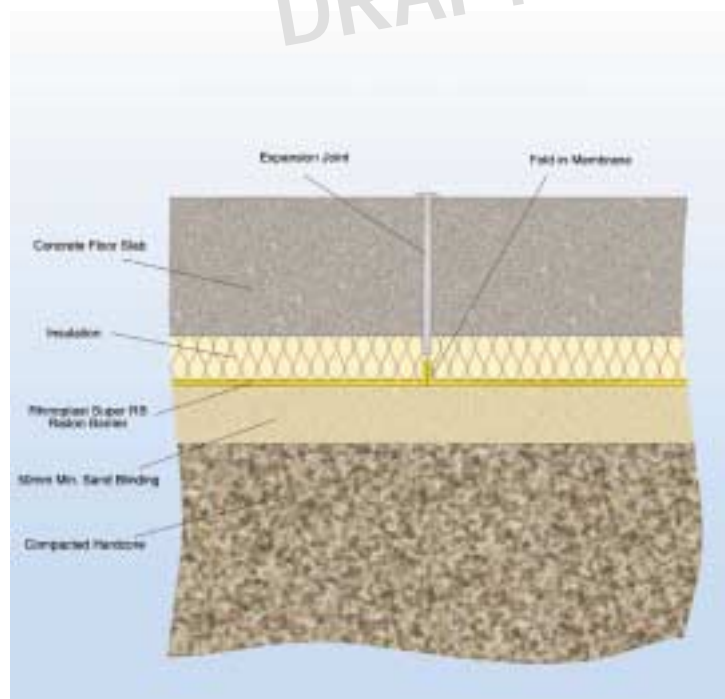


Figure 2: Detail showing typical movement control joint.

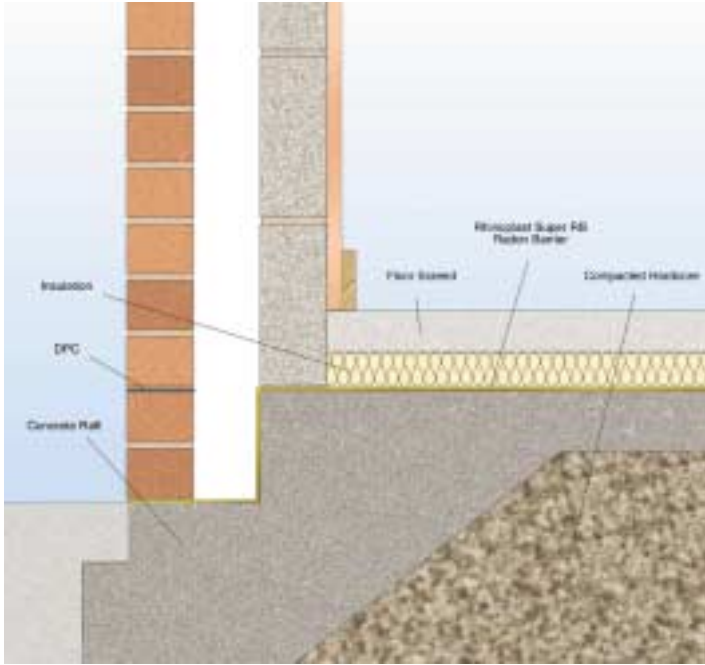


Figure 3:
Raft foundation detail with Rhinoplast Super Radon Barrier.

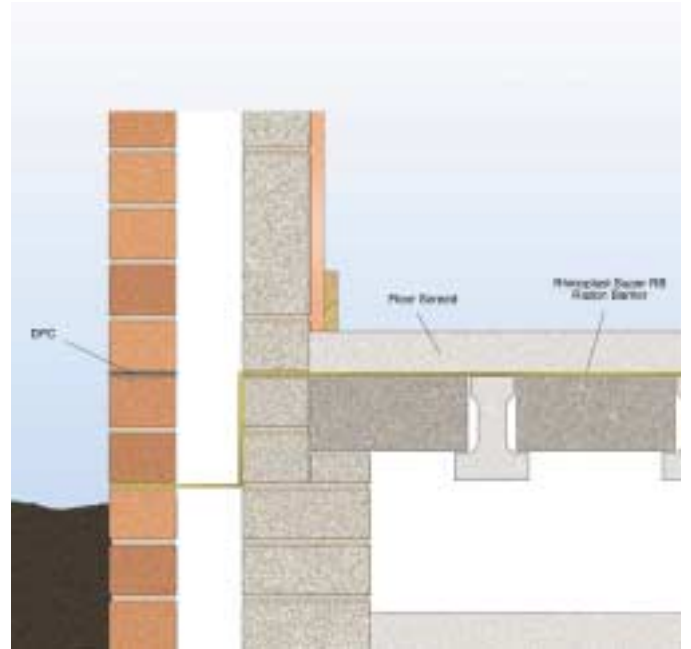


Figure 4:
Detail for suspended concrete floor.

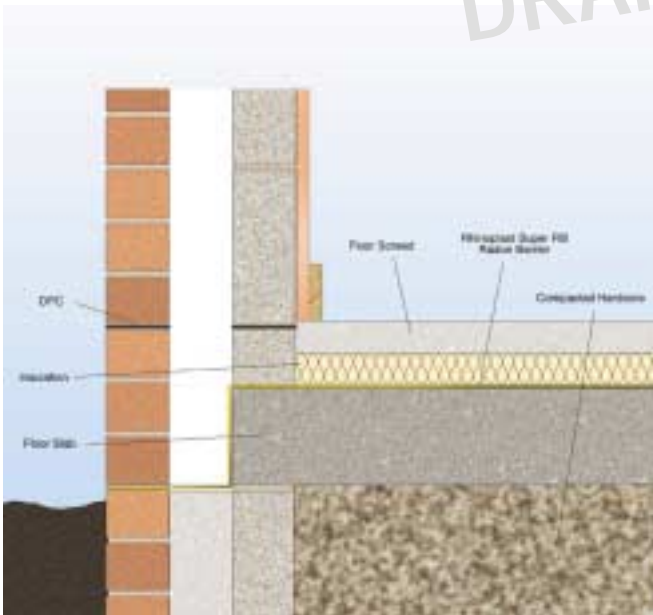


Figure 5:
Detail of Rhinoplast Super RB placed over the floor slab and under insulation and screed.

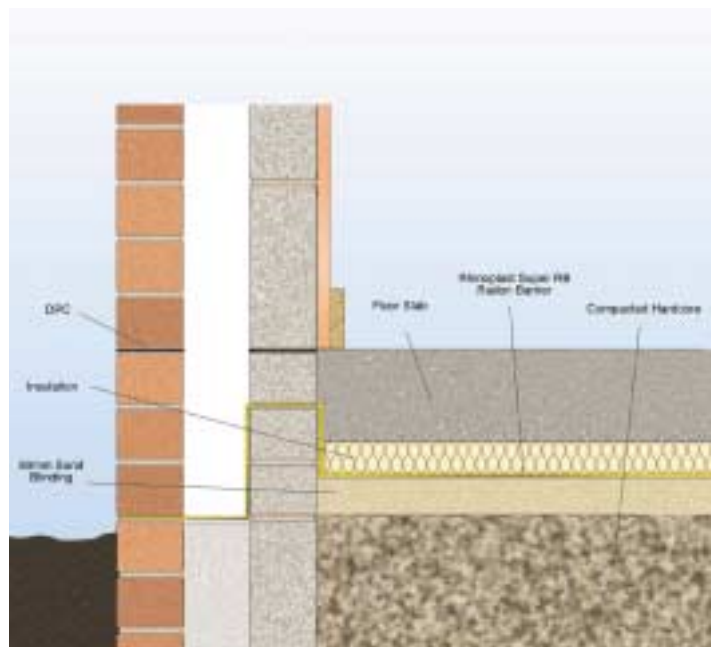


Figure 6:
Detail showing Rhinoplast Super RB placed on soft sand blinding under insulation and floor slab.

3.1 GENERAL

The Rhinoplast Super Radon Barrier is suitable for use in concrete floors not subject to hydrostatic pressure, in accordance with the relevant clauses of IS 325: Part 2: 1995 and of BS CP 102: 1973: '*Code of Practice for protection of buildings against water from the ground*'.

The product can be installed as an over-site membrane, either between a sand blinded hardcore (50 mm of sand minimum) bed and the base concrete, or laid on top of high-density insulation (25 kg/cubic meter) with a concrete screed laid over it.

3.1.1 Resistance to radon, water and water vapour

The membrane and the methods of jointing provide an effective barrier to the passage of radon gas, liquid water and water vapour from the ground.

3.1.2 Resistance to tear and puncture

The product has a high resistance to tear. Care should be taken during installation, particularly when handling building materials and equipment over the surface and when placing concrete or screeds, since the membrane can be punctured by sharp objects. When installed as set out in this certificate there should be minimum risk of puncture or tear damage. High-density insulation (25kg/m³) is an effective protection after laying.

3.1.3 Site conditions

The product may be installed in all conditions normal to ground floor slab construction. Where there is a risk of ground becoming waterlogged, sub-soil drainage must be provided in accordance with IS 325: Part 2: 1995 and

BS CP 102:1973: '*Code of Practice for protection of buildings against water from the ground*'.

3.1.4 Underfloor heating

When used in accordance with the conditions set out in this Certificate, there will be no adverse effect on the membrane from underfloor heating under normal conditions.

3.2 CONSTRUCTION DETAILING

To reduce radon gas migration/ingress into buildings the following guidelines should be followed:

- design for controlled movement of construction (see IS 325: Part 2: 1995)
- ensure that all designed cavities are effectively closed to interior spaces
- design for grouping of services, with effective gas seal of ground slab openings and penetrations

3.3 CONSTRUCTION SETTLEMENT

Consideration should be given to differential and/or relative settlement of ground floor construction during the full life cycle of the building.

Where special installation detailing is introduced, i.e. folding of a radon resisting membrane at critical construction points, an elongation capability for the membrane itself may not be required. Where high concentrations of radon are likely and where a building is properly designed, detailed and constructed to take account of settlement, the installation of the Rhinoplast Super Radon Barrier represents an effective measure against radon health hazards.

4.1 TESTS/ASSESSMENTS

Technical investigations were carried out on the Rhinoplast Super Radon Barrier. Typical results are shown in Table 1.

4.2 MAINTENANCE

No maintenance of a radon resisting membrane is required when installed in accordance with this Certificate.

4.3 DURABILITY

When installed in accordance with this Certificate and subject to normal conditions of use, the membrane will provide an effective barrier, which will be substantially impervious to the transmission of radon gas, liquid water and water vapour for the life of the building.

Long periods of exposure to ultraviolet light can reduce the effectiveness of a membrane. However, during stor-

age, and when installed in accordance with this Certificate, the membrane will be protected from such exposure.

It is important to note that alterations to the building structure subsequent to the installation of a radon protective system must take into account the integrity of the Radon resisting membrane.

4.4 OTHER INVESTIGATIONS

- Existing data on properties in relation to fire, and toxicity, were assessed. When stored with normal care on site prior to installation the membrane will not present a significant fire or health hazard.
- The manufacturing process was examined including the methods adopted for product quality control, and details were obtained of the quality and composition of the materials used.

5.1 CONDITIONS OF CERTIFICATION

The National Standards Authority of Ireland ("NSAI") following consultation with the Irish Agrément Board ("IAB") has assessed the performance and method of installation of the product/process and the quality of the materials used in its manufacture and certifies the product/process to be fit for the use for which it is certified provided that it is manufactured, installed, used and maintained in accordance with the descriptions and specifications set out in this certificate and in accordance with the manufacturer's instructions and usual trade practice. This certificate shall remain valid so long as:

- (a) the specification of the product is unchanged;
- (b) the Building Regulations, 1997 to 2002 and any other regulation or standard applicable to the product/process, its use or installation remain unchanged;
- (c) the product continues to be assessed for the quality of its manufacture and marking by NSAI;
- (d) no new information becomes available, which in the opinion of the NSAI would preclude the granting of the certificate;
- (e) the product or process continues to be manufactured, installed, used and maintained in accordance with the description, specifications and safety recommendations set out in this certificate.

5.2 The IAB mark and certification number may only be used on or in relation to products/processes in respect of which a valid certificate exists. If the certificate becomes invalid, the certificate holder must not use the IAB mark and certification number and must remove them from products already marked.

5.3 In granting this certificate, the NSAI makes no representation as to:

- (a) the presence or absence of patent rights subsisting in the product/process; or
- (b) the legal right of the certificate holder to market, install or maintain the product/process; or
- (c) whether individual products have been manufactured or installed by the certificate holder in accordance with the descriptions and specifications set out in this certificate.

5.4 This certificate does not comprise installation instructions and does not replace the manufacturer's directions or any professional or trade advice relating to use and installation which may be appropriate.

5.5 Any recommendations contained in this certificate relating to the safe use of the certified product or process are preconditions to the validity of the certificate. However, the NSAI does not certify that the manufacture or installation of the certified product or process in accordance with the descriptions and specifications set out in this certificate will satisfy the requirements of the Safety, Health and Welfare at Work Act, 1989 or of any other current or future statute or current or future common law duty of care owed by the manufacturer or by the certificate holder.


5.6 The NSAI is not responsible to any person or body for loss or damage, including personal injury, arising as a direct or indirect result of the use of this product or process.

5.7 Where reference is made in this certificate to any Act of the Oireachtas, regulation made thereunder, statutory instrument, code of practice, national standards, manufacturer's instructions or similar publication, it shall be construed as reference to such publication in the form in which it is in force at the date of this certification.

THE IRISH AGRÉMENT BOARD

This Certificate No. 03/0177 has been granted by the NSAI to Principal Building Products Ltd. on behalf of The Irish Agrément Board.

Date of Issue: July 2003

Signed: 
 Chief Executive, NSAI

Readers may check that the status of this Certificate has not changed by contacting the

Irish Agrément Board,
 NSAI, Glasnevin, Dublin 9. Ireland.

Telephone: (01) 8073800.
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DRAFT



BUILDING PRODUCT CERTIFICATION

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