

BMI Sverige AB
Pulpetgatan 20
215 37 Malmö

Determination of radon transmittance

(2 appendices)

Work requested

RISE was requested to measure the radon transmittance through a membrane in accordance with SP Method no. 3873.

The material sample

The client delivered their product which was named Vedagard Safety Blank to RISE Research Institute of Sweden on 2026-09-02. There were no signs of visible damage to the material on arrival. The material was tested without joints. See Appendix 2 for a picture of the material.

Method of testing

Radon transmittance was tested in accordance with SP Method no. 3873. The material was mounted between two stainless steel boxes, the lower of which (the source box) contained a radon source. The perimeter was sealed very carefully, in order to ensure gas-tight joints between the boxes and the material, and also between the boxes themselves. The radon concentrations on each side of the test material was measured using an Atmos 33 instrument.

Results

Material	Radon transmittance P , m/s	Radon resistance Z , s/m
Vedagard Safety Blank	$< 3.0 \cdot 10^{-9}$	$> 3.3 \cdot 10^8$

Note that the test results shown above apply only to the particular sample of material that was tested. Detailed results, including uncertainty of measurement, are given in Appendix 1.

Also note that the SP Method no. 3873 cannot state values of radon transmittance that are lower than $3.0 \cdot 10^{-9}$ m/s as results lower than this can be affected by the normal level of radon gas indoors. In the same manner, the method cannot state values of the radon resistance above $3.3 \cdot 10^8$ s/m.

RISE Research Institutes of Sweden AB

Postal address

Box 857
501 15 BORÅS
SWEDEN

Office location

Brinellgatan 4
504 62 Borås
SWEDEN

Phone / Fax / E-mail

+46 10-516 50 00
+46 33-13 55 02
info@ri.se

Confidentiality level

C2 - Internal

This report may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

Accred. No. 1002
Testing
ISO/IEC 17025

RISE Research Institutes of Sweden AB
Building Physics and Sustainable Buildings - Building Physics Testing

Performed by



Fredrik Ståhl

Examined by



Eva-Lotta Kurkinen

Appendices

1 Test results

2 Photographs of the tested material

Appendix 1

Test results

Client	BMI Sverige AB
Sample for testing	Vedagard Safety Blank
Date of testing	2026-09-03 – 2026-09-10
Test data	Free volume, source box, V_1 : 0.027 m ³ Free volume receiver box, V_2 : 0.026 m ³ Total free volume, V : 0.053 m ³
Equipment	Atmos 12 DPX (KWP18569) for measurement of Polonium-218 concentration. Most recently calibrated 2025-11-06 by Swedish Radiation Safety Authority.
Radon source	Lightweight concrete emitting Radium Rn-222, with Po-218 as the first decay product.
Ambient temperature	23 ± 3 °C
Ambient RH	50 ± 25 %
Uncertainty of measurement	The increased uncertainty of measurement was estimated as ± 11 %, including a coverage factor of $k = 2$. Uncertainty of measurement for temperature was ± 2 °C, and that for relative humidity was ± 5 % in the test chamber.
Observation	No changes in the test material were observed during the tests.
Miscellaneous	The test results given in this report relate only to the particular samples of material that were tested.

The following results have been calculated under the conditions as shown in the table below:

Material, name	Vedagard Safety Blank
Exposed area of test material A , m ²	0.250
Radon concentration at start C_0 , Bq/m	40
Radon exhalation Φ , Bq/s	$5.6 \cdot 10^{-3}$
Effective radon sink λ , s ⁻¹	$9.1 \cdot 10^{-6}$
Radon transmittance P , m/s	$< 3.0 \cdot 10^{-9}$
Radon resistance Z , s/m	$> 3.3 \cdot 10^8$

Appendix 1

Theory

Emission of radon from the radon source results in an increase of radon concentration in the source box, leading to a difference in concentration between the source box and the receiver box. This difference causes a flow of radon by diffusion through the test material. Only radon gas (Rn) passes through, and not its decay products (RnD). Radon transmittance is measured by measuring the change in radon concentration on both sides of the test material. Figures 1 and 2 show how the radon concentrations build up in the two boxes.

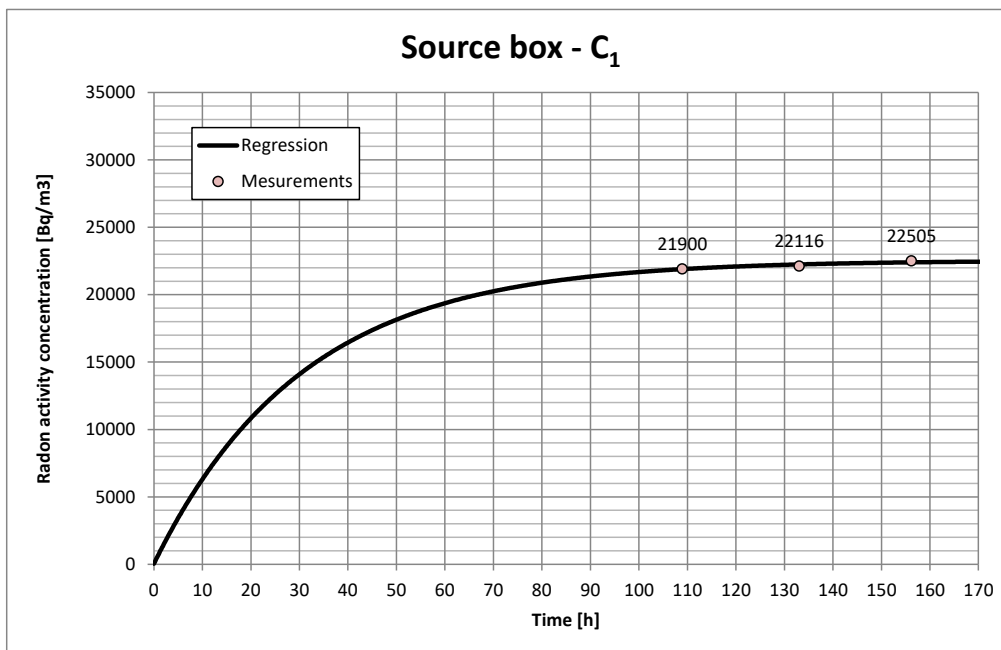


Figure 1 Radon concentration in the primary box: measured daily average values and the regression curve.

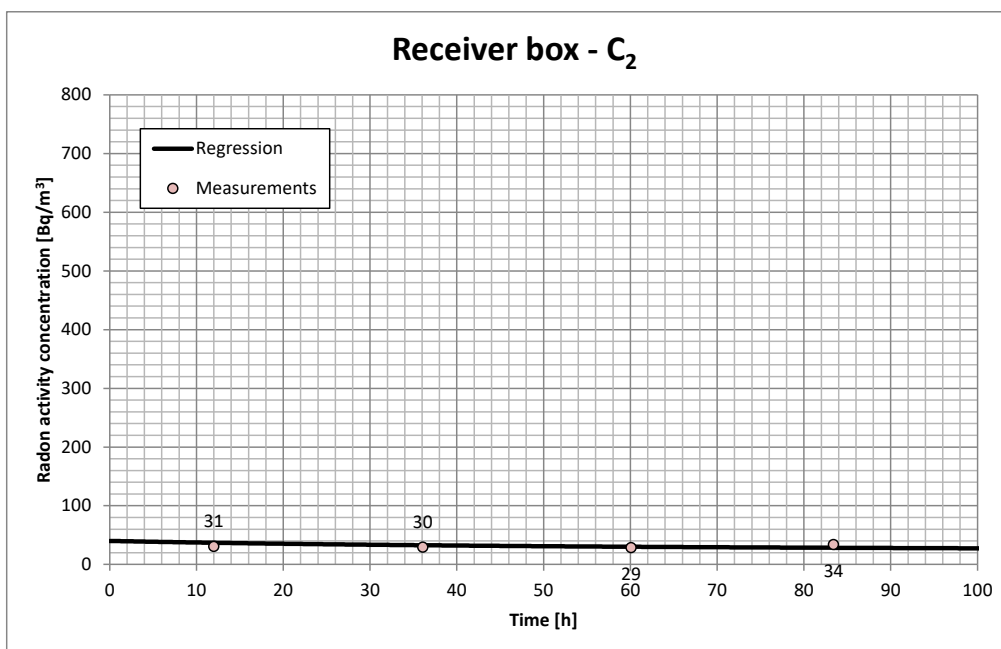
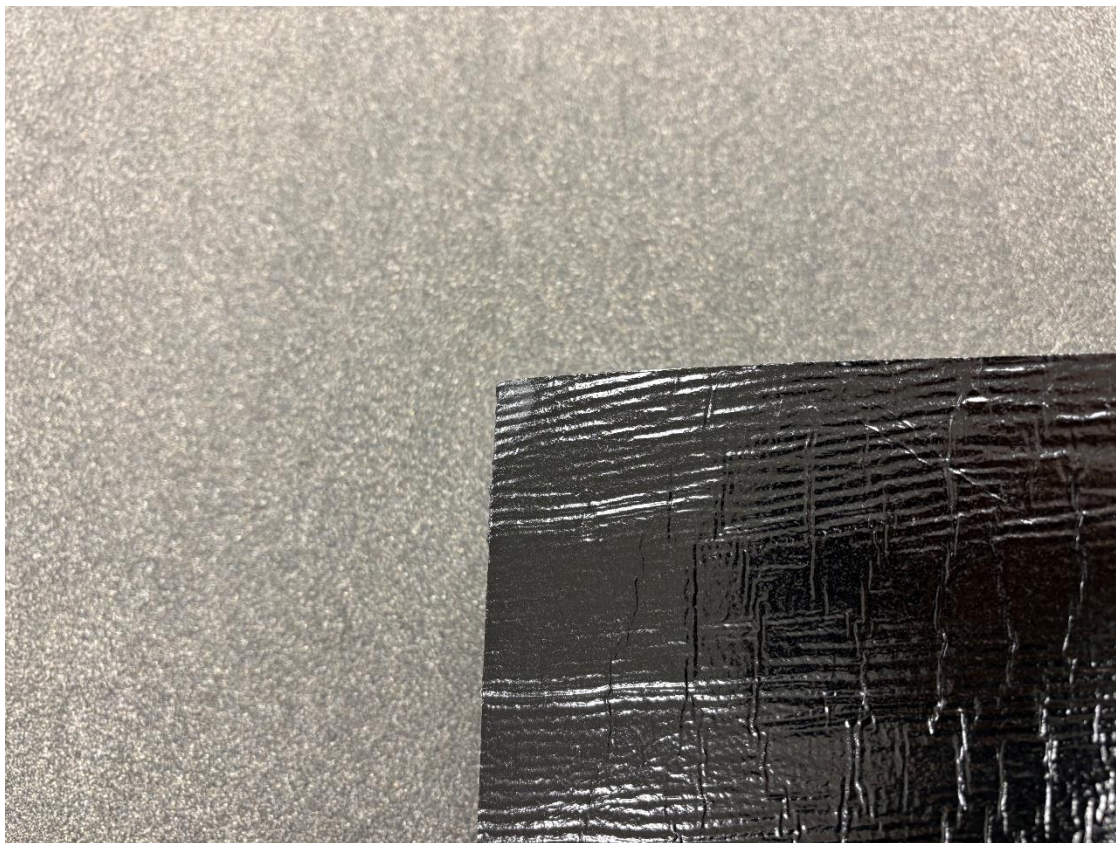


Figure 2 Radon concentration in the secondary box: measured daily average values and the regression curve.

Appendix 2

Photographs of the tested material

Vedagard Safety Blank

Verifikat

Dokument-ID 09222115557589007217

Dokument

1378796 Rpt Radon transmittance

Huvuddokument

5 sidor

Startades 2026-09-14 12:32:03 CEST (+0200) av Fredrik Ståhl (FS)

Färdigställt 2026-09-23 13:21:49 CEST (+0200)

Signerare

Fredrik Ståhl (FS)

RISE Research Institutes of Sweden AB

Org. nr 556464-6874

fredrik.stahl@ri.se

+46105165911



Signerade 2026-09-14 12:32:41 CEST (+0200)

Eva-Lotta Kurkinen (EK)

RISE

eva-lotta.kurkinen@ri.se



Signerade 2026-09-23 13:21:49 CEST (+0200)

Detta verifikat är utfärdat av Scrive. Se de dolda bilagorna för mer information/bevis om detta dokument. Använd en PDF-läsare som t ex Adobe Reader som kan visa dolda bilagor för att se bilagorna. Observera att om dokumentet skrivs ut kan inte integriteten i papperskopian bevisas enligt nedan och att en vanlig papperutskrift saknar innehållet i de dolda bilagorna. Den digitala signaturen (elektroniska förseglingen) säkerställer att integriteten av detta dokument, inklusive de dolda bilagorna, kan bevisas matematiskt och oberoende av Scrive. För er bekvämlighet tillhandahåller Scrive även en tjänst för att kontrollera dokumentets integritet automatiskt på: <https://scrive.com/verify>

