



# AlphaBlock 4+

## Processing Instructions

### Existing building renovation

September 2021



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Version: 01

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## 1 Properties

The new radon-proof AlphaBlock 4+ film for indoor and outdoor applications. Self-adhesive with integrated protective fleece.

## 2 Technical Data

<b>tested according to</b>	DIN EN 14909 DIN EN 13967	
<b>Radon tightness test</b>	Surface: passed Transition/adhesive point: passed	
<b>Fire class</b>	E DIN EN ISO 11925-2 and EN 13501-1	
<b>Fire behaviour</b>	EN 1928 A+B: passed	
<b>Water tightness</b>	EN 1931: sD: $\geq 1500$ m	
<b>Water vapour permeability</b>	EN 12691: procedure A passed	
<b>Resistance to impact load</b>	EN 12317-2: 215N	
<b>Shear resistance of the joint</b>	EN 12311-2 max. tractive force:	lengthways : $\geq 378$ N transverse: $\geq 289$ N

Stretch:

 lengthways :  $\geq 16\%$   
 transverse:  $\geq 16\%$ 


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**Tensile elongation  
behaviour**

 EN 12730:  $\leq 15$  kg
 

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**Resistance to static load**

EN 12310-1

 lengthways :  $\geq 209$  N  
 transverse:  $\geq 189$  N
 

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**Tear resistance (nail shank)**

 EN 1296: passed  
 EN 1931: passed
 

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**Durability to ageing**

 EN 1847: passed  
 EN 1928: passed
 

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**Durability to chemicals**

Hydrochloric acid 10% + Hydrochloric acid conc. + Sulphuric acid 10% + Sulphuric acid 80% + Nitric acid Nitric acid 5% + Nitric acid conc. + Phosphoric acid 10% + Boric acid 4% + Chromic acid 10% + Formic acid 5% + Acetic acid 5%ig - Lactic acid 5% + Sodium hydroxide 30% - Potassium hydroxide 30% - petrol -	Ammonia 5% + Ammonia 25% + Saline solution 5% + Calcium chloride solution 5% + Potassium carbonate solution 10% + Tap water + Alcohol den. 5% + Alcohol den. 50% - Butanol + Glycerol + toluene - Carbon tetrachloride - trichloroethylene -
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HD oil +

perchloroethylene -  
Fuel oil, diesel oil +

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**Resistance to chemicals**

EN 1548: passed  
EN 1928: passed

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**Compatibility with bitumen**

EN 1850-2: passed

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**Visible defects**

EN 1849-2: passed

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**Straightness**

ca. 20 kg/roll

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**Weight**

60 m

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**Length**

1,20 m

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**Width**

ca. 0,8 mm

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### 3 Radon tightness certificate

The IAF-Radioökologie GmbH has tested the AlphaBlock4+ for radon-proofness. Not only the surface was tested, but also the transitions with the adhesive joints. Both tests were passed successfully and thus our self-adhesive AlphaBlock 4+ radon protection film is "verifiably" radon-proof.

<b>IAF - Radioökologie GmbH</b> Labor für Radionuklidanalytik   Radiologische Gutachten   Consulting	
<b>Bestimmung des Radon-Diffusionskoeffizienten            und der Diffusionslänge einer Radonschutz-Folie</b>	
<b>Auftraggeber:</b>	RadonTec GmbH Hauptstraße 5 89426 Wittlingen
<b>Projektname:</b>	Bestimmung des Radon-Diffusionskoeffizienten und der Diffusionslänge für die Radonschutz-Folie „AlphaBlock“ 4+“
<b>Projektnummer:</b>	210210-01
<b>Auftragnehmer:</b>	IAF-Radioökologie GmbH
<b>Autor:</b>	Dipl.-Ing. (BA) R. Baumert
 Deutsche Akkreditierungsstelle D-PL-31101-01-00  <small>Die Akkreditierung gilt für die dargestellten Ergebnisse der            Bestimmung der Radon-Diffusionskoeffizienten von            Dichtungselementen (DOP 4.02: 2018:11). Die im Bericht            enthaltenen Bewertungen basieren auf diesen Ergebnissen</small>	
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Bankverbindung: HypoVereinsbank Dresden IBAN: DE52 8502 0005 5350 1794 29 SWIFT (BIC): HYVDE333	

## 4 Indoor Installation

The installation of the AlphaBlock 4+ film to form a radon-proof system is carried out in three steps:

1. substrate preparation
2. film laying
3. film bonding to the wall

### 4.1 Surface preparation

Although the AlphaBlock 4+ radon protection film is extremely stable and crack-resistant, sharp objects or stones can damage the film. For this reason, cleaning the substrate and the side walls to which the film is to be applied is extremely important. Carefully remove all sharp objects such as stones, concrete noses or splinters. This can be done most easily with a push scraper or with a wide spatula.



Old plaster and loose paint should be removed from both the floor and the walls. The smoother and more homogeneous the surface, the easier it is to achieve a good seal against radon.

The substrate must be dry or slightly damp, clean, free of grease and oil and free of loose components.

Repair damaged concrete and plaster surfaces as well as cracks and holes with a depth greater than 5 mm beforehand with a WU barrier mortar.

Existing coving must be checked for their function and, if necessary, new coving must be created. Edges must be chamfered.



Before you roll out the film, sweep the floor to remove any fine dirt.

## 4.2 Laying the foil

Laying the AlphaBlock 4+ over the entire room

Make sure that there are no sharp stones or other sharp edges in the soles of your shoes. Our recommendation is to lay the foil in socks or shoes with soft rubber soles.



Die AlphaBlock 4+ mit dem Schutzvlies nach unten zeigend ausrollen. Es befinden sich auf beiden Seiten Klebestreifen, die mit einer gelben Schutzfolie versehen sind.



Let the foil stand up about 10 - 15 cm against the wall. Here it depends on how much space you have (height of the floor structure). The more the better.



Then roll out the second sheet.



The adhesive strips must lie directly on top of each other. Align the film accordingly.



Now remove the yellow protective film from both adhesive strips.



The easiest way to do this is to remove both protective films at the same time. However, make sure that the film is optimally aligned. After the adhesive surfaces have touched, a correction is hardly possible.



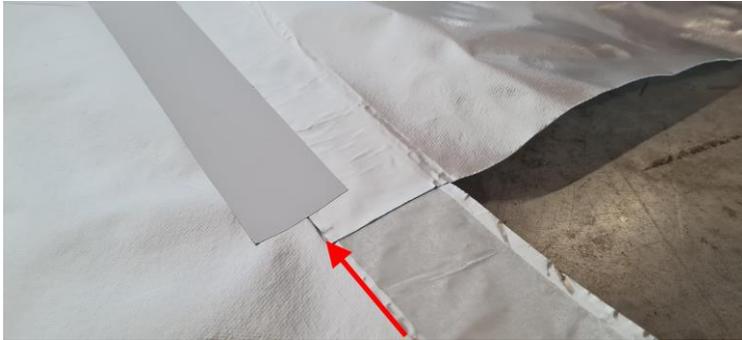
Now press both adhesive areas/foils firmly together. The easiest way to do this is with a silicone roller. It is important that the bond does not have any large bubbles or wrinkles.



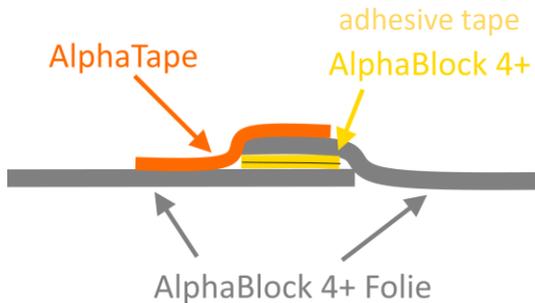
For additional security, apply another adhesive strip with our tested AlphaTape over the seam.



Stick the AlphaTape over the seam of both foils as a safeguard.



The AlphaTape should be applied centrally over the joint between film 1 and film 2.



Lay the entire room gradually until the floor is completely covered with the AlphaBlock 4+ foil. Afterwards, the foil is bonded in the area of the floor-wall connections with the help of AlphaSeal. To do this, fold back the foil on the walls and apply the AlphaSeal thick coating.

### **Alternative to gluing**

Alternatively, the individual sheets can also be welded as usual with hot air or an open flame. In this case, make sure that the white protective fleece is completely removed so that it does not burn in the event of welding.

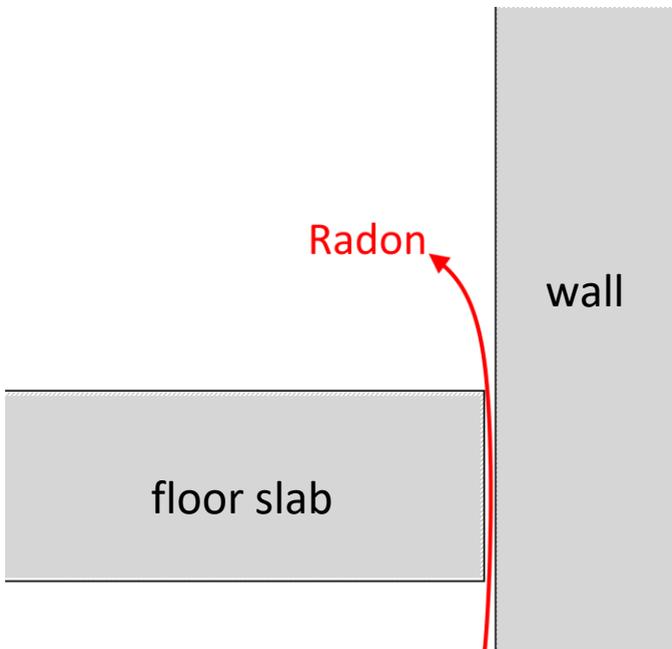
If the film is then heated, the individual sheets can be pressed together and rubbed together while the plastic layer is visibly liquefied.

Both application methods create a permanently inseparable, vapour- and moisture-proof barrier layer.

### 4.3 Foil bonding on the wall

One of the greatest weak points in radon remediation is the transition between the floor slab and the wall. Radon can very easily penetrate the building/room through cracks and joints via convective air flow.

For these weak points, we have developed our AlphaSeal sealing slurry for interiors.



Defects up to 5 mm and old bituminous substrates are prepared with a scratch filler consisting of 2 parts AlphaSeal with 1 part quartz sand CT 483 (0.06 - 0.36 mm grain size).

Soft (e.g. aerated concrete), highly saline and absorbent substrates should be prepared with AlphaPrimer (consumption 100 - 130 g / m<sup>2</sup>, up to 250 g / m<sup>2</sup> possible on highly absorbent substrates).



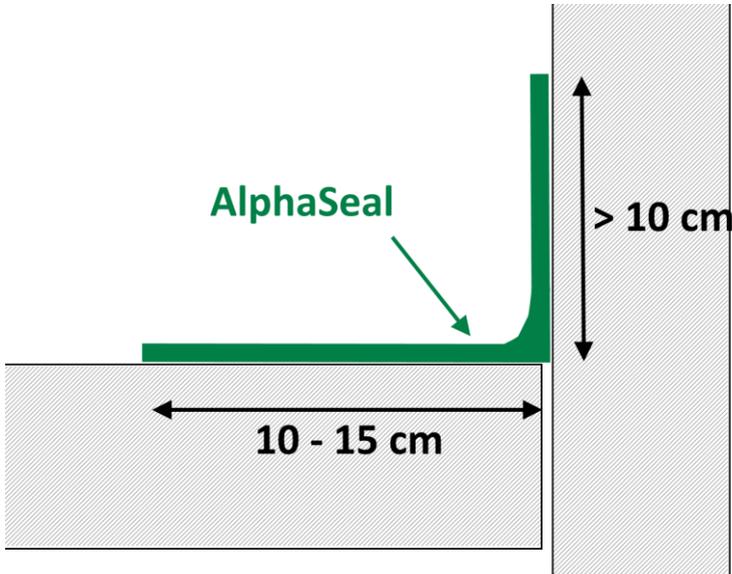
Mix the AlphaSeal sealing slurry.



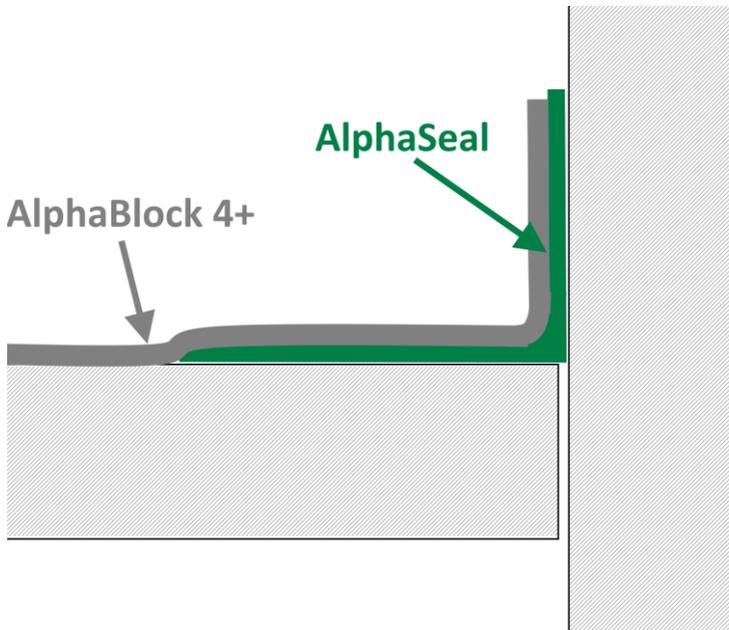
Apply the AlphaSeal thick coating to the floor slab and the wall.



We recommend a minimum thickness of 3-4 mm to achieve an even bond of the film. The AlphaSeal should be applied at least 10 cm on the floor slab and at least 10 cm on the wall.



Once the waterproofing slurry is in place, press the AlphaBlock 4+ foil onto the waterproofing slurry to create a flat seal.



Make sure that there are no cavities or bubbles. The working time of AlphaSeal is approx. 45 minutes.

After 16 hours, the system is dry enough for you to start the rest of the floor construction.

## 5 Repairing the foil

If there is any damage in the AlphaBlock 4+ film, you can seal it with a piece of AlphaTape.



A hole or tear in the film.



Cut a suitable piece of the AlphaTape and make sure that the film is free of dirt or dust.



Press the tape firmly against the film. It is best to press it on again with a silicone roller.

The following are radon-proof repair instructions for the AlphaBlock 4+ foil in case of damage to the foil during installation work.

## **6 Support and Contact**

### **6.1 Troubleshooting/FAQ**

You will find answers to the most frequently asked questions on our website:

<https://www.RadonTec.de>

### **6.2 Contact Us**

Should you have any further questions or require further help and technical support, please do not hesitate to contact us.

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