# METHOD STATEMENT
# Sikaplan® 1650 DPM Gas Barrier

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BUILDING TRUST

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# 1 SCOPE

This method statement describes the procedure for installing the range of Sikaplan® DPM Gas Barrier.

# 2 SYSTEM DESCRIPTION

**Characteristic properties:**

- High chemical resistance
- High resistance to ground gasses
- Long term durability
- Damp-proofing Barrier
- Gas Barrier (Radon – BRE211, Methane / Carbon Dioxide - BS8485:2015+A1 2019)

Sikaplan® DPM Gas Barrier is extensively tested and proven to withstand the most aggressive environments.

Providing a robust, durable and flexible membrane, Sikaplan® DPM Gas Barriers are the ideal gas and damp-proofing barrier.

In all cases it is recommended the installation of Sikaplan® DPM Gas membranes is completed by a suitably qualified and accredited installer (NVQ level 2) and validated in accordance with C735. Sika Ltd can offer advice as to suitable/recommended installers.

## 2.1 SIKAPLAN® 1650 DPM GAS BARRIER

Sikaplan® 1650 DPM Gas Barrier is a high quality gas barrier manufactured from low density reinforced polyethylene (LDPE). It is ideal for use on sites with ground gas contamination. Sikaplan® 1650 DPM Gas Barrier incorporates an aluminium foil core, offering additional protection against Radon**,** Methane and Carbon Dioxide where it is separated from the ground e.g. above a block and beam floor.

## 2.2 AVAILABLE SYSTEM COMPONENTS AND ACCESSORIES:

| Material Code | Material | Rolls Size | | Roll Weight |
|---|---|---|---|---|
| 608495 | Sikaplan® 1650 DPM Gas Barrier | 2.0m x 50m | 100 $m^2$ / roll | 37kg |
| 608497 | Sikaplan® 1650 Detailing strip | 0.3m x 20m | 6 $m^2$ / roll | 2.22kg |
| 514907 | Sikadrain 850 geo | 2.44m x 12.5m | 30.5 $m^2$ / roll | 30kg |
| 424701 | Sikaproof® FixTape-50 | 0.5m x 20m | 10 $m^2$ / pc | n/a |
| 516977 | Sika Bentoshield Paste | | | 15 kg / pc |
| 564721 | Sikadur-32 | | | 5 kg / pc |

Sikaplan® 1650 DPM Detailing Strip – A 300mm wide Gas Resistant Self Adhesive Membrane, is a bituminous gas proof and damp-proof sheet, composed of self-adhesive SBS polymer modified bitumen with an upper surface finish of aluminium foil, and release film. Sikaplan® 1650 DPM Detailing Strip is used for the Gas/damp-proofing of ground structures where harmful ground gasses are anticipated.

SikaProof® FixTape-50 - A double sided 50mm wide butyl strip for sealing lapped joints.

Sikadrain 850 geo – 2.44m wide protection membrane to provide protection to the membrane and provide a drainage pathway to a maintainable land drain to alleviate pore water pressure on the structure.

Sika Bentoshield Paste – Water resistant bentonite grout, for use around penetrations and perforations.

Sikadur-32 – Gas resistant epoxy resin for sealing over pile heads.

## 2.3 SUBSTRATE PREPARATION:

Substrates for installation of the membrane system need to have sufficient stability to avoid movement during the installation and subsequent construction works, including the concreting. The substrate preparation should include the following:

- A clean, uniform, smooth surface free from debris, ponding water (damp or slightly wet is acceptable), oil and grease.
- Voids (> 12mm depth or width) must be filled before the installation of the membrane system.
- Voids can be filled with suitable sub-grade fill material, or repair mortar of the vertical walls.
- Where the substrate contains changes in elevation of >12mm, or particle protrusions from the substrate exceed 12mm, a protection fleece should be utilised to protect the membrane from damage from the substrate. Consult Sika's technical team for advice as to the most appropriate grade of protection fleece.

## 2.4 JOINTING AND SEALING USING TAPES

- A 100mm overlap print line is provided on products to assist with overlapping, jointing and sealing.
- For taped joints, SikaProof® FixTape-50 (50mm wide) can be utilised. The SikaProof® FixTape-50 is double sided for ease of use.
- To joint using tapes, ensure the first panel of Barrier is laid, and the surface is clean, dry, and free from dust. Begin by applying the tape along the outside edge of the 100mm guide line; such that the tape is 50mm from the Barrier roll edge.
- Unroll the second layer of Barrier ensuring a 150mm overlap, slowly removing the upper layer of protective film from the Tape, and pressing firmly on the taped joint with a silicone roller to remove trapped air. It is imperative that pressure sealing with silicone roller is implemented.
- Optional: Finish the joint by application of Sikaplan® 1650 DPM Detailing Strip over the joint to provide a smooth finish.

## 2.5 JOINTING AND SEALING USING WELDING

- Before welding work is carried out trials must be completed to determine the operating window for the welding equipment and materials. It is noted that ambient air temperature, power supply and the condition of welding equipment can affect the working window.
- Welding window for Sikaplan® 1650 DPM Gas Barrier is 180-240$^{o}$C at a suggested rate of 1.5 metres/minute on low air flow.
- Sika Limited recommends that any heat welding is carried out by a Construction Skills NVQ Level 2 qualified installer (or equivalent). The membranes should be overlapped by at least 100mm and care should be taken to ensure a seal between the joint.
- The printed 100mm overlap line should be used as a guide to ensure suitable jointing. A minimum welded overlap joint of 50mm wide should be achieved – it should be noted that the suitability of the welded joint is defined by the joint integrity, as tested in accordance with C735 (most commonly air lance), if a welded joint passes integrity testing, it would be deemed acceptable.

### 2.6 CORNER DETAILING

Corner detailing may be formed and sealed using the 300mm wide Sikaplan® 1650 DPM Detailing Strip ensuring 150mm overlap onto the surrounding membrane.

### 2.7 PILE HEAD / PIPES / REBAR PENETRATIONS

Sealing around pile heads is achieved by application of Sikadur-32 applied over the surface to achieve a coating thickness of at least 1mm (two coats). Sikaplan DPM Gas Barrier should be cut to match the penetration and Sika Bentoshield Paste applied in a 40mm x 40mm fillet to link between the penetration and the membrane.

Sealing around rebar penetrations is achieved by cutting the Sikaplan DPM Gas Barrier to match the penetration and Sika Bentoshield Paste should be applied in a 40mm x 40mm fillet to link between the penetration and the membrane.

Sealing around pipe penetrations is achieved by cutting the Sikaplan DPM Gas Barrier to match the pipe and sealed using the 300mm wide sikaplan® 1650 DPM detailing strip ensuring 150mm overlap onto the pipe and surrounding membrane.

### 2.8 REPAIRING PUNCTURES

Should tears, or punctures occur in the membrane, these can be patched using a piece of the same material sized to overlap at least 150mm beyond the extent of the puncture/tear. The lap being bonded with SikaProof® Fixtape-50 in accordance with the instructions above and optionally sealed with SikaProof® Fixtape-50, or welded to provide a continuous sheet.

## 3 LIMITATIONS

- It is recommended that membrane systems are installed in ambient air temperatures in excess of -5°C.
- Ingress of water into the installation area should be prevented.
- In all cases the surface onto which the membrane is to be laid or applied should be clean and free from debris and have no standing water which may cause damage to the Barrier.
- In all cases it is recommended the installation of Sikaplan® DPM Gas membranes is completed by a suitably qualified and accredited installer (NVQ level 2). Sika Ltd can offer advice as to suitable/recommended installers.
- Appropriate PPE should be worn at all times during handling, placement and fixing of the Barrier.
- Vehicular traffic directly on top of the membrane should be avoided.
- Foot traffic directly on top of the membrane should be restricted.
- Where either Vehicular or Foot traffic is unavoidable, additional protective measures may be required to prevent damage to the membrane. (Use of protection fleece and/or protection boards)
- Smoking, and naked flames are strictly prohibited.
- Please refer to the current Product Data Sheet and Standard Detail. All available from www.sikawaterproofing.co.uk

# 4 LEGAL NOTE

The information, and, in particular, the recommendations relating to the application and end-use of Sika products, are given in good faith based on Sika's current knowledge and experience of the products when properly stored, handled and applied under normal conditions in accordance with Sika's recommendations. in practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any written recommendations, or from any other advice offered. The user of the product must test the products suitability for the intended application and purpose. Sika reserves the right to change the properties of its products. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local Product Data Sheet for the product concerned, copies of which will be supplied on request.

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