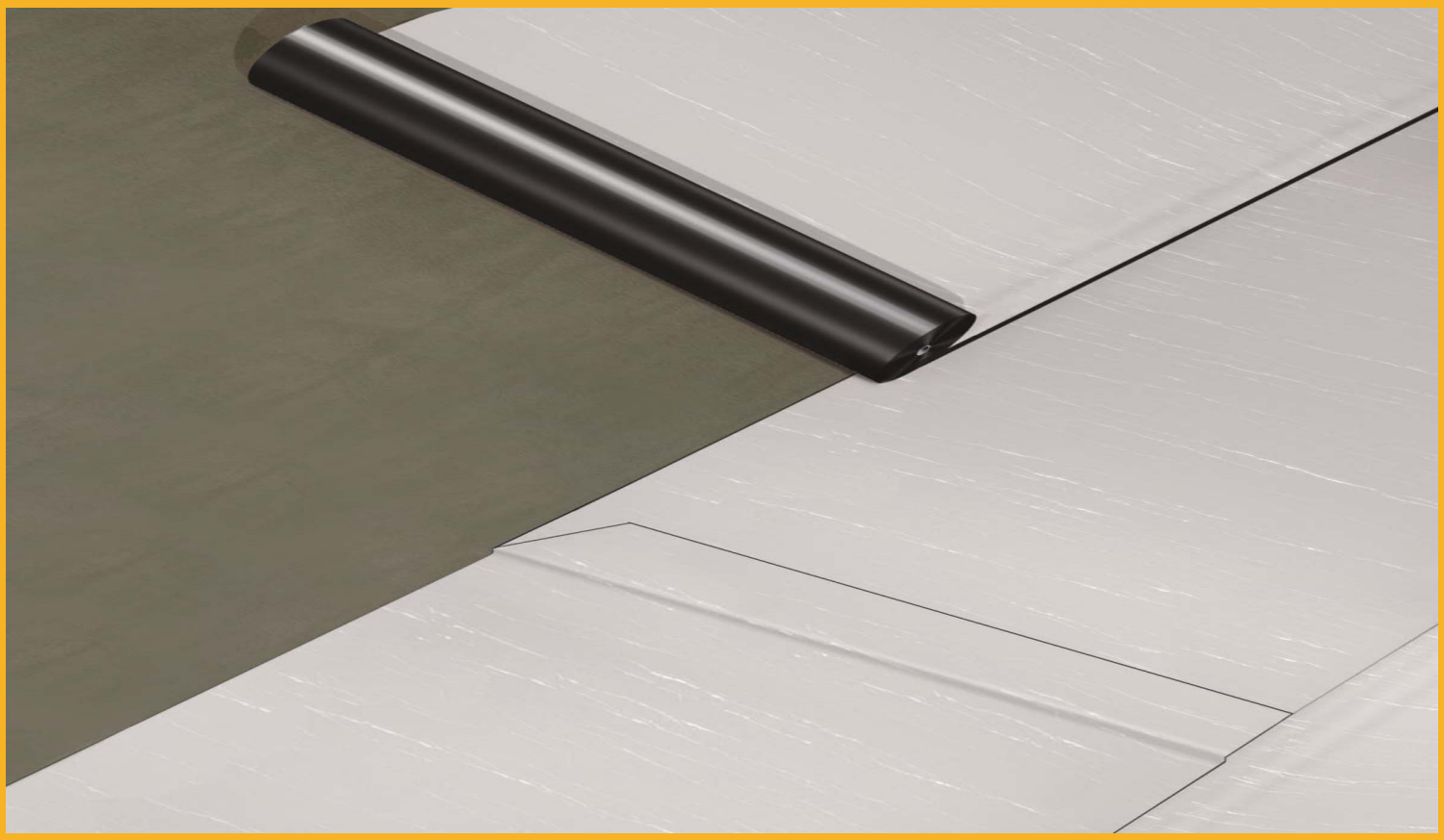

METHOD STATEMENT
Sika® BituSeal S-115

01/12/13 / VERSION 1.0 / SIKA UK / JOHN EUSTACE

BUILDING TRUST

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1 GENERAL PRINCIPLES

1.1 The substrate should be sound, smooth, clean, dry and free from sharp edges. All loose material and any other contaminants should be removed as these may affect the membrane after application.

1.2 Application should not be carried out under wet conditions or onto damp substrates. Note that condensation can occur on a cold substrate even in dry conditions. Ensure all previously applied coatings are compatible and are fully cured. Certain coatings may not require priming, consult with Sika Ltd if in doubt.

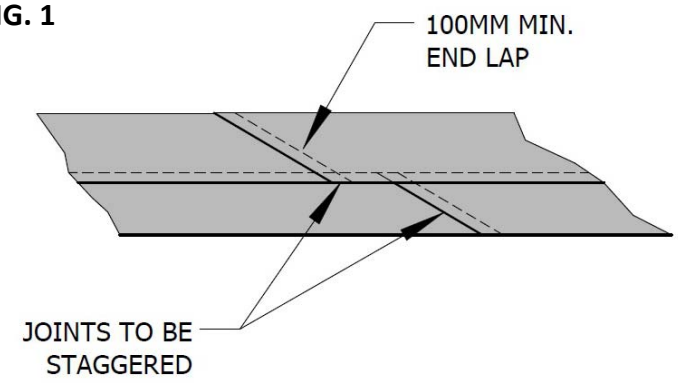
1.3 When bonding the membrane to the surface, care should be taken to avoid forming air pockets beneath the membrane. This can be achieved by applying pressure from the centre towards the edges.

1.4 Overlaps between roll sides and ends should be at least according to the minimum specification.

1.5 All overlap joints must be secure and fully bonded. A useful tool to assist this operation is a hand-held roller for vertical application and a foot roller for horizontal application.

1.6 End-of-roll overlaps of adjacent lengths should be staggered to avoid them being side by side on adjoining rolls, causing a four fold overlap. (See fig. 1).

FIG. 1



2 SITE PREPARATION

2.1 *Priming after general cleaning*
Priming will bind any remaining surface dust and will help stabilise a friable and powdery surface.

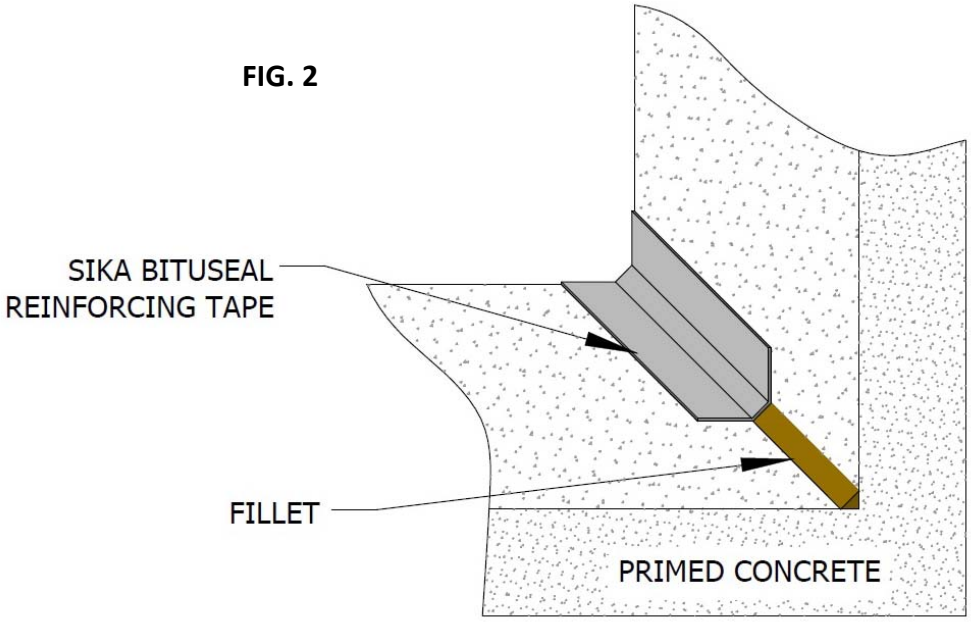
2.2. All vertical and steeply sloping surfaces must be primed using Sika® BituSeal Primer or a smilar approved product. On horizontal surfaces, where the membrane is beneath a slab, priming is not essential, but adhesion to the substrate will be improved if the substrate is primed.

Primer should not be applied onto the membrane and it is not necessary for overlap jointing.

Only prime an area that can be covered with membrane during the working day. Application of the membrane should commence as soon as the primer is dry.

2.3 *Treatment of Angles*
Fillets should be installed when taking the membrane through acute internal angles to avoid the membrane bridging the surfaces and forming voids beneath the membrane.

FIG. 2



Fillets can be made on site using a sand/cement mortar, or they can be preformed strips of fibreboard, PVC or similar material. Preformed strips can be held in place using SikaProof® FixTape-50.

External angles should be chamfered.

2.4 All internal and external angles should be reinforced with a strip of Sika® BituSeal reinforcing tape 300mm wide, centred along the corner angle. (See fig.2).

3 Membrane Application – Horizontal Surfaces

3.1 Application of the membrane should be carried out by two applicators. Mark a straight line on the substrate using a chalk line to mark the edge position of the first roll.

3.2 Align the roll alongside this line at the chosen starting position and unroll about 1.5 metres of membrane.

3.3 Lift the end of the membrane and peel back about 500mm of release paper. Fold this underneath the roll.

3.4 Apply the membrane to the surface by aligning it with the line as necessary and bond the exposed self adhesive compound to the substrate using firm pressure, applied to the centre and smoothing towards the edges. (See fig. 3).

3.5 Push the roll back to rewind it until the loose end of the release paper can be grasped in both hands and pulled away from underneath.

3.6 Take up the release paper, preferably winding this onto a wooden rod, until it is at a comfortable angle for the first applicator. (See fig. 4).

3.7 The first applicator should walk slowly backwards, applying an even strain to the release paper, which should now be wound up onto the wooden rod. Ensure that the membrane is aligned along the line as application proceeds.

3.8 The second applicator then applies firm presure onto the surface of the membrane to ensure good adhesion to the substrate and to avoid trapping air underneath. Normally he would use a broom to smooth the membrane down, working from the centre outwards. The applicators must avoid puncturing the membrane and the use of soft soled footwear is recommended. (See fig. 5).

HORIZONTAL MEMBRANE APPLICATION

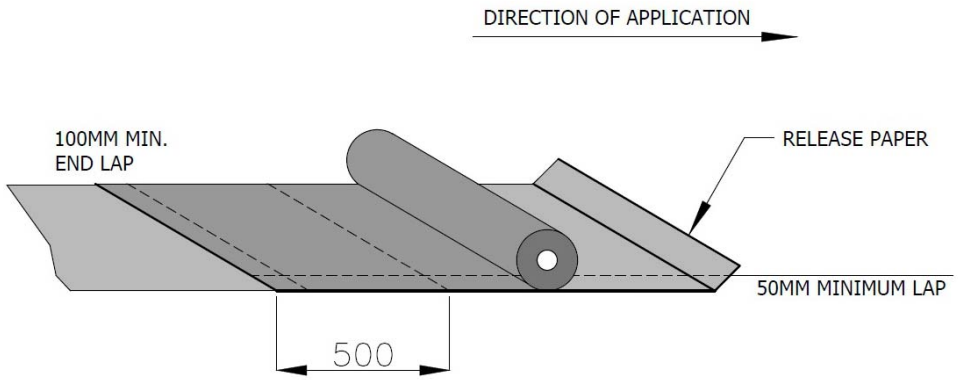


FIG. 3

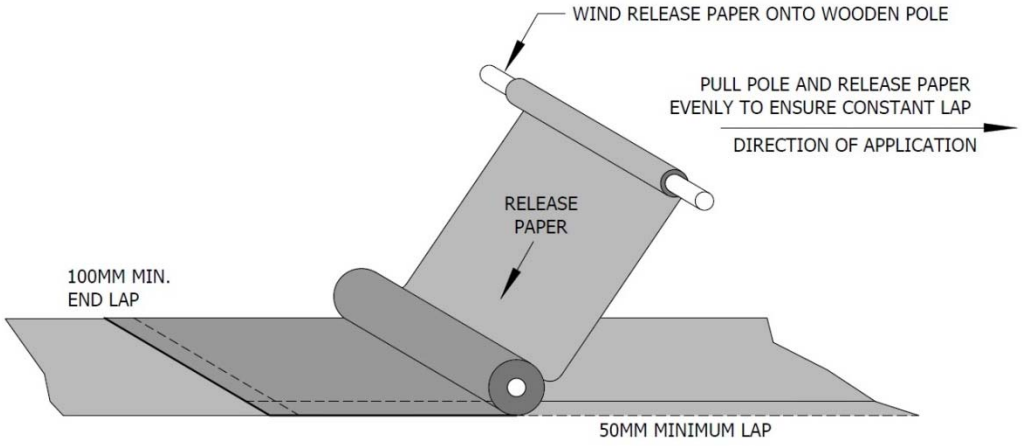


FIG. 4

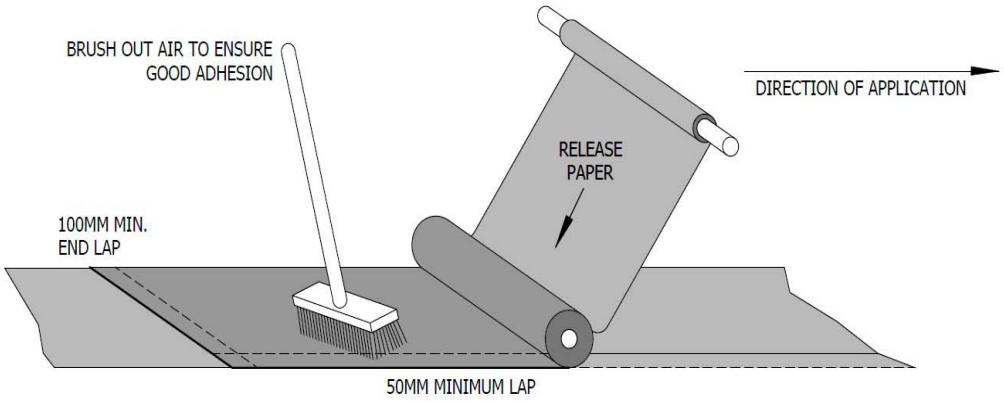
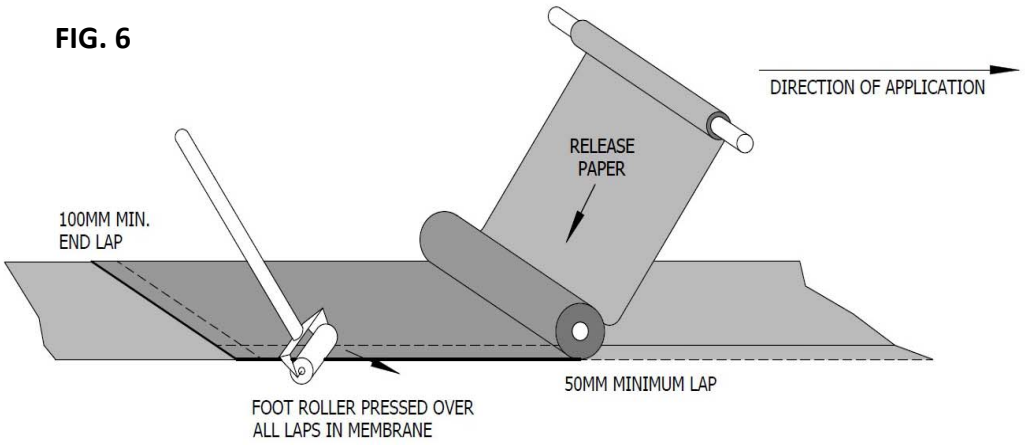


FIG. 5

FIG. 6



3.9 Once the first roll has been applied, the next roll should then be positioned. Overlap this as specified, with the end of the first roll to form an endlap point and bond about 500mm to the substrate. It is important to ensure that the endlap dimensions are in accordance with those specified and the ends of the roll are staggered.

3.10 Once the first width of membrane has been applied, commence working on the width alongside this.

3.11 The application of this roll is similar to that previously described (3.7 and 3.8), except that this roll is positioned alongside the first roll to give the minimum overlap for side laps.

3.12 In addition to making a good bond with the substrate, the second applicator must also ensure a watertight joint across and along the whole of the sidelap. He does this by pressing down, on the membrane overlap join, preferably using a hand-held roller or foot roller. Large horizontal areas of membrane should be pressed firmly down with a suitably cushioned water filled roller. (See fig. 6).

4 Membrane Application – Vertical Surfaces

4.1 Start by securing the end of the membrane at the top of the vertical surface. The precise method will depend on site conditions, including the height of the surface, accessibility and the construction detail. A scaffolding tower may have to be used to support the applicators and the roll of membrane.

The top of the vertical membrane should be linked to any other waterproofing installation which may already exist or will be installed.

4.2 It may also be necessary to mechanically fix the membrane at the top. Do this by either “chasing“ the top edge into the substrate or by nailing a wooden batten across its width.

4.3 Position the roll at the top of the vertical surface and unwind about one metre.

4.4 Peel back the first 500mm of release paper, fold it down, then press the exposed self adhesive compound onto the previously primed surface to achieve a strong bond. (See figs. 7 and 8).

4.5 Slowly unwind and lower the roll of membrane towards the ground until the sheet is hanging vertically against the surface.

4.6 Take hold of the release paper that was folded back in both hands on either side of the membrane and slowly but firmly pull it downwards. It is preferable for the release paper to be wound around a wooden pole as this will make it easier for an even tension to be applied and to gather the paper up as it is removed.

4.7 As the release paper is peeled away, the self adhesive compound should be pressed firmly against the surface working from the centre of the membrane outwards to avoid trapping air.

4.8 If an end of roll overlap joint has to be formed (on a high structure) the endlap dimensions should be in accordance with the specified minimum. The overlap joint should be formed by lapping the end of the first (highest) roll on top of the second (lowest) roll, see diagram and carefully pressed down using a hand roller. Extra mechanical fixing is not necessary because of the adhesive strength of an overlap lap joint.

4.9 Once the first width has been applied, the next width is applied adjacent to it in exactly the same way, with a sidelap joint of the membrane alongside.

VERTICAL MEMBRANE APPLICATION

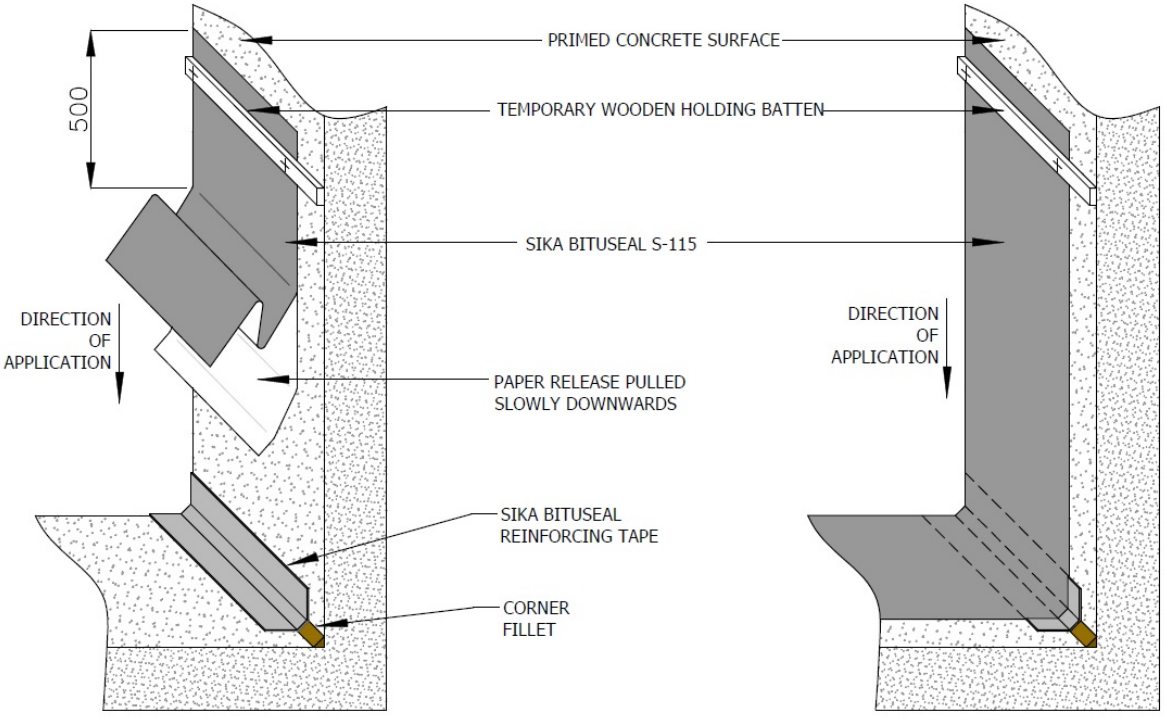


FIG. 7 **FIG. 8**

5 FINISHING THE JOB

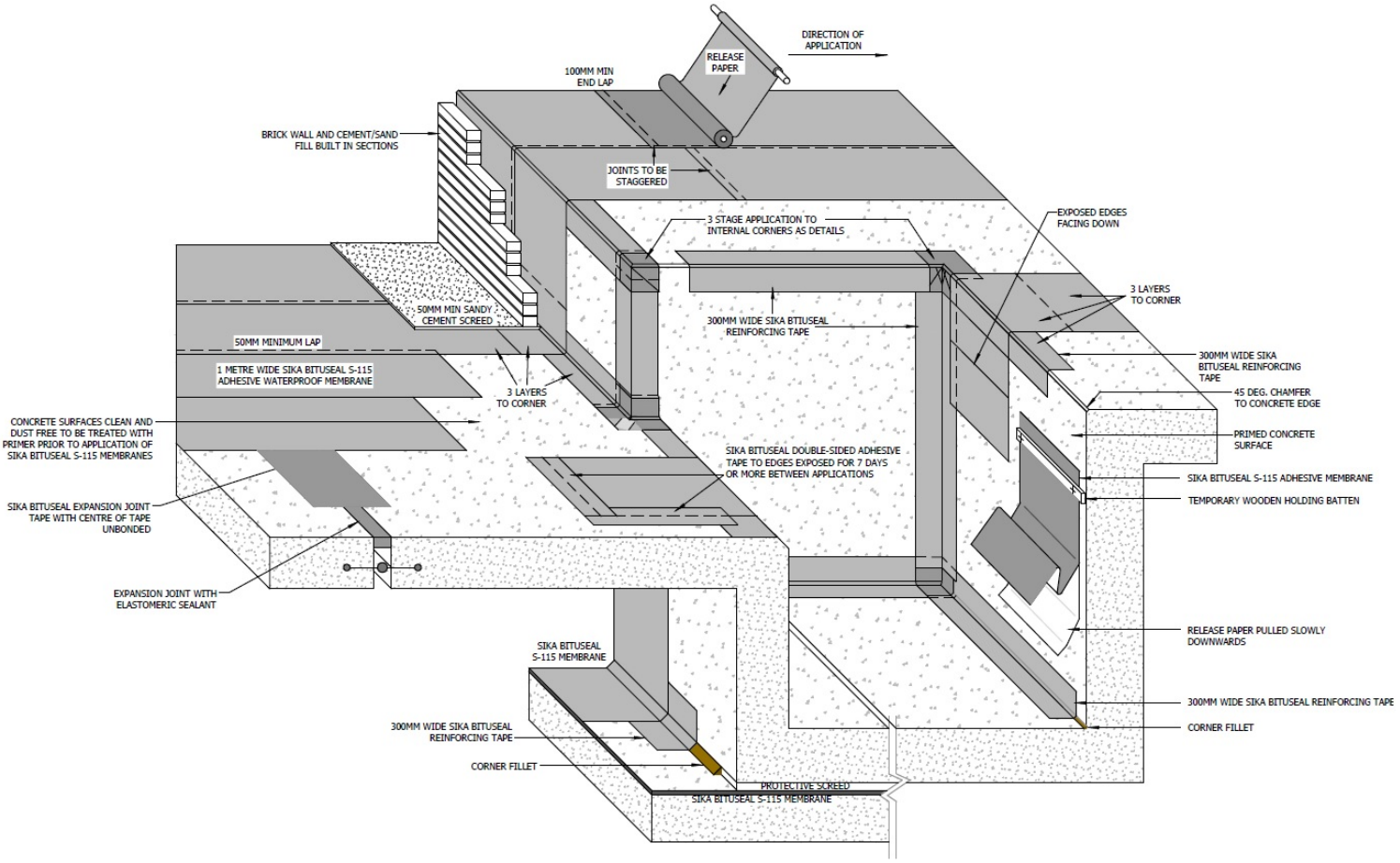
5.1 As soon as possible after application, all membrane should be covered, “backfilling“ sand/cement screed, pavings, or some other specified method.

5.2 For vertically applied membrane, backfill materials should be ideally sand or soil that does not contain debris (rocks, stones, broken concrete, etc), as this could damage the membrane. Other systems may be employed.

5.3 If the quality of the backfill is uncertain then the membrane has to be protected with suitable protection board or similar approved material before backfilling is carried out.

5.4 The use of protection board is important for vertical surfaces because the backfill is usually bulldozed from a height against the sides of the waterproofed structure. This can cause it to drop with considerable force against the membrane.

GENERAL APPLICATION DIAGRAM



6 PRECAUTIONS DURING APPLICATION

6.1 Surface preparation, membrane application, protection and backfilling should be carried out as quickly as possible to minimise the chances of damage caused by other operations on the construction site. There should be a minimum of delay between priming, application and covering.

If there are delays, a number of problems could occur:

- Membrane that is left exposed at high temperatures for several weeks could be degraded to some degree.
- Dust and dirt from other site work may contaminate the surfaces and the exposed edge of the last width of the applied membrane.
- Other site operatives may walk on the membrane and damage it.

6.2 High temperatures may cause blisters of the membrane. This is usually a result of the expansion of trapped air, water vapour or primer solvents. These blisters will not reduce the waterproofing performance of the membrane after it is covered.

6.3 If the application of membrane is to be interrupted for a week or more, it is advisable to roll the exposed edges firmly onto the substrate and seal it with a band of Sika® BituSeal double sided tape. This tape can remain in position and will be covered by the next side overlap when membrane application re-starts.

6.4 On very busy construction sites the probability of damaging the horizontal membrane is high and the membrane should be covered with suitable protection boards as soon as it is applied. Heavy duty protection boards should be used where there is a possibility of vehicular traffic.

6.5 The temporary wooden battens used to secure the tops of vertically applied membrane should be left in position until just before installing the protection boards and backfilling. The tops of the vertical membranes should be reinforced by bonding a piece of membrane horizontally across them. This will cover the nail holes if the battens are removed.

6.6 The upper part of this reinforcing piece should be tied in with whatever waterproofing exists or is to be installed – the exact method depends on the construction detail.

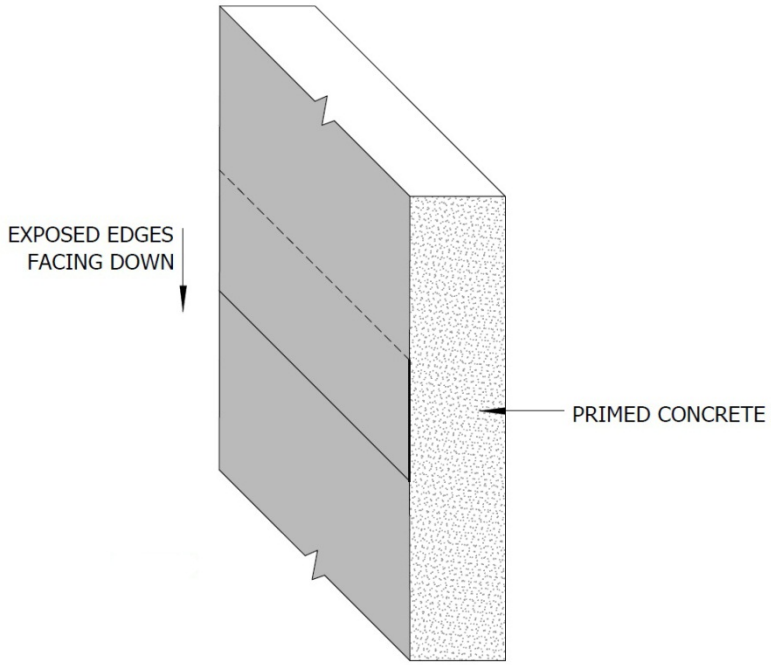


FIG. 9

7 DETAILING

A few typical details are shown in the following pages, including the recommended procedure for waterproofing both external and internal corners.

More precise information for specific circumstances can be supplied upon request, if construction details are provided.

7.1 *General Principles of Detailing*

i) Whenever two different structural elements join (e.g. wall and floor), the membrane should be reinforced with a strip of Sika® BituSeal reinforcement tape in order to reduce the stresses on the main waterproofing membrane by any relative movement of these structural elements (for example, see section 2.3 Treatment of Angles).

Strip and corner reinforcement should be carried out before application of the membrane.

ii) All overlaps should be formed in such a way that the final exposed edge is facing downwards. (See fig. 9).

iii) At a bottom angle or corner the vertical membrane should overlap onto the horizontal. (See fig. 10).

iv) At a top angle or corner the horizontal membrane should overlap onto the vertical. (See fig. 11).

v) In all detailing work it is essential to bond all membranes, corner pieces and reinforcing strips fully and carefully to the substrate. There must be no “bridging“ which would leave a void beneath the membrane.

vi) Detailing around complex structures (e.g. around pipework) should be supplemented by the use of Sika® bitumen mastic.

vii) Where horizontal and vertical membranes are being overlapped care must be taken to avoid damage to the horizontal membrane which had already been applied.

7.2 *Corner Details – internal vertical planes*

Note: When the joint angle between two walls is acute (“internal corner“ diagrams) this should be smoothed by the application of a vertical “fillet“ of sand and cement mortar.

7.3 *Corners Detail – Two internal vertical planes and an internal horizontal plane*

i) Reinforce the fillets (see 2.4) and bottom corners by applying a 300mm wide strip of Sika®BituSeal reinforcing tape along all the angles. This should be “dressed“ carefully round the angles to avoid any air pockets being trapped. (See fig. 14).

ii) Apply the horizontal membrane, lapping it onto the vertical walls beyond the reinforcing strips.

iii) Apply the vertical membrane, lapping it down onto the horizontal membrane (see 7.1.iii). At least one width should be positioned so that it can be dressed all the way round the vertical wall joint.

Both the horizontal and vertical membrane will have to be cut and folded in exactly the same way as the corner pieces in order that they can be applied correctly at the bottom corner.

7.4 *Corner Detail – Two internal vertical planes and one external horizontal plane*

i) Reinforce the top edges and corners by applying a 300mm wide strip of Sika® BituSeal Reinforcing tape along all the angles. This should be “dressed“ carefully round the angles. (See fig. 15).

ii) Apply the vertical membrane by starting with the horizontal and lapping over onto the vertical. At least one width should be positioned so that it can be dressed all the way round the vertical wall joint.

iii) Apply the horizontal membrane, overlapping it down onto the vertical membrane beyond the reinforcing strip.

Both the vertical and horizontal membranes will have to be cut and folded in exactly the same way as the corner pieces in order that they can be applied correctly around the top corner.

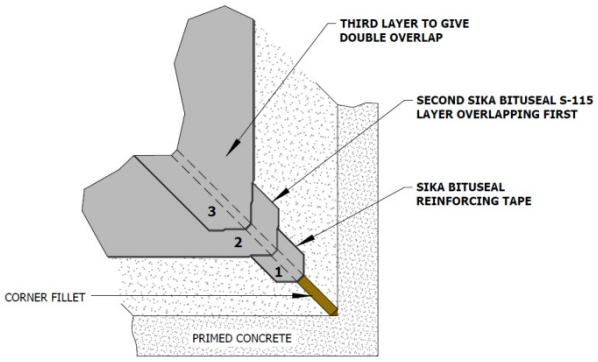


FIG. 10

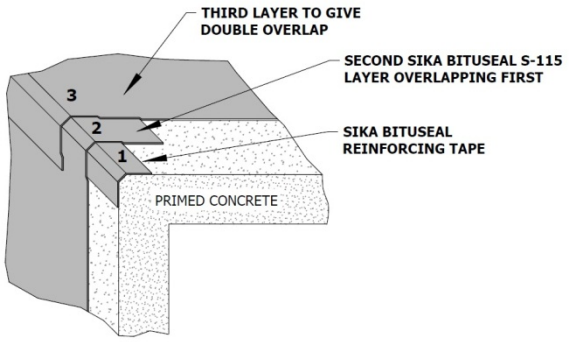


FIG. 11

EXTERNAL CORNER DETAIL

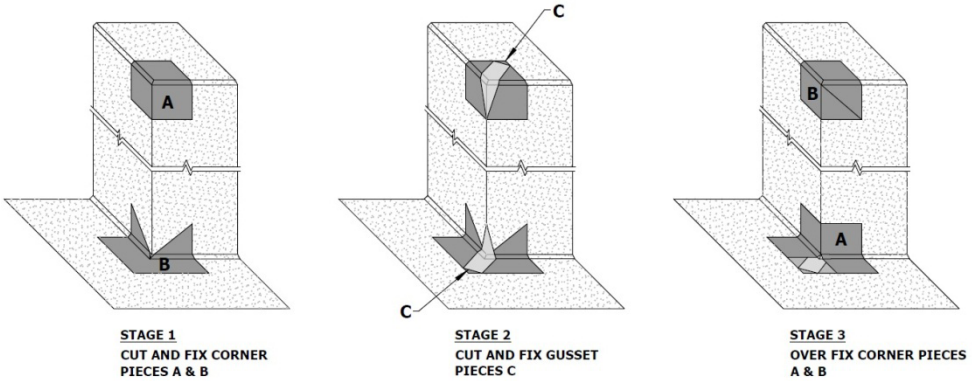
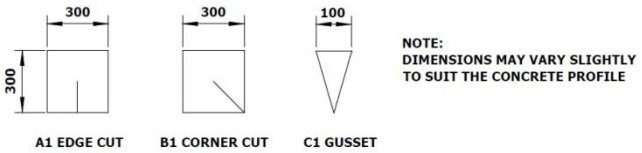


FIG. 12

CORNER PIECE DETAILS



INTERNAL CORNER DETAIL

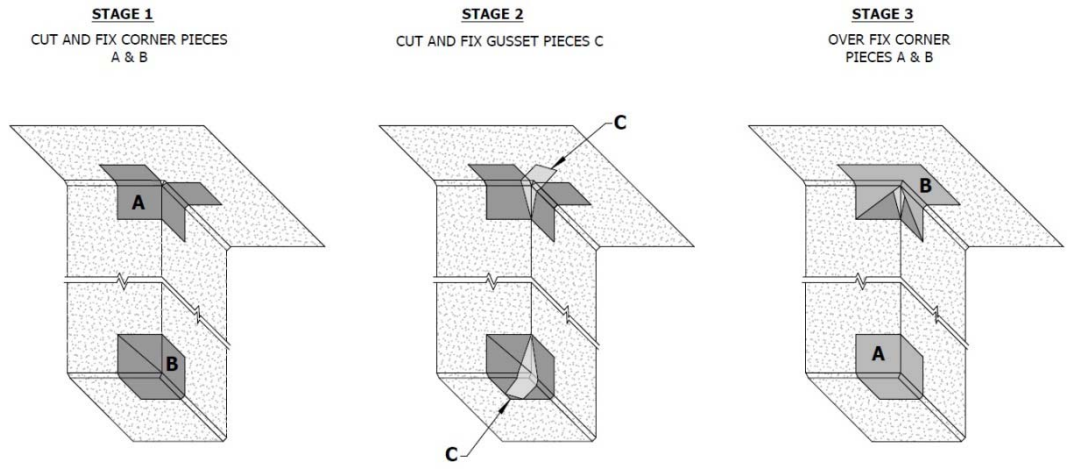


FIG. 13

INTERNAL CORNER DETAIL

FIG. 15

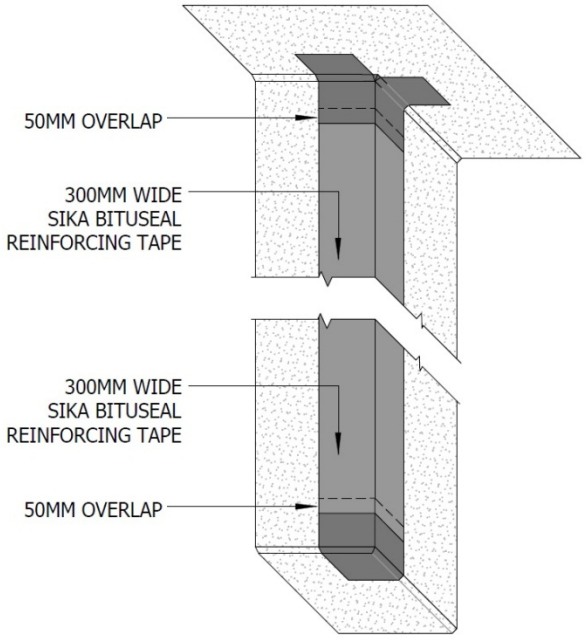


FIG. 14

9 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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