

SECTION 6.0

SAFEGUARD CDM

DEALING WITH INCOMING SERVICE PIPE ENTRY POINTS AND PROTRUSIONS WHICH HAVE TO PUNCTURE THE MEMBRANE (see diagrams 9, 10 & 11)

Very often CDM materials are used in locations where service pipes enter a building. Subject to their position this can be a point of weakness and therefore special attention is necessary. For the purposes of these instructions we shall refer to the incoming service as a pipe:

6.1 Preparatory work:

Clean off any rust, dirt, grease etc. from the incoming service pipe and if necessary apply a primer. Before the detail may be formed first of all cut and fit the membrane around the pipe as close as possible. Make good the unavoidable cut in the membrane using the butt seam technique (see section 2.2). Complete the fixing of the membrane to the wall in the normal fashion.

6.2 Incoming service collar:

Cut off a piece of 20cm width CDM Overseal Tape a minimum of 4 times the cross sectional area of the incoming pipe. On the paper surface draw in the centre, an exact profile of the pipe to be accommodated. Within the drawn profile area cut diagonally across at different points at least four times and then a single cut out to the nearest edge to form a 'collar' (see diagram 9). Remove protective backing paper and offer the 'collar' around the pipe and press the sticky face of the Overseal Tape against the membrane and the profile 'cuts' against the pipe (see diagram 10). Cut off a strip of Overseal Tape about 50mm wide and long enough to wrap around the pipe. Immediately adjacent to the collar apply this strip over the profile cuts around the pipe. Cut off a length of CDM Sealing Rope equivalent in length to the circumference of the pipe and press into the joint where the overseas tape strip meets the collar (see diagram 11).

DIAGRAM 9

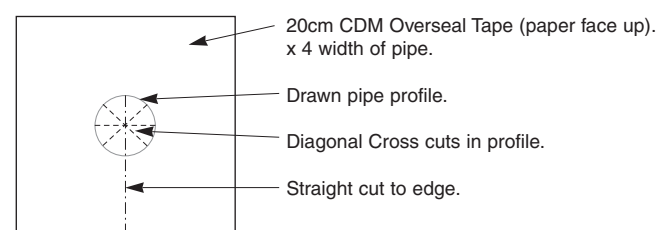


DIAGRAM 10

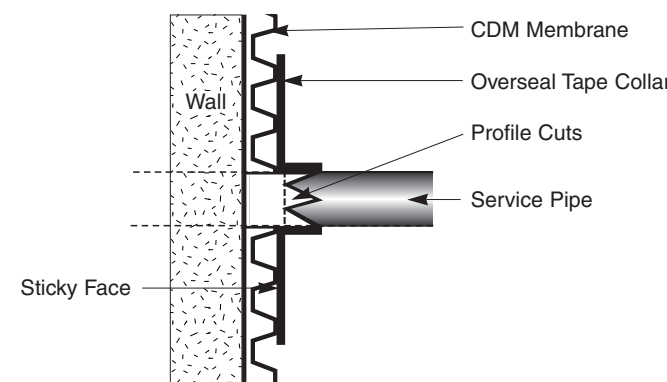
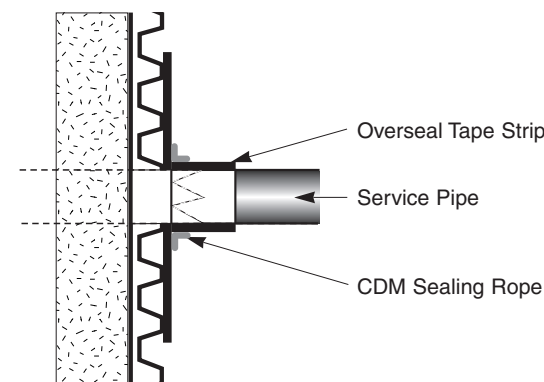


DIAGRAM 11



SECTION 7.0

SAFEGUARD CDM

WINDOW AND DOOR REVEALS (see diagrams 12, 13 & 14)

In below ground situations it is nearly always necessary to form a complete system and to facilitate this it is necessary to temporarily remove window frames, door frames and if present timber staircases so that the concealed masonry surfaces may be covered. As membranes fitted internally will slightly adjust the window and door reveal dimensions an alternative procedure may be necessary when tolerances are minimal:

7.1 If tolerances permit fit the regular membrane behind temporarily removed joinery fittings and reinsteate. The use of sealed brick plugs for reinstating the joinery is advised.

7.2 If tolerances are minimal use CDM Industrial in conjunction with CDM Overseal Tape. In some circumstances CDM Overseal Tape on its own may be adequate.

DIAGRAM 12 Internal 110mm (4 1/2") Reveal

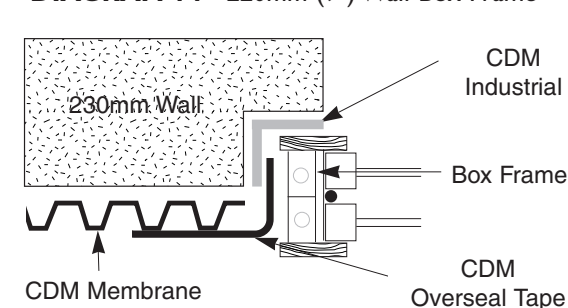


DIAGRAM 13 Internal 220mm (9") Reveal

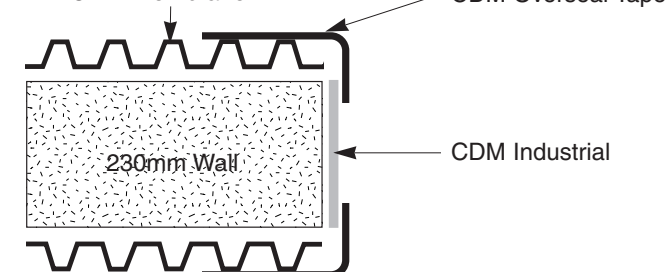
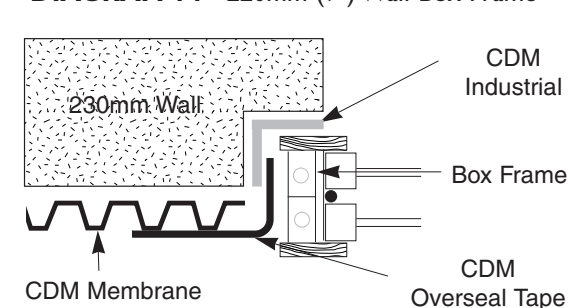


DIAGRAM 14 220mm (9") Wall-Box Frame



SECTION 8.0

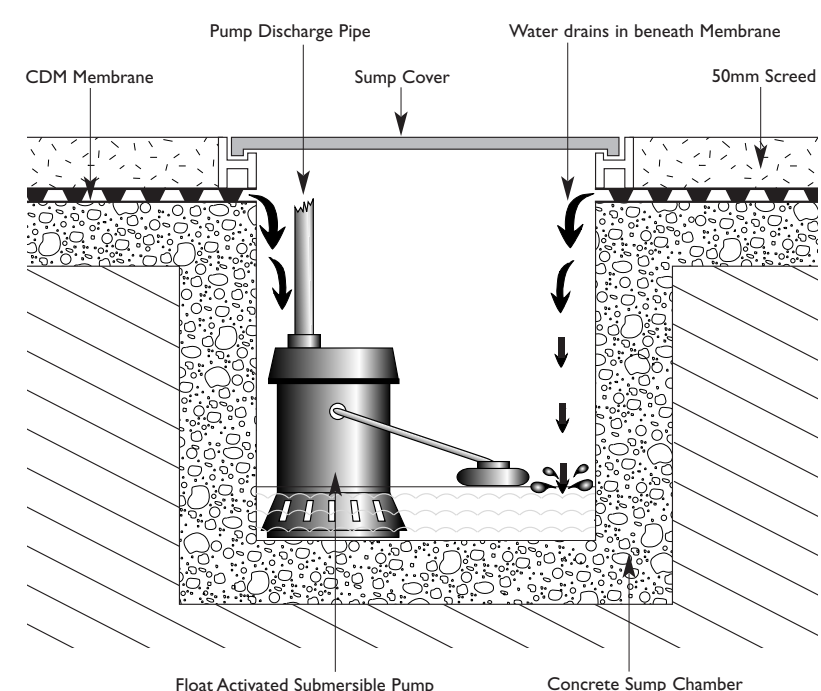
SAFEGUARD CDM

FREE WATER BEHIND THE MEMBRANE (Refer to BS8102)

8.1 When it is known or anticipated free water will be present behind the membrane, the installation design should incorporate adequate provision for its disposal. Dependent upon the volume of water anticipated, drainage channels should be cut or formed in the slab beneath the membrane and directed to discharge into an adequate drain(s) or a sump containing a submersible pump. Any low points in the floor where pooling would be likely to occur should be levelled before laying the membrane. The submersible pump will need to be accessible for maintenance in accordance with the manufacturers instructions and should incorporate an alarm, a one way valve in the discharge pipe and back-up system. A double seal sump access cover is recommended. (see diagram 15 for sump with pump detail).

8.2 Whenever it is necessary to fit CDM Membrane to a ceiling the designer must incorporate adequate falls to avoid 'pooling'. For this reason it is not recommended to fit CDM Membrane directly onto a flat soffit. A system incorporating adequate falls will need to be designed in these circumstances.

DIAGRAM 15 Sump with pump detail



SECTION 9.0

SAFEGUARD CDM

THERMAL INSULATION

9.1 The application of CDM membranes as part of the process to provide a dry decorative surface is very broad and very often there is the temptation to install internal thermal insulation directly behind the wall finish in front of the membrane as part of the dry wall system. Irrespective of the construction or system being employed this practice has the potential to cause condensation behind the insulation and if a membrane has been used it is likely to form on the surface of the membrane. If insulation is to be installed in conjunction with a CDM membrane system it should be directly behind the wall finish and not more than 12mm thick and even then the possibility of condensation forming should not be ruled out.

You are asked to note that this restriction is common to all internally applied thermal insulation and is inherent to building construction and water vapour movement generally and not just relevant when using CDM membrane systems.

SECTION 10.0

SAFEGUARD CDM

USEFUL TIPS WHEN USING CDM MEMBRANES, TAPES, SEALANTS AND FIXINGS.

10.1 Before applying any sealant or tape onto a membrane always ensure that the surface is dry and clean.

10.2 If for any reason a horizontal joint is necessary a butt seam (see section 2.2) is normally adequate but if running water behind the membrane is anticipated then a correctly 'lapped and weathered' joint should be formed for added protection.

10.3 Only use a club/lump hammer to insert CDM Brick Plugs otherwise there is a risk that the head could shatter.

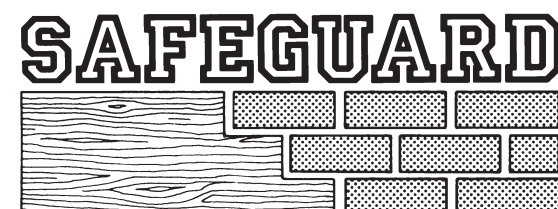
10.4 When using CDM Brick Plugs with sealing rope 'collars' do not make up too many ahead otherwise they may become dust contaminated and/or adhere to each other. Consider using CDM Compression Seal Washers.

10.5 When hanging membrane always plumb the first length for each run of wall. This greatly assists with subsequent vertical brick plug fitting, mechanical seam alignment and prevents an unpleasant visual appearance during the installation of CDM Fast Frame Dry Wall System.

10.6 In most circumstances it is normally better to position and hang the membrane first before attending to the more intricate details.

10.7 The dry wall fast frame system significantly reduces the brick plug requirement compared with a timber batten wall finish technique

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Safeguard Chemicals Limited

Redkiln Close, Redkiln Way, Horsham, Sussex RH13 5QL.

Telephone: +44 (0) 1403 210204/210648 e-mail: sgrdchem@aol.com

Fax: +44 (0) 1403 217529

web-site: www.safeguardchem.com

How to refurbish damp or contaminated walls and floors using CDM MEMBRANE

Before installing a CDM membrane system an evaluation of the expected performance requirements is necessary. BS 8102 defines performance levels for the dryness of buildings and divides them into four grades and you must be satisfied that your proposed installation designs will meet these requirements. When membranes are used internally in an existing structure certain basic design features have to be considered and acted upon. Listed below are some key points:-

- Decide which wall finish system you intend to use as this will affect your fixing centres. Either a timber batten and plaster board, CDM Dry Lining System, or dot and dab may be used in front of the membrane.
- Assess the possibility, however remote, of water entering the drainage cavity behind the membrane. Design in a facility for it to be channelled away either to an adequate drain or a sump with an automatically activated mechanical pump. We advise that you refer to BS 8102 paragraph 3.4.b which states 'for basements not exceeding 4m deep, a design head of groundwater, three-quarters the full depth below ground (subject to a minimum of one metre) is usually adequate'.
- Assess the stability and suitability of the substrate to receive the membrane system and its fixings.
- Within the area to be lined always incorporate adequate ventilation, preferably mechanically assisted into your installation design. We suggest that you refer to the CIRIA documents C139 and C140, Water Resisting Basements. Table 2.2 provides guidance on environmental requirements subject to the intended use of the basement.
- Remove any organic material e.g. wall paper and consider the need to apply Safeguard Probor DB to the substrate before fitting the membrane.
- In below ground level situations always remove any window/door frames, staircases etc before installation to ensure continuity of the membrane behind these fixtures (see section 7)
- Be aware that CDM membranes and sealants are not designed to support a 'head' of water. It must be understood that they are designed to control the movement of water and vapour within the limitations of their capacities.
- Before the installation commences attend to any structural repairs or other works likely to puncture or affect the membrane system.
- Care must be taken not to puncture the floor membrane when flooring material is laid on top of the membrane.

BASIC EQUIPMENT REQUIREMENTS FOR INSTALLATION

- Sharp knife and spare blades
- Measuring Tape
- Spirit level (500mm to 1m)
- Plumb Line / Chalk Line
- Club (lump) Hammer
- 2m straight edge
- Access equipment and adequate lighting
- Dry clean cloths to wipe surfaces clean
- Warm Air Gun
- Masonry drill with 11mm & 10mm bits for fitting CDM Brick Plugs

PROCEDURE WHEN USING CDM TAPES & SEALANTS

It is recommended that a Warm Air Gun be used either to warm the membrane surface or the tape/sealant just prior to use as this greatly enhances the adhesive properties. These instructions therefore assume that surfaces to be joined, seamed or covered will have been warmed just prior to the application of CDM tape and sealants. The use of vapour wipes in areas of high humidity during cold periods is advised.

SAFEGUARD BUILDING MOISTURE CONTROL SYSTEMS

SECTION 1.0

SAFEGUARD CDM

FIXING CDM MEMBRANE USING CDM BRICK PLUGS

The CDM Brick Plug has been purpose designed to secure CDM Membrane. The brick plug fulfills two roles: **(i)** it secures the membrane to the substrate and **(ii)** it provides a sealed facility to accept a No. 12 screw enabling timber battens, dry wall fast frame brackets, service pipe clips etc to be fixed without puncturing the membrane. The CDM Brick Plug requires a 11mm drill hole to receive it however softer substrates may require a reduction of the drill size to 10mm.

1.1 CDM Brick Plug preparation (see diagram 1 & 2)

When using brick plugs above ground level it is not always necessary to seal the collar, however, in below ground situations or whenever running water behind the membrane is anticipated the collar of the brick plug should always be sealed using either of the following methods:

a) Using CDM Sealing Rope. Cut off approximately 30mm of CDM Sealing Rope. Stretch and wrap this all the way round the shank of the brick plug immediately beneath the large flat head to form a collar. Before offering the brick plug up to the drilled membrane wipe dust from around the hole. When the brick plug is driven home against the membrane the sealing rope collar forms a waterproof seal.

b) Using a CDM Compression Seal. Drill through the membrane in the normal fashion and wipe away dust from around the hole. Apply a self-adhesive CDM Compression Seal, over the hole in the membrane and offer the brick plug into the seal/membrane hole. Drive the brick plug fully home and ensure that the shoulder of the Brick Plug has compressed the seal by at least 30% to make it waterproof.

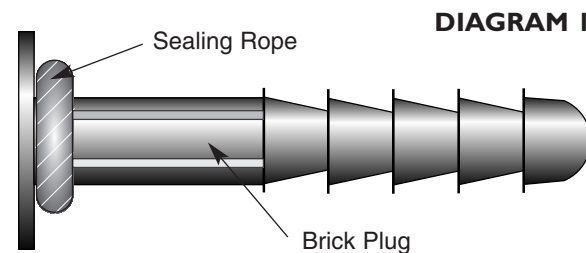


DIAGRAM 1

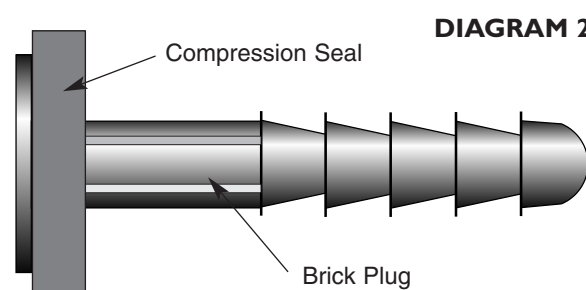


DIAGRAM 2

1.2 Below ground fitting:

In virtually all circumstances vertical hanging of the membrane is recommended. Cut from roll of membrane the correct length to be fixed taking into account the floor/wall detail requirement when relevant (see section 3). Position the cut piece of membrane on the wall (raised dimples against the wall) at your selected starting point, ideally working from left to right. As an aid, temporarily secure near the top centre to create a 'pivot' point for alignment. Using a spirit level and/or a plumb line vertically align the membrane. At this stage establish the fixing requirements and centres for the wall finish system you intend to use as this will probably require specific brick plug positioning. Bearing in mind the fixing centre requirements drill two 11mm holes, to a minimum depth of 80mm, through the membrane into the substrate as near to the top of the membrane as possible. Offer prepared CDM Brick Plugs into the holes and using a club/lump hammer gently tap home hitting true and square without excess force to prevent damaging the brick plug. This will then allow the membrane to hang.

Continue to install prepared brick plugs in a similar fashion working evenly across and down the membrane at centres dictated by the intended wall finish requirements.

1.3 Above ground fitting:

The hanging of the actual membrane should follow the same procedure for 'below ground fitting' as outlined in section 1.2 above. Unless running water is anticipated behind the membrane it is not normally necessary to seal the collar of the brick plug when used above ground level. Your attention is drawn to the floor/wall junction details in section 3.0.

SECTION 2.0

SAFEGUARD CDM

MEMBRANE SEAMS (JOINS)

A fundamental requirement when using any membrane system is the ability to join one piece of membrane to another and form an effective seam. Dependent upon which type of membrane is being used there are various methods available. Most CDM Membranes have a simple flange facility along one edge for this purpose.

2.1 Flange seam (see diagram 3)

Along one edge of most CDM Membranes is a flat flange and the other has a smooth strip between the first and second row of studs. Wipe clean the smooth strip between the first and second row of studs for the entire length of the intended seam. Apply CDM Double Sided Tape to the smooth strip leaving the backing paper on at this stage. Align the flat flange of the next length of membrane to be seam joined over the previously applied double sided tape. When satisfied that the intended seam is straight and even, wipe clean the underside contact surface of the flat flange then, starting from the middle of the seam working outwards in both directions to avoid rucking, tear and remove the backing paper from the double sided tape. Apply gentle heat and firm pressure along the top surface of the flange to ensure the double sided tape has fully adhered. Some membranes do not have a tape Channel along one edge in which case the double-sided tape should be applied between the first and second row of studs. In some circumstances it is also preferable to apply CDM 75mm Overseal Tape onto the flange seam once it has been formed.

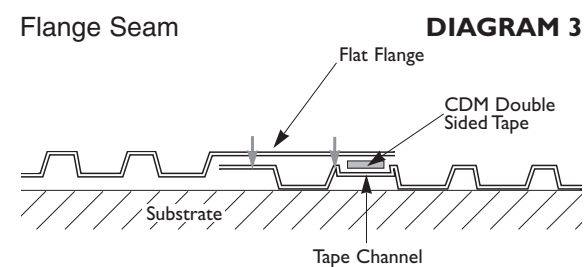


DIAGRAM 3

2.2 Dimple to dimple join

Subject to site circumstances there are two methods of forming a seam when it is not possible to use the mechanical or flange seam facility.

a) Over lap seam: Overlap the two pieces of membrane to be joined by a minimum of 250mm. Apply 20cm width CDM Overseal Tape along the edge of the overlapped membranes so that each receives equal coverage by the Overseal Tape.

b) Butt Seam: Ensure that the two edges to be butt seamed have each been cut straight. Position the two edges along side each other as near as possible. Apply 20cm width CDM Overseal Tape evenly over the join so that each piece of the membrane receives equal coverage by the Overseal Tape. This is a very similar principal to an angle or floor/wall junction described later in section 3.

SECTION 3.0

SAFEGUARD CDM

FLOOR/WALL JUNCTIONS

(see diagrams 4, 5 & 6)

When applying a membrane system to a wall it is important to pay particular attention to the floor/wall junction particularly if a membrane is not being used on a solid floor. The details below cater for three of the most commonly encountered floor/wall situations with regard to solid floors. Each design will control minor moisture penetration should it occur however increased moisture penetration may require different techniques (refer to our technical department).

3.1 Membrane applied to walls and floor

(see diagram 4)

Ideally the same continuous length of membrane should be taken around corners or down the wall and across the floor but for practical working purposes this is not always possible. It is therefore necessary to have a specific detail to cater for a seam at these points. The same basic procedure for the butt seam (see section 2.2) should be followed with the only difference being that instead of a flat surface the seam actually forms the 90° floor/wall junction or any other angle be it vertical, horizontal, internal or external. It is important to remember that the two pieces of membrane which are to form the angle seam are positioned and secured first prior to the application of the CDM Overseal Tape.

3.2 Membrane applied to walls only with existing solid floor (see diagram 6)

To minimise the possibility of condensation forming between the membrane and the substrate and then accumulating at the bottom it is recommended that the membrane is 'dressed' into a solid floor.

At the base of walls being covered form a chase into the solid floor approximately 50mm wide and to a depth greater than the solid floor damp proof membrane. If no membrane is present the chase should be a minimum of 150 mm deep and/or into loose underlying material. Be aware that a floor without any damp proof membrane is probably damp and will remain so. Cut the membrane to a sufficient length so that when hung the base of the membrane penetrates into the full depth of the chase. If a floor membrane is present position the CDM material down the back of the membrane. Make good the chase by ramming in Safeguard SWS Fillet Seal which has expansive curing properties. Where the floor membrane and CDM Membrane meet cover with 75mm CDM Overseal Tape.

3.3 Membrane applied to walls only and new solid floors are to be laid

If new solid floors are to be laid the ideal would be to use CDM as the floor membrane as well. If a CDM Membrane is not to be used as the floor membrane but only on the walls then it should be fixed into position prior to the floor being laid and be long enough to be concealed by the proposed new hardcore, damp proof membrane, concrete slab and screed.

NOTE: CDM Studded Membranes are ideal to receive self levelling or conventional screeds as well as free floating timber based sheet material floor finishes. CDM Industrial Membrane is ideal to receive pumped screeds.

DIAGRAM 4

Floor/Wall Internal Angle Seam

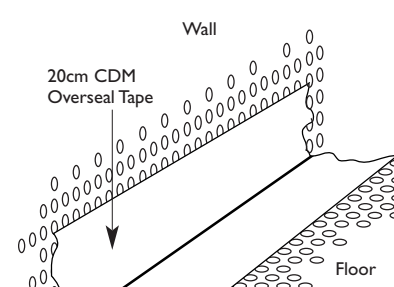


DIAGRAM 5

Example of External Angle Seam used around a window reveal

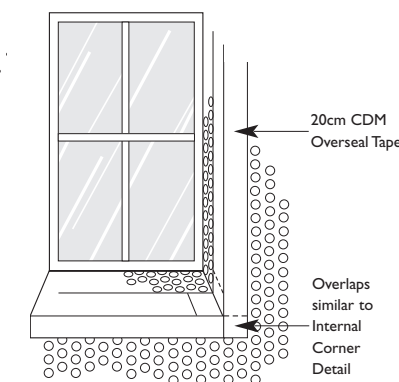
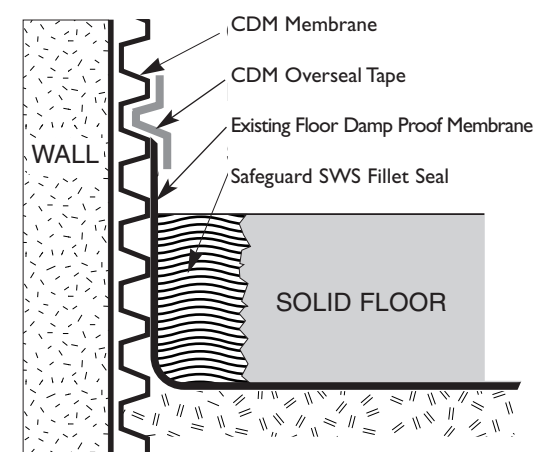


DIAGRAM 6



SECTION 4.0

SAFEGUARD CDM

INTERNAL AND EXTERNAL CORNER DETAILS (see diagrams 7 & 8)

4.1 Internal corner (see diagram 7)

When membranes meet at an internal corner, with both floors and walls being covered, butt seam principles apply and the corner detail is catered for by using CDM Overseal Tape as follows:

Cut off a 400mm length of 20cm width Overseal Tape. With the paper surface down, along both its length and width, fold in half and form two creases. From the centre point where the two creases cross, cut downwards along the crease to the outside edge (half the width). Remove protective backing paper and offer the prepared overseal tape into the corner so that the long creases form the two meeting floor/wall angles and by bending the material around, the short remaining uncut crease forms the vertical corner angle with the cut crease edges overlapping themselves accordingly. Apply gentle heat and press onto the membrane and the overlap to ensure good adhesion. With care this simple corner detail may be formed out of the same continuous length of floor wall junction without the need to form a separate detail.

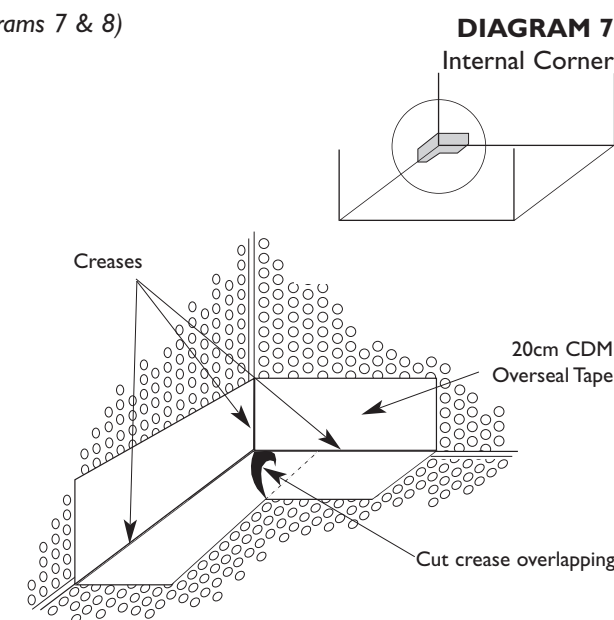


DIAGRAM 7

Internal Corner

4.2 External Corner Detail (see diagram 8)

When membranes meet at an external corner with both floors and walls being covered, butt seam principles apply and the corner detail is catered for by using CDM Overseal Tape as follows:

Cut off two 300mm lengths of 20cm width Overseal Tape. With the paper surface down fold each piece in half back on itself along its length and crease the material. On the right end of one piece and the left end of the other cut along the crease for 100mm. On each piece fold the top flap only backwards on itself to form a right angle and crease the material. Offer one piece up to the angle of the corner in the normal floor/wall junction fashion with the vertical crease of the flap forming the corner and press the flap around the corner onto the membrane. Repeat the process with the other piece of prepared Overseal Tape along the other angle of the corner pressing the flap around the corner onto the already positioned piece with the floor sections now overlapping each other. Cut off a 200mm length of CDM Sealing Rope and from the point of the corner press 100mm into the angle at the base of the flap returning the remainder into the angle around the corner.

Subject to personal preference there are other variations of forming an external corner detail.

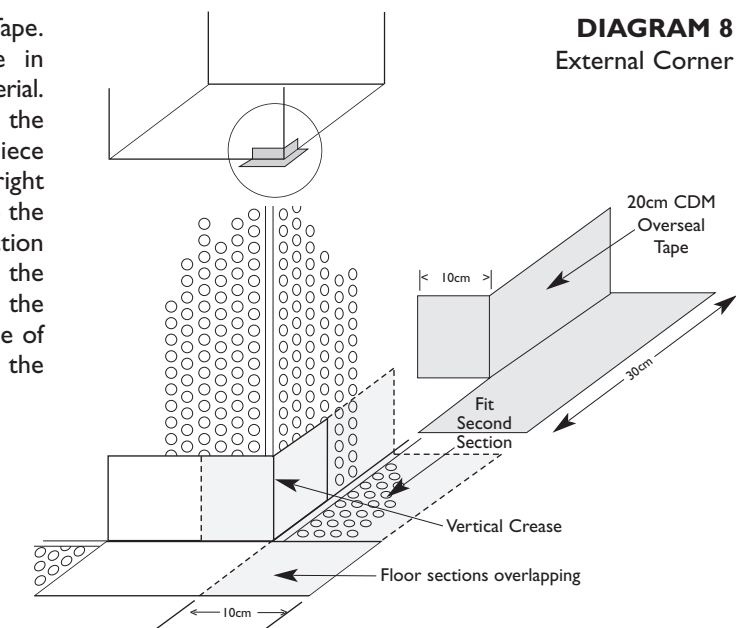


DIAGRAM 8

External Corner

SECTION 5.0

SAFEGUARD CDM

USING CDM STUDDED MEMBRANE ON FLOORS

If CDM Studded Membrane is to be used on a floor alone and not in conjunction with a wall application the following procedure should be followed:

5.1 Laying CDM Studded Membrane on a floor:

Lay the membrane, with the dimples facing down, in lengths across the entire floor area to be covered joining each section to the adjoining piece with the relevant water/vapour proof seam as described in section 2.0. Make sure that the membrane is lapped up around the perimeter of the area as well as any penetrating columns etc to a height greater than the intended floor finish. Lay the floor finish and then trim off any excess membrane flush to the new floor finish.

NOTE:

- 1) It is not necessary to fix the membrane to the floor however, if the intended floor finish requires fixing which necessitates puncturing the membrane the advice of our Technical Department should be sought.
- 2) If a floor and wall areas are to be covered with a CDM Membrane refer to sections 3.0 and 4.0 for the relevant angle and corner joining techniques.