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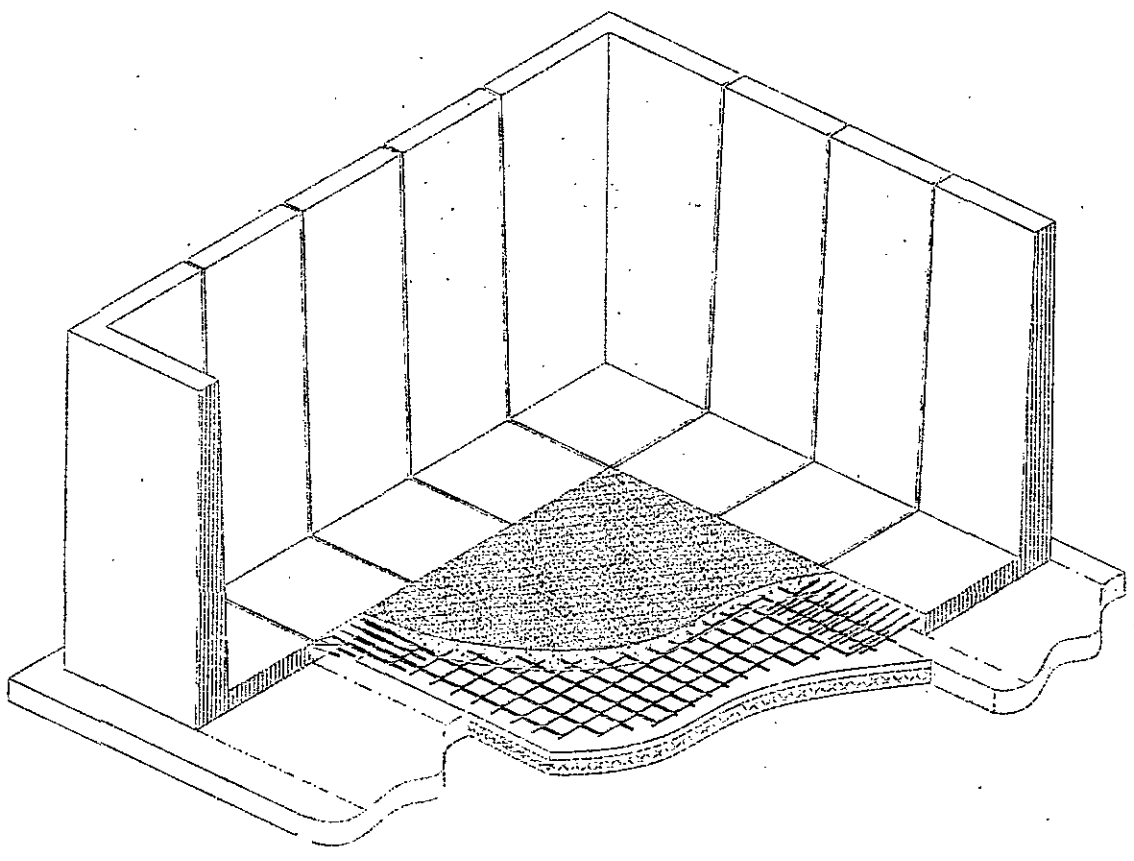
Specification of Works

for the

Installation of Rockwall Precast Concrete Retaining Units

for

Liquid Storage



ISSUE 10-8-11
REV. C

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BELOW GROUND STRUCTURES

Excavations for the construction of underground tanks should be considered special projects. Ground conditions play a major part in the work and if there are any doubts obtain specialist advice.

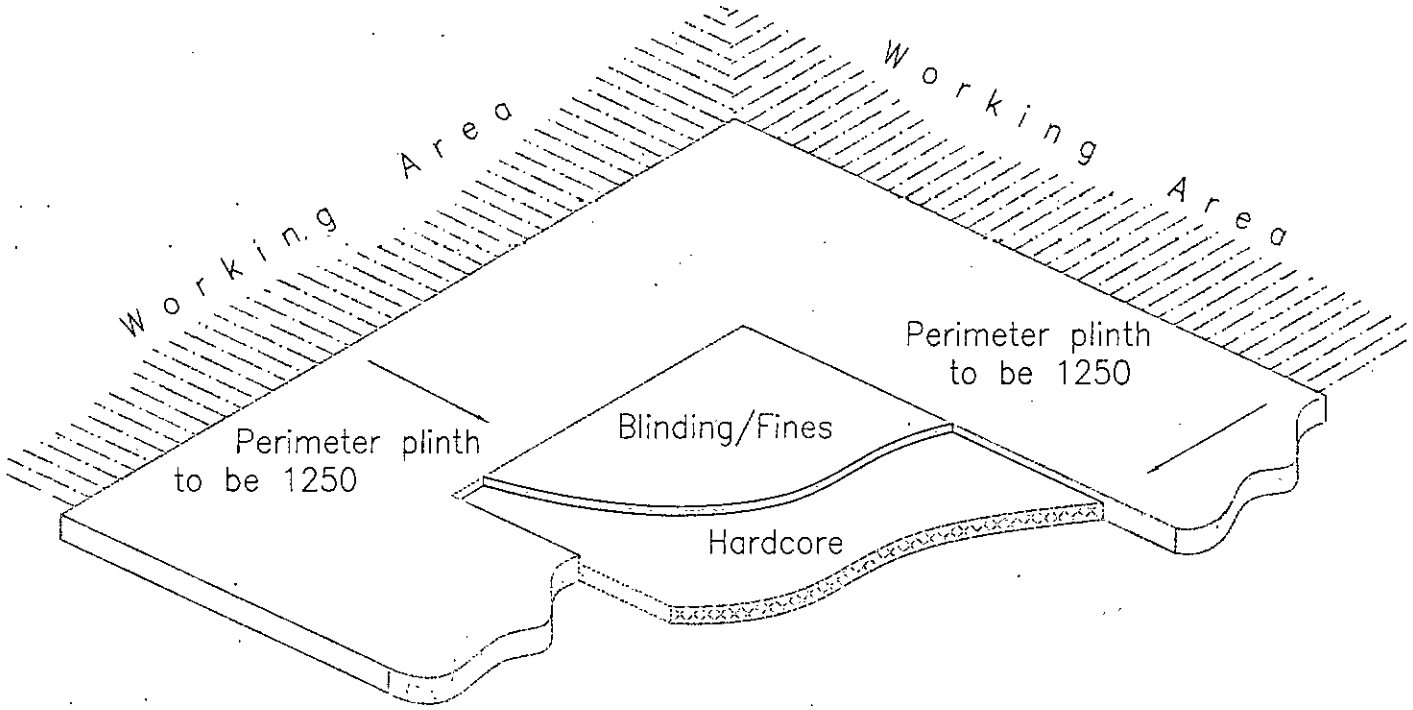
There is a risk of floatation if the tanks are constructed in ground with a high water table or if surface water is allowed to flow into the ground surrounding the tanks.

Consult Whites Concrete limited or obtain specialist advice if the ground water level is above the base of the tank e.g. if pumping is required to keep the excavations dry.

Modifications to the design of the tank base and floor slab, or permanent underground drainage may be required if the ground water level is above the base of the tank.

Surface water interceptor drains may be required if the tanks are being constructed in impervious clay ground to prevent a build up of ground water around the tanks.

SITE PREPARATION/FORMATION OF FOUNDATIONS AND HARDCORE

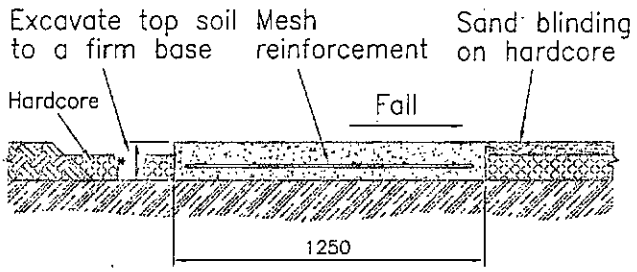


SITE EXCAVATION

Set out working area from setting out drawing.

Remove site of top soil and vegetation to leave a firm base of bearing capacity 110kn/m² (1ton/ft²)

Remove any stones from site where plinths will lay.



SECTION THROUGH PLINTH

PLINTH CONSTRUCTION

Set out plinth formers from setting out drawing.

Lay 1 layer A252 mesh to bottom face of plinth allowing 50mm of cover.

Perimeter plinths to be 1250mm wide x 150mm thick with a fall of 12mm towards centre of store.

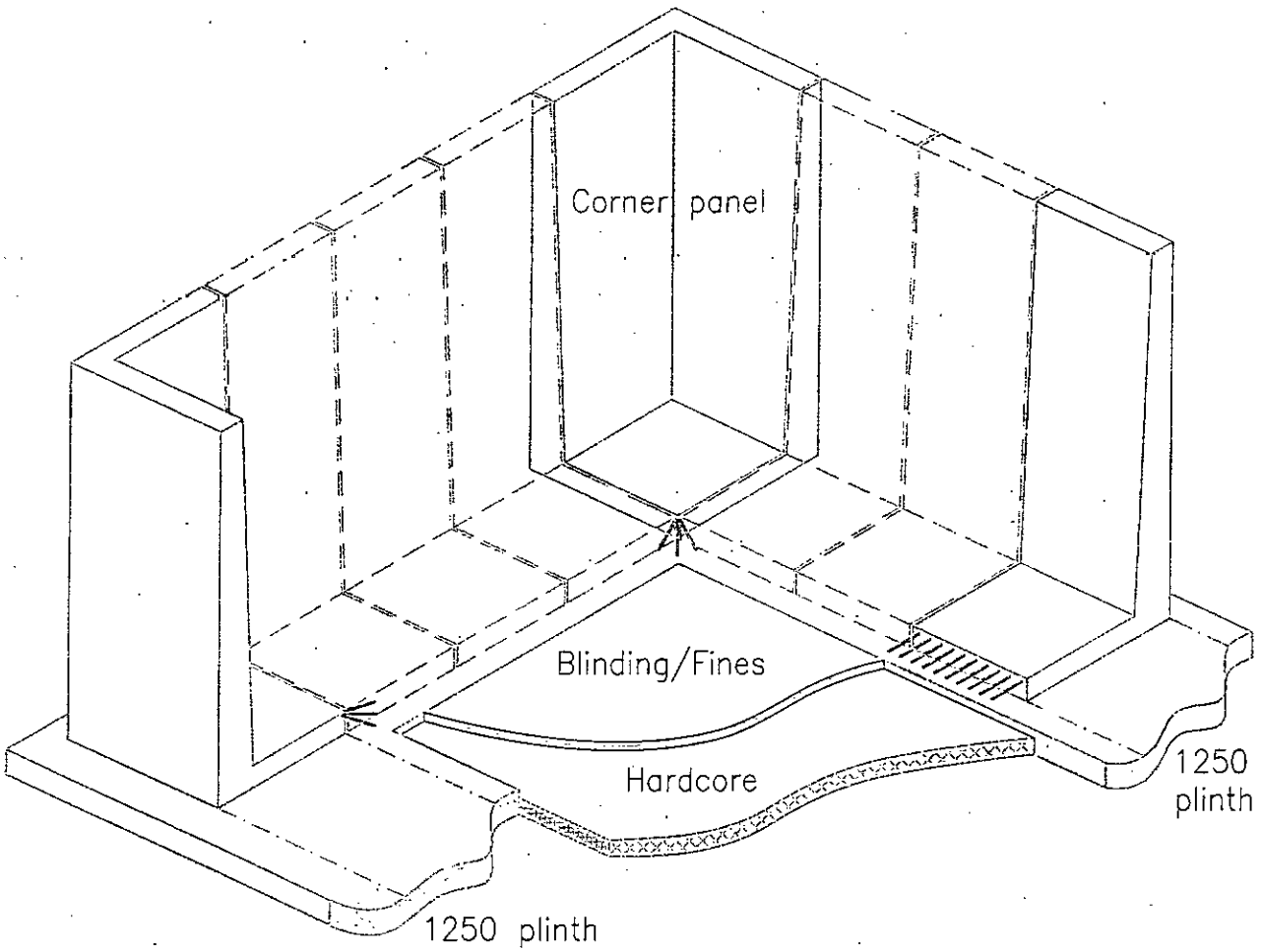
Concrete grade to be C40 or RC40 using 20mm max. aggregate medium workability.

HARDCORE BASE

Site area between foundation plinths to be covered with min. 150mm thick hardcore compacted to 100mm thick then 50mm compacted fines using light roller or plate vibrator.

More hardcore may be required if site slopes or additional excavation is needed to find a good firm base.

INSTALLATION OF ROCKWALL PANELS

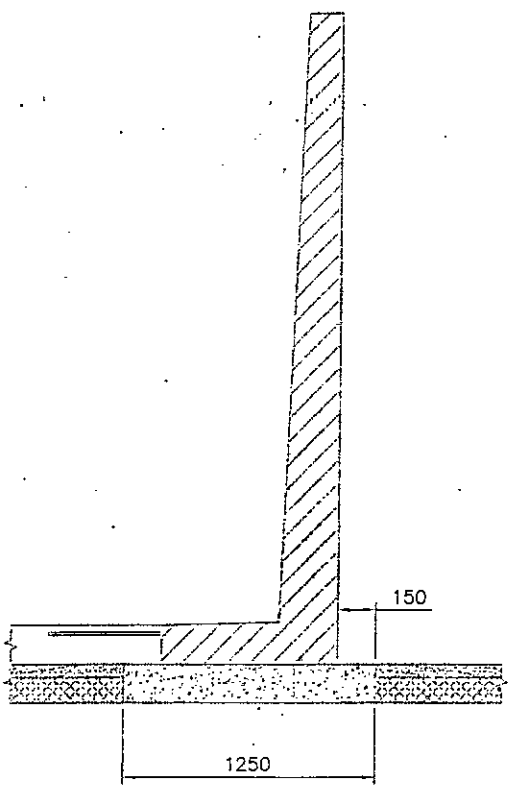


Set a string line max. 300mm high from the plinth to guide installation of the panel backs

Install from corner panel as shown on the setting out drawing ensuring that panels are on line. Note: ignore tops at this stage.

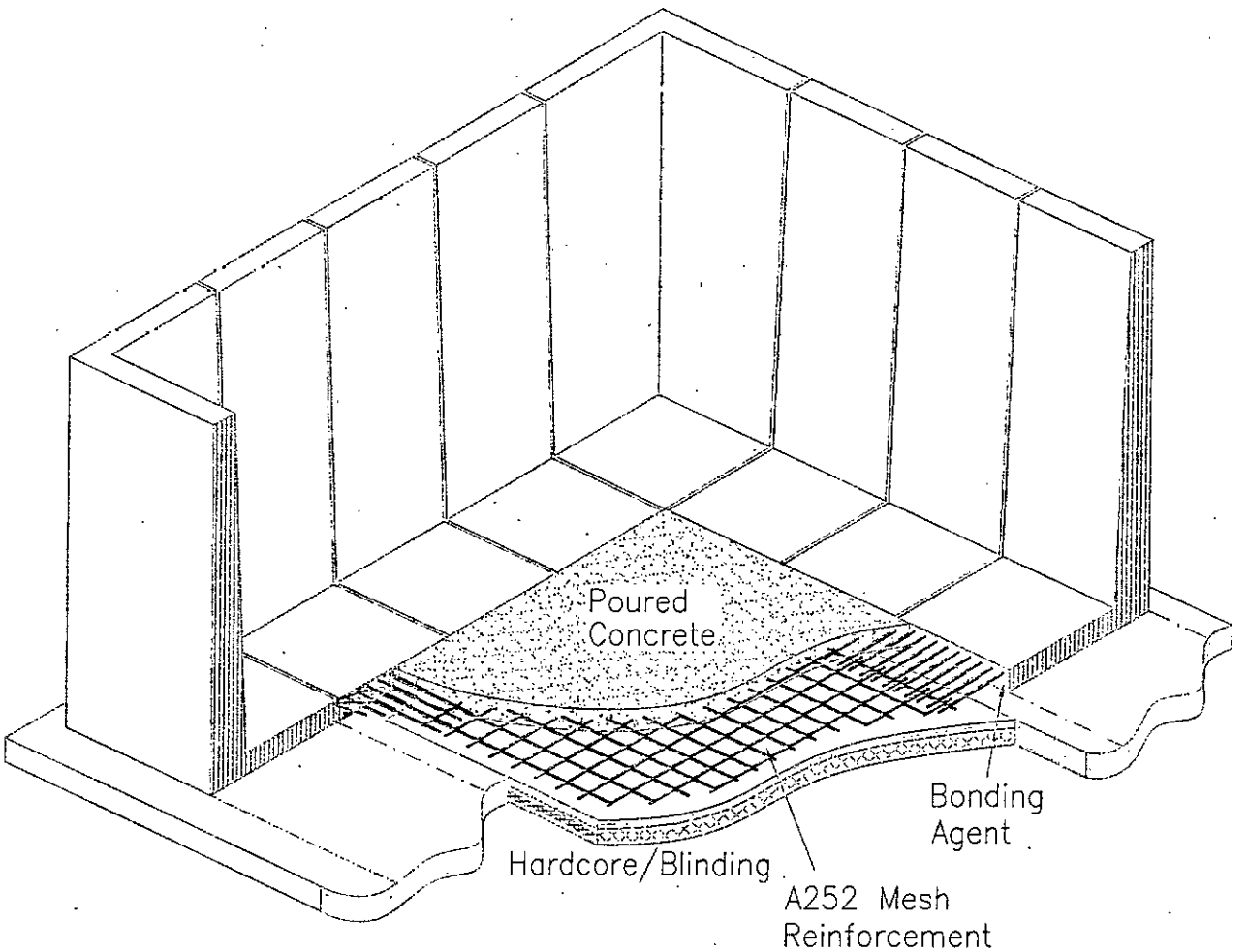
Complete all required sides by this method.

Using string line on panel tops adjust alignment using crowbars and nylon or steel shims under toes of panels.



SECTION

CONSTRUCTION OF FLOOR SLAB



Replace and compact any disturbed hardcore/blinding during erection of panels.

Lay damp proof membrane. Visqueen 1000 or similar over fines ready for the concrete slab floor.

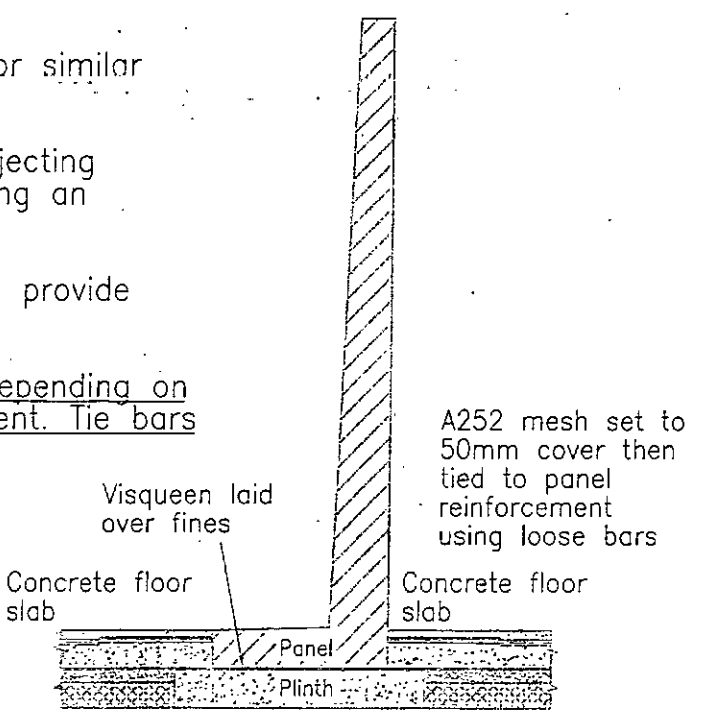
Lay A252 reinforcement mesh under the projecting bars from the wall units at perimeter ensuring an overlap of min. 300mm.

Use wire chair spacers to support mesh and provide 50mm min. cover to top of finished slab.

Position loose bars provided (12's or 10's depending on panel height) alongside projecting reinforcement. Tie bars and mesh together.

Paint vertical faces of toes to wall units with a bonding agent before concreting.

Concrete may be pump/poured to reduce joints.
Note: max. pour 35 metres using A252 mesh. Alternatively traditional laying methods can be used but concrete must be mechanically tamped.



TYPICAL SECTION

Concrete to be grade C40 or RC40; 20mm max. aggregate medium workability and compacted by a vibrating beam.

SEALING AND JOINTING OF FLOOR SLAB

DAY JOINT

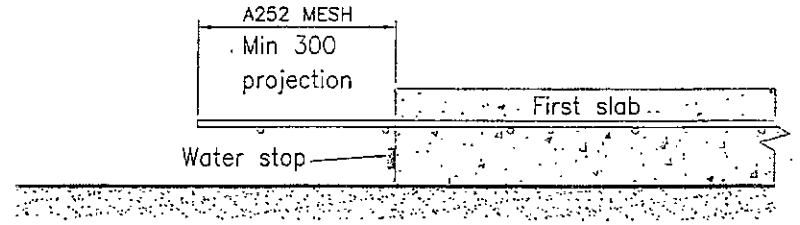
cast concrete slab ensuring A252 mesh projects 300mm from outside edge.

Affix Hydrotite (or similar approved) water stop to side of slab.

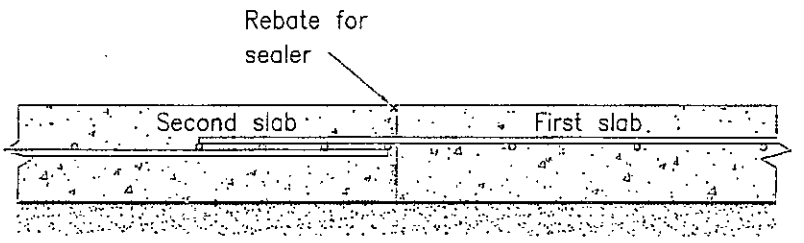
Lay A252 mesh over projecting mesh and continue concreting main slab.

Form 10mm x 10mm rebate during construction.

when concrete is set fill rebate with 'Soudaflex' polyurethane sealer.



STAGE A



STAGE B

USED AS AN END OF WORK JOINT
TO SUIT CONSTRUCTION METHODS

CONTRACTION JOINT

Fix securely into position steel formers.

Lay A252 mesh to provide 50mm cover to top of slab and 100mm away from former.

cast concrete and position dowels through the former into slab.

When concrete is set remove formers.

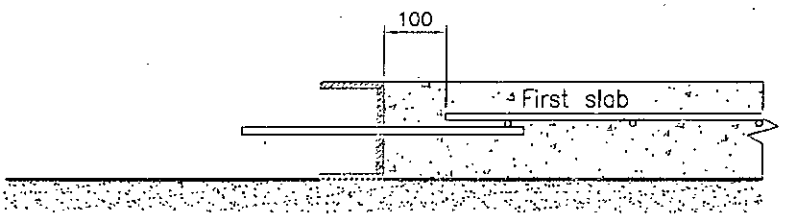
treat dowels with debonding paint.

Affix Hydrotite (or similar approved) water stop to side of slab below dowels.

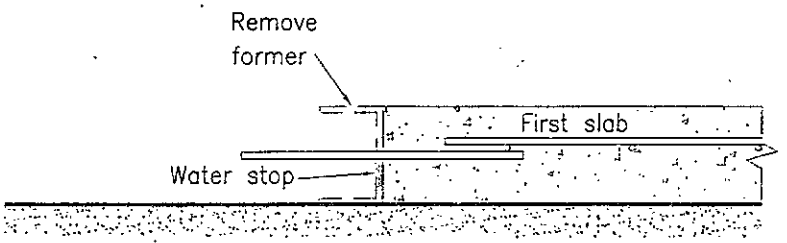
Prepare mesh as before described and continue to concrete main slab.

Form 10mm x 10mm rebate during construction.

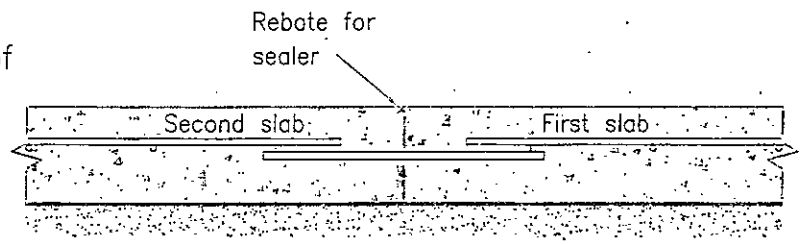
When concrete is set remove bead and fill rebate with 'Soudaflex' polyurethane sealer..



STAGE A



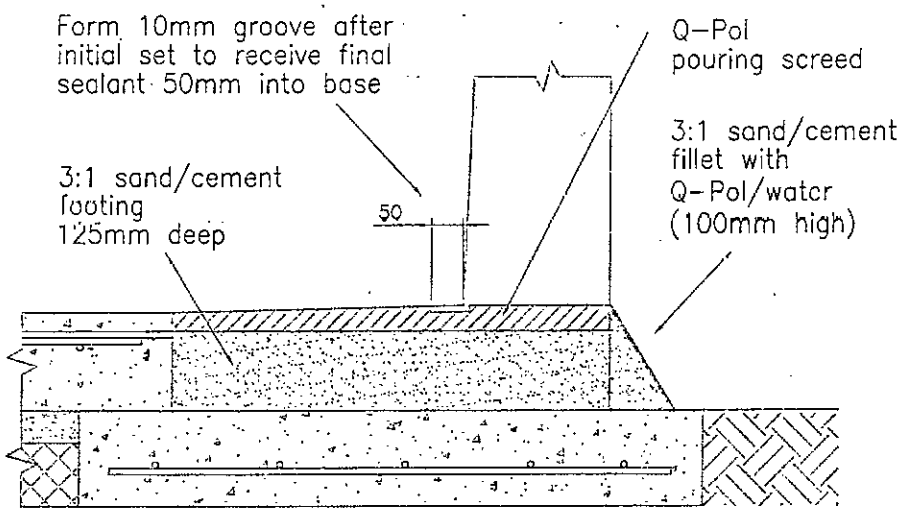
STAGE B



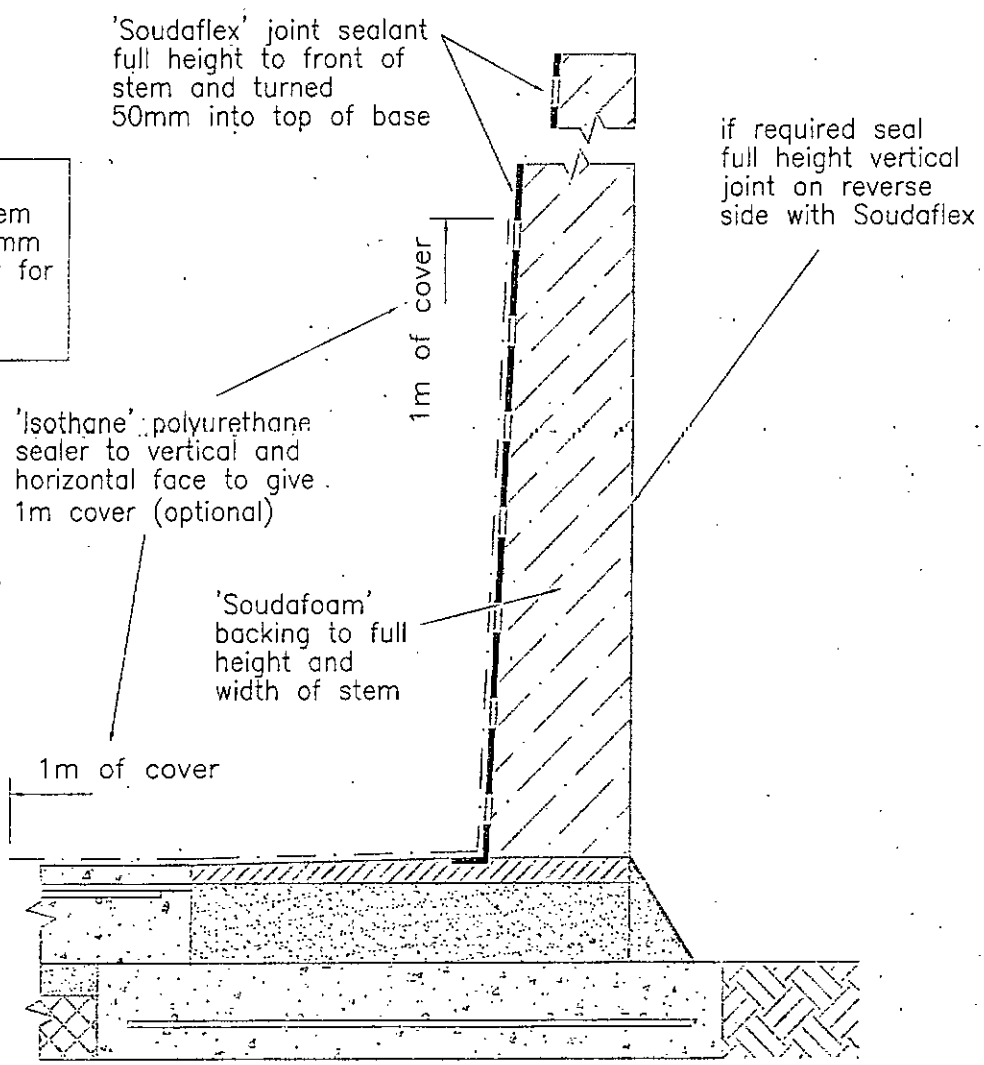
STAGE C

USED WHEN SLAB EXCEEDS
37 METRES IN EITHER DIRECTION

SEALING AND JOINTING OF ROCKWALL PANELS



BASE SECTION



NOTE:
Apply 'Soudafoam' to stem first, then trim back 10mm or width of gap to allow for application of 'Soudaflex' sealant as indicated

BASE/STEM SECTION

Q–POL: SPECIFICATION FOR APPLICATION

PREPARATION

Ensure the surfaces are clean and free from any contamination such as oils or grease and that the surface is sound and solid and free from any loose or friable material.

If the surface is dry then dampen with clean water ensuring that any pools or puddles are swept away.

APPLICATION (AS A MORTAR WHEN FORMING FILLET OR UPSTAND)

DILUTE Q–POL WITH EQUAL AMOUNTS OF WATER
Mix a slurry paste of Q–POL/WATER adding fresh ordinary portland cement to a thick cream–like consistency and brush on liberally to the damp surface to be worked.

Mix 3:1 sharp sand to fresh ordinary portland cement as a dry mix and add Q–POL/WATER to achieve a workable mix. The mix should be kept as dry as possible whilst still being workable.

Apply the mortar by trowel to achieve a triangular fillet between the wall and slab.

Level off by trowel as work proceeds to achieve the required profile and finish.

APPLICATION (AS A POURING SCREED BETWEEN FEET OF PANELS)

MATERIALS BY VOLUME
3 PARTS WATER – 3 PARTS Q–POL – 2 PARTS PORTLAND CEMENT
Mix Q–POL/WATER, add fresh ordinary portland cement and mix ensuring dispersal of the powder within the liquid. Additional OPC can be added to create a thicker product if required.

Pour into the joint until full. Hardening time will vary with temperature but will normally be complete overnight.

<u>At all times good concrete practice should be observed. Do not apply if temperatures are below 4°C or in full hot sun.</u>

SOUDAFOAM: Specification For Joint Filling

PREPARATION

Joints or gaps to be filled should be clean and free from all loose friable material and free from frost.

Soudafoam can be applied to damp surfaces. A moist surface will speed curing time and assist with adhesion.

APPLICATION

Remove protective cap on aerosol and shake can vigorously for approximately 60 seconds. Screw on plastic nozzle to the can.

Press the 'T' bar to release foam in a continuous bead.
Soudafoam can be used from any angle enabling all awkward cavities to be filled.

Fill the cavity to approximately half to allow for expansion of the foam on curing. Do not overfill the cavity as the foam continues to expand for several minutes after being installed.

On vertical areas work from the base upwards to minimise slump of the foam.

Soudafoam is tack free in approximately 7–10 minutes however allow the foam to cure for approximately 2–3 hours before cutting back to required depth.

Soudafoam can be used again providing the nozzle is cleaned out before foam cures in it. Store unopened cans in cool dry conditions and avoid direct sunlight.

SOUDAFLEX: Specification For Joint Filling

PREPARATION

All surfaces of the joints should be clean, dry and free from loose material.

APPLICATION

Gun apply the sealant into the joint with a minimum depth of 10mm.

Tool the sealant using a wetted stick or spatula (a dowel trimmed to approx. joint size is appropriate). This is essential to obtain full firm contact with the joint sides and will achieve a neat snag–free finish.

Always pay particular attention at changes in direction to ensure continuity (for example at vertical / horizontal junction of panel and corner of tank walls).

Soudaflex should be stored at all times in unopened cartridges in cool dry conditions.

SPECIFICATION FOR BACKFILLING

Backfilling material must be carefully selected. Materials excavated from the site of the tank may not be suitable if it is clay or consists of large boulders or large pieces of rubble.

Suitable materials are general rubble (not including large pieces), crushed rock, sand, sandy clay, loam or topsoil. Materials which consist predominantly of clay (i.e. more than 50%) must not be used.

The backfill materials should be placed in horizontal layers with a maximum thickness of 300mm. Each layer must be lightly compacted by using a vibrating plate or similar means. heavy plant or rollers must not be used near to the back of the wall.

If the excavated face is battered back at an angle less than 75 degrees "benching" will need to be formed before backfilling.

Finished ground levels must not be higher than the top of the tank wall for a distance of 3 metres from the back of the wall.

No heavy plant or vehicles must approach within 3 metres from the back of the wall.

CONSULT WHITES CONCRETE IF THERE IS ANY DOUBT ABOUT SITE OR MATERIAL SUITABILITY.