



public works  
& infrastructure

Department:  
Public Works and Infrastructure  
REPUBLIC OF SOUTH AFRICA

## **SUNDUMBILI MAGISTRATE OFFICE: ADDITIONAL ACCOMMODATION**

# **ARCHITECTURAL SPECIFICATIONS**

PROJECT:  
**SUNDUMBILI MAGISTRATE COURT**

PUBLIC WORKS PROJECT NUMBER:  
**WCS 044999**

**ARCHITECTURAL  
SPECIFICATIONS /  
DETAILS**

New Magistrate Court

ISSUED FOR TENDER PURPOSES  
NOV 2019

NATIONAL DEPARTMENT OF PUBLIC WORKS



*Prepared by:*



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## 1. C : DEMOLITION

### 1.1. C20 DEMOLITION

TO BE READ WITH PRELIMINARIES/GENERAL CONDITIONS

#### GENERAL REQUIREMENTS

##### 110 DESK STUDY/ SURVEY

- Scope: Before starting demolition work, examine available information, carry out a survey of the structures, site and surrounding area.
- Report and method statements: Submit, describing:
  - Form, condition and details of the structures, site and surrounding area. Extent: areas where walls are to be removed and where the lift pit is to be formed.
  - Form, location and removal methods of flammable, toxic or hazardous materials.
  - Form, location and removal methods of materials for reuse or recycling.
  - Type and location of adjoining or surrounding premises which may be adversely affected by noise, vibration, dust or removal of structure.
  - Identification and location of services above and below ground, including those required for the Contractor's own use. Arrangements for disconnection and removal of services.
  - Type and location of features of historical, archaeological, geological or ecological importance.
  - Sequence and method of demolition including details of specific pre-weakening.
  - Arrangements for protection of personnel and the public including exclusion of unauthorized persons.
  - Arrangements for control of site transport and traffic.
  - Proposed program of work.
  - Special requirements: n/a. Format of report: paper and electronic.

##### 120 EXTENT OF DEMOLITION

- Structures to be completely stripped and demolished to below ground level. All existing foundations and redundant service to be completely removed.

##### 150 FEATURES TO BE RETAINED

- None

##### SERVICES AFFECTED BY DEMOLITION 210

##### SERVICES REGULATIONS

- Work carried out to or which affects new or existing services: Carry out in accordance with the Byelaws or Regulations of the relevant Statutory Authority.

##### 220 LOCATION OF SERVICES

- Services affected by the Works: Locate and mark positions.
- All existing services that appear within the perimeter of the proposed building site, from adjacent properties, to be relocated prior to construction.
- Mains services: Arrange with the appropriate authorities for location and marking of positions.
- Standard: In accordance with National Joint Utilities Group (NJUG) 'Guidelines on the positioning and colour coding of utilities' apparatus'.

##### 230 DISCONNECTION - ARRANGED BY CONTRACTOR

- General: Arrange with the appropriate authorities for disconnection of services and removal of fittings and equipment prior to starting demolition.

##### 240 DISCONNECTION OF DRAINS

- General: Locate disconnect and seal disused drain connections.

Sealing: Within the site and permanent.

## 250 DRAINS IN USE

- General: Protect drains, manholes, inspection chambers, gullies, vent pipes and fittings still in use, and ensure that they are kept free of debris.
- Damage: Make good damage arising from demolition work. Leave clean and in working order at completion.

## 260 BYPASS CONNECTIONS

- General: Provide as necessary to maintain continuity of services to occupied areas of the same and adjoining properties.  
Minimum notice to occupiers: 72 hours if shutdown is necessary during changeover.

## 270 SERVICES WHICH ARE TO REMAIN

- Damage: Give notice and notify service authority or owner of damage arising from the execution of the works.  
Repairs: Complete as directed, and to the satisfaction of the service authority or owner.

## DEMOLITION WORK

### 310 WORKMANSHIP

- Standard: Demolish structures in accordance with Regulation 1031 of General Safety Regulations, 1986, Section 13.
- Operatives:
  - Appropriately skilled and experienced for the type of work.
- Site staff responsible for supervision and control of work: Experienced in the assessment of risks involved and methods of demolition to be used.

### 330 DUST CONTROL

- General: Reduce airborne dust by periodically spraying demolition works with an appropriate wetting agent. Keep public roadways and footpaths clear of mud and debris. Lead dust: Submit method statement for control, containment and clean-up regimes.

### 340 HEALTH HAZARDS

- Precautions: Protect site operatives and general public from hazards associated with vibration, dangerous fumes and dust arising during the course of the Works

### 350 ADJOINING PROPERTY

- Temporary support and protection: Provide. Maintain and alter as necessary as work progresses.
- Damage: Minimize. Promptly repair.
  - Leave no unnecessary or unstable projections.
  - Make good to ensure safety, stability, weather protection and security.
- Support to foundations: Do not disturb.  
Defects: Report when exposed or becoming apparent.

### 360 STRUCTURES TO BE RETAINED

- None

### 370 PARTLY DEMOLISHED STRUCTURES

- n/a

### 380 DANGEROUS OPENINGS

General: Illuminate and protect. Keep safe outside working hours.

## 391 ASBESTOS CONTAINING MATERIALS

- Discovery: Give notice immediately of suspected asbestos containing materials Discovered during demolition work. Avoid disturbing such materials.  
Standard: Department of Labour Guide : DEMOLITION WORK (REGULATION 21 ASBESTOS REGULATIONS)  
Methods for safe removal. Submit details and statutory risk assessments.

## 410 UNFORESEEN HAZARDS

- Unrecorded voids, tanks, chemicals, etc. discovered during demolition: Give notice.  
Methods for safe removal, filling, etc: Submit details.

## 440 SITE CONDITION AT COMPLETION

- Debris: Clear away and leave the site in a tidy condition.  
Other requirements: n/a.

## 450 SITE LEVELS AT COMPLETION

- Levels: Grade the site to follow the levels of adjacent areas.

## MATERIALS ARISING

### 510 CONTRACTOR'S PROPERTY

Components and materials arising from the demolition work: Property of the Contractor except where otherwise provided.  
Remove from site as work proceeds where not to be reused or recycled for site use.

### 520 RECYCLED MATERIALS

Materials arising from deconstruction/demolition work: Cannot be recycled or reused elsewhere in the project.

### 530 AMAFA CONDITIONS - GENERAL

N/A

### 531 AMAFA CONDITIONS - SELVAGE ITEMS

N/A

### 532 AMAFA CONDITIONS - PERMITS

N/A

## 2. F: IN-SITU CONCRETE

### 2.1. F41 Worked and applied finishes to in situ concrete

TO BE READ WITH PRELIMINARIES/ GENERAL CONDITIONS.

#### PRODUCTS/ MATERIALS 310

##### CEMENTS

- Cement types: In accordance with SANS 50197.

##### 315 AGGREGATES

- Fine aggregate: To SANS 1090.  
- Grading limits: Maximum size 5 mm not more than 10% passing a sieve size 150 microns.
- Coarse aggregates for fine concrete levelling screeds:



- Standard: To SANS 1090.
- Designation: Minimum size 4 mm maximum size 10 mm.

## 320 SURFACE HARDENER

- Manufacturer: Submit proposal.
- Product reference: Submit proposal.

## 330 SURFACE SEALER

- Manufacturer: Submit proposal.
- Product reference: Submit proposal.

## EXECUTION

### 612 CONTROL SAMPLES

- Sample areas that are part of finished work: Floors; Exposed columns in Parking Levels.
- Location: To be agreed.
- Approval of appearance: Obtain before proceeding with remainder of the work.

### 620 FINISHING

- Timing: Carry out at optimum times in relation to setting and hardening of concrete.
- Prohibited treatments to concrete surfaces:
  - Wetting to assist surface working.
  - Sprinkling cement.

### 628 WOOD FLOATED FINISH

- Surface on completion: Slightly coarse, even texture with no ridges or steps.

### 630 SMOOTH FLOATED FINISH

- Surface on completion: Even with no ridges or steps.

### 631 POWER FLOATED FINISH

- Apply Finish to ALL Floor Slabs.
- Surface on completion: Even with no ridges or steps.

### 632 TROWELLED FINISH

- Surface on completion: Uniform, smooth but not polished, free from trowel marks and blemishes, and suitable to receive specified flooring material.
- Protect the surface from construction traffic until the flooring material is laid. If, because of inadequate finishing or protection, the surface of the concrete is not suitable to receive the specified flooring material, it is to be made good by application of a smoothing compound, to the satisfaction of the Architect.

### 635 CLASSIFICATION OF CONCRETE FINISH

- 'Fair-Faced / Special 'Smooth Off-Shutter Finish'.
  - This finish shall apply to all visible shuttered concrete on this project. The Finished concrete surface shall be smooth and free from imperfections such as small fins, bulges, irregularities, surface honeycombing, segregation or surface discoloration.
  - Special off-shutter plywood-lined non-porous formwork shall produce a finish that will comply with the requirements of Degree of Accuracy II in accordance with SANS 1200G.
  - Joints between panels shall be tightly sealed such that practically no grout may leach out.
  - Joints in and between panels shall form horizontal and vertical lines, which shall be spaced uniformly and symmetrically on the formed concrete surface, and shall be even and smooth, requiring minimal or no finishing.
  - Joints in exposed columns shall be level and uniform from column to column and consistent with

joints in other parts of the structure.

- Formwork ties shall be designed on a regular grid. Cone shaped depressions shall be left open as a feature of the finish. Particular care shall be exercised at these locations to avoid any grout loss occurring.
- The proposed layout of all formwork panels and construction joints shall be shown on drawings and submitted to the Engineer for written approval application or erection of any formwork.
- Formwork to non-visible shutter faces shall comply with the requirement of Degree Accuracy II.

#### 642 APPLICATION OF SURFACE HARDENER

- Condition of substrate prior to application: Cured, clean and free from surface contaminants.
- Application: Evenly to dry surfaces. After absorption, wash surface immediately with clean water.
  - Additional applications: As manufacturer's recommendations.
- Solutions and wash water: Do not discharge to drains. Store and dispose of safely.

#### 644 APPLICATION OF SURFACE SEALER

- Substrate:
  - Moisture content: As recommended by sealer manufacturer. Test relative humidity where required to verify suitability.
  - Condition prior to application: Cured, clean and free from contaminants.
- Primer: Not required.
- Application: Evenly to dry surfaces to form an effective seal but without a glossy finish.

#### 670 SLIP RESISTANCE TESTING OF WEARING SURFACES

- Test: To BS 7976-2 using a Transport Research Laboratory (TRL) Pendulum.
  - Timing: Give adequate notice.
  - Test results: Submit, inclusive of slip resistance values (pendulum test value [PTV]), in the wet and dry states.

### COMPLETION

#### 920 MAINTENANCE MANUAL

- Incorporate details within the Building Manual to include:
  - Contact details for subcontractors and suppliers.
  - Product information for components and materials including manufacturers' literature.
  - A full set of construction drawings, updated to include any changes made up to the time of completion.

## 3. H : MASONRY

### 3.1. H10 Brick/ Block walling

TO BE READ WITH PRELIMINARIES/ GENERAL CONDITIONS.

#### TYPES OF WALLING PRODUCTS/ MATERIALS

#### 302 BRICK/ CONCRETE BLOCK SAMPLES

- General: Before placing orders with suppliers submit for approval of appearance labelled samples of the following: All types of brickwork.
- Selection of samples: Representative of the range in variation of appearance.

## 310 CLAY FACING BRICKWORK TO EXTERNAL WALLS AS PER ARCHITECT'S DRAWINGS

- Standard: SANS 227.
  - Classification: FBX.
  - Exposure zone: Severe.
  - Efflorescence: Normal grade.
- Manufacturer: Corobrik or similar approved.  
Product reference: **THE BLACK BRICK**  
Work sizes (length x width x height): 222 x 106 x 73 mm.
  - Special shapes: As shown on drawings.

## 340 CLAY COMMON BRICKWORK All brickwork other than Facebrick

- Standard: SANS 227.
- Classification: Imperial.
- Manufacturer: Corobrik or similar approved.
  - Product reference: Submit proposals.
  - Average compressive strength (minimum): 3.5 MPa.
  - Work sizes (length x height x thickness): 222 x 106 x 73 mm.
  - Water absorption to SANS 227: Not applicable.
  - Moisture expansion limit: tba.
  - Configuration: Perforated.

## EXECUTION

### 606 FINISHED MASONRY WORK REFERENCE PANELS

- General: Before proceeding to construct the following walling types, construct panels as specified. Give notice when panels are dry.
  - Selection of masonry units: Reasonably representative of the average quality of the whole order to be delivered.
  - Panel types:
    - Walling type: H10/310
    - Location: -.
    - Size: 1.5 x 1.5 m.
- Other requirements:  
TESTING

### 608 COMPRESSIVE STRENGTH OF MORTAR FOR EACH WALLING TYPE

- Testing authority: An approved laboratory.
- Test method: SANS 6255.
  - Number of specimens: 6.
  - Type: 100 mm cubes.
- Preliminary tests performed in a laboratory.
  - Required mean compressive strength at 28 days (MPa): -.
- Works or site tests.
  - Required mean compressive strength at 28 days (MPa): -.
- Results: Submit.

### 609 FRESH MORTAR CEMENT CONTENT

- Test method: BREMORTEST in accordance with Building Research Establishment Information Paper 8/89.
- Test specimens: Test mortar for the following wall types: H10.
- Results: Submit.

## WORKMANSHIP

### 612 THE TERM FACEWORK

- Definition: Applicable in this specification to brick walling finished fair.
  - Painted facework: The only requirement to be waived is that relating to colour.

## 614 COLOUR CONSISTENCY OF MASONRY UNITS

- Colour range: Submit proposals of methods taken to ensure that units are of consistent and even appearance within deliveries.
- Conformity: Check each delivery for consistency of appearance with previous deliveries and with approved reference panels; do not use if variation is excessive.
- Finished work: Free from patches, horizontal stripes and racking back marks.

## 616 APPEARANCE

- Brick selection: Do not use units with damaged faces or arrises.
- Cut masonry units: Where cut faces or edges are exposed cut with table masonry saw.
- Quality control: Lay masonry units to match relevant reference panels.
  - Setting out: To produce satisfactory junctions and joints with built-in elements and components.
  - Coursing: Evenly spaced using gauge rods.
- Lifts: Complete in one operation.
- Methods of protecting facework: Submit proposals.

## 620 ACCURACY

- To SANS 2001-CM1 table 13.
- Degree of accuracy: Class I.
- Courses: Level and true to line.
- Faces, angles and features: Plumb.

## 624 CONDITIONING OF CLAY BRICKS

- Bricks delivered warm from manufacturing process: Do not use until cold.
- Absorbent bricks in warm weather: Wet bricks well two hours before using to reduce suction. Do not soak.

## 628 ADVERSE WEATHER

- General: Do not use frozen materials or lay on frozen surfaces.
- Air temperature requirements:
  - Do not wet bricks when air temperature is less than 5°C.
  - When air temperature is above 32°C or in drying winds lay units within one minute of spreading the bedding mortar.
- Temperature of walling during curing: Above freezing until hardened.
- Newly erected walling: Protect at all times from:
  - Rain.
  - Drying out too rapidly in hot conditions and in drying winds.

## 630 LAYING GENERALLY

- Mortar joints: Fill vertical joints. Lay bricks, solid and cellular blocks on a full bed.
- Mortar to be mixed in a dedicated batch plant and tinted black to match the face brick. Final colour to be approved by architect.
- Bond where not specified: Half lap stretcher.
- Vertical joints in facework: Even widths. Plumb at every fifth cross joint.

## 634 LEVELLING OF SEPARATE LEAVES

- Locations for equal levelling of cavity wall leaves: As follows:
  - Every course containing vertical twist type ties or other rigid ties.
  - Every third tie course for double triangle/ butterfly ties.
  - Courses in which lintels are to be bedded.

## 642 LINTELS

- Bearing: Ensure full length masonry units occur immediately under lintel ends.

## 644 SUPPORT OF EXISTING WORK

N/A

## 660 JOINTING

- Profile: Consistent in appearance.

## 662 ACCESSIBLE JOINTS NOT EXPOSED TO VIEW

- Jointing: Struck flush as work proceeds.

## 664 POINTING TO BRICKWORK ABOVE DPC

- Joint preparation: Remove debris. Dampen surface.
- Mortar: As section Z21 to match bedding mortar.
- Profile: Raked and cleaned.

## 666 FIRE STOPPING

- Avoidance of fire and smoke penetration: Fit tightly between cavity barriers and masonry. Leave no gaps.

## 668 BEAM FILLING

- At all junctions of walls and roof with open eaves.
- Minimum width of beam fill to be a half brick.
- Cut neatly between trusses and carry up to underside of roof covering.
- Finish with a splay cut at the top.
- Flush solid to underside of roof covering with a mortar bed 100 mm wide.

## ADDITIONAL REQUIREMENTS FOR FACEWORK

### 680 GROUND LEVEL

- Commencement of facework: Not less than 150 mm below finished level of adjoining ground or external works level.

### 682 PUTLOG SCAFFOLDING

- Use: Not permitted in facework.

## COMPLETION

### 910 CLEANLINESS

- Facework: Keep clean.
- Mortar on facework: Allow to dry before removing with stiff bristled brush.
- Removal of marks and stains: Rubbing not permitted.

### 915 PROTECTION

- Protect: Corners, arrises and projections.
- Remove: Protection at Practical completion.

## 3.2. H40 Accessories/ Sundry items for brick / block/ stone walling

TO BE READ WITH PRELIMINARIES/ GENERAL CONDITIONS.

## PRODUCTS: REINFORCING/ FIXING ACCESSORIES

### 320 CAVITY WALL TIES GENERALLY

- Standard: To SANS 28.
  - Type: Flat twisted.
- Material/ finish: Steel galvanized after manufacture to SANS 121.
- Sizes: 150 mm.

## 324 WALL STARTERS/ CONNECTORS

- 40mm wide x 1.6 mm thick lug system.
- Manufacturer: Contractor's Choice.
  - Product reference: Submit Proposals.
- Material/ finish: Hot dip galvanized mild steel.
- Sizes: TBA.

## HEAD RESTRAINTS

### 330 HEAD RESTRAINT TO TOP OF NON-LOADBEARING WALLS

- Restraints: As per Eng. Details.
  - Fixing: Secure to soffit.
- Joint filler: TBA.
  - Placement: Full, no gaps.

## REINFORCEMENT

### 340 BED JOINT REINFORCEMENT GENERALLY

- Standard: To SANS 190.
- Type: Material: hard drawn mild steel light galvanising - main wires 2.5 mm diameter, cross wires at 300 mm centres.
- Type Welded wire ladder type.
- Material: Galvanized low carbon steel.
- Width: Approximately 40-50 mm less in width than wall or leaf.

## SUPPORTS AND ANCHORS

### 354 GALVANISED WIRE WALL PLATE/ ROOF TRUSS ANCHOR As specified by Specialist Roof Truss manufacturer

- Material/ finish: Hot dip galvanised mild steel wire.
- Sizes: 4 mm diameter.

### 356 HOOP IRON WALL PLATE/ ROOF TRUSS TIE DOWN STRAPS As specified by Specialist Roof Truss manufacturer

- Material/ finish: Hot dip galvanised mild steel strip.
- Sizes: 32 x 1.6 mm.

## FLEXIBLE DAMP PROOF COURSES/ CAVITY TRAYS

### 362 DAMP PROOF COURSE Generally

- Manufacturer: Contractor's Choice.
  - Product reference: tba.

## PROPRIETARY SILLS/ LINTELS/ COPINGS/ DRESSINGS 376

### PRE-STRESSED CONCRETE LINTELS

- Standard: To SANS 1504.
- Manufacturer: Contractor's choice.

- Product reference: tba.
- Sizes: As per openings required.
- Cut back faces of lintels at reveals in face brickwork to receive face brick faggots.
- Bearing length (minimum): 150.

## EXECUTION

### 615 CONCRETE FILL TO REINFORCED CORES OR POCKETS

- Concrete generally: To SANS 2001-CC2.
  - Prescribed mix concrete Grade 25 with 13.2 mm aggregate.
- Workability: High.
- Extent: Maintain 75 mm between top of fill and external ground level and a minimum of 225 mm between top of fill and ground level dpc.
- Placement: Compact to eliminate voids.

### REINFORCEMENT AND ANCHORAGES 650

#### BED JOINT REINFORCEMENT

- Lay on an even bed of mortar in a continuous strip with full laps at angles. Keep back 20 mm from face of external work, 12 mm back from face of internal work and finish joint to normal thickness.
  - Lap length (minimum): 300 mm.

### 655 GALVANISED WIRE WALLPLATE/ ROOF TRUSS ANCHORS

- Build in two strands 5 courses below wall plate level into brick joint.
- Turn wire over truss, twist to remove slack and spike down to prevent unwinding with galvanised clout nails.
- Position at not exceeding 760 mm horizontally, or at exact roof truss positions.

### 660 GALVANISED HOOP IRON WALLPLATE/ ROOF TRUSS ANCHORS

- Build in 5 courses below wall plate level with fish tail end in brick joint.
- Turn strap over truss and spike down to both sides of truss with two 40x2.8 mm galvanised clout nails.
- Position at not exceeding 1500 mm horizontally, or at exact roof truss positions.

### INSTALLATION OF DPCS/ CAVITY TRAYS

#### 670 HORIZONTAL DPCS

- Placement: In continuous lengths on full even bed of fresh mortar, with 100 mm laps at joints and full laps at angles.
- Width: At least full width of leaf unless otherwise specified. Edges of dpc not covered with mortar or projecting into cavity.
- Overlying construction: Immediately cover with full even bed of mortar to receive next masonry course.
- Overall finished joint thickness: As close to normal as practicable.

#### 675 GROUND LEVEL DPCS

- Joint with damp proof membrane: Continuous and effectively sealed.

#### 680 STEPPED DPCS IN EXTERNAL WALLS

- External walls on sloping ground: Install dpcs not less than 150 mm above adjoining finished ground level.

## 685 SILL DPCS

- Form and placement: In one piece and turned up at back when sill is in contact with inner leaf.

## 695 SEALING DPCS GENERALLY

- Overlaps and junctions: Seal with Adhesive recommended by dpc manufacturer.

## 715 DPC/ CAVITY TRAY LEADING EDGE IN FACEWORK - SET BACK

- Treatment at face of masonry: Set back 5 mm from face of wall with recessed mortar joint to expose edge at the following locations: Generally.

## 725 VERTICAL DPCS GENERALLY

- Form: In one piece wherever possible.
- Joints: Upper part overlapping lower not less than 100 mm.

## 730 JAMB DPCS AT OPENINGS

- Joint with cavity tray/ lintel at head: Full underlap.
- Joint with sill/ horizontal dpc at base: Full overlap.
- Projection into cavity: Not less than 25 mm.
- Relationship with frame: In full contact.

## POINTING AND PINNING

### 750 POINTING IN FLASHINGS

- Joint preparation: Free of debris and lightly wetted.
- Pointing mortar: As for adjacent walling.
- Placement: Fill joint and finish flush.

## BEDDING SILLS AND LINTOLS

### 766 BEDDING PRESTRESSED LINTOLS

- Bed on mortar used for adjacent work.
- Prop at not more than 1.2 m centres to prevent displacement during construction.
- Retain props in position for not less than 14 days or until mortar has matured, whichever is longer.
- Provide bed joint reinforcement over for a minimum of four courses above the lintel.
- Cut back faces of lintels at reveals in face brickwork to receive face brick faggots.
- Bearing length (minimum): 150 mm.

## MISCELLANEOUS ITEMS

### 786 BUILDING IN FRAMES

- Preparation: Remove horns and provide support.
- Fixing cramps: Fully bed in mortar.

### 788 OPENINGS FOR FRAMES

- Formation: Use accurate, rigid templates to required size.

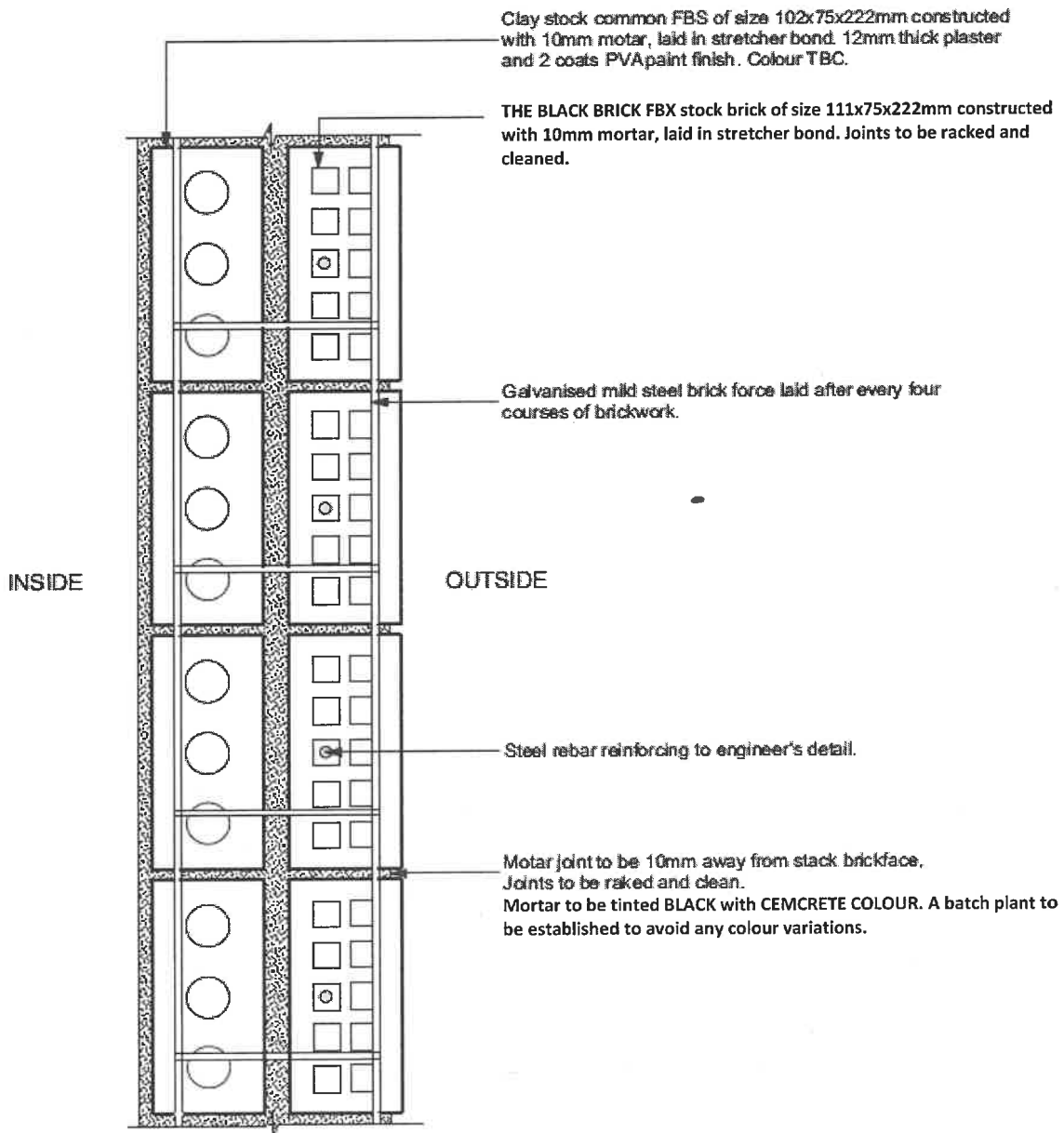
## COMPLETION

### 920 MAINTENANCE MANUAL

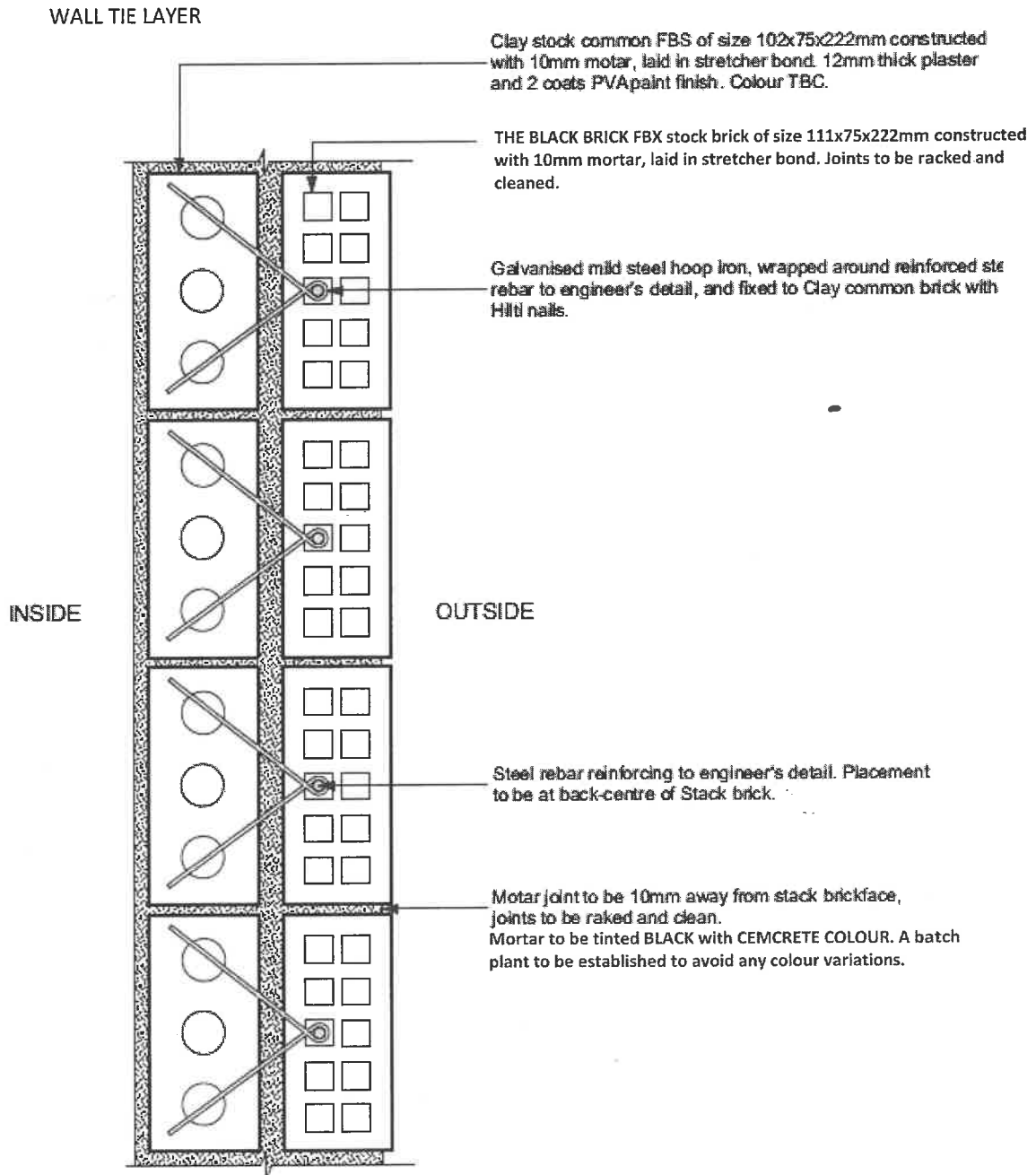
- Incorporate details within the Building Manual to include:
  - Contact details for subcontractors and suppliers.
  - Product information for components and materials including manufacturers' literature.



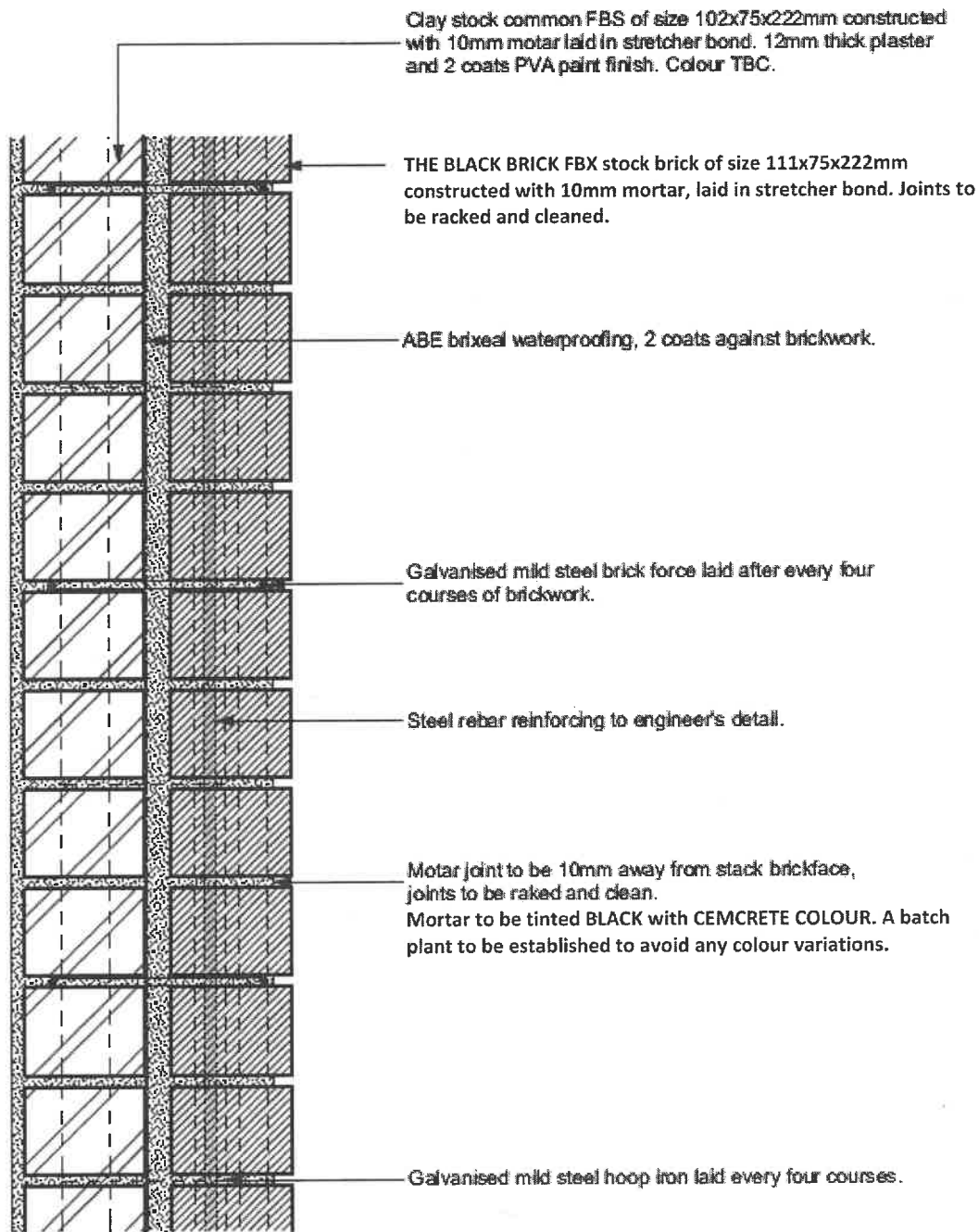
3.3. BRICKWORK DETAILS: PLAN - BRICKWORK / WALL TIES :



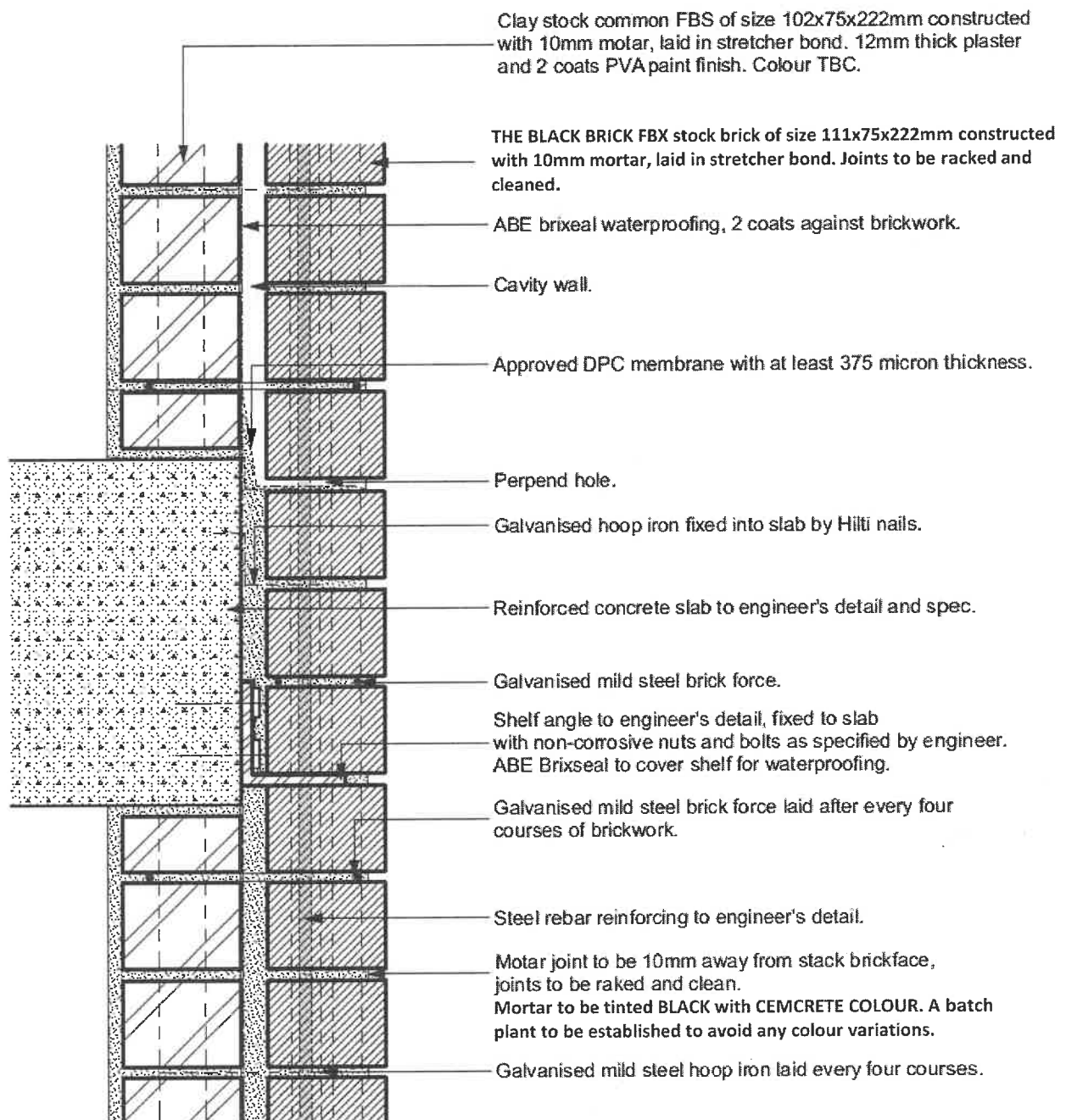
BRICK FORCE LAYER



3.4. BRICKWORK DETAILS: SECTIONS: Facebrick wall construction



TYPICAL WALL SECTION



TYPICAL WALL SECTION AT FLOOR SLAB

## 4. J : WATERPROOFING

### 4.1. PENETRON ADMIX

FLAT RC. SLAB ROOF, EXPOSED RC. WORK AND RC. GUNITED RETAINING WALLS, BASEMENT SURFACE BED AND GROUND FLOOR SLAB INCLUDING BEAMS, PLANTERS:

- ☐ PRODUCT : PENETRON ADMIX
- ☐ METHOD : ADDED TO NEW CONCRETE DURING BATCHING, AS PER PENETON'S SPECIFICATIONS AND METHODOLOGY
- ☐ OTHER ACCESSORIES : PENETRON PENEBAR SW AND PRIMER, PLACED AND APPLIED AS PER PENETON'S SPECIFICATIONS AND METHODOLOGY

### 4.2. J42 Single layer polymeric sheet roof coverings

TO BE READ WITH PRELIMINARIES/ GENERAL CONDITIONS.

#### TYPES OF ROOF COVERING

##### 110 TORCH-ON ROOF COVERING New Court Building

- Substrate: Concrete deck.
- Preparation: Cement: sand screed laid to falls.
- Roof covering system: DERBIGUM or similar approved.
- Lower protection layer (loose laid): Not required.
- Vapour control layer: As recommended by waterproofing manufacturer.
- Insulation: 50mm Lambdaboard by Rigifoam or similar approved.
- Separating layer (loose laid): Not required.
- Waterproof membrane: TORCH-ON
- Width: As per manufactured width.
- Thickness: 4 mm.
- Colour: Sand grey.
- Upper protection layer (loose laid): Geotextile Filtration Layer.
- Surface protection: Painted with reflective silver paint and stone ballast.
- Accessories: As recommended by manufacturer.

#### PERFORMANCE

##### 210 ROOF PERFORMANCE

- Roof covering: Secure, free draining and weathertight.

##### 220 AVOIDANCE OF INTERSTITIAL CONDENSATION: WARM AND INVERTED ROOFS - BS 5250

- Determine: Interstitial condensation risk of roof construction as recommended in BS 5250, annex D.
- Vapour control layer: If necessary, provide a suitable membrane so that damage and nuisance from interstitial condensation do not occur.

##### 230 INSULATION

- Requirement: Determine type and thickness of insulation and integral or separate overlay to satisfy the following criteria:
  - Thermal transmittance of the roof (maximum): U-Value : 0.37 W/m<sup>2</sup>K .
  - Compressive strength of insulation (minimum) at 10% compression: provide details for approval.
  - Finished surface: Suitably even, stable and robust to receive roof covering.
  - Insulation compliance: To a relevant South African, European norm, British Standard, or Agreement certified.

## PRODUCTS

### 340 PREFORMED SLEEVES

- Type: As per roof membranemanufacturer.
- Manufacturer: As roof membrane.
- Product reference: Submit proposals.
- Colour: sand grey.
- Size: as required.

### 355 MECHANICAL FASTENERS, WASHERS, PRESSURE PLATES, ETC.

- Type: Class 2 linear fastener Class 2 point fastener As membrane manufacturer's/ supplier's recommendations.
- Manufacturer: As roof membrane.
- Product reference: Submit proposals.

### 460 STONE BALLAST

- Type: Washed, round aggregate.
- Supplier: Submit proposals.
- Size: Graded 20–40 mm, free from fines and sharps.
- Colour: Natural.

### 480 PIPE COLLARS

- Manufacturer/ Supplier: As roof membrane.
- Product reference: Submit proposals.
- Size: As Required.

## EXECUTION GENERALLY

### 610 ADVERSE WEATHER

- General: Do not lay membrane at temperatures below 5°C or in wet or damp conditions unless effective temporary cover is provided over working area.
- Unfinished areas of roof: Keep dry and protect edges of laid membrane from wind action.

### 612 INCOMPLETE WORK

- End of working day: Provide temporary seal to prevent water infiltration.
- On resumption of work: Cut away tail of membrane from completed area and remove from roof.

## SUBSTRATES/ VAPOUR CONTROL LAYERS/ WARM DECK ROOF INSULATION

### 620 SUITABILITY OF SUBSTRATES

- Surfaces to be covered: Secure, clean, dry, smooth, free from frost, contaminants, voids and protrusions.
- Preliminary work: Complete, including:
  - Grading to correct falls.
  - Formation of upstands, kerbs, box gutters, sumps, grooves, chases and expansion joints.
  - Fixing of battens, fillets and anchoring plugs/ strips.
- Moisture content and stability of substrate: Must not impair integrity of roof.

### 670 LAYING VAPOUR CONTROL LAYER

- Laying: Loose laid, flat and smooth.
- Side and head laps: 100 mm. Seal with non-setting adhesive.
- Upstands, kerbs and other penetrations: Enclose edges of insulation. Fully seal at abutment by bonding or taping.

### 680 LAYING ROOF INSULATION

- Setting out:

- Long edges: Fully supported and running at right angles to side laps in single ply membrane.
  - End edges: Adequately supported.
  - Joints: Butted together.
  - End joints: Staggered.
  - Attachment: Not required.
  - Mechanical fixing: Not required.
  - Completion: Boards must be in good condition, well fitting and secure.
- WATERPROOF MEMBRANES/ ACCESSORIES

## 710 MECHANICAL FIXING OF WATERPROOF MEMBRANE

- Setting out: Perpendicular to the deck direction.
- Laying: Loose, do not wrinkle or stretch.
- Installing fasteners:
  - Use manufacturer's/ supplier's recommended methods and equipment.
  - Insertion: Correct and consistent.
- Washers/ Pressure plates/ Bars:
  - Distance from fixed edge (minimum): 10mm.
  - Fixing: Flush with membrane.
- Sheet overlaps: Extend beyond washers/ pressure plates by minimum as per manufacturer's recommendations.
- Surface condition at completion: Fully sealed, smooth, weatherproof and free draining.

## 730 WELDED JOINTING OF WATERPROOF MEMBRANE

- Side and end joints:
  - Laps (minimum): As per manufacturer recommendation.
  - Preparation: Clean and dry surfaces beyond full width of joint.
  - Sealing: Weld together.
- Seam sealant: As per manufacturer recommendation.
- Condition at completion: Fully sealed, smooth, weatherproof and free draining.

## 760 PERIMETER OF MEMBRANE

- General: Secure membrane at roof edge conditions, changes of plane, curb flashings, upstands to roof lights, etc. with mechanical fasteners.

## SURFACING

### 820 LAYING STONE BALLAST

- Condition of substrate: Clean.
- Gravel guards: Fit to outlets.
- Previously laid materials: Protect whilst laying ballast.
- Laying: Spread evenly. Do not pile to excessive heights.
- Depth (minimum): 50 mm.

### 830 BONDING STONE BALLAST

- Location: 1 m width at roof perimeter.

## COMPLETION

### 910 INSPECTION

- Interim and final roof inspections: Submit reports.

### 930 FLOOD TEST OF PLANTING BOXES

- Condition of roof prior to testing:
  - Waterproof membrane complete to a stage where integrity can be tested.
- Outlets: Externally cover and seal. Protect against damage from water pressure using temporary curbs. Do not use plugs to seal outlets.
- Flood levels: Submit proposals. In no case higher than curbs.



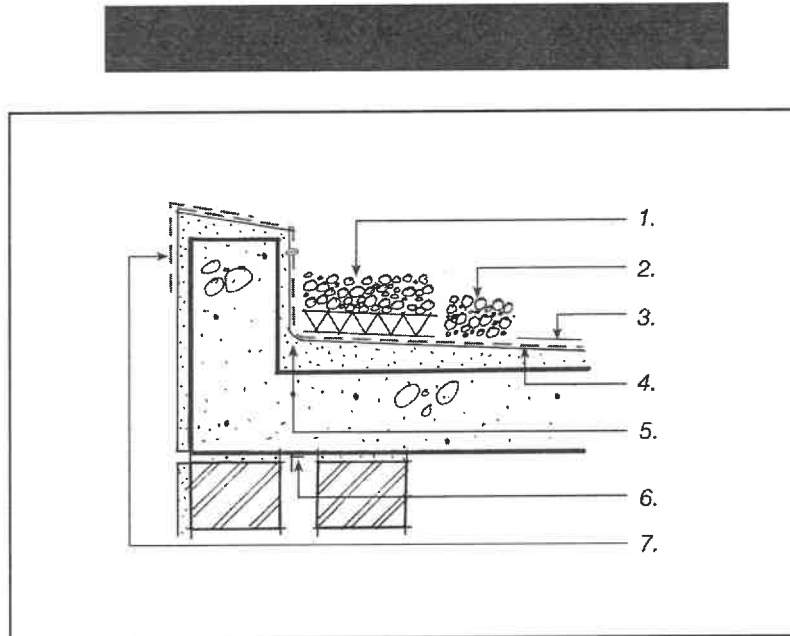
- Flood duration: Three days.
- Inspection: Regular, to detect leaks.
- Completion of test: Slowly drain roof. Do not overload or flood outlets.
- Test results and warranty: Submit on completion of testing.

## 940 COMPLETION

- Roof areas: Clean.
- Outlets: Clear.
- Work necessary to provide a weathertight finish: Complete.
- Storage of materials on finished surface: Not permitted.
- Completed membrane: Do not damage. Protect from traffic and adjacent or high level working.

4.3. WATERPROOFING TO EXTERNAL RC SLAB :

4mm DERBIGUM FULLY BONDED TORCH-ON WATERPROOFING TO 50MM THICK ISOBOARD ON CLEANED ROOF SLAB SURFACE AND FIXED AS PER SPECIALIST SPECIFICATION AND METHODOLOGY. WATERPROOFING TO BE PAINTED WITH SILVER REFLECTIVE PAINT. COVER ENTIRE WATERPROOFED SLAB WITH 20mm ROUNDED RIVER PEBBLES, 50mm THICK, COLOUR AND TYPE TO ARCHITECTS FURTHER INSTRUCTION. NO SHARP EDGED PEBBLES WILL BE PERMITTED ON THE WATERPROOFING.

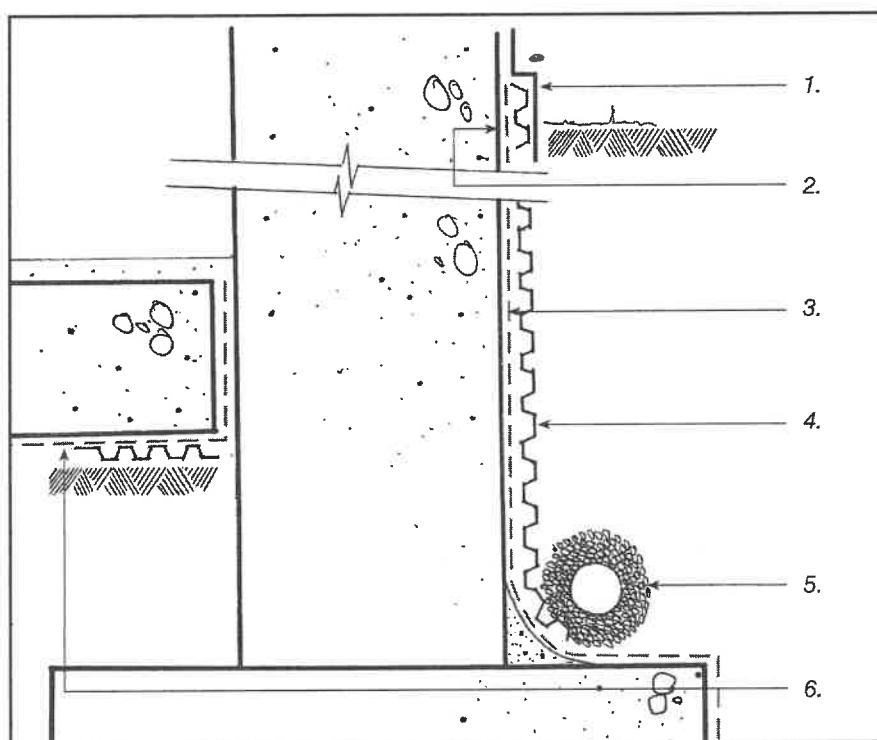


- |  |  |
|--|--|
| <p>1. <i>Roof finishes;<br/>50 mm stone layer on insulation boards on waterproofing system</i></p> <p>2. <i>Roof finishes;<br/>50 mm stone layer on waterproofing system</i></p> <p>3. <i>Roof finishes;<br/>One/two coats of bituminous aluminum paint or suitable acrylic roof paint</i></p> <p>4. <i>Main waterproofing system on screed to falls on concrete slab dressed up and on top of plastered upstand</i></p> | <p>5. <i>Sand/Cement cove at junction between horizontal and vertical surfaces</i></p> <p>6. <i>PVC angle bedded in a mastic sealant and fixed to concrete slab to form a cavity drip</i></p> <p>7. <i>Suitable waterproofing system edge flashing taken over the outside face of the plastered upstand. Alternatively the main waterproofing system bonded onto an aluminium edge section fixed to concrete</i></p> |
|--|--|

4.4. RC. RETAINING WALLS :

PRODUCT : BASF

METHOD: SEETYPICALDETAILBELOW, AS PER BASF SPECIFICATIONS AND  
METHODOLOGY

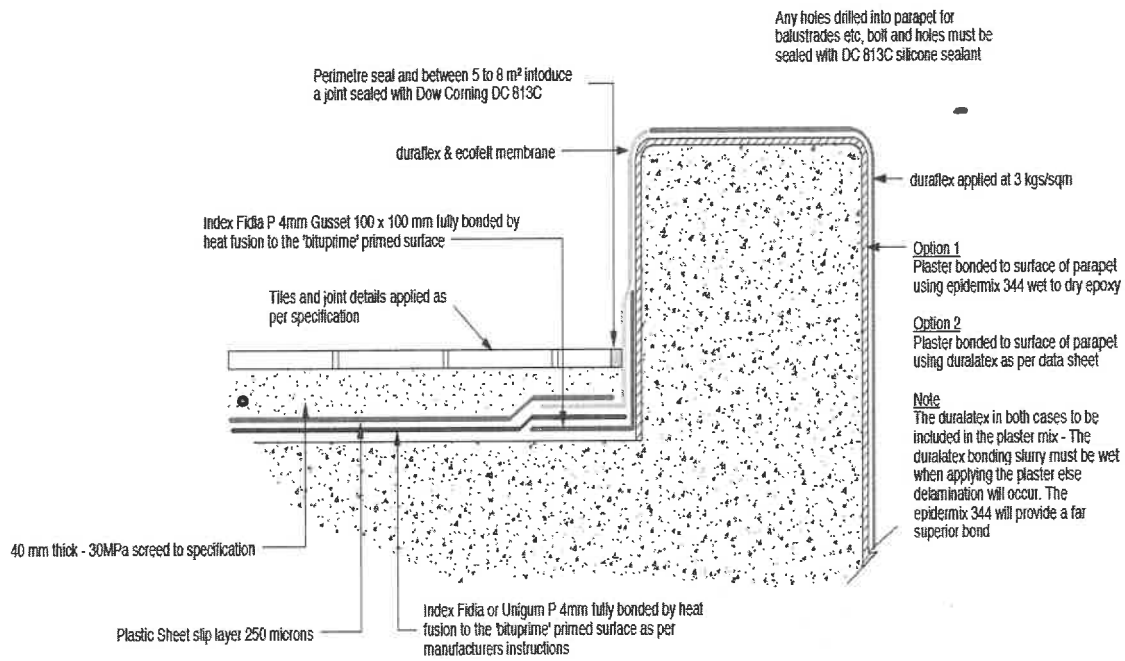


- |   |   |
|---|---|
| <p>1. Skirting cover over drainage membrane fixed to concrete</p> <p>2. Waterproofing membrane terminated above ground level</p> <p>3. Waterproofing system bonded to dry, smooth and even surfaces, of retaining wall, including dressing membrane onto and down the edge of smooth concrete footing</p> | <p>4. Drainage/protection membrane placed against waterproofing membrane</p> <p>5. Agricultural drain below the level of the internal concrete slab</p> <p>6. DPM on drainage system/membrane under concrete slab taken up and sealed against concrete wall</p> |
|---|---|

4.5. WATERPROOFING TO UPSTAND :

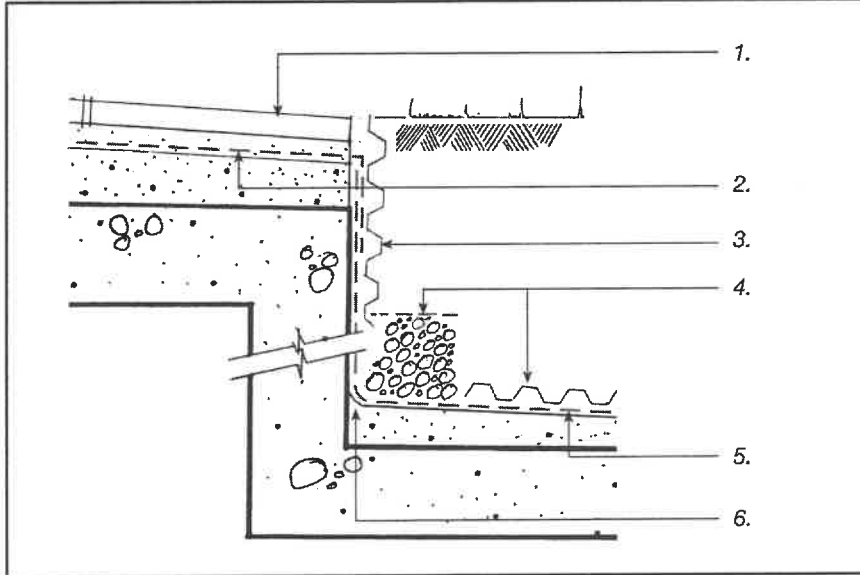
PRODUCT : BASF

METHOD: SEETYPICALDETAILBELOW,ASPERBASFSPECIFICATIONSAND  
METHODOLOGY



4.6. WATERPROOFING TO PLANTER / UPSTAND :

INTERFACE OF ROOF GARDEN (GREEN ROOF)  
AND TRAFFICABLE AREA



Section Q - Q

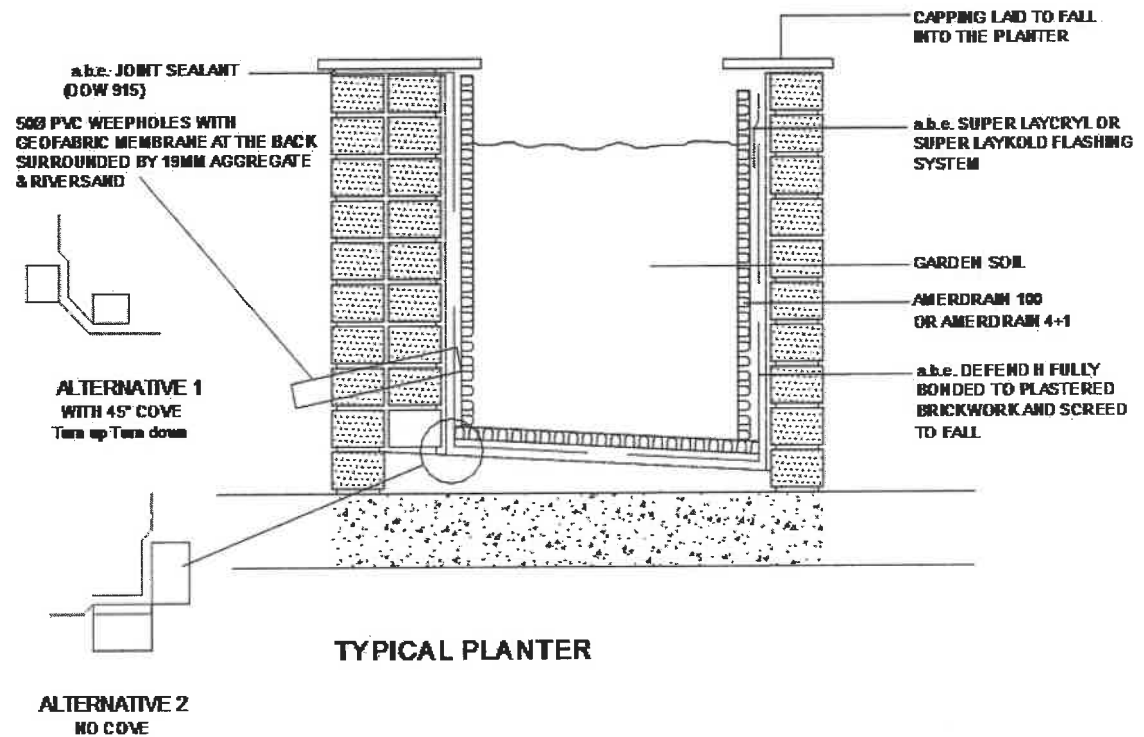
- |  |   |
|--|---|
| <p>1. Brick paving on 25 - 30mm compacted sand; or tiles on screed (minimum thickness 50mm) on waterproofing</p> <p>2. Waterproofing system on screed to falls on trafficable area turned down and bonded to root resistant waterproofing system in roof garden</p> <p>3. Drainage membrane against sides of roof garden</p> | <p>4. Geotextile on 100 to 150 mm thick layer of stone; or drainage membrane as drainage system for roof garden</p> <p>5. Root resistant waterproofing system on screed to falls and dressed up against walls of roof garden (Note: only shallow rooted plants must be planted in roof garden.)</p> <p>6. Sand/cement cove at junction between horizontal and vertical surfaces</p> |
|--|---|

4.7. WATERPROOFING TO PLANTER :

PRODUCT : ABE

METHOD: SEETYPICALDETAILBELOW,ASPERABESPECIFICATIONSAND  
METHODOLOGY

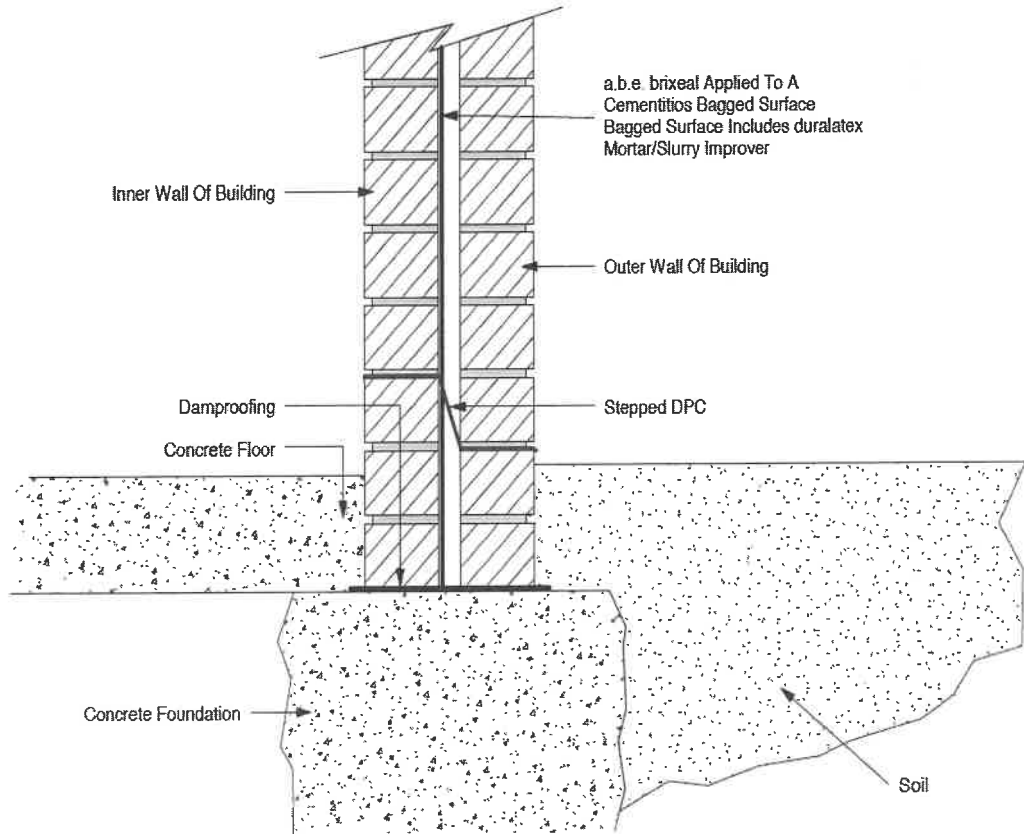
OTHER ACCESSORIES : PROVIDE 50mm $\varnothing$  PVC WEEHOLES STAGGERED AT 1M C/S. PROVIDE GEOFABRIC, AGGREGATE AND  
RIVERSAND FILTER AT THE BACK OF WEEPHOLE



4.8. WATERPROOFING TO EXTERNAL BRICKWORK :

PRODUCT : ABE DAMP PROOF COURSE, STEPPED DPC AND BRIXEAL METHOD :

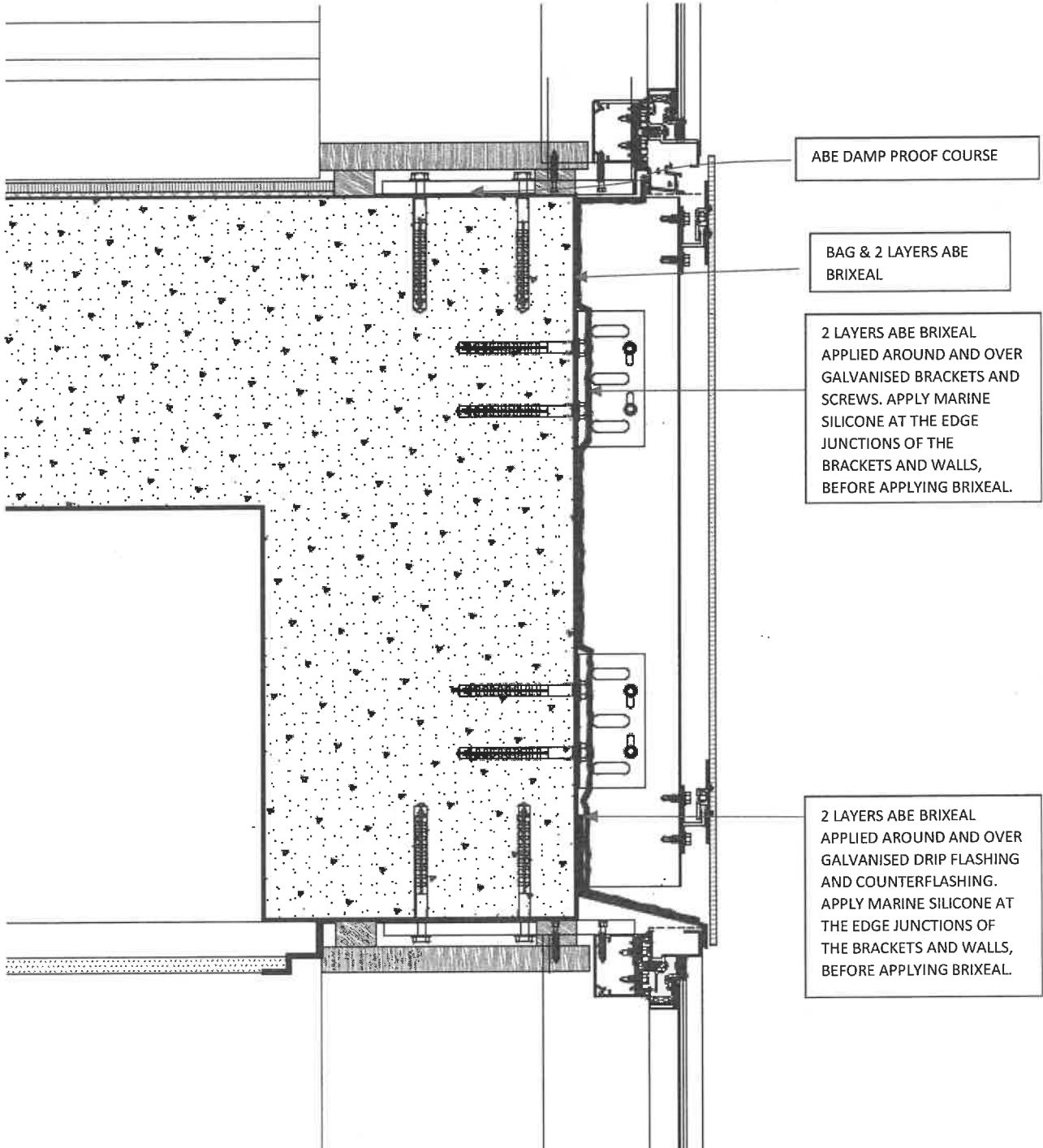
SEETYPICALDETAILBELOW,ASPERABESPECIFICATIONSAND  
METHODOLOGY



4.9. WATERPROOFING TO EXTERNAL FAÇADE BEAM / BRICKWORK:

PRODUCT : ABE DAMP PROOF COURSE, STEPPED DPC AND BRIXEAL METHOD:

SEE TYPICAL DETAIL BELOW, AS PER ABE SPECIFICATIONS AND METHODOLOGY

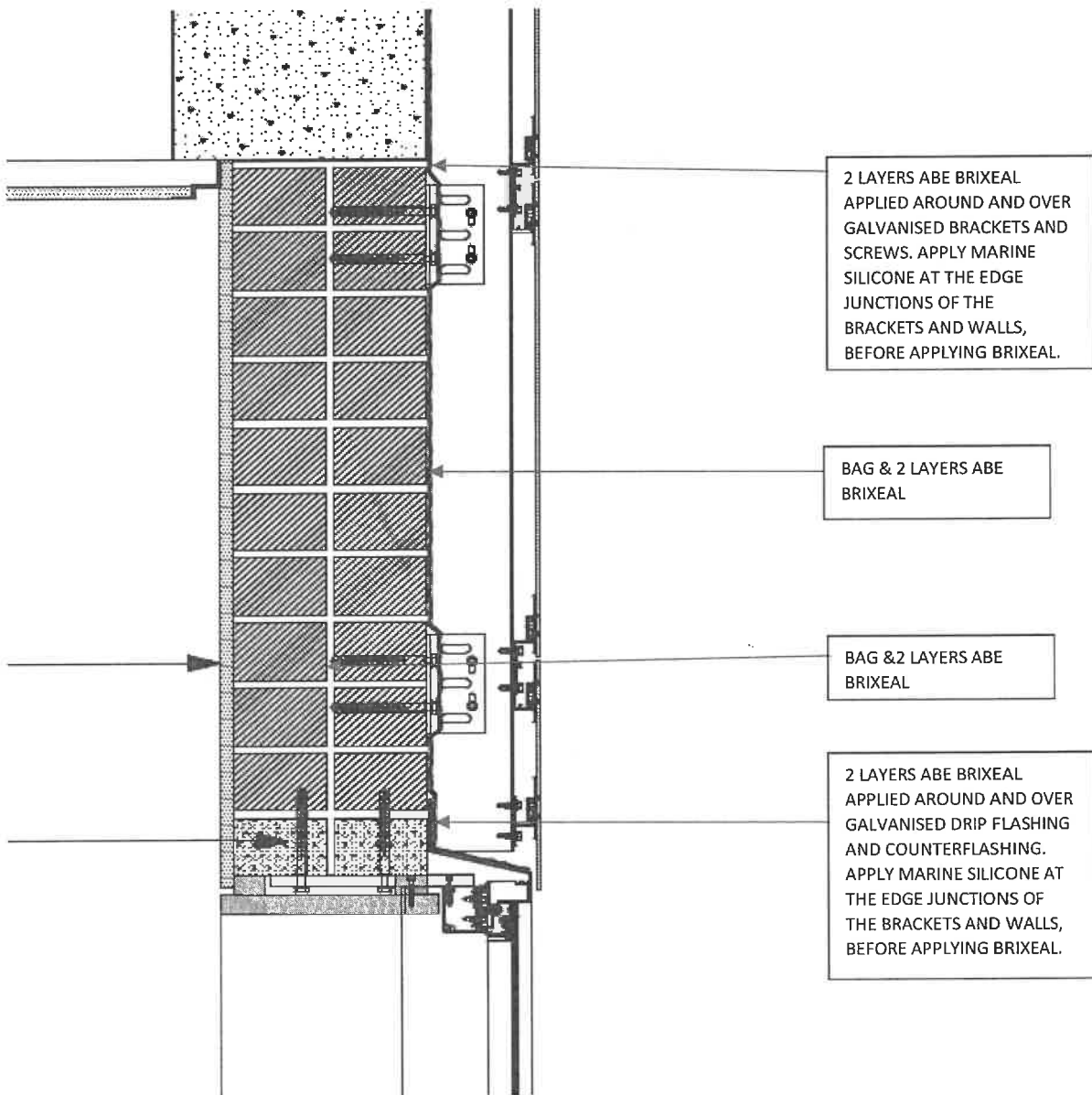




# NATIONAL DEPARTMENT OF PUBLIC WORKS

PRODUCT : ABE DAMP PROOF COURSE, STEPPED DPC AND BRIXEAL

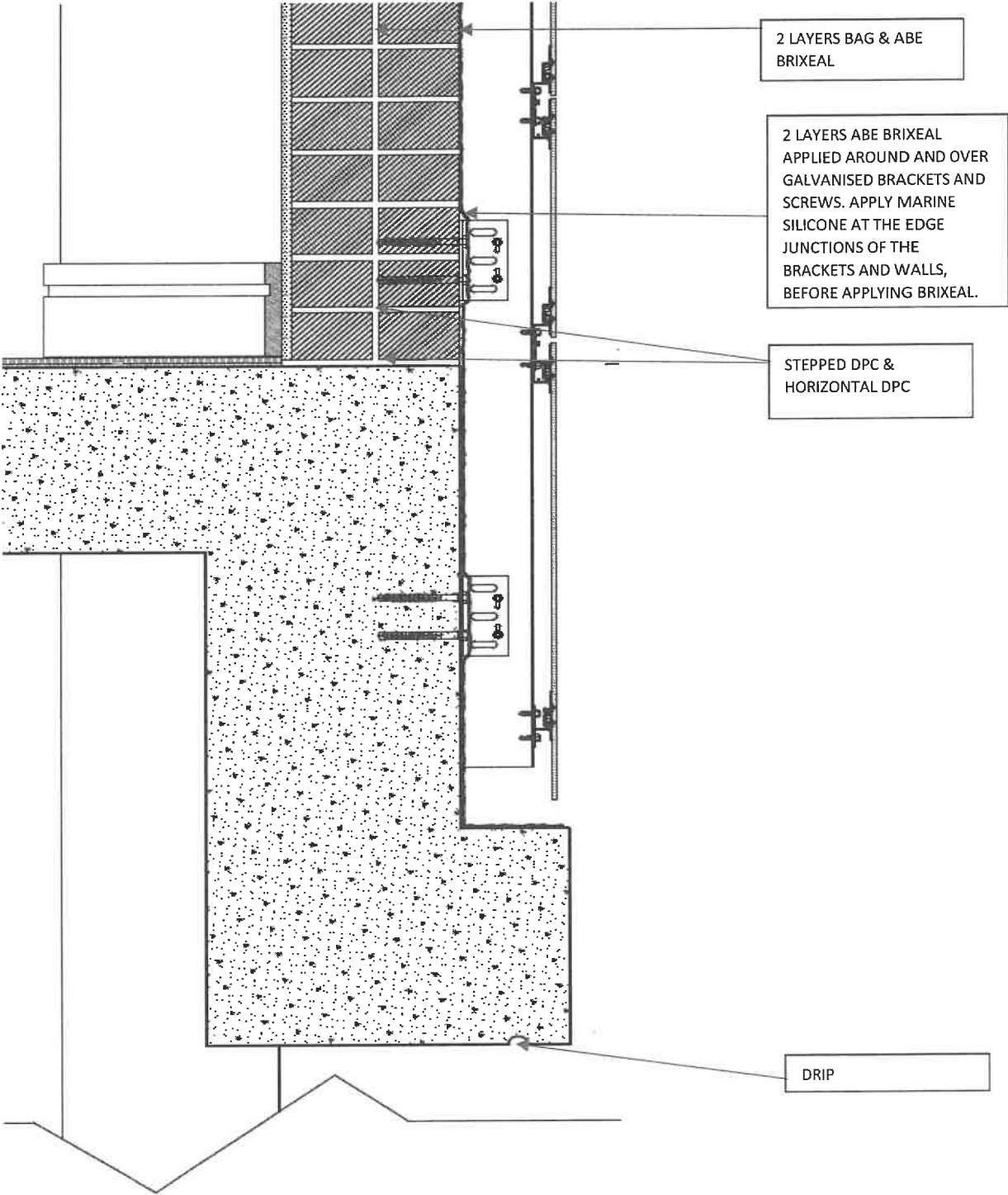
METHOD: SEETYPICALDETAILBELOW, ASPERABESPECIFICATIONSAND  
METHODOLOGY



PRODUCT : ABE DAMP PROOF COURSE, STEPPED DPC AND BRIXEAL

METHOD: SEETYPICALDETAILBELOW, ASPERABESPECIFICATIONSAND

METHODOLOGY

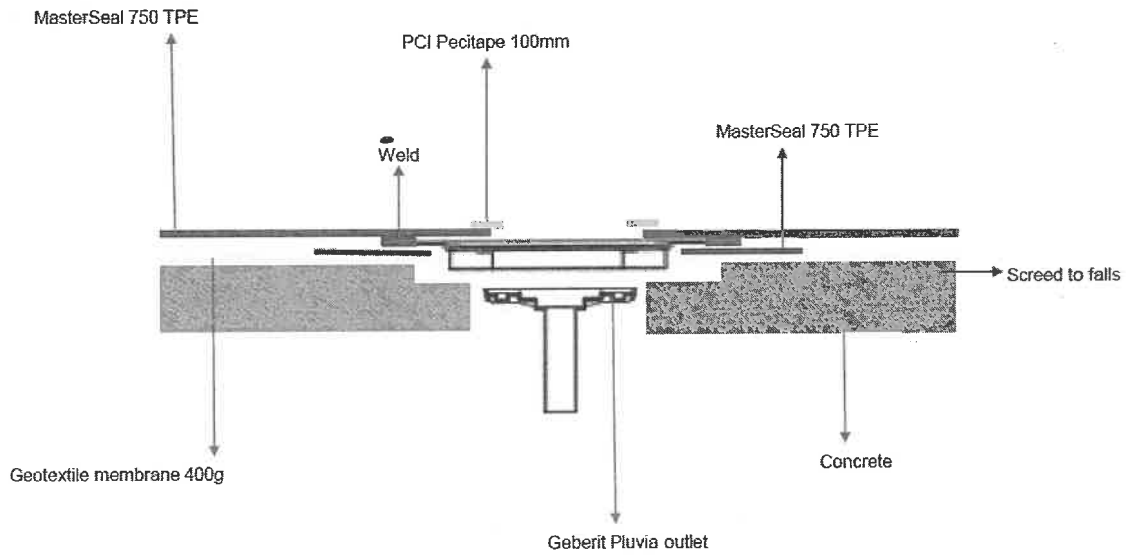


4.10. WATERPROOFING TO FULLBORE :

PRODUCT : BASF

METHOD: SEETYPICALDETAILBELOW, AS PER BASF SPECIFICATIONS AND METHODOLOGY

Geberit Pluvia Detail



## 5. K : CLADDING AND COVERING

### 5.1. K31 Metal profiled sheet cladding/ covering

TO BE READ WITH PRELIMINARIES/ GENERAL CONDITIONS.  
GENERAL

#### 110 METAL COVERING TO ROOF

- Cladding/ covering system type: 0.8mm KLIPLOK 700 Aluminium Grade 9017 Ezclad with a G4 Colortech DOVE GREY finish to external face and Mountain Mist finish internally.
- Support Structure: As per Eng. details.
- Roof pitch: As per Architect's drawings.
- Additional requirements: Sound insulation.

#### SYSTEM PERFORMANCE

#### 210 DESIGN

- Cladding/ covering system: Complete detailed design and submit before commencement of fabrication.
- Standard: To SANS 10237.
- Related works: Coordinate in detailed design.

#### PRODUCTS

#### 345 GUTTERS – New court building

- Manufacturer: Contractor's Choice.
- Product reference: Submit Proposal.
- Sizes: 150 x 150mm SEEMLESS box gutter.
- Material: Aluminium.
- Gauge/ Thickness: 0.8 mm.
- External finish: Coated - WHITE.
- Insulation: N/A.
- Jointing method: As recommended by manufacturer.
- Fixing method: As recommended by manufacturer.
- Accessories: Outlets and Downpipes.

#### 380 MINERAL WOOL THERMAL INSULATION

- Standard: To SANS 8144.
- Manufacturer: ISOVER or similar approved.
- Product reference: ENERGLITE.
- Thickness (minimum): 100mm.
- Installation: Continuous and not compressed between outer and lining sheets. Secure to prevent future movement or dislodgement.

#### 385 LAMINATED FOIL INSULATION LAID OVER PURLIN

- Standard: To SANS 1381 part 4.
- Material: Reflective Foil Insulation.
- Manufacturer: SISALATION.
- Product reference: FR430.
- Installation requirements:
- Insulation widths: Widest practical.
- Laid direction: At right angles to straining wires.
- Joints: 150 mm overlap, no gaps.
- Straining wires: 14g Galvanised.

#### 400 PROFILE FILLERS GENERALLY

- Material: Closed cell cross linked EP.
- Manufacturer: CONTRACTOR'S CHOICE.
- Product references: Submit Proposals.
- Colour: Black.
- Width: 50.
- Fixing method: Self-adhesive tape.
- Requirement: To close cavities/ regulate air paths within the external envelope. Tight fit with no unintended gaps.

#### 405 FIRE RESISTING PROFILE FILLERS

- Types: To accurately match sheet profile.
- Fixing method: Adhesive recommended by profile filler manufacturer.

#### 415 FASTENERS

- Unspecified fasteners: Recommended for the purpose by the cladding/ covering manufacturer.

#### 420 FITTINGS AND ACCESSORIES

- Unspecified fittings and accessories: Recommended for the purpose by the cladding/ covering manufacturer.

#### 450 PRODUCT SAMPLES

- General: Before commencing detailed design, submit labelled samples of the following: Ro of Sheeting .

#### 455 FASTENER SAMPLES

- General: During detailed design, submit labelled samples of each type of fastener.

### EXECUTION

#### 610 FIXING SHEETS GENERALLY

- Sequence: Paint outer surface of supporting structure before fixing cladding/ covering.
- Cut edges: Clean true lines.
- Penetrations: Openings to minimum size necessary.
- Edge reinforcement: Submit proposals.
- Sheet orientation: Exposed joints of side laps away from prevailing wind unless shown otherwise on drawings.
- Sheet ends, laps and raking cut edges: Fully supported and with fixings at top of lap.
- Fasteners: Drill holes. Position at regular intervals in straight lines, centered on support bearings.
- Position of fasteners in oversized drilled holes: Central.
- Fasteners torque: Sufficient to correctly compress washers.
- Debris: Remove dust and other foreign matter before finally fixing sheets.
- Completion: Check fixings to ensure watertightness and that sheets are secure.
- Cut edges: Paint to match face finish.

#### 635 FLASHINGS/ TRIMS GENERALLY

- Lap joint treatment:
  - Vertical and sloping flashings/ trims: End laps to be same as for adjacent sheeting.
  - Horizontal flashings/ trims: End laps to be 150 mm, sealed and where possible arranged with laps away from prevailing wind.
- Method of fixing: To structure in conjunction with adjacent sheeting. Otherwise to sheeting.
- Fasteners: Submit proposals.

## 645 BUTT JOINTED FLASHINGS/ TRIMS

- Locations: All horizontal.
- Butt straps: 300 mm wide and made from sheet of same material and finish.
- Butt joints: Seal.

## 650 ABUTMENTS

- Junctions with flashings: Weathertight and neatly dressed down.

## 655 SEALING LAPS ON EXTERNAL SHEETS

- Sealant tape: Types recommended by sheet manufacturer.
- Position: Below fixing positions in straight unbroken lines, parallel to and slightly back from edge of sheet.
- Seal quality: Effective, continuous and not over compressed.
- End laps: Sealant tape positions:
  - Single line tape: Immediately below line of fasteners.
  - Second line tape (where specified): Slightly set back from edge of external sheet.
- Side laps: Sealant tape positions:
  - Single line tape: Outside line of fasteners.
  - Second line tape (where specified): On other side of fasteners.

## 680 LIGHTNING PROTECTION AND EARTH BONDING

- Standard: SANS 10313.
- Bonding between individual sections of roofing/cladding to have a minimum cross sectional area of 50 mm<sup>2</sup>.
- Ensure continuity between adjacent sections, vertically and horizontally.

## COMPLETION 910

### GUARANTEE

- Provide a guarantee against material and workmanship defects for one complete rainy season.
- The guarantee shall cover the entire roof assembly and be obtained for the full guarantee period.

### 920 MAINTENANCE MANUAL

- Incorporate details within the Building Manual to include:
  - Contact details for subcontractors and suppliers.
  - Design criteria for the cladding/covering system.
  - Product information for components and materials including manufacturers' literature and recommendations for cleaning maintenance and repair.
  - Copies of material, components and finishes certification and test report.
  - A full set of construction drawings, updated to include any changes made up to the time of completion.
  - The terms and conditions of any guarantee.
  - Method statement for means of access for maintenance and for use of any permanent equipment.
  - Recommendations for routine maintenance and cleaning, including suitable cleaning agents.
  - Schedule of inspection requirements.
- Record book for listing defects, maintenance and repairs.

## 5.2. ROOFING

### ROOF SHEETING :

DOUBLE-INTERLOCKING CONCEALED-FIX RHEINZINK DOUBLE STANDING SEAM ROLL-FORMED IN CONTINUOUS LENGTHS AND CUT TO LENGTH BY A PNEUMATIC CUT-OFF PROCESS FROM CERTIFIED ALUMINIUM GRADE 9017 EZCLAD G4 COLORTECH FINISH . A CERTIFICATE VERIFYING COMPLIANCE SHALL BE ISSUED BY THE MANUFACTURER GLOBAL ROOFING SOLUTIONS. THE PROFILE SHALL BE ROLL-FORMED WITH FOUR RIBS AT CENTRES NOT EXCEEDING 233MM AND A COVER WIDTH NOT EXCEEDING 700MM. THESE WILL INCLUDE A MALE AND FEMALE RIB WITH CAPILLARY ACTION BREAKS. THE MALE RIB SHALL INCORPORATE SPURS SPACED NO MORE THAN 200MM APART TO ENSURE MINIMUM CLIPPING AREAS ON THE SIDE LAP, AND STAND PROUD OF THE RIB FOR PURPOSES OF DOUBLE INTERLOCKING ACTION WITH ADJACENT SHEETS. WHEN INTERLOCKED, THE MINIMUM SHEET DEPTH SHALL BE 41MM.

### MATERIAL AND FINISH FOR G.R.S KLIPLOK 700 ROOF SHEETING:

- 0.8MM G.R.S KLIPLOK 700 ALUMINIUM GRADE 9017 EZCLAD WITH A G4 COLORTECH FINISH TO ONE SIDE WITH A STANDARD MOUNTAIN MIST BACKING COAT TO OTHER.

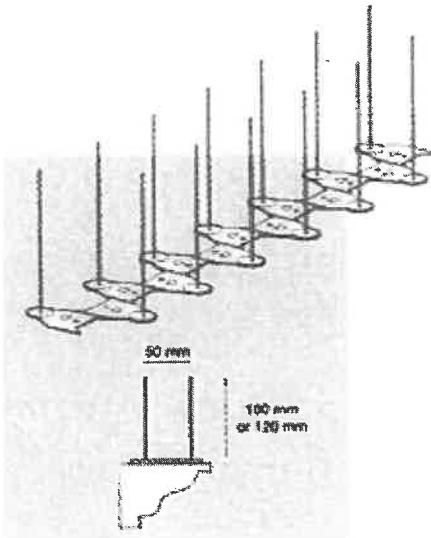
### FIXING G.R.S KLIPLOK 700

THE G.R.S KLIPLOK 700 SHEETS SHALL BE FIXED TO EVERY PURLIN BY MEANS OF PATENTED KL700 CLIPS HAVING SPURS WHICH WILL SECURELY HOLD THE SHEETS IN POSITION AND LOCK-IN THE SIDELAP AND BOTH CENTRE RIBS. THE KL700 CLIPS SHALL BE MANUFACTURED FROM ALUMINIUM AND SHALL BE FIXED WITH THE APPROPRIATE CLASS 5 WAFER HEAD SELF- DRILLING/TAPPING SCREWS TO STEEL PURLINS (TO ENGINEERS DETAILS)

### KLIPLOK FLASHINGS

FLASHINGS SPECIFICATIONS SHALL BE TO THE GLOBAL ROOFING SOLUTIONS STANDARDS AND FIXED TO THE SHEETING WITH S10 BRACKETS OR, SLIDING BRACKETS AT APEX WHERE ROOF SHEETS ARE 30M OR LONGER, TO OBTAIN ANY DIRECT FIXING PERFORATIONS. PRIOR TO FLASHINGS BEING FIXED, ALL TROUGHS AT THE APEX SHALL BE STOP-ENDED TO THE FULL DEPTH OF THE SHEET IN ORDER TO PREVENT ANY PENETRATION OF WIND DRIVEN WATER. THE TROUGH SHALL BE LIPPED AT THE EAVES END TO FORM A DRIP. TRANSVERSE FLASHING FLANGES SHALL BE NOTCHED TO THE SHEET PROFILE WHERE NECESSARY. ALL THESE OPERATIONS MUST BE PERFORMED WITH SPECIAL TOOLS AVAILABLE FROM GLOBAL ROOFING SOLUTIONS.

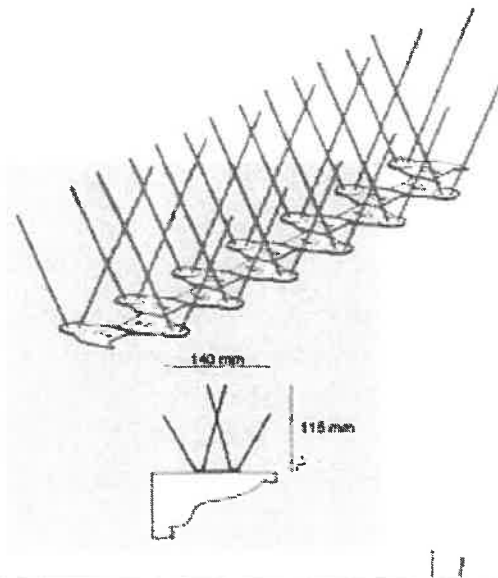
5.3. BIRD DETERRENT SPIKES



## ECOPIC® E2

Ref.	Description	Packaging
ECO143	E2 PCB 100 mm	50 linear metre

- Product dimensions :  
L 33 x W 6 x H 10 cm
- 13 spikes in 2 rows
- Packaging dimensions :  
51.5 x 36.5 x 32 cm box for 6.5 kg
- Width protected : from 6 cm to 10 cm
- Protection : pigeons
- Stainless-steel prong / **Steelinox®** + Ø 1.3 mm



## ECOPIC® E4

Ref.	Description	Packaging
ECO146	E4 PCB 85/115 mm	50 linear metre

- Product dimensions :  
L 33 x W 14 x H 8.5/11.5 cm
- 26 spikes in 4 rows
- Packaging dimensions :  
70.5 x 51.5 x 32 cm box for 9.5 kg
- Width protected : from 14 cm to 18 cm
- Protection : pigeons and gulls
- Stainless-steel prong / **Steelinox®** + Ø 1.3 mm



## 5.4. K60 Rainscreen cladding

TO BE READ WITH PRELIMINARIES/ GENERAL CONDITIONS.

### TYPES OF RAINSCREEN CLADDING 111

#### RAINSCREEN CLADDING

- Primary support structure: CONCRETE FRAMEWORK AND BRICKWORK INFILL PANELS.
  - Rainscreen cladding system:
    - Type: Drained and back ventilated.
    - Manufacturer: [DURBAN TILING SERVICES PTY LTD or similar approved].
    - Requirement: Include products, fixings and interfaces necessary to complete the fabrication and installation. Performance criteria to comply with Design/Performance Requirements and Testing subsections.
  - Rainscreen panel:
    - Type: Tile.
    - Material: Compact Sintered Surface.
    - Thickness: As determined by performance requirements.
    - Finish/ Colour: Custom - Based on STRATA.
    - Other panel requirements: None.
    - Fixing system Secret.
    - Fasteners: Strongfix system or similar approved.
- Number and location of fasteners: As determined by manufacturer.
- Joint type: Open.
  - Air gap: Not less than 100mm.
  - Secondary support/ framing system: Vertical and horizontal carrier rails.
    - Material: Aluminium.
    - Fasteners: Strongfix system or similar approved. Number and location: As determined by manufacturer.
  - Backing wall: Masonry as section H10/340.
  - Thermal insulation: Not required.
  - Breather membrane: Not required.
  - Accessories: None.
  - Incorporated components: Mechanical Ventilation Grilles - Details TBA.
  - Other requirements: Co-ordinated with Window positions.

### SYSTEM PERFORMANCE 210

#### DESIGN

- Curtain walling and associated features: Complete the detailed design. Submit before commencement of fabrication.
- Related works: Coordinate in the detailed design.

#### 212 SPECIFICATION

- Compliance standard:
  - The Centre for Window and Cladding Technology (CWCT) 'Standard for systemised building envelopes'.
  - Guide to good practice for facades.
  - TN 52 Impact performance of cladding.
- Reference information: For the duration of the contract, keep available at the design office, workshop and on site copies of:
  - The CWCT 'Standard for systemised building envelopes' Publications invoked by the CWCT 'Standard for systemised building envelopes'.

#### 213 INFORMATION TO BE PROVIDED WITH TENDER

- Submit the following curtain walling particulars:
  - Typical plan, section and elevation drawings at suitable scales.
  - Typical detailed drawings at large scales, including -

- Technical information and certification demonstrating compliance with specification of proposed incorporated products and finishes, including -.
- Certification, reports and calculations demonstrating compliance with specification of proposed curtain walling.
- Proposals for connections to and support from the building structure and building components.
- Proposals for amendments to primary supporting structure and for secondary supporting structure additional to that shown on preliminary design drawings.
- Schedule of builder's work, special provisions and special attendance by others.
- Examples of standard documentation from which project quality plan will be prepared.
- Preliminary fabrication and installation method statements and programme.
- Schedule of products and finishes with a design life expectancy less than that specified in clause 440, with proposals for frequencies and methods of replacement.
- Proposals for replacing damaged or failed products.
- Areas of non-compliance with the specification.

## 214 DESIGN SUBMITTALS

- Submit the following curtain walling particulars:
  - A schedule of detailed drawings and dates for submission for comment.
  - A schedule of loads that will be transmitted from the curtain walling to the structure.
  - Proposed fixing anchor details relevant to structural design and construction.
  - A detailed testing programme in compliance with the Main Contract master programme.
  - A detailed fabrication and installation programme in compliance with the Main Contract master programme.
  - Proposals to support outstanding applications for Building Regulation consents or relaxations.

## 215 QUALITY PLAN

- Requirement: Submit during detailed design.
- Content: In accordance with SANS 9001 and including the following:
  - Name of the quality manager.
  - Quality assessment procedures.
  - Inspection procedures to be adopted in checking the work.
  - Stages at which check lists will be used and samples of the lists.
  - List of work procedures on the correct use of materials or components, both offsite and on site.
  - List of product information with latest revisions.
  - Subcontractors involved in the work.
  - Subcontractors' quality plans.
  - Storage, handling, transport and protection procedures.
  - Procedure for registering and reporting non compliances.
  - Maintenance procedures and calibration records.
  - Certification that completed work complies with specification.
  - Check list register to ensure all items have been inspected and non compliances discharged.

## DESIGN/ PERFORMANCE REQUIREMENTS

### 221 PERFORMANCE REQUIREMENTS OF THE RAINSCREEN CLADDING SYSTEM

- AAAMSA Performance category: A2.

### 230 GENERAL MOVEMENT

- Requirement: Rainscreen cladding must accommodate anticipated building movements as follows that may occur during the fixing, final installation or lifetime of the works: The application of dead, live and wind loads.

### 270 SAMPLES OF FIXINGS

- General: During detailed design, submit labelled samples of each type of fixing anchor,

including casting-in restraints and shims, together with manufacturers' recommended torque figures.

## 272 PRODUCT SAMPLES

- General: Before commencing detailed design, submit labelled samples of: All components.

## 280 APPEARANCE AND FIT

- Requirement: Design rainscreen wall:
    - To ensure position and alignment of all parts and features as shown on preliminary design drawings.
    - To accommodate deviations in the primary support structure.
  - Primary support structure: Before commencing installation of rainscreen cladding system, carry out surveys sufficient to verify that required accuracy of erection can be achieved.
  - Give notice: If the structure will not allow the required accuracy or security of erection.
  - Design tolerances: -.
  - Rainscreen envelope zone tolerances:
    - Width:  $\pm 1$  mm.
- Critical reference location: -.
- Maximum permitted component and installation tolerances: Panel tolerance  $\pm 2$  mm, installation tolerance  $\pm 2$  mm, overall =  $\pm 4$  mm.

## PRODUCTS

### 310 ALUMINIUM ALLOY FRAMING SECTIONS

- Standards: To BS EN 755-9 alloy EN AW-6063 and suitable for the specified finish.
- Structural members: To comply with SANS 1200HE.

### 320 MECHANICAL FIXINGS

- Stainless steel: To Grade 1.4301 generally, grade 1.4401 when used in severely corrosive environments.
- Carbon steel: To SANS 50025-2 and suitable for galvanizing or other protective coating.
- Aluminium brackets, rivets and shear pins: To relevant parts of BS EN 755-1.

### 324 FIXINGS AND FASTENERS

- Type and use: Reviewed and approved by manufacturers. Submit confirmatory information on request.
- Dimensions: Not less than recommended by their manufacturers.
- Adjustment capability: Sufficient in three dimensions to accommodate primary support structure and rainscreen cladding fabrication/installation tolerances.

### 332 GENERAL SEALANTS

- Selection: In accordance with BS 6213 from:
  - Silicone.
  - One part polysulfide.
  - Two part polysulfide.
  - One or two part polyurethane.
- Classification and requirements: To BS EN ISO 11600.
- Reaction to contact products and finishes: Stable and compatible.

## FABRICATION 510

### GENERALLY

- Electrolytic corrosion: Take necessary measures to prevent.
- Identification of products: Mark or tag to facilitate identification during assembly, handling, storage and installation. Do not mark surfaces visible in the complete installation.

### 512 METALWORK

- Requirement: As section Z11, unless specified otherwise in this section.

## INSTALLATION

### 610 ASSEMBLY

- Location: Carry out as much assembly as possible in the workshop.
- Joints: Other than movement joints and designed open joints, must be rigidly secured, reinforced where necessary and fixed with hairline abutments.
- Displacement of components in assembled units: Submit proposals for reassembly on site.

### 612 INSTALLATION ACCURACY

- Generally: Grade II to SANS10155.

### 614 FIXING ANCHOR INSTALLATION

- Site drilling or cutting into structure: Submit proposals for positions other than shown on detailed drawings.
- Concrete supporting structure:
  - Cast-in inserts: Provide detailed locational information. Protect cavities in inserts from entry of concrete.
  - Edge fixing distances: Not less than recommended by fixing anchor manufacturers.
- Corrective fabrication: Minimize. Where necessary, submit proposals.

### 630 RAINSCREEN CLADDING INSTALLATION

- Tightening mechanical fasteners: To manufacturer's recommended torque figures. Do not overtighten fasteners intended to permit differential movement.
- Protective coverings: Remove only where necessary to facilitate installation and from surfaces which will be inaccessible on completion.

## COMPLETION

### 920 MAINTENANCE MANUAL

- Incorporate details within the Building Manual to include:
  - Contact details for subcontractors and suppliers.
  - Design criteria for the curtain wall system.
  - Product information for components and materials including manufacturers' literature and recommendations for cleaning maintenance and repair.
  - Copies of material, components and finishes certification and test report.
  - A full set of construction drawings, updated to include any changes made up to the time of completion.
  - The terms and conditions of any guarantee.
  - Method statement for means of access for maintenance and for use of any permanent equipment.
  - Method statement covering the procedures for replacement of parts that have a design life less than the design life of the curtain wall system.
  - Recommendations for routine maintenance and cleaning, including suitable cleaning agents and lubrication/ adjustments to working parts.
  - Schedule of inspection requirements.
- Record book for listing defects, maintenance and repairs.
- Materials certification and test reports to be included: For support system and finish.



## 5.6. SUPPLY AND INSTALLATION OF SOLTIS FT 381 FROM SERGE FERRARI FACADE LOT

MEMBRANE TYPE SOLTIS FT 381, MADE OF HIGH TENACITY POLYESTER YARNS COATED UNDER THE "PRECONTRAIINT" TECHNOLOGY. THE MEMBRANE SHOULD HAVE A POROSITY OF 28% AND A WEIGHT OF 550G / M<sup>2</sup>.

THE MECHANICAL PROPERTIES OF THIS MATERIAL WILL BE AT LEAST 330/330 DAN / 5 CM OR A MINIMUM BREAKING STRENGTH OF 6T / ML.

FIRE CLASSIFICATION B-S2-D0 ACCORDING EUROCLASSES EN 13501. COLOR

CHOICE OF THE ARCHITECT IN THE STANDARD RANGE.

THE COMPOSITE MATERIAL WILL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE REACH REGULATION (REGISTRATION, EVALUATION AND AUTHORISATION OF CHEMICALS)

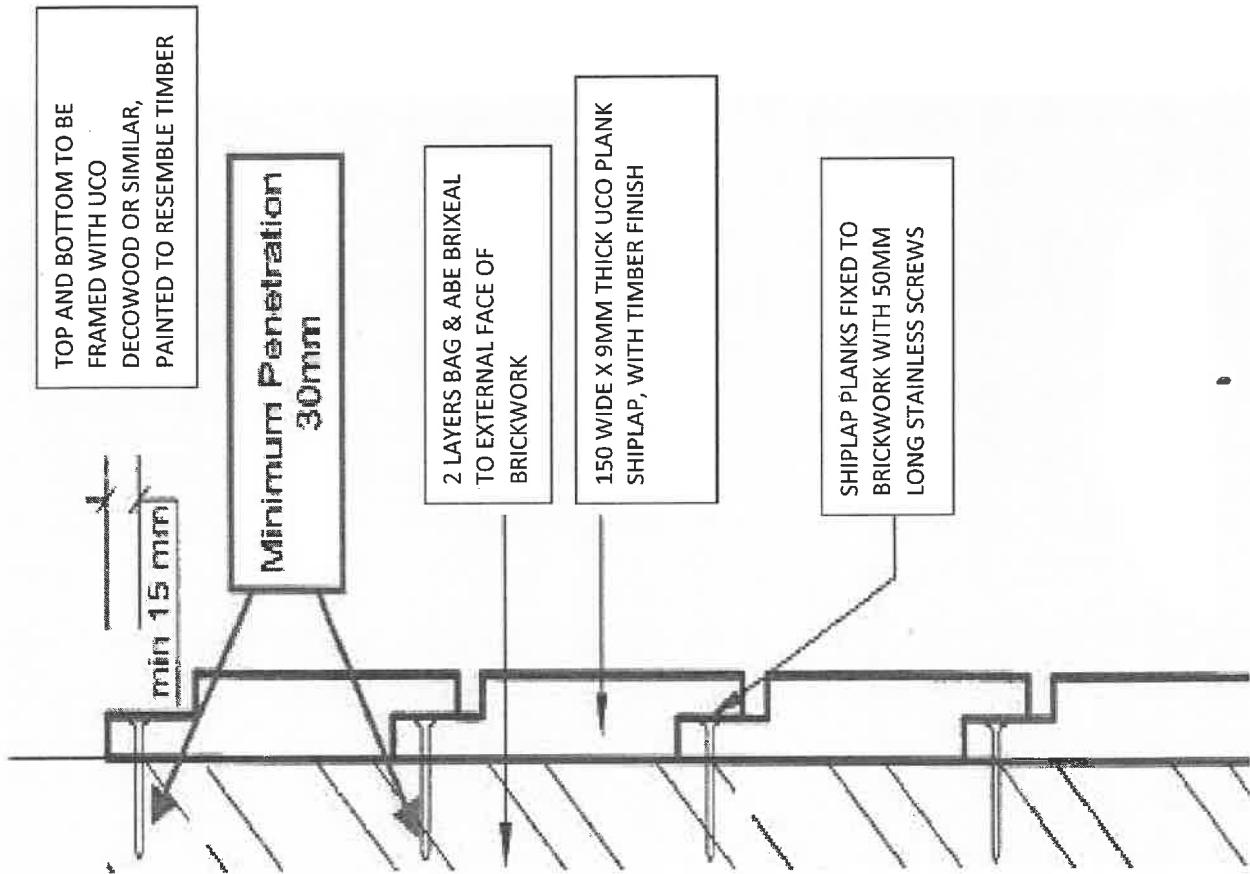
THIS COMPOSITE MEMBRANE MUST HAVE A LIFE CYCLE ANALYSIS (LCA).

IT WILL BE 100% RECYCLABLE BY TXYLOOP PROCESS THUS CONTRIBUTING TO THE PRESERVATION OF NATURAL RESOURCES BY THE PRODUCTION OF NEW RAW MATERIALS.

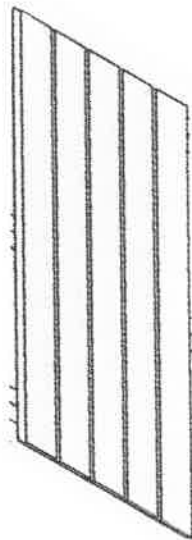
THE FABRICATION WILL BE CARRIED OUT FOLLOWING THE RECOMMENDATIONS OF THE MEMBRANE FABRICATOR BY WELDING WITH HIGH FREQUENCY (THERMAL WELDING). SERGE FERRARI SAS

FOR THE IMPLEMENTATION OF THE FACADE TYPE FT 381 STAMISOL SERGE FERRARI, THE INSTALLER SHOULD REFER TO THE MANUFACTURER'S RECOMMENDATIONS OF THE COMPOSITE MEMBRANE

5.7. VERTICAL FIXED, TIMBER LOOK ALIKE FIBRE CEMENT WALL CLADDING



SECTION



ELEVATION

## 6. L : CAPENTRY AND JOINERY

### 6.1. L61 Domestic kitchen fittings, furnishings and equipment

TO BE READ WITH PRELIMINARIES/ GENERAL CONDITIONS.

#### GENERAL

##### 111 FITTED KITCHEN SYSTEM

- Kitchen units: To All Kitchenette areas.
- Worktops: 20mm CEASARSTONE QUARTS or similar approved - colour SNOW WHITE.
- Sink: As per Architect's Sanitary schedules.

#### SYSTEM PERFORMANCE

##### 210 MOISTURE RESISTANCE

- All materials to satisfy the design life requirements.
- All facings, adhesives, fixings and associated elements of the boarding to have moisture resistant properties to match core materials.
- The works to remain stable and free from expansion, contraction or other movements detracting from the required performance or appearance.

#### PRODUCTS

##### 390 PURPOSE MADE UNITS GENERALLY

- Standard: To BS 6222-2, -3 and EN14749.
- Manufacturer: Submit proposals.
- Product reference: -.
- Structural performance: To BS 6222-2, grade H.
- Surface finishes: To BS 6222-3.
- Doors and drawer fronts:
  - Material: Melamine laminate.
  - Thickness: 16mm.
  - Finish and colour: WALLNUT laminate
  - Edges: WALLNUT veneer edging
  - Other requirements: All doors to have concealed spring loaded hinges.  
All opening members to have 192mm stainless steel bar handles.  
All drawers to use telescopic runners.
- Side panels, plinths and shelves:
  - Material: Melamine laminate
  - Thickness: 16mm.
  - Finish and colour: WHITE laminate.
  - Edges: WHITE, impact resistant PVC.

#### FABRICATION

##### 510 ACCURACY

- Take: Exact site dimensions before starting fabrication.
- Report: Any discrepancies to the Architect.
- Obtain: Instructions before proceeding.
- Permissible deviations for panels:
  - Length:  $\pm 1.5$  mm.
  - Width:  $\pm 1.5$  mm.



- Squareness:  $\pm 1.5$  mm in 1 m.
- Flatness:  $\pm 1$ mm under a 600mm straightedge.

## 515 CORE MATERIALS FOR LAMINATE FACED PANELS

- Substrates for decorative laminate bonded board:
- Particleboard in accordance with EN 312, grade P5.
- Plywood in accordance with SANS 929.
- MDF in accordance with EN 622-5.
- Blockboard/ Laminboard in accordance with SANS 929.
- Adhesiveness shall comply with EN 204, type to match durability class of core material. EXECUTION

## 610 MOISTURE CONTENT OF WOOD AND WOOD BASED BOARDS

- Control and monitoring:
- Method statement: Submit.

## 620 INSTALLATION GENERALLY

- Fixings and adhesives: As section Z20.
- Services: Not applicable.

## 630 INSTALLING UNITS AND WORKTOPS

- General: Well fitting, stable and secure.

## 640 INSTALLING APPLIANCES

- Connections: Provide to electric, gas, and hot and cold water services.
- Electrical supply: To SANS 10142.

## 650 INSTALLING SINKS, TAPS AND WASTES

- Water supply: To SANS 10252-1.
- Taps:
- Fixing: Secure, watertight seal with the appliance.
- Positioning: Hot tap to left of cold tap as viewed by the user of the appliance.
- Wastes:
- Bedding: Waterproof jointing compound.
- Fixing: With resilient washer between appliance and backnut.

## 660 SEALANT BEDDING AND POINTING

- Application: As section Z22.
- Bedding: Sink to top of worktop.
- Pointing: Between units and splash backs.

## 670 INSTALLING TRIMS AND MOULDINGS

- Lengths: Un-jointed between angles or ends of runs.
- Angle joints: Mitred.

## COMPLETION 910

### GENERAL

- Doors and drawers: Accurately aligned, not binding. Adjusted to ensure smooth operation.
- Ironmongery: Checked, adjusted and lubricated to ensure correct functioning.

## 920 APPLIANCE COMMISSIONING

- Appliance operation, functions and controls: Verify.
- Documentation: Submit guarantees, instruction manuals, etc.

## 7. M : CEILINGS / PARTITIONS / ACCESSFLOORING

### 7.1. M10 Plasterboard dry linings/partitions

TO BE READ WITH PRELIMINARIES/ GENERAL CONDITIONS.

#### SYSTEMS

##### 110 STUD PARTITIONS

- Type: Refer to Finishes Schedule.

##### 120 PLASTERBOARD DRYLINING

- Type: Refer to Finishes Schedule.

#### EXECUTION

##### 610 CONTROL SAMPLES

- General: Complete areas of finished work and obtain approval of appearance before proceeding.
- Type of dry lining: All.
- Location/ Size: Submit proposals.

##### 620 PREPARATION OF MASONRY TO RECEIVE WALL LININGS

- General: Suitable to receive lining system. Redundant fixtures and services removed. Cutting, chasing and making good completed.
- Holes, gaps, service penetrations, perimeter junctions and around openings: Seal.
- Adhesive fixings: Prepare substrate to achieve effective bonding.
- Contaminants: Remove loose material, dirt, grease, oil, paper, etc.
- Absorption: Control by dampening, priming or applying bonding agents as necessary.

##### 622 DRY LININGS GENERALLY

- General: Use fixing, jointing, sealing and finishing materials, components and installation methods recommended by board manufacturer.
- Cutting plasterboards: Neatly and accurately without damaging core or tearing paper facing.
- Cut edges: Minimize and position at internal angles wherever possible. Mask with bound edges of adjacent boards at external corners.
- Fixings boards: Securely and firmly to suitably prepared and accurately levelled backgrounds.
- Finishing: Neatly to give flush, smooth, flat surfaces free from bowing and abrupt changes of level.

##### 624 METAL FRAMING FOR PARTITIONS/ WALL LININGS

- Setting out: Accurately aligned and plumb.
- Frame/Stud positions: Equal centres to suits specified linings, maintaining sequence across openings.
- Additional studs: To support vertical edges of boards.
- Fixing centres at perimeters (maximum): 600mm.
- Openings: Form accurately.
- Doorsets: Use sleeved or boxed metal studs and/or suitable timber framing to achieve strength grade requirements for framing assembly and adequately support weight of door.
- Services penetrations: Allow for associated fire stopping.

##### 626 STAGGERED STUD PARTITIONS

- Horizontal frame members (noggins, bearers, etc.) and boards: Fix between alternate studs and not touching adjacent offset studs.

##### 630 ADDITIONAL SUPPORTS

- Framing: Accurately position and securely fix to give full support to:
  - Partition heads running parallel with, but offset from main structural supports.
  - Fixtures, fittings and service outlets. Mark framing positions clearly and accurately on linings.

- Board edges and lining perimeters, as recommended by board manufacturer to suit type and performance of lining.

## INSTALLATION

### 640 METAL FURRINGS FOR WALL LININGS

- Setting out: Accurately aligned and plumb.
- Vertical furring positions: Equal vertical centres to suit specified linings, maintaining sequence across openings. Position adjacent to angles and openings.
- Additional vertical furrings: To support vertical edges of boards and at junctions with partitions.
- Horizontal furring positions: To provide continuous support to edges of boards.
- Adhesive bedding to furrings:
- Dabs: Length 200 mm (minimum). Located at ends of furrings and thereafter at 450 mm (maximum) centres.
- Junctions with partitions: Continuous bed with no gaps across cavity.

### 650 INSTALLING MINERAL WOOL INSULATION

- Fitting insulation: Closely butted joints and no gaps. Use fasteners to prevent slumping or displacement.
- Services:
- Electrical cables overlaid by insulation: Sized accordingly.

### 652 SEALING GAPS AND AIR PATHS

- Location of sealant: To perimeter abutments and around openings.
- Pressurized shafts and ducts: At board-to-board and board-to-metal frame junctions.
- Application: To clean, dry and dust free surfaces as a continuous bead with no gaps.
- Gaps greater than 6 mm between floor and underside of plasterboard: After sealing, fill with jointing compound.

### 656 FIRE STOPPING AT PERIMETERS OF DRY LINING SYSTEMS

- Material: Tightly packed mineral wool or intumescent mastic/ sealant.
- Application: To perimeter abutments to provide a complete barrier to smoke and flame.

### 660 JOINTS BETWEEN BOARDS

- Tapered edged plasterboards:
- Bound edges: Lightly butted.
- Cut/ unbound edges: 3 mm gap.
- Square edged plasterboards: 3 mm gap.
- Square edged fibre reinforced gypsum boards: 5 mm gap.

### 662 VERTICAL JOINTS

- Joints: Centre on studs.
- Partitions: Stagger joints on opposite sides of studs.
- Two layer boarding: Stagger joints between layers.

### 664 HORIZONTAL JOINTS

- Surfaces exposed to view: Horizontal joints not permitted. Seek instructions where height of partition/ lining exceeds maximum available length of board.
- Two layer boarding: Stagger joints between layers by at least 600 mm.
- Edges of boards: Support using additional framing.
- Two layer boarding: Support edges of outer layer.

### 666 PLANK PLASTERBOARD

- First layer in two layer boarding: Square edged with long edges at right angles to studs.

### 670 FIXING PLASTERBOARD TO METAL FRAMING/ FURRINGS

- Partitions/ Wall linings: Fix securely and firmly at the following centres (maximum):

- Single layer boarding: To all framing at 300 mm centres. Reduce to 200 mm centres at external angles.
- Multi-layer boarding: Face layer at 300 mm centres, and previous layers around perimeters at 300 mm centres.
  - Position of screws from edges of boards (minimum): 10 mm.
- Screw heads: Set in a depression. Do not break paper or gypsum core.

## 672 DEFLECTION HEADS

- Fixing boards: Do not fix to head channels.

## 674 FIXING PLASTERBOARD TO TIMBER

- Fixing to timber: Securely at the following centres (maximum):
  - Nails: 150 mm.
  - Screws to partitions/ wall linings: 300 mm. Reduce to 200 mm at external angles.
- Position of nails/ screws from edges of boards (minimum):
  - Bound edges: 10 mm.
  - Cut/ unbound edges: 13 mm.
- Position of nails/ screws from edges of timber supports (minimum): 6 mm.

## 676 FIXING PLASTERBOARD WITH ADHESIVE DABS

- Setting out boards: Accurately aligned and plumb.
  - Fixing to substrates: Securely using adhesive dabs.
  - Adhesive dab spacings for each board:
    - Horizontally: One row along top edge and one continuous dab along bottom edge.
    - Vertically: One row along each edge and thereafter at intermediate spacings to suit size of board:
- | Thickness (mm) | Width (mm) | Dab centres (mm) |
|----------------|------------|------------------|
| 9.5            | 1200       | 400              |
| 12.5           | 900        | 450              |
| 12.5           | 1200       | 600              |
- Adhesive dab dimensions (width x length): At least 50-75 mm x 250 mm.
  - Position of dabs from edges/ ends of boards (minimum): 25 mm. FINISHING

## 680 LEVEL OF DRY LINING ACROSS JOINTS

- Sudden irregularities: Not permitted.
- Joint deviations: Measure from faces of adjacent boards using methods and straight edges (450 mm long with feet/ pads) Tapered edge joints:  
Permissible deviation (maximum) across joints when measured with feet resting on boards: 3 mm.
  - External angles:  
Permissible deviation (maximum) for both faces: 4 mm.
  - Internal angles:  
Permissible deviation (maximum) for both faces: 5 mm.

## 682 SEAMLESS JOINTING TO PLASTERBOARDS

- Cut edges of boards: Lightly sand to remove paper burrs.
- Filling and taping: Fill joints, gaps and internal angles with jointing compound and cover with continuous lengths of paper tape, fully bedded.
- Protection of edges/ corners: Reinforce external angles, stop ends, etc. with specified edge/ angle bead.
- Finishing: Apply jointing compound. Feather out each application beyond previous application to give a flush, smooth, seamless surface.
- Nail/ screw depressions: Fill with jointing compound to give a flush surface.
- Minor imperfections: Remove by light sanding.

## 684 INSTALLING BEADS/ STOPS

- Cutting: Neatly using mitres at return angles.
- Fixing: Securely using longest possible lengths, plumb, square and true to line and level, ensuring full contact of wings with substrate.

- Finishing: After joint compounds/ plasters have been applied, remove surplus material while still wet from surfaces of beads exposed to view.

## COMPLETION

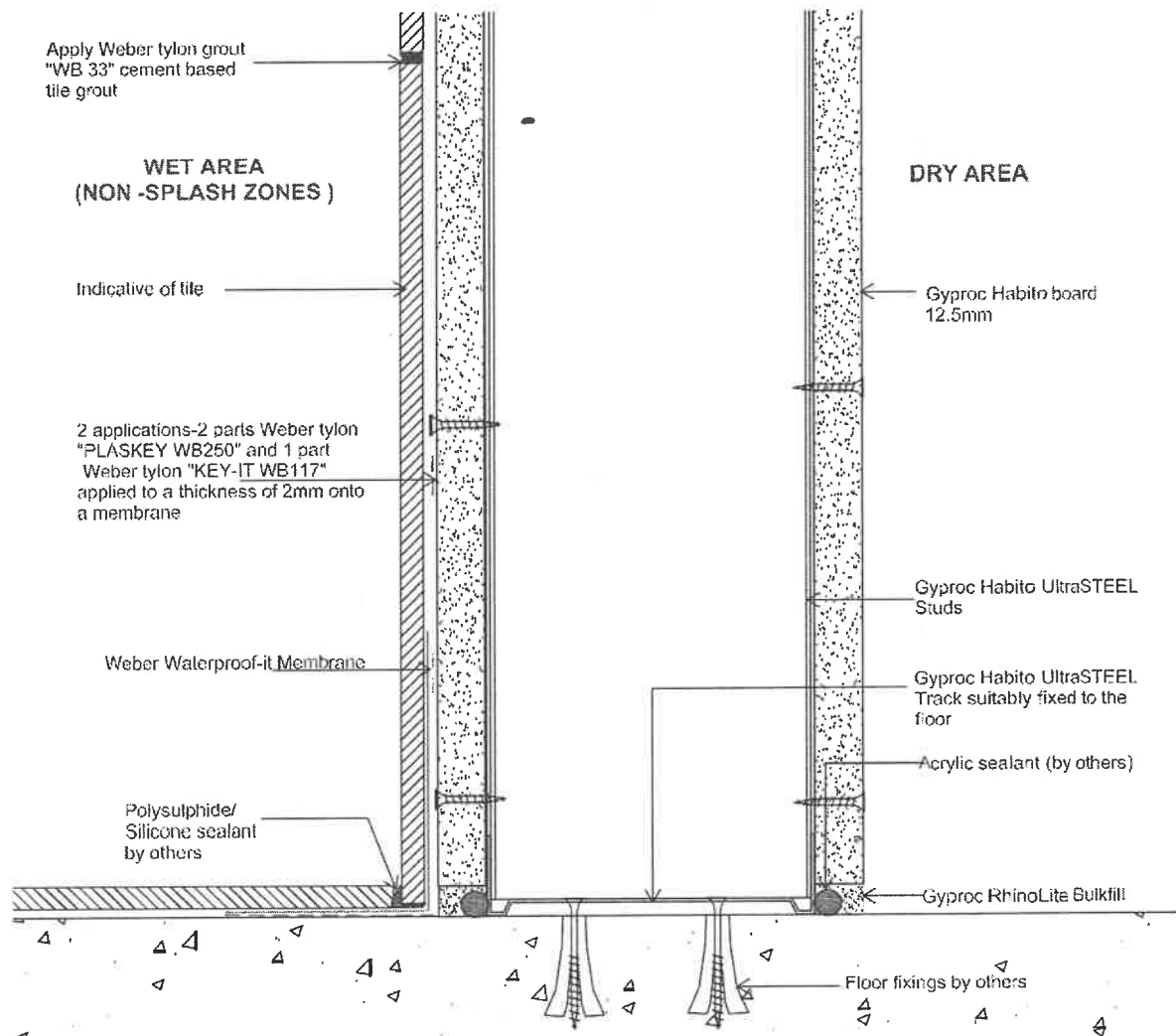
### 920 MAINTENANCE MANUAL

- Incorporate details within the Building Manual to include:
  - Contact details for subcontractors and suppliers.
  - Product information for components and materials including manufacturers' literature.
  - A full set of construction drawings, updated to include any changes made up to the time of completion.

7.2. HABITO WALL – WATERPROOFING DETAIL

**DRAWING NOTES:**

1. Gyproc Habito Board is fixed to the studs using Gyproc Habito High Performance Screws spaced at maximum 220mm centres.
2. Performance figures are stated for systems with studs spaced at 400mm centres.
3. All joints shall be reinforced using Gyproc RhinoTape.
4. This detail applies to non-splash zones ( i.e. not suited for shower areas or bathtubs)
5. Ventilation to areas where this system is to be installed , should meet the SANS 10400 - O requirements or mechanical ventilation is advisable
6. Please note : Do not use Plaskey WB250 and KEY-IT WB117 as a final finish



**Tile Adhesive Notes**

- For porcelain tiles apply Weber tylon "Porcelain Fix 12" tile adhesive
  - For ceramic tiles apply Weber tylon "WALL N' FLOOR WB11" tile adhesive
- Waterproof-it Membrane**
- Apply membrane onto the wet slurry and press down firmly. Allow the membrane joints to overlap by 100mm with neighbouring membrane.
  - Immediately apply a second coat of slurry, ensuring that the membrane is completely saturated.

## 7.3. OPERABLE WALL – HUF COR (New Court Building)

To supply & install Ifuba/Hufcor 5000 series in paired panel configuration operable partition with an STC 48 to suit opening HT 3000 x W 9654 comprising 8 no panels faced clear polished Zebrano veneer. Including the necessary top & bottom retractable seals, interlocking vertical seals & end lever closure all in natural anodized protective surround frame. Panels suspended from natural anodized track type 38 including all the necessary components for attaching to an existing support structure capable of supporting a hanging weight of 45kg per sqm.

Void above track to be filled with an STC 48 acoustic baffle.

Ifuba / Hufcor Acoustic Partitions are to be installed by a listed approved installer.

## 7.4. M11 Plasterboard ceilings

TO BE READ WITH PRELIMINARIES/ GENERAL CONDITIONS.

### SYSTEMS

#### 110 SUSPENDED GYPSUM PLASTERBOARD CEILING

- Type: Suspended flush jointed plasterboard ceiling on metal branderling suspended below concrete slab.

#### 130 GYPSUM PLASTERBOARD BULKHEAD

- Type: Flush plastered plasterboard bulkhead on galvanised metal framing.

#### 346 PLASTERBOARD GENERALLY

- To SANS 266 with exposed surface and edge profiles suitable to receive the specified finish.

### EXECUTION

#### 620 FIXING PLASTERBOARD TO TIMBER

- Fixing to timber: Securely at the following centres (maximum):
  - Nails: 150 mm.
  - Screws to ceiling linings: 300 mm. Reduce to 200 mm at external angles.
  - Screws to ceilings: 230 mm.
- Position of nails/ screws from edges of boards (minimum):
  - Bound edges: 10 mm.
  - Cut/ unbound edges: 13 mm.
- Position of nails/ screws from edges of timber supports (minimum): 6 mm.

#### 622 FIXING PLASTERBOARD TO METAL BRANDERING

- Ceilings: Fix securely and firmly at the following centres (maximum):
  - Single layer boarding: To all framing at 300 mm centres. Reduce to 200 mm centres at external angles.
  - Multi-layer boarding: Face layer at 300 mm centres, and previous layers around perimeters at 300 mm centres.
- Position of screws from edges of boards (minimum): 10 mm.
- Screw heads: Set in a depression. Do not break paper or gypsum core.

#### 624 FIXING COVERED PLASTERBOARD CORNICE

- Fixing: nailed with cadmium plated 38 mm x 2 mm nails at 300 mm centres to wall plugs and 450 mm centres through boarding into timber branderling.
- Scribe cornice at internal angles and mitre at external angles.
- Fix in long lengths with splayed butt joints where necessary.

- Jointing: Fill with quick setting joint filler and rub down when set.
- Caulk joint to plastered walls with gun applied paintable acrylic sealant.

## 626 ADDITIONAL SUPPORTS

- Framing: Accurately position and securely fix to give full support to:
  - Partition heads.
  - Fixtures, fittings and service outlets. Mark framing positions clearly and accurately on linings.
  - Board edges and lining perimeters, as recommended by board manufacturer to suit type and performance of lining.

## 630 INSTALLING INSULATION

- Fitting insulation: Closely butted joints and no gaps. Use fasteners to prevent slumping or displacement.
- Services:
  - Electrical cables overlaid by insulation: Sized accordingly.
  - Ceilings: Cut insulation around electrical fittings, etc.

## 635 CAVITY FIRE BARRIERS WITHIN SUSPENDED CEILINGS

- Fix barriers securely at perimeters and joints to ensure permanent stability and continuity with no gaps, providing a complete barrier to smoke and flame.
- Seal barriers to the structure with intumescent sealant.

## 660 JOINTS BETWEEN BOARDS

- Tapered edged plasterboards:
  - Bound edges: Lightly butted. At right angles to supports and with ends staggered in adjacent rows
  - Cut/ unbound edges: 3 mm gap.
- Two layer boarding: Stagger joints between layers.
- Square edged plasterboards: 3 mm gap.
- Square edged fibre reinforced gypsum boards: 5 mm gap.

## FINISHING

### 682 SEAMLESS JOINTING TO PLASTERBOARDS

- Cut edges of boards: Lightly sand to remove paper burrs.
- Filling and taping: Fill joints, gaps and internal angles with jointing compound and cover with continuous lengths of paper tape, fully bedded.
- Protection of edges/ corners: Reinforce external angles, stop ends, etc. with specified edge/ angle bead.
- Finishing: Apply jointing compound. Feather out each application beyond previous application to give a flush, smooth, seamless surface.
- Nail/ screw depressions: Fill with jointing compound to give a flush surface.
- Minor imperfections: Remove by light sanding.

### 684 INSTALLING BEADS/ STOPS

- Cutting: Neatly using mitres at return angles.
- Fixing: Securely using longest possible lengths, plumb, square and true to line and level, ensuring full contact of wings with substrate.
- Finishing: After joint compounds/ plasters have been applied, remove surplus material while still wet from surfaces of beads exposed to view.

### 690 REPAIRS TO EXISTING PLASTERBOARD

- Filling small areas with broken cores: Cut away paper facing, remove loose core material and fill with jointing compound.
  - Finish: Flush, smooth surface suitable for redecoration.
- Large patch repairs: Cut out damaged area and form neat hole with rectangular sides. Replace with matching plasterboard.
  - Fixing: Use methods to suit type of dry lining, ensuring full support to all edges of existing



and new plasterboard.

- Finishing: Fill joints, tape and apply jointing compound to give a flush, smooth surface suitable for redecoration.

## COMPLETION

### 920 MAINTENANCE MANUAL

- Incorporate details within the Building Manual to include:
  - Contact details for subcontractors and suppliers.
  - Product information for components and materials including manufacturers' literature.
  - A full set of construction drawings, updated to include any changes made up to the time of completion.

## 7.5. M30 Demountable suspended ceilings

TO BE READ WITH PRELIMINARIES/ GENERAL CONDITIONS.

### TYPES OF CEILING SYSTEM

#### 110 SUSPENDED CEILING SYSTEM

- Type: Refer to Architect's Ceiling Drawings.

### EXECUTION

#### 610 CONTROL SAMPLES

- General: Complete areas as part of the finished work in the following locations: TBA with Architect .
- Approval: Obtain before completing areas of similar work.

#### 615 SETTING OUT

- General: Completed ceiling should present, over the whole of its surface exposed to the room below, a continuous and even surface, jointed (where applicable) at regular intervals.
- Infill and access units, integrated services: Fitted correctly and aligned.
- Edge/ perimeter infill units size (minimum): Half standard width or length.
- Corner infill units size (minimum): Half standard width and length.
- Grid: Position to suit infill unit sizes. Allow for permitted deviations from nominal sizes of infill unit.
- Infill joints and exposed suspension members: Straight, aligned and parallel to walls, unless specified otherwise.
- Suitability of construction: Give notice where building elements and features to which the ceiling systems relate are not square, straight or level.

#### 620 BRACING

- General: Secure, with additional bracing and stiffening to give a stable ceiling system resistant to design loads and pressures.

#### 625 PROTECTION

- Loading: Do not apply loads for which the suspension system is not designed.
- Ceiling materials: When necessary, remove and replace correctly using special tools and clean gloves, etc. as appropriate.

#### 630 TOP FIXING

- Building structure: Verify suitability.
- Structural soffit: Existing concrete slab.
- Suitability to receive specified fixings: Evaluate and confirm.
- Fixing to:

- Concrete: Drill and insert suitable expanding anchors.
- Aerated concrete: Fix through from the top of concrete units and provide a system of primary support channels.
- Structural steel: Drill, or use suitable proprietary clips/ adaptors.
- Metal roof decking: Fix to sides of liner tray corrugations.
- Timber: Fix to side of joists at least 50 mm from bottom edge. If ceiling system is intended for fire protection, fix into top third of joists.
- Hollow structural members: Submit fixing proposals.
- Cartridge or powder activated methods: Do not use.

## 635 INSTALLING HANGERS

- Wire hangers: Straighten and tension before use.
- Installation: Install vertical or near vertical, without bends or kinks. Do not allow hangers to press against fittings, services, or insulation covering ducts/ pipes.
- Obstructions: Where obstructions prevent vertical installation, either brace diagonal hangers against lateral movement, or hang ceiling system on an appropriate rigid sub-grid bridging across obstructions and supported to prevent lateral movement.
- Extra hangers: Provide as necessary to carry additional loads.
- Fixing:
  - Wire hangers: Tie securely at top with tight bends to loops to prevent vertical movement.
  - Angle/ strap hangers: Do not use rivets for top fixing.
- Spacings: to manufacturer's details.

## 645 INSTALLING PERIMETER TRIMS

- Jointing: Neat and accurate, without lipping or twisting.
- External and internal corners: Mitre joints generally. Overlap joints at internal corners are not acceptable.
- Intermediate butt joints: Minimize. Use longest available lengths of trim. Align adjacent lengths.
- Fixing: Fix firmly to perimeter wall, edge battens or other building structure.
- Fasteners: to manufacturer's details.
- Fixing centres: to manufacturer's details.

## 650 EXPOSED GRIDS

- Grid fixings: to manufacturer's details.
- Main runners: Install level. Do not kink or bend hangers.
- Spliced joints: Stagger.
- Wire hangers passing through main runners: Use sharp bends and tightly wrapped loops.
- Angle/ strap hangers: Do not use rivets for bottom fixing.
- Angular displacement of long axis of one runner in relation to next runner in line with it: Not visually apparent.
- Cross members supported by main runners or other cross members: Install perpendicular to intersecting runners.
- Cross tees: Flat and coplanar with flanges of main runners after panel insertion.
- Cross tees over 600 mm long, cut and resting on perimeter trim: Provide an additional hanger.
- Holding down clips: Locate to manufacturer's recommendations.
- Fire protecting/ resisting ceiling systems: Use clip type featured in the fire test/ assessment.

## 655 CONCEALED GRIDS

- Grid fixings: to manufacturer's details.
- Primary support channels: Install level. Do not kink or bend hangers.
- Wire hangers wrapped around primary channels: Twice wrapped. Loops tightly formed.
- Angle/ Strap hangers: Do not use rivets for bottom fixing.
- Splines: Locate between infill units to assist levelling of adjacent units and to resist air movement at joints.
- Spring-tee grids: Do not omit primary channel.

## 660 INSTALLING INFILL UNITS

- General:
  - Perimeter infill units: Trimmed, as necessary, to fully fill space between last grid member and perimeter trim. Prevent subsequent movement.
  - Deeply textured infill units: Minimize variations in apparent texture and colour. In particular, avoid patchiness.
- Concealed grids: Install infill units uniformly, straight and aligned. Avoid dimension creep.
- Infill units around recessed luminaires and similar openings: Prevent movement and displacement.

## 665 INSTALLING METAL INFILL UNITS

- Sound absorbing pads: Fit to prevent upward air movement through infill units. Cut or fold pads in cut perimeter infill units to full unit size. Reseal cut pads.
- Perimeter infill units: Firmly wedge cut units into perimeter trim, or clip down.

## 670 BOARD CEILING SYSTEMS

- Cut boards: Neat and accurate.
- Fixing to grid:
  - Board edges: Fully support. Screw to grid members. Set heads of screws below surface of boards and fill flush with surface.
  - Boards applied in two or more layers: Stagger joints.
- Movement joints: Provide as appropriate for the area of ceiling system and/ or to coincide with movement joints in surrounding structure.

## 675 UPSTANDS AND BULKHEADS

- Vertical ceiling systems: Support and brace to provide alignment and stability.
- High upstands: Provide support at base of upstand.

## 680 OPENINGS IN CEILING MATERIALS

- General: Neat and accurate. To suit sizes and edge details of fittings. Do not distort ceiling system.

## 685 INTEGRATED SERVICES

- General: Position services accurately, support adequately. Align and level in relation to the ceiling and suspension system. Do not diminish performance of ceiling system.
- Small fittings: Support with rigid backing boards or other suitable means. Do not damage or distort the ceiling.
- Surface spread of flame rating of additional supporting material: Not less than ceiling material.
- Services outlets:
  - Supported by ceiling system: Provide additional hangers.
  - Independently supported: Provide flanges to support ceiling system.

## 695 CEILING MOUNTED LUMINAIRES

- Support: by ceiling system.
  - Independently supported luminaires: Suspension adjusted to line and level of ceiling.
  - Ceiling supported luminaires: Modifications and/ or extra support required: To each luminaire.
- Surface mounted luminaires: Units installed so that in event of a fire the designed grid expansion provision is not affected.
- Modular fluorescent recessed luminaires: Compatible with ceiling module. Extension boxes must not foul ceiling system.
- Recessed rows of luminaires: Provide flanges for support of grid and infill units, unless mounted above grid flanges. Retain in position with lateral restraint.
- Fire protecting/ resisting ceiling systems: Luminaires must not diminish protection integrity of ceiling system.
- Access: Provide access for maintenance of luminaires.

## 700 TRUNKING

- Recessed trunking: Provide flanges for support of grid and infill units, unless mounted above grid flanges. Retain in position with lateral restraint.

## 705 MECHANICAL SERVICES

- Fan coil units:
  - Inlet/ Outlet grilles: Trim ceiling grid and infill units to suit.
  - Space beneath: Sufficient for ceiling system components.
  - Suspension and connections: Permit accurate setting out and levelling of fan coil units.
- Air grilles and diffusers:
  - Setting out: Accurate and level.
  - Linear air diffusers: Retain in place with lateral restraint. Provide flanges for support of grid and infill units.
  - Grille/ Diffuser ceiling joints: Provide smudge rings and edge seals.
- Smoke detectors and PA speakers:
  - Ceiling infill units: Scribe and trim to suit.
  - Independent suspension: Not required.
  - Flexible connections: Required.
- Sprinkler heads: Carefully set out and level.

## 710 INSTALLING INSULATION

- Fitting: Fit accurately and firmly with butted joints and no gaps.
- Insulation within individual infill units: Fit closely. Secure to prevent displacement when infill units are installed or subsequently lifted.
- Dustproof sleeving: Reseal, if cut.
- Width: Lay insulation in the widest practical widths to suit grid member spacings.
- Services: Do not cover electrical cables that have not been sized accordingly. Cut insulation carefully around electrical fittings, etc. Do not lay insulation over luminaires.
- Sloping and vertical areas of ceiling system: Fasten insulation, to prevent displacement.

## 715 CEILING SYSTEMS INTENDED FOR FIRE PROTECTION

- Junctions of ceiling systems with perimeter abutments and service penetrations: Seal gaps with tightly packed mineral wool or intumescent sealant to prevent penetration of smoke and flame.
- Ceiling system/ Wall junctions: Maintain protective value of ceiling system.
- Fixings and grounds: Non-combustible.
- Metal trim: Provide for thermal expansion.
- Access and access panels: Maintain continuity of fire protection.

## 735 ELECTRICAL CONTINUITY AND EARTH BONDING

- Substantial conductive parts of the ceiling system: Electrically continuous and fully earth bonded to carry prospective earth fault currents.
- Standard: To SANS 10313.
- Sequence: Complete earth bonding as soon as possible after completion of each independent area of suspension system.
- Testing: After completion of the ceiling system, associated services and fittings, test conductive parts of suspension system required to carry earth fault current, or used as bonding connections. Give notice before testing.
- Test readings: Record and certify. Address test to resistance of other parts of the path forming the earth fault loop.

## COMPLETION

### 920 MAINTENANCE MANUAL

- Incorporate details within the Building Manual to include:
  - Contact details for subcontractors and suppliers.
  - Product information for components and materials including manufacturers' literature.
  - A full set of construction drawings, updated to include any changes made up to the time of completion.
- User instructions include the following:
  - Correct methods for removing and replacing infill units and other components.

- Cleaning methods and materials.
- Recommendations for redecoration.
- Ceiling systems intended for fire protection: Limitations placed on subsequent alterations and maintenance procedures, to ensure that their fire performance is not impaired.
- Maximum number, position and value of point loads that can be applied to ceiling system after installation.

925 SPARES

- General: At Completion supply the following: TBA by Architect.

## 8. N : FLOOR COVERINGS

### 8.1. Wall to wall Carpet /tiling

TO BE READ WITH PRELIMINARIES/ GENERAL CONDITIONS.

#### PRODUCTS/ MATERIALS 331

Wall to wall carpet

- Manufacturer: FLOORWORX or similar approved.  
Product reference: FLOTEX - DAKOTA.  
Type: FLOCKED CARPETING  
Level of use class: U5 Heavy Commercial.  
Luxury rating class: Not applicable.  
Colour / pattern: Anthracite (FCD345187).  
Underlay: BLUE UNDERCUSHION  
Fixing: Supply & fix 4.3mm thick x 30m x 2m wide Flotex sheeting, butting factory edges for seaming. Spread FloorworX No.60 Plus acrylic adhesive to exposed substrate as per specialist specification.  
Installation to be done by specialist preferred suppliers.  
Skirting: SAPELE timber skirting & quadrants to be installed. Fixed to wall with countersunk screws. To be filled with appropriate wood filler. All to receive min. 2 coats of varnish.

#### 332 Tiling

- Manufacturer: DURATILE  
Size: 450 x 900mm  
Type: NON-SLIP, FULL BODIED PORCELAIN  
Level of use class: Heavy Commercial.  
Luxury rating class: Not applicable.  
Colour / pattern: Charcoal grey. To architect's later approval  
Fixing: Goldstar tile adhesive with maximum 5mm joints between tiles. Grouting to architects later approval.  
Skirting: 150mm of the same tile. Skirting to have Surestrip, 15mm SES straight edge stainless steel strip to cover the top exposed edge