



**sport, arts & culture**

Department:  
Sport, Arts and Culture  
REPUBLIC OF SOUTH AFRICA



**PACOFS**

PERFORMING ARTS CENTRE  
OF THE FREE STATE  
An agency of the Department  
of Sport, Arts and Culture

## Annexure B

### THE APPOINTMENT OF A SERVICE PROVIDER FOR THE REPLACEMENT OF WATERPROOFING FOR THE ENTIRE PACOFS BUILDINGS

#### 1. SCOPE OF WORKS

The project comprises the following main work group: Treatment of the concrete flat roofs and related elements,

##### CONCRETE ROOFS

The scope of work for this work group comprises the following:

- a) Erect safety measures as required,
- b) Strip existing torched-on waterproofing and dispose,
- c) Repair screeds where falls are insufficient,
- d) Apply new screeds to improved falls,
- e) Clear all full-bore drains, and of blocked, inspect by camera for repairs,
- f) Apply new spray-on waterproofing coating with adequate side laps,
- g) Strip existing joint seals and grout from parapet copings and stone cladding, and reseal with correct waterproof grout.
- h) Remove redundant brackets and fixings from walls and roof slab, and seal the holes,
- i) Scratch open plaster cracks, clean and seal cracks, apply waterproofing membrane and repaint walls,
- j) Seal around all roof skylights.
- k) Maintain the lightning conductor on all parapets, test and certify upon completion by specialist subcontractor.

##### FLAT SLAB ROOF

The plant room area where the rooftop chillers and other mechanical equipment is positioned is considered confined, with difficult accessible sections. Therefore an elastic spray-on product is required to ensure proper coverage throughout around the chiller areas.

- Strip and dispose of existing waterproofing material.
- Remove all oils, grease, or other contaminants by scrubbing, rinsing, and cleaning to produce a water break-free surface. Abrade surfaces where necessary by etching, blasting, or grinding.
- Inspect roof falls for proper drainage and identify areas where screeds must be modified.

- Apply new screed to minimum 1% falls to outlets, with crystalline add-mixture to supplier's application. Internal corners should be coved to 50mm and external corners radiused to 25mm. All exposed brickwork, where the waterproofing is to be terminated, must be plastered to a smooth and true finish.
- Apply a polyurea-polyurethane spray-on application waterproofing membrane, Stoncor Stonechem 441 or Bitumproof Inopaz H2O or similar approved.
- Existing torch-on membrane must be washed and scrubbed well, as to remove all contaminants from the surfaces.
- A full and thorough inspection of existing membrane must be done. Any areas of existing membranes deemed to have delaminated from the surface, or that has become brittle from UV exposure and the elements, are to be removed completely. If these areas exceed 20% or more of existing areas, then it is recommended to remove all existing membranes in a specific area.
- Replace and patch all areas where existing membrane has been removed with a single(or double) layer of Prostruct 1001 x 4mm plain, after priming with Prostruct 201. - 7
- All overlaps, penetrations and outlets on existing waterproofing are to be checked and resealed to ensure a watertight seal, should there be any visible signs of delaminating.
- All previously coated aluminum coatings are to be removed by heating up the surface, and mechanically removal thereof means before placing new waterproofing membranes.
- Internal corners should be coved to 50mm and external corners radiused to 25mm. All exposed brickwork, where the waterproofing membrane is to be terminated, must be plastered to a smooth and true finish. A minimum surface tensile strength of the substrate of at least 1.5 MPa and a minimum moisture content of 5% is required.

#### **TEMPERATURE:**

- Apply all waterproofing products only in fair weather when air and surface temperature are above +5°C.

#### **PRIMING:**

Prime all prepared surfaces to be waterproofed with Pro-Struct 201 Bituminous Primer, including all verges, and around outlets and protrusions at a coverage rate of 3 to 5m<sup>2</sup>/litre. Allow the primer to dry until tack free, ensuring all solvents have evaporated. Extremely porous surfaces should be re-primed.

- Prime only the area which will be covered with membrane in the same working day.
- Areas not covered with membrane in 24 hours must be re-primed.

#### **MEMBRANE APPLICATION:**

- Apply a 300mm wide gusset strip of Pro-Struct 1001 4mm Plain, centrally at all floor

screed and wall junctions.

- Dress all full-bore outlets with a single layer of Pro-Struct 1001 4mm Plain.
- Seal the entire full-bore outlet with Pro-Struct 203 Rubberised Bitumen Emulsion Reinforced with Pro-Struct 599 reinforcing membrane (as per the Technical Data Sheet for Pro-Struct 203).
- Apply the First layer of Pro-Struct 1001 4mm Plain, dual reinforced with a non-woven polyester membrane and a woven glass mesh composite.
- Fully bond the membrane, by heat fusion, onto the primed area.
- Side laps of 75mm shall be carefully sealed by heat fusion, allowing a small bead of molten bitumen to become visible at the exposed edge of the sheet. • Seal these edges with a roller while the bitumen is still wet in a molten state.
- Do not seal these laps with a heated trowel or other tool, it does more harm than good.
- Apply the Second layer of Pro-Struct 1001 4mm Plain, dual reinforced with a non-woven polyester membrane and a woven glass mesh composite.
- Fully bond the membrane, by heat fusion, onto the primed area.
- Side laps of 75mm shall be carefully sealed by heat fusion, allowing a small bead of molten bitumen to become visible at the exposed edge of the sheet. • Seal these edges with a roller while the bitumen is still wet in a molten state.
- Do not seal these laps with a heated trowel or other tool, it does more harm than good.
- For end laps, the underlying membrane must be heated to form a 100mm wide strip of molten bitumen. The underside of the upper sheet is also heated, laid into the molten bitumen, and sealed with a roller. Do not use a heated trowel to seal these end laps.
- Extend and fully bond the Pro-Struct 1001 4mm Plain 200mm up all vertical surfaces.

#### **VERTICAL TERMINATION:**

Counter-flash all vertical terminations with a 200mm wide strip of Pro-Struct 203 Rubberised Bitumen Flashing Liquid reinforced with Pro-Struct 599 membrane (as per the Technical Data Sheet of Pro-Struct 203). It is recommended that the top leading edge of the counterflashing be terminated in either a Reglet of the substrate (Minimum of 6x6mm joint), or a brickwork joint.

#### **ALUMINIUM COATING:**

Apply two coats of Pro-Struct 202 Bituminous Aluminium Coating to the waterproofed areas at a coverage rate of 6m<sup>2</sup>/litre/coat.

**Lap all sides** to suppliers' directions along all balustrades, upstands, and plinths.

**Counter flash** all vertical terminations with a 100mm wide strip of Pro-Struct 680 Acrylic Flashing Liquid reinforced with Pro-Struct 599 membrane (as per the Technical Data Sheet of Pro-Struct 680). The top leading edge of the counter flashing will be terminated in either

a Reglet of the substrate (Minimum of 6 x 6mm joint), or a brickwork joint.

**Flood Test and Thermal Camera inspection:** On completion of the waterproofing obtained from the main contractor establishing that the waterproofing treatment was handed over in a watertight and workmanlike manner.

**Balustrade cladding & copings.**

- Strip all existing membranes and seals from joints.
- Clean stone cladding by grit blasting to remove traces of old waterproofing and paint.
- Scratch out old grout between joints.
- Seal joints with *TREMCO PU515 or similar approved low modulus polyurethane elastomeric sealant* to suppliers' directions.

**DRAWINGS**

No formal drawings are available on the project.

The contractor must submit sketches of their proposed access and safety system for approval by the Facilities Representative prior to commencing work.

**HEALTH AND SAFETY**

Safety during construction is paramount, and the Contractor must adhere to the statutory construction regulations and other regulatory requirements. The following serves as a guideline to the access and safety scaffolding:

- One point of entry will be allowed from street level. Access is allowed from inside the building on prior approval.
- All roof structures must be inspected prior to erection of working platforms or scaffolding onto roof structures. Any discrepancies must be reported to the Facilities Representative for assessment.
- Stacking of materials may only be done on roof sections able to withstand the load safely and must be restricted to limit concentrated loads on the structure.

**A secure means of entry and exit is essential.**

A general access scaffold or tower scaffold (preferably of the stairway design) will be required to provide suitable access. A properly secured ladder is the minimum requirement for short term access.

**Permanent security**

Access to the site must be controlled and always limited. Contractor to provide his own security.

**Edge Protection Barriers:** All exposed roof edges to be enclosed with an edge protection barrier. Edge protection should include or be equivalent to:

- a main guard rail at least 950 mm above the edge.

- a toe board and brick guard where there is risk of objects being kicked off the edge of the platform; and
- a suitable number of intermediate guard rails or suitable alternatives positioned so that there is no gap more than 470 mm.
- Roof parapets may provide equivalent protection but if it does not, extra protection will be required as described above.

**Crawl boards and Roof ladders:** On sloping roofs, roof workers should not work directly on tiles, as they do not provide a safe footing, particularly when they are wet. Use roof ladders and proprietary staging to enable safe passage across a roof. It must be designed for the purpose, of good construction, properly supported, and, if used on a sloping roof, securely fixed by means of a ridge hook placed over the ridge, bearing on the opposite roof or other support. It should be used in addition to eaves-level edge protection. *Gutters should not be used to support any ladder.*

**Work platforms:** Adequate and secure work platforms from which to carry out the work are required where necessary.

**Fall mitigation:** Providing adequate platforms and edge protection may not always be possible or reasonably practicable. If so, safety nets, soft landing systems, or other measures may be necessary to minimise the consequences of any potential injury. If nets are used it must be properly installed by competent riggers as close under the work surface as possible to minimise the distance fallen.

**Personal fall arrest systems:** Devices such as harnesses with a sufficiently strong anchorage points are necessary throughout, the contractor must determine where the anchorage points should be, and clearly indicate it on site. The contractor will be responsible to monitor user discipline and active monitoring for compliance.

**Falling material:** A tidy site must be maintained to prevent material which could fall from accumulating. Material may never be thrown from a roof or scaffold, and enclosed rubbish chutes are to be used if lowering material to the ground in containers is not possible. Rubbish chutes must discharge into skips to dispose of spoil material to spoil level.

**Public safety** must be maintained throughout, and all scaffolding and pedestrian walkways must be barricaded to prevent accidental or unauthorised access. Where necessary, the contractor must obtain permission from council to barricade sidewalks.

## Work requirement

- The contractor shall not use PACOFS Facilities without permission.
- The contractor shall not conduct any works that is beyond the TOR.
- The contractor shall provide construction personnel, equipment, material, tools, and supervision as needed to complete the services that meet the technical requirements in this statement of work as per Tor.
- The contractor shall identify a site agent or supervisor who shall be responsible for the overall management of the project and shall represent the contractor on site during work as per TOR.
- Demarcation and housekeeping play a major role in maintaining PACOFS safety standards and it should be noted that the contractor is responsible for site demarcation, keeping a clean and tidy site and the daily removal of rubble, redundant ~~equipment~~ to the appropriate designated municipal dumping site.
- Any additional work carried out without the express instruction of the project owner will not be paid for under the term on this contract and will be for the account of the contractor.
- Service provider shall dispose all the rubbles.
- PACOFS have storage facility therefore service provider will be expected to pay should they elect to use or provide own office and storage facility for new equipment and their tools.
- Contractor shall mount all logbook shelf on the wall. **NB: Facilities to advice.**
- Contractor will be required to register all personnel with PACOFS security before commencing with the service.

## Warrantees and Guarantees

- The Service Provider must provide a **10-year guarantee** on the waterproofing from the Original Equipment Manufacturer except malicious damage or poor workmanship.

## Safety requirements

- The contractor shall comply to PACOFS Health and Safety procedures.
- Compile and submit health and safety plan on appointment.
- Compile and submit Baseline risk assessment on appointment.
- Submit Health and safety file after appointment for approval before commencing with the project.
- Applicable legal appointments letters (contractor) and agreement in terms of Section 37(2) of the OHS-Act.
- Attend OHS induction prior work commencement.
- PACOFS will not be responsible for any loss/damaged of tools on site of the Service Provider.

**On site vendor requirements**

- Provide proof of identification documents for workers before entering PACOFS building.
- Site agent/Foreman must report to SM facilities office daily before project starts.
- Only personnel registered at the security will be allowed to work within the perimeters of the building.
- It is a definite requirement that a contractor shall only employ personnel fully conversant with the required service as per terms of reference.