

How is it cleaned?

Statement

Under Conran specification M40 it states: *'Cleaning to mosaic tiles as per specialist advice provided by PAYE report Centre Point, London Summary Report of the Facade Cleaning and Repair Trials (latest revision). Cleaning should be complete prior to commencing any refurbishment/repair works'*

As per PAYE report the Mosaic panels/ Tesserae are sample cleaned with the following:

- Vulpex soap
- DOFF superheated water clean

'This proposed cleaning strategy details the methods of cleaning agreed with Mr Alan Wito the Conservation Officer at the London Borough of Camden who was in attendance during the cleaning trials and is considered to be the 'agreed method'.

As such we have undertaken further samples of Vulpex soap and super-heated water clean to remove the surface contaminants, to the standard required by the Design team.

Material & Plant

Vulpex Soap

A cleaning agent based on potassium methyl cyclohexyl oleate in which methyl cyclohexanol is incorporated. Soluble in both water (5% solution) and organic solvents such as white spirit and 1,1,1-Trichloroethane (1% solution). **A non-corrosive, non-foaming, non-hazardous, germicidal, non-acidic insecticidal formulation used throughout the museum world as a versatile 'wet' or 'dry' spirit cleaner for practically any material from paper to stone. Vulpex soap does not have any adverse effects on ceramic tiles, glazed or none glazed.**

Doff Super-heated water clean

DOFF cleans stonework and masonry using high temperature steam. Whilst the temperature in the

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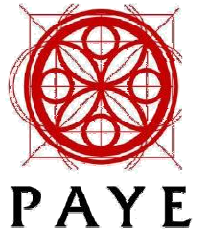


system is high, the pressure on the surface being cleaned is **very gentle and the volume of water is low**. Due to the hard impermeable nature of the glazed ceramic tile and volume of water being used, the surface **will not be saturated** and will be dry within minutes.

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The steam/superheated water will remove moss, algae, fungi and other biological matter and will also kill off spores. This means there's then no need to use a chemical biocide during the removal process or as a protection against further biological activity.

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Process / Procedure

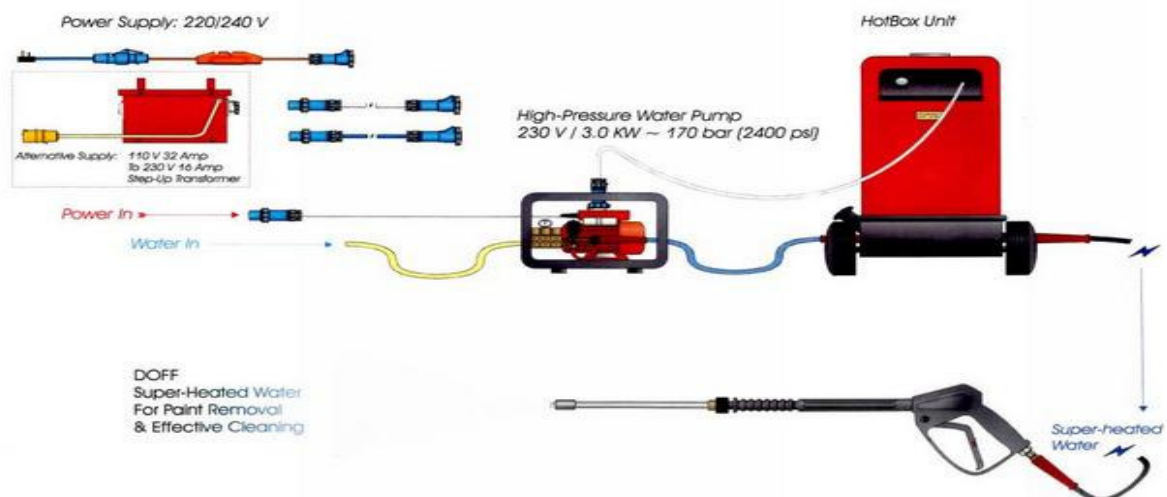
Protection

Using polythene sheeting and low tack tape, all apparent areas of potential water ingress inclu. Vents, grilles, ducting and exposed area of mosaic panels are sealed. This is to **prevent damage to existing services, mechanical ventilation and any ferrous material embedded in the façade.**

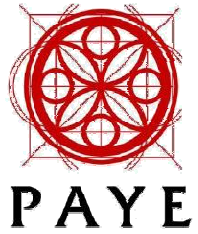
Setting up the equipment

PAYE Operatives are to set up the DOFF cleaning equipment in a safe location within close proximity to the workface. A 110v power supply and a cold water feed pipe will then be connected to the DOFF machine. Once the machine itself has been set up, PAYE cleaning operatives will proceed with connecting the hoses from the machine to the lance and nozzle ready to commence with the works.

The DOFF machine will then be allowed to warm up to the correct working temperature (temperature is variable depending on intended result) so that the cleaning can be started. Temperatures can be varied between 30 degrees and 140 degrees, although the proposed working temperature for cleaning the stonework is approx. 130 degrees this is **not the case with glazed ceramics which as an artificial material is more impermeable than limestones & sandstones.** At all times the pressure will be **kept to a 'safe' level** to prevent any abrasion or other disruptions to the façade.



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Apply Vulpex

Using just the nozzle, water will be poured at a slow speed over the surface to soften and wet the area. Vulpex soap will then be poured by the operative into a bucket and applied to the surface using a brush/ scouring pad. Typically this is lathered on and brushed in a side to side motion covering all the surface of the area. The surface is then scrubbed to aggravate and remove dirt.

Vulpex soap is used due to its **non-corrosive & non-hazardous nature, regardless of dwell periods the product cannot damage the existing mosaic / Tesserae** as it's mostly a degreaser.

Apply super-heated water clean

The lance is then offered to the substrate starting at the top of the area to be cleaned working downwards. The trigger is then opened and controlled by the cleaner, and the lance is moved sideways in a slowly controlled motion in order for the masonry to be steam cleaned. The nozzle will be kept approx. 100mm away from the masonry depending on the intended result of the cleaning. Stubborn areas may need to be agitated with the nozzle and subsequently closer.

Cleaning operatives to work methodically through the area until complete. Operating temperature, nozzle pressure and distances to the substrate will be controlled and monitored carefully by the cleaning operative.

Protection of heritage works.

At all times the cleaning process will be undertaken by accredited Heritage skills craftsmen, supervised and managed by experienced industry professionals specialising in heritage works. Operatives will ensure all mosaic edges / Mitres / reveals / corners are all protected at low level from the passing of plant and materials.

How will the existing Mosaic tiles be removed?

Statement

'Hairline cracks to glaze only are acceptable. Tiles which have cracked, chipped or damaged shall be removed and replaced'

Scope of replacement mosaics to be identified and confirmed by the design team.

Material & Plant.

Cutting equipment

- 4 ½ inch - Diamond abrasive rotary cutting wheels.
- Dremel multi tool
- Diamond tipped chisels and masons hammer
- Variable speed rotary polisher
- Carborundum stone

Process / Procedure

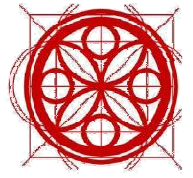
Protection to surrounding Mosaic/ Tesserae

The existing areas of Mosaic / Tesserae not to be removed, will be protected using premium grade, twin walled fluted plastic sheeting. **This will protect all surrounding areas from debris created by the removal of the defective Mosaic pieces and bonding material.**

Setting up equipment

All electric rotary cutting / polishing wheels will be checked before usage in accordance with the manufacturer's recommendation.

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Careful removal

PAYE operatives will first mark out the area of replacement mosaics/ tesserae using a permanent marker.

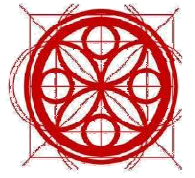
Operatives will commence the careful removal of each individual Tessera by making several cuts into the centre of the piece, using a rotary cutting wheel or Dremel multi tool. **Operatives to ensure the keep away from all grout joints surrounding the individual Tessera, to avoid chipping the adjacent tile.** The remaining material is then carefully removed using fine diamond tipped masonry chisels and masons hammer. The operatives ensure the chiselling out is pointed into the tile, to again avoid chipping the adjacent tile.



Inspection of backing/ substrate

Once the Tesserae has been removed, the **substrate will be checked for defects** as per design specification:- *'Background/ Base: Contractor to survey existing substrate to ensure it is suitable for application of replacement tiles. Contractor to report any damages or damp conditions to underlying substrate to Main Contractor. Damages shall be repaired before replacements/refurbishment is commenced'*.

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Protection of heritage works.

Careful attention is given at all times during removal process, to ensure adjacent / surrounding Tesserae are not damaged by the works been undertaken.

At all times the repair process will be undertaken by accredited Heritage skills craftsmen, supervised and managed by experienced industry professionals specialising in heritage works.

How we will replace?

Statement

PAYE will aim to replace the original materials of mosaic and grout with as close match as possible.

'Grout and tile colours to be mixed to match existing tiles M40/120J, - All replacement tiles shall be flush with existing tile faces. All tiles and grout joints shall align with existing tiles'

Material & Plant

Plant

- Masons trowel and hawk.
- Adhesive grout spreader, sponge and squeegee.

Mortars

- Bedding adhesive
- Adhesive pointing mix

Process / Procedure

Protection to surrounding granite

Where existing mosaic / tesserae is being retained around new units, it shall be sufficiently protected with premium grade, twin walled fluted plastic sheeting and hard board to **prevent any damages occurring whilst the installation works are ongoing.**

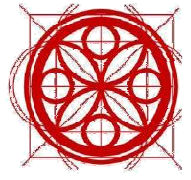
Selection of replacement Mosaic / Tesserae (Individual pieces).

For replacement of individual areas, before removal each replacement will be selected from the sample range to best match the colour of the original tiles.

Careful Installation

Each unit will be carefully bedded into position using a sufficient amount of mortar bed adhesive to suit the substrate. If the tiles cannot be fixed into position due to interface with existing non uniform tiles, then the replacement piece will milled and grinded to suit using a carborundum rubbing stone and masonry polisher. **Care is taken at all times not to spall / chip the**

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replacement glaze when reducing the size.

Once the tile is bedded in position the area will be left to cure and then pointed in the specified approved pointing mix using a squeegee.

The area is then cleaned down with water and sponge to remove any excess material.

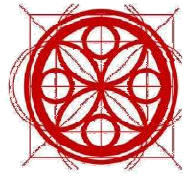
Protection of heritage works.

- Careful attention is given at all times not to smear / create over spill onto the surrounding tiles. Low tack tape is used to protect original tiles.
- At all times the repair process will be undertaken by accredited Heritage skills craftsmen, supervised and managed by experienced industry professionals specialising in heritage works.

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