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THE CLEANING OF CERAMIC TILES

It is now widely appreciated that in determining the total cost involved in providing any type of wall or floor finish, it is necessary to take into account not just the initial capital outlay but also the additional expense likely to be incurred in the subsequent cleaning maintenance and renewal of all such finishes.

One of the significant advantages that ceramic tiles have over other wall and floor finishes, is that they can be readily maintained in a clean, hygienic condition. Adherence to the cleaning procedures outlined in this leaflet will enable you to take maximum advantage of these properties.

The recommendations for general maintenance and cleaning of ceramic wall and floor tiles have been drawn up jointly by members of The Tile Association and are based on many years experience.

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1. UNGLAZED CERAMIC FLOOR TILES AND QUARRIES

1.1 General

The paragraphs shown in italics are based on the recommendations made in British Standard BS 5385 : Part 3 “Code of Practice for the Design and Installation of Ceramic Floor Tiles and Mosaics”.

Note:

The application of linseed oil, proprietary products or polishes is not normally recommended since these materials may not be absorbed into the surface and may tend to make the surface slippery and more difficult to clean. Proprietary impregnating sealers are available but their suitability should be checked with the manufacturer.

The tile manufacturer should also be consulted for specific advice.

1.2 Initial Clean (Builders Clean)

1.2.1 Removal of Residual Cement Film

The grouting process may leave a residual film on the surface of the tiles. It is important that this film is completely removed prior to the floor being brought into service. Residual cement film can be removed by treatment with appropriate proprietary acid cleaners. The floor should be wetted and free water removed prior to the application of the cleaning agent. It is important that this treatment is followed immediately by a thorough rinsing with clean water.

Proprietary products should be used in strict accordance with the manufacturer’s instructions.

Note:

Temporary tile sealers may be used to facilitate cleaning-off after laying and grouting and are recommended to prevent potential staining from coloured grouts.

These proprietary compositions can be readily removed after completion of the grouting operation by using normally alkaline detergents and rinsing.

Where temporary sealers are employed they should be used strictly in accordance with the manufacturer’s instructions.

1.2.2 Removal of Residual Epoxide Film

Jointing with epoxide resin is now an essential requirement in certain types of installations. It is important that any residue is removed from the surface of the tiles during the grouting process and before the resin cures.

Failure to achieve this will make removal of the film very difficult but is probably best achieved with a special gel-type epoxide remover. This may necessitate several applications.

1.2.3 Removal of Efflorescence

Efflorescence is aggravated by excessively damp conditions following installation or prolonged delay in drying out and may be persistent if it is due to rising moisture where damp resisting construction is inadequate. The deposit should disappear with washing but may reappear after drying: it should diminish with progressive washing and the most effective treatment is to increase the frequency of washing until the deposit ceases.

Persistent deposits may be treated with an appropriate proprietary acidic cleaner, but in such cases the floor should be wetted and free water removed before the application of the cleaning agent. It is important that this treatment is followed immediately by thorough rinsing with clean water.

1.3 Routine Maintenance

1.3.1 General

The pH of a material is the measure of the acidity or alkalinity.

Below pH7 the material is progressively more acidic and above pH7 more alkaline (i.e. pH8 is ten times more alkaline than pH7).

The regular use of detergents and other cleaning agents which are excessively acidic or alkaline can cause irreversible damage to the tile surface; acidity being less damaging than alkalinity.

Many degreasing agents which contain wax, sodium silicate or other additives which leave a sticky deposit on the floor and thus retain dirt, must also be avoided.

Old residues or a build up of wax etc, may be removed with a proprietary wax and polish.

1.3.2 Manual Cleaning

In normal circumstances, unglazed dust pressed and quarry floor tiles require little maintenance and are easily kept clean by sweeping and then mopping with warm water to which a neutral or nearly neutral detergent has been added.

Whichever detergent is used, it should be used in accordance with the manufacturer's instructions. The cleaning solution should be allowed to remain on the floor for sufficient time (5 to 15 minutes) to allow it to penetrate and emulsify the dirt, after which it should be removed by rinsing thoroughly with clean water.

IT IS THE RINSING PROCESS WHICH REMOVES THE DIRT

Note:

Typical detergents are listed in the appendix.

1.3.3 Mechanical Cleaning

The normal cleaning recommendations described in Section 1.3.1 above will suffice to keep a ceramic floor in a satisfactory clean condition. However, large areas of plain or textured surface floor tiles are more readily cleaned with rotary mechanical scrubbing machines. These would fall into three main categories:

* Rotary Action :

Whichever rotary machine is selected it should not be operated at speeds in excess of 450 r.p.m

* Contra-rotating :

Multiple brush heads make this type of machine easier to handle than the rotary action. However, its scrubbing action is less effective.

* Cylindrical :

These machines tend to be light and extremely mobile. Most machines of this type feature bi-directional movement and are able to wash, collect dirt and remove surface water in one operation.

Having selected the most suitable type of machine the choice of brush heads is all important. The brushes have to be flexible enough to grip the floor and at the same time they must not be of a type to cause damage to the tiles or joints.

Two different types of brushes are recommended:

* Union Mix Brush :

For washing tiles with a light scrubbing action.

* Polypropylene Brushes :

Where the deposits of dirt are especially heavy.

The regular use of scrub and rinse cleaning machines fitted with abrasive pads, other than the finest grades, is likely to damage the surface and may result in gradual loss of thickness in the wear layer. Cleaning pads are not recommended.

Many scrubbing machines are now provided with a suction drying facility. If so equipped the machine should first be used with the suction facility switched off to permit the water detergent solution used in the scrubbing process to remain on the floor to penetrate and emulsify the dirt layer.

The detergent solution should remain on the floor for 5 to 15 minutes after which time scrubbing operation should be repeated, but with clean water only, and with the suction drying facility switched on.

1.3.4 High Pressure Cleaning

High velocity cold or hot water jetting equipment is in use in many industries, particularly for the removal of obstinate deposits which defy normal cleansing techniques such as dirt and grime present in heavy concentrations or in relatively inaccessible areas.

Because of the ease with which ceramic tile surfaces, both unglazed and glazed, can be maintained in a clean condition, high pressure equipment is not often used on such surfaces, but where it is employed the following points should be noted:

- a) Whilst tiles will not be affected by high water pressure, excessive pressures may abrade the grouting material in the joints. For this reason care must be taken when using high pressure water jetting equipment to ensure that the water is not concentrated on one point for too long, but sprayed evenly across the entire surface being cleaned.
- b) Sometimes abrasives, detergents and disinfectants are added to the high velocity water. Whilst correctly proportioned mixes of suitable detergents or disinfectants in water should not harm tiles or grouting material, abrasives added to the water may produce damage. Therefore, water incorporating abrasive materials should not be sprayed over the tile surface.

THE USE OF STEAM CLEANERS IS NOT RECOMMENDED AS THEY CAN CAUSE LOCALISED THERMAL EXPANSION OF THE TILE WHICH MAY RESULT IN ADHESION FAILURE.

1.4 Periodic Deep Cleaning

In order to remove any build up of ingrained dirt, stubborn marks or stains it may be necessary to carry out a deep clean.

1.4.1 Chemical

Clean the floor in accordance with 1.3.2 above but substitute the detergent with a proprietary deep cleaner.

1.5 Specialised Treatments

From time to time, foreign matter may cause surface stains which mark the tile, and which normal water cleaning will not remove.

If stains have occurred the following treatments will normally remove or minimise them, though the treatment should only be used on the offending mark. It is advisable to experiment on a small area first, particularly if the nature of the stain is in doubt.

Staining Agent Treatment

Paint

Paint remover

Organic Stains

Bleach or one-off treatment with washing soda

Rust

Masonry cleaner

Rubber

Abrasive powder or liquid

Oil, Fat, Grease

Spillages of oil, fat or material likely to stain should be removed immediately by using detergents or degreasers and hot water, followed by rinsing with clean water. Stubborn stains may best be removed by the use of proprietary cleaners. These may require prolonged contact for effective cleaning.

Mould Growth

Household bleach or proprietary cleaner.

Tea, Coffee, or Ink

Proprietary cleaner or household bleach.

Wet Areas

Installations which are permanently wet (e.g. swimming pool promenades, showers, changing rooms etc.) may attract a build up of body fats, oils, soap residues and, in humid conditions, organic growth (algae). To remove these, a more acidic cleaning agent used regularly, is preferable. If build up has been allowed to occur, a preliminary deep clean with a proprietary cleaner should be carried out, followed by regular use of a mildly acidic cleaner.

2. GLAZED TILES

2.1 Glazed Ceramic Floor Tiles

The routine cleaning of glazed ceramic floor tiles should present few difficulties.

Any loose dirt or grit should first be removed from the surface by sweeping with a dry brush followed by mopping with warm water to which a neutral, low sulphate detergent has been added (see 1.3.1). This should be followed by a final rinsing with clean water.

ABRASIVE POWDERS WHICH MAY SCRATCH THE GLAZE MUST NOT BE USED.

2.2 Glazed Ceramic Wall Tiles

2.2.1 General

Some glazed wall tiles are supplied having a thin wax coating to the back of the tile in order to prevent scratching of the glazed surface during packaging and transit. The wax may often be transferred to the tile face and is best removed with warm water and a non-metallic scouring pad.

2.2.2 Routine Maintenance

The routine cleaning of glazed ceramic wall tiles should be carried out after the removal of any loose dirt or grit by wiping off with a dry cloth, followed by washing with warm water to which a neutral, low sulphate detergent has been added (see 1.3.1). After a further rinse with clean water to ensure thorough removal of the detergent solution the installation should be given a final wipe down and polish with a clean, dry, soft cloth.

ABRASIVE POWDERS WHICH MAY SCRATCH THE GLAZE MUST NOT BE USED.

2.2.2 Renovation of Grout

Over a period of time the grout lines between the tiles may become discoloured.

The grout can easily be refreshed with proprietary products used in accordance with the manufacturer's instructions

HEALTH AND SAFETY ASPECTS

Some of the cleaning methods described involve the use of chemicals, which may be hazardous if not used in the correct manner.

It is important that any safety warnings issued by the manufacturers, of proprietary cleaning products and of chemicals should be read carefully and that they should be strictly adhered to.

In general the following precautions should be taken:

- a. When using chemicals, protective clothing such as gloves, goggles, boots and overalls should be worn.
- b. Adequate ventilation is required in confined spaces when using chemicals.
- c. When using flammable materials, do not smoke cigarettes and extinguish naked flames and other sources of ignition.
- d. When diluting acids, always add acid to water and not water to acid.
- e. Any clothing that is contaminated with chemicals should be disposed of safely.
- f. When using chemicals, care must be taken not to damage, contaminate or stain any adjoining material.
- g. Care must be taken to protect personnel operating in the area of the cleaning from risk of injury or from any hazards created by the cleaning process.

- h. Run-off material containing any chemicals should be carefully controlled to ensure that its disposal does not harm any personnel, animals, or any part of the environment.
- i. It is particularly important with all cleaning methods that trials should be carried out on a small, inconspicuous area, to determine the effect of the chemicals before treating a larger area.