

## Quarry Tiles

### Background and applications

Dreadnought Tiles and Ketley Bricks are manufactured in a high quality factory in the West Midlands UK which has been operating for 210 years. During this time the company has built up an extensive knowledge of the tile manufacturing process. All this experience is behind the new wider range of Quarry Tiles and Brick Slips now being produced.

The Quarry Tiles and Slips are manufactured from the proven Etruria Marl clay, which when fired becomes dense, hard wearing and resistant to acids, alkalis, oils, grease and fats. It is the same clay that has stood the test of many decades in the form of Ketley Class A engineering bricks and Dreadnought Roof tiles, still seen in excellent condition in railway bridges, canal locks and roofs across the UK.

The range of Quarry Tiles and Brick Slips suit most flooring and wall cladding applications indoors or externally, in commercial premises or the home. They are available in a range of natural clay colours from Staffordshire Red, Brown Brindle, Blue Brindle, Brown Antique and Staffordshire Blue.

The Quarry Tiles and Brick Slips are 18mm thick and demonstrate, in unpolished slip resistance tests, values with a mean of 68 SRV in both directions, which means they can be categorised as U3 according to BS EN 1344:2002 annex F.

Sealers are not necessary but can sometimes be used indoors to enrich the subtle shadings. The tiles are normally easily kept clean by sweeping and then washing with warm water to which a soapless detergent has been added. They are ideal for heavily pedestrianised traffic areas, such as external terraces, where continuity from indoors to outdoor paving is desired, light industrial and internally in retail, commercial outlets and the home.

### Laying Quarry Tiles

During the floor laying operation the areas being treated should be accessible to no-one but the floor layers and should not be subjected to traffic until the bedding has stiffened and sufficient bond has developed between the bedding and the tile. The floor should be kept clean and free from cement and plaster droppings.

As a general guide the following fixing should be followed;

1. A joint width of between 6 & 10 mm
2. A bedding layer to be approximately 6mm for cement based adhesives, 15-25mm for cement mortar and up to 70mm for a semi dry bed.
3. A screed would normally be applied with a thickness of 50mm.
4. A separating layer may be used to isolate the slips or paving tiles and their bedding from the base, preventing stresses in the base affecting the floor finish. This method is not recommended for exterior applications.

When a screed is applied, the concrete base must be at least 4 weeks old. The screed must then be allowed to mature for at least 2 weeks before fixing commences, during which time it must be protected from rain and frost.

Bedding directly to the base can be used where the base is completely matured and where there is no risk of further shrinkage movement or where a damp-proof membrane is incorporated between the concrete base and screed. This method is suitable for external applications.

Care should be taken to incorporate appropriate falls and movement/expansion joints within the design of structure.

A suitable damp-proof membrane should be incorporated in the construction.

Quarry tiles should only be laid on a rigid bed with no voids underneath so the load applied to them is transferred through to the base. In situations where heavy loads are involved the strength of the installation can be improved by the use of a thicker paver as the transverse breaking load of a clay paving product is directly related to its thickness where all other factors are equal. It is advisable to select the material to resist the most arduous conditions likely to be imposed during the life of the product.

## Grouting

Grouting of Quarry tiles laid with wet cement-sand mortars or adhesives should not be carried out for 12 hours after laying the quarry tiles. Where a semi-dry mix method is used, tiles should be grouted within 4 hours of laying to ensure a full bond between the grout and the bedding.

Board should be laid over the tiled area to spread the load of the tiler when carrying out the grouting operation. The grouting mortar should be adapted for the width of the joint with a lower ratio of cement for wider joints. A mixture of 1:1 cement to fine dry sand by volume mixed to a paste with only the minimum of water for workability, should be used for joints of less than 3mm and a ratio of 1:3 for joints wider than 6mm. Avoid too wet a mix, as this will dry out rapidly and the grouting will crack and break out. Work in the grout in small joints with a squeegee action. In wider joints pointing is recommended. After the joints have been filled, scatter a dry 1:3 or 4 mortar mix over the joints: allow to dry for about 5 to 10 minutes, then brush away excess loose material with a soft bristle brush. Finally clean off the tiles with water and a cloth, avoid excess watering of the tiles in this operation.

If an impervious joint is required, additives may be used in the grout mix or proprietary ready grouts can be used. However advice should be sought from the manufacturers as to their suitability for the application. Attention should be paid to cleaning any proprietary grout or grouts mixed with additives off the surface of the Quarry tiles immediately.

Tiles should be cleaned as work proceeds. Such cleaning should be minimal with good workmanship.

## Cleaning and Maintenance

Under normal circumstances Quarry Tiles require little maintenance and can be kept clean by sweeping then washing with warm water to which a suitable non-soapy detergent has been added.

Clean and dry flooring surfaces possess a low slip potential, the majority of slip accidents occur in the presence of a contamination between the floor surface and foot. The likelihood of a slip occurring is greatly reduced if contamination is controlled by means of a cleaning and maintenance procedure. In order for a cleaning and/or maintenance regime to be effective there are a number of basic elements that should be considered:

- Before establishing a floor cleaning protocol, the specific contaminants must be identified in order to enable the selection of the appropriate cleaning agent
- The cleaning tools provided should be appropriate for use with the floor in question – it may be necessary to assign dedicated tools for specific areas
- Regular cleaning of the floor should be scheduled, specifying the responsible person and time of day or night (dependent on likely volume of pedestrian traffic) cleaning should take place
- Clear instruction should be provided as to the cleaning requirements and procedures, correct use and disposal of detergents, emergency conditions and procedures and recording and reporting of maintenance operations
- Wear, damage, debris and contaminants should be identified through routine inspection of floor surfaces.

Contamination cleansing routines are dependent upon a number of factors including the type of surface to be cleaned, the contamination present, the availability of chemical cleaning agents and the practicality of manoeuvring cleaning machinery in the given space. Beyond the method used, it is imperative to ensure all contaminants are removed following the cleansing process. The freshly cleaned floor must be thoroughly rinsed with clean water to make certain that all cleaning agents are removed and the floor is dry on completion. Failure to conduct these last actions can lead to a build-up of concentrated contaminant and cleaning agent on the surface of floors. These contaminant and cleaning agent residues will combine with any water subsequently applied to form an emulsion that can spread over the floor's surface, significantly increasing the slip potential.

Quarry Tiles should require only a small amount of cleaning on completion, and this only when the joints are hard. This should be done with a non-soapy, neutral, sulphate-free detergent and cleaned off with clean water. Strong detergents should not be used as they can cause scumming. Always damp tiles before applying a cleaning agent to avoid the cleaner being drawn into the body of the tile: the cleaning treatment is then restricted to the surface of the tile.

Difficult stains can be removed in one of three ways;

- By the use of an abrasive soap. Steel wool should not be used as small particles may be deposited in the grouting causing rust marks
- By chemical means, by reaction with the appropriate solvent but due to the variety of materials that may cause staining it is recommended that advice is sought from organisations such as Lucideon in Stoke on Trent.
- By bleaching to remove the colour from the stain, although this should not be done on a regular basis.

NB: The use of sealers and polishes on Quarry Tiles can make regular cleaning more difficult.

### **Disclaimer**

The information and recommendations given in this document are provided as guidelines to good practice. However, since conditions of use and workmanship are beyond the control of the company, its agents and consultants, the information and advice are given without acceptance of any responsibility by the company, its agents or consultants in any way whatsoever.