

## The Conservation of Church Tiles

Lesley Durbin BA (hons) ACR  
Senior Conservator, Jackfield Conservation Studio Ltd

### Introduction

This paper summarises my presentation given at the TACS Church Ceramics Conference. The subject was the conservation of church tiles and it aimed to cover the most frequently occurring problems that are found in tiles which are part of church fabric. Medieval tiles remain in only a few churches nowadays; most tiles date from the Victorian period of extensive church building and restoration. The same period saw the rise in the use of Portland cement and the majority of tile floors laid after 1860 will be laid on that same material. Earlier churches, which were restored during the late Victorian period, often have a sub floor of lime mortar with Portland cement laid over the top in order to provide the flat hard bed, which the tile manufacturers recommended for their tiles. Some manufacturers, Godwin's of Hereford especially, used only lime mortar to fix their tiles. It is this set of factors combined with high humidity and low temperatures or constantly changing humidity and temperature that cause the commonly found problems in church tile floors, for damage to tiles is usually a symptom of a greater problem within the fabric of the church itself.

### Salts

Salts of various types are naturally present in either the tile body itself or the underlying substrate, whatever it may be, or in both. For the most part they will remain as soluble salts and do no harm as long as both the tile and the substrate remain in a stable atmosphere, either humid or dry. If rapid changes of humidity or temperature occur, as is often the case in churches when heating is turned on or off frequently, then the soluble salts will begin to re-crystallize (Fig. 1). Damaging salt



*Figure 1*

crystals can appear on the surface or even within the clay body of the tile caused by low or incomplete evaporation of rising ground water. This slow evaporation can also cause a chemical change within the clay resulting in the appearance of black sulphides, which will permanently stain the tile (Fig. 2). Covering tiles with carpets



*Figure 2*

when these combinations of conditions are prevalent is also a recipe for disaster, as the moisture in the tiles will not have the opportunity to regularly dry with a free passage of air over the surface (Fig. 3). To remedy this situation the ambient



*Figure 3*

temperature and humidity in the building must be constant along with a good airflow, in addition the tile floors should be cleaned regularly.

### **Wear and tear**

The tread of many feet over a long period of time in a relatively small area such as an entrance or central nave aisle, will inevitably result in severe wear and tear (Figs. 4 and 5). In some instances tiles can be completely worn away giving rise to what



*Figure 4*



*Figure 5*

would be considered a hazard in health and safety terms, in others it merely results in the loss of decorative pattern. In the first case the worn tiles must be removed and replaced as soon as possible, however it is vital from an aesthetic point of view that the new tiles must match the historic exactly in colour and size. In the second case replacement is not essential; it is a matter of judgement as to the level of restoration or conservation to be achieved whether to leave the original but worn tile in place or to put in an 'as new' replacement.

### **Medieval tiles**

Medieval tiles are rarely found in churches now, but when they do occur they require special treatment. They should be cleaned only very rarely, perhaps annually, and then only by a conservator. Bird droppings must not be allowed to gather in any one place, under nesting swallows is a particularly common occurrence, the acid surface environment caused by droppings can be very damaging therefore they must not be allowed to accumulate (Fig. 6). The traditional



*Figure 6*

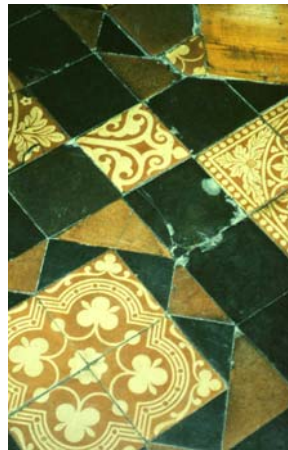
coating for tiles in the past was either hot linseed oil or beeswax, as time goes by the oil or wax will blacken as it both absorbs dirt and naturally changes colour; both wax and linseed oil are virtually impossible to remove. Neither is recommended as coatings. Repairs to medieval floors should always be of the simplest form using lime mortar (Fig. 7).



*Figure 7*

### **Fractures**

Typically fractures, together with spalling on the edges of tiles, are caused by building shift, the movement causing pressure as the tiles are forced against each other. This type of damage usually occurs when tiles are laid on Portland cement, lime mortar is more forgiving and will accommodate movement more readily (Fig. 8). Often in the past damaged tiles will have been repaired with unsympathetic,



*Figure 8*

badly matched tiles. The remedy here is to cut out the damaged and poorly matched tiles and replace with new tile where the pattern can be correctly re-ordered and the colours matched. However it is important to be circumspect in the number of tiles to be replaced making sure the maximum number of historic tiles remain in place (Fig. 9). There are instances where previous re-ordering of the church or provision of services result in ugly cement infills (Fig. 10). The best remedy here is to buy new matching tiles and have them fixed by a skilled craftsman tile fixer.



*Figure 9*



*Figure 10*

### **Work in progress**

Many churches are poorly provided for in terms of funding in order to maintain and care for their valuable historic fabric. A great deal of damage can be done by poor workmanship or bad practices during repairs. Poorly thought out procedures can cause irreparable damage, which is inevitably more costly than ever to put right (Figs. 11 and 12). Parish Church Councils and their architects now have a duty of



*Figure 11*





Figure 12

care to their buildings beyond the purely pragmatic, and accredited conservators in the care of building fabric and precious objects are fairly thin on the ground, but nevertheless it is beholden on the carers of church fabric to seek the best possible advice from accredited conservators before embarking on conservation or restoration of church fabric. Very often good advice and a clear specification for the work is all that is required from the conservator, the actual work may then be carried out by a suitably qualified practitioner according to the advice given. A conservation assessment document, which gives a clear indication of treatment and costs, can also be invaluable as a fund raising tool, avoiding unnecessary over-expenditure and ensuring that money is spent wisely in the right areas.

#### Notes

For a detailed examination of conservation practices for the conservation and restoration of church tiles see Durbin, L. (2005) *Architectural Tiles: Conservation and Restoration*. Oxford, Elsevier/Butterworth Heinemann. ISBN 0750658320.

#### Jackfield Conservation Studio Ltd

**The above information is for guidance only. We do not accept responsibility as a result of any person carrying out any works according to the advice contained in this document.**