CONSERVATION OF CERAMIC TILING

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1. INTRODUCTION

- Use of ceramic tile in skirting, flooring, benches, etc. as a practical, long-lasting, stable material.
- Aggressions undergone as a result of incorporation in buildings and service in general.
- Need to appreciate its historical and artistic value, and raise the issue of conservation instead of replacement.

2. PATHOLOGIES

- *TECHNICAL CAUSES*
  - Installation defects or poor quality of components, leading to glaze losses, weak bodies, cracks, etc.
  - Careless tile fixing, improper levelling or screeding, entailing erosion or wear and accumulation of dirt, use of cements contributing harmful salts, knocks, fine joints, etc.
  - Movements in the building and excessive loads
- *ENVIRONMENTAL CAUSES*
  - Stemming from exterior applications, or in floors or skirting exposed to the weathering agents and climatic changes, capillary moisture and salts, dirt deposits, etc.

- *SOCIAL, ADMINISTRATIVE OR CULTURAL CAUSES*

  - Remodelling of the building where tiling is installed, for aesthetic or functional reasons, or even because of neglect, can lead to replacement, removal, covering up, relocation, etc. of tiling,

  - Unsuitable, non-systematic, non-documented interventions.

3. LIGHT INSULATING SUBSTRATES

Substrates can be prepared as part of the conservation of whole objects when the wall or building no longer assures the insulation of the tiling, or when it becomes advisable to consider taking down panels or relocating these elsewhere.

This means tearing out tiles and requires conducting preliminary studies regarding the state of walls, mortars, tiles, assessing the difficulty involved in removing the tiling, as well as the material and equipment required.

- PRIOR TO REMOVING THE TILING:

  - Thorough documentation: photographs of whole object to be dealt with as well as details, drawings and plans of the tile installation, state of conservation, etc.

  - Surface cleanness

  - Preliminary consolidations

  - Numbering and labelling

  - Wrapping broken segments in protective material

- EMOVING THE TILING

  - Access grooves to allow removing the tiling by breaking the mortars, since blows in joints will produce breakage at tile edges.

  - Tearing out: manually in the case of classic mortars, or with diamond thread in the case of cements.

  - Cleaning: fair face and back.

  - Documentation of marks on the back.

  - Desalting

  - Drying of items

  - Sticking together fragments

  - Structural reintegration

  - Chromatic reintegration

Tile from the Escuela de Minas in Madrid

Once the tiles have been brought to this state of conservation, the whole object can be reassembled by means of a backing system, an adhesive and an intervention layer, forming manageable, independent, compact panels.

The intervention layer is a reversible layer that unites, fills up gaps, and levels up the tile backing. It serves to separate the original tiles from the new backing material, and by guaranteeing the reversibility of the material, allows recovering the tiles should this be necessary. It is a resistant layer but not of greater hardness than the tiles themselves, with the ability to adapt to movements arising in the whole section.

The adhesives used between the intervention layer and the backing system are epoxy resins, which ensure stability, strength and bonding.

The most commonly used backing materials are polyester and fibre glass prefabricated products containing aluminium mesh reinforcing.

4. CONCLUSIONS

- The conservation of ceramic tiling is necessary not just because of the material value of the work, but also because of its value as cultural heritage and historical document.
- The treatments applied need to be reversible and closely documented.
- Conservation can at times only be achieved by totally isolating the tiling, transforming it into a furnishing with the possibility of relocation elsewhere, in a context that satisfies conservation requirements.