Tiles and ceramics

Tiles are classed as Inert Waste and can therefore be sent to landfill, subject to a Landfill Tax rate of £2.50 per tonne. The main components of ceramic materials are clay, silica, fluxes and colouring. When combined with water and baked at high temperatures, these will produce a variety of construction products including bricks, and pipes as well as roofing, walling and flooring tiles.

For every kilogram of tiles produced, the following substances are conveyed through gaseous emissions: 0.2 to 0.4 g of fluorine compounds; 30 to 45 g of dusts; 0.01 to 0.1 g of lead compounds. Over 90% of these polluting substances are removed by purification plants, so that the quoted emission levels are respectively reduced to: 0.02 to 0.04 g of fluorine compounds; 0.2 to 0.3 g of particulate matter; 0.001 to 0.01 g of lead compounds.

Water consumption by the ceramics industries has been reduced as wastewater is reused in the productive process thereby limiting environmental pollution. Ceramic processes are characterized by significant energy requirements. Thanks to a vigorous drive toward technology and plant innovation, the entire sector today consumes less energy than it did previously.

The next phase, after manufacture, of the life cycle of tiles is their installation. The materials used for bedding and joints are generally materials of little significance with regards to their toxicity. As regards to safety, ceramic tiles limit health and environment risks associated with laying.

Minimise:
Roof and internal building tiles are highly durable materials but they are also fragile and break easily if they are not handled and stored appropriately on site. With the advancement of Modern Methods of Construction (MMC) techniques used by the construction industry, modular elements made in the manufacturing plant such as “bathroom pods” can be bought eliminating ceramic tile waste on the construction site. As not all construction projects use modular building elements, the reduction of ceramic materials in the waste stream needs to be addressed by the project team whom should only order the actual number of tiles needed to cover a roof, wall or floor areas.

Reuse:
If larger quantities of tiles were delivered to site than needed, the procurement teams should contact the tile manufacturer / supplier and negotiate the return of the extra materials delivered to site. If there is another site that uses and requires
the same materials, the extra materials should be transported there. If the construction company cannot use the tiles on another project or send them back to their supplier, the materials should be taken to a material reuse centre and reclamation yard for reuse by other companies or the general public if possible.

**Recycling:**
Thanks to their inert nature, the scraps of ceramic materials generated by construction sites can be used in the form of recycled aggregate without any particular environmental risk. Both roof tiles and internal tiles are suitable for recycling, and damaged tiles and off-cuts on construction sites can be stored in inert segregation skips and sent to be ground for use as aggregate.

**General advice:**
- Re-use your materials where practicable - don’t throw away cut tiles
- Send back pallets - don’t waste space in a skip.
- Pack skips well - a skip is up to 40% air.
- Minimise the amount of water you use on site.
- Get trades to finish mixed materials - cement, plaster, and adhesives.

Sources:  [www.thetiledoctor.com/tile](http://www.thetiledoctor.com/tile)
Also see:  [www.clayroof.co.uk/production/index.htm](http://www.clayroof.co.uk/production/index.htm)  [www.iflooringinfo.com/ceramic/environmental.htm](http://www.iflooringinfo.com/ceramic/environmental.htm)

<table>
<thead>
<tr>
<th>Useful figures</th>
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<tbody>
<tr>
<td>Wastage rate*</td>
<td>5% by weight (roof tiles)</td>
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<tr>
<td></td>
<td>8% by weight (internal tiles)</td>
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<tr>
<td>SMARTWaste benchmark**</td>
<td>0.095 tonnes/100m² (Non-residential projects)</td>
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<td>0.186 tonnes/100m² (Residential projects)</td>
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Notes:
* Taken from BRE’s Green Guide to Specification
** Based on completed projects on BRE’s SMARTWaste database (28th February 2010)

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