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SIST-TP CEN/TR 13548:2004
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Splošna pravila za oblikovanje in vgradnjo keramičnih ploščic

General rules for the design and installation of ceramic tiling

Konstruktion und Aufbringung von Belägen aus keramischen Fliesen und Platten -
Fugenmörtel für Fliesen und Platten

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General rules for the design and installation of ceramic tiling

Konstruktion und Aufbringung von Belägen aus
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und Platten

This Technical Report was approved by CEN on 12 October 2003. It has been drawn up by the Technical Committee CEN/TC 67.

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CEN/TR 13548:2004 (E)

Foreword

This document (CEN/TR 13548:2004) has been prepared by Technical Committee CEN/TC 67 “Ceramic tiles”, the secretariat of which is held by UNI.

Annex A is informative.

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Introduction

There are now current European Standards available for:

- ceramic tiles
- adhesives and grouts for tiles

For these products to give satisfactory service, it is necessary for them to be selected and installed competently, and to receive appropriate initial treatment, protection and maintenance.

Certain CEN member countries have issued standards and/or guides that define the practice for design and installation of ceramic tiling.

This Technical Report is not intended to replace these national standards or guides, neither prevent the development of national standards or guides in those member countries that do not currently have them. Its purpose is to foster good design and installation standards for ceramic tiling across Europe, especially in countries where there is no national standard or guide on this subject.

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CEN/TR 13548:2004 (E)

1 Scope

This Technical Report applies to internal and external floor and wall ceramic tiling, installed by both cement mortar and adhesive methods.

The aim of this Technical Report is to define the quality of ceramic tiling and the main general rules associated with materials selection, design, installation and use that should be followed to ensure that the required levels of quality and performance are achieved.

Note: The quality of ceramic tiling depends on compliance with the following general requirements:

- regularity
- durability
- safety

Compliance with these requirements shall be achieved with the simultaneous and indispensable contribution of all the "functions" involved in the design and installation of the tiling. These functions are:

- manufacture and distribution of the materials (ceramic tiles, adhesives, grouts, etc.);
- design of the tiling;
- installation of the tiling (tile fixing operations).

The durability of the tiling can also depend on its use and management.

2 Normative references

This Technical Report incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this Technical Report only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

ISO 7976-1:1989, *Tolerances for building -- Methods of measurement of buildings and building products -- Part 1: Methods and instruments*

EN 14411, *Ceramic tiles - Definitions, classification, characteristics and marking* (ISO 13006:1998, modified)

3 Terms and definitions

For the purposes of this Technical Report, the terms and definitions relevant to ceramic floor and wall tiles, adhesive, mortars, screeds, etc. given in the existing standards and the following apply.

3.1 General

3.1.1

ceramic tiling

ceramic tiles installed, together with its associated bedding and jointing

3.1.2

design or specification (of ceramic tiling)

selection of ceramic tiles, backgrounds, fixing methods and fixing and jointing materials as appropriate for the structure and intended use

3.1.3

installation (of ceramic tiling) or tile fixing

application of ceramic tiling in accordance with the specification

3.2 Components of a ceramic tiling

3.2.1

background

any material system used as a base over which the ceramic tile is to be fixed

3.2.2**filling out layer**

separate application of material to achieve the required vertical flatness (walls)

3.2.3**fixing surface**

plane rigid surface upon which the tile is fixed

3.2.4**insulating layer**

layer included to obtain sound or thermal insulation

3.2.5**intermediate joint**

movement joint to divide large tiling into smaller, approximately square areas

3.2.6**levelling layer**

layer applied to compensate for unevenness and differences in height of the base or to accommodate services (floors)

3.2.7**movement joint**

joint in tiles, backgrounds or substrates, designed to accommodate movement. Types of movement joints: structural joint, perimeter joint, intermediate joint

3.2.8**perimeter joint**

movement joint to isolate the ceramic tiling from adjacent building elements

3.2.9**primer**

fluid material, used separately or mixed with binder to form a slurry, applied as a thin layer to improve adhesion of the bedding to the background, or to isolate the bedding material from the background surface

3.2.10**separating layer**

material which separates layers within the tiling system. Example: anti-fracture membrane

3.2.11**structural joint**

movement joint in ceramic tiling to correspond with structural movement joint in the background

3.2.12**tile bed or bedding**

layer of specified materials in which the tile is set and which bonds the tiles to the fixing surface

3.2.13**tile joint**

space between adjacent tiles

3.2.14**waterproofing membrane**

continuous layer of impervious material to resist the passage of water

3.3 Tiling techniques and operations**3.3.1****bonded method**

floor tiling laid with a system which ensures that the bedding is bonded to the background

CEN/TR 13548:2004 (E)**3.3.2****buttering method**

adhesive or mortar applied on the reverse of the tiles, just before the tile is placed

3.3.3**contact area**

proportion of the tile back and/or background support that is in contact with the bedding after the tile has been set into position

3.3.4**direct bedding**

tile fixing directly onto a structural background

3.3.5**floating method**

adhesive or mortar applied to the fixing surface, just before the tile is placed

3.3.6**floating and buttering method**

adhesive or mortar applied to the fixing surface and to the reverse of the tile, just before the tile is placed

3.3.7**grouting**

operation of filling the joint cavities between tiles other than at movement joints

3.3.8**maintenance (of ceramic tiling)**

all aspects of the cleaning, treatment and periodic repair of damage to the ceramic tiling

3.3.9**plastering**

application of a gypsum plaster to a vertical background

3.3.10**rendering**

application of a cement mortar to a vertical background

3.3.11**screeding**

application of a screed on a floor background

3.3.12**tanking**

application of an impermeable layer beneath tile and bedding to prevent water penetration into the background

3.3.13**unbonded method**

any method of laying floors which provides separation of the tiling system from the background

3.4 Characteristics/aspects of ceramic tiling**3.4.1****durability**

the quality of tiling which maintains its characteristics over time

3.4.2**flatness**

conformity of the surface of the tiling to a theoretical plane within an allowable tolerance

3.4.3**levelness**

conformity of the surface of floor tiling to a fixed horizontal datum plane within an allowable tolerance

3.4.4**lipping**

deviation between tile surfaces either side of a joint (including movement joints)

3.4.5**plumbness**

conformity of the surface of wall tiling, designed to be vertical, to a fixed plane within an allowable tolerance

3.4.6**slip resistance**

ability of a floor tiling to provide friction to resist slipping by pedestrians

4 Exchange of information

In order for the correct floor/wall covering to be installed in appropriate conditions, at the right time, etc, it is essential that all parties have a clear understanding of the requirements of the project. To ensure that this is achieved, it is essential that there is wide consultation between all the parties involved in the project, including sub-contractors and materials suppliers.

As each project will be unique, it is impossible to give a definitive list of the information to be exchanged, but the following are common examples.

- a) Design: the information required (see 6).
- b) Special attendances: access, unloading, hoisting and storage facilities, heat, light and power and any additional items considered necessary to expedite the work.
- c) Materials: technical specification and instructions for transport, storage, use.
- d) Backgrounds: type and age of construction; location within the building; type, characteristics (mechanical strength, deformation, etc.); and regularity of background (see 6); and any need for an intermediate substrate or for movement joints.
- e) Associated work: services embedded in or passing through the backgrounds and junctions with other adjacent finishes
- f) Finishes: type, size and colour of tiles and layout requirements.
- g) Installation: type and technique (see 7).
- h) Programme: a time schedule for the progress of the work taking into consideration drying and curing periods of backgrounds and tiling until completion

5 Materials**5.1 Introduction**

This section aims to identify and list the materials that are involved in a ceramic tiling, and to define the main information and rules that apply to these materials.

The identification and selection of materials suitable for any given application are a design operation. The relative criteria are therefore reported in 6.3.