

Bodenberg 300 - Tiling for anticorrosion

Description

Here the tiling is an integral surface composed of anticorrosion tiles/bricks and mortars onto the sealing layer.

Components

The anticorrosion tiles/bricks can be ceramic or carbon materials. The anticorrosion mortar can be made of synthetic resin or silicates.

Requirements for the substrate

The concrete substrate must be solid and compact; the strength must be tested and meet the design requirements, with minimum compressive strength 30 MPa. Both penetration of under-water and uneven sedimentation is forbidden. There should be no exposed sand, de-bonding, cracking and voids and pits. The surface should be flat, with less than 3mm height difference in 2 m . The substrate must be dry and free of dust and contaminants such as oil and grease. The substrate should have minimum tensile strength of 1.5 MPa. The residue moisture content must not exceed 6%. The slope of the substrate must be tested and meet the design requirements, and the possible deviation not more than 0.2% of the slope length, or maximum 30mm in value.

Normally the tiles/bricks are installed on the sealing layer which was made onto the concrete substrate.

Treatment of sealing layer

The sealing layer must be clean and relatively rough. (For example) Laminate as sealing layer: after application of the last layer of reinforced materials, the laminating solution should be coated, and then sanded with aggregate in size of 0.7-1.2 mm.

Installation of tiles/bricks

1. Primer: on the clean sealing layer, the synthetic resin or dilute mortar should be coated evenly.
2. Environmental conditions:

Environmental conditions	Value
Relative humidity	≤80%
Surface temperature	10°C ~ 30°C
Application temperature	20±5°C is recommended
Dew points distance	≥3K

3. Installation of tiles/bricks: The tiles/bricks are fully bedded and jointed, avoiding any voids, lumps and cavities. The recommended joints: bed joint 4~7mm, and the cross joint 3~6mm.
4. Vertical installation : The curing time of the mortar should be considered to avoid any deformation.
5. Acidification: Acidification is needed if using silicate mortar.

Field of application

Places where chemicals appear, such as chemical industry, metallurgy industry.

Anticorrosion design

Check list for corrosion protection is very important. The chemical stress, thermal stress, mechanical stress and other stresses are the preconditions for the correct recommendation. Following the operating conditions by the customers can guarantee the long-term service.

Cases



1. Outdoor tiling floor in a chemical plant



2. Brick lining in an autoclave in metallurgy industry



3. Tiling sample based on silicate mortar

Reference

Standard of China GB 50212 -2002 <<Norm of application and inspection for anticorrosion construction>>

AGI - working document S10-3 Protection of structures against chemical attack, utilizing tile coverings (acid protection engineering), Tile layers