

# DESIGN OF FLOORINGS

Floor and/or wall tiles, of any nature, are generally considered “semi-finished” products, they are considered “finished” when laying has been done. This is a relevant task for the design and has fundamental importance for the service life. The proper choice of size, thickness and surface of the tiles, are very important to ensure the functional integrity, hygiene and safety statements. Each CIPA GRES S.p.A. production undergoes instrumental controls to ensure the closest qualitative values respecting sector laws and standards. Moreover, the company wants promote an increase in product dimensional accuracy which means smaller joints and lower charges in the use of sealants during laying operations, with subsequent reduced jolt of trolleys, better soundproofing of work environments..

## INSTALLATION

The use of HI-TECH tiles for high performance floorings which undergo many stress type (Mechanical – Chemical – Hygrometric) require high and uniform adherence to laying background without interstitial porosity and mechanical decrease (breaking strength, impermeability, frost resistance, resistance to acids and alkalis). They must have typical elastic characteristics suitable to accommodate the expected deformation of the contact surfaces and the difference in terms of linear thermal expansion of the flooring components. The closed joint setting expressly excluded in some European Countries in favour of the open joint is the major cause of detachment and tile liftings. Even if the open joint laying is long and expensive, we strongly suggest its adoption for the HI-TECH program items of the and especially for thick tiles.

## OPEN JOINT

Defined the nature of adhesive and sealant joints to be adopted on the cement or organic basis, in relation to the agents that will impact on the finish flooring (Acids – Alkalines- Sulfates– Oils and Fats – Sugar solutions – Water Chlorine) it is recommended to lay with joints at the basis of the tile not less than 2 mm in order to allow the anchoring of the sealant filling to the layer of glue under the tiles. In another case, if retained only minimally among the adjacent tiles (non-absorbent) will be removed as soon as possible leaving open cracks between the tiles which are carrying to the lower layers bacterial deposits and/or disintegrating agents. In case of outdoor floors exposed to cyclical thermal changes, this phenomenon is a primary cause of detachment due to the volume increase of the water infiltration between the layers as a consequence of the frost.

Bedding layer, suitably reinforced, as appropriate, and the above flooring, will be properly released from the supporting structure by means of sliding sheats and expansion joints (compressible), interposed between the supporting structure and flooring (curtain, walls, pillars and so on) to compensate for small structural movements with the additional function of contributing to the sound insulation. For larger surfaces expansion joints will be placed to divide the surface into dimensional fields conveniently limited or otherwise positioned in correspondence of possible tensions (casting interruption, underlying structural breaks).

## LAYING RECOMMENDATIONS

The perfect outcome of CIPA GRES S.p.A. tiles laying depends not only from technical and aesthetic qualities, but also from many other elements (substrate, binder layer etc) that build up a real system.

Laying operations, performed in the correct sequence, are as much important as the tiles themselves.

In choosing the most suitable adhesive you should follow the instructions of its producer. Moreover, it is important to check that products used for grouting, if very colourful, do not dirty the surface of tiles and that this dirt could be easily removed. It is therefore suggested to make check with unlaidd or hidded tile before starting to grout. The project of each tiled surface must be given to an expert designer. Considering the structure, the destination of use, the load, the mechanical as well as the thermal stresses expected, he will calibrate substrates, cement layers, tiles, slope and every single aspect of laying. In addition, the designer must set out in the tender any aspect of the project, i.e. type and method of laying, materials, particle size, dosage, dimensions of joints, structural joints, expansion joints and so on.

## CLEANING AND MAINTENANCE

Washing after laying is a fundamental phase for all next steps of maintenance. First cleaning made with buffered acid-based products, such as Deterdek of Fila, Keranet of Mapei, Delta Plus of Kerakoll or Cement Remover of Faber must be done only one time and shows the additional advantage to give colour consistency on the surface.

Acid washing after laying eliminates the residue grout and the usual dirt of worksite such as: mortar, glue, paint and dirt from construction site of various kinds. It is worth knowing that more than 90% of claims in the building-site are due to bad or omitted first washing with acid-based products. To prevent that acid-based product used for the initial cleaning corrode the cement-based filling of the joints it is necessary, prior to the cleaning, wetting the floor so that the joints are impregnated and, thus, protected from the acid.

You should:

- Remove with alkaline-based detergents grease or similar substances;
- Proceed with washing after laying;
- Rinse the floor, picking up the water;
- Cleaning must be made after 4-5 days from grouting (grout must harden) and no later than 10 days. After this period, cleaning can become very difficult; you should carefully follow the advice given by detergent manufacturer. Always carry out prior tests (on unlaidd tile).

## DAILY MAINTENANCE

We recommend the use of a common detergent diluted in warm water. Avoid the use of acids, alkalines, waxing and/or glues. In daily cleaning it is necessary to limit the use of abrasives (eg. steel wool or scouring pads). This precaution becomes compulsory with glossy surfaces, more subject to nicks and scratches. In case of more dirty structured surfaces, you can use a mild alkaline-based detergent, rinsing after washing. In daily practice you must consider that certain kinds of dirt (eg. dust or sand) increase the abrasive effect of foot traffic.

## EXCEPTIONAL MAINTENANCE

In the case of dirt resistant to daily cleaning we recommend the use of a suitable cleaning agent according to the type of dirt and anyway, prior to use, we suggest you to do a test on a tile that is not laid. In the table “ REMOVE STAINS”you can find effective detergents according to the type of stain.