

1.0 INTRODUCTION

A ceramic tiling finish is a system comprising no less than substrate, adhesive, stone, grout and movement joints. All components are equally important and intimately related to one another. Adequate compatibility must exist among the components as they could only function collectively. The system could only be as strong as the weakest component, if not worse.

Therefore, design, preparation works, installation, protection and maintenance must take into consideration the performance characteristics of each individual component as well as the in-situ environmental conditions that prevail during the installation process. These considerations are similar for new technologies and materials in Design for Manufacturing and Assembly (DfMA) such as Prefabricated Prefinished Volumetric Construction (PPVC) and Prefabricated Bathroom Unit (PBU). It is recommended to refer to the respective guides for ceramic tiling installation in these technologies.

Due to the volume constraint, this guide will focus on the interior installation of ceramic tiling.

2.0 DESIGN

To achieve good tiling works, it is critical to take into account the material selection besides proper installation and quality control. It is important to understand the characteristics of the selected materials as well as their compatibility with one another to achieve optimal performance.

The following design details should be considered:

- Tiles selection
- Adhesives
- Grout joints
- Movement joints
- Waterproofing

2.1. TILE SELECTION

Ceramic tile is a mixture of clay, quartz ferrous sand materials and water. The clays are mined from earth, shaped and then coloured. The clays are then dried and subsequently fired at very high temperature in kilns. Ceramic tile comes in two forms: glazed and unglazed. The primary portion of the tile, known as bisque, can be naturally coloured with highly designed surfaces which can be glazed either in a high gloss or matte finish. Glaze is a liquid glass that is baked onto the bisque. Most ceramic tiles have either a white or red body colouration underneath the glazed finish.

Figure 2.1a illustrates the manufacturing process of ceramic tile extracted from “Design and Material Selection for Quality – Vol 2”.