

Level 1 Term 2

ARCH 109

BUILDING & FINISH MATERIALS

Floor Finish Materials

What is a Floor?

- Floors are **horizontal elements** of building structures
- **divides building into different levels** for the purpose of creating more accommodation with in the restricted space
- **provide support** to the occupants, furniture and equipment of a building



What is **Floor Finish**?

- Any **finish material** applied over a floor structure to **provide a walking surface**



Carpet



Tiles



Vinyl



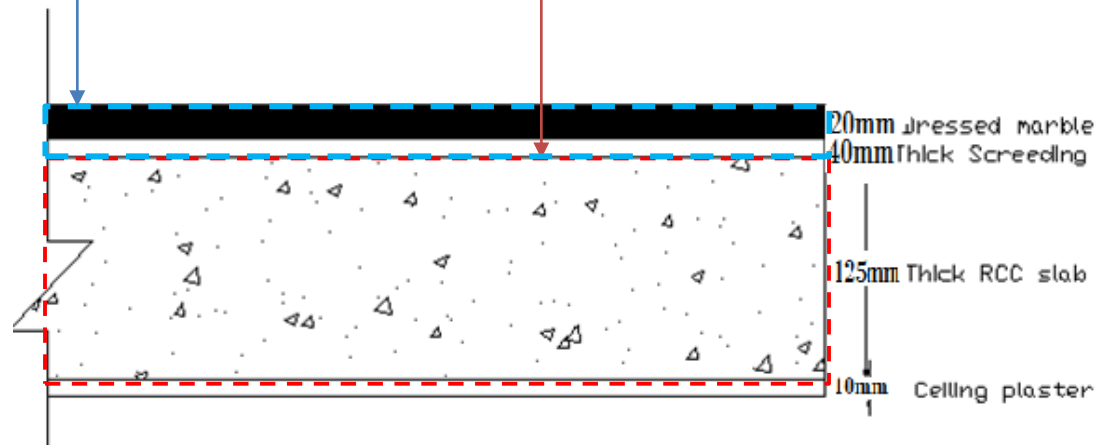
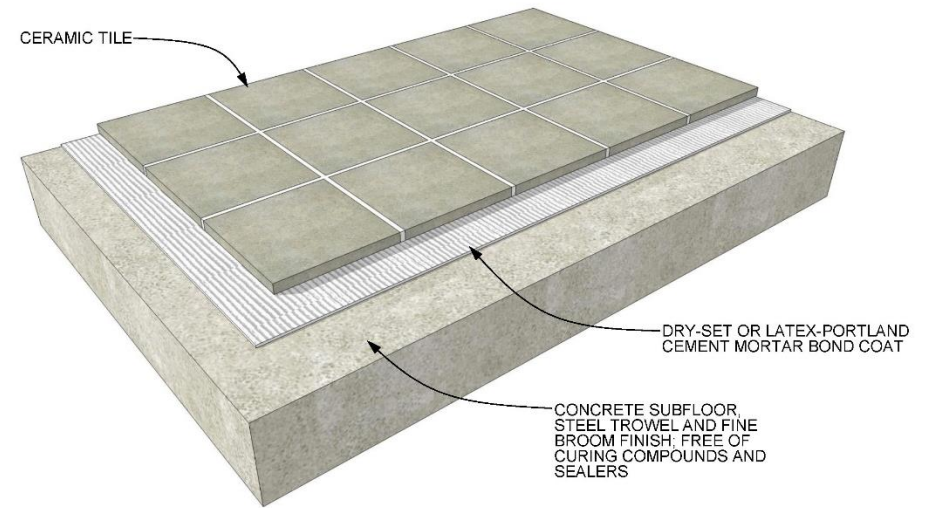
Laminate

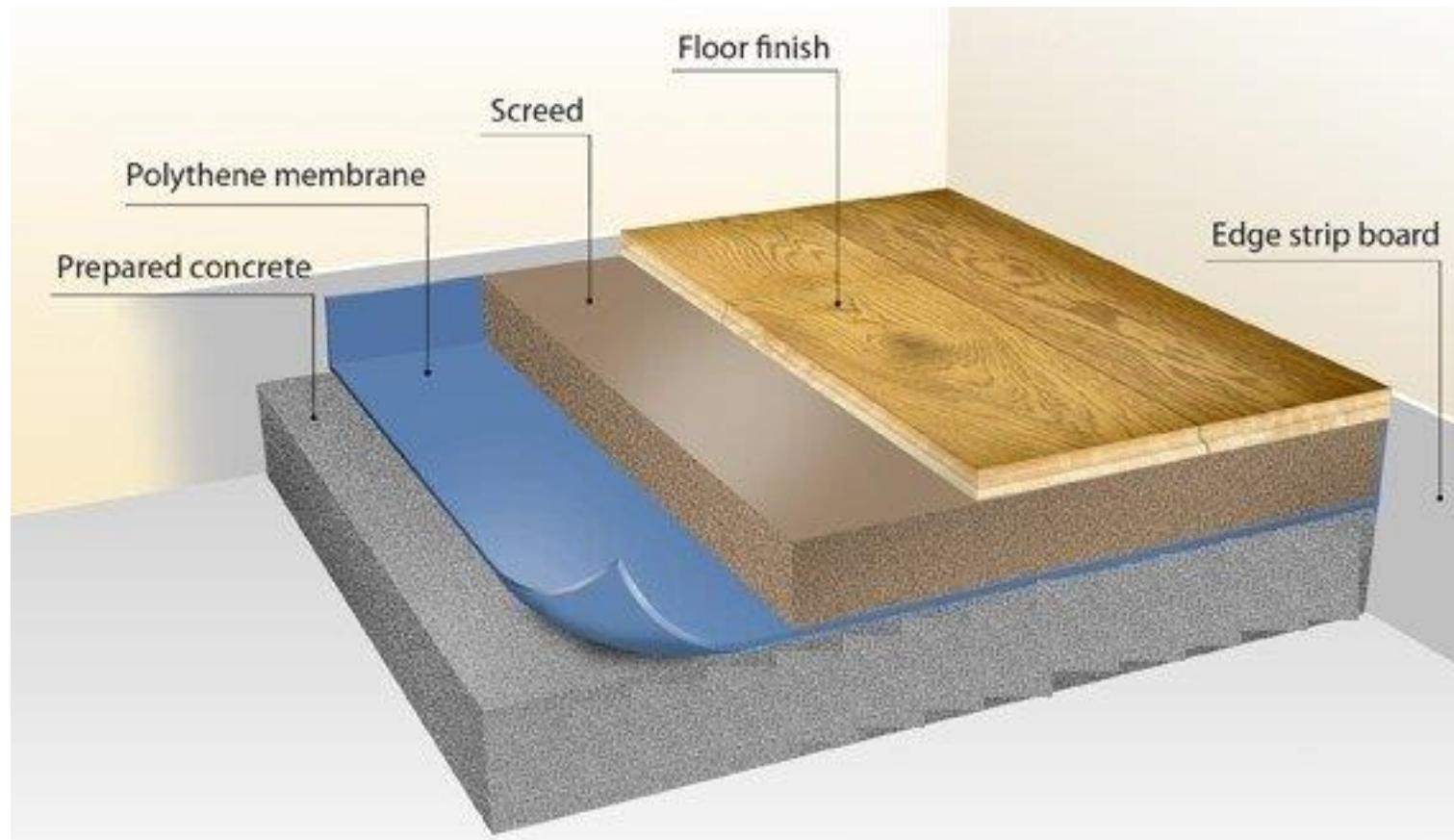
Characteristics of Good Floor Finish

- **Durability and Hardness**
- **Easy Maintenance**
- **Appearance, Smoothness**
- **Damp resistant**
- **Fire Resistant**
- **Low Maintenance cost**
- **Sound insulation**

Components of Flooring

1. Sub floor, base course or floor base
2. Floor covering





Floor Finish: **Tile**

- constructed from **square, hexagonal, or other shapes** made up of **clay, cement concrete or terrazzo**
- used in residential flooring, offices, hospitals, schools and other public buildings
- varieties of colors, textures and patterns
- vitrified tiles, ceramic tiles, porcelain tiles etc.

Floor Finish: **Tile**

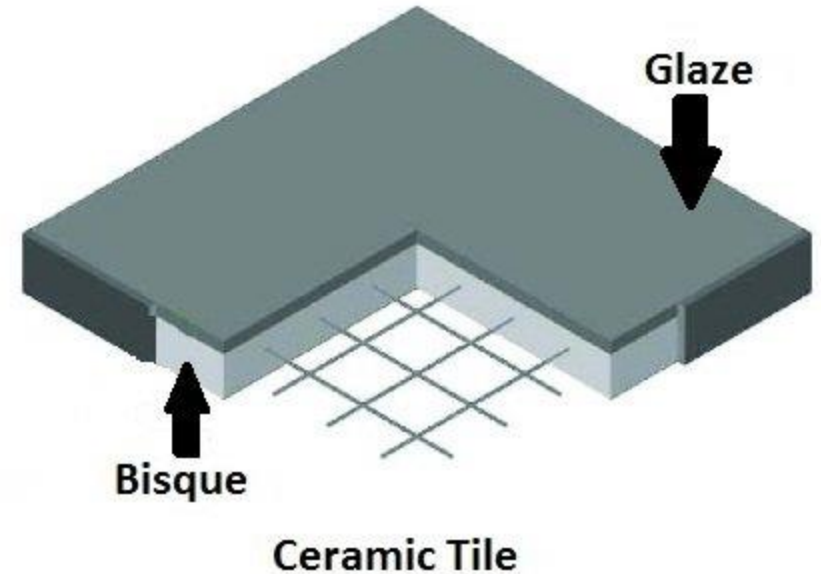
Process:

- Over the concrete base, a **25 to 30 mm thick layer of lime mortar (1:3)** is **spread** to serve as a **bedding**
- **Curing is done for 12 to 24 hours** before laying the tiles
- **cement slurry** is spread over the bedding mortar
- the tiles are laid flat over it, gently pressing them into the bedding mortar
- **wooden mallet** used for leveling surface

Floor Finish: **Types of Tile**

Ceramic tiles –

- mixture of **clay and water**
- Indoor-outdoor use
- **not slippery**
- easy to clean and hygienic
- toilet, bathroom etc.
- cheaper than other types of flooring options like marble, granite, wooden flooring
- **glazed or unglazed**



Vitrified Tiles Flooring ceramic tile with low porosity

non-porous and more durable

high resistance to water

more resistance to scratches

low slip resistance

effect of heat will not remove the color

Porcelain Tiles Flooring

type of vitrified tiles

staining and water resistant





Glazed Tile



Unglazed Tile

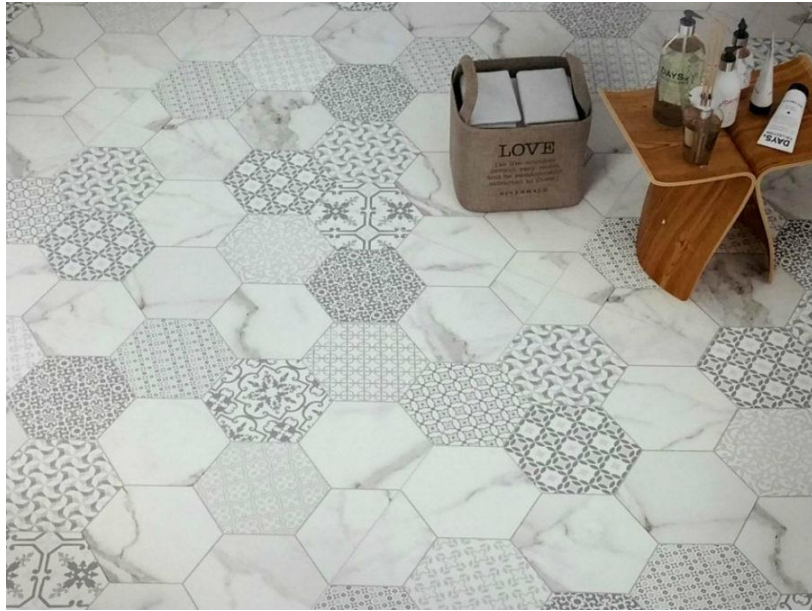
Floor Finish: **Tile**



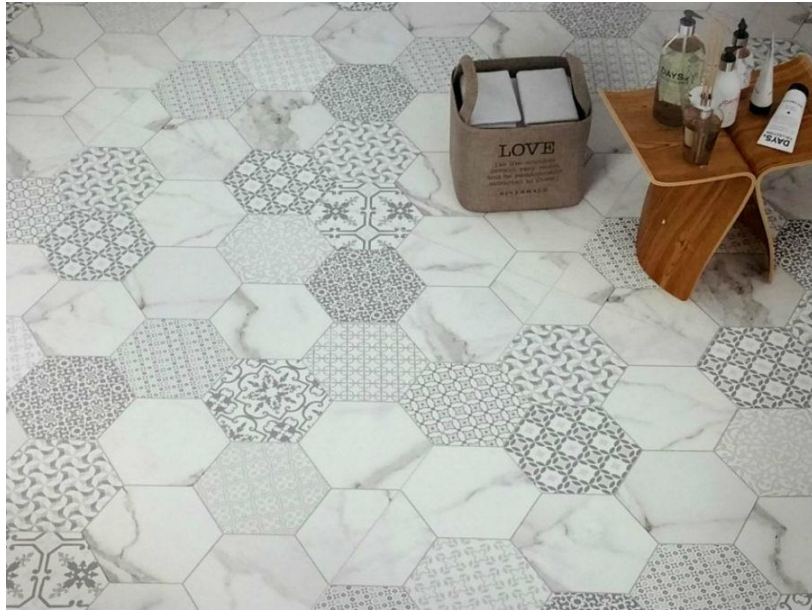
Floor Finish: **Tile**



Floor Finish: **Tile**



Floor Finish: **Tile**



Glazed or Unglazed?



Floor Finish: **PVC/Vinyl Tile**

- floor finish made from **polyvinyl chloride**
- Tile or sheet flooring
- **1/8" thickness**(common)
- tiles can be easily removed and replaced when damaged
- **durable** as it is easy to clean and maintain
- **resistant to water**
- suitable for **low traffic areas**

Floor Finish: PVC/Vinyl Tile

Process

- Laid over **prepared base** of concrete or timber
- Base has to be dry and brought to room temperature before laying
- Guide lines used to mark the layout on the base
- Tiles are laid after **adhesive** has set (half an hour later)
- Notched **trowel** used to apply adhesive
- Wooden **roller** is used to press the tile to ensure proper contact
- Extra adhesive is cleaned with warm soap water before use







Floor Finish: **Tile**

Advantage

- Non absorbent
- Pleasant appearance
- Durable
- Permits quick laying
- Resistant to wear
- Good strength
- Easily repairable

Disdvantage

- Initial costing is high
- Terrazzo tile and glazed tile flooring slippery when wet
- PVC flooring gets damaged in contact with burning of paper, match stick

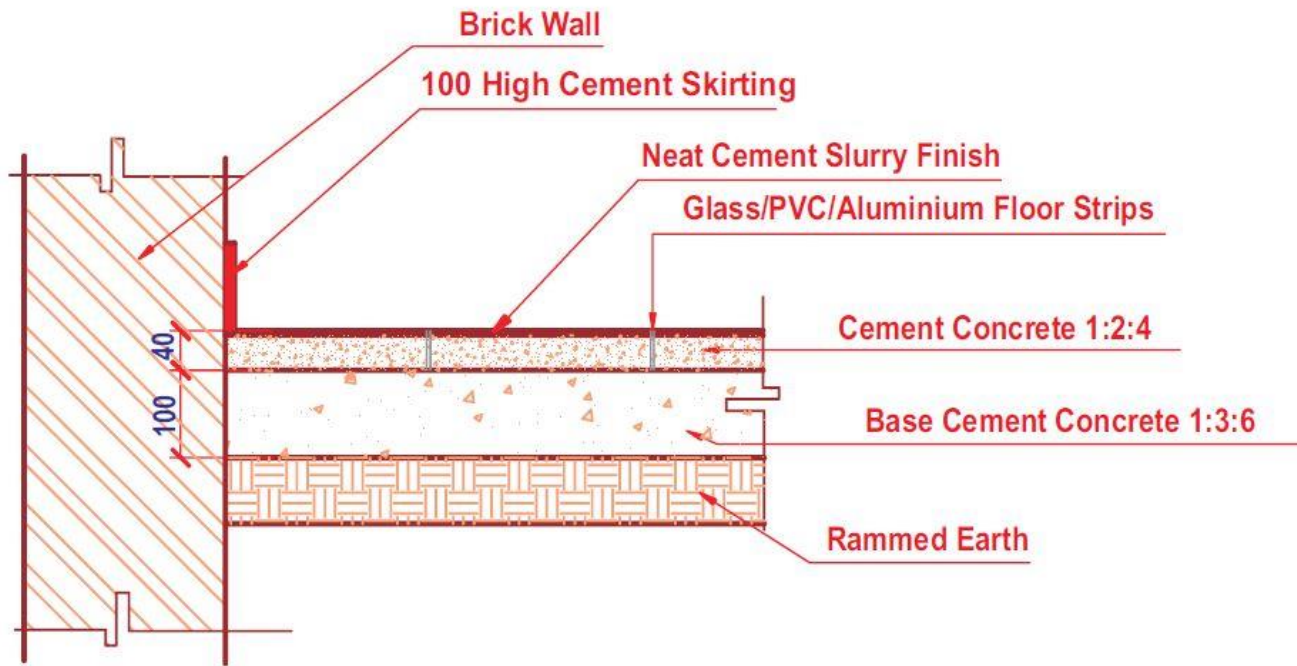
Floor Finish: **Cement Concrete**

cheap, quite durable and easy to construct

two components:- a) **Base concrete** b) **Topping or wearing surface**

Floor Finish: **Cement Concrete**

- **BASE COURSE: 7.5 to 10 cm thick**, either in lean **cement concrete (1:3:6 to 1:5:10)** or **lime concrete** containing **40% mortar** of 1:2 lime-sand & **60% coarse aggregate** of 40mm nominal size.
- After the hardening of base concrete, broom is used to brush the surface and cleaning
- It is wetted the previous night and excess water is drained.
- **TOP LAYER: 1:2:4 cement concrete**, thickness 4cm
- alternate layers laid **after 72 hrs.**, **to eliminate cracks**
- prepared surface is protected from sunlight, rain, other damages for a period **12 to 20 hrs**
- **Curing** done for **7-14 days**







Floor Finish: **Terrazzo**

- **concrete surface with special type of marble chips** embedded in it
- bathrooms, dining rooms, offices, hospitals, etc
- Expensive

Floor Finish: **Terrazzo**

- Specialized concrete surface containing **cement and marble chips in proportion to 1:2/1:3**
- sub base preparation and concrete base laying is done in the similar manner of cement concrete flooring
- **The top layer** may have **40 mm thickness** consisting of:- a) **34mm thick cement concrete layer (1:2:4)** laid over the base concrete. b) About **6 mm thick terrazzo topping**.



Floor Finish: **Terrazzo**

- Concrete of the grade 1:2:4 is then laid in alternate panels leveled and finished to rough surface.
- When the surface is hardened, the terrazzo mix is laid and finished to the level surface
- Additional marble chips may be added during the temping and rolling operations. In this process, at least **80% of the finished surface show exposed marble chips**
- the chips are exposed by **grinding operation**



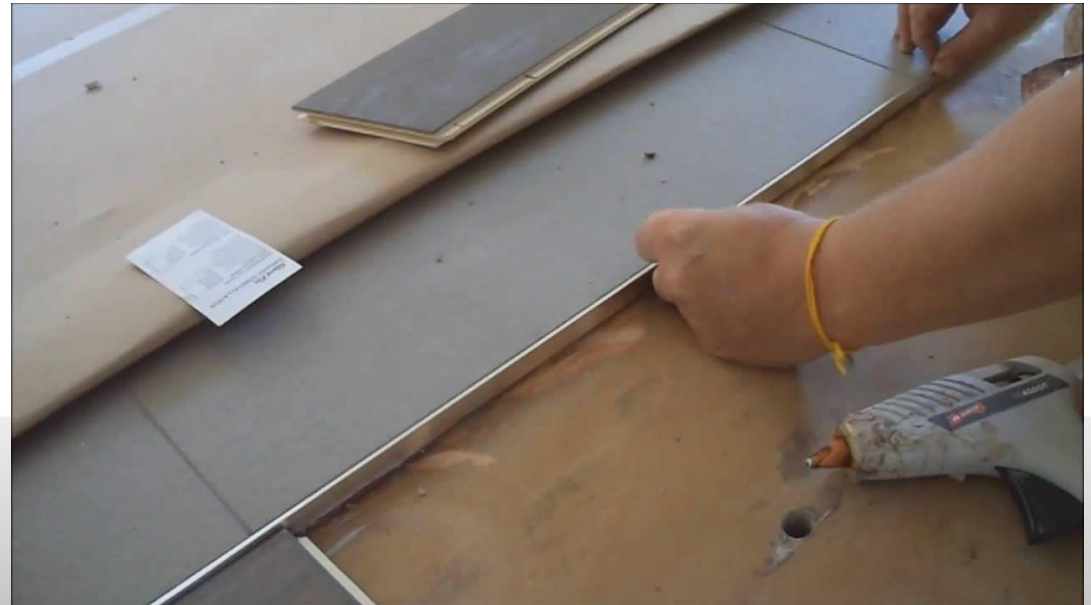
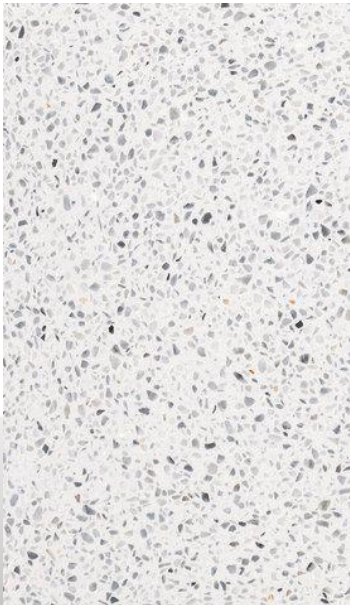
Floor Finish: **Terrazzo**

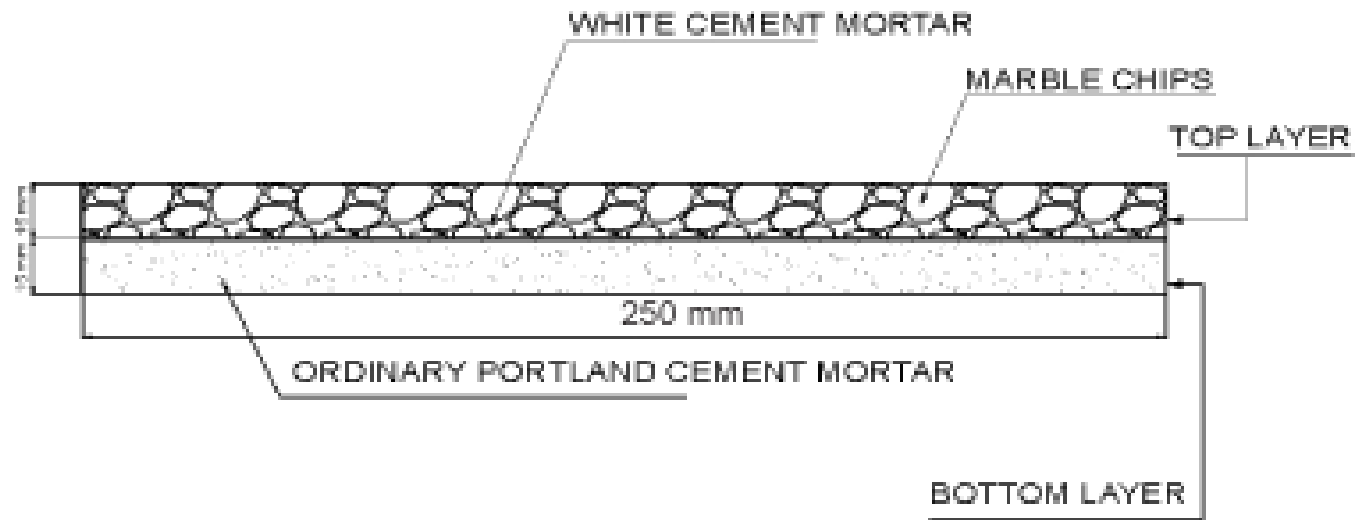
- Surface is floated and troweled and left to dry for 12 to 20 hours
- Grinding is done in **three phase**
- **Before every phase curing is done**
- **Phase 01:** curing for 2-3 days, followed by machine grinding, watering and cement filling of pores and holes
- **Phase 02:** curing for 5-7 days, followed by second grinding by machine
- **Phase 03:** curing for 4-5 days, followed by final grinding by machine



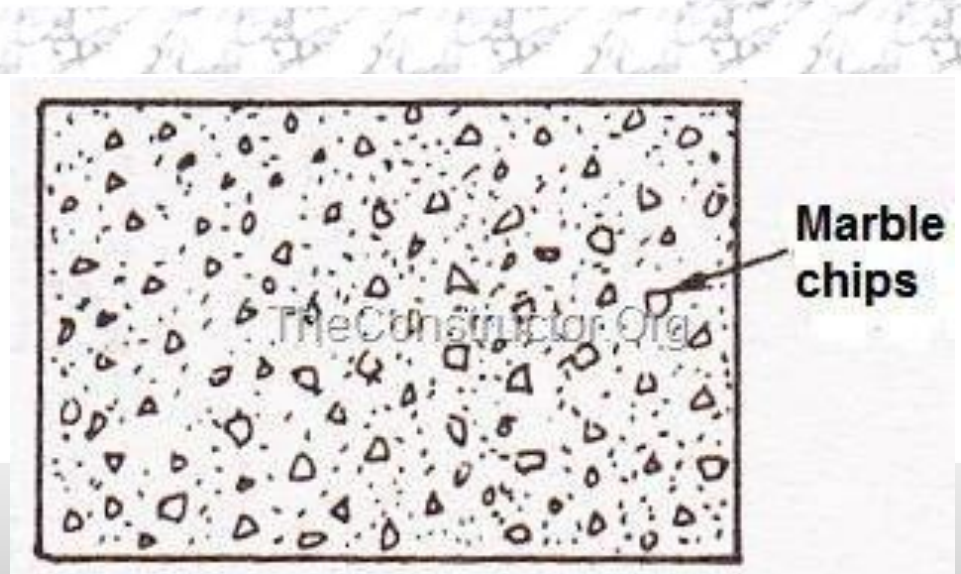
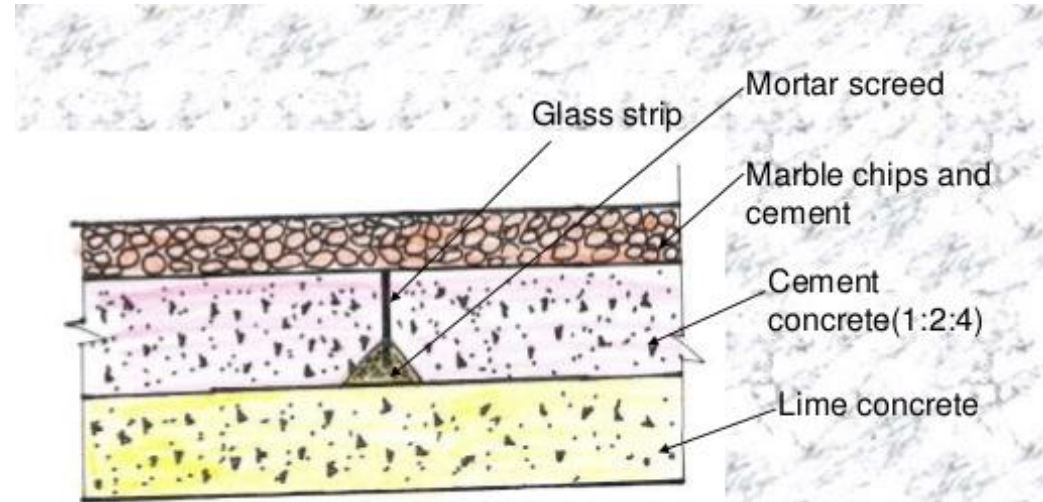
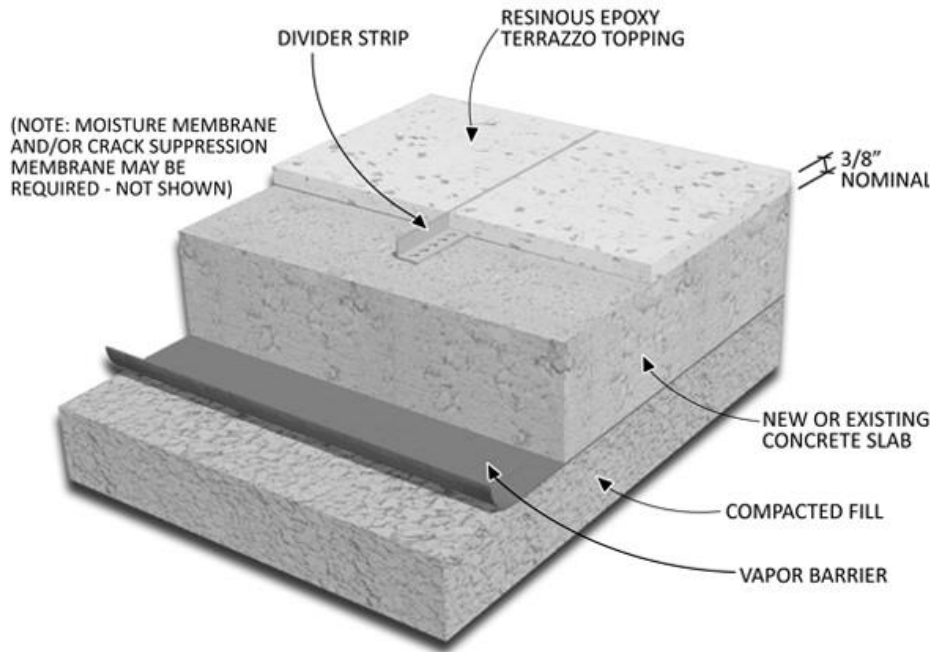
Floor Finish: **Terrazzo**

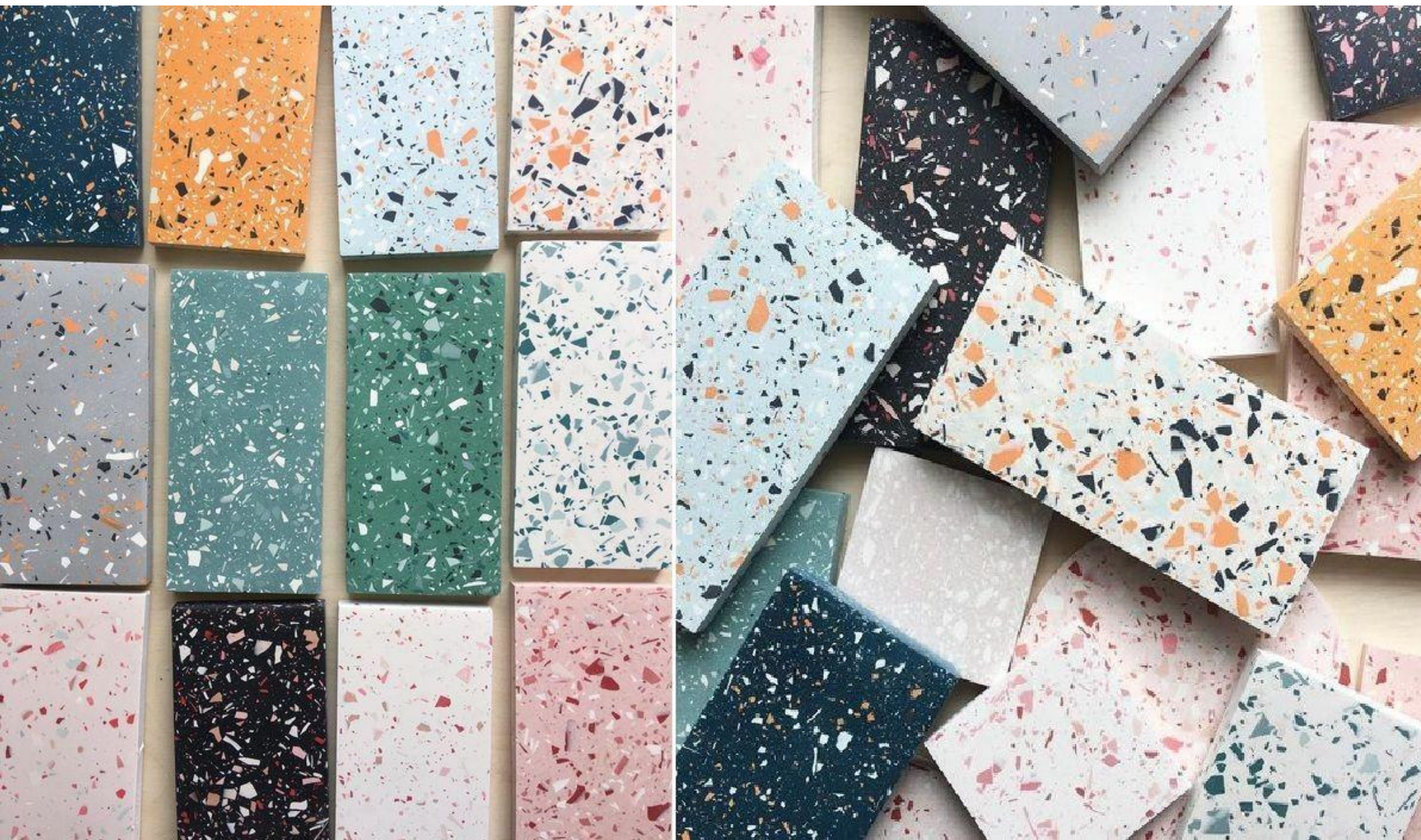
- Finally The surface is thoroughly cleaned using plenty of water
- Wax polish is applied with the help of polishing machine to get final glossy surface





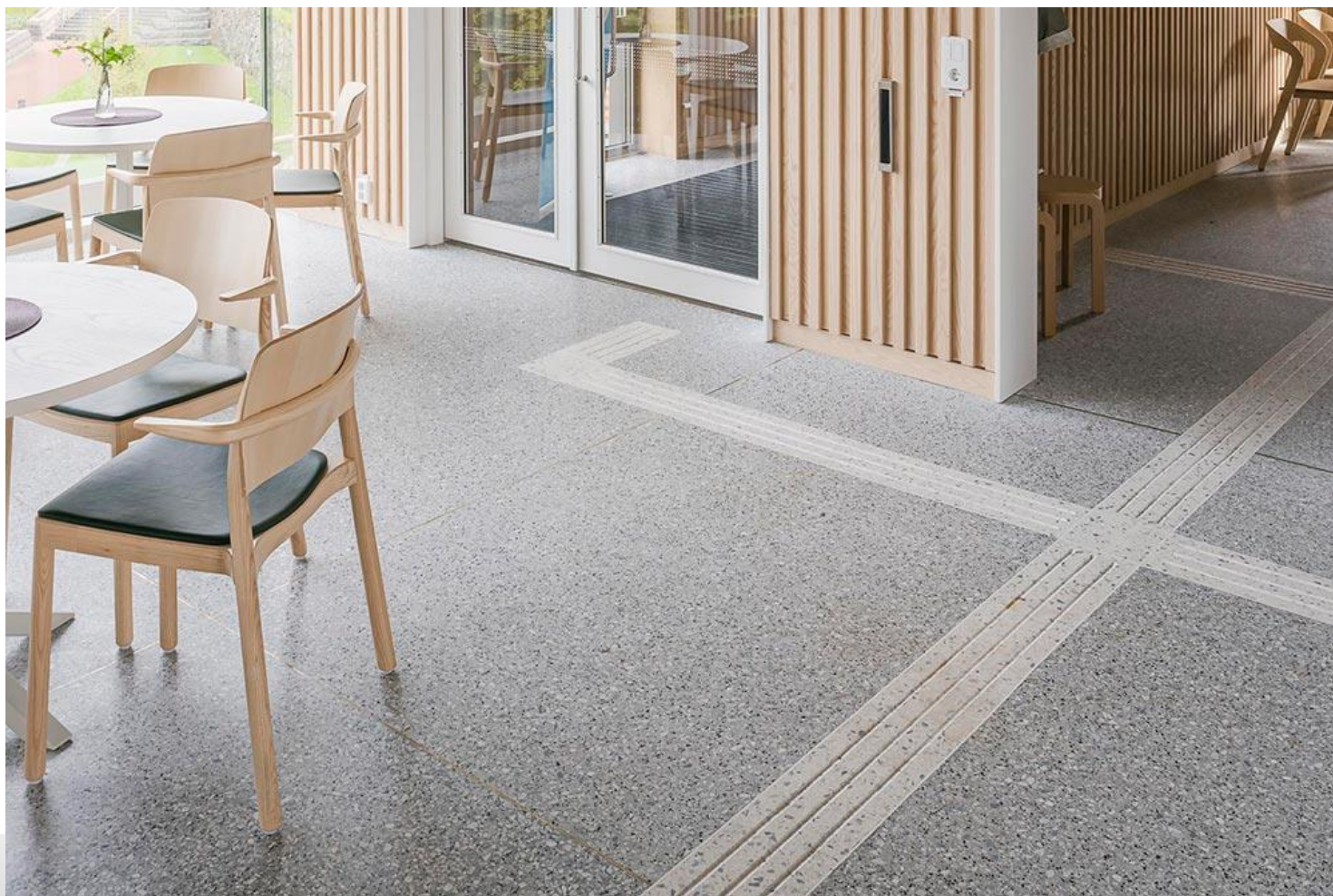
Section of a Pre-cast Terrazzo Flooring





Terrazzo Tile







Floor Finish: **Mosaic**

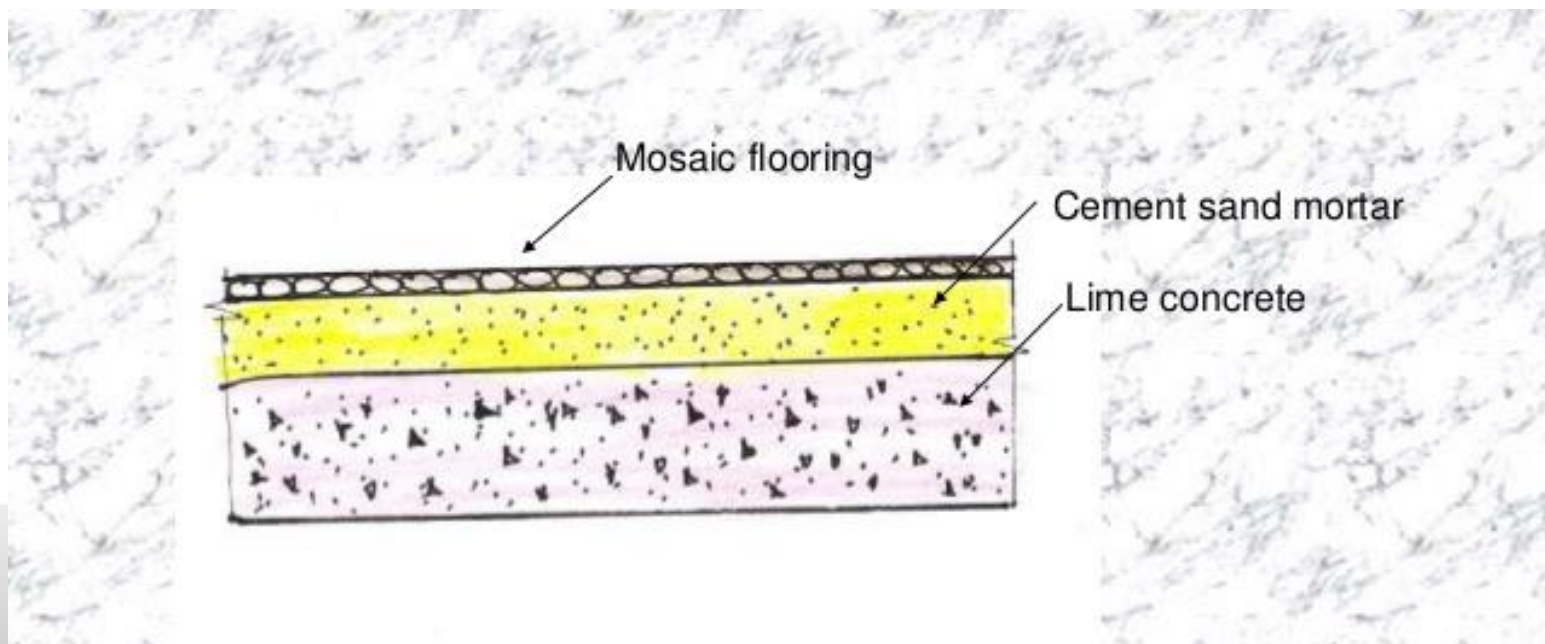
- traditional flooring for residential and public buildings
- made of small Available in the form of tile or can be prepared on site.
- 1 pieces of broken tiles of china glazed or of cement or of marble arranged in different pattern.
- kitchen, bathroom or bedroom floors

Floor Finish: **Mosaic**

- A concrete base is prepared as in the case of concrete flooring and over it 5 to 8 cm thick lime- surkhi (Powder of bricks) mortar is spread and leveled.
- On this, a 3 mm thick cementing material in the form of paste of 2 parts of slaked lime, one part of powdered marble and one part of puzzolana material is spread and is left to dry for about 4 hours.

Floor Finish: **Mosaic**

- Thereafter small pieces of broken tiles are arranged in definite patterns and hammered into cementing layer.
- The surface is gently rolled by a stone roller of 30 cm diameter and 40 to 60 cm long, sprinkling water over the surface, so that cementing materials comes up through the joints and an even surface is obtained.
- Floor is allowed to dry for 2 weeks before use









Floor Finish: **Marble**

- superior type of flooring used in bathrooms and kitchens of residential building and in hospitals, sanatoriums, temples etc. where extra cleanliness is an essential requirement.
- The base concrete is prepared in the same manner as that of concrete floor.
- Over the base concrete, 20 mm thick bedding mortar of either 1:4 cement-sand mix is spread under the area of each individual slab.
- The marble slab is then laid over it, gently pressed with the wooden mallet and leveled.
- The paved area is properly cured for about a week







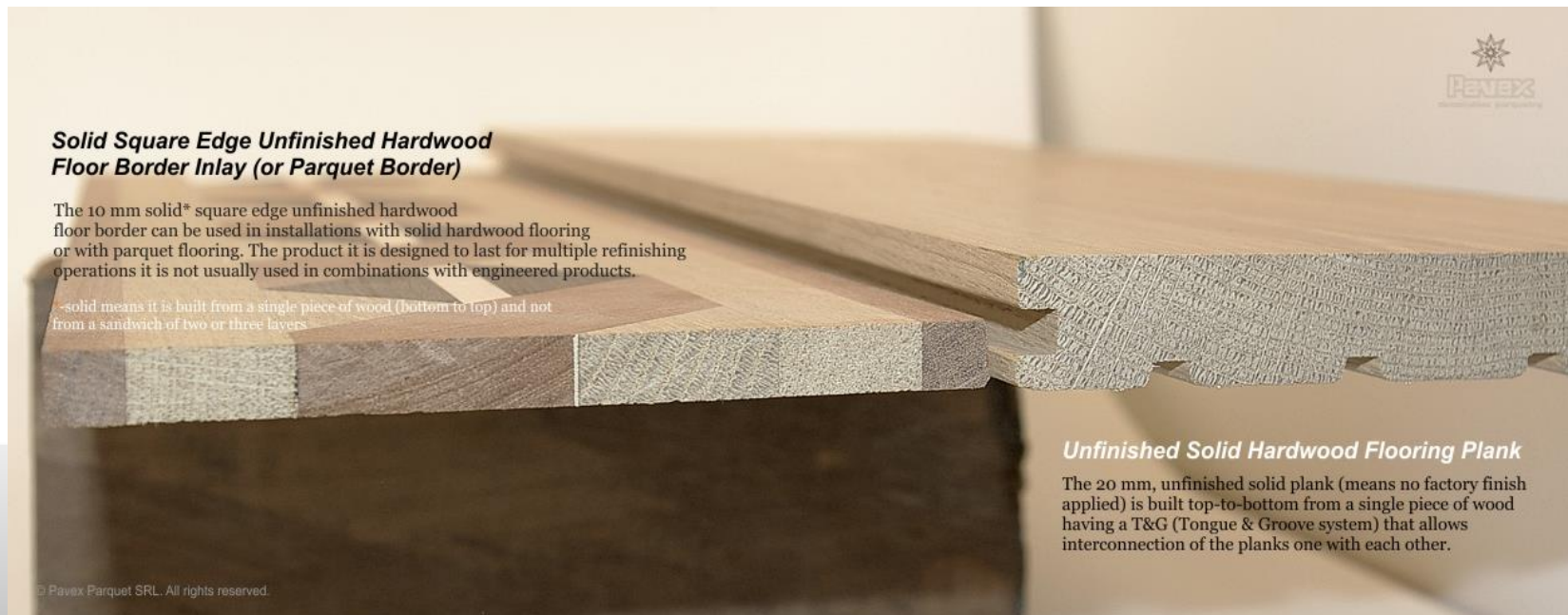




Hardwood Flooring

Hardwood Flooring

- durable, long lasting surface covering material
- Proper maintenance needed
- The two major forms of wood flooring are **plank and parquet**
- hardwood floors include **ash, beech, birch, hickory, maple, teak and walnut**
- **Has to be properly finished in order to protect it from stains, damage, and moisture penetration**



Hardwood Flooring: Installaton

1. Wood Subfloor

- Plywood on Slab
- Floating Plywood System

2. Laying of Floor

- **Wood Subfloor**



- Laying of Floor

