Finishes
Learning Objectives

• Discuss the various floor and wall finishes commonly used
Three aspects of Interior Design

• Function, Structure and space standards
• Construction of interior - wall, floor, façade, windows, doors, M&E
• Material, aesthetic and finishes – floor and wall finishes
Functions

• The interior space and design should serve its intended primary function for e.g. a guestroom and also the secondary functions e.g. bathroom
3 Aspects

Structure & Material

• Building structure and form, floor, wall etc
• Material chosen
• Construction techniques
• translate the design to provide the function of the interior.
• Affected by space / budget
• Choice of material influence the durability of the function
3 Aspects

Aesthetics

• important for generating the sensory experience for hotel guest to appreciate the function of the interior
Finishes
Selection Criteria

• Selection of wall and floor finishes for a building / facilities depend on the performance required
  – Resistance to wear and tear / durability
  – Resistance to stain requiring minimal maintenance
  – Resistance to oil, grease and chemicals eg at the kitchen area
  – Resistance to moisture eg bathrooms, toilets, balconies
  – Slip resistance (for floor finishes)
  – Cost and quality
  – Aesthetic
Floor Finishes
Selection Criteria

- Cost, appearance, durability
- Resistance to wear, impact
- Resistance to oil, grease
- Resistance to moisture
- Resistance to stain
- Non slip
- Resilience eg gym
- Durability
Types of Floor Finishes

• **In-situ**
  – Cement and sand screed
  – As a finishes or base for applied finishes
  – Provide fall towards floor trap.
  – Accommodate services
  – Improve sound insulation
Types of Floor Finishes

• Granolithic finish
  – Mixture of cement and granite chippings applied to concrete slab.
  – Very hard wearing
  – Used in areas where easy maintenance is required.
Types of Floor Finishes

Applied Finishes

• Ceramic / ClayTile
  – Resistant to chemical, abrasion
  – Easy maintenance, colour permanent
  – Wide range of colours and design
Types of Floor Finishes

Applied Finishes

- Ceramic / Clay Tile
Types of Floor Finishes

Applied Finishes
• Stone Finishes – Granite, Marble
  – Natural stones
  – Varying size and thickness
  – Hard wearing / cold
  – Difficult to maintain
  – Slippery when wet

<table>
<thead>
<tr>
<th>A</th>
<th>granite generally</th>
<th>m²</th>
<th>66.25</th>
</tr>
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<tbody>
<tr>
<td>B</td>
<td>marble generally</td>
<td>m²</td>
<td>66.25</td>
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</tbody>
</table>
Types of Floor Finishes

Applied Finishes
- Parquet
- Vinyl
- Carpet
Types of Floor Finishes

Applied Finishes

• Parquet
Carpet
Parts of Carpet

- **Pile** - raised surface of a fabric
- **Yarn** – a long continuous interlocking fibre
- **Warps** - It is the main backbone of a carpet and it consists of yarn strands that stretch from top to bottom (height-wise, vertically).
- **Wefts** - These are yarn strands that are inserted perpendicular (width-wise, horizontally) to the warp strands, and woven in and out of the warp strands during weaving. It is normally made up of the same material as the warp, but is only visible from the back of the rug.
Carpet

Carpet Type

• **Tufted Carpet** - sewing / stitch carpet fiber “pile” through a backing material + secondary backing

• **Woven Carpet** — integrate pile and backing yarns in its production. No secondary backing required. Used commonly in hospitality industry.

• **Knotted Carpet** — usually rugs and popular in hospitality industry. Inserting tuft one at time by hand into a backing coated with latex.

• **Carpet Tile** — common in office. PVC backing. Modular. Manufactured. Yarn attached by adhesion

Date of Revision – 15 Apr 2014 / Version 00
Carpet

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Carpet

Carpet Installation

• Stretch in Installation
  – Traditional method
  – Carpet stretch over a cushion and attached at the perimeter with tack strip
  – Used for residential, woven wool carpets, hotel lobby
  – Secured only at the edge so may have ripple – not for large area
Carpet

Carpet Installation

- **Adhesive Installation**
  - Direct glue down – economical and fast / used for stairs, ramp / requires an even and hard surface base
  - Double Glue Down – glue down carpet cushion then glue down carpet
  - Self Stick – a flexible adhesive layer is applied to the carpet backing and is covered with a protective plastic film
Wall Finishes
Wall Finishes

- Wall material can be self finished eg brickwall
- Or applied eg
  - Plaster & Paint
  - Wall Tiling
  - Others
Plaster & Paint

• Most common used
• Cheaper than tiling
• Can have a wide range of colours or texture
• Special application possible
• Also used for repairing
Plastering

Requirement of Plaster

• Provide a smooth base for finishes
• No contraction
• Adhere firmly
• Good sound insulation
• Fire resistant
• durable
Application of Plaster

- 2 coat
- 1\textsuperscript{st} coat is usually about 10mm thick
- 1\textsuperscript{st} coat need to be scratched to form “key” for finishing coat.
- Finishing coat is also about 10mm thick
- Can apply skim coat (3mm thick)
- Addition of lime to reduce shrinkage
Painting

Functional Requirements

• Protects surfaces from rain, sunlight, abrasion, chemicals, micro-organisms
• Provide decoration
• Provide hygienic surfaces
• Remain intact with surface
• Resist thermal movement
• Be easily applied to the surface and easily removed
Plastering – to fill up all gaps, cracks and create an even surface for the wall.

Sealer – protects the undercoat, gives max adhesion and ensure uniform colour match.

(http://www.learnapaintsonline.com/undercoats.htm)
Plaster & Paint

- **Primer**
  - a preparatory coating put on materials before painting.
  - Ensures better adhesion of paint to the surface, increases paint durability, and provides additional protection for the material being painted.
  - Especially for non water resistant material eg timber (wikipedia)
  - Epoxy Primer – used for waterproofing and protecting metal (http://www.learnautopainting.com/undercoats.htm)
Types of Paint

- **Emulsion** – water based
- **Enamel** - solvent based
- **Metal**
- **Outdoor**
- **Special**

Emulsion paint is water based with some additives to make it more durable, but it can usually be scrubbed off with water and detergent. Enamel paint is solvent based and permanent and can only be removed with a solvent. Use emulsion to cover large surfaces cheaply and where you may want to change the colour - use enamel paint (which is very much more expensive) where you want a permanent hard finish.

http://in.answers.yahoo.com/question/index?qid=20110207015831AAtEC8H
Other Types of Wall Finishes

- Tile
- Stone Finishes – Granite, Marble
- Wall Paper
Other Types of Wall Finishes

Tile Fixing

• Sand cement method
  – Cement and sand scratched for key
  – Float coat
  – Tiles soaked in water before tiling
  – Tile “buttered” with mortar
  – Start from base of wall and align for level and plumb.

• Adhesive method
  – Proprietary
  – 2mm thick
  – Thicker if need to accommodate uneven surface.
  – Joints grouted
Other Types of Wall Finishes

- Stone Finishes – Granite, Marble

GRANITE WALL INSTALLATION

1. Install 1/4-inch backerboard over existing drywall.
2. Mix up a small batch of thinset and spread a small amount along the joints of the backerboard.
3. Mix enough thinset to cover the wall that is being tiled.
4. Place two 1/6-inch tile spacers flat onto the floor under each tile, and then place the granite tiles into the thinset, working up the wall and away from the center line in each direction into the corners. Use tile spacers to ensure a consistent grout spacing between every tile.
5. Load the grout onto a grout float and spread the grout over the granite tiles, using upstrokes.
6. Allow the grout to set for 15 to 20 minutes. Allow the grout to cure for at least 72 hours.
7. Apply a high-quality penetrating grout and tile sealer over the tile and the grout with a small household sponge.
Raised Floor
Raised Floor

Wikipedia

A raised floor (also raised flooring) or access floor(ing) (also raised access computer floor) are types of floor that provide an elevated structural floor above a solid substrate (often a concrete slab) to create a hidden void for the passage of mechanical and electrical services. They are widely used in modern office buildings, and in specialized areas such as command centers, IT data centers and computer rooms where there is a requirement to route mechanical services and cables, wiring, and electrical supply. Raised/Access Flooring can be installed at varying heights from 2 inches (51 mm) to heights above 4 feet (1,200 mm) to suit services that may be accommodated beneath
Raised Floor

Without raised floor how would we have installed electrical, IT cables essential for office environment

• Floor trunking (embedded on concrete floor)
• Cable Pole
Raised Floor

And so what are the benefits of using raised floor for office?

Note that while raised floor is commonly used in many other facilities – Data Center, Lab, Hospital etc etc our context for your assignment is an office building.
Raised Floor

Performance Requirement

Client’s Requirements

- House data and power
- Durable
- Flexible
- Can hold partition
- Compatible with ceiling and partition

What does it mean?

- Min 300mm depth/access panel/cutting
- Maintenance free/strong sturdy material
- Modular
- Sufficient loading strength
- Wide range of design/aesthetic
**Raised Floor**

**Performance Requirement**

<table>
<thead>
<tr>
<th>Other Possible Requirements</th>
<th>What does it mean?</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Fire resistance</td>
<td>• Fire rating / Fire Code compliance</td>
</tr>
<tr>
<td>• Finishes</td>
<td>• Smooth enough to receive other finishes eg carpet</td>
</tr>
<tr>
<td>• Flexibility in access</td>
<td>• Dimensions and size compatible with carpet</td>
</tr>
<tr>
<td>• Sustainability</td>
<td>• Design of screw, access panel</td>
</tr>
<tr>
<td></td>
<td>• Recyclable</td>
</tr>
</tbody>
</table>
Raised Floor Commercial Products
Millenium 3
www.m3bp.com
Concore Panels

Concore Access Floor panels are epoxy coated unitized shells consisting of a flat steel top sheet welded to a formed steel bottom sheet filled with a highly controlled mixture of lightweight cement. Manufactured to exacting tolerances, these non-combustible rigid, solid panels deliver the ultimate in strength, durability, and acoustic performance. **Check out more from Tate**
Millenium 3 Access Floor

M3 Access Floors provides an excellent investment as it guarantees the functional life of the building, thus eliminating the fear of building obsolescence. Our cement core steel panels is made from two layers of steel plate welded together and filled with lightweight concrete. The result is a top performance access floor system at a reasonable price. Various types of standard duty & heavy duty understructures are also available to suit different applications and demand. Other options include epoxy coatings of pedestals, choice of static-control vinyl / high pressure laminate coverings, special 1200 x 1200mm grid understructure system, etc. It is one of the very few truly value for money access floors in the modern industry.
# Millenium 3 Access Floor

## Panel Selection Chart

<table>
<thead>
<tr>
<th>Panel Type</th>
<th>Model</th>
<th>Panel Size</th>
<th>Rolling Loads (note 2)</th>
<th>Concentrated Load</th>
<th>KN Impact Load</th>
<th>KN Ultimate Load</th>
<th>KN/M² Uniform Load</th>
<th>KN Rolling Load 10 Passes</th>
<th>KN Rolling Load 10,000 Passes</th>
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<tbody>
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<tr>
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</table>
Raised Floor
Other Prominent Suppliers

Tate
www.tateinc.com

Hyperline
www.hyperline.com
Suspended Ceiling
Suspended Ceiling

Used to

• Conceal building services
• Create a uniform ceiling finishes
• Create an acoustic environment
Suspended Ceiling

Types

• Jointless

• plasterboard is fixed to the underside of the suspended framework.
• Provide a fire resistant ceiling
• However it is not suitable for a situation where services are to be carried in the void unless they can be approached from the floor area above
• Alternatively expanded metal lathing is fixed to the underside of the suspension framework and lightweight plaster or other fibrous material is sprayed on
Suspended Ceiling

Types

• Jointed
• Consist basically of a metal framed grid suspended from the floor or structure above.
• Into the grid are fitted tiles made from a variety of materials such as mineral fibre board, plaster and metal.
• Tiles are then supported by the grid.
Suspended Ceiling

Types

• Jointed

An alternative method is concealed grid
• Most systems although the grid cannot be seen the joints between the tiles are visible.
• For top quality construction the textured finish on the tile, combined with the high quality edge to the tiles, results in a finished ceiling that looks monolithic, as if constructed using a jointless wet method.
• One problem with this technique is that access to the ceiling void is not easy and attempts to do so can damage the ceiling finish.

![Suspended Ceiling Diagram](image)

Figure 8.7  Suspended ceiling with concealed grid
Suspended Ceiling

Types

• Open
  • designed to give a visual barrier between the room below and the ceiling void above by the use of an open grid
• http://www.dobner.net/site/english/open_cell_ceilings.htm
<table>
<thead>
<tr>
<th>Suspended Ceiling</th>
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</thead>
<tbody>
<tr>
<td>Performance Requirement</td>
</tr>
</tbody>
</table>

**Client’s Requirements**

- House data and power
- Durable
- Accessible /Flexible
- Compatible with floor and partition / Aesthetic

**What does it mean?**

- Min 600mm depth/ access panel/ cutting
- Safety / No risk of falling
- Modular/ Easily accessed
- Wide range of design/ aesthetic
## Suspended Ceiling

### Performance Requirement

### Other Possible Requirements
- Fire resistance
- Acoustic
- Thermal insulation
- Light Reflectance
- Sustainability

### What does it mean?
- Fire rating / Fire Code compliance
- Reduce noise transmission but not very effective
- Reduce heat loss/gain
- Able to reflect light back into the room
- Recyclable
Suspended Ceiling
Performance Requirement

- Acoustic – use fibrous ceiling tiles to increase sound absorption
Suspended Ceiling

Performance Requirement

• Aesthetic/ Access/ Serviceability / Durability
  • There are a vast range of ceiling systems and finishes available today, ranging from open grid systems to textured tiles and smooth sheet finishes.
  • The choice of finish is not just one of aesthetics but also of serviceability.
  • The specifier should consider the possible staining and discolouring that could occur during the life of the ceiling and the ease of cleaning or re-decorating.
Suspended Ceiling
Reputable Brand
www.armstrong.com
Armstrong
www.plasterceil.com
Plasterceil