

# Building Materials -1

B.arch - 408/21

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# Introduction to Roof Covering Materials

Roof covering materials are essential for protecting buildings from weather elements and providing insulation. These materials include:

1. Clay tiles
2. Manglore tiles
3. PVC

They are used to create durable and aesthetically pleasing roofs for residential and commercial buildings.





# Constituents of Roof Covering Materials

## 1. Clay Tiles

Clay, sand, and water are the primary constituents of clay tiles. They are molded and fired at high temperatures to create durable roofing materials.

## 2. Mangalore Tiles

Mangalore tiles are traditionally made from red clay and shaped using wooden molds. They are then sun-dried or baked to achieve strength and longevity.

## 3. PVC Tiles

PVC (Polyvinyl Chloride) tiles are composed of synthetic materials, including PVC resin, plasticizers, and stabilizers, resulting in lightweight, durable roofing solutions.

1.



2.



3.



# Properties of roof covering materials

- **Durability:** Roof covering materials should be durable to withstand weather conditions and wear over time.
- **Waterproof:** They need to provide effective waterproofing to protect the building from water damage.
- **Insulation:** Some materials offer insulation properties to regulate internal temperature.
- **Cost:** Initial cost and long-term maintenance expenses.
- **Installation Ease:** Some materials are easier and quicker to install than others.
- **Environmental Impact:** Sustainability, recyclability, and energy efficiency

# Uses of Roof Covering Materials

- **Protection**

Roof covering materials protect buildings from weather elements like rain, snow, and sun.

- **Aesthetics**

They enhance the visual appeal of structures, adding character and style to the overall design.

- **Energy Efficiency**

They contribute to energy efficiency by providing insulation and reducing heat transfer.

- **Durability**

Quality materials can extend the lifespan of the roof, reducing maintenance needs and costs.

- **Waterproofing**

They prevent water from seeping into the building, which can cause structural damage and mold growth.

- **Sound insulation**

Certain materials can reduce outside noise, creating a quieter interior environment.

# Process of laying roof covering materials

The process of laying roof covering materials involves careful planning and adherence to safety regulations.

- First, the roof structure must be inspected and prepared to ensure stability and support for the materials.
- Then, the materials are laid starting from the bottom and working upwards to create a watertight barrier.





# Example 1: Clay tiles



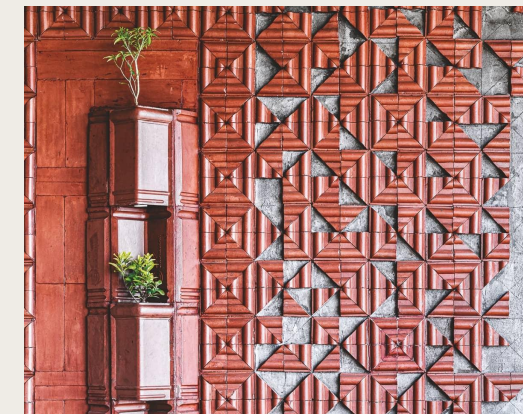
## Natural and Sustainable

Clay tiles are made from natural materials and are environmentally friendly, contributing to sustainable construction practices.



## Durable and Long-lasting

Clay tiles are known for their durability and can last for decades, providing a long-term roofing solution.



## Aesthetic Appeal

Clay tiles offer a classic and timeless aesthetic, enhancing the overall appearance of a building.

# Example 2: Country Allahabad Manglore tiles



## Aesthetic Appeal

The Country Allahabad Manglore tiles exhibit a unique, rustic charm, adding traditional elegance to rooftops.



## Durability and Longevity

These tiles are known for their exceptional durability and long-lasting performance even in challenging weather conditions.



## Distinctive Patterns

Each tile features distinctive patterns, creating a visually appealing and diverse arrangement on the roof.



# Example 3: PVC tiles



## Durable and Weather-Resistant

PVC roof tiles are known for their exceptional durability and ability to withstand various weather conditions, including heavy rain, wind, and extreme temperatures.



## Lightweight and Easy to Install

These tiles are lightweight, making them easy to handle during installation. Their lightweight nature also reduces stress on the roof structure.



## Low Maintenance and Longevity

PVC tiles require minimal maintenance and have a long lifespan, making them a cost-effective option for roof coverings. They are resistant to rot, mold, and insect damage.

# Comparison of different roof covering materials

| Material Type                       | Cost   | Durability | Appearance          |
|-------------------------------------|--------|------------|---------------------|
| Clay Tiles                          | Medium | High       | Rustic, traditional |
| Country Allahabad<br>Manglore Tiles | Low    | Medium     | Distinctive, earthy |
| PVC Tiles                           | Low    | Low        | Modern, versatile   |

Clay tiles offer a medium cost, high durability, and a rustic, traditional appearance. On the other hand, Country Allahabad Manglore tiles have a low cost, medium durability, and a distinctive, earthy appearance. Whereas PVC tiles have a low cost, low durability, and a modern, versatile appearance.

Thank you... 😊