

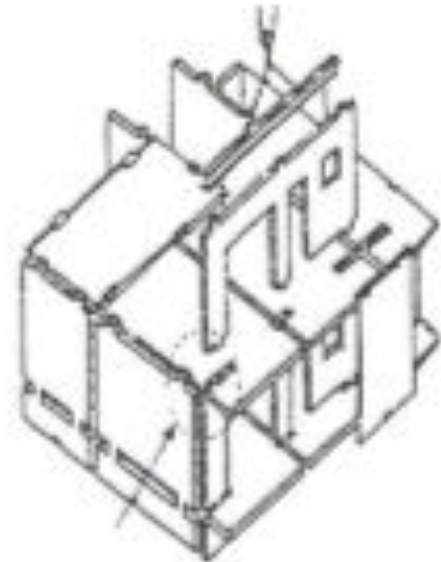
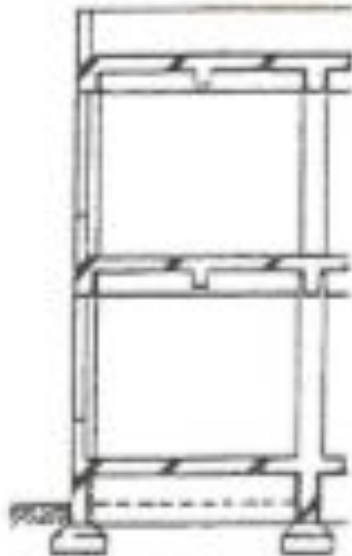
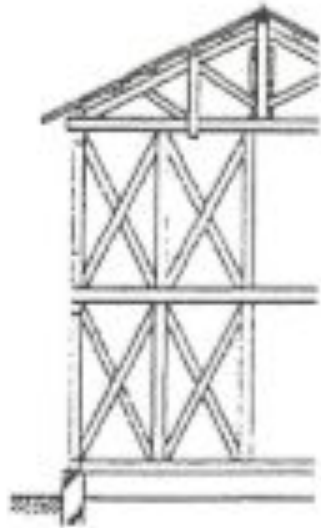
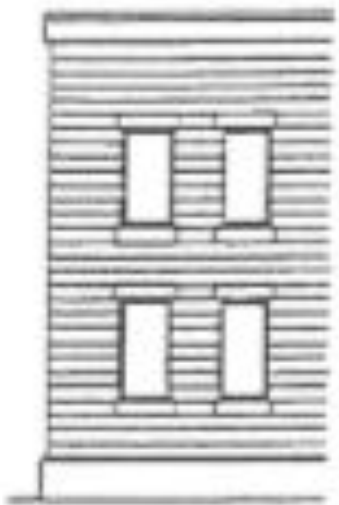
INTRODUCING TO ARCHITECTURAL ENGINEERING



Sharipova Maqina

Classification by construction method

- Masonry structure
- Wood Frame structure
- Light Gauge Steel Frame structure
- Prefabricated structure (precast)



Classification by construction method

Masonry structure

- Advantages: high compressive strength under vertical loads
- Disadvantages: low tensile strength (against twisting or stretching)



Classification by construction method

Wood Frame structure

- Advantages: low construction cost; easy to make useful shaped spaces
- Disadvantages: Not capable of needed loads; not able to created large open spaces with several large door openings.



Classification by construction method

Light Gauge Steel Frame structure

- Advantages: light; time; easy to carry and change
- Disadvantages: low sound insulation; low fire protection



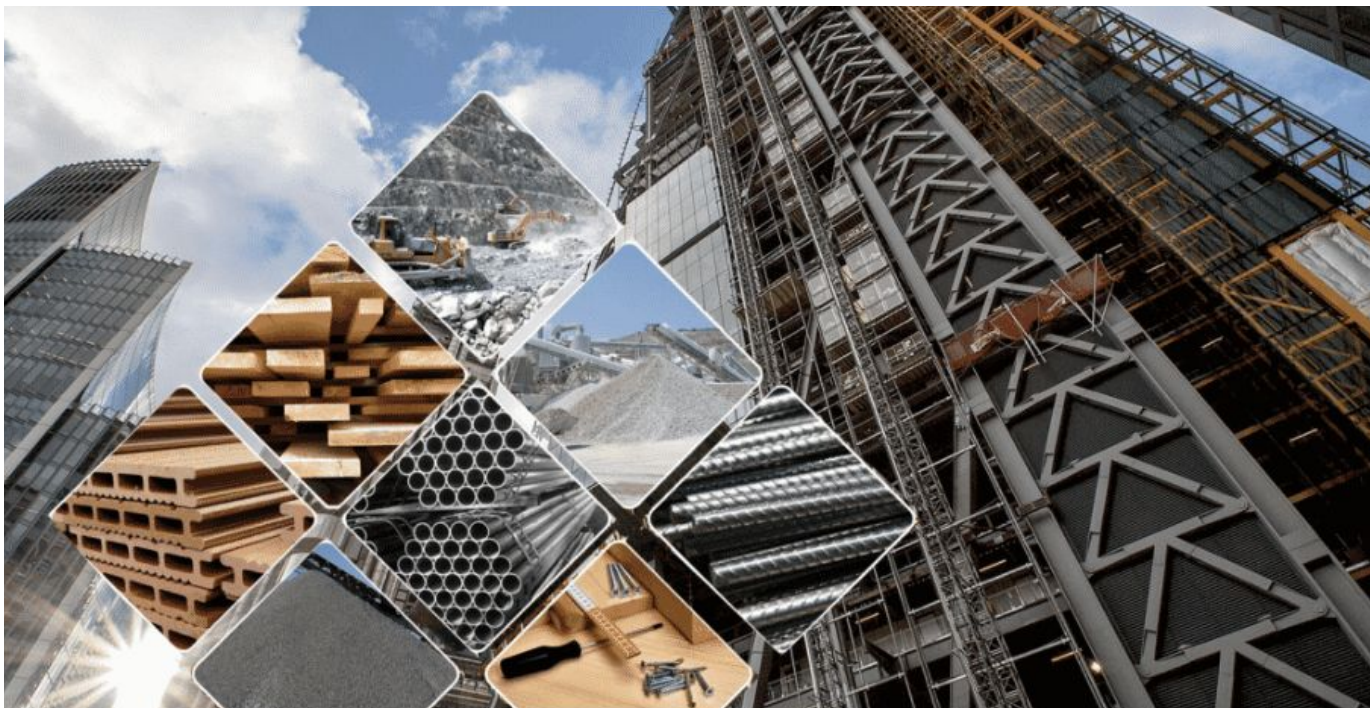
Classification by construction method

Prefabricated structure (precast)

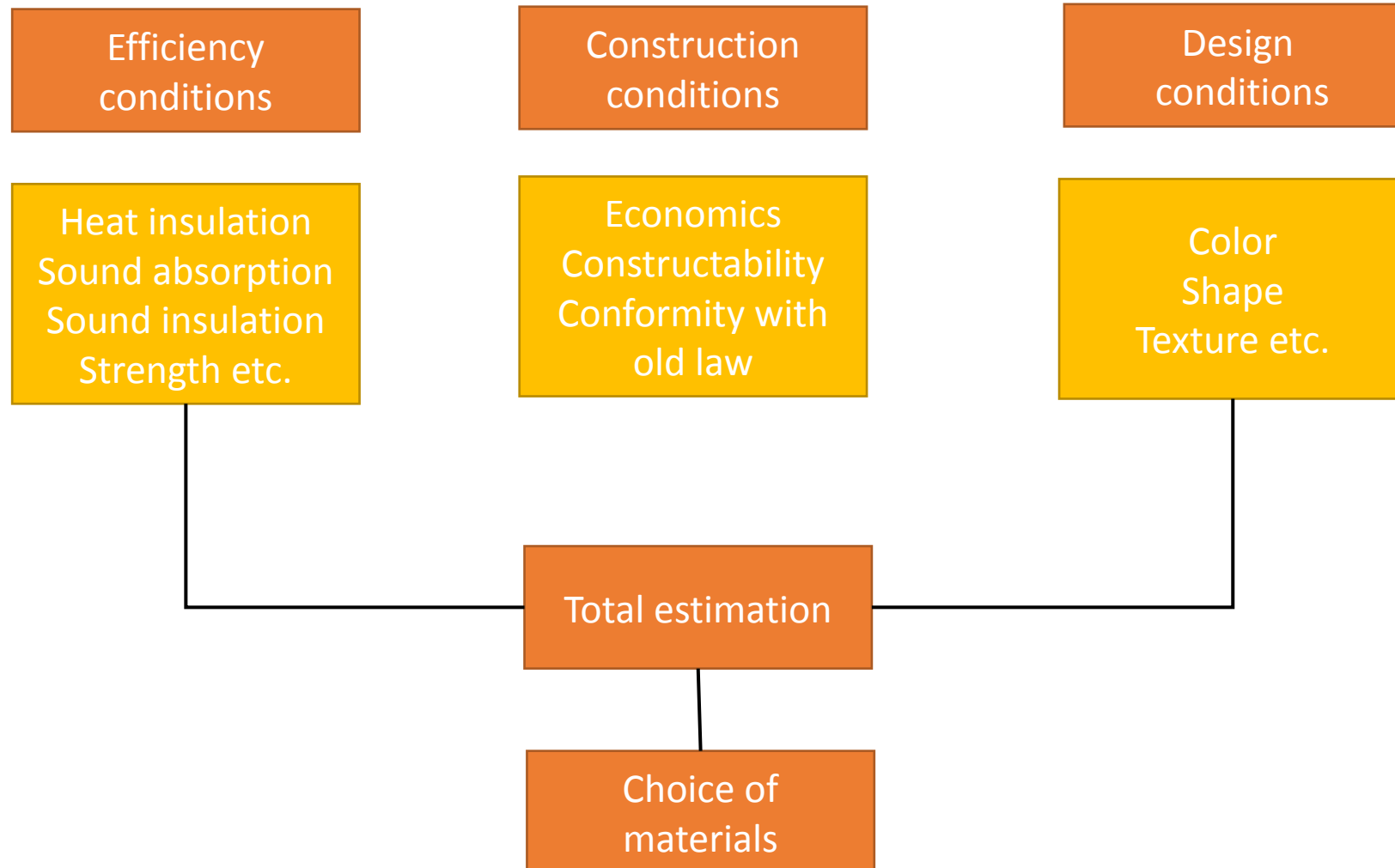
- Advantages: time; durable
- Disadvantages: more expensive; assembling call for skilled trades and equipment



Building materials



Choosing architectural materials



Classification of building materials

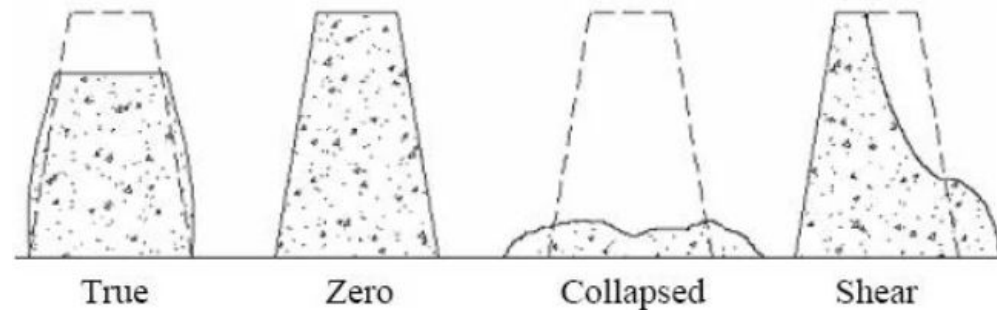
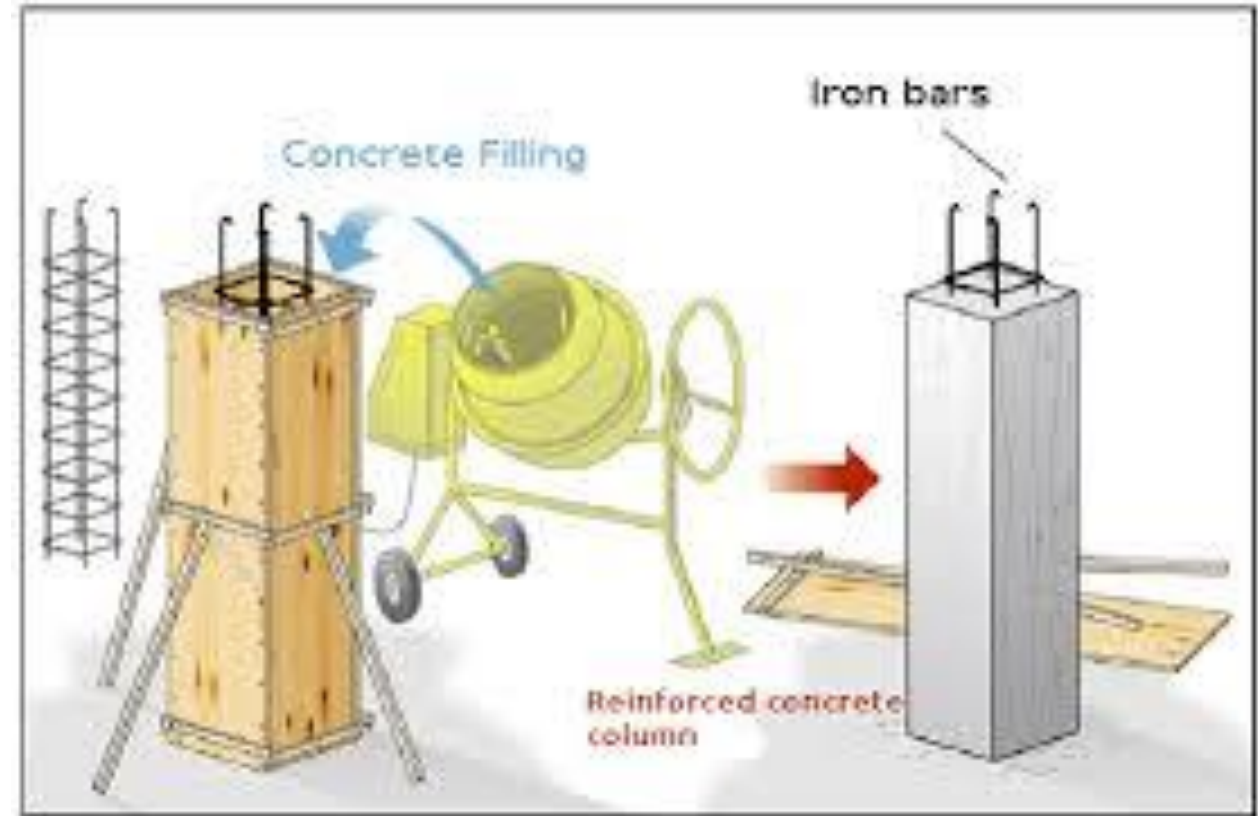
- Classification by manufacture: Natural materials, Artificial materials.
- Classification by purpose of use: Structural material, Finishing material, Blocking material, Fire and Refractory Materials.
- Classification by chemical composition: Inorganic materials, Organic materials.
- Classification by building part: Structure, Roof, Floor, Wall, Ceiling.

Physical Properties of Building Materials

- Density
- Water content and water absorption
- Specific heat
- Coefficient of thermal expansion
- Thermal conductivity
- Softening point, flash point and flash point
- Sound absorption rate and sound insulation
- Transmittance and reflectance

Structural materials

- Reinforced concrete materials:
- Cement
- Aggregate
- Admixture
- Concrete
- Rebar
- Slump test



Structural materials

Material of steel structure:

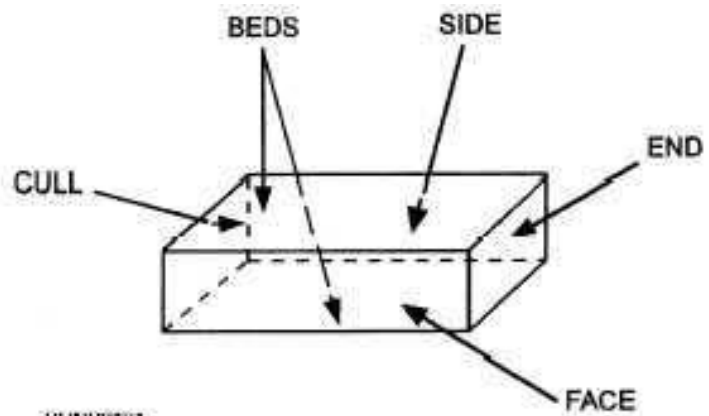
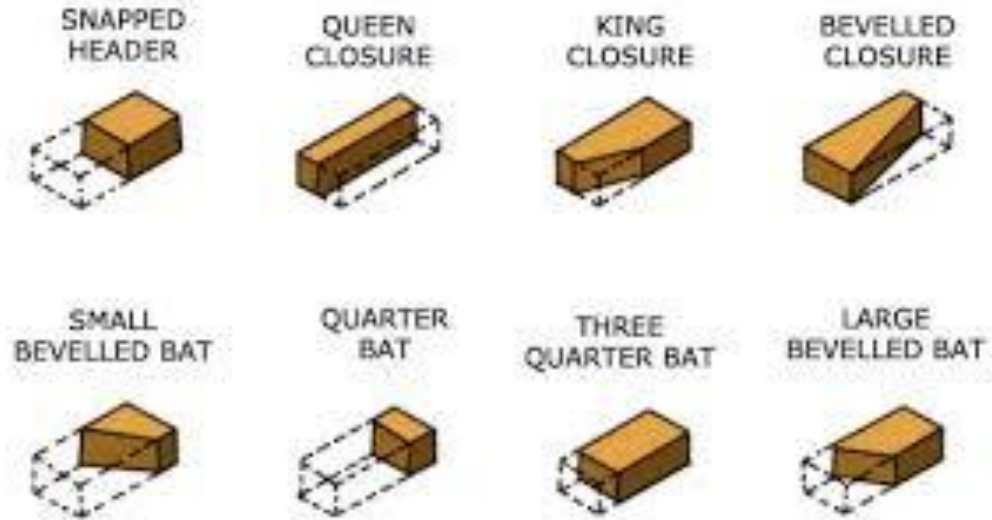
- Classes and Features of steel
- Mechanical properties of steel
- Preparation method of steel
- Steel processing
- Steel product



Finishing materials

- Brick
- Block
- Autoclaved lightweight concrete
- Stone
- Artificial stone
- Wood
- Nonferrous metal
- Glass
- Plasterer
- Tile
- Paint

Brick, Block

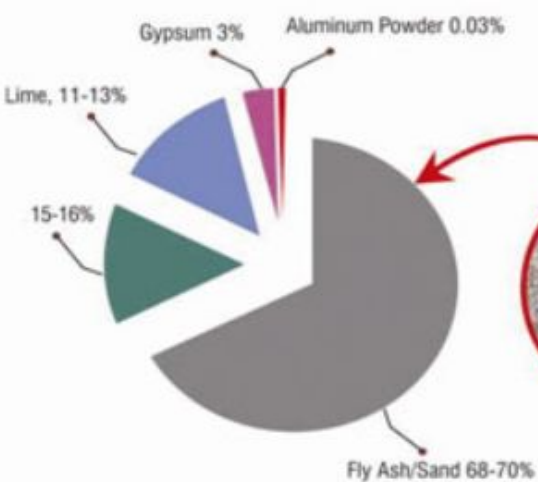


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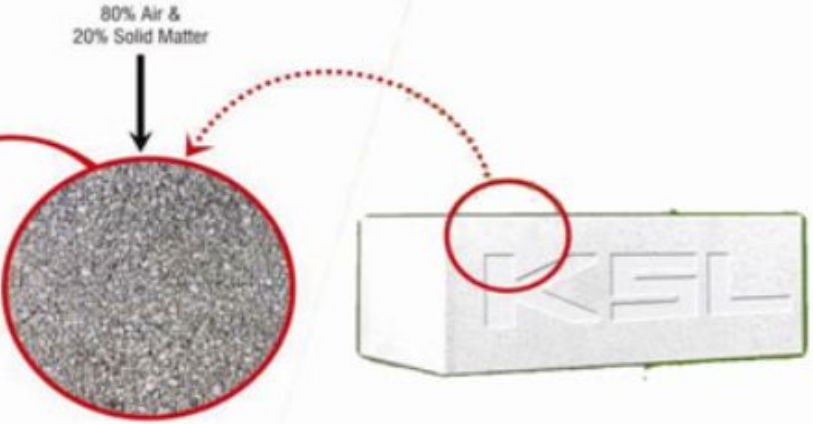


Autoclaved lightweight concrete Stone, Artificial stone

COMPOSITION OF



AAC BLOCKS



Wood

Nonferrous metal



Copper

Aluminum

Lead



Glass Plasterer

- Plate glass
- Multilayer glass
- Glass block

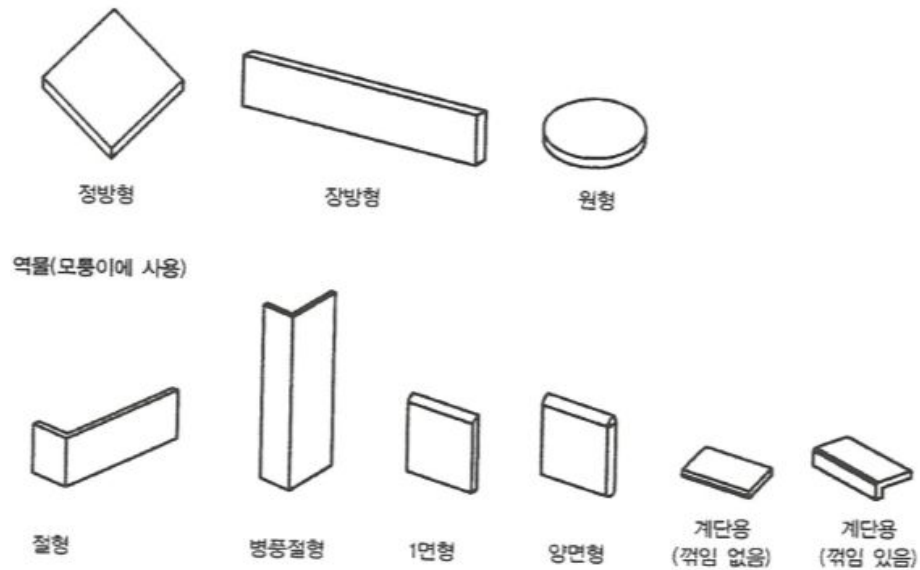


- Cement mortar
- Gypsum Plaster
- Slaked lime and plaster
- Dolomite Plaster



Tile Paint

Color, Fire Resistance, Mildew
Resistance, Chemical Resistance,
Pollution Resistance



Materials by building part

Flooring material

Performance
Requirements of
Floor Materials

Internal
performance
Functional
performance
Sensory
performance
Design,
construction,
economic
performance

Flooring method

Attached
Plaster
Spread

Materials by building part

Walling materials

Exterior wall
material

Paneling
Plaster
Hang
Curtain wall

Interior wall
material

Paneling
Plaster
Attached
Special wall

Materials by building part

Ceiling materials:

- Attached ceiling
- Wood Frame ceiling
- System ceiling



Materials by building part

Roofing materials:

- Background material
- Roofing material

