


ROOF AND ITS TYPES

3.1. Vocabulary

Ex. 1. Match the words to their Russian equivalents.

1. steepness	a. неблагоприятные последствия
2. well-drained	b. склон; клониться
3. adverse effects	c. укрытие
4. vertical rise	d. устройство для гидроизоляции
5. horizontal span	e. хорошо дренированный
6. shelter 	f. горизонтальный пролет
7. water-proofing arrangement	g. вертикальный подъем
8. slope	h. крутизна (склонов)

Ex. 2. Match the words to their definitions.

1. lifespan	a. a rounded vault forming the roof of a building or structure
2. watertight	b. a horizontal beam that runs parallel to the rafters and supports the roof covering
3. entryway	c. a passage or doorway providing access to a building or room
4. dome	d. flat rectangular roofing tiles made of asphalt and used for waterproofing roofs
5. purlin	e. a framework consisting of beams, bars or rods that support a roof or bridge
6. rafter	f. the length of time during which something is functional or usable
7. slot	g. completely sealed against the entry or escape of water
8. asphalt shingles	h. a sloping beam that supports the roof of a building
9. truss	i. a narrow opening or groove in a surface, often used for inserting something into it

Ex. 3. Make sentences using the following words:

1. shelter/protect/rain
2. water-proofing/arrangement/prevent
3. horizontal span/bridge/long
4. rafter/supports/roof
5. purlin/holds up/roof truss

3.2. Reading

Ex. 1. Read the text.

What is roof and its types

What is roof? A roof is a structure forming the upper covering of a building or other shelter. Its primary purpose is generally to provide protection from the elements, but it may also contribute to safety, security, privacy, insulation, and so on.

What are the requirements of good roof?

Following are the requirements of well-planned/good roof:

- It should be durable against the adverse effects of various agencies such as wind, rain, sun etc.
- It should grant the desirable insulation against sound and heat.
- It should be structurally stable and sound,
- it should be capable of taking the loads likely to come over it.
- It should be well-drained.
- It should have efficient water-proofing arrangement.

Classification of roofs

Roof is classified as per its functional requirements. The roofs are mainly classified into the following three categories:

- Pitched Roof or Sloping Roof
- Flat Roof or Terrace Roof

- Shell Roofs or Curved Roof
- Pitched Roof

Pitched roofs are the most common types of roofs found on buildings. Basically, pitched roof is a roof that slopes downwards, usually in two parts at an angle from a central ridge, but sometimes in one part, from one edge to another. The 'pitch' of a roof is its vertical rise divided by its horizontal span and is a measure of its steepness.

Types of pitched roofs

- Single roof
- Double or purlin roof
- Trussed roofs

Single roof

In this type of roof, common rafters are provided to each slope without any intermediate support.

The following are the varieties of single roof:

Lean to roof

Couple roof

Couple close roof

Collar beam roof

Double or purlin roofs

When the span exceeds 2.4m, the necessary size for the rafters becomes uneconomical. Hence in order to reduce the size of rafters, intermediate supports called purlins are introduced under the rafters.

This roof can be adopted economically upto 4.8m.

Trussed roofs

When the span exceeds 4.8m and when there are no inside supporting walls or partitions for purlins, framed structure known as trusses are on the roof, position of cross walls, span and material of the truss.

The spacing is 3m for wooden trusses. Trusses carry the ridge piece and purlins on which the common rafters rest. Some of the usual forms of roof truss are given below.

- King-post truss
- Queen post truss
- Mansard truss
- Truncated truss
- Bel-fast truss
- Steel trusses
- Composite trusses

Flat Roof

As the name indicate a roof which is nearly flat is known as flat roof. It should be noted that no roof can be laid perfectly level. The roof must slope in one direction or the other to cause rain water to flow off rapidly and easily.

The construction of flat roof is same as that of floors except that the top surface is made slightly.

Sloping in case of flat roofs. The types of flat roofs commonly used are

- Madras terrace roof
- Bengal terrace roof
- Curved Roofs

These are the just the modifications of pitched roofs and are frequently employed in modern age to cover large areas shed/roofs and domes are the varieties of curved roofs.

They are useful for big structures such as factories, monumental works etc. curved roofs may be constructed of timber or R.C.C. the latter material being very common now-a-days. They are common forms of a shell roof

- A Dome
- Barrel Arch
- Cone
- Hyperbolic Paraboloid

Ex. 2. Say if the following statements are *TRUE (T)* or *FALSE (F)*

1. A roof is a structure that forms the lower covering of a building or other shelter.
2. The primary purpose of a roof is to provide insulation.
3. A good roof should be well-drained.
4. Roofs are classified based on their material.
5. Pitched roofs are the most common types of roofs found on buildings.
6. A single roof has intermediate supports called purlins.
7. Trussed roofs are used when the span exceeds 2.4m.
8. Flat roofs are always perfectly level.
9. Curved roofs are modifications of flat roofs.
10. A dome is a common form of a shell roof.

Ex. 3. Answer the questions.

1. What is a roof and what is its primary purpose?
2. What are the requirements of a good roof?
3. How are roofs classified based on their functional requirements?
4. What is a pitched roof, and how is its pitch measured?
5. What are the different types of pitched roofs?
6. What is a single roof, and what are some varieties of it?
7. When are double or purlin roofs used, and what are they supported by?
8. What are trussed roofs, and when are they used?
9. What are some common forms of roof truss?
10. What is a flat roof, and what are the types of flat roofs commonly used?