TYPES OF BRICKS USED IN CONSTRUCTION

11.1. Vocabulary

Ex. 1. *Match the halves to make words or collocations.*

1. by	a. product
2. clad	b. to
3. coal	c. combustion
4. energy	d. efficiency
5. alkali	e. ding
6. prone	f. resistance

Ex. 2. *Match the words to their definitions.*

1. shale	a. the outer layer of a building or structure that provides protection and insulation
2. energy efficiency	b. a white powder made from limestone, used in construction and agriculture
3. insulating	c. a type of sedimentary rock formed from mud or clay, often containing fossils
4. clay 	d. a type of soil that is sticky when wet and hard when dry, often used for making pottery
5. cladding	e. to take in or soak up something, such as a liquid or information
6. veneer	f. using less energy to perform the same task or function
7. efflorescence	g. the process of a substance appearing on the surface of a material due to moisture or chemical reaction
8. resonance	h. closely compacted together; having high density

9. absorb	i. providing protection from heat, cold, or sound by preventing their transfer
10. lime	j. the quality of producing a deep, full, and reverberating sound
11. dense	k. a thin layer of decorative material applied to the surface of a wall or furniture

11.2. Reading

Ex. 1. *Read the text.*

Types of Bricks

There are several common types of bricks, which are classified based on their composition, size, and application. Here are some of the most popular types of bricks:

1. Clay Bricks

Common bricks are the most basic type of bricks, which are usually red or brown in color, and have a rough surface texture. Common bricks are made of clay or shale, and are typically used for building walls, foundations, and chimneys.

2. Facing Bricks

Facing bricks are also known as “cladding” or “veneer” bricks, and are used for the visible surfaces of buildings, such as facades, entrances, and accent walls. Facing bricks are available in various colors, textures, and shapes, and can enhance the aesthetic appeal of a building.

3. Engineering Bricks

Engineering bricks are strong and durable bricks, which are used for heavy-duty applications, such as in structural walls, sewers, and bridges. Engineering bricks have a dense composition, and can resist high pressure, frost, and erosion.

4. Fire Bricks

Fire bricks are special types of bricks, which are designed to withstand high temperatures, such as in fireplaces, ovens, and kilns. Fire bricks have a high alumina content, and can resist thermal shock, corrosion, and abrasion.

5. Hollow Bricks

Hollow bricks are lightweight and insulating bricks, which are used for reducing the weight and cost of construction, as well as improving the energy efficiency and comfort of buildings. Hollow bricks have a cavity or core, which can be filled with insulation material or reinforced concrete.

6. Fly Ash Bricks

Fly ash bricks are made from fly ash, a by-product of coal combustion. They are lightweight, porous, and have good insulation properties. Fly ash bricks are also environmentally friendly as they use waste materials that would otherwise end up in landfills.

7. Concrete Bricks

Concrete bricks are made from cement, sand, and aggregate. They are denser and stronger than clay bricks and are commonly used for construction in areas prone to extreme weather conditions. Concrete bricks are also less expensive than clay bricks, making them a popular choice for builders on a budget.

8. Sand Lime Bricks

Sand lime bricks are made from sand, lime, and fly ash or cement. They are popular for their durability, strength, and resistance to moisture. Sand lime bricks are also environmentally friendly and can be recycled.

How to Identify Bricks

Identifying bricks can be useful for determining their quality, origin, and suitability for your building project. Here are some tips for identifying bricks:

Check the color, texture, and size of the bricks, and compare them to the standard references or samples.

Check the markings, such as the manufacturer’s logo, the production date, and the brick type code.

Check the sound, by tapping two bricks together, and listening to the tone and resonance.

Check the strength, by applying pressure or force to the bricks, and observing their resistance and deformation.

Properties of Bricks

Bricks have various properties, which can affect their performance, durability, and safety. Here are some of the important properties of bricks:

Compressive strength: the maximum load that a brick can bear without breaking.

Water absorption: the amount of water that a brick can absorb, which can affect its weight, strength, and frost resistance.

Thermal conductivity: the ability of a brick to conduct heat, which can affect its insulation value and fire resistance.

Efflorescence: the white or gray deposit that can appear on the surface of bricks, caused by the migration of soluble salts.

Alkali resistance: the ability of a brick to resist the corrosive effect of alkali, which can affect its durability and appearance.

Uses of Bricks

Bricks have been used in construction for thousands of years. They are versatile, durable, and can be used in a wide range of applications.

Building Walls: One of the most common uses of bricks is in building walls. Bricks can be used to build load-bearing walls or non-load-bearing walls. Load-bearing walls are used to support the weight of the building, while non-load-bearing walls are used for partitioning or decoration. Bricks can be arranged in a variety of patterns to create interesting and decorative designs.

Paving: Bricks can also be used for paving. Paved areas can be used for walkways, patios, or driveways. Bricks used for paving are often thicker and stronger than those used for building walls. They are designed to withstand the weight of vehicles and foot traffic.

Fireplaces: Bricks are often used in the construction of fireplaces. Fire bricks, which are made from refractory clay, are designed to withstand high temperatures without cracking or crumbling. Fireplaces can add warmth and character to a room, and bricks can be arranged in a variety of patterns to create interesting designs.

Chimneys: Chimneys are another common use of bricks. They are used to vent smoke and gases from fireplaces or heating appliances. Bricks used in chimney construction are often specially designed to withstand the corrosive effects of flue gases.

Retaining Walls: Retaining walls are used to hold back soil and prevent erosion. Bricks are often used in the construction of retaining walls because they are strong and durable. Retaining walls can be used to create level areas on sloping ground, or to create raised garden beds.

Decorative Features: Bricks can also be used to create decorative features such as arches, columns, and cornices. These features can add character and interest to a building and can be used to create a unique look.

Foundations Bricks: are often used in the construction of foundations. They can be used to create a strong and stable base for a building. Foundations are essential for ensuring that a building remains stable and secure.

Ex. 2. *In the text, find the following phrases:*

1. сопротивлятьс высокому давлению, морозу и эрозии

2. предназначен для выдерживания высоких температур, например, в каминах, духовках и обжиговых печах

3. используется для снижения веса и стоимости конструкции

4. отходы производства

5. миграция растворимых солей

Ex.3. *Choose the correct answer.*

1. What are the common types of bricks classified based on?

a) Color, texture, and size

b) Composition, size, and application

c) Weight, strength, and insulation

d) Manufacturer, production date, and brick type code

2. Which type of brick is used for the visible surfaces of buildings?

a) Clay bricks

b) Engineering bricks

c) Facing bricks

d) Fire bricks

3. What are the properties of bricks that can affect their insulation value and fire resistance?

a) Compressive strength

b) Water absorption

c) Thermal conductivity

d) Efflorescence

4. What is the maximum load that a brick can bear without breaking?

a) Water absorption

b) Compressive strength

c) Thermal conductivity

d) Alkali resistance

5. What is the white or gray deposit that can appear on the surface of bricks caused by the migration of soluble salts?

a) Compressive strength

b) Water absorption

c) Thermal conductivity

d) Efflorescence

6. What is the most common use of bricks?

a) Paving

b) Building walls

c) Fireplaces

d) Chimneys

7. What are retaining walls used for?

a) To hold back soil and prevent erosion

b) To create decorative features

c) To create a strong and stable base for a building

d) To vent smoke and gases from fireplaces or heating appliances

8. What are fire bricks made of?

a) Clay or shale

b) Sand, lime, and fly ash or cement

c) Refractory clay

d) Cement, sand, and aggregate

9. What are hollow bricks used for?

a) To reduce the weight and cost of construction

b) To improve the energy efficiency and comfort of buildings

c) To create level areas on sloping ground

d) To withstand heavy-duty applications

10. What is the ability of a brick to resist the corrosive effect of alkali?

a) Compressive strength

b) Water absorption

c) Thermal conductivity

d) Alkali resistance