

Brick

5 Read the text and then write a list of the advantages and disadvantages offered by brick.

Masonry construction is a method that has been used for centuries around the world. It is usually used for walls of buildings, retaining walls and monuments. The most frequent type of masonry is brick, but concrete block is also becoming more and more popular. Brick was one of the first building materials that man used and has been used since the times of the ancient Egyptians because it offers a great number of advantages. First of all, it has an affordable price and it is made of accessible raw material, which has long durability and good insulating properties. It is a strong material and is perfect for load-bearing systems where the loads are compressive. It is the size of a man's hand and therefore simple to use. The appearance of the final work depends on the ability and expertise of the bricklayer. Another advantage of using brick is that, like stone, it offers increased comfort in the heat of the summer and the cold of the winter. Being heat resistant, this material also offers good fire protection.

One of the disadvantages of using this material is that masonry must be built on a firm foundation to prevent settling and cracking, and in the presence of expansive soils the foundation may need to be elaborate. Moreover, this is a heavy material, consequently the structural requirements will have to be increased, especially if the area is subject to earthquakes.



Advantages	Disadvantages
<i>affordable price,</i>	

Cement and concrete

6 Listen to the text and complete it with the words from the box.

blocks bricks concrete (x2) ingredient materials mixture walls

The most common type of cement is Portland cement, which is the basic (1) _____ of concrete and mortar.

It is made of Portland cement clinker (calcium silicates, aluminium and other compounds) and other minor constituents.

Portland cement clinker is produced by heating a mixture of raw (2) _____ up to 1450° C in a kiln.

There are three production stages:

- preparation of the raw mixture,
- production of the clinker,
- preparation of the (3) _____.

Limestone is the main raw material for the production of clinker, followed by sand, shale, iron ore, bauxite, fly ash and slag. About 2% gypsum is also added and then the (4) _____ is pulverised. The resulting powder will react when water is added.

Portland cement is commonly used to produce (5) _____, which is made of gravel, sand, cement and water. Blocks of cinder concrete, ordinary concrete and hollow tile are known as Concrete Masonry Units (CMU). They are larger than ordinary (6) _____ and used for applications where appearance is not very important, such as in factory walls, garages and industrial buildings. One of the advantages of concrete (7) _____ is that they can be reinforced, grouting the voids, inserting rebar or using grout, so that they are stronger than typical masonry (8) _____.



7 Read the text in exercise 6 again and choose the best alternative.

- 1 Portland cement is the basic ingredient of *concrete/aluminium*.
- 2 The main raw material for the production of clinker is *brick/limestone*.
- 3 Portland cement is used to produce *gravel/concrete*.
- 4 Concrete Masonry Units are larger than ordinary *bricks/stones*.
- 5 Concrete blocks can be *reinforced/industrial*.
- 6 Reinforced concrete blocks are stronger than masonry *industries/walls*.

8 Match the words with their definitions.

- | | |
|-------------|---|
| 1 masonry | a <input type="checkbox"/> a mixture of cement, sand, small stones and water |
| 2 brick | b <input type="checkbox"/> brick work |
| 3 concrete | c <input type="checkbox"/> white rock often used for making cement |
| 4 mortar | d <input type="checkbox"/> a mixture of sand, water and cement or lime |
| 5 limestone | e <input type="checkbox"/> a reddish-brown rectangular block used to build walls and houses |

9 Create four groups. Each group chooses one material from this unit (stone, timber, brick, cement and concrete). Use your own words to describe it to the other groups.

10 Use the information from exercise 9 and the texts in this unit to complete the following table.

	Stone	Timber	Brick	Cement and Concrete
Advantages	_____	_____	_____	_____
Disadvantages	_____	_____	_____	_____

MY GLOSSARY

bricklayer /'brɪkleɪər/ _____	to join /tə dʒɔɪn/ _____
to blend in /tə blænd ɪn/ _____	kiln /kɪln/ _____
cinder concrete /'sɪndə(r) 'kɒŋkri:t/ _____	to lay /tə leɪ/ _____
clad /klæd/ _____	lime /laɪm/ _____
compound /'kɒmpaʊnd/ _____	limestone /'laɪmstəʊn/ _____
concrete /'kɒŋkri:t/ _____	masonry /'meɪsənri/ _____
cracking /'krækɪŋ/ _____	mortar /'mɔ:tə(r)/ _____
to fasten /tə 'fɑ:sn/ _____	mortice /'mɔ:tɪs/ _____
fence /fens/ _____	mould /məʊld/ _____
fly ash /flaɪ æʃ/ _____	nail /neɪl/ _____
foamed /fəʊmd/ _____	peg /peg/ _____
frame /freɪm/ _____	to put up /tə pʊt ʌp/ _____
gap /gæp/ _____	rebar /rɪ'bɑ:/ _____
gravel /'græv(ə)l/ _____	settling /'setlɪŋ/ _____
grout /graʊt/ _____	shale /ʃeɪl/ _____
to grout /tə graʊt/ _____	slag /slæg/ _____
gypsum /'dʒɪpsəm/ _____	to surround /tə səraʊnd/ _____
heat insulation /hi:t ɪn'sju:leɪʃn/ _____	tenon /tenən/ _____
hollow tile /'hɒləʊ taɪl/ _____	timber /'tɪmbə(r)/ _____
iron ore /'aɪən ɔ:(r)/ _____	void /vɔɪd/ _____