

Гідротехнічні споруди

Exercise 1. Read and translate the text. Dams.

Arch dam

Best for narrow rocky ravines with steep walls strong enough to support the structure, these are solid concrete structures that curve upstream, forming an arch. The pressure from the water is distributed evenly for structural integrity, similar to an arch bridge. The weight of the dam pushes it into the ground, helping to reinforce it. Examples that are double-curved horizontally and vertically are referred to as dome dams.



Buttress dam

A buttress dam or hollow dam is **a dam with a solid, water-tight upstream side that is supported at intervals on the downstream side by a series of buttresses** or supports. Most buttress dams are made of reinforced concrete and are heavy, pushing the dam into the ground. Buttresses add weight to the structure. Buttress dams are used when the surrounding rock is not strong enough to provide a solid foundation. A series of solid concrete buttresses lined along the downstream face of the dam provide the strength needed to hold it in place. Since most of the support comes from the buttresses, the dam wall can either be flat or curved.

Embankment dam

The embankment dam is a dam constructed from natural materials excavated or obtained nearby, such as soil, sand, rock. Made from a bank of earth, these dams rely on their intense weight and shape to hold the water back. There may be a layer of plastic or other material on the upstream face if the particle sizes in the earth are big enough for water to seep through. Earth-filled dams can be made completely from one type of material, but may need a layer that collects and drains seep-water to ensure the structure stays intact.



Exercise 2. Learn the words.

ravine [rə'vei:n] ущелина
buttress ['bʌtrɪs] опора
buttress dam контрфорсна гребля (гребля, у якій тиск води у верхньому б'єфі сприймається напірними перекриттями і передається на основу через вертикальні стінки — контрфорси)

anchor ['æŋkə] закріпляти
embankment [ɪm'bæŋkmənt] набережна дамба
support [sə'pɔ:t] підтримувати
sloped похилий
dome [dəʊm] купол
concrete бетон

Do the tasks.

1. Answer the question. When are buttress dams used?

2. Answer the question. What does the embankment dam rely on to hold the water back?

3. Choose the correct variant.

1. An arch dam is ...

a) flat b) curved

2. The embankment dam is made of

a) soil, sand, rock b) concrete bricks c) artificial materials

3. A brick or stone structure built to support a wall is called....

a) dome b) buttress c) arch

4. Most buttress dams are made of ...

a) soil, sand, rock b) plastic c) reinforced concrete d) bricks

4. Choose the correct word.

a) Arch dams are suitable for narrow /wide gorges.

b) “The structure stays intact” means it is not strong/ damaged/ weak.

5. True or false?

A buttress dam wall can either be flat or curved. True/false

6. Match the words with the pictures.



buttress dam

embankment dam

arch dam