

Дата:31.01.2024

Група № 2Б-1

Wednesday, the 31st of January

Classwork

Lesson 11-12

Topic: Control Work. Panel Heating.

Мета уроку: Ознайомити учнів з новою лексикою теми. Вдосконалювати навички усного мовлення та письма. Розвивати культуру спілкування та мовленнєву реакцію учнів.

Матеріал уроку:

1. Прочитайте і запам'ятайте значення наступних слів і словосполучень для кращого розуміння тексту.

atmospheric environment	атмосферне середовище
efficiency	продуктивність; к.к.д.
contamination of the air	забруднення повітря
loss of heat	втрата тепла
central heating	центральне опалення
hot-water (heating) system	система водяного опалення
boiler	котел
steam (heating) system	парове опалення
copper pipes	мідні труби
panel heating system	панельне опалення

2. Прочитайте і перекладіть текст.

Heating and ventilation are tip branches of engineering which are very closely connected; they are therefore treated as a dual subject. Both are concerned with providing a required atmospheric environment within a space, the former with respect to heat supply to produce a desired temperature for maintaining comfort, health or efficiency of the occupants, the latter with regard to supply and removal of air frequently with emphasis on contamination of the air. Air conditioning is closely related to both heating and ventilation.

It is for heating to prevent the too rapid loss of heat from the body. By heating the ambient air of walls, ceiling or floor the rate of heat loss from the body is controlled. Some old concepts of heating were gradually changed since engineers obtained more precise knowledge about how the body loses heat. Insufficient attention was paid formerly to loss by radiation, which is the transmission of energy in the form of waves from a body to surrounding bodies at a temperature. The human being also loses heat by conduction (through his clothes) and convection.

The determination of the capacity or size of the various components of the heating system is based on the fundamental concept that heat supplied to a space equals heat lost from; the space. The most widely used system of heating is the central heating, where the fuel is burned in one place – the basement or a specially designer room and from which steam, hot water or warm air is distributed to adjacent and remote spaces to be heated.

There are two most common systems of heating – hot water and steam. Both

systems are widely used nowadays. A hot-water system consists of the boilers and a system of pipes connected to radiators suitably located in rooms to be heated. The pipes, usually of steel or copper.

As for steam systems, steam is generated usually, at less than 5 pounds per square inch in the boiler and the steam is led to the radiators through or by means of steel or copper pipes. The steam gives up its heat to the radiators and the radiators to the room and the cooling of the steam condenses it to water. The condensate is returned to the boiler either by gravity or by a pump. The air valve on each radiator is necessary for air to escape. Otherwise it would prevent steam from entering the radiator.

Recent efforts completely conceal heating equipment have resulted in an arrangement whereby the fluid, whether it be hot water, steam, air, or electricity, is circulated through distribution units embedded in the building construction. Panel heating is a method of introducing heat to rooms in which the emitting surfaces are usually completely concealed in the floor, walls, or ceiling.

As for fuels used for heating buildings they include coal, oil, manufactured and natural gases and wood. There are two other sources: electricity and steam. Nowadays gas fuel is being used on an ever increasing level.

3. Звіряючись з текстом, підберіть відповідний переклад з правого стовпчика до наступних англійських слів і словосполучень.

- | | |
|-------------------|--------------------------|
| 1. cooling | a. стеля |
| 2. space | b. забезпечувати |
| 3. to maintain | c. опалення |
| 4. removal | d. навколишнє середовище |
| 5. contamination | e. парове опалення |
| 6. loss | f. визначення |
| 7. precise | g. отримувати |
| 8. equal | h. рівний |
| 9. heat supply | i. застосовувати |
| 10. environment | j. видалення |
| 11. to obtain | k. втрата |
| 12. determination | l. точний |
| 13. to provide | m. забруднення |
| 14. steam heating | n. охолодження |
| 15. ceiling | o. підтримувати |
| 16. cooling | p. середовище |
| 17. space | q. паливо |

Control Work

1. *Перекладіть текст письмово зі словником. Підготуйте його переказ (англійською мовою).*

Mobile Cranes

The function of a crane is to hoist or lower a load suspended from its jib. Various types of cranes are available, the type and size best suited for a specific operation being influenced by the following factors: 1. The nature of the work on which it is to operate. 2. The weight of load it has to handle.

Mobile cranes have a wide range of uses on building and civil engineering works of construction. Cranes of this type usually take the form of a frame carrying a jib, a winch, and other necessary hoisting and controlling equipment, the whole being mounted on a cast-iron bed plate fitted with road wheels of the pneumatic type. One may also have them mounted on caterpillar tracks or on a lorry chassis if desired.

At present rope-operated mobile cranes are being superseded by hydraulically operated ones, in which all working operations, but travelling, are performed with the help of hydraulic rams. The jib of the mobile crane can be of the solid or latticed type, the latter being preferred now because of its lower weight.

2. *Вкажіть, які з наведених нижче тверджень, не відповідають змісту тексту *Mobile Cranes*.*

1. A disadvantage of cranes with telescopic booms is that it takes much time to bring them into action from the travelling position.

2. The ability to change the length of the telescopic boom makes it possible to vary the load-lifting capacity of the crane.

3. The hydraulic rams used in hydraulic-ally operated mobile cranes lower the maneuverability of such cranes.

Усі виконані завдання надсилайте на електронну адресу gr.ev@ukr.net з підписом у темі листа «ПБ, № групи та назва навчальної дисципліни».