**Heat engineer: job description, education, duties, responsibility**

Many do not know what a heating engineer is. You should figure out where they teach this profession, how to write a resume in order to find a job. It is also important to figure out what duties a heating engineer has according to the job description.

**Essence of profession**

A little more than a quarter of a century ago, specialists of this type were called stokers. Currently, the scope of their powers has grown significantly and expanded. The work of an engineer is very complex, so specialists require deep knowledge in various exact disciplines, good concentration, restraint, responsibility. All this is due to the fact that even a small mistake can stop the work of an entire enterprise.

The job description of a heating engineer states that the main activity of a specialist is to provide urban residents or various enterprises and other objects with heat and light. It is also his duty to look for options to improve the quality of the supplied heat and save it (if possible).

All of these actions are taught in various educational institutions in the specialty "Heat power and heat engineering". The main place of work for graduates of relevant universities and colleges is thermal power plants. At the TPP, boiler appliances and equipment are adjusted, the activities of workshops and other departments of a particular station are coordinated.

An important duty of a specialist in the thermal sector is also to draw up work plans for a particular enterprise and monitor their implementation. The engineer must make forecasts that relate to the amount of (potential) production of thermal energy, as well as the costs that will need to be made on fuel-type resources. The specialist must exercise full control over each of these actions.

**The level of professionalism and required qualities**

People working as a heating engineer are trained in various disciplines of a typical nature. The mandatory curriculum includes the following areas:

* theory and basic rules of heat engineering;
* device, installation and maintenance of equipment of drying, refrigeration and heat engineering type;
* hydraulics.

Specialists of this profile need to have good logical thinking, memory, attention and accuracy. In this regard, untrained workers will not be able to qualitatively perform the duties assigned to them, because of which the entire work of the enterprise may suffer.

**Demand in the market**

Currently worka heating engineer, as well as another highly qualified specialist, is in demand in the labor market. Salaries and availability of vacancies depend on the region and the scope of assigned duties.

For example, in Voronezh and the region, an engineer can be offered a salary of twenty thousand rubles. In St. Petersburg or Yekaterinburg, the payment is twice as high, and in Moscow it reaches eighty thousand rubles.

**Profession in the modern world**

A heating engineer resume should include many nuances due to the high demands and seriousness of the job. Nowadays, being an engineer (and any other highly qualified specialist) is an honor and a challenge.

The work of an engineer is associated with active participation in all processes in production, drawings and complex projects. Specialists in this field, who have a technical mindset, speak of the work as a responsible, important, useful and very interesting business.

The benefits of the material world that surround all citizens (electricity, water, gas) are the result of painstaking and well-coordinated joint work of people, technical means and communications.

Since the provision of light and heat to millions of people, as well as their safety depends on the correct and competent work of a specialist, great responsibility for the uninterrupted and proper operation of equipment requires specialists to have a high level of preparedness and a serious attitude to work.

**Heat engineering education**

Educational institutions,who train specialists of the appropriate level, approach the preparation of students very carefully. On the speci alty "Heat power engineering and heat engineering" the following disciplines are studied:

1. Operation of boiler-type plants.
2. Use of fuel and heat supply systems.
3. Heat supply and heat engineering equipment.
4. Operation, selection and calculation of heat engineering type equipment and related systems.

In practice, this knowledge is directed to consideration in detail of issues on the rules for the production of heat and electricity, the repair and use of fuel supply, as well as options for saving resources of the fuel and energy type.

In addition to providing knowledge, teachers try to teach students to understand and develop possible logical solutions to improve the performance of heat supply and its systems.

**Resource transfer analysis**

Heat is transferred to the designated places by using a piping system - a heating network. This process is carried out with hot water or steam. The duties of a heating engineer include monitoring the compliance of the indicated devices and systems with the requirements of sanitary and other standards, their quality and tightness, the reliability of fittings at the set pressure, as well as determining the normal temperature level and its compliance with the indicators according to the plan.

Modern heat pipelines must meet certain parameters:

* possibility of immediate detection and repair of damage;
* high level of heat resistance insulating structure;
* availability of key elements for factory production;
* possibility to assemble finished elements on the track;
* economical to use.

**Features of the heat pipe**

The main task of a heating engineer in housing and communal services and other areas is to reduce energy consumption and costs arising from the distribution, delivery or production of thermal energy. To reduce the level of energy losses to a minimum, it is necessary to take care of the effective and reliable insulation of the pipeline.

Proper processing and protection of the system can reduce unnecessary costs and increase the period of its operation. Due to the fact that the activity of the heat pipeline is carried out underground, with an increased level of temperature and humidity, the risk of corrosion of metal structures greatly increases.

External factors have a negative impact on the design. Due to the fact that at present there are no pipes that are strong, reliable, flexible and safe at the same time, the work of an engineer is directly related to finding the optimal type of pipe with reliable insulation, support structure and rational routing. In this case, the specialist must take into account the external environment and the features of the relief.

**Features of building-type heat engineering**

In progressconstruction of houses for residential and non-residential purposes, special attention is paid to the choice of building heat engineering. Enclosing structures and structures must be designed in accordance with indoor humidity and temperature.

The following indicators are used for verification:

* resistance to vapor permeability of enclosing structures;
* heat resistance;
* breathability resistance.

The enclosing structures in this case include floors, partitions, walls, ceilings, filling window openings, stained-glass windows and shop windows. In each case, the calculations of indicators are made on an individual basis.

The leading heating engineer and employees subordinate to him, who specialize in working in the construction industry, in heat and water supply of buildings, at heat stations or in housing and communal services, have the opportunity to use existing knowledge in the design and maintenance of boiler plants.

Neither houses nor shopping centers will be put into operation if they do not have a system of water and heat supply. Designing such systems requires professional skills and deep knowledge.

**Heat engineer job description**

The main responsibility of the employee in this position is to ensure the technical application and uninterrupted operation of thermal equipment. According to the job description, the heating engineer must perform the followingresponsibilities:

1. Participate in organizing meetings with various heat energy suppliers and signing contracts with them.
2. To monitor the operation of the equipment, be responsible for the timely correction of equipment problems.
3. Prepare and maintain thermal power plants.
4. To conduct research in the field of foreign experience in the maintenance of thermal equipment.
5. Keep records of thermal appliances.
6. Analyze the identified indicators and compare them with the calculated figures.
7. Take part in drawing up the rules for the operation of thermal equipment and monitor their implementation.
8. Complete written requests for the purchase of spare parts and reports on the implementation of plans.
9. Be responsible for the timely preparation of heat supply installations in normal operation during the heating period.
10. Carry out preventive work during the non-heating period.