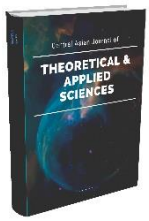

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Use of Solar Energy Systems

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Abstract: *This article provides a brief overview of the types of solar water heater collector, different between collectors according to the use and use of solar water heater collector.*

Keywords: *Solar water heater collector, bak battery, tempering, absorber, body, transparent mirror, sunroof Windows, heat sink, light absorption tubes, infrared rays.*

Introduction: New types of solar collectors are currently being discovered. It is known that the simplest way to use solar energy is to get heat from it. Different bodies heat up differently in sunlight. Judging by the observations, bodies with a particularly black surface have the property of harder heating and collecting heat. The working order of the solar collector is also based on this. The heat from the sun is collected in a special heat accumulating device or used for short-term consumption. The word collector is derived from Latin meaning collector, collector. A solar collector is said to be a device that serves to convert solar energy into thermal energy.

Currently, insulated flat solar collectors with an airtight body with a transparent coating, painted in black, with a metal plate with absorbent water conduit tubes, and with the purpose of protecting against heat loss on the back and side walls of the body are common. The use of the sun as a source of heat has long been known. Until the technology of obtaining energy from minerals by humans took the leading positions, they were well aware of the use of the sun in heating water and other products.

The solar collector is a well-known device whose industrial samples began to be produced more than 200 years ago. For example, in 1767, the first flat-surface solar collector was invented by the Swedish scientist Goracius de Saussure, which later became popular. From this 118 much later in the 30s of the XIX century, John Gershel was foiled to heat food from this equipment during his trip to South Africa.

Collectors currently discovered can be classified into: flat-surface, vacuum, concentrator. In flat-surface collectors-light-absorbing tubes, which are moved after a flat absorber (light-absorbing device) (often a metal plate with a black-surface light-absorbing surface), the heat-absorber (teplonositel) settles. In order to save the accumulated thermal energy from waste to the environment and outside, the back and sides of the moving tubes are closed with heat-insulating material.

The front of the absorber is glazed. The sunlight freely passes through the window to the unobstructed heat transmitter. A positive feature of the absorber is that the energy and infrared rays of the sun falling on it are absorbed. The thermal energy absorbed by the heat transmitter from the sun does not reverse, but is retained there. Air between the thick-surface windshield and the heat-absorbing tube has the potential to

accumulate in the hot temperature convector due to the lack of convection. In some cases, the Collector's windshield is covered in two layers, despite the increase in the cost and weight of the equipment. The result expected from this is an increase in the useful coefficient of work in the Collector. Extremely high-quality collectors can heat the heat transmitter up to 150 0C. But in most solar collectors, the temperature of the heat transmitter does not even reach the boiling point. For this reason, flat-surface collectors can be used for a long time without technical inspection.

Vacuum collectors have the property of accumulating heat in accordance with their name. In these devices, the heat-generating (transforming) elements are welded into vacuum-forming glass tubes. Glass has the ability to absorb infrared rays emanating from heated elements, thus preventing the return of light. Because it does not have a cooling system in the result of convection. Vacuum collectors work effectively even in severe cold, cloudy weather, in the sun they can heat the heat transmitter up to 3000 C. Due to these properties, vacuum collectors are very complex and expensive.

Collectors of this type are equipped with special controllers designed to expel excess heat outside. Concentrating collectors-based on the use of devices of a separate class when it is necessary to obtain very hot temperatures. A simple lens can be used as an example of a simple concentrator. It is usually possible to activate simple materials such as paper, wood by focusing sunlight from the lens. Current concentrators use parabola-shaped bottlenecks that collect sunlight by directing it to a special surface instead of lenses. [2-3]

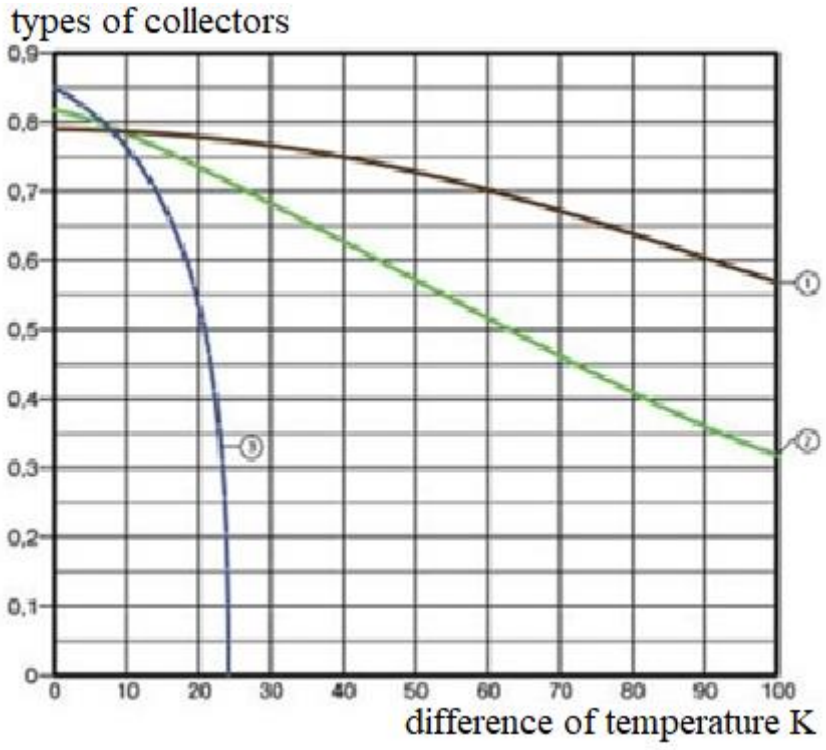

Figure 1. Thermal efficiency of different types of collectors

1-Vacuum Tube Collector; 2-flat collector with thermosiphon coating; 3-open collector.

The temperature on the surface where sunlight is focused reaches several 100 0C. The flat solar collector is the most common solar collector used in household water heating. Due to the fact that the collector is covered with a pre-mirror, a heat-insulated panel is considered, and a light-absorbing plate is placed inside it. The absorbent plate is made of copper or aluminum metal, and it conducts heat well. Copper in particular is more widely used due to its rust resistance, high heat transfer compared to aluminum. The

absorber plate is covered with a special coating with a high selectivity to keep the absorbed light in place for a longer period of time. This layer, covered with a metal base, which is very well refractive of light at the limit of the visual spectrum and has a low radiation coefficient at the far-wave infrared limit, is made up of a very solid thin amorphous semiconductor.

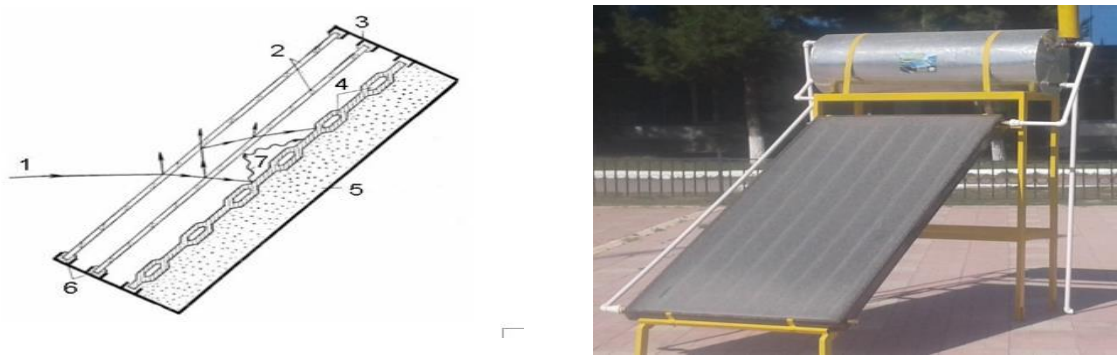

Figure 2. Flat solar collectors

1-sunlight; 2-glass shell; 3-Housing; 4-heat intake cutter surface (absorber); 5-heat insulator; 6-fastener; 7-specific wavelength.

As a result of the glazing of flat collectors (usually a dim glass window mixed with low-grade iron powder, which only transmits light), the waste of heat 120 is in very small quantities. The bottom and side walls of the Collector are sealed with heat-shielding material and it reduces heat losses [4].

Conclusion: It is advisable to use solar energy to increase the energy efficiency of buildings. When using solar energy, we must pay attention to those below the solar energy that falls at a certain time on sloping areas facing different sides of the globe will not be the same. The solar energy that falls on the south-facing slope during the day is the most abundant, but the solar energy that falls on the north-facing slope during the day is the least.

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