RESEARCH OF EFFICIENCY OF APPLICATION OF HEATCOVER SCREENS OF RADIATORS OF SYSTEM OF AQUATIC HEATING

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One of methods of reduction of losses of warmth in the systems of heating there is establishment of heatcover screens on internal walls in the places of location of heating devices (radiators).

With the aim of establishment of quantitative descriptions of processes of transference of warmth from heating devices to the walls closed by heatcover screens Research of influence of heatcover screens to the processes of heat exchange at establishment of them in the zones of placing of radiators of the system of aquatic heating for reduction of losses of warmth and increase of potential of energy-savings building are done.

The processes of heat exchange between radiators and wall flow through a heat-conducting, by конвективним and effulgent methods. Thus a temperature rises on the internal surface of wall, and reduction of her thickness (for the improvement of aesthetic kind radiators set in deepening in a wall) results in reduction of thermal resistance of walls, and the losses of warmth grow in an environment.

Heatcover screens are chosen on results experimental research of thermophysical descriptions of different materials. In experiments the used material of пінофол. Thermal resistance of wall in area of location of batteries at the use of пінофолу grows from 0,75 $м^2$-К/W to 0,836 $м^2$-К/W and a thermal stream through a wall due to a heat-conducting diminishes in 1,1 раза.

Establishment of heatcover screens between a wall and radiators influences on reduction of losses of warmth because a screen is additional thermal resistance of transfer of warmth, and the high reflectivity of radiation constituent of thermal stream assists transference of heat in reverse direction - from a screen to the surrounding him environment (in an apartment).

During realization of experiments measured temperature of air in apartments - $t_в$, temperature of coolant-moderator of $t_Т$ in the system of heating, and also on the

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surface of battery from the side of apartment of t_1; on the opposite (directed sdws wall) surface of battery of t_2; on the surface of heatcover екрана t_3; between a screen and by the wall of t_4; on the external surface of wall of t_5; temperature of environment of $t_{зовн.} = t_6$; a temperature is in an apartment without establishment of heatcover screens of $t_в^{безек}$. but after establishment of heatcover screens of $t_в^{екр}$.

Measuring recurred with the set periodicity, and after processing of data such results are got.

Implementation calculations of thermal resistance of the screened walls, specific losses of warmth through the surface of walls without екрана and with a screen, closeness of thermal stream, that is reflected from a screen, and total effect from the use of screens - reduction to power of batteries.

Thermal stream from a battery to the screen through a radiation in both cases identical and presents $q_{випр.}$=50 W/м^2, and the thermal stream removed from a screen at $К_{відб}$=0,9 presents $q_{відб.}$=45Вт/м^2, id est 90% warmth at an effulgent heat exchange goes back into an apartment for heating of air. If to take into account reduction of losses of warmth through a heat-conducting, then most effective in the use will be heatcover screens, that have a less coefficient of heat-conducting, greater thermal resistance and high reflectivity. Therefore the basic economy of warmth is arrived at due to an effulgent heat exchange.

Increase of temperature of air in an apartment on 2...2,5 ºС with the set heatcover screens experimentally confirm a conclusion about financial viability of establishment of heatcover screens on walls in the zone of placing of radiators in the system of heating of building of the different settingю.