CREATING COMFORTABLE WORKING CONDITIONS FOR COMPUTER WORKERS

Mamadaliyev Adkhamjon Tukhtamirzaevich
Namangan Engineering Construction Institute,
160103, Republic of Uzbekistan, Namangan, I. Karimov st.,12
Adhamjon6300@gmail.com

Annotation: *This article is devoted to the topic of creating comfortable working conditions for computer workers, in which the importance of adjusting meteorological indicators for computer rooms, which lamps to choose, the correct organization of workplaces, and the importance of ensuring electrical and fire safety was discussed.*

Key words: *Comfortable working conditions, meteorological indicators, lighting, electrical safety, fire safety, correct organization of workplaces, work and rest procedures, relative humidity, powder fire extinguishers and carbonic acid fire extinguishers.*

Work is the basis of formation and social development of a person, creation of material wealth. Properly organized work leads to physical, intellectual and spiritual development of people.

One of the main tasks of labor protection is to ensure the safety of workers. Regular supply of modern production with new techniques and technologies involves changing some types of work and tools.

Computer equipment is designed to enter data, process it and transmit the result. Computer workers belong to the category of mental workers.

When creating comfortable working conditions for computer workers, it is necessary to pay attention to the following:

1. Standardization of meteorological indicators to create comfortable working conditions for computer workers;

2. Correct choice of lighting in creating comfortable working conditions for computer workers;

3. Ensuring electrical and fire safety while creating comfortable working conditions for computer workers;

4. Proper organization of workplaces to create comfortable working conditions for computer workers;

5. To create comfortable working conditions for computer workers, it is necessary to develop a work and rest procedure

When creating standard working conditions, it is necessary to take into account meteorological indicators based on the requirements of GOST 12.1.005-81. The temperature in the computer room should not be lower than 180C and not higher than 220C. Relative humidity should be 40-60%. The speed of air movement should be 0.2-0.3 m/s, in any case it should not exceed 0.5 m/s.

Light plays an important role in maintaining health and high performance. The height of the computer room should be 3 m or more. If we assume that the area of the room is S=3.5 m* 6 m = 21 m2, for the purpose of artificial lighting of this room, a lamp with a total power of =S* 15W =21* 15=315 Vt is needed. This lighting requires the use of fluorescent lamps based on refracted light. . Taking into account the possibility of seeing in the room, according to the requirements of GOST 12.1.046-81 - "General flat lighting of the workplace", the illumination of the room is required to be no less than 300 lux. For a computer operator, if we take into account the requirements of Building codes and regulations II-4-79- “Natural and artificial lighting”, the light should mainly fall from the left side.

It is advisable to install fluorescent lamps of the LB 40-1 type in rooms that create special working conditions for computer workers. Given that the power of this lamp for this room is =40 watt, the number of lamps is:

there will be pieces.

Lamps installed in the room are installed in pairs. Based on this, n=8 lamps are obtained. Because the total power of the lamps can be higher than the standard, but should not be small.

The air content in the computer room is regulated according to GOST 12.1.005-81 – “General requirements for air in the working area”. For this, the power of fans is selected based on the size of the room. That is, based on the fact that the volume of the room is V=S h=21m*3 m =63 m3, it is determined that room air is changed up to N=5 times per hour in order to ensure normal operation of the computer monitor and processors. To satisfy this requirement, the fan power is selected as R=V*N=63*5=315 m3/h. At this point, it should be said that the process of changing room air in this amount is performed in cases where the amount of dust and vapors of various substances in the air exceeds the norm.

Taking into account the microclimate conditions, since the standard temperature is 18-220C, it is convenient to choose air conditioning for the room air exchange process. Because, in the operation of computers, the regulation of the relative humidity of the air is also in a special place. If the number of computers in the rooms of the above size is up to 4, BK-1500, if more than 5, BK-2500 brand air conditioners should be installed

Electrical and fire safety in computer rooms is implemented based on the requirements of GOST 12.1.019-79-«Electrical safety» and GOST 12.1.004-76-«Fire safety». It is forbidden to touch and repair power supply networks, source dimensions during operation, and remove printed circuit boards from the units when they are connected to electricity. Powder and carbonic acid flamethrowers: OP-8, OP-5, OP-3, OP-2 and OU-2 must always be in the computer room. Fire extinguishers must be hung on the wall at a height of 1.5 m from the floor and registered with the fire department once a year.

The organization of workplaces in computer rooms should be based on Sanitary norms and rules 001-94.

The following requirements are imposed on proper posture:

 the neck should not be lowered below 200S (relative to the body along the "head-neck" axis);

 should leave the shoulder free;

 elbows are located 80-1000S;

Shoulders and forearms should be in a supine position

Circumstances that may cause the body to not hold properly:

absence of a device for placing documents;

remote location of the keyboard;

lack of space to keep arms and legs free

In order to overcome these shortcomings, the following instructions are given: a good mobile keyboard should have a specially adjustable desk-chair, keyboard, screen and palm rest.

According to the organization of the workplace, it is recommended:

the height of the work table is 750 mm;

the height of the leg is 650 mm;

the height of the chair from the floor is 450 mm;

the chair should be soft and round;

enough space to place documents on it and on the left;

the distance from the eye to the screen is 700 mm;

the distance from the eye to the keyboard is 400 mm;

the distance from eyes to documents is 600-700 mm;

The screen should be adjustable to the right-left and height.

When creating comfortable working conditions for computer workers, the most comfortable conditions for work and rest are determined taking into account the level of nervous and mental stress of their work, the dynamics of the functional state of various systems of the body, work capacity, and the order of fixed working hours and breaks;

Taking into account the individuality of the work of the workers in the technique, in the order of rest, it is necessary to introduce two to four additional micro-breaks, the duration of each of which is 10-15 minutes, two breaks in a 6-hour working day and 3-4 breaks in an 8-hour working day.

In order to prevent strain and fatigue of the users of the computer model, it is necessary to perform regular micro-breaks and a complex of physical exercises designed for muscle movement.

Due to the violation of working conditions and working order, the stress and burdens of human labor, a number of disorders occur in the central nervous system and cardiovascular organs of computer workers, microwaves have a damaging effect on the eyes, the pupil of the eye becomes cloudy and cataracts develop, and it leads to extreme strain on the hands.

In addition, long periods of time in front of the display screen cause strain on the vision analyzer and fatigue and reduced vision.

Taking into account the above, it is necessary to establish the necessary measures to protect health from the effects of electromagnetic waves. For this, it is necessary to use a device with a special barrier screen that protects against rays, and use personal protective equipment. When using a computer, the use of modern ones, i.e. monitors with a liquid crystal screen, gives good results.

In conclusion, it should be said that if the creation of comfortable working conditions for computer workers is organized as mentioned above, the health of the employees working here will be preserved and occupational diseases will be prevented.

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