

**ANALYSIS OF THE CONDITIONS OF USE OF HIGH TEMPERATURE RESISTANT
SHOES AND REQUIREMENTS FOR THEM**

Shaxobiddin Kodirov,

Assistant Jizzakh Polytechnic Institute

Republic of Uzbekistan, Jizzakh

E-mail: qodirovshaxobiddin223@gmail.com

Nodir Mirzaev,

DSc professor Tashkent Institute of Textile and Light Industry

Republic of Uzbekistan, Tashkent

E-mail: nbmirzaev@mail.ru

The article analyzes the conditions for using footwear against high temperatures and defines the requirements for it.

At present [1], the development of the national economy is of great importance in order to raise the economy of our republic and reduce the influx of imported products and raw materials.

Enterprises where the process of heat release [2] is 23 Vt/m^2 are hot enterprises [3]. Such temperature conditions have a negative effect on the body of workers employed in these enterprises.

In the conditions of the metallurgical industry, hot metal, slag, agglomerates, open parts of heating furnaces, etc. The microclimate associated with the presence of sources of heat radiation, such as Calculations and practical measurements show that a modern high-power marten furnace releases heat into the room in the same amount as melting steel [4,5]. Different elements of microclimate can strengthen or weaken each other's influence. For example, high humidity increases the effect of high temperature on the body, and increased air speed neutralizes its effect at high temperature. In most workplaces, the air temperature reaches $35...40^{\circ}\text{C}$.

According to the literature [6,7], the working conditions are the most difficult for the workers of the following specialties: miners, steel smelters and metal caster. The main workplace of the invaders and assistants is located around the domain furnace. Microclimatic conditions are formed in casting enterprises and mining sites under the influence of heat radiation (liquid slag, slag residues left in the gutters after casting, cast iron and slag mirror in the pits).

During the work shift, the microclimate of the production environment periodically undergoes drastic changes due to the release of cast iron and slag.

At Marten's enterprise, service personnel constantly work with molten metal and slag, where the process is carried out under conditions of intense heat radiation from hot metal, slag and a superheated furnace.

The main work of steel casters and assistants takes place in the loading bays in front of the steel casting units.

As a result of the radiation in the production conditions of metallurgical enterprises, the unpleasant factors of the production environment affecting the clothes and shoes of the workers were determined (Table 1).

Table 1

Factors affecting the clothing and footwear of workers of metallurgical enterprises production conditions

Factors		The specialization of workers	
	The conqueror and his assistants	Steel casters and assistants	Metall casters
The influence of the environment:			
air temperature, °C	To 40	To 40	To 40
Relative humidity, %	10-40	10-40	10-40
Air movement speed, m/s	0,2-3,5	0,2-1,5	0,2-1,5
Heat radiation, kVt/m ²	To 10,5	13,3	4,3
continuity, second	40-50	30	20
periodicity, time/shift	5-8	10	70
Effect of sparks and drops			
continuity, second	10-20	20-30	10-15
periodicity, time/shift	50-60	10	70
Driving on a hot platform:			
Contact temperature, °C	50-300	50-130	100-200
Duration of operation at the maximum contact temperature, time/shift	40-50	-	-
hour/shift	-	1	2

As can be seen from the table, the occupation conditions are the most difficult for the occupier and his assistants.

The conditions of use of shoes in the welding industry are not much different from the conditions of use in the metallurgical industry. They are also related to the electric arc, high temperature of the welding seam, the presence of sparks and drops in the molten metal, the presence of harmful aerosols, gases and slags.

Thus, the analysis of the conditions of use of shoes in hot enterprises showed that heat radiation, high temperatures, contact with heated surfaces, as well as exposure to drops of molten metal and sparks are the main reasons for the breakdown of special shoes.

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