

PRECAUTIONARY INSTRUCTIONS FOR HEAT WAVE

INDUSTRIAL ACTIVITIES

The following instructions concern mainly employees in **production operations, which under certain conditions may be exposed to thermal stress.**



Employees engaged in operations involving high air temperatures, radiant heat sources, high humidity, direct physical contact with hot objects, or strenuous physical activities have a high potential for inducing **heat stress**, particularly during a heat wave, in such operations. Such places include: iron and steel foundries, nonferrous foundries, brick-firing and ceramic plants, glass products facilities, rubber products factories, electrical utilities (particularly boiler rooms), bakeries, confectioneries, commercial kitchens, laundries, food canneries, chemical plants, mining sites, smelters, and steam tunnels. The employee may experience a sense of intolerance, reduction of attention or even health problems resulting in deterioration of productivity and work quality, as well as to an increased accident probability.

[The Heat wave is announced by the National Weather Service.](#) High ambient temperature constitutes a potential hazard causing thermal stress.

Factors determining heat stress are:

- Dry bulb temperature
- Relative humidity
- Air velocity
- Radiation (thermal)
- Work load
- Clothing
- Health status
- Acclimatization of worker: is the normal procedure allowing the adaptation in the hot environment by reducing the basic metabolic rate, increasing sweating and reducing the loss of electrolytes (salts) in sweat. Full acclimatization is achieved in 7-10 days.

HEAT STRESS SYMPTOMS

Muscle contractions

It is caused by the intense loss of salts and fluids due to sweating. Mainly appear when the employee has been drinking too much water without substituting salts. This condition is not considered to be dangerous. It appears suddenly and has the following symptoms:

- Intense pain and contractions of the abdominal and skeletal muscles
- Skin becomes pale and moist.

Heat exhaustion

It occurs mainly in people, who are not accustomed to work in hot and humid environment. Caused by excessive loss of fluids and salts from the body. Symptoms:

- Fatigue, lethargy, weakness and restlessness of the patient
- Headache, fatigue, dizziness, nausea
- Blurry vision
- Face pale, skin cold and clammy, profound sweating
- Breathing fast and irregular
- Pulse fast and weak
- Temperature normal or falling
- Painful muscle contractions of legs and abdomen
- The situation can cause even fainting and worsens if diarrhea and vomiting occur.

Heat stroke. Observed in people, who have been exposed

for a long time, to a very hot and humid environment. It is caused by body temperature rise due to failure of eliminating heat when sweating is blocked. It appears suddenly with the following symptoms:



- Exhaustion and restlessness of the patient
- Headache, dizziness and feeling too hot
- Intense thirst and dry mouth
- Hot skin, red (flushing) and dry
- In severe cases bleeding red spots appear
- Pulse rapid and intense
- Pressure slightly elevated
- Breathing deep fast and noisy
- Muscle contractions, cramping, seizures and vomiting
- Sudden loss of consciousness, which rapidly becomes deep
- Coma, death.

HIGH RISK GROUPS

Resistance to thermal stress is reduced for workers having any of the following health problems:

- Heart disease
- Lung disease
- General disorders
 - Diabetes
 - Chronic renal failure
 - Liver disorders
 - Thyroid Dysfunction

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- Uncontrolled hypertension
- Anemia (congenital hemoglobinopathies)
- Mental illness under treatment
- Diseases of the central nervous system
- Massive skin disorders
- Obesity (30% above normal weight)
- Taking certain medication
- General situations
 - Women in gestation period
 - Non acclimatized employees (new employees, people returning from illness or vacation)

PRECAUTIONARY INFORMATION

Maintain Fluids and Salts Balance

- Drink plenty of fresh water, even if do not feel thirsty.
- If not acclimatized and we sweat a lot, add some salt in our water (tip of the spoon in 1 lt bottle).
- Avoid oily and heavy meals as well as alcohol consumption.
- Eat fruits and vegetables.

Clothing

- Clothes must facilitate body aeration, allowing sweat evaporation and also to be light, comfortable and cotton-made.
- If we work outside or near radiating surfaces, we take care not to leave our body uncovered.
- We use air coolers or air-conditioning, when available.

Working Outdoors

- We don't work half naked under the sun.
- We try to work more under the shade.
- We always use a hat or a safety helmet. It protects us from sunstroke.
- We work more productively during morning hours.

Acclimatization

- Body adaptation to hot conditions is achieved in a few days.

- When we come back from vacations or even from weekend break, we might have to adapt from the beginning.

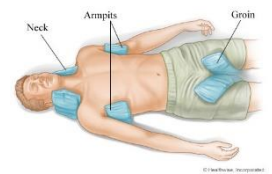
Work near hot surfaces

- Avoid staying in places where heat sources are present (furnaces, boilers etc.).
- Do not remove thermal insulation from hot surfaces.
- Report immediately to the supervisor any equipment malfunction which can increase the thermal load of the workplace (e.g. steam leakage).
- Regularly maintain air conditioning/ ventilation systems reporting any malfunctions.

FIRST AID

If we see someone with symptoms of a heat stroke such as: discomfort, fatigue, dizziness, cramps etc., we must immediately ask for medical assistance. Until it arrives we do the following:

- Lay down the person in the shade and remove any unnecessary clothes.
- Cool the body with cool water or wet clothes.
- If the person faints, we place him in a secure recovery position, i.e. facing down with the head to the side where the arm and leg are folded.



Emergency number: 166

Note: The above instructions are in addition to the organizational measures (breaks and / or work stoppage) that may need to be taken by the Management of the company, in accordance with the relevant circular (OIK. 20716 / 23-6-2015) of the Labor Inspection Body (SEPE) which is still in force according to the new circular No. Prot.217464 / 6-7-2020 of (SEPE).