

Abstract

Self-preparation guide for 2gr students.

Subject: "Safety science"

Topic 1.3 "Safety arrangements of civil population in the case of emergency or armed conflict. Individual skin protective equipment: protective clothing"

1. Personal skin protective equipment.

Personal skin protective equipment is protective clothing, shoes and other garments designed to protect human skin from different poisoning agents (chemical and biological agents, radiological dust etc.)

Personal skin protective clothing divides on:

- Filtering;
- Isolating.

Personal skin protective equipment according to the working principle:

- Military protective outfit;
- Special protective outfit.

Also, personal skin protective equipment divides on:

- clothing for regular wearing;
- clothing for periodical wearing;
- disposable clothing.

1.1 Filtering protective clothing.

Filtering protective clothing is clothing from filtering materials – cotton uniform impregnated with special chemical composition.

Filtering protective clothing (Russian abbreviation – ОКЗК) is applicable for daily wearing. It protects human skin from some poisoning chemical agents, radiological dust, luminous radiation, unfavorable weather conditions.

The main disadvantage of filtering protective clothing is skin irritation (contact dermatitis) and decreased air permeability.

Filtering protective clothing contains from protective jacket, pants, protective underwear impregnated with special chemical composition, protective headgear and spectacles.

Sizes (according to the person's height there are 3 sizes):

1 - under 160 cm;

2 – 160 till 170 cm;

3 – more than 170 cm.

1.2 Isolating protective clothing

Isolating protective clothing is made from airtight material.

1. Military protective outfit (O3K. This is Russian abbreviation. Please keep it in mind)
2. Special protective clothing (Ж-1. This is also Russian abbreviation.)

Military protective outfit (O3K) is made from rubber airtight material. It includes:



-Protective cloak/coat;

- Protective stockings;

- Protective gloves.

There are 5 sizes of cloak according to the person's height:

1 - until 165 cm;

2 - 166-170 cm;

- 3 - 171-175 cm;
- 4 -176-180 cm;
- 5 – 181cm and more.

Forms of using(donning) protective outfit:

- 1 - in the form of “a cape” (in the case of sudden use of chemical or bacteriological weapon, in the case of radioactive fallout after nuclear disaster, in the face of chemical, bacteriological or radiological emergency)
- 2 - “cloak in sleeves” (in the case of crossing contaminated area or in the case of carrying out decontamination arrangements.)
- 3 - form of “an overall” (in the case of carrying out long-term arrangements in contaminated area (rescue and evacuation operations)).

There are 3 sizes of protective stockings (according to the shoes size):

- 1- 37—40;
- 2 - 41—42;
- 3 - 43 and more.

The disadvantage of military protective outfit is overheating in summer and undercooling in winter because of rubber material. So, there is time limit for wearing military protective outfit associated with the season and the temperature.

Time limit for working in military protective outfit according to the weather (air temperature).

Table 1.

Air temperature, ° C	Time limit
30 and more	15-20 minutes
25-29	Under 30 minutes
20-24	Under 45 minutes
15-19	Under 2 hours
15 and low	More than 3 hours

Special protective clothing (JI-1).



Special protective clothing JI-1 is lightweight reusable protective outfit. It protects human skin from chemical poisoning agents, radiological and bacteriological agents, used while working in contaminated zone.

Special light protective outfit (JI-1) consists from:

- Protective hooded jacket;
- Protective pants with stockings;
- Protective gloves (2 pairs);
- Impregnated balaclava;
- Bag for transportation.

There are 3 sizes of JI-1 outfit according to the human height:

- 1 – under 165 cm;
- 2 - from 166 to 172 cm;
- 3 – more than 172 cm.

Also, there is protective outfit for infants - КЗД-6 (Russian abbreviation) – protective camera.

Questions for self – control:

1. Classification of individual (personal) protective clothing.
2. Filtering protective clothing. Working principle.
3. Characteristic of filtering protective clothing.
4. Isolating protective clothing. Working principle.

1.3 Practicepart.

Ways of donning military protective outfit (O3K):

- In the form of “a cape”;
The order of donning:
 1. Put on a respirator;
 2. Undo hood locking pin;
 3. Don a cloak on your shoulders;
 4. Don a hood on your head;
 5. Lap over cloak flaps;
 6. Squat down or lay down to cover the rest clothing and shoes.

- In the form of “a cloak in sleeves”;
The order:
 1. Put on a respirator;
 2. Put stockings on and tie braids;
 3. Put gloves on;
 4. Push arms in the sleeves; put loops on thumbs above gloves;
 5. Put on a hood;
 6. Do up a cloak.

- In the form of an overall.
The order:

1. Put on a respirator;
2. Put on stockings, fasten half-belts, tie stocking braids to the belt;
3. Push your arms in the sleeves;
4. Push the endings of holders into the frames underneath the coat and fix them;
5. Fasten central hole with right and then left parts of cloak, fix with a clasp;
6. Fix holders with fasteners;
7. Fasten lateral braids of a cloak;
8. Twist lateral braids round the leg (under the knee) and fasten them;
9. Fasten cloak flaps;
10. Put on the hood;
11. Put on gloves (loops on thumbs above glasses).

Protective outfit	Short description
Military protective outfit (O3K)	<p>Composition:</p> <ul style="list-style-type: none"> - Protective coat - Protective stockings - Protective gloves <p style="text-align: right;">} from rubber material</p> <p>5 sizes of protective coat associated with human height:</p> <p>1 – under 165 cm;</p> <p>2 – from 166 to 170 cm;</p> <p>3 – from 171 to 175 cm;</p> <p>4 – from 176 to 180 cm;</p> <p>5 - 181 cm and more.</p> <p>Way of donning (using):</p> <ul style="list-style-type: none"> • “Cape-form” – in the case of sudden use of poisoning agents in response to a command “Gases!”; • “Cloak in sleeves” – in the case of crossing

	<p>contaminated area or in the case of carrying out decontamination arrangements (when there is enough time to don the cloak in response to a command “Gases!”);</p> <ul style="list-style-type: none"> • Form of “overall” - in the case of carrying out long-term (e.g. rescue or evacuation) operations in contaminated zone. <p>The disadvantage of military protective outfit is overheating in summer and undercooling in winter because of rubber material. So, there is time limit for wearing military protective outfit associated with the season and the temperature.</p>
Special light protective outfit (JI-1)	<p>JI-1 is a special light protective outfit for working in contaminated area. It protects human skin from poisoning agents, bacteriological agents and radioactive dust.</p> <p>The main distinctions from military protective outfit (O3K):</p> <ul style="list-style-type: none"> -light weight; -easy donning. <p>Composition of JI-1:</p> <ul style="list-style-type: none"> - Protective hooded jacket; - Protective pants with stockings; - Protective gloves (2 pairs); - Impregnated balaclava; - Bag for transportation. <p>There are 3 sizes of JI-1 according to the height.</p>

Honorable students!

After learning this material, you need to pass the test in Google-form. Please fill all gaps properly (name, faculty, number of your group).

https://docs.google.com/forms/d/e/1FAIpQLScyDK5LE_IThyXAx9oYUzXlqBHBwZRlDzuNuCm8sAOIK2FTpg/viewform