

# The equipment of a medic rucksack and capabilities of medical assistance on the contemporary battlefield

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## Summary:

As a result of new experiences gained during conflicts in Iraq and Afghanistan there have been new medical kits introduced in the Polish Army including medic rucksack, individual medical kit for a soldier and an observer, individual medical package. The paper presents the adjustment of a medic rucksack to new realities of contemporary battlefield and the injuries that can occur there. The assessment of the process of determining the priority of the patients according to the type of injuries with reference to the equipment in the rucksack have been made and the author has presented and described in an illustrative manner various elements of the rucksack equipment. Moreover, the author has presented the advantages and disadvantages of the composition of the medic rucksack and the legitimacy of possessing certain items.

**Key words:** medic rucksack, military emergency medicine, military medicine, tactical emergency medicine, medics

The emergency medicine in the Polish Armed Forces initially was present in special units, who participated in peacekeeping operations and stabilising missions of Polish Military Contingents. Nowadays, the emergency medical system is being introduced to all military units of the Polish Armed Forces of the Republic of Poland.

The equipment of the entire system with special devices, medicines and medical materials is changing together with the development of emergency medicine in the Polish Army. Emergency medicine in armies from various countries is frequently referred to as 'tactical' medicine, whereas the branch of medicine dealing with this field is known as 'tactical medicine'. Hence, the term 'tactical emergency medicine' is being met in many procedures more and more often.

The words 'rescue' or 'rescuer' have etymologically meaning quite distant in the history. They are associated with any form of help in various situations,

emergencies especially those threatening the life or health.

Basic actions that should be performed by a paramedic include:

- interview and physical examination including auscultation and obtaining patient's history, etc.:
- the assessment of general condition of the victim in order to determine further procedure,
- placing the victim in the position corresponding to the type of the condition or sustained injuries,
- conducting basic and advanced cardiopulmonary resuscitation in adults and children,
- device-less restoration of patency of the respiratory tract,
- restoration of the patency of the respiratory tract with the use of oropharyngeal and nasopharyngeal airway,
- administration of the oxygen to breathe,
- supporting the breath or conducting ventilation with the use of mask-bag ventilation, breathing valve, self-expanding bag and transport ventilator,

- direct tracheal intubation through the mouth with the use of laryngoscope in sudden cardiac arrest (without the use of muscle relaxants),
- conducting mechanical ventilation with the use of valve and self-expanding bag,
- endotracheal intubation in cardiac arrest with double-bore tube,
- conducting emergency tracheotomy, when there is no possibility to conduct intubation
- performing manual defibrillation controlled by ECG,
- performing automated defibrillation,
- performing ECG,
- monitoring the respiratory function
- monitoring cardiovascular function,
- performing cannulation of peripheral veins of upper and lower limbs,
- intravenous, intramuscular, subcutaneous, intraosseous, endotracheal administration of drugs and administration via inhalation,
- assessment of the patient's consciousness according to Glasgow Coma Scale,
- evaluation of the width of the pupils and their reaction to light,
- pleural puncture in case of arothorax confirmed by physical examination
- bladder catheterisation,
- placing gastric tube,
- venous and capillary blood collection for laboratory tests,
- determination of glucose concentration in venous blood with the use of glucometer,
- wound care,
- immobilisation of fractures, dislocations and sprains,
- immobilisation of the spine and especially of cervical spine,
- assisting in a sudden labour outside the hospital,
- medical segregation in case of mass events and catastrophes,
- undertaking preventive actions in order to reduce health effect of the event,
- preparation of the patient and taking medical care of the patient during transport.

Tactical emergency medicine in the best armies in the world is strictly based on the Tactical Combat Casualty Care guidelines in short referred to as TCCC or TC3.

Tactical Combat Casualty Care is the only standard of proceeding, approved and implemented by the best armed forces of NATO countries.

The evolution of TCCC is a result of experiences gained in the areas of military operations mostly by special units of the United States Special Operations Command. The guidelines have been repeatedly modified to meet the demands of the contemporary battlefield.

TCCC standard includes the principles of handling the victims in the battlefield according to the tactical environment and injuries sustained by the victim.

Procedures and standards in the tactical emergency medicine differ radically from civil emergency medicine. Medics deal with totally different situation in the battlefield than in the peace time. Therefore, a medic in a battlefield must be able to properly act in the situation when threats to human life and health. Moreover, a medic must establish priorities of action in a given situation.

In tactical emergency medicine – otherwise, as in civil emergency medicine – the priority is to conduct fire and dominate the opponent and not to provide first medical aid. Therefore, in battlefield medicine the most important issue is safety of the soldiers, who possess combat capability, and not necessarily the safety of wounded soldiers, who have limited combat capability. Consequently, in tactical medicine conducting fire also by medics is more important than providing first aid. In tactical medicine a domination of tactical situation occurs first and only after that first aid.

The entire training system and the system of rescuing the victims on the battlefield have been changed. The modifications also concerned team and individual equipment used during combat tasks and as a result new first aid kits for the injuries sustained in the battlefield have been proposed. The kits are very complex, additionally equipped in new tools that so far have not been used in emergency medicine.

In the emergency medicine system in 2010 a new equipment was introduced primarily for soldiers leaving for stabilisation missions to Afghanistan. i.e. the following tools have been bought:

- a medic rucksack,
- a rucksack of a medical orderly,
- an individual medical package,
- an individual medical kit.

### **1.1. The equipment, importance and providing first aid by a medic with the use of a medic rucksack.**

A medic rucksack is intended for the transport of medical equipment. Its construction is modular and based on MOLLE system. A rucksack is constructed of:

- a main chamber,
- one front pocket,
- two side pockets,
- one top pocket.

The internal construction of the rucksack enables a segregation and generic distribution of medical

equipment. There is a possibility to remove a front pocket and side pockets [1].

According to the experts in the field of emergency medicine, the rucksack is too square and hinders movement e.g. in a combat vehicle.



**Figure 1:** Medic rucksack, a 2010 model (Model PRM 2010)

**Table 1:** The content of a rucksack

| No.  | Product name                                    | Number |
|--|---|--------|
| <b>Bleeding staunching and protecting shotwounds</b> |   |        |
| 1  | Haemostatic dressing QuikClot Combat Gauze      | 4      |
| 2  | Individual dressing                             | 10     |
| 3  | QuikClot Z Folded Gauze                         | 4      |
| 4  | BCS Valve dressing                              | 4      |
| 5  | Abdominal dressing – in case of extenteration   | 1      |
| 6  | Tactic stazis CAT                               | 2      |
| 7  | Elastic bandage, 15 x 4                         | 10     |
| 8  | Dressing gauze, 0.25 m2                         | 2      |
| 9  | Dressing gauze, 1.0 m2                          | 2      |
| 10   | Gauze compress, 9x9                             | 2      |
| 11   | Adhesive bandage without a dressing, 5 cm x 5 m | 2      |
| 12   | Adhesive bandage with a dressing, 1m x 6 cm     | 1      |
| 13   | Codofix Net 6                                   | 1      |
| 14   | Scarf bandage                                   | 2      |
| <b>Securing the airways and ventilation</b>          |   |        |
| 15   | Nasopharyngeal airway #28                       | 1      |
| 16   | Nasopharyngeal airway #32                       | 1      |
| 17   | Lubricant for the tube                          | 2      |
| 18   | Oropharyngeal airway # 10                       | 1      |
| 19   | Oropharyngeal airway # 9                        | 1      |
| 20   | Oropharyngeal airway # 8                        | 1      |
| 21   | Intubation tube # 7                             | 1      |
| 22   | Intubation tube # 7,5                           | 1      |
| 23   | Intubation tube # 8                             | 1      |
| 24   | 5ml Luer syringe                                | 3      |
| 25   | A guide for adults                              | 3      |
| 26   | Lubricant for the tube                          | 3      |
| 27   | Endotracheal tube LTS-D # 3                     | 1      |
| 28   | Endotracheal tube LTS-D # 4                     | 1      |
| 29   | Endotracheal tube LTS-D # 5                     | 1      |

| No.                                      | Product name                                 | Number |
|--|--|--------|
| 30                                       | 20 ml syringe                                | 3      |
| 31                                       | Lubricant for the tube                       | 3      |
| 32                                       | A handle of fiberoptic laryngoscope          | 1      |
| 33                                       | MacIntosh blade # 4                          | 1      |
| 34                                       | MacIntosh blade # 3                          | 1      |
| 35                                       | Spare bulb                                   | 1      |
| 36                                       | Batteries                                    | 2      |
| 37                                       | Soft wrap for a laryngoscope                 | 1      |
| 38                                       | Manual suction device Suction Easy           | 1      |
| 39                                       | Self-expanding bag                           | 1      |
| 40                                       | Oxygen mask for a bag # 3                    | 1      |
| 41                                       | Bacterial filter HEPA                        | 5      |
| 42                                       | A needle for chest decompression             | 4      |
| 43                                       | Cricothyrotomy set Quicktrach                | 1      |
| <b>Burns protection</b>                  |  |        |
| 44                                       | Hydrogel dressing 20 cm x 20 cm              | 2      |
| 45                                       | Face hydrogel dressing 40 cm x 60 cm         | 1      |
| 46                                       | Hydrogel in a 125 ml bottle                  | 1      |
| <b>Orthopaedic protection</b>            |  |        |
| 47                                       | Regulated Philadelphia collar (reusable)     | 1      |
| 48                                       | Long splint SPLINT                           | 2      |
| <b>Fluidotherapy and vascular access</b> |  |        |
| 49                                       | 5 ml syringe                                 | 5      |
| 50                                       | 10 ml syringe                                | 5      |
| 51                                       | 20 ml syringe                                | 5      |
| 52                                       | 0,8 needle                                   | 10     |
| 53                                       | 1,1 needle                                   | 10     |
| 54                                       | Gauze pads for local disinfection            | 20     |
| 55                                       | Elastic stazis with a metal clasp            | 1      |
| 56                                       | 14 G peripheral vein catheter                | 4      |
| 57                                       | 16 G peripheral vein catheter                | 4      |
| 58                                       | 18 G peripheral vein catheter                | 4      |
| 59                                       | peripheral vein catheter veneer              | 12     |
| 60                                       | Pressurised fluid administration set         | 1      |
| 61                                       | Fluid transfusion device                     | 6      |
| 62                                       | FAST – First Access for Shock and Trauma set | 1      |
| <b>Monitoring vital signs parameters</b> |  |        |
| 63                                       | Blood pressure meter                         | 1      |
| 64                                       | Thigh cuff                                   | 1      |
| 65                                       | Double head stethoscope                      | 1      |
| 66                                       | Fingertip pulse oxymeter Onyx                | 1      |
| <b>Medic protection devices</b>          |  |        |
| 67                                       | Nitrile protective gloves with extender cuff | 10     |
| <b>Remaining equipment</b>               |  |        |
| 68                                       | 10 ml saline solution 0,9% NaCl              | 5      |
| 69                                       | Optic dressing (oval)                        | 5      |
| 70                                       | Waterproof notebook                          | 1      |
| 71                                       | Pen writing in all conditions                | 1      |
| 72                                       | Disposable emergency blanket                 | 1      |

| No.                      | Product name                      | Number |
|--------------------------|-----------------------------------|--------|
| 73                       | Disposable isothermal foil        | 3      |
| 74                       | Petzl headlamp                    | 1      |
| 75                       | Emergency scissors                | 1      |
| 76                       | Surgical sewing kit               | 1      |
| 77                       | Evaluation kit                    | 1      |
| <b>Signalling packet</b> |                                   |        |
| 78                       | Green chemical light stick, 12 h  | 3      |
| 79                       | Yellow chemical light stick, 12 h | 3      |
| 80                       | Red chemical light stick, 12 h    | 3      |
| <b>Container</b>         |                                   |        |
| 81                       | Rucksack/bag for medical kit      | 1      |

### 1.2. The description of the composition of medical rucksack



**Figure 2:** Manual blood pressure meter. Model DS44-11C.



**Figure 3:** Manual blood pressure meter.

**DESCRIPTION:** manual blood pressure meter, pressure gauge integrated with the cuff, drum with rotary valve on a cable. Pressure gauge is attached to the cuff by a Flexi Port clip, which is compatible with all cuff sizes. Cuff is welded, disinfectable with fluids. Pressure gauge is resistant to falls from 75 cm. Calibration warranty for 5 years. It contains adult cuff, thigh cuff and a case for the set.



**Figure 4:** Stethoscope MDF 767 Black Out.



**Figure 5:** Fingertip pulse oximeter. Model NONIN ONYX 9500

**DESCRIPTION:** Fingertip pulse oximeter is to measure pulse and oxygen saturation of arterial blood. It can be used both for single measurements and temporary monitoring of children and adults. Due to very durable construction it may be used in the field. The operation of pulse oximeter has been as simplified as possible. It is equipped with the function of automatic switching in the moment of putting the sensor on the finger and switches off when the sensor is removed. Nonin Onyx does not require additional sensors.

**Characteristic features:**

- two large digital LED displays,
- 3-colour perfusion ratio,
- battery powered.

**Technical parameters:**

- Oxygen Saturation Display Range: 0 – 100%, Oxygen Saturation Accuracy Range: 70 - 100% +/- 2 digits;
- Pulse Rate Display Range: 18 - 321 BPM;
- Measurement Wavelengths: 660 nm (red), 910 nm (infrared),
- Operating Temperature: +32°F to +104°F (0°C to +40°C),
- Storage Temperature: -22°F to +122°F (-30°C to +50°C),
- Operating Humidity: 10 - 90% non-condensing,
- Power supply: 2 AAA alkaline batteries,
- Battery Life: (Continuous Use): approximately 1,600 spot-checks (18 hours of operation and 40 seconds per spot-check).
- Dimensions: 2.3"L x 1.37"W x 1.27"H (5.84cm x 3.48cm x 3.23cm),
- Weight: 2 oz. with batteries (62 g).





**Figure 6:** Model: red: 108013, green: 108016, yellow: 108017, orange: 108011.

**DESCRIPTION:** Chemical light stick is activated by breaking inner capsule with chemical reagent and mixing the liquids inside by vigorous shaking. Light duration : up to 12h.



**Figure 7:** Isothermal foil NRC Model FI.

**DESCRIPTION:** Isothermal foil for thermal protection of the victim or for self-protection. Packed individually.



**Figure 8:** Headlamp model E+Lite.

**DESCRIPTION:** Compact headlight: can be stored with batteries for up to 10 years (CR2032 lithium batteries do not leak). It functions in extreme temperatures and conditions: -22°F to +140°F (30 °C to +60 °C). Waterproof down to -1 m. Weight: 27g with batteries. Protective case included.

**High-performance lighting:** 3 white LED with a range up to 19m. Provides up to 4 consecutive nights of lighting (45 hours). One red LED (discrete lighting). Strobe signalling mode (white and red LED).

**Simple and practical:** switch – a lever easy to operate. Can be worn on the

head due to elastic band, attached to thin-edged objects with integrated clip. Light source rotates 360° on ball and joint. Designed to prevent accidental operation with locking switch.

**Certification:** CE Ex II 3GD Eex ic IIC T6, Ex tD A22, IP6X T85°C X



**Figure 9:** Emergency scissors, model 720532

**DESCRIPTION:** Emergency scissors intended for cutting clothes and dressings with one serrated edge. Titanium blade, ball-ended. They do not require sharpening. Grey, lustreless blade.



**Figure 10:** Surgical sewing kit RML100-017

**DESCRIPTION:** Disposable surgical sewing kit for field use includes:

- surgical forceps, 14 cm, 1 item,
- curved Pean clamps, 14 cm, 1 item,
- straight Cooper scissors, 14 cm, blunt-sharp, 1 item,
- non-absorbable suture (atraumatic suture) 2/0, 3/0, 1 pack each,
- 10 ml Luer syringe, 1 item,
- 0.8, 1.1 Luer Lock needles, 1 item each,
- sterile surgical latex gloves #7.5 and # 8, 1 item each,
- non-sterile gauze compress 7.5 x 7.5, 5 items.



**Figure 11:** Blizzard rescue blanket BPS-01S

**DESCRIPTION:** Rescue blanket is made of three-layered foil. It has additional air chambers which insulate a patient from the atmosphere. Vacuum packed. Size unpacked: 1.9 m x 2.4 m. Size packed: 22 cm x 11 cm x 4 cm. Weight: 120g.



**Figure 12:** Waterproof notebook (model: 491040) and pen (model: 491045)

**DESCRIPTION:** Pen and notebook to write in all weather conditions.



**Figure 13:** Optic dressing Eycopad

**DESCRIPTION:** Intended for eye trauma protection. Size: 56 mm x 70 mm.



**Figure 16:** Fiber-optic laryngoscope – a set.



**Figure 14:** Evacuation kit

**DESCRIPTION:** A set for evacuation the victims from a battlefield. It allows for hooking adjustable straps to the victims by clip hooks. To be used by one or two people. It includes:

- pack sized: max. 250x150x70 mm;
- tape with clip hooks;
- the packaging should be made of Condura type material; weight: 700 – 1000g;
- the packaging should be fitted with an assembly system – a system of tapes compatible with MOLLE 40/25 system (tape width 25 mm; seams every 35 - 40 mm),
- packaging closed by two unbraked zips;
- ended with two clip hooks, protected against opening
- low carbon steel clip hooks, covered with zinc-plated layer, deformation resistance min 12 kN.



**Figure 15:** Mechanical filter 100-585-000.

**DESCRIPTION:** Disposable mechanical filter without heat or moisture exchanger. Intended for connecting in the ventilation devices e.g. in self-expanding bags, ventilator. Suggested place of installation – between the mask and the rest of ventilation system. EtCO<sub>2</sub> sensor can be connected.



**Figure 17:** Intubation tube

**DESCRIPTION:** intubation tube to secure upper respiratory tract ended with a cuff with Murphy eye. The set includes a guide for adults, 5 ml syringe and 5 g lubricant to facilitate application.

- Tube #: 100/199/070
- Tube # 7.5: 100/199/075
- Tube #: 100/199/080
- Guide: MGW 06-01 05,0mm
- Lubricant: XT00229
- Syringe: Strzyk 5



**Figure 18:** LTS-D Laryngeal tube for intubation without eye contact

**DESCRIPTION:** Laryngeal tube to secure upper respiratory tract. Intended for blind intubation and insertion to the oesophagus. It has two sealing cuffs (oesophagus and throat), filled with a single cable. Two channels – one for ventilation, another for gastric access. The set includes: tape, lubricant and syringe.

- Tube # 3: 32-06-103
- Tube # 4: 32-06-104
- Tube # 5: 32-06-105
- Lubricant: XT00229
- Syringe: Strzyk 20



**Figure 19:** Disposable manual suction device Suction Easy

**DESCRIPTION:** Intended for cleaning the contents from the upper respiratory tract. Suction Easy is a single use, unsterilisable device. Before using, pull the suction tube until it stops.



**Figure 20:** Cricothyrotomy set Quicktrach, 30-04-904-1.

**DESCRIPTION:** A set for emergency cricothyrotomy. 4mm drain. The set includes a syringe to test proper location, a bracket for a drain, corrugated clip to connect breathing assistive devices such as: self-expanding bag, ventilator, etc.



**Figure 21:** A needle for chest decompression, 382268.

**DESCRIPTION:** A needle for chest decompression in case of pulmonary oedema. Gauge 14. Length: 83 mm.



**Figure 22:** Intubation guide

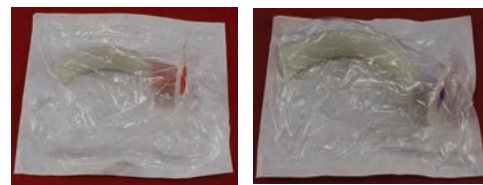
**DESCRIPTION:** Intubation guide. Metal wire with limited flexibility used for profiling the tube before intubation.

- **Adult version:** MGW 06-01 05,0mm .
- **Children version:** MGW 06-01 02,2mm.



**Figure 23:** Nasopharyngeal airway. Size: Fr28 and Fr32

**DESCRIPTION:** Nasopharyngeal airway to secure the patency of upper respiratory track. A set includes a 5g lubricant facilitating the application of a tube.



**Figure 24:** Oropharyngeal airway.

**DESCRIPTION:** Guedel oropharyngeal airway. Colour-coded sizes. Rounded edges. Intended for preliminary restoration of breathing. Available versions:

- 50mm tube: SG-005;
- 60mm tube: SG-006;
- 70mm tube: SG-007;
- 80mm tube: SG-008;
- 90mm tube: SG-009;
- 100mm tube: SG-010.



**Figure 25:** Self-expanding bag. Adult version: SR-001

**DESCRIPTION:** Reusable self-expanding bag for active and passive ventilation with 100% oxygen or air. The construction of a bag allows its application without the use of extra tools. Components of a bag:

- facial mask
- pressure safety valve 50 cm H2O
- bag
- oxygen reservoir connector
- oxygen reservoir
- 210 cm oxygen tubing with star section.

There is a possibility to sterilize all elements of the bag except oxygen reservoir.



**Figure 26:** Philadelphia collar. Version: 264 208 020

**DESCRIPTION:** Philadelphia collar for adults with a regulated height of jaw support.





**Figure 27:** A splint for limbs immobilization (Sam Splint type)

**DESCRIPTION:** A plastic splint intended for limbs immobilisation. Stiff aluminium foil coated with polyurethane foam. Stiffness is obtained after bending and forming adjusted to a broken limb.  
Version: Medium (7,6 cm x 7,8 cm): 1211320, Long (10 cm x 91 cm): 1211328.



**Figure 32:** Veneer for venous catheters. Venoplast

**DESCRIPTION:** Sticking plaster to attach intravenous punctures.



**Figure 28:** Antiseptic gauze pads Leko/Pomona

**DESCRIPTION:** Cotton gauze pads saturated with alcohol for local skin disinfection.



**Figure 29:**

- A - Intravenous cannula (Version Venfl 1.0)
- B - Intravenous cannula (Version Venfl 0.8)
- C - Intravenous cannula (Version Venfl 1.2)

**DESCRIPTION:** Intravenous cannula with butterfly mounting. Disposable, all sizes available. Only selected models are given above.



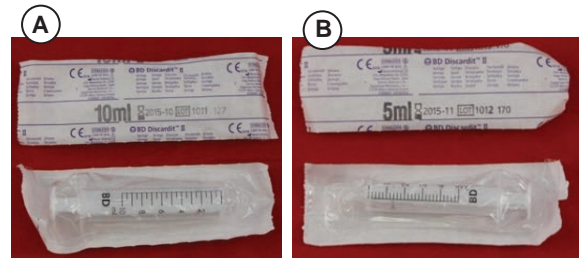
**Figure 30:** Stazis with metal clasp. Version: 902.

**DESCRIPTION:** Elastic stazis with metal clasp to establish intravenous punctures.



**Figure 31:** Puncture needle; 0,6, 0,8, 0,9, 1,1

**DESCRIPTION:** Medical needles for punctures. Luer connector. Sample sizes are given above.



**Figure 33:** A - 10 ml syringe, B - 5 ml syringe.

**DESCRIPTION:** Medical syringes with Luer connector. Sample sizes are given above. Available versions:

- 2ml syringe: strzyk 2
- 5ml syringe: strzyk 5
- 10ml syringe: strzyk 10
- 20ml syringe: strzyk 20



**Figure 34:** Scarf bandage. Version: MA-124-MMMM-101

**DESCRIPTION:** Cotton scarf bandage intended for tying it in form of a sling, stabilisation of the limbs after injuries. Absorbent base on the dressings.



**Figure 35:** Sterile hyg-envelope gauze. 1 m2. Version: MA-107-MMMM-001

**DESCRIPTION:** One m217-threads envelope gauze. Intended for a dressing element placed directly on the wound.





**Figure 36:** Elastic band 4x15. MA-123-BA40-004.  
**DESCRIPTION:** Elastic band intended for dressing support, stabilising a limb or joints. Size: 4 m x 15 cm.



**Figure 40:** Dressing net Codofix COD 1 – finger.  
**DESCRIPTION:** Elastic net intended for dressing support. It eliminates the need of bandaging. Easy to put on and change. Packed per 1 m.  
 Available versions:

- COD 1 – finger;
- COD 2 – slim hand, finger;
- COD 3 - hand, foot;
- COD 4 - shin, knee, elbow, foot;
- COD 6 - head, arm, shin, knee;
- COD 8 - thigh, head, hips;
- COD 10 - hips, abdomen;
- COD 14 - chest, abdomen.



**Figure 37:** Abdominal dressing FCP09.  
**DESCRIPTION:** A bandage to dress abdominal wounds including extention. Wide base with anti-adhesive coating (it does not stick to the tissue), ended with elasticated bandage.



**Figure 41:** Envelope gauze 1/4 m<sup>2</sup> MA-107- MMMM-003  
**DESCRIPTION:** 1/4 m<sup>2</sup> 17-threads envelope gauze. Intended for a dressing part placed directly on the wound.



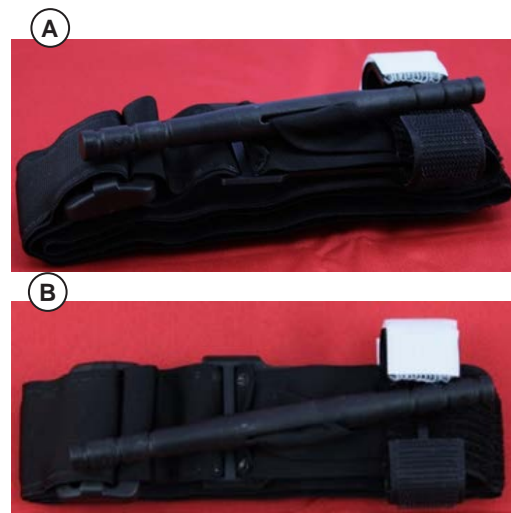
**Figure 42:** Gauze compresses 9x9. MA-102-F003-003  
**DESCRIPTION:** 17-threads gauze compresses. Intended for use as a dressing element directly on the wounds. Packed per 3 items.



**Figure 38:** Individual dressing MA-151-WWWW-003.  
**DESCRIPTION:** The new type of military dressing. Green elasticated bandage with two absorbent bases in one slidable bandage. A pack with rubber base, waterproof.

**Figure 39:** Sticking plaster without a dressing. Polovis 5 x 2.5 cm

**DESCRIPTION:** Sticking material plaster intended for dressing support. Placed on a plastic roll. Easy to unroll, cut, tear. Length: 5 m, width: 2.5 cm.



**Figure 43:** A - Clamp (Tactical stazis). Version: CAT;  
 B - Clamp (Tactical stazis).  
**DESCRIPTION:** Intended for stopping life-threatening bleedings from upper and lower limbs in case of overall or partial trauma amputations and severe arterial bleedings. Tightening system consists of a tape, Velcro fastening and clamping tape with metal crossbar.



**Figure 44:** Haemostatic dressing. CG QuikClot Combat Gauze.

**DESCRIPTION:** Intended for supporting medium and severe bleedings staunching. In form of a bandage. Length: 3.7 m. Width: 7.5 cm. Saturated with haemostatic agent based on mineral substances (zeolite). Should be put directly in the area of bleeding. Strong pressure for 90 seconds in the area of bleeding is required. It may be left on the wound until surgical intervention.



**Figure 45:** Valve dressing BCS.

**DESCRIPTION:** Valve dressing for penetrating chest wounds. Intended for sealing the inlet and outlet wounds in the lungs in order to prevent oedema. Dressing has very strong adhesive sealant even though the presence of water and blood. Triple flat valve provides air exhaust and prevents its blocking with a part of clothing or gear.



**Figure 46:** Hydrogel dressing 20 cm x 20 cm 900906.

**DESCRIPTION:** Hydrogel dressing in a half-solid form of gel spotted on the base dressing material (gauze). Intended for immediate imposition on the burned area. It is recommended to rinse chemical burns in advance with a water. In case when water is not available, hydrogel should be applied directly. Constant humidity of a dressing should be kept. Drying dressing should be moistened with a hydrogel from 125 ml bottle. A dressing is intended for medium burns, feet and hands. There is a possibility of putting hand or feet inside the package without taking the hydrogel out. Five-year expiry date after manufacturing.



**Figure 47:** Hydrogel dressing in 125 ml bottle. 550008.

**DESCRIPTION:** Hydrogel dressing in form of half-solid gel placed in 125 ml bottle with atomizer. Intended for immediate imposition on every burned area. It is recommended to rinse chemical burns in advance with a water. In case when water is not available, hydrogel should be applied directly. It is intended mostly for smaller burns and for moisturising hydrogel dressings with a gauze as a carrier material. Five-year expiry date after manufacturing.



**Figure 48:** Face hydrogel dressing. Size 40 cm x 60 cm. 901136.

**DESCRIPTION:** Hydrogel dressing in a half-solid form of gel spotted on the base dressing material (gauze). Intended for immediate imposition on burned area. It is recommended to rinse chemical burns in advance with a water. In case when water is not available, hydrogel should be applied directly. Constant humidity of a dressing should be kept. Drying dressing should be moistened with a hydrogel from 125 ml bottle. The dressing has a cut for eyes, nose, mouth and can be also used on other body parts; due to the size especially on big bodyparts as back, chest, thighs. Five-year expiry date after manufacturing.



**Figure 49:** Sticking bandage with a dressing

**DESCRIPTION:** Sticking bandage with a dressing.



**Figure 50:** Nitrile protective Glover. Version Supreno SU-INT (S, M, L or XL)

**DESCRIPTION:** Protective gloves made of durable nitrile. They are characterized by increased resistance to abrasion, tear, puncturing in comparison to average latex gloves (in normal conditions of use). Thickened on the fingertips, they facilitate gripping. Available in sizes: S, M, L, XL). Colour: blue.

## 2. Segregation of casualties in relation to their general condition

According to their general conditions, the casualties are assigned to one of four groups, each with corresponding colour code:

- 1) **red** — group 1 — the casualty requires immediate medical attention; life-threatening injuries,
- 2) **yellow** — group 2 — the casualty requires rapid treatment; non-life-threatening injuries,
- 3) **green** — group 3 — definite treatment may be delayed; casualties with minor injuries,
- 4) **blue** — (or black) group 4 — casualties with so severe injuries that their treatment reduces the chances of survival of casualties with less severe injuries,
- 5) **black** — (or white) — deceased.

Existing cards for segregation have distinguished:

- **red** — immediate medical attention,
- **yellow** — treatment delayed; after emergency care, soldier does not require immediate transport,
- **green** — treatment when practical, a soldier does not require evacuation,
- **black** — deceased,

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- **blue** — a soldier who requires decontamination (BST).

In Israeli army, white has been reserved for paediatric casualties. In case of a casualty from the red group, a medic is able to provide medical assistance to only one wounded soldier and two if the second one is circulatory and respiratory competent. In case of the yellow group, there is a possibility to provide assistance to several soldiers at once (3-6 soldiers) under the assumption that the injuries are varied. As for the green group, the supply of dressings is sufficient for 5 to 10 injured soldiers. There are limited possibilities of decontamination of one soldier in case of the blue group.

After assessing the content of a medic rucksack in terms of injuries, the following conclusions have been made: in case of extensive wound dressing it contains materials sufficient to dress 1 to 3 wounds; in case of minor wounds there are enough bandages to dress 10 to 25 various wounds. In case of a burn wound, there are enough bandages to dress up to 20% of the body surface. Two or three bone fractures or injuries of 2-3 joints can be secured in case of fractures or dislocations.