



NCSEA
National Council of Structural Engineers Associations



Structural Engineering Emergency Response Trauma Kit

The Structural Engineering Emergency Response Trauma Kit (SEER Trauma Kit) is vital for engineers in emergencies. This guide highlights essential medical supplies to handle both critical and non-critical injuries, ensuring safety during disaster response.

STRUCTURAL ENGINEERING EMERGENCY RESPONSE TRAUMA KIT OVERVIEW

The SEER first aid kit is divided into two sections: a minor injuries kit and a trauma kit. This distinction is based on two different scenarios the first aid kit is intended to address.

The first scenario involves non-life-threatening injuries that, while not fatal, could impact the individual's quality of life and work efficiency or necessitate an early end to their deployment (e.g., severe blisters, severe sunburn).

The second scenario involves immediately life-threatening injuries that could result in death before professional emergency medical services can arrive (e.g., cardiac arrest, respiratory arrest, arterial bleeding). Both the minor injuries kit and the trauma kit are designed to meet these specific criteria. For example, splinting supplies are not included, as musculoskeletal sprains, strains, and fractures are not immediately life-threatening, and such injuries would result in the individual being unable to continue their work regardless of whether they are splinted.

GENERAL CONSIDERATIONS

- **Emergency Medical Services (EMS):** During a SEER deployment, EMS may be delayed. This kit is designed with that in mind, focusing on critical interventions.
- **Training:** The kit's contents align with standard first aid training courses in the U.S., such as those offered by the American Heart Association and Red Cross. Users should be trained in both CPR and first aid to use this kit effectively.

PACKAGING

- Vacuum seal bags, similar to those used in kitchens, are recommended. These bags make it easy to see the contents, are waterproof, and are made of durable plastic. They also provide a clear indication when restocking is needed, as a torn package signals that an item has been used. Additionally, they are lightweight. To facilitate opening, a small slit should be cut on the edge of the bag to provide a starting point for tearing.



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1. Tourniquet & Sharpie

It may take only 3 minutes for someone to bleed out from their femoral artery, and exsanguination (bleeding out) is one of the leading preventable causes of death. It is crucial to ensure that the tourniquet's make and model are approved by the Committee on Tactical Combat Casualty Care (CoTCCC), as there are many imitators and look-alikes on the market, particularly on platforms like Amazon. There are several reasons some tourniquets are inferior, such as their inability to be applied by the user themselves. A Combat Application Tourniquet (CAT) is recommended, as it is commonly used in first aid training. The tourniquet should be unwrapped and prepared for quick application. Any included instructions should be discarded to facilitate rapid deployment.

The Sharpie is used for marking the time that a tourniquet was administered (either on the tourniquet itself or on the patient's forehead).



2. Mylar Survival Blanket

Hypothermia kills trauma patients. Your clotting processes start to break down at 95°F. If the ambient temperature is less than 95°F, you need to take measures to keep your patient warm. A mylar survival blanket can effectively limit the effects of both convective heat loss and radiative heat loss; however, it is best used in combination with blankets or additional clothes. Additionally, the patient should be kept off the ground, if possible, or they will lose a significant amount of conductive heat to the ground.

3. Safety Glasses

The risk for contracting a bloodborne pathogen through the eyes is greater than through the hands.

4. Pocket Face Mask

Modern guidelines are moving toward compressions-only CPR, at least when teaching laypersons or bystanders. However, it is understood that the American Heart Association and the Red Cross both still teach administering respirations during CPR, and both organizations continue to teach the use of a pocket face mask when providing rescue breaths. Additionally, there are still emergencies where rescue breaths are necessary, particularly in "correctable" situations such as lightning strikes, drowning, asthma, or opioid overdose. It is preferable to administer rescue breaths and keep the patient's heart beating on its own rather than waiting for cardiac arrest to begin compressions-only CPR.



5. Z-Fold/S-Rolled Gauze

Used to pack a junctional hemorrhage (locations where a tourniquet cannot be used such as the base of neck, armpit, or groin). Can also be used as a pressure bandage or in lieu of a 4x4 dressing. North American Rescue (NAR) S-rolled gauze feeds out of the package like Kleenex, which is kind of convenient.



6. Trauma Shears

Used to cut off clothing while limiting movement to an orthopedic injury.



7. Nitrile Gloves

Gloves do more to protect the patient from you, rather than protecting you from the patient. It's very unlikely that you'll pick up something contagious from getting another person's fluids on your hands, even if you have an exposed cut. Mucous membranes, like around your eyes, nostrils, and mouth, are far more likely to be the point of entry for something bad, so safety glasses will do more to protect you than gloves. Nevertheless, it's best to wear gloves if available. Tan or light blue is the best color for the gloves as you will be able to see blood on the gloves when doing your physical assessment. Nitrile material is better than latex or vinyl. Some people are allergic to latex (which might be your patient, not you), and both latex and vinyl have durability and quality issues compared to nitrile. Although gloves between 3mm and 8mm thickness are common, 5mm is the sweet spot between comfort and durability. Tip: You can also fill gloves with water, then freeze them for a DIY ice pack.



8. Pressure Bandage/Emergency Trauma Dressing

Used to control bleeding that is not immediately life threatening but still needs to be controlled. Also great for securing wound packing at a junctional injury. Also great for head wounds as they tend to bleed a lot and can be secured around the head. Also commonly known as an Israeli dressing.

