# SAFETY BULLETIN

AMERICAN SOCIETY OF CONCRETE CONTRACTORS
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## EMERGENCY RESCUE BASKETS

Emergency rescue baskets are a common piece of safety equipment that utilizes cranes to move materials, tools, and equipment. They are often referred to as rescue litter, stokes and/or man basket, or rescue platform. When on a tall building that utilizes a man hoist, stairs, and/or ladders, access and egress can present challenges to moving an injured worker. Using a basket is especially prudent if the person is unconscious, or, the injury so debilitating that the worker is not able to assist with transport. The crane and rescue basket can significantly reduce the time it takes to get someone on the ground and to medical attention.

**Types and Construction:**

It is important to differentiate the two types of rescue baskets. They are 1) a single person litter style, and 2) a basket that utilizes a platform with four sides and guardrails. While both have their advantages, selection should be based on the needs of the site, capabilities, storage space, operating procedures, and training requirements. Other factors to keep in mind are the weight capacity of the basket and the crane's reach and hoisting capacities.

**Single Man Rescue Basket**

Commonly referred to as a rescue litter or stokes basket, this device is typically constructed from stainless-steel, aluminum or titanium, with a wire mesh or high-density polyethylene molded shell to provide a comfortable surface when strapped in. These baskets utilize strong, nylon web belts or lashing that are connected to the frame of the basket and provide the means to secure the worker during hoisting. Most rescue baskets provide room to accommodate a back board in the event the injured worker needs to be immobilized. There are typically four attachment points for the four-way lifting slings or "bridle" to connect the basket to the hook on the crane. Most four-way bridles offer independently adjustable legs to allow the basket to be set at the best angle for comfort of the injured individual, and to allow the basket to maneuver around obstructions. Typical bridles are nylon, four-way, synthetic slings that come with most rescue baskets.

It is important that workers receive training to set up and use the basket and to inspect the slings. Synthetic straps degrade in sunlight, making the use of a bridle made from wire rope or Grades 80 or 100 chain a good option to reduce potential failure. Regardless of construction, the four-legged rescue

bridle is not to be used for lifting procedures outside of rescue basket operations. The advantages of these types of rescue baskets are that they are easily stored, can be “pre- rigged” with two legs of the bridle attached to minimize deployment, and are light enough to be handled by one person.

**Multi-Person Rescue Basket**

Multi-person rescue baskets are not as popular due to size. They are, however, becoming more prevalent on large construction projects. These baskets have traditionally been used for maintenance and inspection of the crane and are much larger than the single man basket. They are typically constructed of heavy-gauge steel, include a platform and guardrails, and often employ the use of a drop-down ramp to facilitate the use of a gurney. They must be designed by a certified engineer and have a safety factor of supporting five times the intended load. Construction includes anchor points for persons tending to the injured worker and tie down points to secure the gurney. Some have a roof.

Most include fork pockets to allow transport of the basket should it need to be relocated. Due to size, test weights are built into the frame, allowing users to perform the required proof testing when brought onsite, as well as a trial test prior to using the equipment. When considering this style of basket, be sure to familiarize yourself with the requirements under OSHA CFR 1926.1431 Hoisting Personnel.

Bridles for larger baskets are typically constructed from cable and grades 80 or 100 chain, and may only be used for rescue procedures. Due to their size, they tend to be exposed to the elements and take more planning for logistics and storage. It is important to note the four-legged bridle is only to be used with the rescue baskets and is not for other lifting.

**OSHA Requirements**

OSHA has very stringent requirements when it comes to lifting personnel with a crane. For these purposes, properly rated "personnel platforms or baskets" must be used. These platforms that suspend from the load line are covered by OSHA 29 CFR 1926.1501(g). Basket materials and construction also have specific requirements. When researching this equipment, it's important to verify that the manufacturer has met these qualifications, including that the basket was designed by a registered engineer, meets the specified safety factor, and can safely support the intended load.

Regarding use of the crane, there are standards for lifting personnel, but not for rescue. Basically, a crane lifting personnel for work (not rescue) must reduce the lifting capacity by 50% (refer to the load chart for length of boom and radius), have an anti-two block device, include a locking hook (not the typical spring latch), and follow all other rules for lifting.

Lifting an injured worker in a litter basket is considered an emergency. The employer should have a plan for rigging the litter basket, signaling the crane operator, and using a tag line. The rigging should have locking hooks (not the typical spring latch), have a Working Load Limit tag (required for standard rigging) and be solely dedicated to use with the rescue basket. Lastly, rigging must be dedicated to and used for rescue purposes only.

**Training**

OSHA has little in their regulations specific to training requirements for rescue baskets. You should, however, reference OSHA's Hoisting and Rigging requirements 1296.753, Rigging Equipment for Material Handling 1926.251 and Subpart CC, Cranes and Derricks in Construction, for specific training

requirements. The National Fire Protection Agency (NFPA) asserts that rescuers will be trained, qualified and certified. A good source for training is your local fire department's heavy rescue division, or, seek out a reputable basket manufacturer along with your safety equipment vendor. It is also important to ensure that whoever will be rigging the basket to the crane and directing its movement is a qualified rigger, and that individuals trained in First Aid and CPR are available throughout the workday.

**Program Best Practices**

When incorporating a basket for site rescue it's important to have a detailed plan for your specific equipment. Outline the training requirements, including rigging the litter, crane signaling, use of tag line, emergency response, and CPR/First Aid. Documentation of training is critical, ensuring there are workers on the site who are sufficiently trained.

Reach out to your local OSHA director for guidance. This ensures you have included their recommendations, along with requirements that may be specific to your state if applicable. Seek out a partnership and feedback from the local fire department to perform a mock rescue. This can provide invaluable training, along with feedback on your emergency response and rescue. Perform mock drills regularly, as conditions and logistics on the jobsite can change day to day and communicate to crews on a regular basis the location of the emergency rescue basket and rescue procedures.



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