

TOTAL FIRE GROUP METRO NEWS

Product News for Metropolitan Fire Departments

Heat Stress and Fireground Rehab...

As awareness grows of the threat that heat stress poses to firefighter safety, more departments are investing resources and time in fireground rehabilitation.

In 2006, the Defence Research and Development Canada (DRDC), an agency of the Canadian Department of National Defence responding to the technological and scientific needs of the Canadian Forces released a study that backs up the claim that the quickest way to reduce a firefighter's core body temperature is to submerge his hands and arms in ambient temperature water. The study compared all types of cooling systems and determined that, while they were all effective to varying degrees, one clearly stood out from the rest.

"In this study both the use of the mister and the hand and forearm submersion were effective in

Total Fire Group Metro News includes just a few of the exciting new products available from Total Fire Group. Future issues will introduce more of these metro preferred products. Call 800-688-6148 to schedule an appointment to see all these exciting new offerings.



extending both work and total exposure time in the heat. However, the use of hand and forearm submersion was clearly the better cooling option under the conditions that were studied."

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The study also proved that using hand and forearm immersion extended work time and total exposure time of rehabilitated firefighters by 60% compared to passive systems and by 30% over misting systems. More importantly, by using hand and forearm immersion,

"...there was a significant reduction in the thermal strain associated with the given workload at a specific period of time. The implication of this finding is that even if the cooling is not used to extend total work time, cooling will significantly reduce the heat strain associated with any given task. Ultimately, this would help reduce the occurrence of heat-related injury and possibly myocardial infarction (heart attack) in active firefighters."

Why is hand and forearm immersion more effective than other cooling techniques?

The Kore Kooler Rehab Chair was developed to offer convenient hand and forearm immersion. It relies on direct contact of the skin with a large volume of water through immersion. The rehabilitating firefighter places his arms in each of the two reservoirs in the chair. As blood circulates through the veins in the firefighter's arms, the cool water in the reservoirs picks up the heat from the blood

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and transfers it to the water. As the cooled blood circulates to the firefighter's heart, it cools his core temperature and reduces his risk of succumbing to heat stress-related maladies.

Three Reasons the Kore Kooler is an Essential Safety Tool

The core-cooling process is particularly effective for several reasons:

- The veins in the arms are very close to the skin's surface and, therefore, can effectively transfer heat from the body to the cooler water.
- 70% of the heat load borne by the firefighter's body comes from within rather than from external sources. This means it is critical to cool the body from the *inside out* rather than from the outside as misting and passive systems do.
- Passive cooling systems and misting systems can give the firefighter the impression that he is ready to go back into the fire



because he *feels cool*, when in reality his core temperature is still dangerously high.

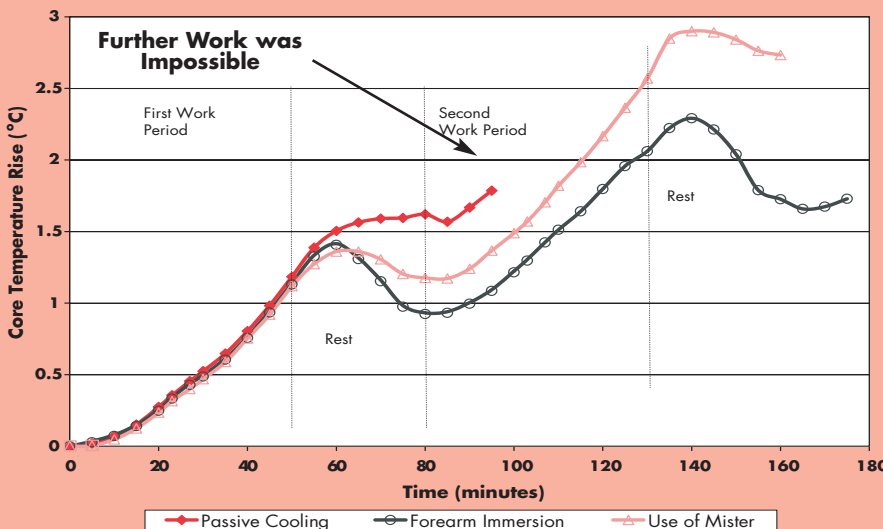
- According to the DRDC study, 70% of the heat transference takes place within the first 10 minutes of rehabilitation with the Kore Kooler Rehab Chair due to the elevated heat transfer gradient at the beginning of the submersion. This rapid decrease in core temperature is critical when dealing with a firefighter

whose core temperature is dangerously high and climbing. Passive and misting systems take substantially longer to have a significant cooling effect and may leave a firefighter exposed to dangerously high core temperatures for an unacceptably long time.

Kore Kooler Rehab Chair Details

- Very inexpensive and portable!
- The chair is rated to hold up to 300 pounds and its frame is wide enough to accommodate a firefighter wearing his bunker pants.
- The sling construction of the chair mimics a hammock and supports the firefighter in the perfect reclining position to maximize the skin surface of his hands and arms submerged.
- An optional sun shade is available and is highly recommended. The shade clamps on to the chair and can be positioned to shade the rehabbing firefighter while staying out of the way of other chairs and personnel in the area. The shade can be silk screened with your fire department's logo or apparatus marking.
- The chairs come standard in blue (in stock), but special orders in black and lime are possible. Please allow four weeks for delivery. 🔥

The Superiority of Limb and Forearm Immersion



Speed Up Downed Firefighter Rescues with the 5-Person Drag System!

When a firefighter goes down in the heat of a fire, every second spent rescuing him is precious. When seconds could mean the difference between life and death, the last thing you need is to waste time struggling over debris as you drag a fallen firefighter to safety.

Now, thanks to the invention of the 5-Person Drag System (5PDS) that worry can be a thing of the past!

Total Fire Group, in concert with experienced metro firefighters, developed the configurable 5PDS (the system can be configured for 4-, 3-, 2- and even 1-person deployment) to address the need to expedite the rescue of downed firefighters as part of our continuous commitment to creating bunker gear that provides members of the fire service with the highest level of safety possible.

The 5PDS is the only such system available on the market.

So, how does it work?

The 5PDS is basically invisible when it is stored and adds only minimal weight. The system is integrated into either the standard Morning Pride DRD system (Morning Pride uses a

patented articulating DRD made of moisture barrier-friendly Kevlar® rope) or the *highly recommended* Positive Closure DRD (essentially the same as the standard DRD, but including a front D-ring and reverse hook that circles the chest when the coat is closed) and includes hand holds in the knees and shoulders (for the 5-person system).

Hand holds in the knee are stored behind replaceable knees and can be deployed by pulling the Scotchlite™ locator tab. When deployed, rescuers can grab DRD-style handles at both knees. Either one rescuer positioned between the downed firefighter's legs or two rescuers on each knee can lift the lower portion of the body.



Hand holds in the shoulders are stored behind protective flaps that are easily accessible, while preventing the system from being inadvertently deployed during normal fire fighting operation. The Kevlar® ropes at the shoulders loop twice around the arms and, integrated into the Positive Closure DRD, prevent the coat from being pulled off the downed firefighter. The 5PDS coat application makes it possible for either one rescuer to carry the downed firefighter from the DRD behind the neck; or for two to carry him from the hand holds at each shoulder; or for three to carry him from both the shoulder hand holds and the DRD.



Once rescued, a downed firefighter's 5PDS can easily be restaged simply by reaching under the outer shell of the garment and pulling the Kevlar® ropes back through the port openings. Once restaged, the 5PDS is ready to go! Call today (800.688.6148) to start a no- or low-cost field test. 🔥

Special Operations Recovery Drag (SORD)... Simple, Fast, Effective!

The Special Operations Recovery Drag (SORD) is a compact, lightweight, lifesaving device designed to give firefighters a simple, quick and effective way to move downed victims in dangerous, life-threatening environments. Thanks to the SORD's innovative, compact design and pliability, this rescue tool can be used anywhere, regardless of how confined the space. How is that possible? Because the SORD doesn't rely on rigid frameworks or inflexible materials.

Anyone who has tried to operate a traditional rescue system with belts and buckles knows how hard it is to use, especially in the critical first moments of a rescue while wearing bunker gloves in near-zero visibility. The SORD over-

comes those obstacles because it doesn't use belts or buckles! Instead, the SORD uses integrated handles to "cocoon" a victim in its fold. When needed, the firefighter need only reach back to the SORD bag conveniently stored in a bandolier out of the way next to his air pack, open the top flap, remove the SORD from its container, open it approximately 18" next to the victim, roll the victim onto the device, pull straight up on the corner handles, and take off. It is that simple! And, because the victim is wrapped in the device, rescuers won't have to worry about snagging the victim's air pack and other gear on debris on the fire-ground.

Design and Specifications

The SORD has eight strategically placed handles on its 60 x 60 inch body. The device comes in either cotton with nylon border and handles (rated to hold up to 1000 pounds) or two-ply Kevlar®, rated to withstand temperatures up to 900 degrees and with a certified load rating of over 6000 pounds. The device comes in Kevlar®



yellow, EMS blue and fire service red. The storage bag also has a compartment for storing carabiners.

You can see more about the SORD, including a live demonstration of firefighters recovering a downed victim in 12 seconds using the device at www.firewear.com/sord. Please contact Total Fire Group (800-688-6148) for a demonstration.



Total Fire Group Expands Production Facility

Thanks to the support of fire departments across the country, Total Fire Group is in the process of expanding the company's Dayton, Ohio, manufacturing facility by 58%. The Dayton location is both the company's headquarters and the manufacturing plant where Morning Pride bunker gear is fabricated. The decision to expand the plant came as demand for the company's innovative and industry-leading bunker gear outgrew the existing plant's capacity. This is the third expansion at the Dayton facility since 2002. 

