

NATIONAL INTERAGENCY FIRE CENTER

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9216 NFES (FA240)

April 13, 2007

NATIONAL FIRE EQUIPMENT SYSTEM CACHE MEMORANDUM NO. 07-4

To: NFES National Incident Support Caches
From: Paul Naman, NFES Representative
Subject: Fire Shelter Polyvinyl Bag Retrofit

The Interagency Fire Shelter Task Group is advising all owners of New Generation Fire Shelters manufactured prior to June, 2005 to retrofit pull handles of polyvinyl (PVC) bags to conform to current specifications. Although fire shelters are still serviceable without the retrofit, users of these fire shelters will need to be advised of the strength limitations of the original pull handle and how to avoid pull handle failures. Most “regular” sized New Generation fire shelters currently in service will require the pull handle retrofit. Equipment Specialists at the Missoula Technology and Development Center have developed a retrofit process that does not require specialized equipment or a high level of technical expertise and utilizes materials that are readily available from commercial sources. Fire shelter owners are requested to perform the retrofit of their inventory locally. The NFES National Interagency Support Caches and GSA will not be providing fire shelter retrofit services or exchanges for other fire shelter owners.

Regular sized shelters can be easily identified by the yellow pull handle attached to the PVC bag. All “large” size shelters were manufactured after June, 2005 and were provided with reinforced pull handles that do not need modification. Large fire shelters can be identified by the orange pull handle marked “LARGE”. Fire shelter manufacture dates are located on the pink or white data label located inside the PVC bag.

The April, 2006 Fire Tech Tip “*What’s New With The New Generation Fire Shelter?*” (0651-2322-MTDC) describes the issue and repair procedures in detail. This publication is available online at:

<http://fsweb.mtdc.wo.fs.fed.us/pubs/htmlpubs/htm06512322/index.htm>. The Fire Tech Tip has been reproduced in part below to provide the technical information required to carry out the retrofit modification:



Fire Shelter Polyvinyl Chloride Bag

The main function of the PVC bag is to protect the fire shelter from dirt and abrasion, which can reduce its service life. Wildland firefighters should treat their fire shelters with care and protect them from damage. The fire shelter sleeve of the Fireline Pack (NSN: 8465-01-503-4484) has been redesigned to lessen the amount of dirt and debris that enters the sleeve.

The pull strap on the PVC shelter bag was designed to help remove the shelter from its pack during a shelter deployment. This feature was incorporated into the old-style shelter design in 1999 and was brought forward to the New Generation fire shelter.

During shelter deployment drills performed by firefighters and tests done by MTDC, the pull strap detached from the PVC shelter bag when the strap was jerked abruptly. Pull tests show the pull strap tore from the shelter bag with an average force of 65 pounds when pulled straight away. When pulled at an angle, some pull straps tore away with only 35 pounds of force. *Since the publication of the April, 2006 Fire Tech Tip there has been one documented case of a failure of the pull strap during an actual shelter deployment.*

Equipment Specialists at MTDC have designed a method to reinforce the pull-strap attachment point on the PVC shelter bag that holds the New Generation fire shelter. With the reinforcement, the tear-away force has been increased to over 100 pounds. All PVC bags manufactured since June 2005 are made with the reinforced design.

PVC shelter bags made before this change should be retrofitted. The reinforcement retrofit uses an adhesive and nylon webbing to strengthen the attachment point.

Retrofit Materials

Adhesive: 3M Marine Adhesive Sealant—Fast Cure 5200. Part No. 051135-05220. The adhesive is available through many hardware and home improvement stores nationwide, and is also widely available through internet sources. This glue is commonly available in two sizes: a 3 oz tube (about \$13.00/tube) which should be adequate to retrofit 50 shelters. The larger 13 oz caulking gun size tube (about \$18.00/tube) should provide enough adhesive to retrofit 165 fire shelter bags.

Nylon webbing: Mil-T-5038, type 3, or the non-certified commercial equivalent, 1 inch wide, 5½ inches long, two pieces for each shelter. A 72 yard roll will be enough material to retrofit about 230 shelter bags. This material is available in bulk (roll) quantities from the following sources:

DJ Associates, Inc. 479 452-3987, www.dj-associates.com . \$0.44/yd, \$31.68 for a 72 yd roll. \$25 minimum order

Para Gear Equipment Co.Inc. 800 323-0437, www.para-gear.com . \$35.64 for a 72 yd roll. \$25 minimum order.

The commercial variant of the nylon webbing can be purchased in smaller amounts through fabric stores and sewing shops, and may also be available through your servicing NFES National Interagency Support Cache.

It is recommended that fire shelter owners in an area pool their efforts to increase efficiency and allow for cost effective purchase of retrofit materials where possible.

Instructions

The following photographs show a simple way to reinforce PVC shelter bags produced before June 2005.



STEP 1: Perform all work in a well ventilated area. Cut the webbing to proper length with a heat knife or sear the ends with a match to prevent them from fraying. Apply a thin bead of adhesive to the nylon webbing.



STEP 2: Spread adhesive so it is 1/16 inch thick.



STEP 3: Apply the webbing to one side of the pull strap attachment area and smooth it in place. Repeat on the opposite side of the pull-strap attachment area.



STEP 4: To ensure positive contact until the adhesive cures, use clothespins or paper binders to hold the webbing in place. The adhesive cures in 24 hours.

Question or comments regarding this information should be directed to Tony Petrilli, USDA Forest Service, MTDC, at 406 329-3965.

/s/ Paul E Naman

cc:
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