INCH-POUND

MIL-DTL-32438
5 March 2013

DETAIL SPECIFICATION

HOT BEVERAGE BOX

This specification is approved for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This specification describes the criteria for a hot beverage box (HBB) consisting of a potable water pouch (with fitment and detachable spigot cap) in a collapsible fiberboard box, one heater/heater bag assembly, one activation fluid unit and one instruction sheet that is adhered to the collapsible fiberboard box. This item is for use by the Department of Defense as a supplement to operational rations.

2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in sections 3, 4 or 5 of this specification. This section does not include documents cited in other sections of this specification or recommended for additional information or as examples. While every effort has been made to ensure the completeness of this list, document users are cautioned that they must meet all specified requirements of documents cited in sections 3, 4 or 5 of this specification, whether or not they are listed.

Comments, suggestions or questions on this document should be addressed to US Army Research, Development and Engineering Command, Natick Soldier Research, Development and Engineering Center, RDNS-CFF, 15 Kansas St., Natick, MA 01760-5056 or emailed to melvin.l.carter6.civ@mail.mil. Since contact information can change, you may want to verify the currency of this address information using the ASSIST Online database at http://assist.dla.mil/

AMSC N/A FSC 8970

2.2 Government documents.

2.2.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract.

FEDERAL STANDARDS

FED-STD-595	Colors Used in Government Procurement

DEPARTMENT OF DEFENSE SPECIFICATIONS

MIL-PRF-131	Barrier Materials, Watervaporproof, Greaseproof, Flexible, Heat-Sealable

(Copies of these documents are available online at https://assist.dla.mil/quicksearch/ or from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.)

2.2.2 Other Government documents, drawings and publications. The following other Government documents, drawings, and publications form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract.

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

Federal Food, Drug and Cosmetic Act and regulations (21 Code of Federal Regulations (CFR), Parts 170-189)

(Copies of this document is available from http://www.gpo.gov/fdsys/pkg/CFR-2011-title21-vol3/pdf/CFR-2011-title21-vol3.pdf or from the Superintendent of Documents, ATTN: New Orders, P.O. Box 371954, Pittsburgh, PA 15250-7954.)

U.S. ARMY

Army Regulation 40-5	-	Preventive Medicine
Army Regulation 70-1	-	Army Acquisition Policy
Army Pamphlet 70-3	-	Army Acquisition Procedures

(Copies of these documents are available online at www.apd.army.mil or from U.S. Army Publishing Directorate.)

2.3 Non-Government publications. The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract.

ASTM INTERNATIONAL

D4727/D4727M	Standard Specification for Corrugated and Solid Fiberboard Sheet Stock (Container Grade) and Cut Shapes
F88/F88M	Standard Test Method for Seal Strength of Flexible Barrier Materials

(Copies of these documents are available from www.astm.org or ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959.)

2.4 Order of precedence. Unless otherwise noted herein or in the contract, in the event of a conflict between the text of this document and the references cited herein (except for related specification sheets), the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 First article. When specified (see 6.2), a sample shall be subjected to first article inspection in accordance with 4.2.

3.2 Materials. The contractor shall select materials capable of meeting all of the requirements specified herein.

3.3 Interface and interoperability requirements.

3.3.1 Hot beverage box. The HBB shall consist of a potable water pouch (with fitment and detachable spigot cap) in a collapsible fiberboard box, one heater/heater bag assembly, one activation fluid unit and one instruction sheet. The pouch will be filled with potable water at time of use. The pouch and box shall be configured to facilitate the use of the item (to include shipping in a collapsed configuration), filling of the potable water pouch and activation of the heater.

3.3.1.1 Heater. The heater shall be constructed of materials that, when activated by a fluid, shall initiate and propagate an exothermic reaction suitable for use with food. This reaction shall generate adequate energy to heat the water. No toxic gas, liquid or solid by-products are desired. If potentially hazardous by-products are produced, they shall be minimized to the greatest extent while allowing for adequate heating and ensuring operator and consumer

safety. The heater shall be classified as non-regulated by the Department of Transportation (DOT) and the Environmental Protection Agency (EPA) before and after use.

The heater shall raise the temperature of one gallon of potable water by a minimum of 110°F (from 40°F to 150°F) in 45 minutes or less and hold the high temperature for a minimum of 30 minutes. The maximum temperature shall not exceed 170°F from the starting temperature of 40°F, reflecting a 130°F maximum rise. The heater material shall be evenly distributed and completely sealed within a non-woven, porous, polymeric scrim matrix to minimize the release of materials, and facilitate direct in-place activation of the heater materials. The size of the heater shall accommodate the fit and function of the hot beverage box. The heating rate shall be optimized to minimize the time required to heat the water, without causing excessive foaming or uncontrolled release of reaction by-products. The heater shall not melt, deform or degrade during heating.

3.3.1.2 Heater bag. One heater shall be sealed and packaged within a heater bag constructed from high density polyethylene material. The color of the high density polyethylene material shall be translucent and a light green color in the range of 34127 through 34159 (excluding 34138) or 34226 through 34258 or 34583 of FED-STD-595. The heater bag will function as protective packaging for the heater during transportation and storage and serve as the container to safely hold the heater and its associated activating solution while in use. The heater bag shall be heat sealed on all four edges and shall not leak or otherwise be degraded while the heating process is taking place or when tested in accordance with 4.6.2. Tear notches shall be provided to facilitate opening of the heater bag.

The heater bag shall be of a sufficient size to accommodate the heater and its activating fluid and shall be positioned in the fiberboard box to maximize heating performance, while providing safe release of any gaseous by-products of the heater without causing scalding or otherwise burning the operator during use. The bag shall be glued in place and shall not dislodge during use. The glue shall be approved for indirect contact with food. The heater bag shall have a 1 inch by 2 inch strip of tape attached to the top corner of the bag. The tape shall be used to secure the bag to the outer surface of the box to prevent the heater bag from slipping into the fiberboard box during use.

3.3.1.3 Activation fluid unit. The activation fluid unit consisting of a pouch containing the activation fluid shall be made of material equivalent to Class 1 of MIL-PRF-131. Alternate activation fluid unit materials and design shall be permitted with approval from Natick Soldier Research, Development and Engineering Center. The pouch shall be designed with a spout and shall have maximum outer dimensions of 6 by 12 inches. The spout shall have a minimum opening of 2 inches (±1/2 inch). The pouch shall be filled with a fluid as specified by the heater manufacturer with approval from Natick Soldier Research, Development and Engineering Center. The volume of fluid in the pouch, when combined with the heater, shall be adequate to initiate and propagate the exothermic reaction. The pouch shall be heat sealed on all edges. A tear nick or notch shall be provided in the spout area to facilitate opening of the filled and sealed pouch. The average seal strength of the heat seals shall be not less than 6 pounds per inch of width and no individual specimen shall have a seal strength of less than 5

pounds per inch of width. Alternatively, the filled and sealed pouch shall exhibit no rupture or seal separation greater than 1/16 inch or seal separation that reduces the effective closure seal width to less than 1/16 inch when tested for internal pressure resistance.

3.3.1.4 Potable water pouch with fitment and spigot cap. The potable water pouch shall be clear and shall be fabricated from an FDA approved food grade polymeric material. The pouch shall have a minimum of a 4 inch gusset on three sides of the pouch and shall have maximum outer dimensions of 11 by 11 inches. The minimum volume capacity of the pouch shall be 1 gallon (3.8 liters). The pouch shall be heat sealed on all edges. The average seal strength of the closure seal shall be not less than 6 pounds per inch of width and no individual specimen shall have a seal strength of less than 5 pounds per inch of width.

The fitment shall be sealed to the potable water pouch. The fitment and spigot cap shall be constructed from food grade (direct food contact) material. The fitment shall have a 1-1/4 inch ($\pm$1/4 inch) opening. The cap shall be constructed with a lever spigot. The spigot shall have an inside diameter of at least 3/16 inch and an exposed length of at least 1 inch and no greater than 2-1/2 inches. The pouch with fitment and spigot cap shall not leak during use or when tested. The spigot shall not fail to dispense the heated water. The cap shall fit onto the neck to provide a liquid barrier. The cap shall be attached to the neck section of the fitment by a lanyard. The lanyard shall have a length of 3-1/2 inches ($\pm$1/2 inch).

3.3.1.5 Fiberboard box. The fiberboard box shall be constructed from E-flute corrugated fiberboard conforming to type CF, variety SW, burst grade 125 of ASTM D4727/D4727M, Standard Specification for Corrugated and Solid Fiberboard Sheet Stock (Container Grade) and Cut Shapes. The exterior of the box shall have a water resistant coating. The fiberboard box shall maintain its shape and integrity while containing the activated heater and potable water for a minimum of 90 minutes after the heating reaction is initiated. The box shall facilitate the flat shipping configuration. A fill slot shall be cut into the fiberboard box to provide a visual indication that 1 gallon of water has been added to the potable water pouch when the water level is between the mid-point and the top of the slot. Figure 1 specifies the design requirements and dimensions of the box.

3.4 Environmental requirements.

3.4.1 Shelf life. The hot beverage box and components shall meet the minimum shelf life requirements of 36 months at 80°F.

3.4.2 Temperature range of operation. The HBB shall be capable of withstanding extreme temperatures in storage and transport ranging from -20°F to 160°F. At the time of use, the HBB shall be capable of operating at temperatures ranging from 35°F to 120°F and shall perform as intended and raise the temperature of the water to the target temperature. The HBB components shall exhibit no failures, major deformities or degradation as a result of the heating process.

3.5 Operating requirements.

3.5.1 Food safety. The materials used in the potable water pouch with fitment and spigot cap shall be safe for use with food in accordance with 21 CFR, Parts 170-189, applicable material safety data sheets, or other recognized health standards and regulations. The material shall be approved for addition of hot water (less than or equal to 212°F).

3.6 Support requirements.

3.6.1 Health hazard assessment. The item shall not present a health hazard when used as intended. Department of the Army Regulation (AR) 40-5, Preventive Medicine, AR 70-1, Acquisition Policy, and Department of the Army Pamphlet 70-3, Acquisition Procedures require that all new chemicals and materials being added to the Army supply system have a Toxicity Clearance. A Toxicity Clearance involves a toxicological evaluation of materials prior to introduction into the Army supply system. The Army Program Manager is responsible for identifying materials and requesting a Toxicity Clearance for use of that material within their program. All chemicals (including proprietary materials) shall be identified and accompanied by the appropriate Material Safety Data Sheet (MSDS). If requested, the contractor shall furnish the formulation of the heater and the activation fluid to the U.S. Army Public Health Command [formerly U.S. Army Center for Health Promotion and Preventive Medicine], ATTN: MCHB-TS-OHH, Aberdeen Proving Ground, MD 21010-5403. The formulation shall detail the exact percentages of the chemicals and compounds used in the heater and the activation fluid, including the chemical composition of the trade name ingredients.

3.7 Labeling requirements.

3.7.1 Heater. Each heater (heater elements in a matrix) shall be correctly and legibly labeled. The label shall contain the following information:

(1) Name and type of heater
(2) Contractor's name and address
(3) Do Not Eat pictogram. The pictogram shall be printed in three colors; a black figure of a person on a white background with a red circle and a bar (prohibition sign). The minimum outside diameter of the pictogram circle shall be 7/8 inch. (See figure 2)

3.7.2 Activation fluid unit. Each activation fluid unit shall be correctly and legibly labeled. The label shall contain the following information:

(1) Name
(2) Active ingredients with proper chemical names in accordance with Occupational Safety and Health Administration (OSHA), US Environmental

Protection Agency (USEPA) and US Department of Transportation (USDOT)
(3) Net volume
(4) Date 1/
(5) Contractor's name and address and emergency phone number, as required by OSHA, USEPA and USDOT
(6) POUR INTO HEATER BAG TO START HEATER IN ACCORDANCE WITH HBB INSTRUCTIONS
(7) DO NOT CONSUME

1/ Each activation fluid unit shall have the date of pack noted by using a four digit code beginning with the final digit of the current year followed by the three digit Julian day code. For example, 14 February 2014 would be coded as 4045. The Julian day code shall represent the day the activation fluid was packaged.

3.7.3 Fiberboard box. One side of each fiberboard box shall be correctly and legibly printed or labeled with the operating instruction sheet shown in figure 3.

4. VERIFICATION

4.1 Classification of inspections. The inspection requirements specified herein are classified as follows:

a. First article inspection (see 4.2).

b. Conformance inspection (see 4.3).

4.2 First article inspection. The first article shall be inspected in accordance with the provisions of this document and evaluated for overall performance. Any failure to conform to the performance requirements shall be cause for rejection of the lot. The approved first article shall be used as the product standard. DLA Troop Support - Subsistence shall select sample units during production of contracts and submit them to the following address for evaluation:

US Army Research, Development and Engineering Command
Natick Soldier Research, Development and Engineering Center
RDNS-CFF
15 Kansas Street
Natick, MA 01760-5056

Three (3) sample units (HBBs) shall be randomly selected from that one production lot or as otherwise specified in the contract. The three (3) sample units shall be shipped to Natick within five (5) working days from the end of the production month from which they are randomly selected and upon completion of all inspection requirements. The sample units will

be evaluated for materials, interface, interoperability, environmental, operating and labeling requirements.

4.3 Conformance inspection. Conformance inspection shall include the tests specified in table I and the examinations of 4.4, 4.5, and 4.6.

TABLE I. Verification methods 1/

Title	Requirement	Verification
Interface and interoperability	3.3	4.6.2
Hot beverage box	3.3.1	4.4, 4.5, 4.6.2.1
Heater	3.3.1.1	4.4, 4.5
Heater bag	3.3.1.2	4.4, 4.5
Activation fluid unit	3.3.1.3	4.4, 4.5, 4.6.1
Potable water pouch with fitment and spigot cap	3.3.1.4	4.4, 4.5, 4.6.1
Fiberboard box	3.3.1.5	4.4, 4.5
Environmental	3.4	4.6.3
Shelf life	3.4.1	4.6.3.1
Temperature range of operation	3.4.2	4.6.3.2
Operating	3.5	4.6.4
Food safety	3.5.1	4.6.4.1
Support	3.6	4.6.5
Health hazard assessment	3.6.1	4.6.5.1
Labeling	3.7	4.4
Heater	3.7.1	4.4
Activation fluid unit	3.7.2	4.4
Fiberboard box	3.7.3	4.4

1/ A Certificate of Conformance (CoC) may be accepted as evidence of conformance to the following requirements:

Seal tests
Shelf life
Temperature range of operation
Food safety

4.4 HBB examination. The HBB shall be examined for the defects listed in table II. The lot size shall be expressed in HBBs. The sample unit shall be one fully assembled HBB. The inspection level shall be S-3 and the acceptable quality level (AQL), expressed in terms of defects per hundred units, shall be 1.0 for major defects and 4.0 for minor defects.

TABLE II. Hot beverage box defects 1/ 2/ 3/ 4/ 5/ 6/ 7/ 8/

Category		Defect
Major	Minor	
101		Not a hot beverage box.
102		HBB has component(s) missing, incorrect, damaged or not compatible.
		Heater
	201	Heater material not evenly distributed or not completely sealed within a non-woven, porous, polymeric scrim matrix.
103		Size of heater does not accommodate the fit and function of the HBB.
		Heater bag
	202	Heater bag not translucent or not a light green color.
	203	Tear notches on heater bag missing or do not facilitate opening of heater bag.
104		Heater bag not of sufficient size to accommodate the heater and its activating fluid.
	204	Heater bag not glued in place.
	205	Heater bag does not have 1 inch by 2 inch strip of tape attached to top corner.
		Activation fluid unit
	206	Activation fluid pouch has outer dimensions greater than 6 by 12 inches.
	207	Activation fluid pouch spout opening is less than 2 inches (±1/2 inch).
	208	Tear nick or notch on activation fluid pouch missing or does not facilitate opening.
		Potable water pouch with fitment and spigot cap
	209	Potable water pouch not clear.

TABLE II. Hot beverage box defects 1/ 2/ 3/ 4/ 5/ 6/ 7/ 8/ - Continued

Category		Defect
Major	Minor	
	210	Potable water pouch has a gusset less than 4 inches or not on three sides.
	211	Potable water pouch has outer dimensions greater than 11 by 11 inches.
105		Potable water pouch volume capacity less than 1 gallon (3.8 liters).
106		Fitment not sealed to the potable water pouch.
	212	Fitment on potable water pouch opening not 1-1/4 inch (±1/4 inch) opening.
107		Cap not constructed with a lever spigot.
	213	Spigot on the potable water pouch has an inside diameter of less than 3/16 inch.
	214	Spigot on the potable water pouch has an exposed length less than 1 inch or greater than 2-1/2 inches.
108		Cap does not fit onto the neck to provide a liquid barrier.
109		Cap not attached to the neck section of the fitment by a lanyard.
	215	The lanyard length not 3-1/2 inches (±1/2 inch).
		Fiberboard box
110		Fiberboard box exterior does not have water resistant coating.
111		Fiberboard box not correct dimensions or not correct design or does not facilitate flat shipping configuration.
		Labeling
	216	Labels missing or incorrect or illegible.
	217	Operating instructions incorrect or illegible or not on one side of fiberboard box.
	218	Pictogram on heater missing or incorrect or illegible.

1/ Presence of any foreign materials such as, but not limited to dirt, insect parts, hair, glass, wood, or metal, or any foreign odors such as, but not limited to burnt, scorched, rancid, sour, stale, musty or moldy shall be cause for rejection of the lot.

2/ Any evidence of rodent or insect infestation shall be cause for rejection of the lot.

3/ Heater material construction shall be verified by CoC.

4/ Individual heater designation as unregulated by DOT and EPA shall be verified by CoC.

5/ Use of MIL-PRF-131 material for the activation fluid unit shall be verified by CoC.

6/ The activation fluid solution shall be identified and verified by CoC.

7/ Potable water pouch, fitment, and spigot cap material requirements shall be verified by CoC.

8/ Use of specified fiberboard conforming to D4727/D4727M for the fiberboard box shall be verified by CoC.

4.5 HBB performance examination. The HBB shall be examined for the performance defects listed in table III after activation of the unit in accordance with 4.6.2. The lot size shall be expressed in HBBs. The sample unit shall be one fully assembled HBB. The inspection level shall be S-3 and the acceptable quality level (AQL), expressed in terms of defects per hundred units, shall be 1.0 for major defects and 4.0 for minor defects.

TABLE III. Hot beverage box performance defects 1/

Category		Defect
Major	Minor	
101		Activation fluid not of adequate volume or heater does not initiate and propagate an exothermic reaction suitable for use with food.
102		Heater causes excessive foaming or uncontrolled release of reaction by-products.
103		Heater melts, deforms or degrades during heating.

TABLE III. Hot beverage box performance defects 1/ - Continued

Category		Defect
Major	Minor	
	201	Heater bag dislodges during use.
104		Heater bag or potable water pouch leaks.
	202	Fill slot does not provide a visual indication that 1 gallon of water has been added to the potable water pouch.
105		Heated water does not dispense from the pouch when the spigot is opened.
106		More than 10 ml of liquid has leaked from any part of the HBB. 2/
107		Fiberboard box does not maintain its shape and integrity while containing the activated heater and potable water for a minimum of 90 minutes after the heating reaction is initiated.

1/ By-products of the activated HBB shall be non-toxic, safe and unregulated waste and shall be verified by CoC.

2/ The HBB shall be observed for leakage for 90 minutes after the heating reaction is initiated. The HBB shall be placed in a tray to collect any leakage. Water leaking from the HBB shall be collected on the tray and measured in a graduated container. Observation of leakage from any pouch during this time period or more than 10 ml leaked from any part of the HBB shall be classified as a major defect.

4.6 Tests.

4.6.1 Seal testing. The pouch seals shall be tested for seal strength as required or as applicable.

4.6.1.1 Unfilled preformed pouch seal testing. The seals of the unfilled preformed pouch shall be tested for seal strength in accordance with ASTM F88/F88M, Standard Test Method for Seal Strength of Flexible Barrier Materials. The lot size shall be expressed in pouches. The sample unit shall be one pouch. The sample size shall be the number of pouches indicated by inspection level S-1. Three adjacent specimens shall be cut from each of the three sealed sides of each pouch in the sample. The average seal strength of any side shall be calculated by averaging the three specimens cut from that side. Any average seal strength of less than 6 pounds per inch of width or any test specimen with a seal strength of less than 5 pounds per inch of width shall be classified as a major defect and shall be cause for rejection of the lot.

4.6.1.2 Pouch closure seal testing. The closure seals of the pouches shall be tested for seal strength in accordance with ASTM F88/F88M. The lot size shall be expressed in pouches. The sample unit shall be one pouch. The sample size shall be the number of pouches indicated by inspection level S-1. For the closure seal on preformed pouches, three adjacent specimens shall be cut from the closure seal of each pouch in the sample. For form-fill-seal pouches, three adjacent specimens shall be cut from each side and each end of each pouch in the sample. The average seal strength of any side, end or closure shall be calculated by averaging the three specimens cut from that side, end or closure. Any average seal strength of less than 6 pounds per inch of width or any test specimen with a seal strength of less than 5 pounds per inch of width shall be classified as a major defect and shall be cause for rejection of the lot.

4.6.1.3 Internal pressure test. The internal pressure resistance shall be determined by pressurizing the pouches while they are restrained between two rigid plates. The lot size shall be expressed in pouches. The sample unit shall be one pouch. The sample size shall be the number of pouches indicated by inspection level S-1. If a three seal tester (one that pressurizes the pouch through an open end) is used, the closure seal shall be cut off for testing the side and bottom seals of the pouch. For testing the closure seal, the bottom seal shall be cut off. The pouches shall be emptied prior to testing. If a four-seal tester (designed to pressurize filled pouches by use of a hypodermic needle through the pouch wall) is used, all four seals can be tested simultaneously. The distance between rigid restraining plates on the four seal tester shall be equal to the thickness of the product +1/16 inch. Pressure shall be applied at the approximate uniform rate of 1 pound per square inch gage (psig) per second until 14 psig pressure is reached. The 14 psig pressure shall be held constant for 30 seconds and then released. The pouches shall then be examined for separation or yield of the heat seals. Any rupture of the pouch or evidence of seal separation greater than 1/16 inch in the pouch manufacturer’s seal shall be considered a test failure. Any seal separation that reduces the effective closure seal width to less than 1/16 inch shall be considered a test failure. Any test failure shall be classified as a major defect and shall be cause for rejection of the lot.

4.6.2 Interface and interoperability verification.

4.6.2.1 HBB performance test. Five (5) fully assembled HBBs shall be tested as end item units in accordance with the operating instructions (shown in figure 3) to demonstrate that operational performance parameters are met. The test shall be conducted at an ambient temperature of 72°F $\pm$ 2°F in an explosion-proof exhaust fume hood or sufficiently ventilated environment, away from open flame or potential ignition sources. One gallon of 40°F $\pm$ 5°F potable water shall be added to the potable water pouch (water level shall be between the midpoint and the top of the fill slot). Activation of the HBB shall be in accordance with step 4 of the operating instructions. The water temperature shall be measured at one minute intervals by use of a thermocouple, placed in a rubber stopper in place of the spigot cap. The temperature shall be recorded for 90 minutes after the heating reaction is initiated. After 45

minutes, the heater shall have raised the temperature of one gallon of potable water by a minimum of 110°F (from 40°F to 150°F) and the high temperature shall have been held for a minimum of 30 minutes. The maximum temperature shall not have exceeded 170°F from the starting temperature of 40°F, reflecting a 130°F maximum rise in temperature. At this time the spigot cap shall be replaced and used to dispense 5 cups of heated water, the spigot shall be opened to dispense and closed between filling each cup. The spigot shall not drip between cups. Any unit failing to perform as described shall be cause for rejection of the lot.

4.6.3 Environmental verification.

4.6.3.1 Shelf life. All HBB components shall demonstrate conformance to 3.4.1, when tested in a storage study.

4.6.3.2 Temperature range of operation. The HBB shall demonstrate conformance to 3.4.2, when exposed to temperature extremes.

4.6.4 Operating verification.

4.6.4.1 Food safety. The HBB shall demonstrate conformance to 3.5.1, when all applicable health standards are verified.

4.6.5 Support verification.

4.6.5.1 Health hazard assessment. Health hazard assessment shall demonstrate conformance to 3.6.1, when all applicable hazardous material standards are verified.

5. PACKAGING

5.1 Packaging. For acquisition purposes, the packaging requirements shall be as specified in the contract or order (see 6.2). When packaging of materiel is to be performed by DoD or in-house contractor personnel, these personnel need to contact the responsible packaging activity to ascertain packaging requirements. Packaging requirements are maintained by the Inventory Control Point’s packaging activities within the Military Service or Defense Agency, or within the military service’s system commands. Packaging data retrieval is available from the managing Military Department’s or Defense Agency’s automated packaging files, CD-ROM products, or by contacting the responsible packaging activity.

6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Intended use. The HBB covered by this specification is intended for use as a component in Unitized Group Ration™-Express™ (UGR-E™) and as a supplement to other operational rations.

6.2 Acquisition requirements. Acquisition documents should specify:

a. Title, number and date of this specification.

b. When first article is required (see 3.1).

c. Packaging requirements (see 5.1).

6.3 Shelf-life. This specification covers items where the assignment of a Federal shelf-life code is a consideration. Specific shelf-life requirements should be specified in the contract or purchase order, and should include, as a minimum, shelf-life code, shelf-life package markings in accordance with MIL-STD-129 or FED-STD-123, preparation of a materiel quality storage standard for type II (extendible) shelf-life items, and a minimum of 85 percent shelf-life remaining at time of receipt by the Government. These and other requirements, if necessary, are in DoD 4140.27-M, *Shelf-life Management Manual*. The shelf-life codes are in the Federal Logistics Information System Total Item Record. Additive information for shelf-life management may be obtained from DoD 4140.27-M, or the designated shelf-life Points of Contact (POC). The POC should be contacted in the following order: (1) the Inventory Control Points that manage the item and (2) the DoD Service and Agency administrators for the DoD Shelf-Life Program. Appropriate POCs for the DoD Shelf-Life Program can be contacted through the DoD Shelf-Life Management website: https://www.shelflife.hq.dla.mil/

6.4 Subject term (key word) listing.

Ration
Self-heating
Unitized Group Ration™ (UGR™)

6.5 Part identifiers and sources of supply.

6.5.1 Heater. The heater is available from:

Truetech Inc.
680 Elton Ave.
Riverhead, NY 11901-2585
(631) 727-8600

6.5.2 Activation fluid unit. The material CADPACK N for the construction of the activation fluid unit pouch is available from:

Cadillac Products
5800 Crooks Road
Troy, Michigan 48098-2830
(248) 813-8200

The filled and sealed activation fluid units are available from:

Heritage Packaging
625 Fishers Run
Victor, NY 14564
(585) 742-3310

6.5.3 Fully assembled HBB. The complete HBB is available from:

Truetech Inc.
680 Elton Ave.
Riverhead, NY 11901-2585
(631) 727-8600

6.5.4 Instruction sheet. The operating instruction sheet is attached in figure 3.

Instruction sheets in color are available electronically from:

US Army Research, Development and Engineering Command
Natick Soldier Research, Development and Engineering Center
RDNS-CFR
15 Kansas Street
Natick, MA 01760-5056
(508) 233-4573

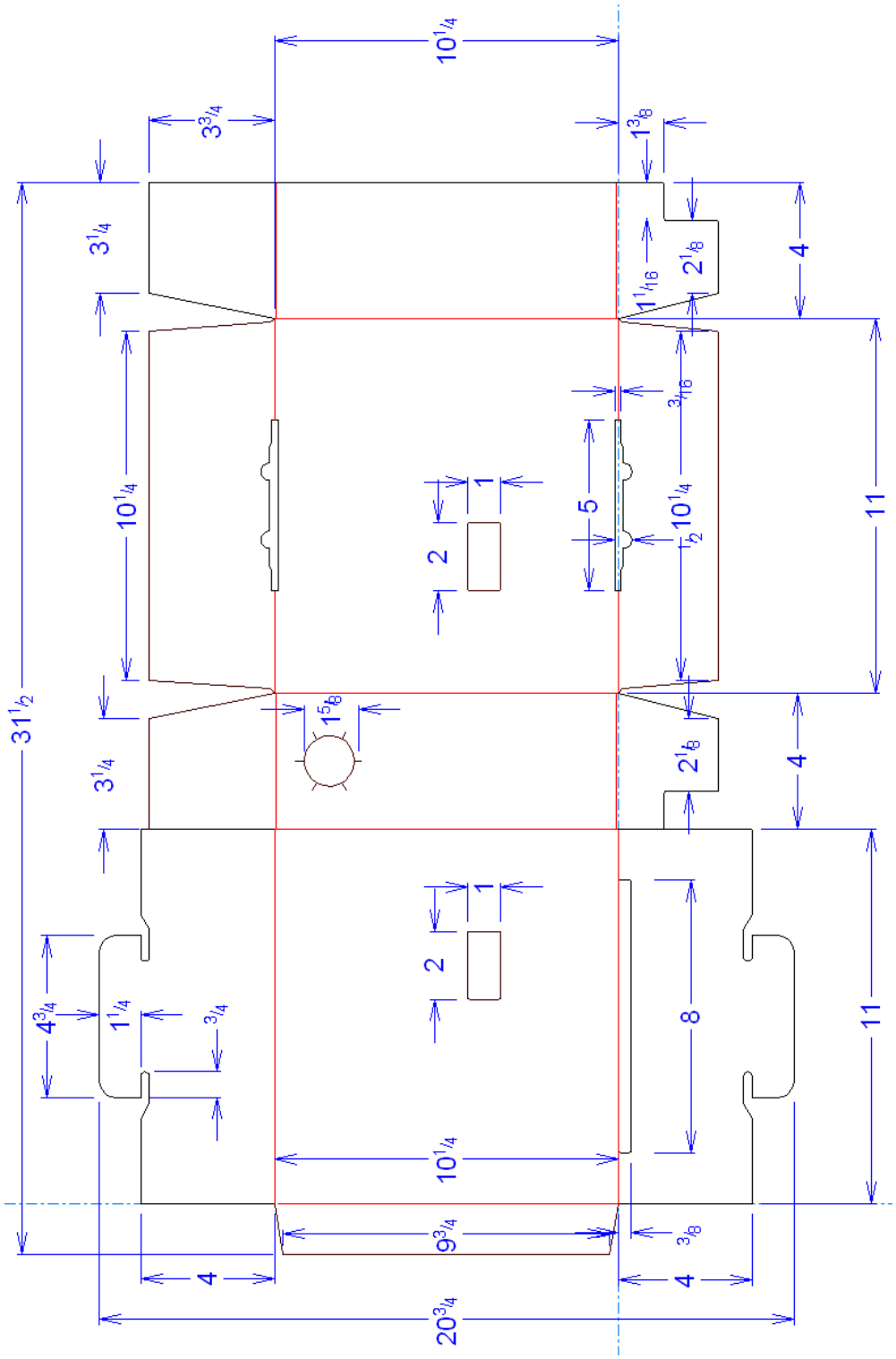

FIGURE 1. Hot Beverage Box

FIGURE 2. Do Not Eat Pictogram

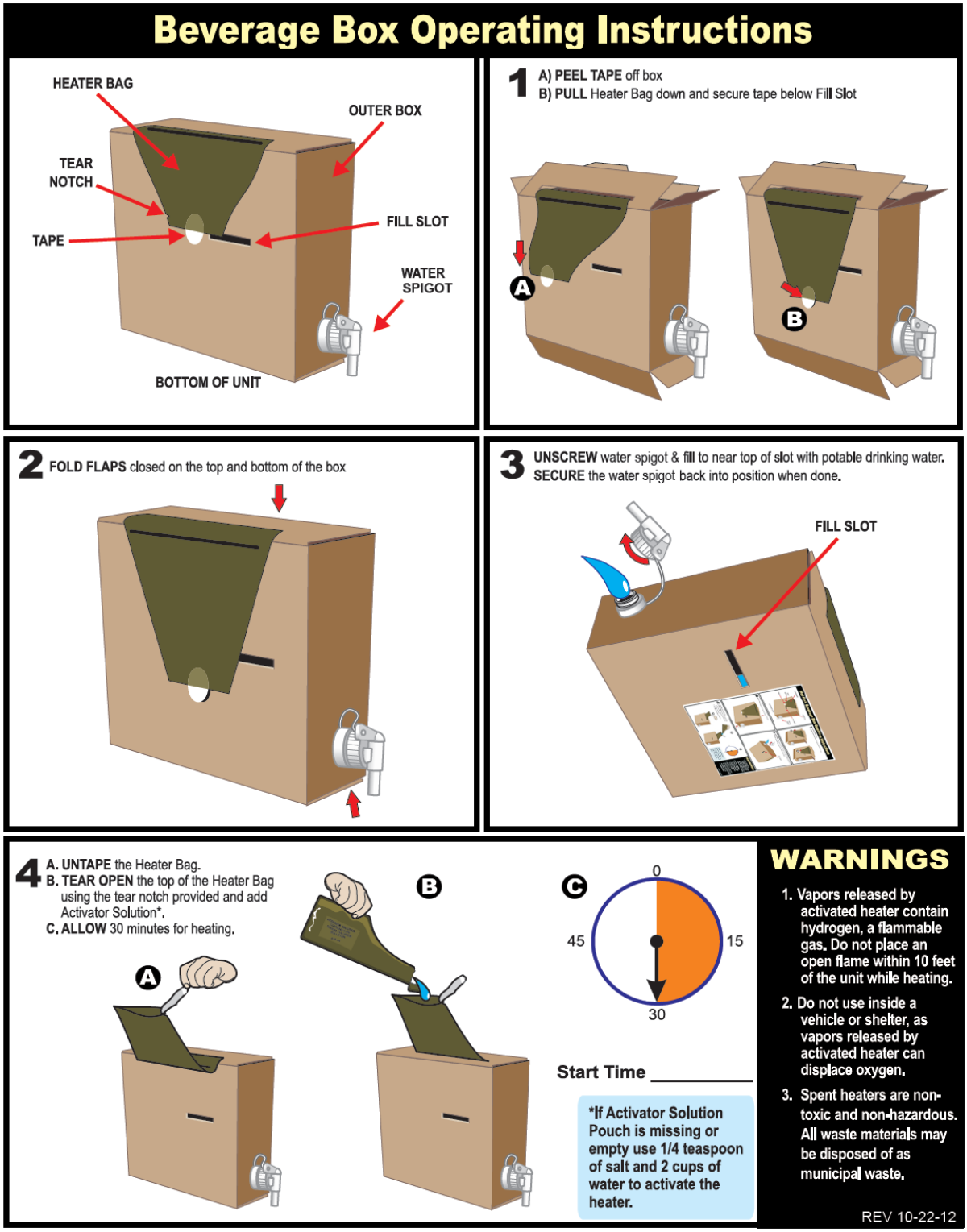

FIGURE 3. Operating Instructions for Hot Beverage Box

Custodians:
Army – GL
Navy – SA
Air Force – 35

Preparing activity:
Army – GL
(Project 8970-2012-001)

Review Activities:
Army – MD, QM
Navy – MC
DLA – SS

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using ASSIST Online database at https://assist.daps.dla.mil/.