

**SECTION C**

The Meal, Ready-to-Eat™ (MRE™) provides an operational ration for the individual.

**C-1 ITEM DESCRIPTION**

**ACR-M-033, MEAL, READY-TO-EAT™ (MRE™), ASSEMBLY REQUIREMENTS**

**C-2 ASSEMBLY REQUIREMENTS**

A. Components. The components are specified in table I.

TABLE I. Components

Component	Reference
<u>Entrées</u>	
Asian Style Beef Strips with Vegetables	<a href="#"><u>PCR-A-005</u></a>
Beef Patty, Grilled	<a href="#"><u>PCR-B-029A</u></a>
Jalapeno Pepper Jack	Flavor 2
Beef Ravioli in Meat Sauce	<a href="#"><u>PCR-B-021A</u></a>
Beef Stew	<a href="#"><u>PCR-B-020A</u></a>
Beef Taco	<a href="#"><u>PCR-B-054</u></a>
Brisket Entrée (Gravy with Seasoned Beef Brisket Slices)	<a href="#"><u>PCR-B-050</u></a>
Cheese Tortellini in Tomato Sauce	<a href="#"><u>PCR-C-020A</u></a>
Chicken Fajita	<a href="#"><u>PCR-C-055</u></a>
Chicken, Noodles and Vegetables, in Sauce	<a href="#"><u>PCR-C-021A</u></a>
Chicken Pesto Pasta	<a href="#"><u>PCR-C-069</u></a>
Chicken with Tomatoes and Feta Cheese	<a href="#"><u>PCR-C-077</u></a>
Chili and Macaroni	<a href="#"><u>PCR-C-027A</u></a>
Chili with Beans	<a href="#"><u>PCR-C-062</u></a>
Meatballs in Marinara Sauce	<a href="#"><u>PCR-M-015</u></a>
Mexican Style Chicken Stew	<a href="#"><u>PCR-M-016</u></a>
Penne with Vegetable Sausage Crumbles in Spicy Tomato Sauce, Made with Whole Grain Penne Rigate	<a href="#"><u>PCR-P-036</u></a> Type II
Pork Sausage in Cream Gravy	<a href="#"><u>PCR-P-047</u></a>
Pork Sausage Patty, Maple Flavored	<a href="#"><u>PCR-P-045</u></a>
Ratatouille (Mixed Vegetables and Penne)	<a href="#"><u>PCR-R-012</u></a>
Rib Shaped Barbecue Flavor Pork Patty	<a href="#"><u>PCR-R-013</u></a>
Southwest Beef and Black Beans	<a href="#"><u>PCR-S-018</u></a>
Spaghetti with Beef and Sauce	<a href="#"><u>PCR-S-002</u></a>

TABLE I. Components – Continued

Component	Reference
Tuna, Flexible Pouch, Chunk, Light, Water Packed, Lemon Pepper, Regular (no more than 1.5 percent salt)	<a href="#">A-A-20155D</a> , Type B, Form I, Color a, Packing Media 1, Flavor 1, Salt/Sodium Level (a)
Vegetable Lasagna	<a href="#">PCR-V-008</a>
<u>Starches and Soups</u>	
Cornbread	<a href="#">PCR-C-075</a>
Granola	<a href="#">PCR-G-003A</a>
With Milk and Blueberries	Type I
With Milk and Bananas	Type II
Potato Cheddar Soup Flavored with Bacon	<a href="#">PCR-P-046</a>
Potatoes au Gratin	<a href="#">PCR-P-048</a>
Potatoes, Mashed, Garlic	<a href="#">PCR-P-011A</a> , Flavor II
Refried Beans	<a href="#">PCR-R-007</a>
Rice	<a href="#">PCR-R-001A</a>
Fried Rice	Type IV
Santa Fe Style Rice and Beans	<a href="#">PCR-S-019</a>
Snack Bread, Fortified	<a href="#">PCR-S-009D</a>
Wheat Snack Bread, Single and Twin Pack	Type I, Style A or B
Italian Bread Sticks, Single Pack	Type IV, Style A
Multigrain Snack Bread, Single Pack	Type V, Style A
White Wheat Snack Bread, Single Pack	Type VI, Style A
Tortillas	<a href="#">PCR-T-008</a>
<u>Fruits</u>	
Apple Pieces in Spiced Sauce	<a href="#">PCR-A-001B</a>
Cobbler, Cherry Blueberry	<a href="#">PCR-C-058</a> , Flavor I
Fruits, Infused and Dried	<a href="#">A-A-20299B</a>
Sliced Cranberries, Not Fortified	Type VII, Fortification a
Raisins, Not Fortified	Type IX, Fortification a
Fruits, Wet Pack	<a href="#">PCR-F-002C</a>
Pears, Sweetened, Sliced or Diced	Type IV
Mixed Fruit, Sweetened	Type V
Applesauce, with Raspberry Puree, Sweetened, Reg.	Type VI
Applesauce, Carbohydrate Enhanced, Sweetened, Reg.	Type VII
Applesauce, with Mango and Peach Puree, Sweetened, Reg.	Type VIII

TABLE I. Components – Continued

Component	Reference
<u>Desserts and Snacks</u>	
Beef and Turkey Snacks, Cured	<a href="#">A-A-20298B</a>
Beef, Moist Cured/Kippered, Chopped and Formed, Strips, Smoked	Variety A, Type II, Style a, Class 1, Flavor (a)
Turkey, Moist Cured/Lactate, Natural Style, Nuggets, Smoked	Variety B, Type III, Style b, Class 4, Flavor (a)
Cakes, Brownies, Muffin Tops, and Filled Cakes	<a href="#">PCR-C-007E</a>
Cakes	Type I
Vanilla Pound	Flavor 1
Lemon Poppy Seed Pound	Flavor 6
Spice Pound	Flavor 7
Carrot Pound	Flavor 10
Marble Pound	Flavor 11
Brownies	Type II
Fudge Brownie with Chocolate Drops, <i>trans</i> fat free	Flavor 1, Style 2
Muffin Tops	Type III
Chocolate Banana Nut	Flavor 1
Maple	Flavor 2
Filled Cakes	Type IV
Chocolate Pound with Chocolate Filling	Flavor 1
Cheese Spread, Cheddar, Fortified	<a href="#">PCR-C-039</a>
Plain	Type I
With Jalapeno Peppers	Type II
With Bacon	Type III
Cookies, Regular, Individual Serving Package, Crisp	<a href="#">A-A-20295D</a> , Type I, Class 1, Bake Type a
Sugar, Patriotic	Style D, Shape (b)
Oatmeal, Plain	Style I, Flavor 1
Oatmeal, Chocolate Chunk	Style I, Flavor 6
Chocolate Chip, Plain	Style J, Flavor 1
Crackers, Fortified	<a href="#">PCR-C-037</a>
Plain	Type I
Vegetable	Type II
Dessert Powder, Pudding, Regular, Instant,	<a href="#">A-A-20344A</a> , Type I,
Nonfat Dry Milk	Preparation Method C, Style 1
Vanilla	Flavor a
Chocolate	Flavor b

TABLE I. Components - Continued

Component	Reference
Filled Bakery Item	<a href="#">MIL-DTL-32221A</a>
Cinnamon Bun	Type II
Apple Turnover	Type III
First Strike™ Bar	<a href="#">PCR-F-001</a>
Chocolate, Regular	Flavor I, Style A
Apple-Cinnamon, Regular	Flavor II, Style A
Jelly, Fruit, Standardized, Single, Regular	<a href="#">A-A-20078C</a> , Type I, Style 1
U.S. Grade A	Finished Product Quality a
Apple	Kind A
Grape	Kind M
Nut and Fruit Mix	<a href="#">PCR-N-003</a>
Nuts and Raisins	Type I
Nuts and Raisins with Pan Coated Chocolate Disks	Type II
Nut Butters and Nut Spreads	<a href="#">A-A-20328B</a> , Class A, Type a
Regular, Stabilized, Fortified, Salted, Conventional	Fortification 2, Seasoning (a), Agricultural Practices (1)
Peanut Butter, Smooth	Style I, Texture 1
Peanut Butter, Chunky/Crunchy	Style I, Texture 3
Peanut Spread, Smooth, Chocolate	Style II, Texture 1, Flavor 2
Nuts, Shelled, Roasted	<a href="#">A-A-20164D</a>
Peanuts, Virginia or Runner Type, Dry Roasted, Salted	Type V, Style A
Cashews, Halves (Splits), Jalapeno	Type VI, Size 2, Style C
Almonds (Unblanched), Flavored (Smoked and Barbeque)	Type IX, Style C
Preserves (or Jams), Fruit	<a href="#">A-A-20079C</a> , Type I
U.S. Grade A	Finished Product Quality a
Single Fruit, Blackberry, Regular	Group I, Flavor A, Style 1
Single Fruit, Strawberry, Regular	Group I, Flavor Q, Style 1
Ranger Bar	<a href="#">PCR-R-008B</a>
Caramel Apple	Flavor II
Chocolate Covered Chocolate Chip	Flavor III
Cran-apple	Flavor IV
Banana Nut	Flavor V

TABLE I. Components - Continued

Component	Reference
Snack Foods	<a href="#">A-A-20195D</a>
Pretzels, Sticks, Plain, Salted	Type II, Style C (Flavor 1)
Filled Pretzels, Cheddar Cheese and Nacho Cheese	Type II, Style F, Flavor 1 and 2
Baked Snack Crackers, Cheddar Cheese and Hot and Spicy Cheese	Type V, Flavor 1 and 2
Toasted Corn Kernels, Plain, Salted	Type VI, Flavor 1
Cheese Filled Crackers, Cheddar Cheese and Pepperoni Pizza	Type VII, Flavor 1 and 2
Tortilla-type Filled Crackers, Jalapeno Cheddar	Type VIII, Flavor 1
Toaster Pastries, Shelf Stable, Regular, Not fortified, Rectangular, Enriched Wheat Flour	<a href="#">A-A-20211B</a> , Type I, Fort. b, Shape i, Grain Composition (1)
Single Serving Packet	Servings (a)
Frosted Brown Sugar Cinnamon, Without Sprinkles	Style B, Flavor 3, Frosting (B)
Frosted Chocolate Chip, With Swirled or Drizzled Icing	Style B, Flavor 12, Frosting (C)
<u>Candy</u>	
Candy and Chocolate Confections	<a href="#">A-A-20177E</a>
Toffee, Chocolate Flavored, Roll and Cube	Type II, Style A or B
Pan Coated Candy	Type VI
Disks, Milk Chocolate, Plain	Style A, Flavor 1
Disks, Fruit Flavored, Original	Style A, Flavor 2, Fl. Style a
Disks, Fruit Flavored, Berry	Style A, Flavor 2, Fl. Style b
Disks, Fruit Flavored, Sour	Style A, Flavor 2, Fl. Style d
Disks, Peanut Butter	Style A, Flavor 4
Oval/Round, Milk Chocolate, Plain with Peanuts	Style B, Flavor 1
Licorice Style Candy, Bite Size, Cherry	Type X, Shape B, Flavor 1
Caffeinated Mints, Round Tablets	Type XII, Style A
Peppermint	Flavor 1

TABLE I. Components - Continued

Component	Reference
<u>Beverages</u>	
Beverage Bases (Powdered)	<a href="#">A-A-20098E</a>
Sweetened with Nutritive Sweetener, Small Flat Pouch	Type II, Design E,
Fortified with Ascorbic Acid and Maltodextrin	Formulation d
Orange	Flavor 1
Lemon-Lime	Flavor 4
Tropical Punch	Flavor 10
Sweetened with Non-nutritive Sweetener, Lap or Fin Seal	Type III, Design D,
Pouch, Fortified with Vitamin C and Calcium	Formulation h
Orange	Flavor 1
Beverage Powder, Carbohydrate Electrolyte, Flat Pouch	<a href="#">PCR-B-013A</a> , Design A
Fruit Punch	Flavor I
Grape	Flavor II
Lemon-Lime	Flavor III
Orange	Flavor IV
Cocoa Beverage Powder, Fortified,	<a href="#">PCR-C-041</a> ,
Flat Interlocking Closure Pouch	Design B
Cocoa Beverage Powder, Sugar Sweetened,	<a href="#">A-A-20189B</a> , Type I, Style B,
without Marshmallows, Chocolate Hazelnut,	Flavor F
Flat Interlocking Closure Pouch	Design B
Dairyshake Powder, Fortified with Calcium and Vit. D	<a href="#">PCR-D-002B</a> , Type 2,
<i>trans</i> Fat Free, Flat Interlocking Closure Pouch	Design B
Vanilla	Flavor I
Chocolate	Flavor II
Strawberry	Flavor III
Strawberry Banana	Flavor IV
Drink Mixes, Coffee (Flavored and Unflavored),	<a href="#">A-A-20336A</a>
Flavored Instant Cappuccino, Regular	Type V, Style A
Flat Interlocking Closure Pouch	Design B
French Vanilla	Flavor 1
Mocha	Flavor 2
Irish Cream	Flavor 4
<u>Other Items</u>	
Bag, Hot Beverage	<a href="#">MIL-PRF-32176</a>
Barbecue Sauce, Plain/Regular, Without Fruit Purees	<a href="#">A-A-20335A</a> , Flavor I, Type B
Fork, Knife and Spoon, Picnic (Plastic), High Impact	<a href="#">A-A-3109B</a> , Type IV, Item 13
Spoon, MRE, 7-inch (Brown)	
Hot Sauce, 1/8 fluid ounce pouch	<a href="#">A-A-20097F</a>
Extra Hot 4x	Type II

TABLE I. Components - Continued

Component	Reference
Ketchup, Regular	<a href="#">A-A-20346A</a> , Flavor 1
Mayonnaise, Salad Dressing and Tartar Sauce	<a href="#">A-A-20140D</a>
Mayonnaise, Fat Free	Type I, Style C
Mustard, Yellow (Salad Style)	<a href="#">A-A-20036B</a> , Type I
Natural Butter Flavor Granules, Spray Dried, Regular 2 gram packet	<a href="#">A-A-20351</a> , Type I, Style A, Package 1
Ration Supplement, Flameless Ration Heater (FRH)	<a href="#">MIL-R-44398B</a>
Spices and Spice Blends	<a href="#">A-A-20001A</a>
Red Pepper, Ground	Type I, Class Z, Form 1
Seasoning Blend, Salt Free, with Herbs and Citrus	Type II, Class D, Blend (1)
Syrup, Table, Imitation Maple, Regular Calorie	<a href="#">A-A-20124D</a> , Type IV, Flavor A, Style 1

B. Accessory components. Accessory components are specified in table II.

TABLE II. Accessory Components

Component	Reference	Acc. Pack
Chewing Gum, Tablet, Regular, Without Caffeine, Xylitol Sweetened, Peppermint or Cinnamon <u>1/</u>	<a href="#">A-A-20175D</a> , Type I, Size B, Style (1), Class 3, Flavor a or c	All
Hand Cleaner (towelette), Unscented, Water Based	<a href="#">A-A-461B</a> , Type II	All
Matches, Safety	<a href="#">A-A-59489A</a> , Type I, Class B	A
Salt, Table, Iodized, 4 grams	<a href="#">NaCl Monograph</a>	All
Toilet Tissue, Institutional, Folded, One Ply, Perforated	<a href="#">A-A-59594A</a> , Style II, Type A, Class 1, Sheet Size b	All
Coffee, Soluble, Freeze Dried, Reg.	<a href="#">A-A-20184B</a> , Type III, Style A	A, C
Creamer, Non-Dairy, Dry, Regular, Original	<a href="#">A-A-20043C</a> , Style I, Flavor A	A, C
Sugar, 1/7 ounce	<a href="#">A-A-20135D</a> , Type I, Style A	A
Beverage Base (Powdered) <u>1/</u> Sweetened with Non-Nutritive Sweetener, Lap or Fin Seal Pouch	<a href="#">A-A-20098E</a> Type III Design D	B
Lemonade, Non-fortified	Flavor 8, Formulation a	
Raspberry, Non-fortified	Flavor 13, Formulation a	
Sugar Substitutes, Non-Carbohydrate Sucralose	<a href="#">A-A-20178A</a> , Type IV	C

1/ Flavors shall be procured in equal quantities and assembled in a uniform distribution.

C. Contents. The contents of each meal are specified in table III. Refer to table I for full citation and document number of components.

TABLE III. Contents

<p><u>Menu #1</u>  Chili with Beans  Cheese Spread, Cheddar with Jalapeno Peppers  Corn Bread  Crackers, Plain  Ranger Bar <u>1/</u>  Beverage Base, Sweetened with Nutritive Sweetener, Fortified <u>1/</u>  Spice, Red Pepper  Accessory Packet A  Spoon  Flameless Ration Heater  Bag, Hot Beverage</p>	<p><u>Menu #2</u>  Chicken Fajita  Refried Beans  Fudge Brownie with Chocolate Drops, <i>trans</i> Fat Free  Cheese Spread, Cheddar, with Jalapeno Peppers  Tortillas  Nuts <u>1/</u>  Drink Mix, Flavored Instant Cappuccino, Irish Cream  Spice, Seasoning Blend  Accessory Packet B  Spoon  Flameless Ration Heater</p>
<p><u>Menu #3</u>  Chicken, Noodles and Vegetables, in Sauce  Snack Bread, <u>1/</u>  Peanut Butter, Smooth  Jelly/Jam <u>1/</u>  Nut and Fruit Mix, Nuts and Raisins with Pan Coated Chocolate Disks  Beverage Base, Sweetened with Nutritive Sweetener, Fortified <u>1/</u>  Hot Sauce, Extra Hot  Accessory Packet A  Spoon  Flameless Ration Heater  Bag, Hot Beverage</p>	<p><u>Menu #4</u>  Pork Sausage In Cream Gravy  Granola with Milk and Fruit <u>1/</u>  Cheese Spread, Cheddar, Plain  Crackers, Plain  Toaster Pastry <u>1/</u>  Beverage Base, Sweetened with Nutritive Sweetener, Fortified <u>1/</u>  Accessory Packet A  Spoon  Flameless Ration Heater  Bag, Hot Beverage</p>



TABLE III. Contents - Continued

<p><u>Menu #5</u>  Chicken with Tomatoes and Feta Cheese  Fruit, Infused and Dried <u>1/</u>  Cheese Spread, Cheddar, Plain  Crackers, Vegetable  First Strike™ Bar <u>1/</u>  Candy II <u>1/</u>  Beverage Powder, Carbohydrate Electrolyte <u>1/</u>  Accessory Packet A  Spoon  Flameless Ration Heater  Bag, Hot Beverage</p>	<p><u>Menu #6</u>  Beef Taco  Fruits, Wet Pack <u>1/</u>  Snack Food, Cheese Filled Crackers <u>1/</u>  Peanut Butter, Smooth  Tortillas  Jelly/Jam  Beverage Powder, Carbohydrate Electrolyte <u>1/</u>  Barbecue Sauce  Accessory Packet A  Spoon  Flameless Ration Heater  Bag, Hot Beverage</p>
<p><u>Menu #7</u>  Brisket Entrée  Potatoes, Mashed, Garlic  Cookies <u>1/</u>  Peanut Spread, Chocolate  Tortillas  Candy I <u>1/</u>  Beverage Base, Sweetened with Nutritive  Sweetener, Fortified <u>1/</u>  Natural Butter Granules, Spray Dried  Accessory Packet C  Spoon  Flameless Ration Heater  Bag, Hot Beverage</p>	<p><u>Menu #8</u>  Meatballs in Marinara Sauce  Potatoes au Gratin  Cheese Spread, Cheddar, Plain  Snack Bread <u>1/</u>  First Strike™ Bar <u>1/</u>  Beverage Powder, Carbohydrate Electrolyte <u>1/</u>  Accessory Packet C  Spoon  Flameless Ration Heater  Bag, Hot Beverage</p>
<p><u>Menu #9</u>  Beef Stew  Peanut Butter, Smooth  Jelly/Jam <u>1/</u>  Snack Bread, Multigrain  Nut and Fruit Mix, Nuts and raisins  Snack Food, Pretzels  Cocoa Beverage Powder, Chocolate Hazelnut  Hot Sauce, Extra Hot  Accessory Packet B  Spoon  Flameless Ration Heater</p>	<p><u>Menu #10</u>  Chili And Macaroni  Cake, Pound <u>1/</u>  Cheese Spread, Cheddar, Plain  Crackers, Plain  Candy III <u>1/</u>  Beverage Powder, Carbohydrate Electrolyte <u>1/</u>  Spice, Red Pepper  Accessory Packet A  Spoon  Flameless Ration Heater  Bag, Hot Beverage</p>

TABLE III. Contents - Continued

<p><u>Menu #11 Vegetarian</u>  Vegetable Lasagna  Fruit, Wet Pack <u>1/</u>  Cookies <u>1/</u>  Peanut Butter, Chunky/Crunchy  Crackers, Plain  Candy I <u>1/</u>  Drink Mix, Flavored Instant Cappuccino,  French Vanilla  Hot Sauce, Extra Hot  Accessory Packet B  Spoon  Flameless Ration Heater</p>	<p><u>Menu #12 Vegetarian</u>  Penne with Vegetable Sausage Crumbles in  Spicy Tomato Sauce, Whole Grain Penne  Toaster Pastry <u>1/</u>  Dessert Powder, Pudding <u>1/</u>  Snack Bread <u>1/</u>  Peanut Butter, Smooth  Beverage Powder, Carbohydrate Electrolyte <u>1/</u>  Hot Sauce, Extra Hot  Accessory Packet A  Spoon  Flameless Ration Heater  Bag, Hot Beverage</p>
<p><u>Menu #13 Vegetarian</u>  Cheese Tortellini in Tomato Sauce  Fruit, Wet Pack <u>1/</u>  First Strike™ Bar <u>1/</u>  Peanut Butter, Smooth  Crackers, Plain  Candy II <u>1/</u>  Beverage Powder, Carbohydrate Electrolyte <u>1/</u>  Spice, Seasoning Blend  Accessory Packet B  Spoon  Flameless Ration Heater</p>	<p><u>Menu #14 Vegetarian</u>  Ratatouille  Fruits, Infused and Dried <u>1/</u>  Cake, Pound <u>1/</u>  Peanut Butter, Smooth  Crackers, Plain  Dairyshake Powder, <i>trans</i> Fat Free <u>1/</u>  Spice, Seasoning Blend  Accessory Packet A  Spoon  Flameless Ration Heater  Bag, Hot Beverage</p>

TABLE III. Contents - Continued

<p><u>Menu #15</u>  Mexican Style Chicken Stew  Santa Fe Rice And Beans  Snack Food, Cheese Filled Pretzels <u>1/</u>  Cheese Spread, Cheddar, with Jalapeno  Crackers, Vegetable  Candy II <u>1/</u>  Beverage Base, Sweetened with Nutritive  Sweetener, Fortified <u>1/</u>  Spice, Red Pepper  Accessory Packet A  Spoon  Flameless Ration Heater  Bag, Hot Beverage</p>	<p><u>Menu #16</u>  Rib Shaped Barbecue Flavor Pork Patty  Potato Cheddar Soup Flavored with Bacon  Beef Snacks, Strips  Peanut Butter, Smooth  Snack Bread, Wheat, Twin Pack  Candy, Caffeine Mints  Jelly/Jam <u>1/</u>  Beverage Base, Sweetened with Nutritive  Sweetener, Fortified <u>1/</u>  Barbecue Sauce  Accessory Packet B  Spoon  Flameless Ration Heater</p>
<p><u>Menu #17</u>  Pork Sausage Patty, Maple Flavored  Muffin Top, Maple  Cheese Spread, Cheddar, Plain  Crackers, Plain  Nut and Fruit Mix, Nuts and Raisins  Beverage, Sugar Free, Orange, Fortified with  Vitamin C  Syrup  Accessory Packet A  Spoon  Flameless Ration Heater  Bag, Hot Beverage</p>	<p><u>Menu #18</u>  Beef Ravioli  Cheese Spread, Cheddar, Plain  Snack Bread <u>1/</u>  Snack Food, Toasted Corn Kernel  Fruit, Infused and Dried <u>1/</u>  Beverage Base, Sweetened with Nutritive  Sweetener, Fortified <u>1/</u>  Hot Sauce, Extra Hot  Accessory Packet C  Spoon  Flameless Ration Heater  Bag, Hot Beverage</p>

TABLE III. Contents - Continued

<p><u>Menu #19</u>          Beef Patty, Jalapeno Pepper Jack          Cobbler, Cherry Blueberry          Snack Bread, Wheat, Twin Pack          Cheese Spread, Cheddar, Bacon          Cookies <u>1/</u>          Cocoa Beverage Powder          Ketchup          Mustard          Accessory Packet B          Spoon          Flameless Ration Heater</p>	<p><u>Menu #20</u>          Spaghetti with Beef and Sauce          Fruits, Infused and Dried <u>1/</u>          Cheese Spread, Cheddar, Plain          Snack Food, Pretzels, Sticks          Snack Bread, Multigrain          Candy III <u>1/</u>          Beverage Base, Sweetened with Nutritive          Sweetener, Fortified <u>1/</u>          Hot Sauce, Extra Hot          Accessory Packet A          Spoon          Flameless Ration Heater          Bag, Hot Beverage</p>
<p><u>Menu #21</u>          Tuna, Lemon Pepper          Tortillas          Cake, Pound <u>1/</u>          Snack Food, Baked Snack Cracker <u>1/</u>          Nuts <u>1/</u>          Dairyshake Powder, <i>trans</i> Fat Free <u>1/</u>          Mayonnaise, Fat Free          Spice, Seasoning Blend          Accessory Packet B          Spoon</p>	<p><u>Menu #22</u>          Asian Style Beef Strips with Vegetables          Peanut Butter, Chunky/Crunchy          Jelly/Jam <u>1/</u>          Snack Bread <u>1/</u>          Fried Rice          Candy I <u>1/</u>          Cocoa Beverage Powder          Accessory Packet C          Spoon          Flameless Ration Heater          Bag, Hot Beverage</p>

TABLE III. Contents - Continued

<u>Menu #23</u>	<u>Menu #24</u>
Chicken Pesto Pasta	Southwest Beef and Black Beans
Cheese Spread, Cheddar, Plain	Apple Pieces in Spiced Sauce
Italian Bread Sticks	Muffin Top, Chocolate Banana Nut
Filled Bakery Item <u>1/</u>	Turkey Nuggets
Cookies, Sugar, Patriotic	Cheese Spread, Cheddar with Jalapeno
Beverage Powder, Carbohydrate Electrolyte <u>1/</u>	Peppers
Spice, Red Pepper	Tortillas
Accessory Packet A	Drink Mix, Flavored Instant Cappuccino,
Spoon	Mocha
Flameless Ration Heater	Accessory Packet B
Bag, Hot Beverage	Spoon
	Flameless Ration Heater

1/ Flavors or types, as applicable, shall be procured in equal quantities and assembled in a uniform distribution in accordance with table IV:

TABLE IV. Menu distribution

Item	Menu	Flavor
Beverage Base, Sweetened with Nutritive Sweetener, Fortified	1, 3, 4, 7,15, 16, 18, 20	Orange, lemon-lime and tropical punch
Beverages with Carbohydrate Electrolyte	5, 6, 8, 10, 12, 13, 23	Fruit punch, grape, lemon-lime and orange
Cakes, Pound	10, 14, 21	Vanilla, lemon poppy, spice, carrot, marble, and chocolate with chocolate filling
Candy I	7, 11, 22	Chocolate toffee rolls, toffee chocolate cubes and licorice
Candy II	5, 13, 15	Pan coated candy: plain chocolate disks, peanut butter disks and chocolate with peanuts oval/round
Candy III	10, 20	Original, berry and sour fruit disks
Cookies	7, 11, 19	Oatmeal, chocolate chip, and oatmeal chocolate chunk
Dairyshake Powder, <i>trans</i> Fat Free	14, 21	Vanilla, chocolate, strawberry and strawberry-banana
Dessert Powder, Pudding	12	Vanilla and chocolate
Filled Bakery Items	23	Cinnamon bun and apple turnover
First Strike™ Bars	5, 8, 13	Chocolate and apple-cinnamon
Fruit, Infused and Dried	5, 14, 18, 20	Cranberries and raisins
Fruit, Wet Pack	6, 11, 13	Raspberry applesauce, carbohydrate enhanced applesauce, mango/peach applesauce, pears, and mixed fruit
Granola with Milk and Fruit	4	With blueberries and with banana
Jams and Jellies	3, 6, 9, 16, 22	Blackberry, strawberry, apple and grape
Nuts	2, 21	Dry roasted peanuts, jalapeno cashews, smoked almonds, and barbecue almonds
Ranger Bar	1	Caramel apple, chocolate covered chocolate chip, cran-apple and banana nut
Snack Breads	3, 8, 12, 18, 22	Wheat and white wheat
Snack Foods Baked Snack Crackers	21	Cheddar cheese and hot and spicy cheese
Filled Crackers	6	Cheddar cheese, pepperoni pizza, and jalapeno tortilla
Filled Pretzels	15	Cheddar cheese and nacho cheese
Toaster Pastries	4, 12	Frosted brown sugar cinnamon and chocolate chip

## SECTION D

### D-1 PACKAGING

#### A. Components.

(1) Subassembly/accessory packet pouch. The subassembly/accessory packet pouch shall be a preformed-pouch or a form-fill-seal pouch. Dimensions shall be sufficient to contain all components. Seals shall be a minimum 1/8 inch wide. A tear nick, notch or serrations shall be provided to facilitate opening the filled and sealed accessory packet. The average seal strength of the pouch seals shall be not less than 3.5 pounds per inch of width and no individual specimen shall have a seal strength of less than 3.0 pounds per inch of width. As an alternative to the seal strength requirement, the filled and sealed packet shall exhibit no rupture or seal separation greater than 1/16 inch or seal separation that reduces the effective seal width to less than 1/16 inch when tested for internal pressure resistance. The pouch shall be made from polymeric film or film combinations with adequate strength and thickness to contain and protect the components. The water vapor transmission rate (WVTR) of the film shall not exceed 6.2 g/m<sup>2</sup>/24hrs at 90% RH and 100°F when tested in accordance with ASTM F1249, Standard Test Method for Water Vapor Transmission Rate Through Plastic Film and Sheeting Using a Modulated Infrared Sensor, ASTM E96/E96M, Standard Test Methods for Water Vapor Transmission of Materials or Method 3030 of MIL-STD-3010, Test Procedures for Packaging Materials. The exterior color of the packet shall be clear or tan.

(2) Time-temperature indicator (TTI) label. The TTI label shall be a 3/4 inch square, bull's-eye type, pressure sensitive adhesive label. The TTI label shall have an activation energy ( $E_a$ ) of 24–30 kcal/mole, be protected from ultraviolet radiation, and have a shelf life of 1100 days at 80°F as pivot point.

(3) Meal bag. The meal bag shall be made from food grade, low density polyethylene (LDPE) tubing or tubing made from a blend of food grade, low density polyethylene (LDPE) and linear low density polyethylene (LLDPE). Additives may be used in order to improve sealability, peelability, tear resistance or other attributes provided all additives are food grade and are certified by the FDA as approved for food contact. Polyethylene shall have a minimum thickness of 0.010 inch. Inside dimensions of the bag shall not exceed 8-1/2 by 13-1/4 inches. The color of the bag shall conform to number 20219, 30219, 30227, 30279, 30313, 30324 or 30450 of FED-STD-595, Colors Used in Government Procurement. One seal shall be a minimum 1/8 inch wide, continuous, peelable seal that forms a hermetic closure. The seal shall be designed with an inverted “V” shaped peel indicator along the seal path. There shall be a minimum of 1/2 inch between the apex of the “V” and the end of the bag. The seal strength of the peelable seal shall be not less than 4 pounds per inch of width and shall be not greater than 10 pounds per inch of width. Alternative bag construction, bag

materials, and material thicknesses may be used provided that the alternative method can be demonstrated to meet or exceed the requirements of this document, military abuse testing and controlled pest testing. Samples may be submitted to the contracting officer to be qualified on a case by case basis.

B. Assembly.

(1) Subassembly/accessory packet assembly. One of each applicable component as described in table II shall be inserted in an accessory packet pouch. If a subassembly is used, additional components may also be inserted in the packet. For a preformed-pouch, contents shall be inserted in the pouch and the pouch shall be closed with a heat seal not less than 1/8 inch wide. For a form-fill-seal pouch, components shall be placed in the body and the cover applied by heat sealing with a seal not less than 1/8 inch wide. The closure seal shall be free of foldover wrinkles or entrapped matter that reduces the effective seal width to less than 1/16 inch. The average seal strength of the pouch seals shall be not less than 3.5 pounds per inch of width and no individual specimen shall have a seal strength of less than 3.0 pounds per inch of width. As an alternative to the seal strength requirement, the filled and sealed packet 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.

(2) Meal assembly. Each applicable component for each meal as described in table III shall be inserted in a meal bag. The bag shall be closed with a heat seal not less than 1/8 inch wide. The closure seal shall have an average seal strength of not less than 4 pounds per inch of width with no individual specimen test result less than 3 pounds per inch of width. The sealed meal bag shall not show any evidence of foreign odor.

**D-2 LABELING**

A. Subassembly/accessory packet. The subassembly/accessory packet shall be labeled on one face in permanent dark contrasting color ink with 'A', 'B' or 'C', as applicable. Alternatively, the packet letter may be embossed in the seal of the packet.

B. Meal bag. Each meal bag shall be correctly and legibly labeled on at least one face with permanent ink or other dark contrasting color with the information contained in accordance with Figures 1, 2 or 3, as applicable. The label shall cite the correct Menu number, name of entrée, French translation of entrée name (see table V), name and address of assembler, and Menus 11-14 shall cite "Vegetarian". Menus 1-4 and 13-16 shall be printed in accordance with Design 1 (Figure 1). Menus 5-8 and 17-20 shall be printed in accordance with Design 2 (Figure 2). Menus 9-12 and 21-24 shall be printed in accordance with Design 3 (Figure 3). The French translation printed on the meal bag, in accordance with the design specified above, shall be as specified in table V:



TABLE V. French Translation of Entrée Name

Entrée Name	French Translation
Asian Style Beef Strips with Vegetables	Dés de bœuf aux légumes, à l'asiatique
Beef Patty, Jalapeno Pepper Jack	Steak haché au fromage pimenté
Beef Ravioli in Meat sauce	Ravioli au bœuf, sauce à la viande
Beef Stew	Ragoût de bœuf
Beef Taco	Taco au boeuf
Brisket Entrée (Gravy with Seasoned Beef Brisket Slices)	Tranches de poitrine de bœuf assaisonné
Cheese Tortellini in Tomato Sauce	Tortellini au fromage, sauce tomate
Chicken Fajita	Fajita au poulet
Chicken, Noodles and Vegetables, in Sauce	Poulet, nouilles et légumes en sauce
Chicken Pesto Pasta	Poulet et pâtes au pesto
Chicken with Tomatoes and Feta Cheese	Poulet aux tomates et au fromage Feta
Chili and Macaroni	Chili et Macaroni
Chili with Beans	Chili aux haricots rouges
Meatballs in Marinara Sauce	Boulettes de viande, sauce Marinara
Mexican Style Chicken Stew	Ragoût de poulet à la mexicaine
Penne with Vegetable Sausage Crumbles in Spicy Tomato Sauce	Penne à la saucisse végétale, sauce tomate piquante
Rib Shaped Barbecue Flavor Pork Patty	Travers de porc, saveur Barbecue
Pork Sausage in Cream Gravy	Saucisse de porc en sauce crémeuse
Pork Sausage Patty, Maple Flavored	Saucisse de porc, saveur d'érable
Ratatouille (Mixed Vegetables and Penne)	Ratatouille (mélange de légumes et de Penne)
Southwest Beef and Black Beans	Bœuf à la façon "Southwest" aux haricots noirs
Spaghetti with Beef and Sauce	Spaghetti en sauce à la viande de bœuf
Tuna, Chunk, Light, Water Packed, Lemon Pepper	Miettes de thon au naturel au poivre citronné
Vegetable Lasagna	Lasagne aux légumes

### **D-3 PACKING**

A. Packing. Twelve meals shall be packed in a fiberboard box. Case "A" shall contain meals 1 through 12, and case "B" shall contain meals 13 through 24. The fiberboard box shall conform to RSC-L of ASTM D5118/D5118M, Standard Practice for Fabrication of Fiberboard Shipping Boxes and grade V2s of ASTM D4727/D4727M, Standard Specification for Corrugated and Solid Fiberboard Sheet Stock (Container Grade) and Cut

Shapes, except the requirements for dry burst strength shall be minimum 425 psi, the requirement for wet burst strength shall be minimum 250 psi and the laminated board thickness shall be 0.069 inches. [US Army Research, Development and Engineering Command; Natick Soldier Research, Development, and Engineering Center found that solid fiberboard shipping container material consisting of two outer facings of 90 pound wet strength linerboard and an inner ply of 69 pound linerboard meets the performance criteria of this specification.] The box liner shall be a full inside width box liner fabricated from grade W5c fiberboard in accordance with ASTM D5118/D5118M, except the terminal ends of the liner shall overlap a minimum of 2 inches and no fastening of the overlap is required. The box shall be closed in accordance with closure method 2A1 of ASTM D1974/D1974M, Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Boxes; except the gap between the outer flaps shall be not more the 3/4 inch wide. Each box shall be reinforced with two girthwise nonmetallic straps. The inside dimensions of the box shall be 16-11/16 inches in length, 9-1/8 inches in width and 10-1/4 inches in depth.

#### **D-4 UNITIZATION**

A. Unit loads. Forty-eight boxes shall be arranged in unit loads in accordance with type I, class C of DLA Troop Support Form 3507, Loads, Unit: Preparation of Semiperishable Subsistence Items. Each load shall have 24 “A” cases and 24 “B” cases. At least two boxes in each tier shall be oriented to display the TTI label.

#### **D-5 MARKING**

A. Shipping containers. Shipping containers shall be marked in accordance with DLA Troop Support Form 3556, Marking Instructions for Boxes, Sacks, and Unit Loads of Perishable and Semiperishable Subsistence and as specified in the contract with the following exceptions:

(1) Identification markings normally placed on an end of the shipping container shall read from top to bottom, left to right, when the shipping container is rotated from its upright position onto its side for palletization. The major flaps of the shipping container closure immediately to the right of the marked end of the shipping container shall bear the following marking:

Contract data and other required markings  
Date of pack  
Lot number  
Case A or B, as applicable  
U.S. GOVERNMENT PROPERTY – COMMERCIAL RESALE IS UNLAWFUL  
NOTE: WATER ACTIVATED Flameless Ration Heater, NSN 8970-01-321-9153,  
supplied in each MRE bag

Time Temperature Indicator label shall be centrally positioned on the panel. A minimum distance (quiet zone) of 1/4 inch from the nearest identification marking shall be maintained.

(2) One side panel of the shipping container shall be marked “MEAL, READY-TO-EAT™, INDIVIDUAL” in letters not less than 1-1/4 inches high with the French translation “(Repas, Prêt-à-Consommer, Individuel)” marked underneath in letters not less than 1 inch. Underneath the ration nomenclature, in letters not less than 1/2 inch, the shipping container shall be marked “DO NOT ROUGH HANDLE WHEN FROZEN (0°F or below)”.

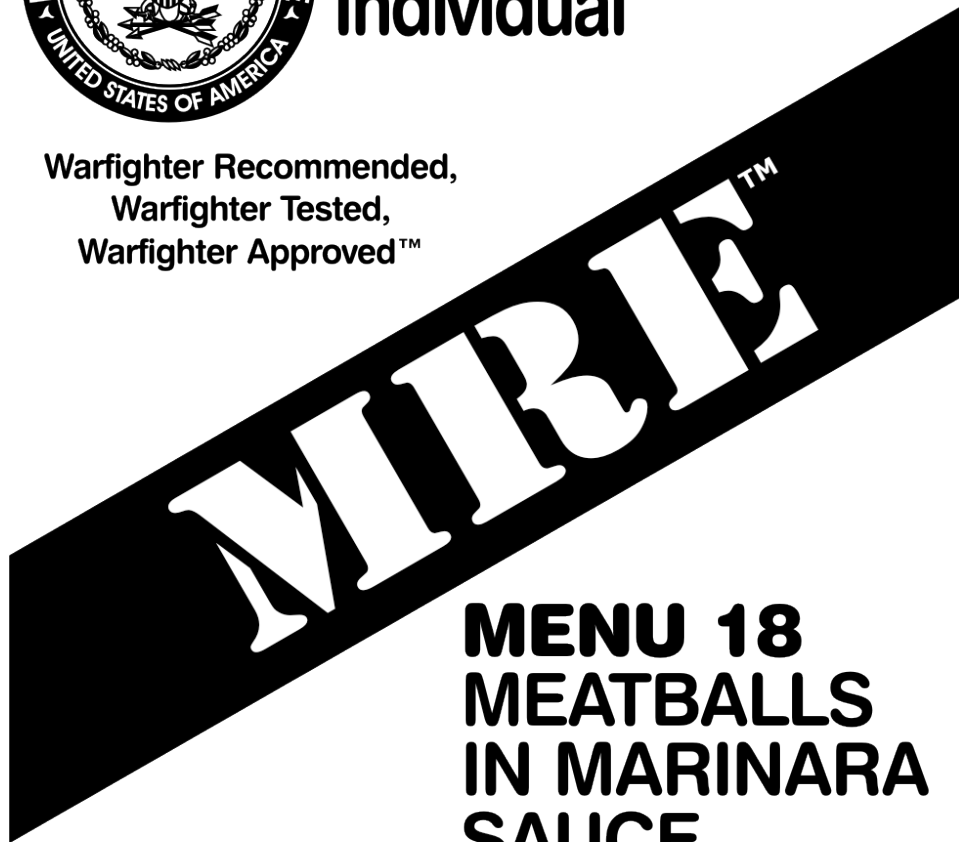
B. Unit loads. Unit loads shall be marked in accordance with DLA Troop Support Form 3556. In addition, each unit load shall be provided with a Material Safety Data Sheet (MSDS), in accordance with MIL-R-44398. The MSDS shall be packaged and attached to one side of the unit load. A copy of the MSDS must be included with the shipping papers and a copy must also be placed in the vehicle manifest.

Peelable Seal ↑



# Meal, Ready-to-Eat™, Individual

Warfighter Recommended,  
Warfighter Tested,  
Warfighter Approved™



## **MENU 18 MEATBALLS IN MARINARA SAUCE**

(BOULETTES DE VIANDE,  
SAUCE MARINARA)

**THE WORNICK COMPANY  
CINCINNATI, OHIO 45242**

**U.S. GOVERNMENT PROPERTY  
COMMERCIAL RESALE IS UNLAWFUL**

**FLAMELESS RATION HEATERS ARE PROHIBITED ON COMMERCIAL  
AIRLINES UNLESS SEALED IN ORIGINAL MEAL BAG**

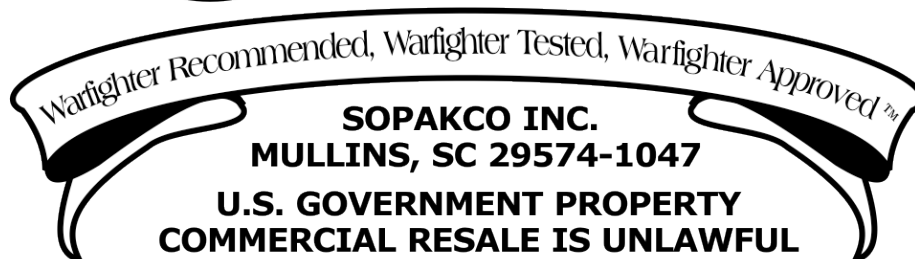
FIGURE 1. Example of Design 1 of Meal Bag Graphics

Peelable Seal ↑



# MENU 18 Meatballs in Marinara Sauce

(BOULETTES DE VIANDE,  
SAUCE MARINARA)



**FLAMELESS RATION HEATERS ARE PROHIBITED ON COMMERCIAL  
AIRLINES UNLESS SEALED IN ORIGINAL MEAL BAG**

FIGURE 2. Example of Design 2 of Meal Bag Graphics

Peelable Seal ↑



**MENU 18**  
**MEATBALLS**  
**IN MARINARA SAUCE**  
(BOULETTES DE VIANDE, SAUCE MARINARA)

**MRE<sup>TM</sup>**  
**MEAL, READY-TO-EAT<sup>TM</sup>, INDIVIDUAL**

**Warfighter Recommended,  
Warfighter Tested,  
Warfighter Approved<sup>TM</sup>**

**AMERIQUAL PACKAGING  
EVANSVILLE, IN 47710**

**U.S. GOVERNMENT PROPERTY  
COMMERCIAL RESALE IS UNLAWFUL**

**FLAMELESS RATION HEATERS ARE PROHIBITED ON COMMERCIAL  
AIRLINES UNLESS SEALED IN ORIGINAL MEAL BAG**

FIGURE 3. Example of Design 3 of Meal Bag Graphics

**SECTION E INSPECTION AND ACCEPTANCE**

The following quality assurance criteria, utilizing ANSI/ASQ Z1.4, Sampling Procedures and Tables for Inspection by Attributes, are required. Unless otherwise specified, single sampling plans indicated in ANSI/ASQ Z1.4 will be utilized. When required, the manufacturer shall provide the Certificate of Conformance (CoC) to the appropriate inspection activity. CoCs not provided shall be cause for rejection of the lot.

A. Definitions.

(1) Critical defect. A critical defect is a defect that judgment and experience indicate would result in hazardous or unsafe conditions for individuals using, maintaining, or depending on the item; or a defect that judgment and experience indicate is likely to prevent the performance of the major end item, i.e., the consumption of the ration.

(2) Major defect. A major defect is a defect, other than critical, that is likely to result in failure, or to reduce materially the usability of the unit of product for its intended purpose.

(3) Minor defect. A minor defect is a defect that is not likely to reduce materially the usability of the unit of product for its intended purpose, or is a departure from established standards having little bearing on the effective use or operation of the unit.

B. Conformance inspection. Conformance inspection shall include the examinations/tests and the methods of inspection cited in this section.

C. Packaging examination.

(1) Pouch material certification. The pouch material shall be tested for these characteristics. A Certificate of Conformance (CoC) may be accepted as evidence that the characteristics conform to the specified requirements.

Requirement	Requirement paragraph	Test procedure
Thickness of meal bag	D-1,A(3)	ASTM D2103 <u>1/</u>
Color of meal bag and subassembly/accessory packet	D-1,A(1) and D-1,A(3)	Visual evaluation and FED-STD-595, as applicable <u>2/</u>
Water vapor transmission rate	D-1,A(1)	ASTM F1249 <u>3/</u> , ASTM E96/E96M <u>4/</u> or Method 3030 of MIL-STD-3010 <u>5/</u>

1/ Standard Specification for Polyethylene Film and Sheeting

2/ Colors Used in Government Procurement

3/ Standard Test Method for Water Vapor Transmission Rate Through Plastic Film and Sheeting Using a Modulated Infrared Sensor

4/ Standard Test Methods for Water Vapor Transmission of Materials

5/ Test Procedures for Packaging Materials

(2) Subassembly/accessory packet examination. The filled and sealed packets shall be examined for the defects listed in table VI. The lot size shall be expressed in packets. The sample unit shall be one packet. The inspection level shall be S-4 and the acceptable quality level (AQL), expressed in terms of defects per hundred units, shall be 2.5 for major defects and 4.0 for minor defects.

TABLE VI. Subassembly/accessory packet defects

Category		Defect
<u>Major</u>	<u>Minor</u>	
101		Not clean. <u>1/</u>
	201	Seal width less than 1/16 inch. <u>2/</u>
	202	Tear nick or notch or serrations missing or does not facilitate opening.
	203	Tear or hole or open seal.
	204	Label missing or incorrect or illegible.
	205	Pouch not sealed on four sides.

1/ Outer packaging shall be free from foreign matter which is unwholesome, has the potential to cause package damage (for example, glass, metal fillings, etc.), or generally detracts from the clean appearance of the package. The following examples shall not be scored as defects for unclean:

a. Foreign matter which presents no health hazard or potential package damage and which can be readily removed by gently shaking the package or by gently brushing the package with a clean dry cloth.



b. Localized dried product which affects less than 1/8 of the total surface area of one pouch face, or an aggregate of scattered dried product which affects less than 1/4 of the total surface area of one pouch face.

2/ An effective seal is defined as any uncontaminated, fusion bonded, continuous path, minimum 1/16 inch wide, producing a hermetically sealed pouch.

(3) Subassembly/accessory packet contents examination. The filled and sealed packets shall be examined for the defects listed in table VII (this examination may be performed on the preformed packets after filling and prior to sealing). The lot size shall be expressed in packets. The sample unit shall be one packet, open or sealed. The inspection level shall be S-4 and the AQL, expressed in terms of defects per hundred units, shall be 1.5 for major defects and 4.0 for minor defects.

TABLE VII. Subassembly/accessory packet contents defects

Category		Defect
<u>Major</u>	<u>Minor</u>	
101		Component not clean. <u>1/</u>
	201	Missing or unserviceable component.

1/ Outer packaging shall be free from foreign matter which is unwholesome, has the potential to cause package damage (for example, glass, metal filings, etc.), or generally detracts from the clean appearance of the package. The following examples shall not be scored as defects for unclean:

a. Foreign matter which presents no health hazard or potential package damage and which can be readily removed by gently shaking the package or by gently brushing the package with a clean dry cloth.

b. Localized dried product which affects less than 1/8 of the total surface area of one package face, or an aggregate of scattered dried product which affects less than 1/4 of the total surface area of one package face.

(4) Assembled meal bag examination. The filled and sealed meal bags shall be inspected for the defects listed in table VIII. The lot size shall be expressed in bags. The sample unit shall be one bag. The inspection level shall be S-4 and the AQL, expressed in terms of defects per hundred units, shall be 2.5 for major defects and 4.0 for minor defects. A minimum of 50 samples shall be examined for critical defects. The finding of any critical defect shall be cause for rejection of the lot. The inspection sample shall contain a proportionate amount of each of the meals.

TABLE VIII. Assembled meal bag defects

Category			Defect
<u>Critical</u>	<u>Major</u>	<u>Minor</u>	
1			Tear or hole or puncture through carton or open carton causing a hole in the pouch or obviously wet or stained carton due to leaking pouch. <u>1/</u>
2			Tear or hole or open seal in cheese spread.
3			Swollen cheese spread pouch, or swollen pouch or carton of thermostabilized item.
4			Tear or hole or puncture in uncartoned thermostabilized pouch.
	101		Tear or hole in carton exposing pouch to potential damage.
	102		Menu component missing or incorrect assortment for menu. <u>2/</u>
	103		Meal bag not clean or outer packaging of its contents not clean. <u>3/</u>
	104		Foreign odor.
	105		Labeling missing or incorrect or illegible.
	106		Swollen peanut butter or jelly or jam pouch.
	107		Tear or hole or open seal in component packages.
	108		Crushed or broken component. <u>4/</u>
	109		Broken spoon
	110		Chocolate toffee rolls or cubes not packaged in barrier pouch.

TABLE VIII. Assembled meal bag defects - Continued

Category			Defect
<u>Critical</u>	<u>Major</u>	<u>Minor</u>	
		201	Tear or hole or open seal or split in meal bag.
		202	Tear or hole or open seal in subassembly/accessory packet.
		203	Thermostabilized carton flaps open or tear or hole in carton not exposing pouch to potential damage.
		204	Inverted "V" shaped peel indicator missing or not located as specified.
		205	Labeling graphics of meal bag not correct.

1/ Applies to cartoned items.

2/ A missing entrée shall be cause for rejection of the lot.

3/ Outer packaging shall be free from foreign matter, which is unwholesome, has the potential to cause package damage (i.e. glass, metal filings, etc.), or generally detracts from the clean appearance of the package. The following examples shall not be scored as defects for unclean:

a. Foreign matter which presents no health hazard or potential package damage and which can be readily removed by gently shaking the package or by gently brushing the package with a clean dry cloth.

b. Localized dried product which affects less than 1/8 of the total surface area of one pouch face, or an aggregate of scattered dried product which affects less than 1/4 of the total surface area of one pouch face.

4/ For definition of crushed or broken, refer to applicable ration component document.

D. Methods of inspection.

(1) Seal testing. The pouch seals shall be tested for seal strength or internal pressure resistance as required in a, b, c, or d, as applicable.

a. Unfilled preformed subassembly/accessory packet pouch. The seals of the unfilled preformed pouches for the subassembly/accessory packet 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 inspection shall be level S-1 and the AQL, expressed in defects per hundred units, shall be 10.0. Three 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 results of the three specimens cut from that side. Any individual test specimen failing to meet a seal strength of 3 pounds per inch of width shall be scored as a major defect. Any average seal strength of less than 3.5 pounds per inch of width shall be cause for rejection of the lot. Alternatively, the internal pressure resistance shall be determined by pressurizing the pouches while they are restrained between two rigid plates. 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 (see table VI, footnote 2/) shall be considered a test failure. Any test failure shall be a major defect and shall be cause for rejection of the lot.

b. Unfilled meal bag. The seals of the unfilled meal bags shall be tested for seal strength in accordance with ASTM F88/F88M. The lot size shall be expressed in bags. The sample unit shall be one bag. The sample size shall be the number of bags indicated by inspection level S-1. Three specimens shall be cut from the sealed end of each bag in the sample. Samples shall not be taken from the inverted "V" peel initiation. Any specimen with a seal strength less than 4 pounds per inch of width or greater than 10 pounds per inch of width shall be a major defect and shall be cause for rejection of the lot.

c. Subassembly/accessory packet pouch closure. The closure seals of the pouches for the subassembly/accessory packet 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 inspection level shall be S-1 and the AQL, expressed in defects per hundred units, shall be 10.0. For the closure seal on preformed pouches, three adjacent specimens shall be cut from the closure seal of each pouch in the sample. For the form-fill-seal pouches, three 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 individual test specimen failing to meet a

seal strength of 3 pounds per inch of width shall be scored as a major defect. Any average seal strength of less than 3.5 pounds per inch of width shall be cause for rejection of the lot. Alternatively, the internal pressure resistance shall be determined by pressurizing the pouches while they are restrained between two rigid plates. 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 (see table VI, footnote 2/) shall be considered a test failure. Any test failure shall be a major defect and shall be cause for rejection of the lot.

d. Meal bag closure. The closure seals of the meal bags shall be tested for seal strength in accordance with ASTM F88/F88M. The lot size shall be expressed in bags. The sample unit shall be one bag. The sample size shall be the number of bags indicated by inspection level S-1. Three specimens shall be cut from the closure seal of each bag in the sample. The average seal strength shall be calculated by averaging the three test specimens cut from that seal (the sample unit). Any test specimen result less than 3 pounds per inch of width shall be cause for rejection of the lot. Any average seal strength of less than 4 pounds per inch of width shall be cause for rejection of the lot.

(2) Unfilled meal bag and unfilled preformed subassembly/accessory packet pouch seal certification. A CoC may be accepted as evidence that unfilled bags or pouches conform to the seal strength requirements specified in D-1,A,(1) and (3). When deemed necessary by the government inspector, testing of the unfilled preformed pouches for seal strength shall be as specified in E,D(1)a.

E. Packing.

(1) Shipping container and marking examination. The filled and sealed shipping containers shall be examined for the defects listed in table IX. The lot size shall be expressed in shipping containers. The sample unit shall be one shipping container fully packed. The inspection level shall be S-3 and the AQL, expressed in terms of defects per hundred units, shall be 4.0 for major defects and 10.0 for total defects.

TABLE IX. Shipping container and marking defects

Category		Defect
<u>Major</u>	<u>Minor</u>	
101		Marking missing or incorrect or illegible.
102		Outer flaps do not completely meet, leaving an opening greater than 3/4 inch between flap ends.
103		Inadequate workmanship. <u>1/</u>
104		Missing meal. <u>2/</u>
105		Not one of each menu specified.
	201	Time-temperature indicator missing or not centrally located on panel.
	202	Time-temperature indicator 1/4-inch quiet zone not maintained.
	203	Meal bag graphics do not coincide with specified design.

1/ Inadequate workmanship is defined as, but not limited to, incomplete closure of container flaps, loose strapping, inadequate stapling, improper taping, or bulged or distorted container.

2/ Each missing meal is a defect.

(2) Flap closure testing. The lot size shall be expressed in shipping containers. The sample unit shall be one shipping container. The inspection level shall be S-2 and the AQL, expressed in terms of defects per hundred units, shall be 4.0. The closure of the four outer flaps of the container shall be tested separately. A 90 degree angular bar with each leg approximately 5 inches long by 3 inches wide by 1/8 inch thick shall be used to test the flap closures. Insert one leg of the angular bar full length under the center of one outer flap. Insertion shall be made through the open slot between the outer flaps. Lift the container vertically by the other leg of the bar until the container is suspended. The complete upper surface of the inserted leg shall be in contact with the inner surface of the flap during the lifting and suspension of the container. Complete separation of the adhesive bond of one or more of the outer flaps, showing no evidence of fiber tear, shall be scored as a major defect.

F. Unit load examination. The unit load shall be examined in accordance with the requirements of DLA Troop Support Form 3507. Any nonconformance shall be classified as a major defect.

**SECTION J REFERENCE DOCUMENTS**

Unless otherwise specified, the applicable version of these documents is that which is active on the date of the solicitation or contract.

DLA Troop Support Forms

Form 3507	Loads, Unit: Preparation of Semiperishable Subsistence Items
Form 3556	Marking Instructions for Boxes, Sacks, and Unit Loads of Perishable and Semiperishable Subsistence

MILITARY SPECIFICATIONS

MIL-PRF-32176	Bag, Hot Beverage
MIL-R-44398B	Ration Supplement, Flameless Ration Heater (FRH)
MIL-STD-3010	Test Procedures for Packaging Materials

FEDERAL STANDARDS

FED-STD-595	Colors Used in Government Procurement
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NON-GOVERNMENTAL STANDARDS

AMERICAN SOCIETY FOR QUALITY (ASQ) [www.asq.org](http://www.asq.org)

ANSI/ASQ Z1.4 Sampling Procedures and Tables for Inspection by Attributes

ASTM INTERNATIONAL [www.astm.org](http://www.astm.org)

D1974/ D1974M	Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Boxes
D2103	Standard Specification for Polyethylene Film and Sheeting
D4727/D4727M	Standard Specification for Corrugated and Solid Fiberboard Sheet Stock (Container Grade) and Cut Shapes

D5118/D5118M	Standard Practice for Fabrication of Fiberboard Shipping Boxes
E96/E96M	Standard Test Methods for Water Vapor Transmission of Materials
F88/F88M	Standard Test Method for Seal Strength of Flexible Barrier Materials
F1249	Standard Test Method for Water Vapor Transmission Rate Through Plastic Film and Sheeting Using a Modulated Infrared Sensor