

SALIENT CHARACTERISTICS  
CASKETS & URNS  
FOR  
AIR FORCE MORTUARY AFFAIRS OPERATIONS (AFMAO)

**1.1 Metal Sealer Casket**

**1.1.1 Classification.**

**1.1.1.1 Standard Size 18-gauge metal** sealer, cut top. Inside dimensions shall not be less than

78 inches in length, measured between the inner surfaces of the end panels, and 23 inches in width, measured between the inner surfaces of the side panels.

**1.1.1.2 Oversize 18-gauge metal sealer**, cut top. Inside dimensions shall not be less than 81 inches long, measured between the inner surfaces of the end panels, and 25 inches wide, measured between the inner surfaces of the side panel. 1.3 Infant Caskets: Caskets and shipping cases covered in the specification shall be of the following types and sizes:

**1.1.2 Requirements.**

**1.1.2.1. Sample Casket.** In accordance with FAR Clause 52.246-17, a sample completed casket and/or sample casket without upholstery shall be made available to the Contracting Officer (CO) or Contracting Officer's Representative (COR) for quality assurance inspection in accordance with 1.1.1. The approval of the sample is acceptance of the casket, but does not relieve the Contractor of responsibility for compliance with all applicable provisions of this specification. The pre-furnished sample(s) shall be manufactured in the same facilities used to manufacture the caskets furnished under contract.

**1.1.2.2. Materials.** Materials shall, as a minimum, conform to the applicable specifications and requirements specified hereinafter. Unless otherwise specified herein, tolerances for materials shall, at a minimum, conform to these specifications.

**1.1.2.2.1. Steel:** Steel sheet shall be common or standard to that used within the metal casket industry. Color will be silver tone to gray.

**1.1.2.2.2. Fabric (Lining).** The construction of this cloth shall, at a minimum, be: warp, 92 ends 100 denier dull acetate yarn; filling, 52 picks 150-denier dull acetate yarn. The acetate taffeta fabric finish shall be flat and/or embossed. The color shall be white to eggshell.

**1.1.2.2.3. Non-woven Fabric Material Tissue (Backing).** The non-woven material for backing the fabric of the lining assemblies shall be scrim laminate consisting of 3 x 2 1/2-nylon scrim with 2 plies of tissue adhesively bonded to each side of scrim. White in color.

**1.1.2.2.4. Body Pocket.** The body pocket shall be a minimum of 40% cotton and 60% liners or synthetic equivalent.

**1.1.2.2.5. Welding.** All component parts to be welded shall be properly aligned into position prior to welding. Resistance, arc, or gas welds shall be sound and free from pits, holes, or fissures. Welding shall be accomplished without burning through the welded metals. After any flash welding, outside exposed flash shall be removed entirely and no trace of the joint shall be visible after finishing. All arc or gas welds shall have sufficient penetration to form a joint of strength equal to that of the parent metal. Exposed welds shall be finished flush to the original

surface and shall be undetectable after finishing. Repair of welds will be accepted, provided such repaired welds meet the requirements of this specification.

**1.1.2.2.6. Upholstering.** Upholstering requirements for the lining assemblies of the interior of the head panel lid, sides and ends of casket, the overlay, mattress spread, and pillow are provided in the following paragraphs:

**1.1.2.2.6.1.** The “two-piece top lid” support and the “one-piece top lid” support shall be finished to compliment the casket. The sides of the casket body shall be backed with specified fabric. (40% cotton and 60% liners or synthetic equivalent.)

**1.1.2.2.6.2.** The head top shall be lined with interior styling.

**1.1.2.2.6.3.** The foot top shall be lined with specified fabric and backing or may be upholstered by applying a rigid one-piece insert, simulating fabric finish.

**1.1.2.2.6.4.** The assemblies for the lid or head panel, as applicable, top of the pillowcase, outside exposed body lining, and top side of overthrow shall be "Wave Crushed," tufted or shirred either by hand or machine.

**1.1.2.2.6.5.** The interior assemblies for the sides and ends of casket shall be tailored and/or shirred by hand or machine. Before lining the casket, the inside of the shell shall be cleaned of all foreign materials.

**1.1.2.2.6.6. Pillow.** The pillow shall be made of specified nonwoven material and filled with a minimum of 2-1/4 pounds of the specified filling material. The pillow shall then be encased in a specified outer fabric cover. The pillow shall be sized to properly fit the casket. The pillow shall also be a minimum of 40% cotton.

**1.1.2.2.6.7. Mattress.** The mattress shall be made of specified nonwoven fabric or polyethylene

(.004) film, and filled with cotton (40% cotton and 60% liners) or equivalent synthetic filling in one piece such as polyester or fiberglass, excluding all foam-type and excelsior materials. The quality of the mattress fills, if cotton or similar, shall be 16 pounds, plus or minus 1 pound. Should the casket be equipped with an adjustable inner spring, the mattress fill shall render a minimum uniform thickness of 2 inches. In either case, the mattress shall be sized to properly fit the casket.

**1.1.2.2.6.8. Side panels.** Side panels of the casket body shall have padding in the skirting or apron area.

**1.1.2.2.7. Finish.** The color of the casket's painted finish shall be within the range of silver tone or gray. The painted finish may be achieved through one of the two methods:

**1.1.2.2.7.1. Synthetic Enamel Baked.** All surfaces of metal components, including outside of bottom and inside of shell shall be thoroughly cleaned and given a phosphate coating conforming to TT-C-490. A primer shall be applied to all exposed surfaces and shall be sanded to a smooth finish. A primer shall be applied to the outside of bottom and inside of shell. All exterior metal surfaces exposed to view including surfaces that are exposed when the casket is open (not applicable to bottom) shall be coated with the appropriate color synthetic gloss enamel in a quantity not less than 2.0 mils dry film thickness. The exposed heads of screws or bolts used for assembling the casket shall be appropriately finished (plated or painted) to correspond or compliment the parent metal finish. The finish coat shall level out to produce a smooth and uniform flow without orange peel, runs, wrinkles, drops, streaks, or areas of thin film or no film.

**1.1.2.2.7.2. Nitrocellulose lacquer** (air dry or flash dry). All surfaces of metal components shall be thoroughly cleaned and given a phosphate coating conforming to Federal Specification TT-C-490, Cleaning Methods and Pretreatment Methods of Ferrous Surfaces for Organic Coatings. A primer shall be applied to the outside of bottom and inside of shell. The primer shall be scuff-sanded in all exposed view areas. Forced drying may be used if desired. All exterior metal surfaces exposed to view, including surfaces that are exposed when casket is opened (not applicable to bottom), shall be given an adequate coating of the appropriate color lacquer. All surfaces shall then be coated with a clear lacquer to achieve at least the required 2.0 mils dry film thickness. The exposed heads of screws used for assembling the casket shall be appropriately finished (plated or painted) to correspond or compliment the parent metal finish. The finish coat shall level out to produce a smooth and uniform flow without orange peel, runs, wrinkles, drops, streaks, or areas of thin film or no film. The casket shall be well finished, smooth, clear, and free from defects that may affect the appearance or serviceability.

**1.1.2.2.8. A Casket Protective Cover (Paper or Plastic).** A cover common to the casket industry shall be placed over each casket.

**1.1.3. Construction Design..** The Sealer Casket shall be of steel, US Standard, square or round ends with top and bottom molding with a painted finish as specified in 1.1.2.2.7. The casket may have appropriate shading effect. The handle assembly shall be a continuous fixed bar or swing-out type handle. Applied lugs and comers shall be plated in finish. It shall be furnished in the specification sizes (5.1.). The casket shall be constructed to yield an airtight seal when closed which shall prevent the escape of odors and leakage. Air tightness compliance shall be determined in accordance with 1.1.5.1.

#### **1.1.3.1. Construction Details.**

**1.1.3.1.1. Body.** The casket shall be fabricated from 18-gauge thick steel. The top flange shall be of the same material and thickness as the body and shall be reinforced to provide sufficient bearing to support the lid assemblies. The full length of all miters shall be welded.

**1.1.3.1.2. Bottom Panel.** The bottom panel shall be constructed from one piece of 18-gauge metal or better with reinforcing ridges. The construction details of the bottom follow.

**1.1.3.1.2.1.** The bottom panel shall withstand, at a minimum, a 350-pound load with deformation not to exceed one-quarter inch (1/4") when tested in accordance with 1.1.5.2.

**1.1.3.1.2.2.** The one-piece bottom shall be constructed of steel 18-gauge or better in thickness with adequate reinforcing ridges extending lengthwise or crosswise to the bottom.

**1.1.3.1.2.3.** The bottom panel shall be appropriately reinforced to meet weight and stress requirements.

**1.1.3.1.2.4.** The entire length and width of the bottom seams shall be (continuous) welded as specified in 1.1.2.2.5.

**1.1.3.1.3. The Casket Lid.** The casket shall consist of a two-piece (stamped from one piece of metal), cut top lid with traditional oval panel and top frame. The lid shall be fabricated of 18-gauge in thick steel. The bridge between the lids to accommodate the bridge or cross gasket shall be a full header.

**1.1.3.1.4. Shell Hardware.** Each lid shall be hinged with two hinges each for proper support and to affect a positive seal. Lids shall be provided with locking supports for retaining the lids in an open position. Each lid shall have two

sealer locks (opposing each hinge) with non-detachable lever-operated handles, or equipped with a crank-type positive lock positive locking system with two locking device engagements opposing the hinges on each lid.

**1.13.1.5. Handle Assembly.** The handle assembly shall be a 3x4x1 continuous fixed bar or swing-out handle assembly. The entire handle assembly, bars, lugs, and corners shall be fabricated of metal or a combination of metals standard to the metal casket industry. The entire handle assembly shall be fastened to the casket body in a manner that will ensure the handle assembly shall not rupture or deform when tested in accordance with paragraph 1.1.5.3. The finish applied to the lugs and corners of the handle assembly shall be plated in a manner common to the metal casket industry. The fixed bar or swing-out handles shall be painted or finished in a manner complimenting the casket.

**1.13.1.6. Perimeter and Bridge or Cross-Gasket System.** The gaskets shall be fabricated from natural rubber, neoprene, ethylene vinyl acetate (EVA) or closed cell polyvinyl chloride (PVC) or any equivalent of the aforementioned. Gasket corners shall be mitered and molded and either vulcanized (rubber) or heat-sealed (EVA, PVC). The gasket systems with the lids in a closed, locked position shall yield an airtight seal.

**1.13.1.7. Workmanship.** The casket shall be produced by the best means employed by those skilled in the art of metal fabrication and upholstering. All parts shall be accurately formed and properly assembled into the finished article, and each casket shall be of the quality and grade of product established by this specification.

**1.1.4. Quality Assurance Provisions.** Unless otherwise specified in the contract or purchase order, the Contractor is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or order, the Contractor may use his or her own or any other facilities suitable for the performance of the inspection requirements specified herein. The Government reserves the right to perform any of the inspections set forth in the specifications where such inspections are required to assure supplies and services conform to prescribed requirements. Any sampling by the Contractor for inspection and acceptance shall be approved by logistics and resource management.

**1.1.4.1. Visual examination** of the caskets shall be in accordance with the classification of defects set forth in Figure 1.1.

**1.1.4.1.2 Dimensional inspection** shall be made of the finished caskets for dimensions specified. Any noncompliance with specified requirements shall constitute a defect.

**1.1.4.1.3 End Item Testing.** Inspection shall be performed in accordance with the test methods in paragraph 1.1.5:

#### **1.1.5. Test Methods.**

**1.1.5.1. Air tightness.** Federal law prohibits the conduct of the Halogen Leak Test. The Government and/or manufacturer shall conduct a reliable and verifiable leak test that is recognized and accepted throughout the industry for detecting casket leaks. Results will be used to determine compliance.

**1.1.5.2. Bottom Deformation Test.** The casket will be loaded with a uniformly distributed weight of 350 pounds. With lids closed and locked, the casket will be attached to a rectangular suspension frame by evenly-spaced metal straps at six points alongside each handle, as close as possible to hardware attachment points, and arranged to produce uniform weight distribution by using adjustable wedges. The width of the straps around the handle will be 3 inches. The suspension frame shall be lifted until the bottom of the casket clears the floor by 4 inches. Bottom deformation shall be measured by placing a straight edge under the casket from the front side to the backside at the casket's midpoint. The extent of deformation shall be the average of two measurements taken simultaneously at the front and back edges of the casket. The readings shall be determined by measuring the distance from the bottom of the casket to the top of the straight edge. The casket shall remain suspended for a period of 15 minutes and examined for compliance.

**1.1.5.3. Handle Bend Test, Static Loading.** The test shall be in accordance with the bottom deformation test except that the casket shall be suspended at two points on each side. These points shall be located midway between the lugs toward the ends of the casket. The same test shall be performed on the end handles. Each end shall be lifted separately using two points of suspension on the end handle. Handles shall then be examined for compliance.

**1.1.6. Metal Sealer Casket Certification.** The manufacturer shall be required to provide a statement that the casket to be furnished for use under the terms of the contract conforms in all details to the minimum specifications contained therein.

**Figure 1.1. Classification of Metal Sealer Casket Defects**

Examine	Defect	Classification	
		Major	Minor
Primer	No primer on outside of bottom or	X	
Outside of bottom/	inside of shell		
inside of shell			
Finish			
All exterior metal surfaces	Not within specified range or color.	X	
exposed to view, including	Orange peel or texture.	X	
surfaces that are exposed	Gritty surface or overspray that is	X	
when casket is opened (not	rough to touch	X	
applicable to bottom).	Area of no film.	X	
	Wet or tacky surface	X	
	Any permanent stain or blemish	X	
	Paint on casket		X
	Finish dirty e.g., oil, glue or other		
	Non-permanent stain		X
Construction and workmanship	Any functioning assembly that is		
(metal rubber and vinyl	inoperative, e.g. lid locks will not		
components, general) (unless	operate as intended.		
otherwise classified herein).			

	Any part loose, e.g., fixed bar is loose fit to lug or corner, but bar is adequately retained or swing out bar bent or fails to swing out smoothly.	X
	Any functioning assembly that requires abnormal pressure to operate	X
Welding	Not welded where required or not specified type of welding	X
Welding	Weld burned through, not free from pits, holes or fissures.	X
	Outside flash not stripped	X
	Exposed welded joints not ground and sanded flush to original surface.	X
Metal fasteners (screws, bolts, Nuts, etc.)	Any missing, stripped or otherwise damaged	X
	Any fastener corks	X
Upholstery	Not specified type fastener	X
	Any component missing or stained	X
	Any open seam, tear, or material defect	X

Assembly	Waving or pleating crushed or matted down	X
	Lining pulled away where it should be affixed	X
	Lid not properly centered on body, i.e., no clearance between top moldings and lid angle (check with lid secured in place)	X
	Evidence of no gasket compression when lids are securely fastened to body	X
	Any part perceptibly out of square or not symmetrical	X
	Casket rocks more than ½ inch when placed on level surface (check with lid secure in place)	X

**1.2. Hardwood Caskets.** This specification establishes minimum standards for hardwood caskets. Specifications and requirements are provided in the following paragraphs.

**1.2.1. Classification** - Standard Size. Perfection Cut Half Couch Hardwood Casket. Inside dimensions shall not be less than 77 1/2 inches in length, measured between the inner surfaces of the end panels, and 22 1/2 inches in width, measured between the inner surfaces of the side panels.

#### **1.2.2. Requirements.**

**1.2.2.1. Sample Casket.** When specified, a sample completed casket and/or sample casket without upholstery shall be made available to the Contracting Officer or the COR for quality assurance inspection in accordance with 1.2.4. The approval of the sample is acceptance of the casket, but does not relieve the Contractor of responsibility for compliance with all applicable provisions of this specification. The pre-furnished sample(s) shall be manufactured in the same facilities used to manufacture other caskets to be furnished under contract.

**1.2.2.2. Materials.** Materials and their tolerances shall, unless otherwise specified herein, as a minimum, conform to the applicable specifications and requirements specified hereinafter.

**1.2.2.2.1. Woods.** Select hardwoods shall be used throughout the caskets. The hardwood used in fabricating or constructing the caskets shall be one of the following: poplar, Salix (willow), or cottonwood. Thickness of the rough lumber used in hardwood caskets shall not be less than 4/4 (1-inch) stock.

**1.2.2.2.2. Fabric (Lining).** The construction of this cloth shall as a minimum be: Warp 92 ends

- 100 denier dull acetate yarns; filling 52 picks - 150 denier dull acetate yarn. The acetate taffeta fabric's finish shall be flat and/or embossed. The color shall be rose tan.

**1.2.2.2.3. Nonwoven Fabric Material Tissue.** The nonwoven material for backing the fabric of the lining assemblies shall be scrim laminate consisting of 3 x 2 1/2-inch nylon scrim with 2 plies of tissue adhesively bonded to each side of scrim. White in color.

**1.2.2.2.4. Pillow and Body Pocket** shall be a minimum of 40% cotton and 60% linters or synthetic equivalent.

**1.2.2.2.5. Upholstery.**

**1.2.2.2.5.1. Lining Assemblies.** The lining assemblies for the interior of the head panel lid, sides and ends of casket; overlay; mattress spread; pillowcase; two piece top (lid) supports; (one-piece top (lid) supports shall be finished to compliment the casket); and the sides of the casket body shall be backed with specified non-woven fabric. The head top shall be lined with interior styling. The foot top shall be lined with specified fabric and backing or may be upholstered by applying a rigid one-piece insert, simulating fabric finish. The assemblies for the lid or head panel, as applicable; top of the pillowcase; outside exposed body lining; and top side of overthrow shall be "Wave Crushed," tufted, tailored, or shirred either by hand or machine. The puffing may be shirred or tailored. The interior assemblies for the sides and ends of casket shall be tailored and/or shirred by hand or machine. Before lining the casket, the inside of the shell shall be cleaned of all foreign material.

**1.2.2.2.5.2. Pillow.** The pillow shall be made of specified non-woven material and filled with a minimum of 2 1/4 pounds of the specified filling material. The pillow shall then be encased in a specified outer fabric cover. The pillow shall be sized to properly fit the casket.

**1.2.2.2.5.3 Mattress.** The casket shall be equipped with an adjustable inner spring. The mattress shall be made of specified fabric or polyethylene (.004) film and filled with cotton or synthetic filling in one piece, such as polyester, excluding all foam type, excelsior materials, and fiberglass. The mattress fill shall render a minimum uniform thickness of 2 inches. The mattress shall also be sized to properly fit the casket.

**1.2.2.2.5.4. Side panels.** The side panels of the casket body shall have padding in the skirting or apron area.

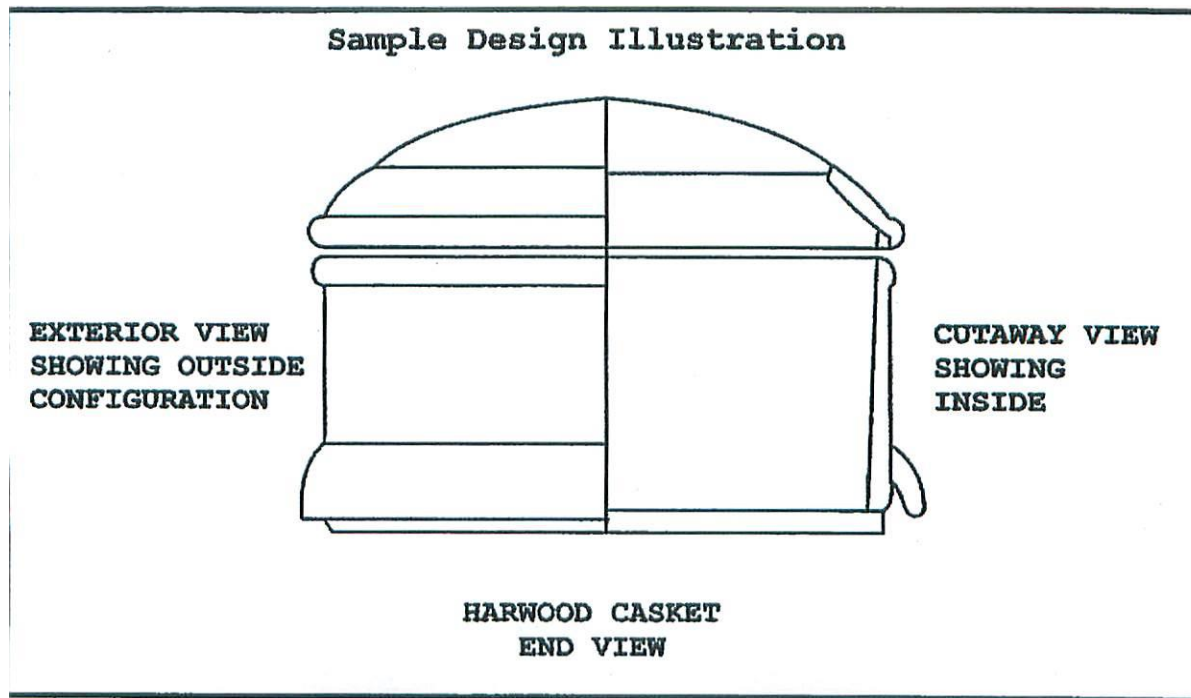
**1.2.2.2.6. Finish.** All exposed surfaces of wood components shall be thoroughly sanded. A walnut color stain and sealer shall be applied to all exposed surfaces and edges. A walnut color stain shall be applied to the outside edge of the bottom of the hardwood casket. Exterior wood surfaces, exposed to view, including surfaces that are exposed when the casket is opened (not applicable to the bottom) shall be given an adequate coating of the appropriate finish. The casket shall have either a satin or high-gloss appearance following final finishing process. The sealer shall be scuff-sanded in all exposed view areas. Forced drying may be used, if desired. The exposed heads of screws used for assembling the casket shall be appropriately finished (plated or painted) to correspond or compliment the parent finish. The finish coat shall level out to produce a smooth and uniform flow without orange peel, runs, wrinkles, drops, streaks or areas of thin coating or no coating. The casket shall be well finished, smooth, clear and free from defects, which may affect appearance or serviceability.

**1.2.2.2.7. Casket Protective Cover.** A cover common to the casket industry shall be placed over each casket.

**1.2.3. Construction Design - Hardwood Casket** The casket shall be of hardwood, 4/4 (1-inch) stock. The casket shall have ledge and base molds, also commonly known within the hardwood casket industry as a "Stateside" design, as illustrated below. The handle assembly shall be a swing-out type handle. Applied lugs and corners shall be either plated in finish if metal, or if hardwood, finished in the same manner as the casket's finish. Construction Details are as follows:



Figure 1.2. -Sample Design Illustration



#### 1.2.3.1. Construction Detail.

**1.2.3.1.1. Body.** The casket shall be fabricated or constructed from not less than 4/4 (1 inch) stock hardwood. The ledge shall be of the same material as the body and shall be reinforced to provide sufficient bearing to support the lid assemblies.

**1.2.3.1.2. Bottom Panel.** The bottom panel shall be constructed from hardwood lumber not less than 4/4 (1-inch) rough hardwood stock. The bottom panel shall withstand, as a minimum, a 350-pound load with no deformation when tested according to 1.2.5.1. The bottom panel shall be appropriately reinforced to meet weight and stress requirements.

**1.2.3.1.3. Lid.** The casket shall consist of a two piece, cut top lid with traditional oval panel, top frame, and header.

**1.2.3.1.4. Assembly.** Accurate tightly mitered joints shall be assembled, using joint locks, nails, and glue common to standard industry practices. Exterior surfaces shall be sanded to a uniform condition to accept exterior finishing materials. Bottoms shall be installed in accordance with industry practices. Top and base moldings before milling shall have been at least 4/4 (1-inch) stock. No trace or screw or nail heads shall be visible after finishing.

**1.2.3.1.5. Shell Hardware.** Each lid shall be hinged with two hinges each for proper support.

Lids shall be provided with locking support for retaining the lids in an open position. Each lid shall have a positive lock.

**1.2.3.1.6. Handle assembly.** The handle assembly shall be 3 x 1 or 4 x 1 continuous swing-out handle assembly. The entire handle assembly shall be fastened to the casket body in a manner that will ensure the handle assembly

shall not rupture or show deformation when tested in accordance with 1.2.5.2. The finish applied to the handle assembly shall be painted or plated in finish (if metal), or if hardwood, finished in the same manner as the casket.

**1.2.3.1.7. Workmanship.** The casket shall be produced by the best means employed by those skilled in hardwood casket fabrication and upholstery. All parts shall be accurately machined and properly assembled into the finished article, and each casket shall be of the quality and grade of the product established by this specification.

**1.2.4. Quality Assurance Provisions.** Unless otherwise specified in the BPA or BPA Call, the Contractor is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the BPA or BPA Call, the Contractor may use his own or any other facilities suitable for the performance of the inspection requirements specified herein. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are required to assure supplies conform to prescribed requirements.

**1.2.4.1. Quality Conformance Inspection.** Sampling for inspection and acceptance shall be performed in accordance with the provisions set forth in ANSI/ASQC Z1.4-1993, Sampling Procedures and Tables for Inspection of Attributes, when required.

1.2.4.1.1. Inspection of Materials and Components. Components and materials shall be inspected and tested in accordance with all the requirements of this specification and standards unless otherwise excluded, amended, modified, or qualified in this specification or applicable purchase document.

1.2.4.1.2 End-Item Inspection. The lot shall be all caskets offered for inspection at one time. The sample unit for this inspection shall be one complete casket.

1.2.4.1.3. Visual Examination. Examination of the caskets shall be in accordance with classification of defects set forth in Figure 53.

1.2.4.1.4 Dimensional Examination. Inspection shall be made of the finished caskets for dimensions specified. Any noncompliance with specified requirements shall constitute a defect.

1.2.4.1.5. End Item Testing. Testing shall be performed in accordance with Para 1.2.5.

1.2.5. Test Methods.

1.2.5.1. Bottom Test. The casket shall be loaded with a uniformly distributed weight of 350 pounds and the lids closed and locked. The casket shall then be attached to a rectangular suspension frame by six evenly spaced metal straps alongside each handle, as close to hardware attachment points as possible, and shall be arranged to produce uniform weight distribution, using adjustable wedges. The width of the strap around the handle shall be 3 inches. The suspension frame shall be lifted until the bottom of the casket has cleared the floor 4 inches. There shall be no deformation when loading the casket. Loading of the casket should not produce any separation between the bottom boards and the sides of the casket.

1.2.5.2. Handle Bend Test, Static Loading. The test shall be in accordance with the bottom test except that the casket shall be suspended at two points on each side. These points shall be located midway between the lugs toward the ends of the casket. The same test shall be performed on the end handles, and each end shall be lifted separately using two points of suspension on the end handle. Handles shall then be examined for compliance.

1.2.6. Hardwood Casket Certification. The manufacturer shall be required to provide a statement that the casket furnished for use under the terms of the contract conforms in all details to the minimum specifications contained therein. Extra copies of the specification may be obtained from the contracting officer.

Figure 1.3. Classification of Hardwood Casket Defects

Examine	Defect	Classification	
		Major	Minor
Color - All exposed surfaces	No color on outside and outside of bottom or edge of bottom	X	
Finish	Not uniform color range.	X	
All exterior wood surfaces exposed to view, including surfaces that are exposed when casket is opened (not applicable to bottom).	Orange peel or texture.	X	
	Area of no film	X	
	Gritty surface or overspray that is rough to touch		X
	Wet or tacky surface	X	
	Any permanent stain or blemish	X	
	Finish dirty e.g., oil, glue or other nonpermanent stain		X
Construction and workmanship	Any functioning assembly that is inoperative, e.g. lid locks will not operate as intended.	X	
	Any part loose, e.g., fixed bar is loose fit to lug or corner, but bar is adequately retained or swing out bar bent or fails to swing out smoothly.		X
	Any functioning assembly that requires abnormal pressure to operate		X
Assembly	Split or open joints	X	
	End grains visible on miters	X	

	Open miter	X
	Split or openings in wood surface	X
	Lid not properly centered on body, i.e., no clearance between top moldings with lid angle (check with lid secured in place)	X
	Any part perceptibly out of square or not symmetrical	X
	Casket rocks more than W when placed on a level surface (check with lid secured in place)	X
Metal fasteners	Any missing, stripped or otherwise damaged screws, nails, bolts, nuts etc.	X
	Any fastener corks	X
	Any screw or nail head visible.	X
Upholstery	Any component missing or stained	X
	Any open seam, tear, or material defect	X
	Waving or pleating crushed or matted down.	X
	Lining pulled away where it should be Affixed	X

**1.3. Shipping Cases (Air Tray or Equivalent)** Casket shipping containers are authorized for shipment of standard and oversize caskets. Casket shipping containers furnished by Contractor s shall conform to the Performance Testing Specification requirements of the air carriers and subsequent connecting carriers. For overseas shipment,

the Contractor shall provide a casket shipping container that meets the requirements of the air carrier(s) and overseas countries involved.

**1.4. Solid Hardwood Urns.** This specification establishes minimum standards for hardwood urns. Specifications and requirements are provided in the following paragraphs.

**1.4.1. Classification.**

**1.4.1.1. Standard Size** - Solid American Black Walnut (*Juglans Nigra*) Urn. The design shall be cube-like with flared base and no single dimension less than one-half (1/2) the length, width, or depth. It shall have at least one dimension of no less than 6 inches. Inside capacity shall be no less than 200 cubic inches.

**1.4.1.2. Oversize** - Solid American Black Walnut (*Juglans Nigra*) Urn. The design shall be cube-like with flared base and no single dimension of less than one-half (1/2) the length, width, or depth. It shall have at least one dimension of no less than 7 1/2 inches. Inside capacity shall be not less than 300 cubic inches.

**1.4.2. Required Sample Urn.** A sample completed urn shall be made available to the Contracting Officer or the COR for quality assurance inspection in accordance with paragraph 5.4.4. The approval of the sample is acceptance of the urn but does not relieve the manufacturer of responsibility for compliance with all applicable provisions of this specification. The pre-furnished sample(s) shall be manufactured in the same facilities used to manufacture urns to be furnished under the BPA.

**1.4.2.1. Materials.** Materials shall, as a minimum, conform to the applicable specifications and requirements specified hereinafter. Unless otherwise specified herein, material tolerances for materials shall, as a minimum, conform to this specification.

**1.4.2.2. Wood.** The entire urn shall be crafted exclusively from kiln dried solid American Black Walnut (*Juglans Nigra*), graded FAS using National Hardwood Lumber Association standards. Thickness of all lumber used in the urns shall not be less than 3/4-inch stock.

**1.4.2.3. Inner Container.** The inner container which shall receive the cremated remains (cremains) for standard size urn shall be a polyethylene bag, 4 mm in thickness, with gusset, and of sufficient size (dimensions) to accommodate not less than 200 cubic inches of cremains and proper closure. The closure device shall be a plastic pull through tie. The same provisions apply for the oversize urn, except the bag shall accommodate not less than 300 cubic inches of cremains and proper closure.

**1.4.2.4. Inner Surfaces.** All inner surfaces of the urns shall be thoroughly sanded, removing all mill, machine, and cross-grain sanding marks. A walnut filler stain shall be evenly applied to all interior surfaces followed by an adequate coat of lacquer.

**1.4.2.5. Hardware.** Any component other than the wood specified in paragraph 1.4.2.2. that is used in assembling the urn shall be of solid brass metal.

**1.4.2.6. Engraving Plate.** The urn shall be provided with a 2 1/2-inch x 5-inch under brass nameplate with a 2-inch x 4 1/2-inch black brass nameplate (black brass nameplate engraves brass color). The black brass nameplate shall have brass mounting screws in each corner of this plate. The plate shall be centered from left to right on the lower portion of the face side of the urn.

**1.4.2.7. Military Emblem.** A cast bronze military emblem shall be affixed to the urn. The emblem's finish shall be satin for the raised portion, while the background shall be a contrasting darker color. The emblem shall be 3-inch in

diameter. The emblem shall be affixed to the face side of the urn with two threaded brass studs, nuts, and washers. The portion of the studs extending beyond the nuts inside the urn shall be covered to prevent penetration and perforation of the urn's inner container. The emblem shall be centered from left to right on the upper portion of the face side of the urn to allow a balanced space below for the engraving plate. The military emblems to be provided are US Air Force, US Space Force, US Navy, US Marine Corps, US Army, and US Coast Guard, as stipulated by the Contracting Officer or the COR (Figure 1.6.).

**1.4.2.8. Finish.** The urn's exterior finish shall be satin. A walnut filler stain shall be applied to all exterior surfaces, inner base edge, and bottom panel edges prior to finishing. Not less than four coats of clear nitrocellulose lacquer, either air-dried or flash-dried, shall be applied to all exterior surfaces, the inner base edge of the body, and the edge of the bottom panel. The finish coat shall level out to produce a smooth and uniform flow without orange peel, runs, wrinkles, drops, streaks, or areas of thin coating or no coating. The urn shall be well finished, smooth, clear, and free from defects, which may affect appearance or serviceability.

**1.4.2.9. Packaging.** The urn shall be enveloped by one of the following prior to placement in the corrugated shipping carton: Kimpak or equivalent, or a soft protective cloth.

### **1.4.3. Construction Design-Solid Hardware Urn.**

**1.4.3.1. Body.** The urn's body shall be crafted so the wood's grain is horizontal and the outer or exterior surfaces shall have the grain match or chase within 1/8-inch on three corners of the body. The body's top shall have a molding edge, applied or shaped design. The base of the body sides shall also have an edge applied or shaped design to compliment the top of the body.

**1.4.3.2. Bottom Panel.** The bottom panel may incorporate the shaped edge rather than the above configuration if preferred by the manufacturer. The bottom panel shall be crafted in a manner that will either fit snugly and recessed into the body or flush tight fit to the body of the urn. The bottom panel shall be affixed to the body of the Standard size urn, using not less than four brass screws of sufficient size to preclude accidental warping or separation and stripping when removing and replacing the bottom panel with body. The bottom panel shall be affixed to the body of the oversize urn using not less than six brass screws of sufficient size to preclude accidental warping or separation and stripping when removing and replacing the bottom panel with body.

**1.4.3.3. Surface.** All wood surfaces of the assembled urn shall be thoroughly sanded before the finishing process. Final sanding shall remove all mill, machine, and cross-grain sanding marks. The body corners shall be of a standard 45-degree miter. The body sides and top shall be joined together by resorcinol (waterproof) glue. All joints where two or more pieces of wood are joined together shall be tight, accurate, and even.

**1.4.3.4. Quality Craftsmanship.** The urn shall be produced by the best means employed by those skilled in hardwood craftsmanship and fabrication. All parts shall be accurately machined and properly assembled into the finished article, and each urn shall be of the quality and grade of the product established by this specification.

**1.4.3.5. Fabrication.** Urns shall be crafted and assembled within the United States of America.

**1.4.4. Quality Assurance Provisions.** Unless otherwise specified in the contract or purchase order, the Contractor is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the BPA or the BPA Call, the Contractor may use his own or any other facilities suitable for the performance of the inspection requirements specified herein. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are required to assure supplies and services conform to prescribed requirements.

**1.4.4.1. Quality Conformance Inspection.** Sampling for inspection and acceptance shall be performed in accordance with the provisions set forth herein when required.

**1.4.4.2. Inspection of Materials and Components.** Components and materials shall be inspected and tested in accordance with all the requirements of this specification and standards unless otherwise excluded, amended, modified, or qualified in this specification or applicable purchase document.

**1.4.4.3. End-Item Inspection.** The lot shall be all urns offered for inspection at one time. The sample unit for this inspection shall be one complete standard size urn and one oversize urn.

**1.4.4.3.1. Visual Examination.** Examination of all urns to be procured shall be in accordance with the classification of defects set forth in Figure 1.4.

**1.4.4.3.2. Dimensional Examination.** Inspection shall be made of the finished urns for dimensions specified. Any noncompliance with specified requirements shall constitute a defect.

**1.4.4.3.3. End Item Testing.** Testing shall be performed for compliance with the provisions of this specification.

**1.4.5. Urn Certification.** The manufacturer shall provide a letter of certification in each urn to be furnished for deceased armed services personnel, certifying the urn conforms to and meets or exceeds this armed services specification.

**Figure 1.4. Classification of Solid Hardwood Urn Defects**

Examine	Defect	Classification	
		Major	Minor
Size	Not specified design		X
	Not specified capacity	X	
Wood	Not solid American Black Walnut	X	
Color (Stain)	No color on outside or bottom	X	
All exposed surfaces			
Finish	Not uniform range of color.	X	
	Orange peel or texture.	X	
	Areas of no film	X	
	Gritty surface or over-spray that is	X	
	rough to touch	X	
	Wet or tacky surface	X	
	Any permanent stain or blemish	X	
	Finish dirty, e.g., oil, glue or other non-permanent stain	X	

Construction and workmanship	Any functioning assembly that is inoperative, e.g. bottom	X	
	Any part loose, e.g., loose fit to corner	X	
	Any functioning assembly that requires abnormal pressure to insert and remove		X
Assembly	Split or open joints	X	
	End grains visible on miters		X
	Open miter	X	
	Split or openings in wood surface	X	
	Any part perceptibly out of square or not symmetrical	X	
	Urn rocks more than 1/16 of one inch when placed on level surface	X	
Metal fasteners, screws	Any missing, stripped or otherwise damaged	X	
Inner Surfaces	Thin or bare areas	X	
Bottom Panel	Does not fit tightly against or into the body	X	
	Has less than required number brass screws	X	
Inner Container	Too small in size	X	
	Plastic too thin		X
Emblem	Not centered		X



	Not in upper portion of urn	X	
	Slight gap between emblem and urn		X
	Not proper size	X	
Engraving Plate	Not centered		X
	Not in lower portion of urn	X	
	Slight gap between plate and urn	X	

**1.5. Solid Bronze Urns.** This specification establishes minimum standards for solid bronze urns. Specifications and requirements are provided in the following paragraphs.

**1.5.1. Classification.**

**1.5.1.1. Standard Size.** Solid bronze urn shall be a cube-like design. It shall have no single dimension being less than 1/2-inch the length, width, or depth. It shall have at least one dimension being no less than 5 1/2 inches. Inside capacity shall be not less than 200 cubic inches.

**1.5.1.2. Oversize.** Solid bronze urn shall be a cube-like design. It shall have no single dimension being less than one-half (1/2) the length, width or depth. It shall have at least one dimension no less than 6 inches. Inside capacity shall not be less than 300 cubic inches.

**1.5.2. Required Sample Urn.** A sample completed urn with inner container shall be made available to the Contracting Officer or the COR for quality assurance inspection. The approval of the sample is acceptance of the urn, but does not relieve the manufacturer of responsibility for compliance with all applicable provisions of this specification. The pre-furnished sample(s) shall be manufactured in the same facilities used to manufacture urns furnished under the contract.

**1.5.3. Materials.** Materials shall, as a minimum, conform to the applicable specifications and requirements specified hereinafter. Unless otherwise specified herein, material tolerances for materials shall, as a minimum, conform to this specification.

**1.5.3.1. Metal.** The metal shall be a bronze or commercial bronze alloy with a minimum of 85 percent copper and the balance shall be comprised of tin, lead, and/or zinc or any other commercially accepted alloying metals. The metal shall be wrought and/or cast. The finished wrought metal shall be not less than 0.090 inch. The finished cast metal shall be not less than 0.125 inch.

**1.5.3.2. Welding.** All component parts to be welded shall be properly aligned into position prior to welding. Resistance, arc or gas welds shall be sound and free from pits, holes, or fissures. Welding shall be accomplished without burning through the welded metals. After any flash welding, outside exposed flash shall be removed entirely and no trace of the joint shall be visible after finishing. Exposed welds shall be finished flush to the original surface and shall not be readily detectable after finishing. Repair of welds will be accepted, provided such repaired welds meet the requirements of this specification. Silver and soft solder techniques are permitted as elective methods.

**1.5.3.3. Inner Container.** The inner container which shall receive the cremated remains (cremains) for standard size urn shall be a polyethylene bag, 4 mm thick, with gusset, and of sufficient size (dimensions) to accommodate not less than 200 cu in of cremains and proper closure. The closure device shall be a plastic pull-through tie. The same provisions apply for the oversize urn with the exception that the bag shall accommodate not less than 300 cu in of cremains and proper closure.

**1.5.3.4. Military Emblem.** The urn shall have affixed a cast bronze military emblem. The emblem's finish shall be satin for the raised portion while the background shall be a contrasting darker color. The emblem shall be 3 inches in diameter. The emblem shall be affixed to the face side of the urn with two threaded brass studs, washers, and nuts. The portions of the studs extending beyond the nuts inside the urn shall be covered to prevent penetration and perforation of the urn's inner container. The emblem shall be centered from left to right on the upper portion of the face side of the urn to allow a balanced space below for engraving. The military emblems to be provided are US Air Force, US Space Force, US Navy, US Marine Corps, US Army, and US Coast Guard as stipulated by the Contracting Officer or the COR. Specific emblems to be provided are illustrated in Figure 1.6.

**1.5.3.5. Finish.** For wrought urns, the exterior finish shall be satin. The back or bottom panel may be painted if recessed in the body of the urn. For cast urns, the exterior finish shall be matte natural bronze. The bottom panel may be painted if recessed in the body of the urn. Nitrocellulose Lacquer (air dry or flash dry) will be used. All metal component surfaces shall be thoroughly cleaned. All exterior metal surfaces exposed to view including other exposed surfaces shall be given an adequate coating of the appropriate color lacquer, or all surfaces shall then be coated with a clear lacquer. This process must achieve at least the required more than 1.0 mil dry film thickness. The exposed heads of screws used for assembling the urn bottom shall be appropriately finished to correspond or compliment the parent metal finish. The finish coat shall level out to produce a smooth and uniform flow without orange peel, runs, wrinkles, drops, streaks, or areas of thin film or no film. The urn shall be well finished, smooth, clear, and free from defects, which may affect the appearance or serviceability.

**1.5.3.6. Packaging.** The urn shall be enveloped by one of the following prior to placement in the corrugated shipping carton: tissue, felt paper, foam material or any other material that has equal or better protective characteristics.

#### **1.5.4. Construction Design.**

**1.5.4.1. Body.** Any and all seams and joints where two or more parts of the body are joined together during fabrication shall be joined as one piece by a continuous metallic bead weld.

**1.5.4.2. Bottom or Back Panel.** This panel shall be separate from the body. A bronze plate shall meet flush with all sides of the body of the urn or shall fit recessed in an equally snug manner to all sides of the body of the urn.

**1.5.4.3. Closure.** The bottom or back panel shall fasten to the body of the urn with a minimum of four brass screws. One screw placed in each corner of the panel. The brass screws shall be not less than No. 6-32 x 3/8-inch flat head machine screws.

**1.5.4.4. Fabrication and Assembly.** Urns shall be fabricated/manufactured and assembled within the United States of America.

**1.5.5. Workmanship.** The urn shall be produced by the best means employed by skilled metal fabrication artists. All parts shall be accurately formed and properly assembled into the finished article, and each urn shall be of the quality and grade of product established by this specification.

#### **1.5.6. Quality Assurance Provisions.**

**1.5.6.1. Responsibility for Inspection.** Unless otherwise specified in the BPA or BPA Call, the Contractor is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the BPA or BPA Call, the Contractor may use his or her own or any other facilities suitable for the performance of the inspection requirements specified herein. The Government reserves the right to perform any of the inspections set forth in the specifications where such inspections are required to assure supplies and services conform to prescribed requirements.

**1.5.6.2. Quality Conformance Inspection.** Sampling for inspection and acceptance shall be performed, when required, in accordance with the provisions set forth herein.

**1.5.6.2.1. Inspection of Materials and Components.** Components and materials shall be inspected and tested in accordance with all the requirements of this specification and standards unless otherwise excluded, amended, modified or qualified in this specification or applicable purchase document.

**1.5.6.2.2. End-Item Inspection.** The lot shall be all urns offered for inspection at one time. The sample unit for this inspection shall be one complete standard size and one oversize urn.

**1.5.6.2.2.1. Visual Examination.** Visual examination of all urns to be procured shall be in accordance with the classification of defects set forth in Figure 5.5.

**1.5.6.2.2.2. Dimensional Examination.** Inspection shall be made of the finished urns for dimensions specified. Any noncompliance with specified requirements shall constitute a defect.

**1.5.6.2.3. End Item Testing.** Testing shall be performed for compliance with the provision of this specification.

**1.5.7. Urn Certification.** The manufacturer shall provide a letter of certification in each urn to be furnished for deceased Armed Services personnel, certifying the urn conforms to and meets or exceeds this armed services specification.

**Figure 1.5. Classification of Solid Bronze Urn Defects.**

Examine	Defect	Classification	
		Major	Minor
Size	Not specified dimensions	X	
Metal	Not specified metal	X	
Finish	Not within specified color match.	X	
All exterior surfaces exposed to view	Orange peel or texture.	X	
	Area of no film	X	
	Gritty surface or over-spray that is rough to touch		X
	Wet or tacky surface	X	

	Any permanent stain or blemish	X	
	Finish dirty, e.g., oil, glue or other non-permanent stain		X
Construction and workmanship (metal, polyethylene components)	Any functioning assembly that is inoperative, e.g. screw will not loosen or tighten as intended		X
	Any part loose		X
	Any functioning assembly that requires abnormal pressure to operate		X
Welding/Soldering	Not welded/soldered where required or not specified type of welding/soldering	X	
	Burned through, not free from pits, holes or fissures	X	
	Outside flash not stripped	X	
	Exposed joints not ground and sanded flush to original surface.	X	
	Evidence of bleed-out (a darkened area on the urn compared to the rest of the urn's colored surfaces).	X	
Metal fasteners (screws)	Any missing, stripped or otherwise damaged	X	
	Not specified type fastener	X	

Assembly	Any part perceptibly out of square or not symmetrical	X	
	Urn rocks more than 1/16 of one inch when placed on level surface	X	
Inner Container	Too small in size	X	
	Plastic too thin		X
Emblem	Not centered		X
	Not in upper portion of urn	X	
	Not affixed as specified	X	
	Gap between emblem and urn		X
	End of stud inside urn not properly covered	X	

**1.6 Infant Caskets.** Polystyrene with outside length not less than 23” or more than 27”.

**1.7 Child Caskets.** Wood with cloth covering – Sizes 2’6”, 3’, and 4’.

**1.8 Shipping Cases.** Suitable outer shipping case for casket.

**1.9 Military Emblems.** The urn shall have affixed a cast bronze military emblem. The emblem’s finish shall be satin for the raised portion while the background shall be a contrasting darker color. The emblem shall be 3 inches in diameter. The emblem shall be affixed to the face side of the urn with two threaded brass studs, washers, and nuts. The portions of the studs extending beyond the nuts inside the urn shall be covered to prevent penetration and perforation of the urn’s inner container. The emblem shall be centered from left to right on the upper portion of the face side of the urn to allow a balanced space below for engraving. The military emblems to be provided are United States Air Force, United States Navy, United States Marine Corps, United States Army, and United States Coast Guard as stipulated by the contracting officer of the designated representative. Specific emblems to be provided are illustrated in figure 1.6

FIGURE 1.1

