

[METRIC]  
A-A-3002  
June 4, 1996

## COMMERCIAL ITEM DESCRIPTION

### MIRRORS, GLASS

The General Services Administration has authorized the use of this commercial item description, for all federal agencies

#### 1 SCOPE AND CLASSIFICATION

1.1 Scope This commercial item description covers wood and metal framed wall mirrors of plate glass

1.2 Classification The mirrors shall be of the following classes and styles as specified (see 6.2)

##### Type I - Framed

###### Class 1 - Wood frame

Style A - Light oak finish

Style B - Walnut finish

Style F - Painted

Grade 3 - Wide frame

Grade 4 - Narrow frame

###### Class 2 - Metal frame

Style C - Chromium finished steel

Style D - Anodized aluminum

Style E - Stainless steel

Grade 1 - Type 302 or 304 stainless steel

Grade 2 - Type 430 stainless steel

##### Type II - Frameless

#### 2 APPLICABLE DOCUMENTS

2.1 Government publications The following documents of the issues in effect on the date of the invitation for bids or request for proposal form a part of this specification to the extent specified herein:

##### Federal Specifications

QQ-C-320 - Chromium Plating (Electrodeposited)

##### Federal Standards

Fed Std No 123 - Marking for Shipment (Civil Agencies)

(Activities outside the Federal Government may obtain copies of Federal specifications, standards, and commercial item descriptions as outlined under General Information in the Index of Federal Specifications, Standards, and Commercial Item Descriptions. The Index which includes bimonthly

A-A-3002

supplements as issued, is for sale on a subscription basis by the Superintendent of Documents, U S Government Printing Office, Washington, DC 20402

(Single copies of this specification, and other Federal specifications and commercial item descriptions required by activities outside the Federal Government for bidding purposes are available without charge from General Services Administration Business Service Centers in Boston, MA New York, NY, Philadelphia, PA, Washington, DC, Atlanta, GA, Chicago, IL, Kansas City MO, Fort Worth, TX, Houston, TX, Denver, CO, San Francisco, CA, Los Angeles, CA, and Seattle, WA

(Federal Government activities may obtain copies of Federal standardization documents and the Index of Federal Specifications, Standards, Commercial Item Descriptions from established distribution points in their agencies )

#### Military Standards

##### MIL-STD 129 - Marking for Shipment and Storage

(Copies of military specifications and standards required by contractors in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer )

2.2 Other publications The following documents form a part of this specification to the extent specified herein. Unless a specific issue is identified, the issue in effect on the date of the invitation for bids or request for proposal shall apply.

#### American Hardboard Association

##### ANSI/AHA A 135.4 - Hardboard

(Application for copies should be addressed to the American Hardboard Association, 1210 W Northwest Hwy, Palatine, IL 60067-1897)

#### American Society for Quality Control

##### ANSI/ASQC Z1.4-1993 - Sampling Procedures and Tables for Inspection by Attributes

(Application for copies should be addressed to the American Society for Quality Control, 611 East Wisconsin Ave, Milwaukee, WI 53202)

#### American Society for Testing and Materials (ASTM) Standards

ASTM A 525 - Steel Sheet Zinc-Coated (Galvanized) by the Hot Dip Process

ASTM B 117 - Salt Spray Corrosion

ASTM C 1036 - Flat Glass

ASTM D 3951 - Standard Practice for Commercial Packaging

(Application for copies should be addressed to the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103)

#### Hardwood Plywood Manufacturer's Association

##### ANSI/HPMA HP - Hardwood Plywood

(Application for copies should be addressed to the Hardwood Plywood Manufacturers Association, 1825 Michael Faraday Dr, Reston, VA 22090)

National Motor Freight Traffic Association, Inc., Agent

## National Motor Freight Classification

(Application for copies should be addressed to the American Trucking Associations, Inc., 2200 Mill Rd., Alexandria, VA 22314)

Uniform Classification Committee, Agent

## Uniform Freight Classification

(Application for copies should be addressed to the National Railroad Freight Committee, Suite 1120, 222 South Riverside Plaza, Chicago, IL 60606)

**3 REQUIREMENTS**

**3.1 First article** First article testing shall be in accordance with the solicitation

**3.2 Material**

**3.2.1 Mirror glass** The glass shall be type I, class 1, quality q<sup>1</sup> or q<sup>2</sup> conforming to ASTM C 1036. Outside dimensions of the glass shall be as specified in the contract or order, with a tolerance of plus or minus tolerance 1.5 mm. Thickness designation shall be 6.0 mm (5.56 to 6.2 mm).

**3.2.2 Plywood** The plywood shall not be less than 3 ply. Construction shall be in accordance with ANSI/HPMA HP, Grade - 2, Type II, Construction - 4, Thickness - not less than 3/16 inch. Both sides shall be sanded (S2S). Veneer core shall not be less than Grade - 3 and any voids shall be filled.

**3.2.3 Solid wood** The wood frame for class 1 mirrors shall be kiln dried to a moisture content of not more than 8 percent. Wood shall be free of defects. Sound tight knots of not over 6 mm maximum diameter will be acceptable if they are not in clusters. Figured grain or discoloration of the wood will be permitted provided a uniform color is obtained on the finished frame. The species of wood for the color of the finish specified shall be as shown in table I.

TABLE I Species of wood and color of finish

Color of finish	Species	
Light Oak	Oak	Mahogany*
Walnut	Walnut	Maple
	Beech	Pecan
	Birch	Gum
	Cherry	Poplar

\*Swietenia (Tropical American) and Khaya (African)

**3.2.4 Hardboard** Hardboard shall be in accordance with ANSI/AHA A 135.4, Class 3 Service tempered. Surface SIS, Thickness 3/16 inch.

**3.2.5 Aluminum** The aluminum frame of the style D mirrors shall be anodized. Unless a bright finish is specified, the finish shall be a natural satin.

**3.2.6 Chrome plated steel** Unless otherwise specified, the chrome plating for style C mirrors shall be class 1 (decorative plating) and type II (satin) of QQ-C-320.

**3.2.7 Stainless steel** Unless otherwise specified, the finish will be satin.

**3.2.8 Steel** Sheet steel used for mirror backs shall have an effective rust resistant finish.

## A-A-3002

3.2.8.1 Galvanized steel When galvanized steel is used for backs, the weight of the coating shall conform to the requirements for triple and single spot minimum checks prescribed in the latest edition of ASTM A 525 for class 1.25, commercial

3.2.9 Silvering Silvering shall be a coating of chemically deposited silver. It shall be free of defects or blemishes in the reflecting surface such as lifting or separation of the silver from the glass, sulfide or other spots, haze or any other visible defects

3.3 Construction Mirrors shall consist of a frame, glass, back, and metal hangers

3.4 Glass silvering The glass specified in 3.2.1 shall be coated on one surface with silver. The silvering may be protected by a metallic copper film or other protective coating. These shall be protected by a suitable organic coating

### 3.5 Class 1

3.5.1 Frames Frames for class 1 mirrors shall be solid wood as specified in 3.2.3 and table I. Only one species of wood shall be used for each frame. For Grade 3 mirrors, the wood shall be 50 mm wide with a minimum thickness of 19 mm. For Grade 4 mirrors, the wood shall be 19 mm wide with a minimum thickness of 16 mm. The width shall have a tolerance of  $\pm 3$  mm. Each side of the frame shall be a single piece of wood and joined to pass the test in 3.9.2. The frame shall be slightly crowned. The mirror glass shall be held securely within the frame

3.5.2 Backs The backs shall be plywood or hardboard, as specified. The tolerance for the backs shall be the same as the glass. When hardboard is used, the smooth surface shall be on the outside

3.5.3 Wood finish Wood shall be sanded smooth and free from dust prior to finishing. For Style A and B mirrors, the frame shall be stained as required to match the specified finish and finished with one coat of clear protective finish. For Style F mirrors, the frame shall be primed with one coat of enamel undercoat and finished with one coat of enamel

3.5.3.1 Color The finish color shall be as specified in the contract or order

3.5.3.2 Finish The wood and plywood finish shall be smooth and even without streaks, separation of color, foreign matter, drops, sags, pinholes, blisters, pits, wrinkles, runs, checks, peeling, and tackiness

3.5.4 Hangers Three rust resistant hangers shall be provided to permit wall hanging. The location of the hangers shall permit the mirror to be hung with either the long or short side at the top

### 3.6 Class 2

3.6.1 Frames The metal shall meet the requirements of 3.2.5, 3.2.6, or 3.2.7. The frames shall be either angles or channels. The width of the face of the frame shall not be less than 8 mm and the depth shall not be less than 12 mm. The corners shall be either square or rounded with a maximum of 38 mm corner radius. Joints shall be secured by a properly designed brace. Open miters shall not have any gaps. The mirror shall be cushioned and held securely within the frame

3.6.2 Backs Backs shall be sheet steel not less than 0.75 mm thick, as specified in 3.2.8. The back shall fit inside the frame. The back may be omitted if the back of the mirror is 12.5 mm from the wall

3.6.3 Hangers Three rust resistant hangers shall be securely spot welded to the back of the frame. The location of the hangers shall permit the mirror to be hung with either the long or short side at the top. The hangers shall be concealed when the mirror is hung

3.7 Beveled edge When specified, mirrors shall be furnished with beveled edges not less than 25 mm nor more than 32 mm inches wide. The outer edge of the bevel shall be 3 mm, minimum.

3.8 Type II Edges on Type II mirrors shall have a ground finish with no clean-cut edge visible. Ground edges shall be straight and even. Type II mirrors shall be furnished with brackets for mounting the mirror to a wall or door.

### 3.9 Performance

3.9.1 Salt spray test The mirrors shall pass a salt spray test specified in 4.8.

3.9.2 Adhesive The adhesive joint shall conform to a room temperature block shear test of 2800 psi, minimum average, and a 50 percent wood failure, minimum average.

3.10 Workmanship The frames shall have smooth neat joints without gaps, proper fitting of the mirror into the frame, and the absence of sharp corners. There shall be no defects that affect the appearance or serviceability of the mirrors.

3.11 Identification marking Each mirror shall be clearly marked in an inconspicuous location with the National Stock Number, year of manufacture, and the manufacturer's name or trademark.

3.12 Regulatory requirements The manufacturer is encouraged to use recovered materials in accordance with Public Law 94-580, as amended, to the maximum extent practicable.

## 4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection The contractor shall be responsible for the performance of all inspection and testing in fulfillment of all requirements specified herein. Unless otherwise specified in the contract or purchase order, the contractor may use his own or any other facilities approved by the Government as suitable for the performance of inspections and tests required by this specification. The Government reserves the right to perform any or all of the inspections and/or tests set forth in this specification, as deemed necessary to provide assurance of supply conformance to prescribed requirements.

4.2 First article requirements The first article requirements shall be in accordance with the solicitation.

4.3 Quality conformance inspection A sample of the finished product shall be selected in accordance with paragraph 4.6 for quality conformance verification. The sample shall be examined to verify that the requirements referenced in sections 1, 2, 3, and 5 have been met. Any nonconformance with the above requirements shall be considered a defect. All defects found shall be classified as major/minor in accordance with paragraphs 4.4 and 4.5 of this specification.

4.4 Major defects The following conditions of nonconformance with the stated requirements shall be considered as major defects which may potentially affect the safety, functionality, durability, usability, and life of the purchased item:

- Glass not in accordance with ASTM C1036
- Plywood not in accordance with ANSI/HPMA HP
- Hardboard not in accordance with ANSI/AHA A 135.4
- Not in accordance with the salt spray test, ASTM B 117
- Wrong kind of metallic reflective coating
- Organic coating of backs missing
- Each side of wood frame not of solid one piece construction
- Wood frames warped, chipped, or splintered
- Plywood back de-laminated

## A-A-3002

Hardboard has a hole in it  
 Glass cracked or broken  
 Blurred or distorted image in mirror  
 Silver lifted or separated  
 Mirror loose in frame  
 Wood or metal joints uneven  
 Identification marking missing  
 Dimensions not as specified  
 Packaging, packing, and marking not as specified

4.5 Minor defects Conditions of nonconformance listed below shall be considered as minor defects affecting the appearance of the finished item

Finish blistered, peeling, sags, runs, tacky, or orange peel  
 Wrong color of wood finish  
 Scratches, abrasions, chips, or nicks in the wood  
 Thin or no finish on the wood  
 Open grained wood not filled  
 Metallic coating is the wrong color, not uniform, or stained  
 More than one species of wood used in the frame  
 Any characteristic wood defect except sound tight knots not over 1/4 inch in diameter  
 Mirror back loose in frame  
 Not marked as specified

4.6 Sampling The sampling plan shall be in accordance with ANSI/ASQC Z1.4-1993 with an inspection level II, Acceptable Quality Level (AQL) of 6.5 percent defective for minor defects and an inspection level of S-2, AQL of 2.5 percent defective for major defects

4.7 Examination for preparation for delivery An examination shall be made to determine that packaging, packing, and marking comply with section 5 requirements. The inspection level shall be level S-4 with an AQL of 4.0 percent defective

Component missing, damaged, or otherwise defective  
 Inadequate application of components such as incomplete closure of container flaps, overwrap, strapping, sealing, and cushioning inadequate, improper or missing, closures improperly affixed, components improperly secured, inadequate stapling, bulging or distribution of containers  
 Identification marking not in accordance with Fed. Std. No. 123

4.8 Tests

4.8.1 Salt spray test Test specimens shall be cut from the corners of the mirror glass. The specimens shall be 229 mm by 229 mm  $\pm$  13 mm. The specimens shall be placed in a salt spray cabinet with the coated side up at an angle of 60 degrees  $\pm$  5 degrees to the horizontal. The specimen shall be subjected to 300 hours of continuous salt spray in accordance with ASTM B 117 using a 20 percent solution of sodium chloride. Intermediate viewing and examination of the specimens will be permitted provided they do not remain out of the salt spray for more than three cycles totaling no more than three hours which shall not be included in the 300 hour test period. At the end of the test, mirror specimens shall be removed, rinsed with clear water and dried to a watermark and salt free condition prior to examination. The latter shall be made from the face of the mirror using bright overhead lighting with the mirror in the horizontal position.

4.8.1.1 Viewing distance The viewing distance shall be approximately 450 mm with normal vision (20/20 corrected or uncorrected) so that illumination and viewing angles are opposing at approximately 45 degrees. Illumination shall approximate two 40 watt daylight or white fluorescent tubes at a distance

of 1.2 m to 1.5 m. The mirrors shall be examined for evidence of any of the following which shall constitute failure of the test:

- a Any clouding or darkening of the reflective surface
- b Any undercutting, discoloration, blackening, or silver impairment of the mirrors on any of the four edges greater than 3 mm measured from the edges. This applies to both cut and original (painted) edges
- c Any tarnish, spotting, or silver impairment greater than a total of 9 spots on the specimen and larger in size than specified below. The presence of 3 spots 3.0 mm or less in diameter or 6 spots 0.5 mm or less in diameter is acceptable

4.8.1.2 Blemishes Blemishes caused by handling of the specimens during the test shall be excluded. Prior blemishes shall be included in rating the specimens.

## 5 PREPARATION FOR DELIVERY

5.1 Packaging and packing Unless otherwise specified in the contract or order, the mirrors shall be packaged in accordance with ASTM D 3951. The complete package shall be designed to protect the item against damage during shipment, handling, and storage. The mirrors shall be packed to conform to the Uniform Freight Classification and National Motor Freight Classification.

### 5.2 Marking

5.2.1 Civil agencies In addition to markings required by the contract or order, the interior packages and shipping containers shall be marked in accordance with Federal Standard No. 123.

5.2.2 Military agencies In addition to markings required by the contract or order, the interior packages and shipping containers shall be marked in accordance with MIL-STD-129.

5.2.3 Special markings Arrows or other prominent marks shall indicate that the mirrors contained shall be shipped and stored in an on-edge position.

5.2.4 Precautionary markings Both sides of each shipping container shall be stenciled or labeled with the following:

"FRAGILE - GLASS"  
"HANDLE WITH CARE"

## 6 NOTES

6.1 Intended use Mirrors covered by this specification are intended for use in general offices, health centers, washrooms, etc.

6.2 Ordering data Purchasers should select the preferred options permitted herein and include the following information in procurement documents:

- (a) Title, number and date of this document
- (b) Type, class, style, and grade of mirrors (1.2)
- (c) Color of painted finish (3.5.3.1)
- (d) If bright finish metal frames required (3.2.5, 3.2.6, 3.2.7)
- (e) If beveled edge is required (3.7)
- (f) Packaging and packing requirements (5.1)

6.3 The National Stock Numbers for the mirrors are:

A-A-3002

Type	Class	Style	Grade	NSN	Overall Dimensions	Frame Color
I	2	E	1	7105-00-133-4846	406 mm x 559 mm	
I	1	A	3	7105-00-262-7173		Light oak
I	1	B	3	7105-00-262-7174		Walnut
I	2	E	1 or 2	7105-00-496-9866	355 mm x 508 mm	
I	1	F	3	7105-00-840-8896		Tan and Brown
I	1	F	4	7105-00-260-1390	330 mm x 381 mm	Gray, Color #16187
II				7105-00-264-5997	508 mm x 1524 mm	
W						

PREPARING ACTIVITY

GSA - FSS