

[METRIC]  
A-A-52407A  
July 29, 1998  
SUPERSEDING  
A-A-52407  
September 15, 1992

## COMMERCIAL ITEM DESCRIPTION

### GLASS, FILTER, COLORED

The General Services Administration has authorized the use of this Commercial Item Description (CID) for all federal agencies.

1. **SCOPE.** This CID covers the physical properties of four related grades of colored filter glass for use in optical systems. The colored filter glass is referred to herein as "glass".
2. **CLASSIFICATION.** Glass covered by this CID are classified as follows:
  - Grade A - Sharp cut red filter.
  - Grade B - Sharp cut red filter with lower cut frequency than grade A glass.
  - Grade C - Blue filter.
  - Grade D - Blue filter which passes smaller frequency range between 15% and 60% transmittance in blue portion of spectrum than grade C glass.

### 3. SALIENT CHARACTERISTICS.

3.1 Design, materials, and manufacturing process. Design, materials, and manufacturing process selection is the prerogative of the contractor as long as all articles submitted to the Government fully meet the physical characteristics of this CID. Final shape of the glass shall be as specified in the contract (see 7.3). Materials shall be of a quality necessary to produce fine annealed high-quality glass which conform to the requirements for grade as detailed in this CID.

3.1.1 Control thickness. The glass shall meet the control thickness requirements specified in table I. The molder/blank thickness shall be as required to achieve the control thickness and salient characteristics of this CID.

Beneficial comments, recommendations, additions, deletions, clarifications, etc. and any other data which may improve this document should be sent by letter to: U.S. Army Tank-automotive and Armaments Command, ATTN: AMSTA-TR-E/BLUE, Warren, MI 48397-5000
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AMSC N/A

FSC 9340

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

TABLE I. Control thickness.

Grade	Control thickness, mm
A	1.4 - 4.6
B	1.4 - 4.6
C	3.9 - 5.1
D	4.4 - 5.6

3.1.2 Inclusions. The allowable maximum and minimum size inclusions shall be 0.50 millimeter (mm) and 0.10 mm, respectively. The permissible number of maximum size inclusions shall be one per cubic centimeter (cm<sup>3</sup>) of glass. The sum of the diameter of all inclusions larger than the minimum size per cm<sup>3</sup> of glass shall not exceed the diameter of the allowable size. Inclusions smaller than the minimum size shall be disregarded.

3.2 Physical properties.

3.2.1 Coefficient of expansion. Unless otherwise specified in the contract (see 7.3), the glass shall meet the coefficient of expansion requirements specified in table II throughout the range of 0 to 300 degrees Celsius (°C), when tested in accordance with ASTM E228.

TABLE II. Coefficient of expansion.

Grade	Expansion, cm/cm/°C, Max
A	0.000043
B	0.000043
C	0.000094
D	0.000092

3.2.2 Temperature. Unless otherwise specified in the contract (see 7.3), the glass shall meet the maximum annealing and strain points temperatures and the minimum softening point temperature requirements specified in table III, when tested in accordance with ASTM C336 and ASTM C338, respectively.

TABLE III. Temperature properties.

Grade	Strain point, °C, Max	Annealing point, °C, Max	Softening point, °C, Min
A	499	533	770
B	499	533	770
C	365	412	665
D	372	411	660

3.2.3 Specific gravity. Unless otherwise specified (see 7.3), the glass shall meet the specific gravity requirements as specified in table IV, when tested in accordance with ASTM D792.

TABLE IV. Specific gravity.

Grade	Specific gravity, g/cm <sup>3</sup> , $\pm 0.004$
A	2.500
B	2.500
C	2.290
D	2.300

3.2.4 Transmittance wave length. The glass grades A and B (sharp cut red filters) and grades C and D (blue filters) shall meet the transmittance wave length requirements specified in tables V and VI, respectively.

TABLE V. Transmittance wave length (grades A and B).

Grade	Nanometers			
	<u>1/</u>	<u>2/</u>	<u>3/</u>	<u>4/</u>
A	637 - 648	678	617	15
B	628 - 637	667	608	15

- 1/ The wave length limits within which shall lie the wave length (the cut frequency) where the transmittance is 37 percent (%).
- 2/ The transmittance shall be 80% or greater from this wave length to 750 nanometers.
- 3/ The transmittance shall be less than 0.5% at all shorter wave lengths.
- 4/ The difference between the wave lengths where the transmittance is 15% and 60% is not greater than this value.

TABLE VI. Transmittance wave length (grades C and D).

Grade	Nanometers		
	<u>1/</u>	<u>2/</u>	<u>3/</u>
C	555	49	T 740 = T 530 $\pm 15$
D	514	40	T 740 = T 510 $\pm 5$

- 1/ Wave length at which transmission is 15.0  $\pm 0.7\%$ .
- 2/ The difference between the wave lengths at which the transmission is 15 % and 60% shall be equal to the specified value within a tolerance of  $\pm 5$  millimicrons. This requirements is applicable in the blue portion of the spectrum.
- 3/ Transmittance (T) in % not corrected for surface reflection.

3.3 Identification marking. Identification markings shall be as specified in the contract or work order (see 7.3).

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#### 4. REGULATORY REQUIREMENTS.

4.1 Recovered material. The offeror/contractor is encouraged to use recovered materials to the maximum extent practicable, in accordance with paragraph 23.403 of the Federal Acquisition Regulation (FAR).

#### 5. QUALITY ASSURANCE PROVISIONS.

5.1 Responsibility for inspection. The contractor is responsible for the performance of all inspections (examinations and tests).

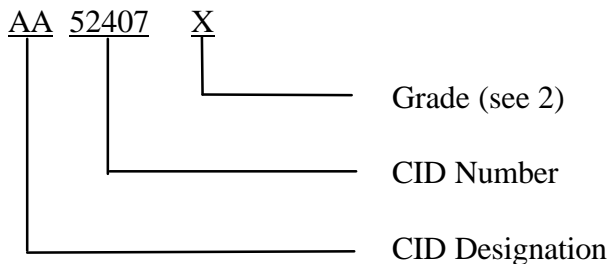
5.2 Product conformance. The products shall meet the salient characteristics of this CID, conform to the producer's own drawings, specifications, standards, and quality assurance practices, and be the same product offered for sale in the commercial market. The Government reserves the right to require proof of such conformance.

6. PACKAGING. Preservation, packing, and marking shall be as specified in the contract or order (see 7.3).

#### 7. NOTES.

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

7.1 Part or Identification Number (PIN). The following part identification numbering procedure is for Government purposes and does not constitute a requirement for the contractor. The PINs to be used for the glass, filtered, colored acquired to this CID are created as follows:



#### 7.2 Addresses for obtaining copies of referenced documents.

7.2.1 Addresses for obtaining copies of referenced Non-Government publications. Copies of American Society for Testing and Materials (ASTM) C336 "Method for Annealing Point and Strain Point for Glass by Fiber Elongation"; ASTM C338 "Softening Point of Glass"; ASTM D542 "Index of Refraction of Transparent Organic Plastics"; ASTM D792 "Density and

Specific Gravity of Plastic by Displacement”; and ASTM E228 “Linear Thermal Expansion of Solid Materials with Vitreous Silica Dilatometer” are available from the American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.

7.3 Ordering data. Acquisition documents must specify the following:

- a. Title, number, and date of this CID.
- b. Issue of the DoDISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced.
- c. Grade of glass.
- d. Final shape, envelope dimensions or configuration of the end item.
- e. If physical properties are other than as specified.
- f. Identification marking requirements.
- g. Packaging requirements.

7.4 Cross-reference data. Glass conforming to this CID is substitutable with colored filter glass conforming to MIL-G-47034A.

7.5 Definitions.

7.5.1 Control thickness. The control thickness is the allowable thickness within the specified range necessary to meet the requirements of a given glass grade.

7.5.2 Cut frequency. The frequency within a given range that corresponds to a desired transmittance change around a specified transmittance value.

MILITARY INTERESTS:

CIVIL AGENCY COORDINATING ACTIVITY:  
GSA-FSS

Custodians:

Army - AT  
Navy - AS  
Air Force - 99

Preparing Activity:  
Army - AT

(Project 9340-0015)

Review Activities:

Air Force - 84  
DLA - GS