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19 April 1960  
SUPERSEDING  
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23 August 1951

## PERFORMANCE SPECIFICATION

### GLASSES, PORTLIGHT, CIRCULAR, HEAT TREATED

This specification has been approved by the Department of Defense and is mandatory for use by the Departments of the Army, the Navy, and the Air Force.

#### 1. SCOPE

1.1 Scope. This specification covers circular heat treated glasses for portlights.

1.2 Classification. Glasses covered by this specification shall be of the following types, as specified (see 6.1):

- Type A - Plain edge, both faces polished.
- Type B - Plain edge, one face polished; opposite face frosted.
- Type C - Rabbeted edge, both faces polished.
- Type D - Rabbeted edge, one face polished; opposite face frosted.

#### 2. APPLICABLE DOCUMENTS

2.1 The following specifications and standards, of the issue in effect on date of invitation for bids, form a part of this specification to the extent specified herein:

#### SPECIFICATIONS

##### FEDERAL

- DD-G-451 - Glass, Flat and Corrugated, for Glazing Mirrors and Other Uses.
- UU-T-111 - Tape; Paper, Gummed (Sealing and Securing).
- PPP-B-585 - Boxes, Wood, Wire-Bound.
- PPP-B-601 - Boxes, Wood, Cleated-Plywood.
- PPP-B-621 - Boxes, Wood Nailed and Lock-Corner.
- PPP-B-636 - Boxes, Fiber.
- PPP-B-291 - Paperboard, Wrapping, Cushing.

##### MILITARY

- MIL-L-10547 - Liners, Case, Waterproof.

#### STANDARDS

##### MILITARY

- MIL-STD-105 - Sampling Procedures and Tables for Inspection by Attributes.
- MIL-STD-129 - Marking for Shipment and Storage.

(Copies of specifications, standards, drawings, and publications required by contractors in connection with specific procurement functions should be ob-

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tained from the procuring activity or as directed by the contracting officer.)

**2.2 Other publications.** The following document forms a part of this specification to the extent specified herein. Unless otherwise indicated, the issue in effect on date of invitation for bids shall apply.

### OFFICIAL CLASSIFICATION COMMITTEE

#### Uniform Freight Classification Rules.

(Application for copies should be addressed to the Official Classification Committee, 1 Park Avenue at 83rd St. New York 16, N. Y.)

## 3. REQUIREMENTS

**3.1 Material.** The glass used shall be glazing quality, polished plate glass, conforming, except as to thickness, to the requirements for type A of Specification DD-G-451.

**3.2 Finish.** Glasses shall be finished by grinding to the tolerances specified in 3.3. Edges shall be ground evenly, with corners chamfered  $\frac{1}{16}$  inch, and shall be free from warp.

**3.3 Dimensions.** The dimensions shall be as specified (see 6.1). The thickness of the plate over its surface shall be uniform, commensurate with a high degree of mechanical strength; opposite faces of the edge shall be essentially parallel. The thickness of any glass shall not vary more than  $\frac{1}{32}$  inch between any two points on its periphery, nor shall there be more than  $\frac{1}{32}$  inch warpage along any line on either face of the glass when tested as specified in 4.4.3. The permitted tolerances shall be as specified in table I.

TABLE I. Permitted tolerances

Dimension	Tolerance ( $\pm$ )
	Inch
Diameter or diameters .....	$\frac{1}{16}$
Thickness:	
Up to $\frac{1}{4}$ inch .....	$\frac{3}{16}$
$\frac{1}{4}$ inch and over .....	$\frac{1}{16}$
Depth of rabbet .....	$\frac{1}{16}$

**3.4 Breakage strength.** Glasses shall exhibit satisfactory resistance to breakage when tested as specified in 4.4.1.

**3.5 Marking.** Glasses shall be marked by etching or sand blasting approximately  $\frac{1}{2}$  inch from the edge with the words "heat-treated".

**3.6 Strain pattern, types A and C.** When viewed under polarized light as specified in 4.3.2, the glasses shall show concentric colored or black rings, characteristic of fully heat-treated glass.

**3.7 Clarity.** When tested as specified in 4.4.2, black and white lines of the clarity target shall be definitely distinguishable for all parts of the critical area.

**3.7.1 Types B and D.** The designated faces of the glasses shall be uniformly frosted by sand blasting or etching.

**3.7.2 Types C and D.** The rabbeted edges of the glasses shall be ground concentric with the sides of the rabbet, forming an angle of 90 degrees  $\pm$  2 degrees.

**3.8 Workmanship.** The workmanship shall be first class in every respect.

## 4. QUALITY ASSURANCE PROVISIONS

**4.1** The supplier is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified, the supplier may utilize his own or any other inspection facilities and services acceptable to the Government. Inspection records of the examination and tests shall be kept complete and available to the Government as specified in the contract or order. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

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## 4.2 Sampling.

**4.2.1 Inspection lot.** For purposes of inspection, a lot shall consist of not more than 1,000 glasses which shall be of a single thickness, produced in a single plant and offered for delivery at one time.

**4.2.2 Sampling for visual and dimensional inspection.** Sample glasses shall be selected at random in accordance with Standard MIL-STD-105 at inspection level II for inspection of 4.3.1.

**4.2.3 Sampling for tests and polariscopic examination.** Glasses shall be selected at random in accordance with table II. Each of these sample glasses shall be subjected to the examination of 4.3.2 and the tests of 4.4.1 to 4.4.3.

TABLE II. Sampling for tests and polariscopic examination

Lot size	Sample size	Allowable number of failures or defectives
1 to 6	All	Does not apply
7 to 50	8	None
51 to 100	14	1
101 to 1000	10	See 4.4.1.4

## 4.3 Examination.

**4.3.1 Visual and dimensional.** The glass shall be examined to verify conformance to all of the requirements which do not involve tests. Lots shall be accepted or rejected in accordance with Acceptable Quality Level (A.Q.L.) 1.5 percent.

**4.3.2 Polariscopic examination, (types A and C glasses).** The glasses shall be subjected to polariscopic examination as specified in 3.6. When ordinary transparent material such as glass is subjected to stresses, the strained regions inside are characterized by changes in their optical properties, whereby they become partially birefringent. The amount of birefringence produced at any point in the material is in part, a measure of the

strain existing there. Consequently, when a sample containing strains is inserted between crossed polarizers, light is restored in the region under strain. This restored light usually appears in the form of various colored striations or color patterns. If any glass does not show concentric rings as specified in 3.6, the lot represented shall be rejected in accordance with table II. The strain pattern in properly heat-treated circular glass will take the form of concentric rings of color near the edge of the glass. There will usually be a regular pattern of color. It is necessary to move the glass to right or left as the pattern may not be visible at the particular angle in which the glass is placed with respect to the polarizing beams of light. The type of viewing polariscope used, whether Nicol prism or polaroid-equipped lens, is immaterial so long as the apparatus is equipped with a shutter mechanism carrying a tint plate so that the strain pattern may be viewed alternately as black lines or as color-fringed pattern. A typical black line pattern is illustrated by figure 1.

## 4.4 Tests.

**4.4.1 Proof load.** Glasses shall be tested under a load applied without shock using the jig illustrated by figure 2. The glass shall be placed centrally between the upper and lower steel beams which are at an angle of 90 degrees and are shown in side and end views, respectively. The steel bearings in way of glass shall be spaced on dimension A so that the glass has a clearance of  $\frac{1}{16}$  inch on either side. Each bearing shall have a leather insert approximately  $\frac{1}{8}$  inch thick over the entire surface between steel and glass. Types C and D glasses shall be tested with the large diameter down, and the bearings against the bottom face shall extend approximately  $\frac{1}{2}$  inch within the circle of the smaller diameter. The rate of loading shall be  $0.1 \pm 0.005$  inch per minute.

**4.4.1.1 When all glasses are to be tested.**

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All glasses shall be tested before acceptance when a special use requires complete protection against defective glasses, or when a lot contains less than 7 glasses. When all glasses in a lot are to be tested, each glass shall be

loaded to the value shown in table III. (Other values may be obtained, if needed, by linear interpolation between the nearest values shown in the table.) Glasses not injured will be accepted.

TABLE III. Proof load in pounds when all glasses in a lot are to be tested

Diameter (inches)	Thickness in inches							
	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1	$1\frac{1}{8}$
	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds
6	790	1,720	2,980	4,570	6,480	8,690	11,220	17,190
8 $\frac{1}{2}$	710	1,550	2,690	4,120	5,840	7,830	10,110	15,490
12 $\frac{1}{2}$	600	1,310	2,280	3,490	4,940	6,640	8,570	13,120
18	520	1,140	1,970	3,020	4,280	5,740	7,410	11,350
20	440	960	1,670	2,560	3,620	4,860	6,270	9,610
25 $\frac{1}{2}$	350	770	1,330	2,070	2,880	3,870	4,990	7,650

4.4.1.2 When a lot is to be accepted on the basis of a sample. Lots consisting of more than 6 glasses shall be evaluated by means of a sample, which shall contain a representative variety of types and diameters.

4.4.1.3 Lots of 7 to 100 glasses. Where the lot consists of 7 to 50 glasses, the sample shall consist of 6 glasses. Where the lot consists of 51 to 100 glasses, the sample shall consist of 14 glasses. Each glass in the sample shall be loaded to the corresponding value shown in table III. If no glass in a sample of 6 breaks, or if at most one glass in a sample of 14 breaks, the lot will be accepted. If more glasses break, all glasses in the lot shall be tested by the method specified in 4.4.1.1 and glasses not injured by that test will be accepted.

4.4.1.4 Lots of 101 to 1,000 glasses. Lots containing more than 100 glasses shall be evaluated by means of a sample of 10 glasses. The sample shall be tested by determining whether the average of the breaking loads of the glasses in the sample does or does not fall below the average of the corresponding proof loads shown in table IV. (Other values may be obtained, if needed, by linear interpolation between the nearest values shown in the table.) If the average of the sample is greater than, or equal to, the average proof load, the lot will be accepted. If the average of the sample is below the average proof load, the lot will be rejected, but the contractor shall then have the option of testing each glass of the lot by the method specified in 4.4.1.1 and glasses not injured in that test will be accepted.

TABLE IV. Proof load in pounds for the average of a sample of 10 glasses from a lot consisting of more than 100 glasses

Diameter (inches)	Thickness in inches							
	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$	1	$1\frac{1}{8}$
	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds
6	1,043	2,265	3,926	6,015	8,524	11,440	14,768	22,621
8 $\frac{1}{2}$	940	2,042	3,539	5,422	7,688	10,312	13,312	20,391
12 $\frac{1}{2}$	797	1,729	2,997	4,592	6,508	8,784	11,275	17,271
18	688	1,495	2,592	3,971	5,628	7,553	9,750	14,936
20	583	1,266	2,195	3,364	4,767	6,397	8,259	12,650
25 $\frac{1}{2}$	464	1,008	1,747	2,677	3,794	5,091	6,573	10,068

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4.4.1.5 In determining the average proof load corresponding to the sample from table III, each entry in table III shall be counted into the average as often as the corresponding pair of dimensions appears in the sample. For example, if the sample consists of glasses of  $\frac{1}{2}$  inch thickness and if 4 glasses are of 6 inch diameter, 1 glass of  $12\frac{1}{2}$  inch diameter and 5 glasses of 20 inch diameter, the average proof load is

$$\frac{(4) (3926) + 2997 + (5) (2195)}{10} = 2967.6$$

Where all glasses are of the same diameter, as well as of the same thickness the average proof load is simply the entry in table III at this diameter and thickness.

4.4.1.6 Attention is invited to the fact that the position of the average breaking load of the sample with respect to the average proof load can usually be determined without breaking all the glasses in the sample. On the average, less than 5 glasses from satisfactory lots should be broken. The following procedure is recommended: Glasses should first be loaded only to the corresponding values shown in table III. If no glass in the sample

breaks, the average of the breaking loads of the sample cannot be below the average proof load and the lot should be accepted. If one glass breaks before its proof load as shown in table III is reached, the deviation of its observed breaking load from its proof load should be recorded; it may be termed the "deficiency" of this glass. The next glass to be tested should then be loaded above its proof load (as shown in table III) to an amount equal in magnitude to the deficiency of the preceding glass. If this second glass withstands the load, the deficiency of the preceding glass has been canceled. If not, the deviation from the proof load should be recorded and should be added to or subtracted from the deficiency of the previous glass to obtain a combined deficiency for the two glasses. The next glass should then be tested above its proof load to an amount equal to this combined deficiency, etc. Thus, if a deficiency occurs at any point in a test, the next glass is either broken or the deficiency is wiped out. For example, consider a possible set of results of testing the sample of glasses of  $\frac{1}{2}$  inch thickness specified in 4.4.1.5. A convenient method of tabulation is as follows (the numbering of the glasses in the sample is purely arbitrary):

Glass No.	Diameter	Load	Deviation from table II	Combined deficiency
	<i>Inches</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>
1	6	3,926	0	0
2	6	3,926	0	0
3	6	3,926	0	0
4	6	3,880	-46	-46
5	$12\frac{1}{2}$	3,030	+33	-13
6	20	2,000	+195	-208
7	20	2,265	+70	-138
8	20	2,333	+138	0
9	20	2,195	0	0
10	20	2,195	0	0

<sup>1</sup> Glass broken.

Glass number 5 was to be loaded to 2,997 + 46 = 3,043 pounds, but broke at 3,030 pounds, leaving a combined deficiency of 13 pounds for glass number 6 to overcome. Glass number 6 broke long before the re-

quired load strength of 2,195 + 13 = 2,208 pounds had been reached, and before its proof load of 2,195 pounds shown in table III was reached, thus increasing the combined deficiency, etc. Glass number 8 finally



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wiped out the accumulated deficiency, and the sample passed the test. Only four glasses were broken by the test. If a deficiency persists at number 10, it will be necessary to reload one or more of the glasses which have not been broken. If all glasses have been broken when number 10 is reached, and if a deficiency remains, the sample has failed the test and the lot will be rejected. However, in that case the contractor has the option of testing each glass of the lot by the method specified in 4.4.1.1.

**4.4.2 Clarity (types A and C glasses).** The deterioration of the clarity of target lines due to placing the sample in a light path shall be observed through a suitable telescope. The target shall consist of two sets of equal width alternate black and white lines oriented so that the lines of the two sets are mutually perpendicular. The width of all the lines in inches, whether black or white, shall have a value of not greater than 0.00175 times the distance between the target and the objective of the telescope in feet. The target to telescope distance shall be at least 20 feet. The telescope shall have a magnifying power of at least 10 times and the test aperture shall be not less than  $\frac{1}{2}$  inch in diameter.

**4.4.2.1** The sample shall be held normal at the line of sight and immediately in front of the telescope objective. It shall be moved in a plane parallel to its own surfaces so as to survey the critical area, covering at least 30 percent of this area. The critical area is the central portion of the glass, exclusive of a rim area extending inward 1 inch on glasses not over 10 inches in diameter and extending inward  $1\frac{1}{2}$  inches in any direction from tong marks, if tong marks are present.

**4.4.3 Warpage.** The annular ring method shall be used to determine warpage. The testing apparatus shall consist of an upper and lower annular ring, whose outside diameter shall exceed the diameter of the glass

to be tested by  $\frac{1}{2}$  inch, the inner diameter being  $2\frac{1}{2}$  inches less than the outer diameter. The surface with which the glass comes in contact shall be within  $\frac{4}{1000}$  inch of a mechanical plane surface. The lower annular ring shall be placed on a level horizontal surface; the glass to be tested shall be laid centrally on the annular ring; and the top annular ring shall be centrally placed on top of the glass. At no point shall variation in clearance space between the plane surface of the annular rings and the surface of the glass exceed  $\pm \frac{1}{32}$  inch in either direction when determined with a feeler gage.

## 5. PREPARATION FOR DELIVERY

### 5.1 Packaging (see 6.1).

**5.1.1 Level A.** Glasses shall be individually protected by a single wrap of flexible corrugated fiberboard or Kraft wrapping paper. Wrapping media shall be of minimum 50 pounds basis weight (24X36-500). The wrap shall be so applied as to protect the entire periphery of the glasses and secured with gummed paper tape. As an alternate, glasses may be individually packaged in corrugated boxes conforming to style OPF of Specification PPP-B-636. Boxes shall be closed in accordance with the box specification.

**5.1.2 Level C.** Glasses shall be provided protection in accordance with suppliers commercial practice.

### 5.2 Packing (see 6.1).

**5.2.1 Level A.** Glasses of one type and size only shall be packed in nailed wood, wood, cleated plywood or wood wirebound boxes conforming to Specification PPP-B-621, (class 2), PPP-B-601 (overseas type) or PPP-B-585 (class 3). The wrapped glasses shall be packed in stacks, with each stack protected by a minimum of 2-inches of well-tamped straw, hay or other suitable material and so placed as to protect the entire periphery of the glasses as well as the top and

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bottom glasses. Shipping containers shall be provided with sealed waterproof case liners conforming to Specification MIL-L-10547, class 2. Case liners may be omitted when glasses are individually packaged (see 5.1.1) in fiber boxes conforming to class 2 or 3 of Specification PPP-B-636. Shipping containers shall be closed and strapped in accordance with the box specification or appendix thereto. Gross weight of shipping containers shall not exceed 200 pounds.

**5.2.2 Level B.** Glasses of one type and size only shall be packed as specified for level A, except that shipping containers shall conform to the domestic type or class and that case liners shall not be required.

**5.2.3 Level C.** Glasses of one type and class only shall be packed in containers of the type and size commonly used for the purpose, in a manner to insure delivery and acceptance at destination. Containers shall comply with Uniform Freight Classification Rules or other regulations as applicable to the mode of transportation.

**5.3 Marking.** In addition to any special marking, specified in the contract or order, or herein, interior packages and shipping containers shall be marked in accordance with Standard MIL-STD-129.

**5.3.1 Additional marking.** Shipping containers shall be marked "GLASS — HANDLE WITH CARE" and "THIS SIDE UP" on each of two opposite sides in such a manner that the weight of the glasses is placed on their peripheries.

## 6. NOTES

**6.1 Ordering data.** Procurement documents should specify the following:

- (a) Title, number, and date of this specification.
- (b) Type and dimensions of glasses desired (see 1.2 and 3.3).

- (c) Whether packaging shall be for level A or C, and packing A, B, or C (see 5.1 and 5.2).

- (d) Special marking required (see 5.3).

**6.2 Definitions.** Certain terms used in this specification are defined as follows:

- (a) **Lines.** Waves which extend continuously across the glass so that the reflection from the surface appears as a line or series of lines extending either the full width or a considerable distance across the glass.
- (b) **Bubbles.** Gas inclusions, practically always spherical and brilliant in appearance. Large bubbles are  $\frac{3}{32}$  inch or over in diameter.
- (c) **Open bubbles.** Bubbles which have been broken into by grinding, leaving a hemispherical hole in the glass surface.
- (d) **Seeds.** Minute bubbles less than  $\frac{1}{32}$  inch in diameter. Fine seeds are visible only on close inspection, usually appearing as small specks and are inherent defect in the best quality of plate glass. Seeds approximately  $\frac{1}{64}$  to  $\frac{1}{32}$  inch in diameter are usually considered as coarse seeds.
- (e) **Heavy seed.** A condition where the fine and coarse seeds are very numerous, such as 25 or more to the square inch.
- (f) **Ream.** An area of unhomogeneous glass incorporated in the sheet, producing a wavy appearance.
- (g) **Stones.** Any opaque or partially-melted particles of rock, clay, or batch ingredient imbedded in the glass.
- (h) **Cords.** Heavy strings incorporated in the sheet, occurring without

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any regularity of direction, and appearing to be of considerable thickness rather than on the surface.

- (i) *Short finish.* Insufficient polish or lack of brilliancy; improperly finished surface which appears slightly pitted and wavy when the surface is viewed in a reflected light.

6.3 The sampling specified in 4.2 is based primarily on the proof load test specified in 4.4.1 for quality. The test is the most reliable method for determining whether circular glasses are properly heat-treated. The results of proof load tests to breakage of 209 samples were analyzed by the method of least squares. The samples were selected from the regular production of two manufacturers and ranged from 6 to 25½ inches in diameter and ¼ inch to 1¼ inches in thickness. Tests were conducted at different laboratories. The median breaking load was found to be given by the empirical equation,

$$L = 21990 T^{1.9115} (0.9593)^D$$

where L is the breaking load in pounds, T is the thickness in inches, and D is the diameter in inches. The standard deviation of the data was of the order of 22 percent of the median. The indicated distribution of breaking strengths is such that approximately 2.3 percent of glasses tested may be expected to fail at loads of less than 65.45 percent of the median, if the production standard represented by the above samples is maintained. The median strength given by the above equation is over 5 times the median strength of annealed plate glass. For most uses of heat-treated circular glasses a minimum strength of 65.45 percent of this median can be tolerated. The specification provides three methods of testing to eliminate inferior glasses. The methods are designed to keep testing and breakage of glasses to a minimum and still give adequate protection to the Navy and to the manufacturers. When a lot

consists of less than 7 glasses, or when a special use requires complete protection against the possibility of defective glasses, all glasses are tested to a load of 65.45 percent of the median given by the above equation and glasses not injured are accepted (see 4.4.1.1). When a lot consists of 7 to 100 glasses, a sample is tested to 65.45 percent of the median (see 4.4.1.3). Lots of 7 to 50 glasses are not accepted if no glass of a sample of 6 fails. Lots of 51 to 1,000 glasses are accepted if not more than 1 glass of a sample of 14 fails. When a lot consists of 101 to 1,000 glasses, a sample of 10 glasses is tested to determine whether the average breaking strength is at least equal to 86.15 percent of the average median given by the above equation and the lot is accepted when the sample passes this test (see 4.4.1.4). Since an average breaking strength is the criterion in this last method, it may be necessary to break a portion of the sample, but a method is outlined for determining the position of the average with respect to the above limit with a minimum of breakage (see 4.4.1.6). Since a satisfactory lot will be rejected approximately 1 percent of the time on the basis of tests of a sample the manufacturer is given the option of testing every glass to 65.45 percent of the median given by the above equation, and glasses not injured are accepted. This method of testing large lots means that the worst possible average percent defectives is 5.5 percent, regardless of the size of the lots sampled, and regardless of whether the manufacturer has maintained the production quality of the data analyzed above. If manufacturers maintain the same production quality, an average of 98 percent of the glasses accepted will have strengths greater than 65.45 percent of the median given by the above equation. It is the manufacturer's interest to maintain or improve the production quality, since the proportion of lots which must be detailed because the samples fail will increase rapidly as the production quality is lowered, and the proportion of glasses broken in the tests will increase.



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**Preparing activity:**

**Navy—Bureau of Ships  
(Project 2040-0031)**

**Custodians:**

**Army—Transportation Corps  
Navy—Bureau of Ships  
Air Force**

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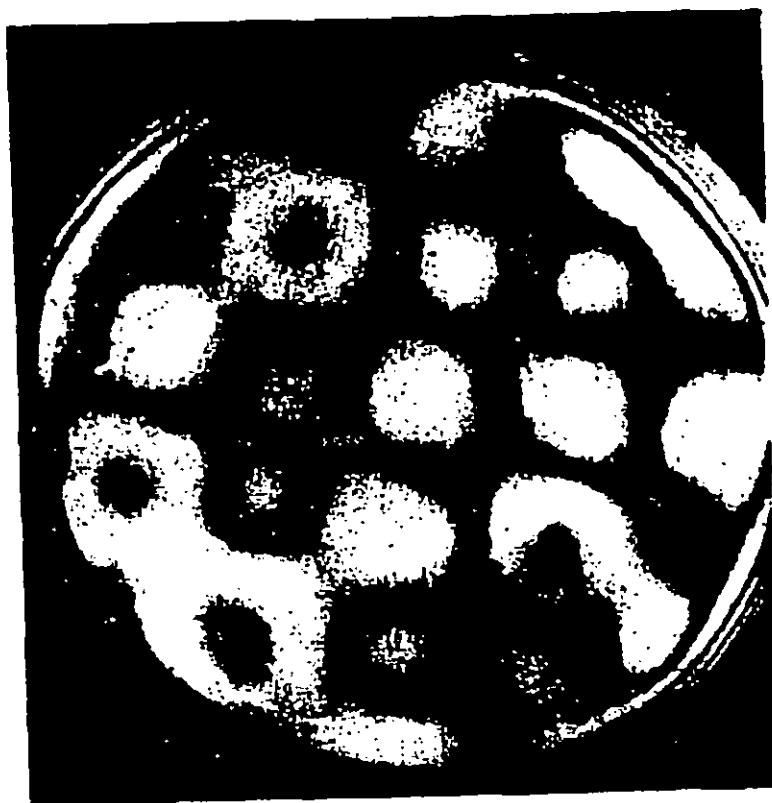


FIGURE 1. Stain pattern,  $8\frac{1}{2}$  inches diameter,  $\frac{7}{8}$  inch thick

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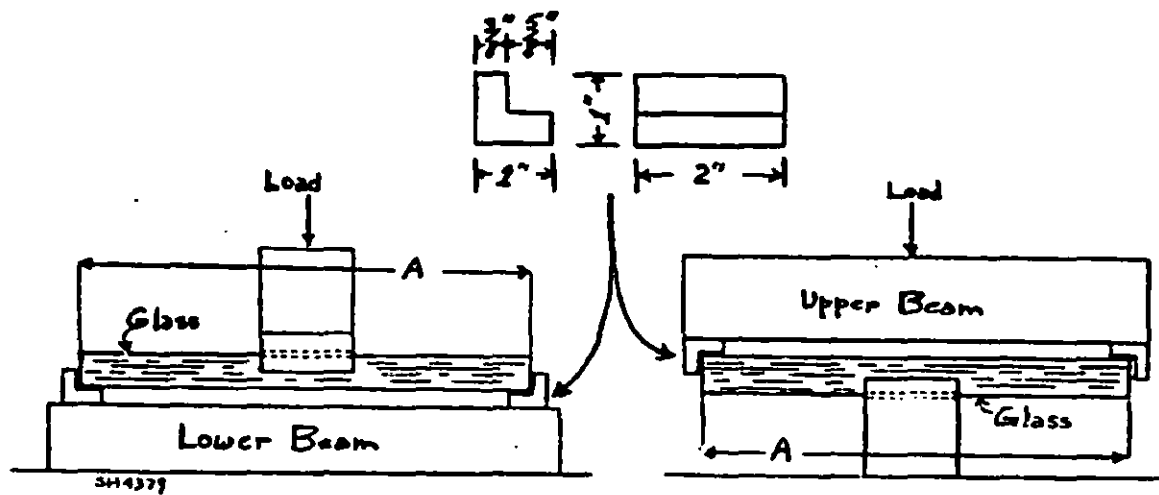


FIGURE 2. Proof load

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**NOTE:** This form may not be used to request copies of documents, nor to request waivers, deviations, or clarification of specification requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements.

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# STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

(See Instructions - Reverse Side)

1. DOCUMENT NUMBER

2. DOCUMENT TITLE

3a. NAME OF SUBMITTING ORGANIZATION

4. TYPE OF ORGANIZATION (Mark one)

☐ VENDOR

☐ USER

☐ MANUFACTURER

☐ OTHER (Specify): \_\_\_\_\_

b. ADDRESS (Street, City, State, ZIP Code)

## 5. PROBLEM AREAS

a. Paragraph Number and Wording:

b. Recommended Wording:

c. Reason/Rationale for Recommendation:

## 6. REMARKS

7a. NAME OF SUBMITTER (Last, First, MI) - Optional

b. WORK TELEPHONE NUMBER (Include Area Code) - Optional

c. MAILING ADDRESS (Street, City, State, ZIP Code) - Optional

8. DATE OF SUBMISSION (YYMMDD)