NOTICE OF CANCELLATION

INCH-POUND

MIL-P-46144C
NOTICE 1
9 June 2000

MILITARY SPECIFICATION

PLASTIC SHEET, POLYCARBONATE

MIL-P-46144C, dated 3 June 1986, is hereby canceled. Future acquisition for this material should refer commercial item description A-A-59502, "PLASTIC SHEET, POLYCARBONATE".

Custodians:
Army - MR
Navy - SH
Air Force - 99

Preparing activity:
DLA - GS

(Project 9330-0107)

Reviewers:
Army - AR, AT, CR
Navy - AS, MC, OS
Air Force - 19, 84

AMSC N/A

FSC 9330

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

INCH-POUND

MIL-P-46144C
AMENDMENT 1
6 February 1990

MILITARY SPECIFICATION

PLASTIC SHEET, POLYCARBONATE

This amendment forms a part of MIL-P-46144C, dated 3 June 1986, and is approved for use by all Departments and Agencies of the Department of Defense.

PAGE 5

3.5.1, lines 4, 5, and 6: Delete "+ 6.35 mm", "+ 12.7 mm" and "+ 3.18 mm" and substitute "+/- 6.35 mm", "+/- 12.7 mm", and "+/- 3.18 mm".

Custodians:
Army - MR
Air Force - 99

Preparing activity:
Army - MR

Project 9330-1150

Review activities:
Army - GL, MI, ER, SM, AV
Navy - AS, SH, YD
Air Force - 19, 20, 23, 84
DLA-GS

User activities:
Army - AR, ME, AT
Navy - OS, MC
Air Force - 15

AMSC N/A FSC 9330

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

MIL-P-46144C
3 June 1986
SUPERSEDING
MIL-P-46144B(MR)
10 February 1977

PLASTIC SHEET, POLYCARBONATE

This specification is approved for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This specification covers polycarbonate sheet.

1.2 Classification. The sheet shall be of the following types, classes, and grades as specified (see 6.2).

Type I - Standard sheet

- Class 1 - Ultraviolet (UV) stabilized
- Class 2 - Non-UV stabilized

Type II - Flame resistant sheet

- Class 1 - Ultraviolet (UV) stabilized
- Class 2 - Non-UV stabilized

Type III - Coated mar resistant sheet

- Class 1 - Ultraviolet (UV) stabilized
  - Grade A - High abrasion resistance
  - Grade B - Medium abrasion resistance
  - Note: See table IV, type III

Type IV - Coated sheet with ultraviolet resistant surface

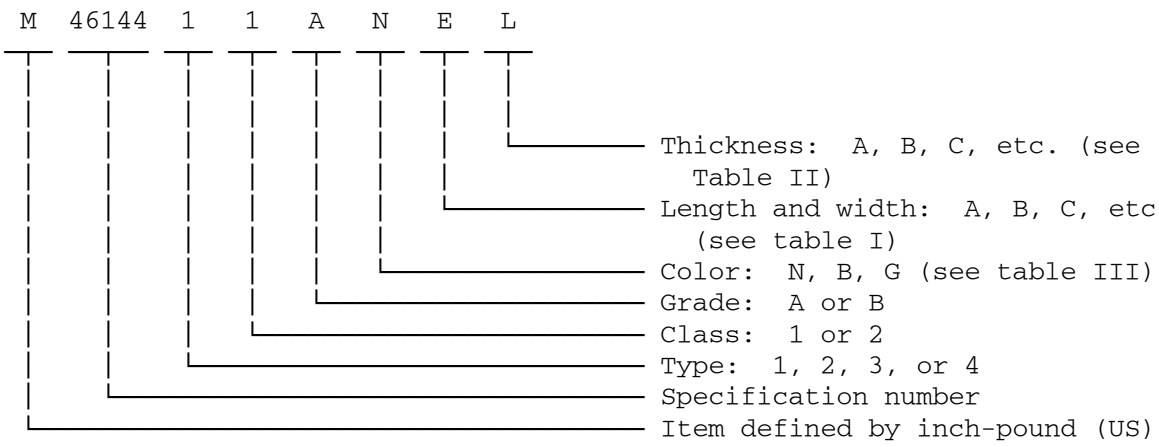
- Class 1 - Monolithic
- Class 2 - Structured/profiled (see 6.4.5)

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Director, U.S. Army Materials Technology Laboratory ATTN: SLCMT-MSR-ES, Watertown, MA 02172-0001 by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

AMSC N/A FSC 9330

1.3 Part numbering. The part numbering system described herein shall be used to identify parts or items covered by this specification.

Example:



Note: Where no grades are specified, the numeric "0" shall be used.

2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this specifications to the extent specified herein. Unless otherwise specified, the issues of these documents shall be those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation.

SPECIFICATIONS

FEDERAL

UU-P-268 - Paper, Kraft, Wrapping
PPP-B-585 - Box, Wood, Wirebound
PPP-B-601 - Boxes, Wood, Cleated Plywood
PPP-B-621 - Box, Wood, Nailed and Lock-corner
PPP-B-636 - Box, Shipping, Fiberboard

MILITARY

MIL-P-116 - Preservation, Packaging, Methods of
MIL-L-10547 - Liner, Case, and Sheet, Overwrap, Water Vaporproof or Waterproof, Flexible

STANDARDS

MILITARY

MIL-STD-129 - Marking for Shipment and Storage

(Copies of specifications, standards, handbooks, drawings, publications, and other government documents required by contractors in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting activity.)

2.2 Other publications. The following document(s) form a part of this specification to the extent specified herein. Unless otherwise specified, the issues of the documents which are DoD adopted shall be those listed in the issue of the DODISS specified in the solicitation. Unless otherwise specified, the issues of documents not listed in the DODISS shall be the issue of the nongovernment documents which is current on the date of the solicitation.

ASTM STANDARDS

ASTM D149	Standard Test Method for Dielectric Breakdown Voltage and Dielectric Strength of Electrical Insulating Materials at Commercial Power Frequencies
ASTM D150	Standard Test Methods for A-C Loss Characteristics and Permittivity (Dielectric Constant) of Solid Electrical Insulating Materials
ASTM D257	Standard Test Methods for D-C Resistance or Conductance of Insulating Materials
ASTM D618	Standard Methods of Conditioning Plastics and Electrical Insulating Materials for Testing
ASTM D635	Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Self/Supporting Plastics in a horizontal Position.
ASTM D638	Standard Test Method for Tensile Properties of Plastics
ASTM D648	Standard Test Method for Deflection Temperature of Plastics Under Flexural Load
ASTM D792	Standard Test Methods for Specific Gravity and Density of Plastics of Displacement
ASTM D882	Standard Test Methods for Tensile Properties of Thin Plastic Sheeting
ASTM D1044	Standard Test Method for Resistance of Transparent Plastics to Surface Abrasion
ASTM D1637	Standard Test Method for Tensile Heat Distortion Temperature of Plastic Sheeting
ASTM D1898	Standard Recommended Practice for Sampling of Plastics
ASTM D2863	Standard Method for Measuring the Minimum Oxygen Concentration to Support Candle-like Combustion of Plastics (Oxygen Index)
ASTM D3951	Standard Practice for Commercial Packaging

ASTM E168 Standard Recommended Practices for General Techniques of Infrared Quantitative Analysis

ASTM E169 Standard Recommended Practices for General Techniques of Ultraviolet Quantitative Analysis

ASTM E204 Standard Practices for Identification of Material by Infrared Absorption Spectroscopy, Using the ASTM Coded Band and Chemical Classification Index

ASTM F735 Standard Practice for Abrasion Resistance of Transparent Plastics and Coatings using the Oscillating Sand Method

ASTM F791 Standard Practice for Stress Crazing of Transparent Plastics

(Application for copies of ASTM publications should be addressed to the ASTM, 1916 Race Street, Philadelphia, PA 19103.)

UNDERWRITERS LABORATORIES (UL)

UL 94 Tests for Flammability of Plastic Materials for Parts in Devices and Appliances.

(Applications for copies of UL publications should be addressed to the Underwriters Laboratories, Inc., 333 Pfingsten Road, Northbrook, IL 60062.)

(Nongovernment standards and other publications are normally available from the organizations which prepare or which distribute the documents. These documents also may be available in or through libraries or other informational services.)

2.3 Order of precedence. In the event of a conflict between the text of this specification and the references cited herein (except for associated detail specifications, specification sheets or MS standards), the text of this specification shall take precedence. Nothing in this specification, however, shall supersede applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 First article. When specified by the procuring activity (see 6.2), a sample shall be subjected to first article inspection (see 4.3.1 and 6.3).

3.2 Material. The material shall consist of thermoplastic polycarbonate sheet. Type II sheet shall contain the necessary additives for flame resistant material. Class 1 sheet shall contain the necessary additives for ultraviolet stabilization material for outdoor use. Type III sheet shall contain a mar resistant coating on both sides. Type IV sheet shall contain an added ultraviolet coating applied to at least one surface for outdoor use.

3.3 Property values. Polycarbonate sheet shall conform to the property values specified in table IV, when tested as specified in the applicable procedure of 4.5. When specified by the procuring activity (see 6.2), the electrical properties specified in table V shall be included as requirements.

3.4 Color. The sheet shall be furnished either in natural color, or in the color specified by the procuring activity (see 6.2 and table III). When natural color is specified, the sheet shall be colorless and transparent.

3.5 Dimensions and tolerances.

3.5.1 Length and width. The length and width of sheet shall be as specified by the procuring activity (see 6.2). Standard nominal sizes are specified in table I for sheet 0.762 mm (0.030 in) and above. For sheet at or below 0.762 mm (0.030 in) roll stock is available. Tolerances are + 6.35 mm (0.250 in) on lengths up to 1219 mm (48 in), and +12.7 mm (0.500 in) on lengths greater than 1219 mm (48 in). Tolerances on width shall be +3.18 mm (0.125 in).

3.5.2 Thickness. The thickness of sheet shall be as specified by the procuring activity (see 6.2). Standard nominal sizes for polycarbonate sheet are specified in table II. Tolerances are +/- 10 percent on 0.013 mm (0.0005 in) to 2.03 mm (0.080 in) sheet for 90 percent of the area and +/- 15 percent on the remainder of the area. For thickness above 2.03 mm (0.080 in), tolerances shall be +/- 5 percent for 90 percent of the area and +/- 10 percent on the remainder of the area.

3.6 Luminous transmittance and haze. Requirements for luminous transmittance and haze shall be as specified in the contract or purchase order (see 6.2).

3.7 Flammability. When specified by the procuring activity (see 6.2), requirements for flame resistant sheet (Type II) shall be specified in the contract or purchase order using the flammability criteria of ASTM D635 or UL 94.

3.8 Chemical resistance. When specified by the procuring activity (see 6.2), the polycarbonate sheet shall be tested for chemical resistance in accordance with ASTM F791 to determine the critical crazing stress for solvents and chemicals which are expected to be encountered in the operational environment of the material.

3.9 Uniformity. The sheet shall be uniform in appearance within each container and from container to container.

3.10 Part numbering. Parts or items covered by this specification shall be identified in accordance with 1.3.

3.11 Workmanship. The sheet shall be free of defects in appearance, construction and workmanship, as determined by visual examination (see table VI).

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. 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 purchase order, the contractor may use his own

or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. 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.

4.1.1 Responsibility for compliance. All items must meet all requirements of sections 3 and 5. The inspection set forth in this specification shall become a part of the contractor's overall inspection system or quality program. The absence of any inspection requirements in the specification shall not relieve the contractor of the responsibility of assuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling in quality conformance does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to acceptance of defective material.

4.2 Classification of inspections. The inspection requirements specified herein are classified as follows:

a. First article inspection (see 4.2.1)
b. Quality conformance inspection (see 4.2.2)

4.2.1 First article inspection. First article inspection shall consist of the visual examination specified in 4.4 and all the tests specified in 4.5.

4.2.2 Quality conformance (i.e, lot acceptance) inspection. Quality conformance inspection shall consist of the visual examination specified in 4.4 and the following tests:

a. Tensile yield strength and elongation
b. Deflection temperature under load (DTUL)
c. Tensile heat distortion temperature (HDT)

4.3 Sampling for inspection. Sampling for inspection shall be performed in accordance with the provisions set forth in ASTM D1898.

4.4 Visual examination. Sampling for visual examination shall be in accordance with ASTM D1898 and as specified herein.

4.4.1 Appearance, construction, and workmanship. The sample unit for this examination, specified in table VI, shall be one sheet. Not more than five sample units shall be taken from any one package of sheets.

4.4.2 Dimensional defects. The sample unit for this examination, specified in table VII, shall be one plastic sheet.

4.4.3 Assembly. The sample unit for this examination, specified in table VIII, shall be one package of sheets.

4.4.4 Count per package of sheets. The sample unit for this examination, specified in table IX, shall be one package of sheets.

4.4.5 Packaging. An examination shall be made in accordance with table X to determine that preservation, packing and marking comply with the requirements of section 5 of this specification. The sample unit for this examination shall be one shipping container, fully packed, selected just prior to the closing operation. Shipping containers fully prepared for delivery shall be examined for closure defects.

4.5 Test methods. Polycarbonate sheet shall be tested in accordance with the methods in table XI and as specified herein.

4.5.1 Ultraviolet stabilizer (class 1 only). When specified (see 6.2), class 1 sheet shall be tested to detect and identify the presence of an ultraviolet stabilizer additive by ultraviolet spectroscopy in accordance with ASTM E169.

4.5.2 Coatings (types III and IV only). When specified (see 6.2), types III or IV sheet shall be tested to detect and identify the presence of a coating by means of Fourier transform infrared spectrophotometry in accordance with ASTM E168 and E204.

5. PACKAGING

Application. The requirements of section 5 apply only to purchase by or direct shipment to the Government.

5.1 Preservation. Preservation shall be level A, B, or Commercial, as specified (see 6.2).

5.1.1 Level A. Unless otherwise specified in the contract or order (see 6.2), sheet shall be unit packed in quantities specified by the procuring agency in accordance with method III of MIL-P-116. Sheet material shall be interleaved to prevent adherence of sheets to each other and shall be over-wrapped with kraft wrapping paper conforming to grade B of UU-P-268. Shapes of only set of nominal dimensions shall be placed in one package. When required, specified quantities of unit packing shall be intermediately packed as specified in the contract or purchase order (see 6.2).

5.1.2 Commercial. Sheet material shall be preserved in accordance with ASTM D3951 to provide adequate protection against deterioration and physical damage during shipment form the supply source to the first receiving activity.

5.2 Packing. Packing shall be level A, B, or Commercial, as specified (see 6.2).

5.2.1 Level A. Sheets shall be packed in containers conforming to PPP-B-585 (class 3), PPP-B-601 (overseas type), or PPP-B-621 (class 2). Unless otherwise specified, containers shall be provided with a case liner conforming to MIL-L-10547. Boxes shall be closed, strapped, or banded in accordance with the applicable box specification or appendix thereto. The gross weight of wood or wood-cleated boxes shall not exceed 91 kg (200 lb).

5.2.2 Level B. Sheets shall be packed in domestic class or type shipping containers conforming to PPP-B-585 (class 1), PPP-B-601 (domestic type), or PPP-B-621 (class 1). Containers shall be closed and strapped in accordance with the applicable container specification or appendix thereto. The gross weight of wood or wood-cleated containers shall not exceed 91 kg (200 lb). When specified (6.2), the shipping container shall be grade V3s or V4s fiber board box fabricated in accordance with PPP-B-636 and closed in accordance with appendix of the container specification.

5.2.3 Commercial. Packing shall be in accordance with ASTM D3951 adequate to ensure acceptance and delivery by the carrier for the mode of transportation employed.

5.3 Marking.

5.3.1 Levels A and B. In addition to any special marking required by the contract or purchase order, level A interior and exterior containers shall be marked in accordance with MIL-STD-129.

5.3.2 Level C. Interior and exterior containers shall be marked as specified in ASTM D3951 when that document is used as the packaging reference. Interior and exterior containers prepared in accordance with specific military requirements shall be marked as specified in MIL-STD-129.

5.3.3 Marking of individual sheets. When specified by the procuring activity (see 6.2), the applicable National Stock Number (NSN) shall be legibly marked on one side of each sheet in at least one place with 305 mm (12 in) of a narrow edge and, in numbers of not less than 12.7 mm (0.500 in) height. Where the marking material will adversely affect the surface of the sheet, the NSN shall be placed on each sheet by means of a pressure sensitive adhesive backed label or in the case of roll stock, clearly marked on the inside cylinder of the roll.

6. NOTES

6.1 Intended use. Polycarbonate sheet is used for architectural glazing, lighting fixtures, skylights, passive solar collectors, printed films, metallized films, packaging and transparent armor applications. Natural color sheet is used for packaging food.

6.2 Ordering data. Acquisition documents should specify the following:

a. Title, number and date of this specification
b. Type, class and grade of material required (see 1.2)
c. Whether first article inspection is required (see 3.1)
d. For electrical applications, testing for electrical properties (see 3.3 and table V), if required
e. Color of sheet (see 3.4 and table III)
f. Length, width, and thickness of sheet (see 3.5.1 and 3.5.2)
g. Requirements for luminous transmittance and haze (see 3.6)
h. Flammability requirements (type II only) using ASTM D635 or UL 94 (see 3.7)
i. Chemical resistance tests if required (see 3.8)

j. Whether test for UV stabilizer or coatings are required (see 4.5.1 and 4.5.2)
k. Degrees of preservation and packing required (see 5.1 and 5.2)
l. Quantities required in unit packing and intermediate packing (if applicable, (see 5.1.1)
m. Additional marking, if required (see 5.3)
n. Marking of individual sheets, if required (see 5.3.3)

6.3 First article. When first article inspection is required, the contracting officer should include specific instructions in acquisition documents regarding arrangements for examinations and test approval.

6.4 Definitions (See ASTM D883).

6.4.1 Sheet. An individual piece of sheeting.

6.4.2 Sheeting. A form of plastic in which the thickness is very small in proportion to length and width and in which the plastic is present as a continuous phase throughout, with or without filler.

6.4.3 Film. An optional term for sheeting having a nominal thickness not greater than 0.25 mm (0.01 in).

6.4.4 Contractor. The term "Contractor" as used in this specification is defined as the organization having a direct contract with the procuring activity. The term "Manufacturer" is defined as the organization actually performing the operations covered by this specification. The contractor may or may not be the manufacturer.

6.4.5 Structured/profiled sheet. An extruded sheet with double-walled and ribbed or corrugated configuration.

6.5 Disposability. One or more of the following methods, shown in order of their preference, shall be used to accomplish disposal of polycarbonate plastic sheet. Recommended preprocessing requirements are shown for each disposal method.

Order of preference	Method	Recommended preprocessing
1	Sanitary landfill	Compaction
2	Incineration	Separation and shredding
3	Baling	Compaction
4	Recycle	Separation and compaction
5	Pyrolysis	Separation and shredding
6	Reuse	Separation
7	Composting	Separation and shredding

Custodians:

Army - MR
Air Force - 99

Review Activities:

Army - GL, MI, ER, SM, AV
Navy - AS, SH, MC
Air Force - 19, 20, 23, 84
DLA - GS

User activities:

Army - AR, ME, AT
Navy - OS, YD
Air Force - 15

Preparing Activity:

Army - MR

Project No. 9330-B063

(WP ID # 0455A/DISK #0135B FOR MTL USE ONLY.)

TABLE I. Length and width of sheet.

Part Numbering Designation	Length and Width mm (in)
A	610 by 1219 (24 by 48)
B	914 by 914 (36 by 36)
C	1219 by 1829 (48 by 72)
D	1219 by 2438 (48 by 96)
E	1524 by 2438 (60 by 96)
F	1829 by 2438 (72 by 96)

TABLE II. Thickness of sheet.

Part Numbering Designation	Thickness mm (in)
A	0.013 (0.0005)
B	0.025 (0.001)
C	0.051 (0.002)
D	0.076 (0.003)
E	0.127 (0.005)
F	0.191 (0.0075)
G	0.254 (0.010)
H	0.381 (0.015)
I	0.508 (0.020)
J	0.762 (0.030)
K	1.02 (0.040)
L	1.27 (0.050)
M	1.52 (0.060)
N	2.03 (0.080)
O	2.36 (0.093)
P	2.54 (0.100)
Q	3.18 (0.125)
R	4.75 (0.187)
S	6.35 (0.250)
T	7.87 (0.310)
U	9.52 (0.375)
V	12.7 (0.500)
W	25.4 (1.00)

TABLE III. Color of sheet.

Part Numbering Designation	Color
N	Natural
B	Bronze
C	Gray

TABLE IV. Property values [1/] (excluding electrical properties).

Property	Type I	Type II	Type III	Type IV
Tensile yield strength, MPa (psi), min				
0.0127 mm (0.0005 in) to 0.127 mm (0.005 in) thick	48.3 (7000)	48.3 (7000)	-	-
Above 0.127 mm (0.005 in) thick	59.3 (8600)	59.3 (8600)	59.3 (8600)	59.3 (8600)
Elongation at break percent, min				
0.025 mm (0.001 in) to 0.127 mm (0.005 in) thick	100	100	-	-
Above 0.127 mm (0.005 in) thick	70	70	70	70
Deflection temperature, under 1.82 MPa (264 psi) fiber stress, min (applicable only to sheet 1.52 mm (0.060 in) or greater in thickness)				
°C, min	129	132	129	129
°F, min	265	270	265	265
Tensile heat distortion temperature, at 0.345 MPa, (50 psi) tensile stress and 2 percent extension, min (applicable only to sheet less than 1.52 mm (0.060 in) thick)				
°C min	132	132	132	132
°F min	270	270	270	270
Specific gravity				
23°C/23°C (73.4°F/73.4°F)	1.18-1.22	1.20-1.25	1.18-1.22	1.18-1.22
Flammability				
Oxygen index value, min				
Sheet 0.508 mm (0.020 in) thick, or less	19	24	-	-
Sheet above 0.508 mm (0.020 in) to 1.02 mm (0.040 in) thick, inclusive	21	26	-	-
Sheet greater than 1.02 mm (0.040 in) thick	24	29	24	24
Surface abrasion				
(Δ%H) Delta percent change in haze Grade A	-	-	≤5%	
300 revolutions/CS 10F wheels) Grade B	-	-	≤15%	

1/ MPa x 145 = psi

TABLE V. Electrical property values [1]

Property	All types
Dielectric constant at 60 Hz, min	2.75
Dielectric strength in air or oil, volts per mil, min (kV/mm)	350 (13.8)
Volume resistivity, ohm-cm, min	1.0 x 10 [14]

[1] Applicable only when specified by the procuring activity (see 6.2)

TABLE VI. Examination for defects in appearance, construction and workmanship.

Examine	Defect
Appearance	Not clean, presence of imbedded particles, dirt, grit or other foreign matter, that may affect appearance or serviceability.
	Not uniform in appearance.
	Material not colorless and transparent when natural color is specified (see 3.4).
	Color and transparency or opacity improper, when color is specified (see 3.4).
	Not conforming to 5.3.3 or marking individual sheets, when so specified.
Construction and workmanship	Any cracks, scratches, bubbles, warpage, pits or other defects that would affect serviceability.
	Any cut, puncture, sharp crease, wrinkle, tear or hole.
	Edges not clean cut; ragged, crushed or uneven edges.

TABLE VII. Examination for dimensional defects.

Examine	Defect
Length and width Varies by more than length and width tolerance specified (see 3.5.1)	Not as specified.
Thickness Varies by more than the tolerance specified (see 3.5.2)	Not as specified.

TABLE VIII. Examination for defects in assembly.

Examine	Defect
Assembly of sheets	Excessive unevenness in stacking. Not interleaved to prevent adherence of sheets.

TABLE IX. Examination for defects in the count per package of sheets.

Examine	Defects
Sheets	Average count per package of sheets less than specified.

TABLE X. Examination of packaging.

Examine	Defects
Preservation	Not level specified; not in accordance with contract requirements.
	Sheet not unit wrapped and preserved as specified.
	Preservation material not as specified; closures not accomplished by specified or required methods or materials.
Packing	Not level specified; not in accordance with contact requirements.
	Any nonconforming component; component missing, damaged or otherwise defective affecting serviceability.
	Container not as specified; closures not accomplished by specified or required methods of materials.
	Inadequate application of components, such as: Incomplete closures of case liners or container flaps, loose or inadequate strappings, bulged or distorted containers.
Count	Less than specified or indicated quantity of packages per shipping container.
Weight	Gross or net weight exceeds specified require-ments.
Marking	Interior or exterior marking (as applicable) omitted, illegible, incorrect, of improper size, location, sequence, or method of application.
	Not in accordance with contract requirements.

TABLE XI. Test methods for polycarbonate sheet.

Property	ASTM Standard
Physical:	
Abrasion resistance	D1044 or F735
Conditioning	D618
Infrared spectroscopy	E168 and E204
Specific gravity	E792
Ultraviolet spectroscopy	E169
Mechanical:	
Tensile strength	D638 or D882
Thermal:	
Deflection temperature under load	D648
Heat distortion temperature	D1637
Electrical:	
Dielectric constant	D150
Dielectric strength	D149
Volume resistivity	D257
Flammability:	
Rate of burning	D635
Oxygen index	D2863
UL rating	UL94
Chemical:	
Stress crazing	F791