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## SECTION 08841

### POLYCARBONATE SHEET GLAZING

#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. Solid polycarbonate plastic glazing.
- B. Multiwall polycarbonate plastic glazing.
- C. Corrugated polycarbonate plastic glazing.
- D. Accessories for installation of plastic glazing.
- E. Skylight Glazing.

##### 1.2 RELATED SECTIONS

- A. Section 08800 - Glazing.
- B. Section 08620 - Unit Skylights.

##### 1.3 REFERENCES

- A. 16 CFR 1201 - Safety Standard for Architectural Glazing Materials.
- B. ANSI Z97.1 - American National Standard for Glazing Materials Used in Buildings.
- C. ASTM D 635 - Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Self-Supporting Plastics in a Horizontal Position.
- D. ASTM D 648 - Standard Test Method for Deflection Temperature of Plastics Under Flexural Load.
- E. ASTM D 696 - Standard Test Method for Coefficient of Linear Thermal Expansion.
- F. ASTM D 790/ASTM D 790M - Standard Test Method for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.
- G. ASTM D 1003 - Standard Test Method for Haze and Luminous Transmittance of Transparent Plastics.
- H. ASTM D 1044 - Standard Test Method for Resistance of Transparent Plastic to Surface Abrasion.
- I. ASTM D 1929 - Standard Test Method for Ignition Properties of Plastics.
- J. ASTM D 2843 - Standard Test Method for Density of Smoke from the Burning and Decomposition of Plastics.

- K. ASTM D 3763 - Standard Test Method for Impact Resistance of Flat, Rigid Plastic Specimen by Means of A Striker Impacted by A Falling Weight (40 ft-lbs).
- L. ASTM G 53 - Standard Practice for Operating Light and Exposure Apparatus (Fluorescent UV-Condensation Type) for Exposure of Non-Metallic Materials.
- M. QUV 313B - Accelerated Weathering Test of Non-Metallic Materials.
- N. ISO-9002 - International Standards Organization.

#### 1.4 SYSTEM DESCRIPTION

- A. Design requirements for installed plastic glazing systems:
  - 1. Windload resistance:
    - a. Positive pressure: \_\_\_ pounds per square foot (\_\_\_ MPa).
    - b. Negative pressure: \_\_\_ pounds per square foot (\_\_\_ MPa).
- B. Performance requirements for polycarbonate sheet glazing: Conforming to requirements of 16 CFR 1201, ANSI Z97.1, and the following:
  - 1. Coefficient of expansion, when tested in accordance with ASTM D 696: .0000375 inch per inch per degree F (0.0000675 ratio per degree C).
  - 2. Modulus of elasticity, when tested in accordance with ASTM D 4065: 340,000 pounds per square inch (2343.96 MPa).
  - 3. Flexural strength, when tested in accordance with ASTM D 790: 13,500 pounds per square inch (93.06 MPa).
  - 4. Deflection temperature, when tested in accordance with ASTM D 648: 270 degrees F (132.2 degrees C) under 274 pounds per square inch (1.88 MPa) load.
  - 5. Self-ignition temperature, when tested in accordance with ASTM D 1929: Minimum 1000 degrees F (537.7 degrees C).
  - 6. Smoke density rating, when tested in accordance with ASTM D 2843: Maximum 75.
  - 7. Maximum allowable continuous service temperature: 180 degrees F (82.2 degrees C).

#### 1.5 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Polycarbonate sheet manufacturer's descriptive literature for each glazing type specified, including documentation of code compliance; include descriptive literature for recommended installation accessories.
- C. Selection Samples: Two sets of color chips representing polycarbonate sheet manufacturer's full range of available colors.
- D. Verification Samples: Two samples, minimum size 4 inches (102 mm) square, representing actual color and finish of products to be installed.
- E. Quality Control Submittals:
  - 1. Design Data: Analysis by polycarbonate sheet manufacturer verifying compliance of polycarbonate sheet glazing; include details of glazing edge engagement, and allowance for anticipated thermal movements.
  - 2. Provide Computer Aided Sheet Engineering (CASE) report based on project information available prior to bidding.
  - 3. Manufacturer Qualifications: Documentation of specified manufacturer qualifications.
  - 4. Manufacturer's Instructions: Printed installation instructions for polycarbonate sheet glazing; include storage, requirements, recommended glazing techniques, and installation accessories.
  - 5. Specimen warranty documents.

6. Operation and maintenance data: Printed instructions on recommended cleaning and maintenance materials and methods.
  7. Warranty documents specified in WARRANTY Article of PART 1 of this section.
- F. Manufacturer Qualifications:
1. Minimum ten (10) years experience producing plastic glazing products.
  2. Minimum five (5) completed projects on which manufacturer has supplied plastic glazing, similar in type and scope to this project; each completed project to be minimum five (5) years old.
  3. Registered in accordance with ISO-9002 quality standards.
- G. Regulatory Requirements: Glazing materials to comply with the following building code:
1. ICC Evaluation Report: ES22-21.
  2. International Building Code (IBC), 2006 Edition.
  3. International Residential Code (IRC), 2006 Edition.
  4. Dade County, FL.
- H. Mock-Ups: Supply materials for mock-ups required in affected sections.
- 1.6 DELIVERY, STORAGE, AND HANDLING
- A. Do not slide, drag, or drop polycarbonate sheet materials.
  - B. Do not store polycarbonate sheet materials in areas subject to direct UV exposure.
  - C. Store products of this section with polycarbonate sheet manufacturer's protective film intact.
  - D. Maintain storage area in accordance with polycarbonate sheet manufacturer's instructions until installation of products.
- 1.7 WARRANTY
- A. At project closeout, provide to Owner or Owners Representative an executed copy of the manufacturer's standard limited warranty against manufacturing defect, outlining its terms, conditions, and exclusions from coverage.
    1. Duration: Three (3) year warranty against defects in Thermoclear Easy Clean materials.
    2. Duration: Five (5) year warranty against defects in Lexan 9030 and 9030FR materials.
    3. Duration: Ten (10) year warranty against defects in materials.

## PART 2 PRODUCTS

### 2.1 MANUFACTURERS

- A. Acceptable Manufacturer: AmeriLux International LLC. 1212 Enterprise Dr, DePere, WI 54115; Tel: (920) 336-9300; Fax: (920) 336-9301; [www.ameriluxinternational.com](http://www.ameriluxinternational.com) ; E: [tech.service@ameriluxinternational.com](mailto:tech.service@ameriluxinternational.com)
- B. Requests for substitution will be considered in accordance with provisions of Section 01600.
- C. Substitutions: Not permitted.

### 2.2 SCOPE / APPLICATIONS

- A. Provide polycarbonate glazing panels for use in glazed curtain wall assemblies.
- B. Provide polycarbonate glazing panels for use in signage applications.

- C. Provide polycarbonate glazing panels for use in unit skylight applications.
- D. Provide polycarbonate glazing panels for use in field fabricated skylight applications.
- E. Provide polycarbonate glazing panels for use in protective railing applications.

### 2.3 SOLID PANELS

- A. LEXAN Margard MR10: Translucent polycarbonate sheet with UV-resistant and abrasion resistant hardcoat surface treatment both sides.
  - 1. Grade/Type: \_\_\_\_\_.
  - 2. Sheet Thickness: 0.118 inch (3mm) nominal, plus or minus 5 percent.
  - 3. Sheet Thickness: 0.177 inch (4.5mm) nominal, plus or minus 5 percent.
  - 4. Sheet Thickness: 0.236 inch (6mm) nominal, plus or minus 5 percent.
  - 5. Sheet Thickness: 0.375 inch (9.5mm) nominal, plus or minus 5 percent.
  - 6. Sheet Thickness: 0.5 inch (12.7mm) nominal, plus or minus 5 percent.
  - 7. Color: Clear/Transparent
  - 8. Color: Bronze.
  - 9. Color: Grey.
  - 10. Color: Light Green.
  - 11. Color: Green.
  - 12. Performance:
    - a. Light transmission: Change not to exceed \_\_\_ percent.
    - b. Thermal Transmission (U-Value): \_\_\_ as determined by calculations based on test data, in accordance with ASHRAE procedures.
    - c. Sound Transmission: STC \_\_\_.
    - d. Impact resistance, when tested in accordance with ASTM D 5420 (Drop Dart): \_\_\_ foot-pounds (271.16 N m) for 1/4-inch (6 mm) thick material.
    - e. Weather resistance, when tested for 1500 hours in accordance with ASTM G 53 and QUV 313B:
    - f. Yellowing intensity: Change not to exceed a delta of \_\_\_\_.
    - g. Haze: Change not to exceed \_\_\_ percent.
    - h. Coating integrity: Intact after testing period.
  
- B. LEXAN Solar Control IR Sheet:
  - 1. Grade/Type: Exell D SC IR.
  - 2. Sheet Thickness: 0.118 inch (3mm) nominal, plus or minus 5 percent.
  - 3. Sheet Thickness: 0.236 inch (6mm) nominal, plus or minus 5 percent.
  - 4. Sheet Thickness: 0.315 inch (8mm) nominal, plus or minus 5 percent.
  - 5. Sheet Thickness: 0.472 inch (12mm) nominal, plus or minus 5 percent.
  - 6. Color: Bronze.
  - 7. Color: Grey.
  - 8. Color: Light Green.
  - 9. Color: Green.
  - 10. Performance:
    - a. Light transmission: Change not to exceed \_\_\_ percent.
    - b. Thermal Transmission (U-Value): \_\_\_ as determined by calculations based on test data, in accordance with ASHRAE procedures.
    - c. Sound Transmission: STC \_\_\_.
    - d. Impact resistance, when tested in accordance with ASTM D 5420 (Drop Dart): \_\_\_ foot-pounds (271.16 N m) for 1/4-inch (6 mm) thick material.
    - e. Weather resistance, when tested for 1500 hours in accordance with ASTM G 53 and QUV 313B:
    - f. Yellowing intensity: Change not to exceed a delta of \_\_\_\_.
    - g. Haze: Change not to exceed \_\_\_ percent.
    - h. Coating integrity: Intact after testing period.

- C. LEXAN XL102 UV Sheet:
1. Grade/Type: XL102UV.
  2. Sheet Thickness: 0.118 inch (3mm) nominal, plus or minus 5 percent.
  3. Sheet Thickness: 0.177 inch (4.5mm) nominal, plus or minus 5 percent.
  4. Sheet Thickness: 0.236 inch (6mm) nominal, plus or minus 5 percent.
  5. Sheet Thickness: 0.375 inch (9.5mm) nominal, plus or minus 5 percent.
  6. Sheet Thickness: 0.5 inch (12.7mm) nominal, plus or minus 5 percent.
  7. Color: Clear
  8. Color: Bronze.
  9. Color: Grey.
  10. Color: Green.
  11. Color: Blue.
  12. Color: Opal White.
  13. Performance:
    - a. Light transmission: Change not to exceed \_\_\_ percent.
    - b. Thermal Transmission (U-Value): \_\_\_ as determined by calculations based on test data, in accordance with ASHRAE procedures.
    - c. Sound Transmission: STC \_\_\_.
    - d. Impact resistance, when tested in accordance with ASTM D 5420 (Drop Dart): \_\_\_ foot-pounds (271.16 N m) for 1/4-inch (6 mm) thick material.
    - e. Weather resistance, when tested for 1500 hours in accordance with ASTM G 53 and QUV 313B:
    - f. Yellowing intensity: Change not to exceed a delta of \_\_\_.
    - g. Haze: Change not to exceed \_\_\_ percent.
    - h. Coating integrity: Intact after testing period.
- D. LEXAN 9030:
1. Grade/Type: 9030.
  2. Sheet Thickness: 0.030 inch (0.75 mm) nominal, plus or minus 5 percent.
  3. Sheet Thickness: 0.040 inch (1 mm) nominal, plus or minus 5 percent.
  4. Sheet Thickness: 0.060 inch (1.5 mm) nominal, plus or minus 5 percent.
  5. Sheet Thickness: 0.080 inch (2mm) nominal, plus or minus 5 percent.
  6. Sheet Thickness: 0.118 inch (3mm) nominal, plus or minus 5 percent.
  7. Sheet Thickness: 0.158 inch (4mm) nominal, plus or minus 5 percent.
  8. Sheet Thickness: 0.197 inch (5mm) nominal, plus or minus 5 percent.
  9. Sheet Thickness: 0.236 inch (6mm) nominal, plus or minus 5 percent.
  10. Sheet Thickness: 0.315 inch (8mm) nominal, plus or minus 5 percent.
  11. Sheet Thickness: 0.375 inch (9.5mm) nominal, plus or minus 5 percent.
  12. Sheet Thickness: 0.472 inch (12mm) nominal, plus or minus 5 percent.
  13. Color: Clear/Transparent.
  14. Color: Bronze
  15. Color: Opal white.
  16. Performance:
    - a. Light transmission: Change not to exceed \_\_\_ percent.
    - b. Thermal Transmission (U-Value): \_\_\_ as determined by calculations based on test data, in accordance with ASHRAE procedures.
    - c. Sound Transmission: STC \_\_\_.
    - d. Impact resistance, when tested in accordance with ASTM D 5420 (Drop Dart): \_\_\_ foot-pounds (271.16 N m) for 1/4-inch (6 mm) thick material.
    - e. Weather resistance, when tested for 1500 hours in accordance with ASTM G 53 and QUV 313B:
    - f. Yellowing intensity: Change not to exceed a delta of \_\_\_.
    - g. Haze: Change not to exceed \_\_\_ percent.
    - h. Coating integrity: Intact after testing period.
- E. Lexan 9034:

1. Grade/Type: 9034.
2. Sheet Thickness: 0.030 inch (0.75 mm) nominal, plus or minus 5 percent.
3. Sheet Thickness: 0.040 inch (1 mm) nominal, plus or minus 5 percent.
4. Sheet Thickness: 0.060 inch (1.5 mm) nominal, plus or minus 5 percent.
5. Sheet Thickness: 0.080 inch (2mm) nominal, plus or minus 5 percent.
6. Sheet Thickness: 0.093 inch (2.36mm) nominal, plus or minus 5 percent.
7. Sheet Thickness: 0.118 inch (3mm) nominal, plus or minus 5 percent.
8. Sheet Thickness: 0.177 inch (4.5mm) nominal, plus or minus 5 percent.
9. Sheet Thickness: 0.220 inch (5.6mm) nominal, plus or minus 5 percent.
10. Sheet Thickness: 0.236 inch (6mm) nominal, plus or minus 5 percent.
11. Sheet Thickness: 0.375 inch (9.5mm) nominal, plus or minus 5 percent.
12. Sheet Thickness: 0.500 inch (12.7mm) nominal, plus or minus 5 percent.
13. Color: Clear/Transparent
14. Color: Grey.
15. Color: Greylite.
16. Color: Bronze.
17. Color: Light Green.
18. Performance:
  - a. Light transmission: Change not to exceed \_\_\_ percent.
  - b. Thermal Transmission (U-Value): \_\_\_ as determined by calculations based on test data, in accordance with ASHRAE procedures.
  - c. Sound Transmission: STC \_\_\_.
  - d. Impact resistance, when tested in accordance with ASTM D 5420 (Drop Dart): \_\_\_ foot-pounds (271.16 N m) for 1/4-inch (6 mm) thick material.
  - e. Weather resistance, when tested for 1500 hours in accordance with ASTM G 53 and QUV 313B:
  - f. Yellowing intensity: Change not to exceed a delta of \_\_\_.
  - g. Haze: Change not to exceed \_\_\_ percent.
  - h. Coating integrity: Intact after testing period.

## 2.4 MULTIWALL PANELS

- A. LEXAN Thermoclick Sheet:
  1. Grade/Type: \_\_\_\_\_.
  2. Panel Thickness: 1.58 inch (40mm) nominal, plus or minus 5 percent.
  3. Color: Opal white
  4. Color: Transparent/clear
  5. Color: Green
  6. Color: Orange
  7. Color: Purple
  8. Color: Blue
  9. Color: Grey
  10. Color: Red
  11. Color: Yellow
  12. Performance:
    - a. Light transmission: Change not to exceed \_\_\_ percent.
    - b. Thermal Transmission (U-Value): \_\_\_ as determined by calculations based on test data, in accordance with ASHRAE procedures.
    - c. Sound Transmission: STC \_\_\_.
    - d. Impact resistance, when tested in accordance with ASTM D 5420 (Drop Dart): \_\_\_ foot-pounds (271.16 N m) for 1/4-inch (6 mm) thick material.
    - e. Weather resistance, when tested for 1500 hours in accordance with ASTM G 53 and QUV 313B:
    - f. Yellowing intensity: Change not to exceed a delta of \_\_\_.
    - g. Haze: Change not to exceed \_\_\_ percent.
    - h. Coating integrity: Intact after testing period.

- B. LEXAN Thermopanel:
1. Grade/Type: \_\_\_\_\_.
  2. Panel Thickness: 1.18 inch (30 mm) nominal, plus or minus 5 percent.
  3. Color: Opal White.
  4. Color: Clear/Transparent.
  5. Performance:
    - a. Light transmission: Change not to exceed \_\_\_\_ percent.
    - b. Thermal Transmission (U-Value): \_\_ as determined by calculations based on test data, in accordance with ASHRAE procedures.
    - c. Sound Transmission: STC \_\_\_\_.
    - d. Impact resistance, when tested in accordance with ASTM D 5420 (Drop Dart): \_\_\_\_ foot-pounds (271.16 N m) for 1/4-inch (6 mm) thick material.
    - e. Weather resistance, when tested for 1500 hours in accordance with ASTM G 53 and QUV 313B:
    - f. Yellowing intensity: Change not to exceed a delta of \_\_\_\_.
    - g. Haze: Change not to exceed \_\_\_\_ percent.
    - h. Coating integrity: Intact after testing period.
- C. LEXAN Thermoroof Sheets:
1. Grade/Type: \_\_\_\_\_.
  2. Sheet Thickness: 2.17 inches (55mm) nominal, plus or minus 5 percent.
  3. Sheet Thickness: 2.56 inches (65mm) nominal, plus or minus 5 percent.
  4. Color: Opal White.
  5. Color: Clear/Transparent.
  6. Performance:
    - a. Light transmission: Change not to exceed \_\_\_\_ percent.
    - b. Thermal Transmission (U-Value): \_\_ as determined by calculations based on test data, in accordance with ASHRAE procedures.
    - c. Sound Transmission: STC \_\_\_\_.
    - d. Impact resistance, when tested in accordance with ASTM D 5420 (Drop Dart): \_\_\_\_ foot-pounds (271.16 N m) for 1/4-inch (6 mm) thick material.
    - e. Weather resistance, when tested for 1500 hours in accordance with ASTM G 53 and QUV 313B:
    - f. Yellowing intensity: Change not to exceed a delta of \_\_\_\_.
    - g. Haze: Change not to exceed \_\_\_\_ percent.
    - h. Coating integrity: Intact after testing period.
- D. LEXAN Thermoclear:
1. Grade/Type: \_\_\_\_\_.
  2. Sheet Thickness: 0.177 inch (4.5 mm) nominal, plus or minus 5 percent.
  3. Sheet Thickness: 0.236 inch (6mm) nominal, plus or minus 5 percent.
  4. Sheet Thickness: 0.315 inch (8mm) nominal, plus or minus 5 percent.
  5. Sheet Thickness: 0.395 inch (10mm) nominal, plus or minus 5 percent.
  6. Sheet Thickness: 0.629 inch (16mm) nominal, plus or minus 5 percent.
  7. Sheet Thickness: 0.787 inch (20mm) nominal, plus or minus 5 percent.
  8. Sheet Thickness: 0.98 inch (25mm) nominal, plus or minus 5 percent.
  9. Sheet Thickness: 1.26 inch (32mm) nominal, plus or minus 5 percent.
  10. Sheet Thickness: 2.36 inch (60mm) nominal, plus or minus 5 percent.
  11. Color: Opal White
  12. Color: Blue
  13. Color: Blue-Green
  14. Color: Light Green
  15. Color: Dark Grey
  16. Color: Bronze
  17. Color: Emerald
  18. Color: Red

19. Color: Clear/Transparent
20. Performance:
  - a. Light transmission: Change not to exceed \_\_\_ percent.
  - b. Thermal Transmission (U-Value): \_\_\_ as determined by calculations based on test data, in accordance with ASHRAE procedures.
  - c. Sound Transmission: STC \_\_\_.
  - d. Impact resistance, when tested in accordance with ASTM D 5420 (Drop Dart): \_\_\_ foot-pounds (271.16 N m) for 1/4-inch (6 mm) thick material.
  - e. Weather resistance, when tested for 1500 hours in accordance with ASTM G 53 and QUV 313B:
  - f. Yellowing intensity: Change not to exceed a delta of \_\_\_.
  - g. Haze: Change not to exceed \_\_\_ percent.
  - h. Coating integrity: Intact after testing period.
  - i. 502

E. LEXAN Thermoclear IR:

1. Grade/Type: \_\_\_\_\_.
2. Sheet Thickness: 0.177 inch (4.5 mm) nominal, plus or minus 5 percent.
3. Sheet Thickness: 0.236 inch (6mm) nominal, plus or minus 5 percent.
4. Sheet Thickness: 0.315 inch (8mm) nominal, plus or minus 5 percent.
5. Sheet Thickness: 0.395 inch (10mm) nominal, plus or minus 5 percent.
6. Sheet Thickness: 0.629 inch (16mm) nominal, plus or minus 5 percent.
7. Sheet Thickness: 0.787 inch (20mm) nominal, plus or minus 5 percent.
8. Sheet Thickness: 0.98 inch (25mm) nominal, plus or minus 5 percent.
9. Sheet Thickness: 1.26 inch (32mm) nominal, plus or minus 5 percent.
10. Sheet Thickness: 2.36 inch (60mm) nominal, plus or minus 5 percent.
11. Color: Green.
12. Color: Light Green.
13. Performance:
  - a. Light transmission: Change not to exceed \_\_\_ percent.
  - b. Thermal Transmission (U-Value): \_\_\_ as determined by calculations based on test data, in accordance with ASHRAE procedures.
  - c. Sound Transmission: STC \_\_\_.
  - d. Impact resistance, when tested in accordance with ASTM D 5420 (Drop Dart): \_\_\_ foot-pounds (271.16 N m) for 1/4-inch (6 mm) thick material.
  - e. Weather resistance, when tested for 1500 hours in accordance with ASTM G 53 and QUV 313B:
  - f. Yellowing intensity: Change not to exceed a delta of \_\_\_.
  - g. Haze: Change not to exceed \_\_\_ percent.
  - h. Coating integrity: Intact after testing period.

F. LEXAN Thermoclear Soft Lite:

1. Grade/Type: \_\_\_\_\_.
2. Sheet Thickness: 0.177 inch (4.5 mm) nominal, plus or minus 5 percent.
3. Sheet Thickness: 0.236 inch (6mm) nominal, plus or minus 5 percent.
4. Sheet Thickness: 0.315 inch (8mm) nominal, plus or minus 5 percent.
5. Sheet Thickness: 0.395 inch (10mm) nominal, plus or minus 5 percent.
6. Sheet Thickness: 0.629 inch (16mm) nominal, plus or minus 5 percent.
7. Sheet Thickness: 0.787 inch (20mm) nominal, plus or minus 5 percent.
8. Sheet Thickness: 0.98 inch (25mm) nominal, plus or minus 5 percent.
9. Sheet Thickness: 1.26 inch (32mm) nominal, plus or minus 5 percent.
10. Sheet Thickness: 2.36 inch (60mm) nominal, plus or minus 5 percent.
11. Color: Light Diffusing Opal White.
12. Performance:
  - a. Light transmission: Change not to exceed \_\_\_ percent.
  - b. Thermal Transmission (U-Value): \_\_\_ as determined by calculations based on



- test data, in accordance with ASHRAE procedures.
- c. Sound Transmission: STC \_\_\_\_.
- d. Impact resistance, when tested in accordance with ASTM D 5420 (Drop Dart): \_\_\_\_ foot-pounds (271.16 N m) for 1/4-inch (6 mm) thick material.
- e. Weather resistance, when tested for 1500 hours in accordance with ASTM G 53 and QUV 313B:
- f. Yellowing intensity: Change not to exceed a delta of \_\_\_\_.
- g. Haze: Change not to exceed \_\_\_\_ percent.
- h. Coating integrity: Intact after testing period.

G. LEXAN Thermoclear Venetian:

1. Grade/Type: \_\_\_\_\_.
2. Sheet Thickness: 0.177 inch (4.5 mm) nominal, plus or minus 5 percent.
3. Sheet Thickness: 0.236 inch (6mm) nominal, plus or minus 5 percent.
4. Sheet Thickness: 0.315 inch (8mm) nominal, plus or minus 5 percent.
5. Sheet Thickness: 0.395 inch (10mm) nominal, plus or minus 5 percent.
6. Sheet Thickness: 0.629 inch (16mm) nominal, plus or minus 5 percent.
7. Sheet Thickness: 0.787 inch (20mm) nominal, plus or minus 5 percent.
8. Sheet Thickness: 0.98 inch (25mm) nominal, plus or minus 5 percent.
9. Sheet Thickness: 1.26 inch (32mm) nominal, plus or minus 5 percent.
10. Sheet Thickness: 2.36 inch (60mm) nominal, plus or minus 5 percent.
11. Color: Clear/Transparent with Colored Strips.
  - a. Strip Color: White.
  - b. Strip Color: Light Blue.
  - c. Strip Color: Blue.
  - d. Strip Color: Yellow.
12. Performance:
  - a. Light transmission: Change not to exceed \_\_\_\_ percent.
  - b. Thermal Transmission (U-Value): \_\_\_\_ as determined by calculations based on test data, in accordance with ASHRAE procedures.
  - c. Sound Transmission: STC \_\_\_\_.
  - d. Impact resistance, when tested in accordance with ASTM D 5420 (Drop Dart): \_\_\_\_ foot-pounds (271.16 N m) for 1/4-inch (6 mm) thick material.
  - e. Weather resistance, when tested for 1500 hours in accordance with ASTM G 53 and QUV 313B:
  - f. Yellowing intensity: Change not to exceed a delta of \_\_\_\_.
  - g. Haze: Change not to exceed \_\_\_\_ percent.
  - h. Coating integrity: Intact after testing period.

H. LEXAN Thermoclear Easy Clean:

1. Grade/Type: \_\_\_\_\_.
2. Sheet Thickness: 0.177 inch (4.5 mm) nominal, plus or minus 5 percent.
3. Sheet Thickness: 0.236 inch (6mm) nominal, plus or minus 5 percent.
4. Sheet Thickness: 0.315 inch (8mm) nominal, plus or minus 5 percent.
5. Sheet Thickness: 0.395 inch (10mm) nominal, plus or minus 5 percent.
6. Sheet Thickness: 0.629 inch (16mm) nominal, plus or minus 5 percent.
7. Sheet Thickness: 0.787 inch (20mm) nominal, plus or minus 5 percent.
8. Sheet Thickness: 0.98 inch (25mm) nominal, plus or minus 5 percent.
9. Sheet Thickness: 1.26 inch (32mm) nominal, plus or minus 5 percent.
10. Sheet Thickness: 2.36 inch (60mm) nominal, plus or minus 5 percent.
11. Color: Clear/Transparent
12. Color: White.
13. Color: Blue.
14. Performance:
  - a. Light transmission: Change not to exceed \_\_\_\_ percent.
  - b. Thermal Transmission (U-Value): \_\_\_\_ as determined by calculations based on

- test data, in accordance with ASHRAE procedures.
- c. Sound Transmission: STC \_\_\_\_.
- d. Impact resistance, when tested in accordance with ASTM D 5420 (Drop Dart): \_\_\_\_ foot-pounds (271.16 N m) for 1/4-inch (6 mm) thick material.
- e. Weather resistance, when tested for 1500 hours in accordance with ASTM G 53 and QUV 313B:
- f. Yellowing intensity: Change not to exceed a delta of \_\_\_\_.
- g. Haze: Change not to exceed \_\_\_\_ percent.
- h. Coating integrity: Intact after testing period.

I. LEXAN Thermoclear Plus:

- 1. Grade/Type: \_\_\_\_\_.
- 2. Sheet Thickness: 0.177 inch (4.5 mm) nominal, plus or minus 5 percent.
- 3. Sheet Thickness: 0.236 inch (6mm) nominal, plus or minus 5 percent.
- 4. Sheet Thickness: 0.315 inch (8mm) nominal, plus or minus 5 percent.
- 5. Sheet Thickness: 0.395 inch (10mm) nominal, plus or minus 5 percent.
- 6. Sheet Thickness: 0.629 inch (16mm) nominal, plus or minus 5 percent.
- 7. Sheet Thickness: 0.787 inch (20mm) nominal, plus or minus 5 percent.
- 8. Sheet Thickness: 0.98 inch (25mm) nominal, plus or minus 5 percent.
- 9. Sheet Thickness: 1.26 inch (32mm) nominal, plus or minus 5 percent.
- 10. Color: Transparent/Clear.
- 11. Color: White.
- 12. Color: Blue.
- 13. Color: Green.
- 14. Color: Bronze.
- 15. Color: Grey.
- 16. Performance:
  - a. Light transmission: Change not to exceed \_\_\_\_ percent.
  - b. Thermal Transmission (U-Value): \_\_\_\_ as determined by calculations based on test data, in accordance with ASHRAE procedures.
  - c. Sound Transmission: STC \_\_\_\_.
  - d. Impact resistance, when tested in accordance with ASTM D 5420 (Drop Dart): \_\_\_\_ foot-pounds (271.16 N m) for 1/4-inch (6 mm) thick material.
  - e. Weather resistance, when tested for 1500 hours in accordance with ASTM G 53 and QUV 313B:
  - f. Yellowing intensity: Change not to exceed a delta of \_\_\_\_.
  - g. Haze: Change not to exceed \_\_\_\_ percent.
  - h. Coating integrity: Intact after testing period.

J. LEXAN Thermoclear Sun XP:

- 1. Grade/Type: \_\_\_\_\_.
- 2. Sheet Thickness: 0.395 inch (10mm) nominal, plus or minus 5 percent.
- 3. Sheet Thickness: 0.629 inch (16mm) nominal, plus or minus 5 percent.
- 4. Sheet Thickness: 0.787 inch (20mm) nominal, plus or minus 5 percent.
- 5. Sheet Thickness: 0.984 inch (25mm) nominal, plus or minus 5 percent.
- 6. Sheet Thickness: 1.25 inch (32mm) nominal, plus or minus 5 percent.
- 7. Color: Transparent/Clear.
- 8. Color: Bronze.
- 9. Color: Opal White.
- 10. Performance:
  - a. Light transmission: Change not to exceed \_\_\_\_ percent.
  - b. Thermal Transmission (U-Value): \_\_\_\_ as determined by calculations based on test data, in accordance with ASHRAE procedures.
  - c. Sound Transmission: STC \_\_\_\_.
  - d. Impact resistance, when tested in accordance with ASTM D 5420 (Drop Dart): \_\_\_\_ foot-pounds (271.16 N m) for 1/4-inch (6 mm) thick material.

- e. Weather resistance, when tested for 1500 hours in accordance with ASTM G 53 and QUV 313B:
- f. Yellowing intensity: Change not to exceed a delta of \_\_\_\_.
- g. Haze: Change not to exceed \_\_\_\_ percent.
- h. Coating integrity: Intact after testing period.

K. LEXAN Thermoclear Dripguard:

- 1. Grade/Type: \_\_\_\_\_.
- 2. Sheet Thickness: 0.177 inch (4.5mm) nominal, plus or minus 5 percent.
- 3. Sheet Thickness: 0.236 inch (6mm) nominal, plus or minus 5 percent.
- 4. Sheet Thickness: 0.315 inch (8mm) nominal, plus or minus 5 percent.
- 5. Sheet Thickness: 0.395 inch (10mm) nominal, plus or minus 5 percent.
- 6. Sheet Thickness: 0.629 inch (16mm) nominal, plus or minus 5 percent.
- 7. Sheet Thickness: 0.787 inch (20mm) nominal, plus or minus 5 percent.
- 8. Sheet Thickness: 0.984 inch (25mm) nominal, plus or minus 5 percent.
- 9. Sheet Thickness: 1.25 inch (32mm) nominal, plus or minus 5 percent.
- 10. Color: Clear/Transparent.
- 11. Performance:
  - a. Light transmission: Change not to exceed \_\_\_\_ percent.
  - b. Thermal Transmission (U-Value): \_\_ as determined by calculations based on test data, in accordance with ASHRAE procedures.
  - c. Sound Transmission: STC \_\_\_\_.
  - d. Impact resistance, when tested in accordance with ASTM D 5420 (Drop Dart): \_\_\_\_ foot-pounds (271.16 N m) for 1/4-inch (6 mm) thick material.
  - e. Weather resistance, when tested for 1500 hours in accordance with ASTM G 53 and QUV 313B:
  - f. Yellowing intensity: Change not to exceed a delta of \_\_\_\_.
  - g. Haze: Change not to exceed \_\_\_\_ percent.
  - h. Coating integrity: Intact after testing period.

L. LEXAN Thermoclear Hammered Glass:

- 1. Grade/Type: \_\_\_\_\_.
- 2. Sheet Thickness: 0.177 inch (4.5 mm) nominal, plus or minus 5 percent.
- 3. Sheet Thickness: 0.236 inch (6mm) nominal, plus or minus 5 percent.
- 4. Sheet Thickness: 0.315 inch (8mm) nominal, plus or minus 5 percent.
- 5. Sheet Thickness: 0.395 inch (10mm) nominal, plus or minus 5 percent.
- 6. Sheet Thickness: 0.629 inch (16mm) nominal, plus or minus 5 percent.
- 7. Sheet Thickness: 0.787 inch (20mm) nominal, plus or minus 5 percent.
- 8. Sheet Thickness: 0.98 inch (25mm) nominal, plus or minus 5 percent.
- 9. Sheet Thickness: 1.26 inch (32mm) nominal, plus or minus 5 percent.
- 10. Sheet Thickness: 2.36 inch (60mm) nominal, plus or minus 5 percent
- 11. Color: Transparent/Clear.
- 12. Color: Bronze.
- 13. Color: Green.
- 14. Color: Blue.
- 15. Color: Grey.
- 16. Performance:
  - a. Light transmission: Change not to exceed \_\_\_\_ percent.
  - b. Thermal Transmission (U-Value): \_\_ as determined by calculations based on test data, in accordance with ASHRAE procedures.
  - c. Sound Transmission: STC \_\_\_\_.
  - d. Impact resistance, when tested in accordance with ASTM D 5420 (Drop Dart): \_\_\_\_ foot-pounds (271.16 N m) for 1/4-inch (6 mm) thick material.
  - e. Weather resistance, when tested for 1500 hours in accordance with ASTM G 53 and QUV 313B:
  - f. Yellowing intensity: Change not to exceed a delta of \_\_\_\_.

- g. Haze: Change not to exceed \_\_\_ percent.
- h. Coating integrity: Intact after testing period.

M. LEXAN Thermoclear Metallic Gray:

- 1. Grade/Type: \_\_\_\_\_.
- 2. Sheet Thickness: 0.177 inch (4.5 mm) nominal, plus or minus 5 percent.
- 3. Sheet Thickness: 0.236 inch (6mm) nominal, plus or minus 5 percent.
- 4. Sheet Thickness: 0.315 inch (8mm) nominal, plus or minus 5 percent.
- 5. Sheet Thickness: 0.395 inch (10mm) nominal, plus or minus 5 percent.
- 6. Sheet Thickness: 0.629 inch (16mm) nominal, plus or minus 5 percent.
- 7. Sheet Thickness: 0.787 inch (20mm) nominal, plus or minus 5 percent.
- 8. Sheet Thickness: 0.98 inch (25mm) nominal, plus or minus 5 percent.
- 9. Sheet Thickness: 1.26 inch (32mm) nominal, plus or minus 5 percent.
- 10. Color: Opal White with Grey Metal Cap.
- 11. Performance:
  - a. Light transmission: Change not to exceed \_\_\_ percent.
  - b. Thermal Transmission (U-Value): \_\_\_ as determined by calculations based on test data, in accordance with ASHRAE procedures.
  - c. Sound Transmission: STC \_\_\_.
  - d. Impact resistance, when tested in accordance with ASTM D 5420 (Drop Dart): \_\_\_ foot-pounds (271.16 N m) for 1/4-inch (6 mm) thick material.
  - e. Weather resistance, when tested for 1500 hours in accordance with ASTM G 53 and QUV 313B:
  - f. Yellowing intensity: Change not to exceed a delta of \_\_\_.
  - g. Haze: Change not to exceed \_\_\_ percent.
  - h. Coating integrity: Intact after testing period.

## 2.5 CORRUGATED PANELS

A. LEXAN LCS 100:

- 1. Grade/Type: \_\_\_\_\_.
- 2. Sheet Thickness: 0.031 inch (0.787mm) nominal, plus or minus 5 percent.
- 3. Color: Transparent/Clear.
- 4. Color: Bronze.
- 5. Color: Opal White.
- 6. Color: White.
- 7. Color: Green.
- 8. Color: Orange.
- 9. Color: Light Orange.
- 10. Performance:
  - a. Light transmission: Change not to exceed \_\_\_ percent.
  - b. Thermal Transmission (U-Value): \_\_\_ as determined by calculations based on test data, in accordance with ASHRAE procedures.
  - c. Sound Transmission: STC \_\_\_.
  - d. Impact resistance, when tested in accordance with ASTM D 5420 (Drop Dart): \_\_\_ foot-pounds (271.16 N m) for 1/4-inch (6 mm) thick material.
  - e. Weather resistance, when tested for 1500 hours in accordance with ASTM G 53 and QUV 313B:
  - f. Yellowing intensity: Change not to exceed a delta of \_\_\_.
  - g. Haze: Change not to exceed \_\_\_ percent.
  - h. Coating integrity: Intact after testing period.

B. LEXAN LCS 200 BG:

- 1. Grade/Type: \_\_\_\_\_.
- 2. Sheet Thickness: 0.031 inch (0.787mm) nominal, plus or minus 5 percent.
- 3. Color: Clear/Transparent.

4. Performance:
  - a. Light transmission: Change not to exceed \_\_\_ percent.
  - b. Thermal Transmission (U-Value): \_\_\_ as determined by calculations based on test data, in accordance with ASHRAE procedures.
  - c. Sound Transmission: STC \_\_\_.
  - d. Impact resistance, when tested in accordance with ASTM D 5420 (Drop Dart): \_\_\_ foot-pounds (271.16 N m) for 1/4-inch (6 mm) thick material.
  - e. Weather resistance, when tested for 1500 hours in accordance with ASTM G 53 and QUV 313B:
  - f. Yellowing intensity: Change not to exceed a delta of \_\_\_.
  - g. Haze: Change not to exceed \_\_\_ percent.
  - h. Coating integrity: Intact after testing period.

## 2.6 ACCESSORIES

- A. Supply joint sealers and installation accessories specified in polycarbonate sheet manufacturer's instructions, or approved by polycarbonate sheet manufacturer, for indicated installation conditions.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Verification of Conditions:
  1. Openings are in accordance with approved shop drawings required in Section
  2. <MF SQ 08800 and polycarbonate sheet manufacturer's instructions, and are plumb and level to required tolerances#08 83 13 - Mirrored Glass Glazing>.
  3. Glazing channels or recesses are sized for correct glazing edge engagement.

### 3.2 PREPARATION

- A. Clean glazing channels or recesses free of obstructions, soil, debris, and other materials.
- B. Seal porous glazing channels or recesses with primer-sealer compatible with substrate and polycarbonate sheet materials.
- C. Cut polycarbonate sheet materials to exact sizes required, with clean edges free of notches; clean contact edges with solvent compatible with polycarbonate sheet materials, as specified or approved by polycarbonate sheet manufacturer.

### 3.3 INSTALLATION

- A. Install plastic glazing in accordance with polycarbonate sheet manufacturer's instructions.
- B. Do not use glazing accessories not specified or approved by polycarbonate sheet manufacturer.

### 3.4 CLEANING

- A. Immediately after completing construction activities relating to installation of polycarbonate sheet materials, remove remainder of strippable masking from surfaces of polycarbonate sheet glazing; do not expose masking to sunlight for an extended period of time.
- B. Immediately after removing masking, clean glazing in accordance with polycarbonate sheet manufacturer's instructions:
  1. Rinse surface with lukewarm water.
  2. Wash surface with mild soap and lukewarm water.
  3. Use soft cloth or sponge gently to loosen dirt and grime; scrubbing glazing surfaces,

or using squeegee on glazing surfaces, is not permitted.

4. Repeat rinse as above, and wipe surface dry with soft cloth until surfaces are spotless and dry.

### 3.5 PROTECTION OF INSTALLED PRODUCTS

- A. Immediately after cleaning, cover polycarbonate sheet glazing surfaces with polyethylene sheeting, or other covering material approved by polycarbonate sheet manufacturer; secure covering in place by taping to framing members - do not tape covering to polycarbonate sheet materials.
- B. Protect installed glazing from damage to function or finish by subsequent construction activities.
- C. Repair minor damage to finishes in accordance with polycarbonate sheet manufacturer's recommendations.
- D. Replace glazing having damage to function, and glazing having damage to finishes which cannot be repaired to Architect's acceptance.

END OF SECTION