

TEN PLUS SPEC NOTE: This master specification section includes TEN PLUS SPEC NOTES for information purposes and to assist the architect / specification writer in making appropriate decisions. TEN PLUS SPEC NOTES always immediately precedes the text to which it is referring. The section serves as a guideline only and should be edited with deletions and additions to meet specific project requirements.

TEN PLUS SPEC NOTE: This specification section follows the recommendations of the Construction Specifications Canada, Manual of Practice including MasterFormat, SectionFormat, and PageFormat. Optional text is indicated by square brackets [ ]; delete the optional text including the brackets in the final copy of the specification. Delete all TEN PLUS SPEC NOTES in the final copy of the specification. This Section is written for the Canadian industry with units of measurement shown in SI Metric and Imperial measurement following in square brackets.

## PART 1:GENERAL

### 1.1 SUMMARY

TEN PLUS SPEC NOTE: Ten Plus Sunshades don't require a fascia to complete the system. Delete fascia below if the design doesn't contain a fascia.

- .1 This Section includes requirements for supply and installation of sunshades, consisting of blades, [and] outriggers [and fascia] and attachment brackets as shown on drawings, as specified and as required for complete and proper installation.
- .2 Sunshades to be furnished include the following:
  - .1 Blades:
    - .1 Louver Blade
    - .2 Airfoil Blade
    - .3 Round Blade
    - .4 Rectangular Blade
    - .5 Perforated Blade / Shade
  - .2 Outriggers:
    - .1 Rounded Face Outrigger
    - .2 Straight Face Outrigger
    - .3 Channel Outrigger
    - .4 Tapered Outrigger
    - .5 Curved Outrigger
    - .6 Blunt Face Outrigger
    - .7 [Custom Cut Outrigger]
  - .3 Fascia:
    - .1 Round Fascia
    - .2 Rectangular Fascia
    - .3 Bull Nose Fascia
    - .4 No Fascia
    - .5 [Custom Fascia]

## 1.2 RELATED REQUIREMENTS

**TEN PLUS SPEC NOTE:** Include in this paragraph only those sections and documents that directly affect the work of this section. Do not include Division 00 Documents or Division 01 Sections since it is assumed that all technical sections are related to all project Division 00 Documents and Division 01 Sections to some degree. Refer to other documents with caution since referencing them may cause them to be considered a legal part of the Contract. Edit the following paragraphs to suit specific project conditions.

- .1 Section 03 30 00 - Cast-In-Place Concrete [03300 - Cast-In-Place Concrete]
- .2 Section 04 20 00 - Unit Masonry [04200 - Masonry Units]
- .3 Section 05 12 00 - Structural Steel Framing [05120 - Structural Steel Metal Framing]
- .4 Section 05 40 00 - Cold-Formed Metal Framing [05400 - Cold-Formed Metal Framing]
- .5 Section 05 50 00 - Metal Fabrications [05500 - Metal Fabrications]
- .6 Section 06 10 00 - Rough Carpentry [06100 - Rough Carpentry]
- .7 Section 07 42 00 - Wall Panels [07400 - Roofing and Siding Panels]
- .8 Section 07 44 00 - Faced Panels [07440 - Faced Panels]
- .9 Section 07 46 00 - Siding [07460 - Siding]
- .10 Section 07 92 00 - Joint Sealants [07900 - Joint Sealers]
- .11 Section 08 41 00 - Entrances and Storefronts [08400 - Entrances and Storefronts]
- .12 Section 08 44 00 - Curtain Wall and Glazed Assemblies [08900 - Glazed Curtain Wall]
- .13 Section 08 51 13 - Aluminum Windows [08520 - Aluminum Windows]
- .14 Section 08 91 00 - Louvers [10200 - Exterior Louvers]

## 1.3 REFERENCES

- .1 American Society for Testing and Materials (ASTM):
  - .1 ASTM B26/B26M-12, Standard Specification for Aluminum Alloy Sand Castings
  - .2 ASTM B209-10, Standard Specification for Aluminum and Aluminum Alloy Sheet and Plate
  - .3 ASTM B211-12e1, Standard Specification for Aluminum and Aluminum Alloy Rolled or Cold Finished Bar, Rod, and Wire
  - .4 ASTM B221-12, Standard Specification for Aluminum and Aluminum Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes
  - .5 ASTM B429/B429M-10e1, Standard Specification for Aluminum Alloy Extruded Structural Pipe and Tube
- .2 Canadian Standards Association (CSA):
  - .1 CSA-W47.2-11, Certification of Companies for Fusion Welding of Aluminum

- .2 CSA-W55.3-08, Certification of Companies for Resistance Welding of Steel and Aluminum
- .3 CSA-W59.2-M1991 (R2008), Welded Aluminum Construction.
  
- .3 Architectural Aluminum Manufacturers Association (AAMA):
  - .1 AAMA 800-10, Voluntary Specifications and Test Methods for Sealants
  - .2 Panels
  - .3 AAMA 611-12, Voluntary Specification for Anodized Architectural Aluminum
  - .4 AAMA 2604-10, Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels
  - .5 AAMA 2605-11 Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels
  
- .4 Aluminum Association (AA):
  - .1 Aluminum Design Manual, 2010
  - .2 Aluminum Structural Welding Code, 2008
  - .3 Aluminum Structures: A guide to their Specifications and Design, Second Edition, 2002

#### 1.4 DEFINITIONS

**TEN PLUS SPEC NOTE:** For the purpose of this Specification, aluminum curtain wall assemblies have been selected as the most common application for which sunshades are typically used in conjunction with. Therefore, curtain wall assemblies will be referred to throughout this Specification in [ ]. Substitute alternate assemblies for which the project requires sunshades to be secured, and modify the [ ] to suit those requirements.  
Example: Window Assemblies or Entrances and Storefronts.

- .1 Equal Dimensions: Vertical mullions of [curtain wall assemblies] indicating equal dimensions on the drawings shall be calculated to align with in-place structural elements followed by even division of the space between structural elements. Therefore, evenly space sunshade members between adjacent structural members, to line up with mullion framings, and not necessarily be evenly spaced across the entire wall assembly.

#### 1.5 ADMINISTRATIVE REQUIREMENTS

- .1 Coordination: Coordinate the Work of this Section with the installation of [curtain wall assemblies]; Sequence work so that installation of sunshades coincides with installation of adjacent materials, assemblies and structural supports without causing delay to the Work.
  
- .2 Pre-Construction Conference: Arrange a site meeting attended by the Contractor, the Subcontractor, the Consultant, materials supplier(s), and other relevant personal before commencement of work for this Section; as indicated in Section 01 31 13 Project Meetings [01310 Project Management and Coordination].
  - .1 Review methods and procedures related to installation, including manufacturer's written instructions;
  - .2 Examine substrate conditions for compliance with manufacturers installation requirements;
  - .3 Review temporary protection measures required during and after installation.
  - .4 Review location and alignment of structural elements as they relate to the aesthetic criteria indicated on the Drawings, and the technical requirements indicated on the shop drawings.
  - .5 Review and finalize construction schedule and verify availability of materials, installer's personnel, equipment, and facilities needed to make progress and avoid delays.

## 1.6 SUBMITTALS

- .1 Provide requested information in accordance with Section 01 33 00 Submittals Procedures [01300 Submittal Procedures].
- .2 Action Submittals: Provide the following submittals before starting any work of this Section:
  - .1 Shop Drawings:
    - .1 Submit shop drawings showing construction and anchorage of exterior sunshades including, details of all elements of assembly and construction.
    - .2 Related items shown on shop drawings which are not intended to be supplied as part of the work of this Section, shall be so identified. All dimensions shall be clearly noted and methods of fastening and anchoring detailed. Show accurately and identify all adjacent materials.
    - .3 Shop drawings shall bear the seal and signature of a Professional Engineer registered in the place of the Work and experienced in the design and fabrication methods used.
    - .4 Do no fabrication work until shop drawings are approved by the Consultant.
  - .2 Design Calculations:
    - .1 Submit design calculations bearing the seal and signature of the Professional Engineer who stamped the shop drawings.
    - .2 Design calculations shall include all test reports and other pertinent supporting data.
    - .3 Submit design calculations at the same time as shop drawings.
  - .3 Samples: Submit 610mm (24") long mock-up samples, having 305mm (12") long sunshade blades, showing perimeter outrigger framing corner and blade/frame connections, and suspension connections to sunshades perimeter outrigger framing and structure/wall, finishes and profiles for Consultant's approval.
- .3 Information Submittals:
  - .1 Certificates: Submit evidence of welder qualifications specified in this Section when requested by Consultant.
  - .2 Structural Requirements: Design all materials to withstand wind loads and snow loads as required by the applicable building code, and recommended by the sunshade manufacturer.
    - .1 Ensure sunshade members deflect no more than L/180 of span between supports when subjected to wind load applied horizontally to sunshade face.
- .4 Closeout Submittals:
  - .1 Operation and Maintenance Data: Submit manufacturer's written instructions for cleaning solutions, materials and procedures, include name of original installer and contact information in accordance with Section 01 78 23 Operation and Maintenance Data [01780 Closeout Submittals].
  - .2 Provide specific warning of any maintenance practice or materials that may damage or disfigure the finished Work.

### PART 1:

PART 2:  
PART 3:  
PART 4:  
PART 5:  
PART 6:  
PART 7:

TEN PLUS SPEC NOTE: Delete the following paragraph in its entirety if sustainable design submittals are not required as part of the Project.

TEN PLUS SPEC NOTE: Add and/or remove items below to comply with LEED credits or prerequisites selected for the Project. After meeting the credit requirements, complete the required documentation for each credit.

TEN PLUS SPEC NOTE: Consult the project team's designated LEED Accredited Professional if these or other credits are going to be pursued.

- .5 Sustainable Design Submittals: Coordinate project sustainable design requirements with Section 01 31 63 Sustainability Certification Project Requirements [01353 General LEED Specifications]; in addition, provide information for following specific requirements of this Section:

TEN PLUS SPEC NOTE: The paragraphs below indicate the lowest requirement to obtain each credit, resulting in one credit point. The second option, indicated in [ ] requires in higher values than option one but allows for an additional credit to be obtained. Edit each paragraph below to suit project requirements.

- .1 MR Credit 4.1[4.2] – Recycled Content:
- .1 **Content:** Use building materials containing recycled content such that the sum of post-consumer recycled content plus 1/2 of the pre-consumer content is at least 10%[20%], based on cost, of the total value of the materials in the Project. The recycled content value of a material assembly is determined by weight.
- .2 **Compliance Requirement:** Submit product cut sheet indicating post consumer and pre-consumer recycled content contained in products proposed for this project.
- .2 MR Credit 5.1[5.2] – Regional Materials:
- .1 **Content:** Use building materials or products extracted, harvested, recovered and processed within 800 km (500 miles) of the final manufacturing site, for which a minimum percentage of regional materials used on the project equals 20%[30%].
- .2 **Compliance Requirement:** Submit evidence of delivery service and product data indicating compliance with regional materials extraction and manufacturing requirements.

## 1.7 QUALITY ASSURANCE

- .1 Qualifications: Provide proof of qualifications when requested by Consultant:
- .1 **Manufacturer / Supplier:** Obtain materials from one source with resources to provide products from the same production run for each contiguous area of consistent quality in appearance and physical properties.
- .2 **Installers:** Execute Work of this Section using qualified personnel skilled in installation of work of this Section, having a minimum of three (3) years proven experience of installations similar in material, design, and extent to that indicated for this Project.

## 1.8 DELIVERY, STORAGE AND HANDLING

- .1 **Delivery:** At the time of delivery, visually inspect all materials for damage. Note any damaged boxes, crates, or sunshade sections on the receiving ticket and immediately report to the shipping company and the material manufacturer.
- .1 Coordinate deliveries to comply with construction schedule and do not load any areas beyond the design limits.

- .2 Storage: Store sunshade sections raised off the ground and cover with a weather proof flame resistant sheeting or crate to protect from elements and corrosive materials. Remove from protecting coving once ready to install.
- .3 Handling: Handle material in accordance with sound material handling practices and in such a way as to minimize racking, twisting, warping and undue strain on assembly. Exercise extreme care in handling units to prevent damage and scratched surfaces.
- .4 Be responsible for damage to the work of this Section until the building is complete and accepted by the Owner. In case of damage, material shall be completely removed and replaced with new.
- .5 Provide safe and adequate equipment on the site to execute the work of this Section, hoisting, scaffolding, staging, safety protection equipment, tools, plant and other equipment required for the completion of the work of this Section.

#### 1.9 SITE CONDITIONS

- .1 Site Measurements: Verify dimensions of other construction by site measurements before fabrication and indicate measurements on shop drawings where sunshades are indicated to fit to other construction.
- .2 Established Dimensions: Establish dimensions and proceed with fabricating sunshades without site measurements where site measurements cannot be made without delaying the Work, coordinated with other construction to ensure that actual dimensions correspond to established dimensions.

#### 1.10 WARRANTY

- .1 Provide manufacturers written warranty, signed and issued in the name of Owner, to replace the following items for defective material and workmanship for the time stated from date of Substantial Performance:
  - .1 Framing and panels: Failure of performance requirements specified above; one (1) year.
  - .2 Joint sealants, caulking: Failure to maintain seal; 1 year.
  - .3 Aluminum brake shapes: Oil-canning and delaminations; 1 year.

#### PART 2:PRODUCTS

##### 2.1 MANUFACTURER

- .1 Materials Manufacturer: Sunshades and accessories specified herein are manufactured by:

PART 1:Ten Plus Architectural Products Ltd.  
PART 2:26 - 6535 Millcreek Drive, Mississauga, Ontario, Canada, L5N 2M2  
PART 3:Phone: 1 (866) 884-0717 - toll free  
PART 4:Email: info@tenplus-online.com  
PART 5:Website: www.tenplus-online.com

##### 2.2 DESIGN CRITERIA

- .1 Design, fabricate and install sunshades, free of defects in material and workmanship affecting appearance and performance. Design elements so that they do not affect continuity of adjacent building envelope elements.

- .2 Employ engineering staff experienced in the design, fabrication and erection methods of the exterior sunshades.
- .3 Assume responsibility for the adequacy of designs, proper provision for and use of all proprietary materials and components from other suppliers forming part of the work of this Section.
- .4 Design sunshades including anchorage to accommodate, without failure, the following exterior stresses expected in the geographical area for this project, in accordance with the latest edition of the National Building Code - 30 year probability climatic data:
  - .1 Structural loads
  - .2 Wind loads
  - .3 Snow loads, including snow load build-up
  - .4 Thermal movements
  - .5 Temperature change
  - .6 Deflection of framing members
  - .7 Sealant elasticity

### 2.3 MATERIALS

- .1 Aluminum:
  - .1 Extrusions: AA6063-T5 alloy, anodizing quality, conforming to ASTM B221.
  - .2 Plate and Sheet: AA1100-H14 alloy, anodizing quality unless otherwise indicated, conforming to ASTM B221.
  - .3 Rod and Flat Bar: AA6063-T5 alloy, anodizing quality, conforming to ASTM B211
  - .4 Castings: High strength aluminum alloy sand castings, high quality, conforming to ASTM B26/B26M
  - .5 Exposed surfaces of aluminum shall be free of die marks, scratches, blisters, "leave-off" marks, or other blemishes.
  - .6 Aluminum Welding Materials: Conforms to CSA W59.2.
- .2 Brackets and Reinforcements: Manufacturer's standard high-strength aluminum with non-staining, nonferrous shims for aligning system components.
- .3 Fasteners and Accessories: Manufacturer's standard corrosion resistant, non-staining, non-bleeding fasteners and accessories compatible with adjacent materials:
  - .1 Use self locking devices where fasteners are subject to loosening or turn out from thermal and structural movements, wind loads, or vibration.
  - .2 Use slip joint linings, spacers, and sleeves at movement joints of material and type recommended by manufacturer.
- .4 Framing Gaskets: where required, as recommended by manufacturer for joint type.
- .5 Framing Sealants: where required, as recommended by manufacturer for joint type.
- .6 Joint Cleaner and Primer: where required, as recommended by sealant manufacturer.
- .7 Concealed Flashing: Manufacturer's standard corrosion resistant, non-staining, non-bleeding flashing compatible with adjacent materials.

2.4 SUNSHADES

**TEN PLUS SPEC NOTE:** Select one of the following components in each category to design the sunshade assembly which best suits the projects design requirements. Consult with manufacturer for system components characteristics which best suit the design requirements prior to final selection.

- .1 Sunshades Components:
  - .1 Provide sunshades compatible with [Section 08 44 00 - Curtain Wall and Glazed Assemblies][08900 - Glazed Curtain Wall], and as described in the following components criteria:
    - .1 Blades:
      - .1 Louver Blade:
        - .1 100mm (4") long louver blade; Type L4
        - .2 150mm (6") long louver blade; Type L6
      - PART 1:
        - .2 Airfoil Blade:
          - .1 100mm (4") long airfoil blade; Type A4
          - .2 150mm (6") long airfoil blade; Type A6
          - .3 200mm (8") long airfoil blade; Type A8
        - .3 Round Blade; Type C2
        - .4 Rectangular Blade:
          - .1 100mm (4") long rectangular blade; Type R4
          - .2 150mm (6") long rectangular blade; Type R6
        - .5 Perforated Blade / Shade; Type P1
      - .2 Outriggers:
        - .1 Rounded Face Outrigger; Type 100
        - .2 Straight Face Outrigger; Type 200
        - .3 Channel Outrigger; Type 300
        - .4 Tapered Outrigger; Type 400
        - .5 Curved Outrigger; Type 500
        - .6 Blunt Face Outrigger; Type 600

**TEN PLUS SPEC NOTE:** Consult with the manufacturer prior to issuing Bid Documents if selecting a custom cut outrigger for the project.

- .7 [Custom Cut Outrigger]; Type 700

- .3 Fascia:
  - .1 No Fascia; Type 10

**TEN PLUS SPEC NOTE:** Consult with the manufacturer prior to issuing Bid Documents if selecting a custom fascia for the project.

- .2 [Custom Fascia]; Type 20
- .3 Round Fascia; Type 30
- .4 Rectangular Fascia; Type 40
- .5 Bull Nose Fascia; Type 50



**TEN PLUS SPEC NOTE:** Once each of the three components have been selected, provide the model number below within the Basis of Design Product. Example. Blade Type C2, Outrigger Type 500 and Fascia Type 30 create "Sunshade Assembly, Model C2-500-30".

- .2 Basis of Design Product: Sunshade Assembly, Model [ ] by Ten Plus Architectural Products Ltd.

## 2.5 FABRICATION

- .1 Form sunshades to specified dimensions with tolerances to accommodate expansion and contraction between components and structural members. Radii of curved profiles to be accurately formed in manufacturer's plant.
- .2 Weld and grind smooth all corners prior to finishing. Weld aluminum in accordance with CSA W59.2-M.
- .3 Factory fabricate accessory and trim components, ready for installation. Clearly mark fabricated components to identify their locations in accordance with Shop Drawings.

## 2.6 FINISHES

**TEN PLUS SPEC NOTE:** Select one of the following finishing options below and delete the finishes not required for the project.

**TEN PLUS SPEC NOTE:** Use Class I finish in high pollution or corrosion areas. Use Class II finish as the standard finish and for all interior finishing requirements.

- .1 Clear Anodized Finish:
- .1 Class I Finish: Architectural Class I, clear coating 0.018mm (0.0007") or thicker in accordance with AAMA 611.
- .2 Class II Finish: Architectural Class II, clear coating 0.010mm (0.0004") or thicker in accordance with AAMA 611.

**TEN PLUS SPEC NOTE:** Use Class I finish as the standard finish for coloured anodized finishes. Class II is an economical option but will display weathering sooner.

**TEN PLUS SPEC NOTE:** Standard coloured finishes include Bronze and Black Anodized Finish.

- .2 Coloured Anodized Finish:
- .1 Class I Finish: Architectural Class I, electrolytically deposited colour coating 0.018mm (0.0007") or thicker in accordance with AAMA 611.
- .2 Colour: As selected by the Consultant from the manufacturer's standard colour offering.

**TEN PLUS SPEC NOTE:** 3 Coat PVDF Coating has a higher performance life offering long term resistance to colour fade. 2 Coat PVDF Coating is the standard high performance organic finish, offering good weathering resistance at an economical price when compared to the 3 coating system.

- .3 High Performance Organic Finish:
- .1 2 Coat PVDF Coating: AA-C12 Chemical Finish, cleaned with inhibited chemicals; C40 Chemical Finish, conversion coating; R1x Organic Coating, manufacturer's standard 2 coat, thermo-cured system consisting of specially formulated inhibitive primer and fluoropolymer colour topcoat containing not less than 70% PVDF resin by weight; prepare, pre-treat, and apply coating to

exposed metal surfaces in accordance with AAMA 2605 and with coating and resin manufacturers' written instructions.

- .1 Colour: As selected by the Consultant from the manufacturer's standard colour offering.
  - .2 Basis of Design Material: PPG Duranar by PPG Industries.
- .2 3 Coat PVDF Coating: AA-C12 Chemical Finish, cleaned with inhibited chemicals; C40 Chemical Finish, conversion coating; R1x Organic Coating, manufacturer's standard 3 coat, thermo-cured system consisting of specially formulated inhibitive primer, fluoropolymer colour coat, and clear fluoropolymer topcoat, with both colour coat and clear topcoat containing not less than 70% PVDF resin by weight; prepare, pre-treat, and apply coating to exposed metal surfaces in accordance with AAMA 2605 and with coating and resin manufacturers' written instructions.
- .1 Colour: As selected by the Consultant from the manufacturer's standard colour offering.
  - .2 Basis of Design Material: PPG Duranar XL by PPG Industries.

**TEN PLUS SPEC NOTE:** More economical than high performance organic coatings and are not as resistant to light degradation. Colour pigments chalk in exterior applications and should only be used for interior applications.

- .4 Acrylic Enamel Finish:
- .1 1 Coat Acrylic Extrusion Coating: AA-C12 Chemical Finish, cleaned with inhibited chemicals; C40 Chemical Finish, conversion coating; Rx Acrylic Coating, manufacturer's standard single coat factory spray applied acrylic coating; prepare, pre-treat and apply coating to exposed metal surfaces to 0.020mm (0.00078") or thicker in accordance with AAMA 2603 and with coating manufacturer's written instructions.
    - .1 Colour: As selected by the Consultant from the manufacturer's standard colour offering.
    - .2 Basis of Design Material: PPG Duracron by PPG Industries.
- .5 Exposed Steel Finishing:
- .1 Shop Primer for Ferrous Metal: Organic zinc rich primer, ready for finish painting by Section 09 90 00 [09900].

### PART 3:EXECUTION

#### 3.1 EXAMINATION

- .1 Verification of Conditions:
  - .1 Examine areas to receive work and surrounding adjacent surfaces for conditions affecting installation.
  - .2 Verify dimensions of supporting structure by accurate field measurements so that work will be accurately designed, fabricated and fitted to the structure.
- .2 Notify Contractor in writing of any conditions that are not acceptable.
- .3 Proceed with installation after verification and correction of surface conditions acceptable to manufacturer.

#### 3.2 INSTALLATION

- .1 Comply with manufacturer's instructions and recommendations for installation of the work, as shown on approved Shop Drawings.
- .2 Anchor sunshades to the building substructure as indicated on Shop Drawings and architectural drawings.

Install anchors with separators and isolators to prevent metal corrosion and electrolytic deterioration and to prevent impeding movement of moving joints.

- 3 Erection Tolerances:
  - .1 Maximum variation from plane or location shown on the approved shop drawings 3mm in 3048mm (1/8" in 10').
  - .2 Maximum offset from true alignment between two members abutting end to end, edge-to-edge in line: 1.6mm (1/16").
  - .3 Erection tolerances shall prevail under both load and no load conditions.
- 4 Cut and trim component parts during erection only with the approval of the manufacturer, and in accordance with the manufacturer's recommendations. Restore finish completely. Weld components in concealed locations to minimize distortion or discoloration of finish. Protect work of other sections from welding.
- .5 Seal joints watertight, except where manufacturer's standard details indicate a requirement for open joints.
- .6 Remove and replace members where cutting and trimming has impaired the strength or appearance of the assembly.
- .7 Set units level, plumb and true to line, with uniform, tight joints to adjacent work.
- .8 Provide necessary fastenings, anchors, clip angles, sills and sill flashings required to complete the installation.

### 3.3 PROTECTION

- .1 General Contractor shall protect installed materials to prevent damage by other trades. Use materials that may be easily removed without leaving residue or permanent stains.

### 3.4 CLEANING

- .1 Progress Cleaning: Leave work area clean at the end of each work day, ensuring safe movement of passing pedestrians.
- .2 Final Cleaning: At completion of installation, clean all surfaces so they are free of foreign matter using cleaners recommended by material manufacturer.
- .3 Restore sunshade components damaged during installation and construction so no evidence remains of corrective work. If results of restoration are unsuccessful, as determined by the Consultant, remove and replace damaged systems with new at no additional cost to the Owner.
- .4 Waste Management: Co-ordinate recycling of waste materials and packaging at appropriate facility, diverting waste from landfill. Certified installer shall be responsible for ensuring waste management efforts are practiced.

END OF SECTION 10 71 13.43 [10705].