

Product Guide Specification

Specifier Notes: This product guide specification is written according to the Construction Specifications Institute (CSI) 3.

Part Format; Section number "8800" shall be changed to specific Section number within 8800 as determined by the Architect specific to the project with page numbers at bottom of each page;

This section must be carefully reviewed and edited by the Architect to meet the requirements of the project and specific glass types of this project.

Coordinate this section with other specification sections and the drawings.

Delete all "Specifier Notes" as noted in italics when editing this section. If there are specific or unusual conditions particular to the glass project please contact Enduroshield USA directly for guidance and recommendations prior to issuance of this specification.

SECTION 8800

General Glazing

Low Maintenance Topical Coatings for all glass types specifically named herein;

PART 1 GENERAL; Product Description:

- a. Enduroshield is an optically clear protective coating used for normally on the exterior (weather side) of monolithic or IGU that chemically bonds to that surface, creating a non-stick barrier resistant to dirt, grime, streaking, corrosion, etching and staining.
- b. Cleaning of the glass is made easier and with less frequent cleaning cycles.
- c. The treated glass becomes both hydrophobic and oleophobic (water and oil repellant) protecting against most forms of contaminants.
- d. Enduroshield is also resistant to cement slurry splash contaminants made of limestone based cement products.
- e. Enduroshield applied to Annealed glass, Heat Strengthened or Fully Tempered glass and is applied after the toughening process. For glass types that must be Heat Soak Tested for indications of NiS the coating must be applied after such HST.
- f. Enduroshield coating bonds in a covalent manner to the microscopic hills and valleys of the glass surface and does not provision a slippery surface after application.
- g. Cleaning instructions to the Glazier and Owner may be received from contacts of Enduroshield USA noted herein this Section.

1.1 SECTION INCLUDES:

- A. Topical Coating of Low Maintenance Enduroshield for glass types as follows;

1.2 RELATED SECTIONS

Specifier Notes: Edit the following list of related sections as required for the project. List other sections with work directly related to this section such as Exterior Glass Types, Interior Glass Types, Door-lites, Side-lites, Balustrade, Shower Doors and/or any other required glass types.

A. Section 8800 *(apply specific Section number as needed)*

1.3 REFERENCES *(add specific glazing sections/glass types as needed)*

A. ASTM C-1048, ENDUROSHIELD IS INTENDED FOR OUTBOARD OR OUTSIDE OF GLASS TYPES ONLY AND IS NOT TO BE AS APPLIED TO ALREADY COATED GLASS SUCH AS LOW E OR SPUTTER COATING SIDE. ENDUROSHIELD IS INTENDED FOR THE PLAIN GLASS NON-COATED SIDES ONLY.

B. ASTM C-1172 91, standard application for laminated architectural flat glass

C. ASTM C-1036, Type 1 transparent quality Q-3, glazing select quality.

D. Coeffaction of Friction Anti Slip Certifications and Test Results by Certified Laboratory. (Weight to dead and live load of coated glass surface lifted by Suction Gear.) Refer questions to Enduroshield Corporate for instructions of potential slip rate of very heavy or super-weight glass. Testing modulus criteria and applicable nomination of sucker cups and their sizes as available from PCT Global/Enduroshield as conducted by the testing laboratory of Woods Power Grip for glass weights between 750 KG up to 1,500 KG.

E. C-1323 - 10 Standard Test Method for Ultimate Strength of Advanced Ceramics with Diametrally Compressed C-Ring Specimens at Ambient Temperature.

F. C-1624 - 05(2010) Standard Test Method for Adhesion Strength and Mechanical Failure Modes of Ceramic Coatings by Quantitative Single Point Scratch Testing.

G. C-1674 - 11 Standard Test Method for Flexural Strength of Advanced Ceramics with Engineered Porosity (Honeycomb Cellular Channels) at Ambient Temperatures

H. C-813 - 90(2014) Standard Test Method for Hydrophobic Contamination on Glass by Contact Angle Measurement

I. C -912 - 93(2013) Standard Practice for Designing a Process for Cleaning Technical Glasses

1.4 SUBMITTALS

A. Comply with Section 01330 for submittals and approval processes to Architect and/or Owner.

Submittal Procedures.

B. Product Data: Submit manufacturer's product data, including application instructions and method as approved by the Manufacturer. Provide also MSDS Sheets for submittal and offer such to the General Contractor to be secured in his office for inspection.

C. Engineering Report: Submit Reports of testing as provisioned by Enduroshield USA.

D. ANSI/NFSI Certifications (phase 1 testing minimum) and UL Certification Letters

1.5 DELIVERY, STORAGE, AND HANDLING

A. Delivery: Deliver glass materials to site with low-glue paper labels clearly identifying product name and manufacturer as applied with nomenclature “**ENDUROSHIELD APPLIED ON OUTBOARD**”. Do not remove such labels until the Architect has inspected the glass or his named Representative has inspected such labels. Note that certain Architect Specified Examples of Enduroshield is as applied to both outboard and inboard sides of the glass type.

B. Storage of glass: Store all glass materials in clean, dry area indoors in accordance with manufacturer's instructions or as described elsewhere in Section 8800.

C. Handling: Protect glass materials and finish from damage during handling and installation as per care and handling instructions as detailed in this Section 8800.

PART 2 PRODUCTS

2.1 MANUFACTURER of Low Maintenance Topical Coating to be Enduroshield Products; PCT Global of Santa Barbara California;

Contact information;

Mr. Adrian Ray, PCT Global LLC

PO Box 20274

Santa Barbara, California, USA 93120

1 805 617 4609 salesusa@enduroshield.com

2.2 Materials of Enduroshield; approximate volume value of Enduroshield applied to square foot of glass is 4,000 square foot per gallon via LISEC Machine Automated Application and nominal (approximate determined on actual conditions) 2,500 square foot per gallon via hand-operated sprayer applied method. These are for Factory Applied only not for Field Applied conditions.

2.3 Other manufactures of low maintenance topical coating may be submitted with the following parameters equal to Enduroshield; ASTM Test Standards related to C 813 and Scrub Resistance ASTM D 2486: testing reports shall be submitted to the Architect who will have sole discretion to accept nominated substitution materials.

Testing methods and means; Rame' Hart Model 50-00 Manual Goniometer and Abrasion Tester.

Hydrophobicity (water) of minimum 101.8

Oleophobicity (oil) of minimum 62.6

1,000 cycle test of 83.2

A. Glass Material (s) to be Enduroshield coated: (*insert here the types of glass at the project to be coated via tag or mark numbers as assigned to the differing glass types.*)

1. Clear Float Glass (green hue)
2. Low Iron Glass (examples Optiwhite, Starfire, Eurowhite)
3. Colored, Cast, Special or Stained Glass
4. Tempered, annealed or heat strengthened glass monolithic and/or laminated and/or IGU
5. Spandrel or other non-vision glass types
6. Balustrade, guard rail, balcony or other Life Safety Glass Types
7. Interior glass types
8. Sliding Glass Doors and/or Windows
9. Doorlites, sidelites and/or transoms
10. Specialty glass types of Bullet rated, Bomb rated or other specialty impact glazing
11. Overhead skylights and/or slope glazing
12. Curtain wall or ribbon wall sections
13. Acid Etch and sand blasted design glass
14. Note that within the above named glass types the Enduroshield Coating may be as applied to one side (normally the "outside") but may in fact also be specified as applied to both sides.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Follow Manufacturer's instructions of care and handling the Enduroshield coated glass. Notify Architect of Factory or Field conditions that would adversely affect application,

installation or subsequent conditions. Do not proceed with application of or installation of Enduroshield coated glass until unsatisfactory conditions are corrected.

3.2 Application of Enduroshield coating;

A. Adhere to Enduroshield Application Guidelines.

B. Application to be with Enduroshield Approved Automatic Spray Coating Machine as manufactured by LISEC Machinery Group; Coating Machine, type BSL-20P

B.1 Contact information for the Lisec Machine automated coating machine:

<http://www.lisec.com/en/Contact>

LISEC AMERICA, INC.
12571 Oliver Avenue South, Suite 100
Burnsville MN 55337 USA
Phone: +1-952-641-99-00
Fax: +1-952-641-99-33
E-Mail: lisec@lisecamerica.com

C. Hand operated sprayer applied method to be accepted by Architect under application guidelines as approved by Enduroshield; obtain from Enduroshield hand-operated-sprayer applied application methods and procedures and document such application with measures used and photographs of the materials' application process and forward such to Architect.

D. Approved Glass Fabricator

1. General Glass International 101 Venture Way
Secaucus, NJ 07094 Phone: (201) 553-1850 www.generalglass.com

3.3 Warranty Conditions;

- a. As part of OEM end of project close out documents submit to General Contractor as part of close out documents a Ten Year Warranty (Two Year for in-situ old or existing glass application) from Enduroshield USA as follows;
- b. Project name and specific location.
- c. Date of Enduroshield application

- d. Applicator of Enduroshield and their application method (hand-spray-applicator or LISEC Machine)
- e. On letterhead from Enduroshield USA their Special Ten Year Warranty (or Two Year) naming the project with specifics of name and location, date of application of Enduroshield and building type and what glass types covered under their warranty.

3.4 PROTECTION of glass during application, handling, processing, shipment and installation covered under other Sections.

For inquiries to the writing, details and nomenclatures of this specification kindly send such inquiries direct to Enduroshield USA:

Mr. Adrian Ray, International Business Development Director
PCT Global LLC
110 El Paseo
Santa Barbara, California, 93120, USA
+1 805 617 4609
salesusa@enduroshield.com

International Contact;
CRAIG HOWARD International Managing Director
PCT Global Pty Ltd
5/21 Bearing Rd
Seven Hills, NSW, 2147, Australia
+61 2 9674 9299
sales@enduroshield.com

END OF SECTION