Joseph H. Dixon, Jr. P.E.
Product Design Consultant *Florida No. 7768*
407-671-0169
3952 Lake Mira Ct.
Orlando, FL 32817

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EVALUATION REPORT No.: **ER-08-0010**

Reference No.: 28059

Product: Exterior Doors - Rolling Overhead Doors, CP0020 slats

Manufacturer: Cornell Iron Works
100 Elmwood Avenue
Mountaintop, PA 18707

Statement of Compliance:

The Rolling Overhead Doors described in this report were evaluated to be in compliance with the 2007 Florida Building Code, Sections 2205, and 2209. The doors are, for the purpose intended, at least equivalent to that required by the Code when manufactured and installed as described below.

Description of the Product:

The doors described in this report consist of a curtain made of interlocking formed steel slats suspended from a drum roller. The slats are approximately 3 inches high in the curtain position. All doors in this report are made using CP0020 flat slats.

The curtain on all models is suspended from a drum roller, and coiling the curtain around the drum raises the curtain. The sides of the curtain are constrained from lateral movement along their vertical edges by steel guides that are attached to the door jambs. This constraint provides resistance to lateral wind forces. Various guide configurations are used for the different door styles included in this report. The lateral wind forces are transferred from the curtain to the guides and then through the attachment elements to the door jamb. The door jambs are part of the main wind frame resisting system and usually are constructed of steel, concrete, or concrete masonry units.

CP0020 slats

The doors are fully described in the attached Cornell drawings, Dwg. No. 16-25 sheets 1 through 7 revised 08/22/08. The slat used for all doors is a CP0020 slat with steel thicknesses of 18, 20 or 22 gage. The depth of the formed slat is ¾ " for all CP0020 slats. Sheets 1 through 4 of Dwg. No. 16-25 show the details of the door construction, guides, and the various components. Sheets 5 through 7 are tables showing the specific door requirements for each of the slat gages. Sheet 5 shows all 22 gage slats, sheet 6 all 20 gage, and sheet 7 all 18 gage. There are separate tables for design wind loads of 30, 40, 50, and 60 psf. Specific requirements are shown for selected door widths.

Slats may be manufactured using galvanized steel sheet, ASTM A653 HSLAS Type B, grade 40; ASTM A653 HSLAS Type A, grade 40 or ASTM A653 structural steel, grade 40.
Stainless steel slats may be manufactured using Type 304, 430 or 201 Stainless Steel, (min. yield 40,000 psi).
A rational analysis was made on each tabulated door to determine the structural requirements of the curtain, guides, windlock attachments, and guide attachments for each of the indicated design wind pressures. A comparison with test results was made to substantiate analytic results.

Technical Documentation:

Test results and Miami-Dade County Notices of Acceptance (NOA) were used to substantiate the analysis procedure. The following information was considered in a comparative analysis of the design.

Door Tests with CP0020 slats

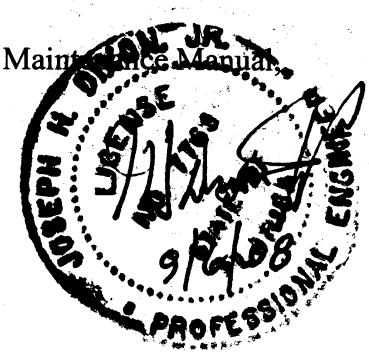
1. a) ASTM E330-97 test, 25'-4" wide opening, 20 gage C20P slat, +/- 60 psf design wind load, Architectural Testing, Report No. 01-39587.04 dated 11/28/01.
   b) Dade County NOA 07-0816.05, Approved 09/20/07, 25'-4" wide opening, 20 gage C20P slat, +/- 60 psf design wind load. Includes tests per Dade County Protocols PA 201-94, PA 202-94, and PA 203-94 conducted by Architectural Testing, Report No: 01-39587.05, dated 4/30/02.
   c) Tensile tests, 6 specimen coupons from C20P slat, 20 gage, tested per ASTM E8-00b. Tests conducted by Architectural Testing, Report No: 01-39587.06, dated 4/30/02.
2. ASTM E330-97 test, 22'-4" wide opening, 22 gage C20P slat, +/- 40 psf design wind load, Architectural Testing, Report No. 01-41691.01 dated 7/02/02.
3. Dade County application # 08-0529.04, pending, 14'-4" wide opening, 22 gage C20P slat, +/- 60 psf design wind load. Includes tests per Dade County Protocols TAS 201-94, TAS 202-94, and TAS 203-94 conducted by Architectural Testing, Report No: 79233.01-109-18, dated 03/13/08.

Research Slat Tests with CP0020 slats

1. ASTM E330 test, 7'-0" clear span, 22 gage steel C20P slat, +/- 31.2 psf, 100% recovery Construction Testing Corporation Report No. 01-006-9, dated 04/10/01.
2. ASTM E330 test, 7'-0" clear span, 20 gage steel C20P slat, +/- 62.4 psf, 100% recovery Construction Testing Corporation Report No. 01-006-10, dated 04/10/01.
3. ASTM E330 test, 7'-0" clear span, 18 gage steel C20P slat, +/- 83.2 psf, 94.9% recovery Construction Testing Corporation Report No. 01-006-11, dated 04/10/01.
4. ASTM E330 test, 7'-0" clear span, 20 gage stainless steel C20P slat, +/- 41.6 psf, 96.4% recovery. Construction Testing Corporation Report No. 01-006-12, dated 04/10/01.

Installation Requirements:

Installation requirements are described in Cornell Iron Works Operation & Maintenance Manual, Rolling Doors, cover sheet plus 7 pages, undated.



Impact Resistance

Both 22 and 20 gage doors have passed the Dade County Protocols TAS 201 and TAS 203 for impact on both sides of the door, permitting installation on either the inside or the outside of the wall. These tests were conducted on the lightest gage curtains and the widest doors shown on the drawings. All doors shown may be considered to be impact resistant.

Limitations and Conditions of use:

The use of the door is limited to buildings for which the design wind loads for wall components and cladding, determined in accordance with Section 1609 of the 2007 Florida Building Code, do not exceed the rated design wind loads of the door as shown on the Cornell Drawing No. 16-25, sheets 5, 6, and 7.

The maximum width limitations for each style are shown in the attached tables. The maximum height for all doors is limited to 30 ft.

The doors covered by this report are not for use in the Florida High Velocity Hurricane Zone.

Door manufacturing is limited to those plants that have met the 2007 Florida Building Code Product Approval quality assurance requirements.

Certification of Independence:

I, Joseph H. Dixon, Jr., certify that I am self-employed and operate as an independent contractor providing professional engineering services. I have no financial interest in nor will I acquire any financial interest in any company manufacturing or distributing products for which evaluation or validation reports have been issued by me.

Likewise, I have no financial interest in nor will I acquire any financial interest in any other entity involved in the approval process of those products for which I have issued reports.

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