

August 20, 2007

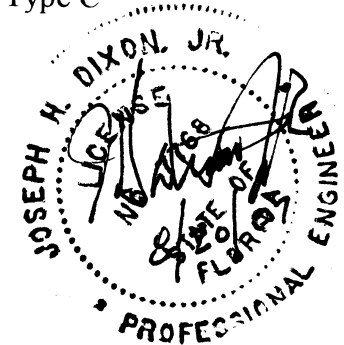
EVALUATION REPORT No.: ER-06-0006

Reference No.: 27022 - 26051

Product: Exterior Doors - Rolling Overhead Doors
Design Type A, Design Type B, and Design Type C

Manufacturer: The Cookson Company
2417 S. 50th Avenue
Phoenix, AZ 85043

800 Tulip Drive
Gastonia, NC 28052



Statement of Compliance:

The Rolling Overhead Doors, Design Type A, Design Type B, and Design Type C described in this report were evaluated to be in compliance with the Florida Building Code 2004 with the 2006 Supplement, Sections 1701 and 1714.5.3.1.

In addition, Design Type A-HVHZ, Design Type B-HVHZ, and Design Type C-HVHZ doors were evaluated to be in compliance with the Florida Building Code 2004 with the 2006 Supplement, "High Velocity Hurricane Zones" Sections 1625, 1626, 2612.2, and 2612.3.1.1 for widths not exceeding the test door width for each Type door and for a maximum design pressure equal to the design test pressure for each type. For these HVHZ doors, the anchorage requirements shall not exceed the spacing used in the test and are shown separately on the Fastener Schedule on Sheet 1 of 3 of the drawings and are the same as for the non-HVHZ doors.

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:

Design Types A, B, and C presented in this report all have slat type curtains. Slats are made of G90 galvanized steel sheet, ASTM A653 structural steel grade 37 with a full coat of primer and baked polyester finish coat. Other type finish coats are available. Slats are also available in stainless steel provided the minimum yield strength equals or exceeds 37000 psi.

There are 3 types of single slats identified by a number followed by the slat thickness in inches. They are: #5-0.0236, #5-0.0296, and #4-0.0356. In addition, there is one type of insulated double slat made by combining two slats, #4-0.0356 and #4-0.0236 and identified as #45-0.0356/0.0236. The #4-0.0356 slat is the exterior slat in the installed door. Expandable Polystyrene foam insulation is contained within the double slat. Door style variations may include door width, slat type, and wind load rating, or

any combination. A different type windlock is used in each of the Design Types. Maximum door height is limited to 3 times the test door height, (30 feet). Each of the Design Types is described in detail on a drawing.

For all Design Types (non-HVHZ and HVHZ), the particular guide geometry and attachment method is fully described on the drawings. Based on the tests, smaller opening widths may be used for the same design wind pressure provided all other requirements on the drawing remain unchanged. All Type HVHZ doors must not exceed the test door width, anchor spacing used in the test, and the design pressures must not exceed the design pressure used for the test for each of the types.

In addition, a comparative analysis was made on each Design Type (non-HVHZ) to determine the maximum pressure that could be applied for various width doors based on using the same guides and anchors used on the test doors. The pressures shown in Table A, Table B, and Table C show these maximum design load values for Design Types A, B, and C. These design pressures will exert forces on the guides and anchors equal to or less than those calculated for the test door.

The following door types covered by this report are described in detail on the following Cookson Rolling Doors drawings:

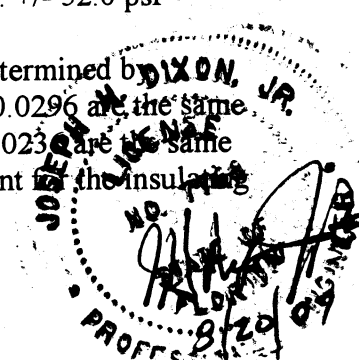
Design Type A #5-0.0236, DWG: WLCD-001-A-2004, sheets 1, 2, and 3 of 3, rev. 04/30/07
 Design Type A #5-0.0296, DWG: WLCD-001-A-2004, sheets 1, 2, and 3 of 3, rev. 04/30/07
 Design Type B #5-0.0296, DWG: WLCD-002-B-2004, sheets 1, 2, and 3 of 3, rev. 04/30/07
 Design Type B #4-0.0356, DWG: WLCD-002-B-2004, sheets 1, 2, and 3 of 3, rev. 04/30/07
 Design Type B #45-0.0356/0.0236, DWG: WLCD-002-B-2004, sheets 1, 2, and 3 of 3, rev. 04/30/07
 Design Type C #4-0.0356, DWG: WLCD-003-C-2004, sheets 1, 2, and 3 of 3, rev. 04/30/07
 Design Type C #45-0.0356/0.0236, DWG: WLCD-003-C-2004, sheets 1, 2, and 3 of 3, rev. 04/30/07

Technical Documentation:

The door types tested are listed below. These tests were conducted following the procedures of the Florida Building Code Test Protocols TAS 201, TAS 202, and TAS 203.

- Test Report No.: 03-48466.01, dated 03/14/04, Architectural Testing, Fresno, CA
14'-4" wide, Type A-HVHZ, #5-0.0236, Design load: +/- 52.0 psf
- Test Report No.: CTLA 468W, dated 11/10/99, Certified Testing Laboratories, Orlando, FL
16'-0" wide, Type B-HVHZ, #5-0.0296, Design load: +55.0 / -60.0 psf
- Test Report No.: CTLA 468W, dated 11/10/99, Certified Testing Laboratories, Orlando, FL
16'-0" wide, Type B-HVHZ, #4-0.0356, Design load: +55.0 / -60.0 psf
- Test Report No.: 03-48467.01, dated 03/14/04, Architectural Testing, Fresno, CA
26'-0" wide, Type C-HVHZ, #4-0.0356, Design load: +/- 52.0 psf

Design pressures for variations in door width and curtain thickness were determined by comparative analysis with test results. Type A, #5-0.0236 and Type A, #5-0.0296 are the same except for the slat thickness. Type C, #4-0.0356 and Type C, #45-0.0356/0.0236 are the same except Type C #45-0.0356/0.0236 has the added slat to form the containment for the insulating material.



The insulation material used in the insulated slats produced by The Cookson Company in their Gastonia, NC plant is manufactured and supplied by Tri-State Foam Products, Inc., Ridgeway, VA. The expanded polystyrene board produced by Tri-State Foam Products, Inc. has passed the following tests:

- ASTM D1929-96 Ignition Properties Test
Test Laboratory: RADCO Listing and Testing Division, Long Beach, CA.
Report No. RAD-2725, February 2001
Appendix to RADCO report, (required: >650° F)
SGS U.S. Testing Company Inc. Report No. 150668-R1, 2/06/01 (752°F)
SGS U.S. Testing Company Inc. Report No. 150668-R2, 2/06/01 (752°F)
- ASTM E-84 Smoke Density Rating (Req'd.<450) and Flame Spread Rating (Req'd.<75)
Test Laboratory: RADCO Listing and Testing Division, Long Beach, CA.
Listing No. 1166, Revised March 2007
Smoke Developed (<450)
Flame Spread Rating (<25)

The following calculations were prepared by Joseph H. Dixon, Jr. P.E.:

- Calculations for Maximum Design Windload for Design Type A, #5 Slat-0.0236 ,
10' to 18' wide, 04/21/07
- Calculations for Maximum Design Windload for Design Type A, #5 Slat-0.0296,
10' to 24' wide, 04/21/07
- Calculations for Maximum Design Windload for Design Type B, #5 Slat-0.0296,
10' to 24' wide, 04/24/04
- Calculations for Maximum Design Windload for Design Type B, #4 Slat-0.0356
10' to 26' wide, 04/28/04
- Calculations for Maximum Design Windload for Design Type B, #45 Slat-0.0356/0.0236
10' to 28' wide, 04/30/04
- Calculations for Maximum Design Windload for Design Type C, #4 Slat-0.0356
12' to 40' wide, 04/21/04
- Calculations for Maximum Design Windload for Design Type C, #45 Slat-0.0356/0.0236
12' to 40' wide, 04/21/04

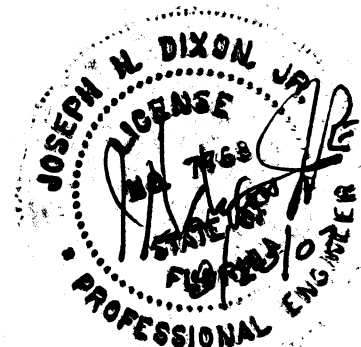


TABLE A
Allowable Transverse Design Wind Loads (psf)

Max. Door Width (ft)	Max. Door Height (ft)	Type A #5 0.0236	Type A #5 0.0296
10	30	+/- 95.8	+/- 98.3
11	30	+/- 81.1	+/- 82.9
12	30	+/- 69.9	+/- 71.2
13	30	+/- 61.1	+/- 62.1
14	30	+/- 54.0	+/- 54.8
14'-4"	30	+/- 52.0	+/- 52.7
15	30	+/- 48.3	+/- 48.9
16	30	+/- 43.5	+/- 44.0
17	30	+/- 39.5	+/- 39.8
18	30	+/- 36.0	+/- 36.4
19	30		+/- 33.3
20	30		+/- 30.7
21	30		+/- 28.5
22	30		+/- 26.5
23	30		+/- 24.7
24	30		+/- 23.1

Design value used for the test is shown in the shaded box.

Maximum test load was 150% of design load.

All widths for any Design Type A have the same guides as the 14'-4" wide test door.

All widths for any Design Type A used in the non-HVHZ have the same anchorage requirements as was used for the 14'- 4" wide test door.

Doors used in the HVHZ shall not have widths in excess of the test door width of 14'-4"

Doors used in the HVHZ shall not have design pressures in excess of the test design pressure

Doors used in the HVHZ shall not have anchor spacing in excess of the spacing used in the test.

All doors shown have a design slip of 0.438" each side.



TABLE B
Allowable Transverse Design Wind Loads (psf)

Max. Door Width (ft)	Max. Door Height (ft)	Type B #5 0.0296	Type B #4 0.0356	Type B #45 0.0356 / 0.0236
10	30	+121.9 / -131.9	+141.9 / -151.9	+193.5 / -203.5
11	30	+103.0 / -111.6	+115.4 / -124.0	+152.5 / -161.1
12	30	+88.6 / -96.2	+96.2 / -103.8	+123.5 / -131.2
13	30	+77.4 / -84.2	+81.8 / -88.6	+102.5 / -109.3
14	30	+68.4 / -74.5	+70.7 / -76.8	+86.7 / -92.8
14'-4"	30	+65.9 / -71.7	+67.6 / -73.5	+82.3 / -88.2
15	30	+61.1 / -66.6	+62.0 / -67.5	+74.5 / -80.0
16	30	+55.0 / -60.0	+55.0 / -60.0	+65.0 / -70.0
17	30	+49.9 / -54.5	+49.3 / -53.9	+57.4 / -61.9
18	30	+45.5 / -49.7	+44.5 / -48.7	+51.1 / -55.3
19	30	+41.8 / -45.7	+40.4 / -44.3	+45.9 / -49.7
20	30	+38.5 / -42.1	+36.9 / -40.5	+41.5 / -45.1
21	30	+35.7 / -39.0	+33.9 / -37.2	+37.8 / -41.1
22	30	+33.2 / -36.3	+31.4 / -34.5	+34.6 / -37.7
23	30	+31.0 / -33.9	+29.1 / -32.0	+31.9 / -34.8
24	30	+29.0 / -31.7	+27.1 / -29.8	+29.5 / -32.2
25	30		+25.3 / -27.9	+27.4 / -30.0
26	30		+23.7 / -26.2	+25.5 / -28.0
27	30			+23.9 / -26.2
28	30			+22.4 / -24.6

Design value used for the test is shown in the shaded box.

Maximum test load was 150% of design load.

All widths for any Design Type B have the same guides as the 16'-0" wide test door.

All widths for any Design Type B used in the non-HVHZ have the same anchorage requirements as was used for the 16'- 0" wide test door..

Doors used in the HVHZ shall not have widths in excess of the test door width of 16'-0"

Doors used in the HVHZ shall not have design pressures in excess of the test design pressure

Doors used in the HVHZ shall not have anchor spacing in excess of the spacing used in the test

All doors shown have a design slip of 0.625" each side.

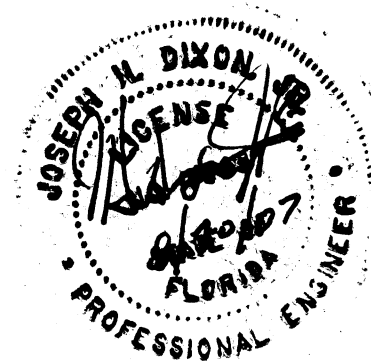


TABLE C
Allowable Transverse Design Wind Loads (psf)

Max. Door Width (ft)	Max. Door Height (ft)	Type C #4 0.0356	Type C #45 0.0356 / 0.0236
12	30	+186.6 / -186.6	+216.6 / -216.6
13	30	+161.9 / -161.9	+184.6 / -184.6
14	30	+142.3 / -142.3	+159.9 / -159.9
14'-4"	30	+136.7 / -136.7	+152.9 / -152.9
15	30	+126.5 / -126.5	+140.3 / -140.3
16	30	+113.5 / -113.5	+124.5 / -124.5
17	30	+102.6 / -102.6	+111.5 / -111.5
18	30	+93.4 / -93.4	+100.7 / -100.7
19	30	+85.5 / -85.5	+91.5 / -91.5
20	30	+78.7 / -78.7	+83.8 / -83.8
21	30	+72.8 / -72.8	+77.0 / -77.0
22	30	+67.6 / -67.6	+71.2 / -71.2
23	30	+63.0 / -63.0	+66.1 / -66.1
24	30	+58.9 / -58.9	+61.6 / -61.6
25	30	+55.3 / -55.3	+57.5 / -57.5
26	30	+52.0 / -52.0	+54.0 / -54.0
27	30	+49.1 / -49.1	+50.8 / -50.8
28	30	+46.4 / -46.4	+47.9 / -47.9
29	30	+43.9 / -43.9	+45.3 / -45.3
30	30	+41.7 / -41.7	+42.9 / -42.9
31	30	+39.6 / -39.6	+40.7 / -40.7
32	30	+37.7 / -37.7	+38.7 / -38.7
33	30	+36.0 / -36.0	+36.8 / -36.8
34	30	+34.4 / -34.4	+35.2 / -35.2
35	30	+32.9 / -32.9	+33.6 / -33.6
36	30	+31.5 / -31.5	+32.1 / -32.1
37	30	+30.2 / -30.2	+30.8 / -30.8
38	30	+29.0 / -29.0	+29.5 / -29.5
39	30	+27.9 / -27.9	+28.3 / -28.3
40	30	+26.8 / -26.8	+27.3 / -27.3

Design value used for the test is shown in the shaded box.

Maximum test load was 150% of design load.

All widths for any Design Type C have the same guides as the 26'-0" wide test door.

All widths for any Design Type C used in the non-HVHZ have the same anchorage requirements as was used for the 26'- 0" wide test door.

Doors used in the HVHZ shall not have widths in excess of the test door width of 26'-0"

Doors used in the HVHZ shall not have design pressures in excess of the test design pressure

Doors used in the HVHZ shall not have anchor spacing in excess of the spacing used in the test.

All doors shown have a design slip of 0.75" each side.



Installation Requirements:

Installation requirements are described in Cookson Rolling Doors, Service Door Installation Instructions, 3-3950-01 Rev 5 ECN 1011 by RG 1/02/07 (31 pages). These instructions apply to Design Types A, B, C, A-HVHZ, B-HVHZ, C-HVHZ for all widths and heights.

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 Florida Building Code 2004, do not exceed the rated design wind loads of the door.

For projects located within the HVHZ, the additional requirements of Sections 1620, 1625, 1626, 2612.2 and 2612.3.1 of the Florida Building Code 2004 are applicable. Insulation material used in the insulated slats must comply with the requirements of Section 2612.2, Approved Foam Plastic.

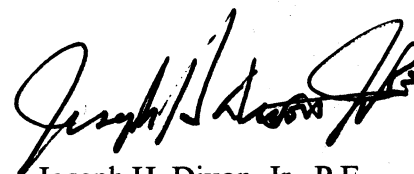
The maximum width and height limitations for each style are shown in Tables A, B, and C. Doors located in the HVHZ shall not have widths in excess of the test door width, anchor spacing in excess of that used in the test for each Type door, nor shall they have design wind pressures in excess of the design wind pressure of the tested door, all as noted on the drawings.

Door manufacturing is limited to those plants which have met the Florida Building Code 2004 Product Approval quality assurance requirements. All doors produced for use in Florida are manufactured in the Gastonia, NC plant of The Cookson Company.

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.



Joseph H. Dixon, Jr. P.E.

