

DIVISION OF INDUSTRY SERVICES
2331 SAN LUIS PL STE 150
GREEN BAY WI 54304
Contact Through Relay
<http://dspd.wi.gov/programs/industry-services>
www.wisconsin.gov
Scott Walker, Governor
Dave Ross, Secretary



August 31, 2015

CUST ID No. 1322626

RYAN SCHULTZ
OPENINGDESIGN
312 W LAKESIDE ST
MADISON WI 53715

REQUEST FOR ADDITIONAL INFORMATION

SITE:

Xcel Sports Complex
Pitzner Pkwy
City of Jefferson
Jefferson County

FOR:

Facility: 751266 XCEL SPORTS COMPLEX
PITZNER PKWY

Identification Numbers
Transaction ID No. 2580428
Site ID No. 813559

Please refer to both identification numbers, above,
in all correspondence with the agency.

Object Type: Building ICC Regulated Object ID No.: 1543519 Code Applies Date: 06/25/15
Major Occupancy: Assembly; Type IIB Metal Frame Unprotected class of construction; New plan; 50,800 project sq ft;
Occupancy: A-3 Other Assembly Uses; Sprinkler Design: NFPA-13 Sprinkler

The submittal described above has been placed on **HOLD** and the review and approval is pending subject to receipt of the ADDITIONAL INFORMATION and/or revised plans requested by this letter. Upon receipt of the additional information and/or revised plans, the plans will be reviewed for compliance to applicable Wisconsin Administrative Codes and Wisconsin Statutes.

The following must be corrected/revised and accompany the resubmittal:

Key Item(s)

- **IBC 602.2** - Buildings of Types I and II construction shall have all beams, columns, exterior walls, interior partitions, floors & floor assemblies, roofs and roof assemblies of non-combustible materials other than as noted in Section 603, and elsewhere in this code. *Refers to wall assemblies E2.A & E2.B. Also, please send information on the polycarbonate panels and Northwood Resin panels to verify non-combustibility. Additionally, see section IBC 1406.2.2, and plastics IBC section 2612.*
- Revised plans are required to be submitted. The fee for a plan re-submittal received prior to a denial action is \$75 + \$100 submittal fee = \$175. Include either 4 revised plans or one revised plan & 3 updated index sheets showing plan sheet revision dates.
- **IBC 1015.1** - Two exit or exit access doorways from any space are required when the occupant load of the space is greater than the values within Table 1015.1 when the common path of travel is greater than the limitations stated in Section 1014.3, and per other referenced sections. *Refers to Wrestling 122.*

Our agency offers a number of worksheets and checklists for the Commercial Building Code at http://dsps.wi.gov/Documents/Industry%20Services/Forms/Commercial%20Buildings/Combined%20Worksheets%20Instructions%20_2009%20ICC.pdf that may assist you in preparing your submittal.

Send your re-submittal into the address listed above, unless otherwise noted, and the department will review the resubmittal within 5 working days of receipt date. Please include a copy of this letter with your resubmittal.

Designer shall identify plan revisions by a readily discernible means such as shading, highlighting, hatching or clouding the changed areas prior to plan re-submittal. Failure to do so may delay review.

If the above requested information and/or plans are not received within 30 business days of the date of this correspondence, this submittal will be returned denied. No fees will be refunded, and a new fee, application form, and submittal of plans/specifications will be required should you desire to continue with this project. The code in effect at the time of new submittal would apply.

If you have any questions, after reading the above comments and related code sections cited, please call me at the telephone number below.

Sincerely,

Donald L Diedrick
Eng. Cons. Building Systems , Division of Industry Services
(920) 492-5610, Fax: (920) 492-5604 , Mon-wed 6:30 AM-04:00 pm
don.diedrick@wisconsin.gov

Fee Received \$

WiSMART code: 7648

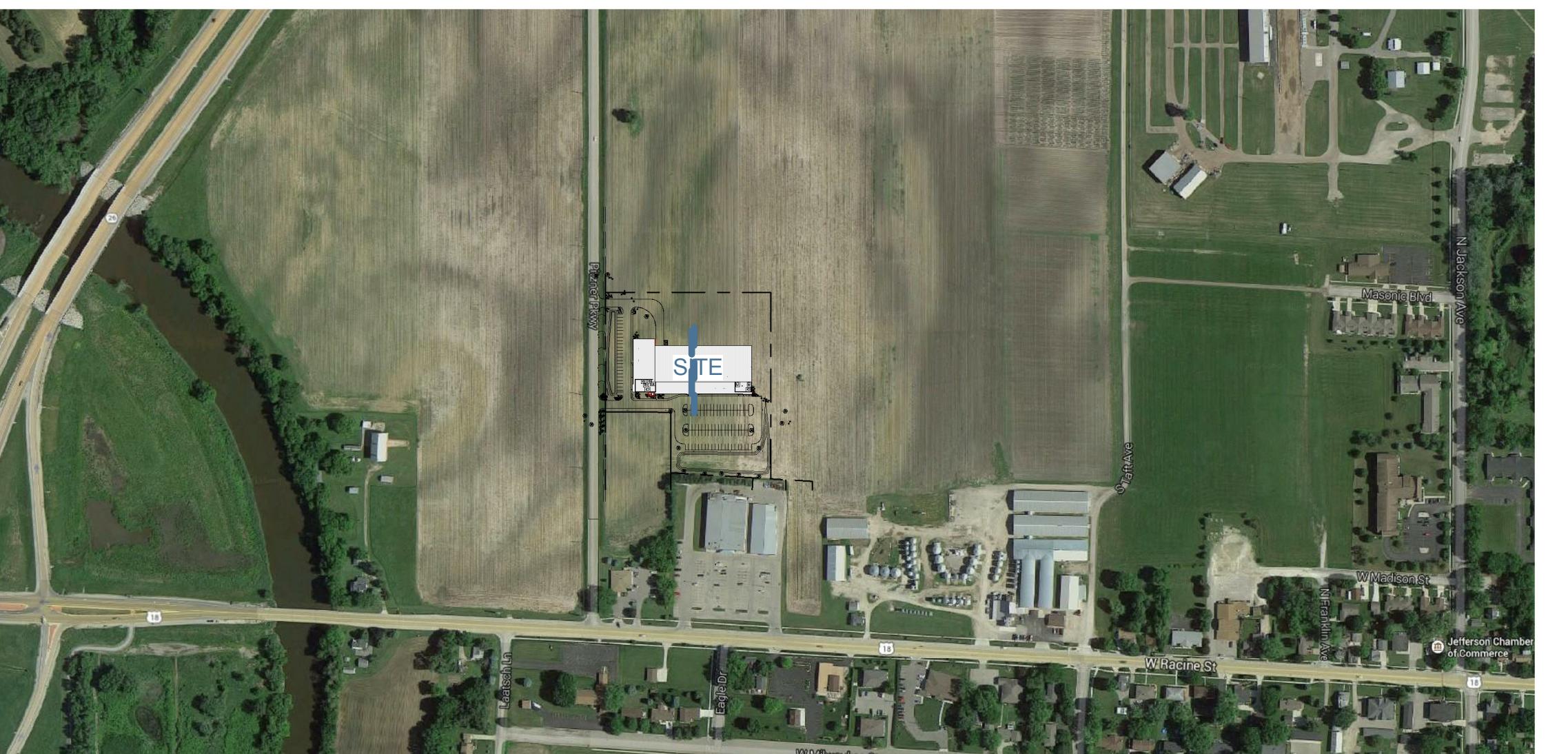
cc: Steve Gothard, State Building Inspector, (608) 235-0568 , Monday 7:45 A.M. - 4:30 P.M.
Municipal Clerk City of Jefferson



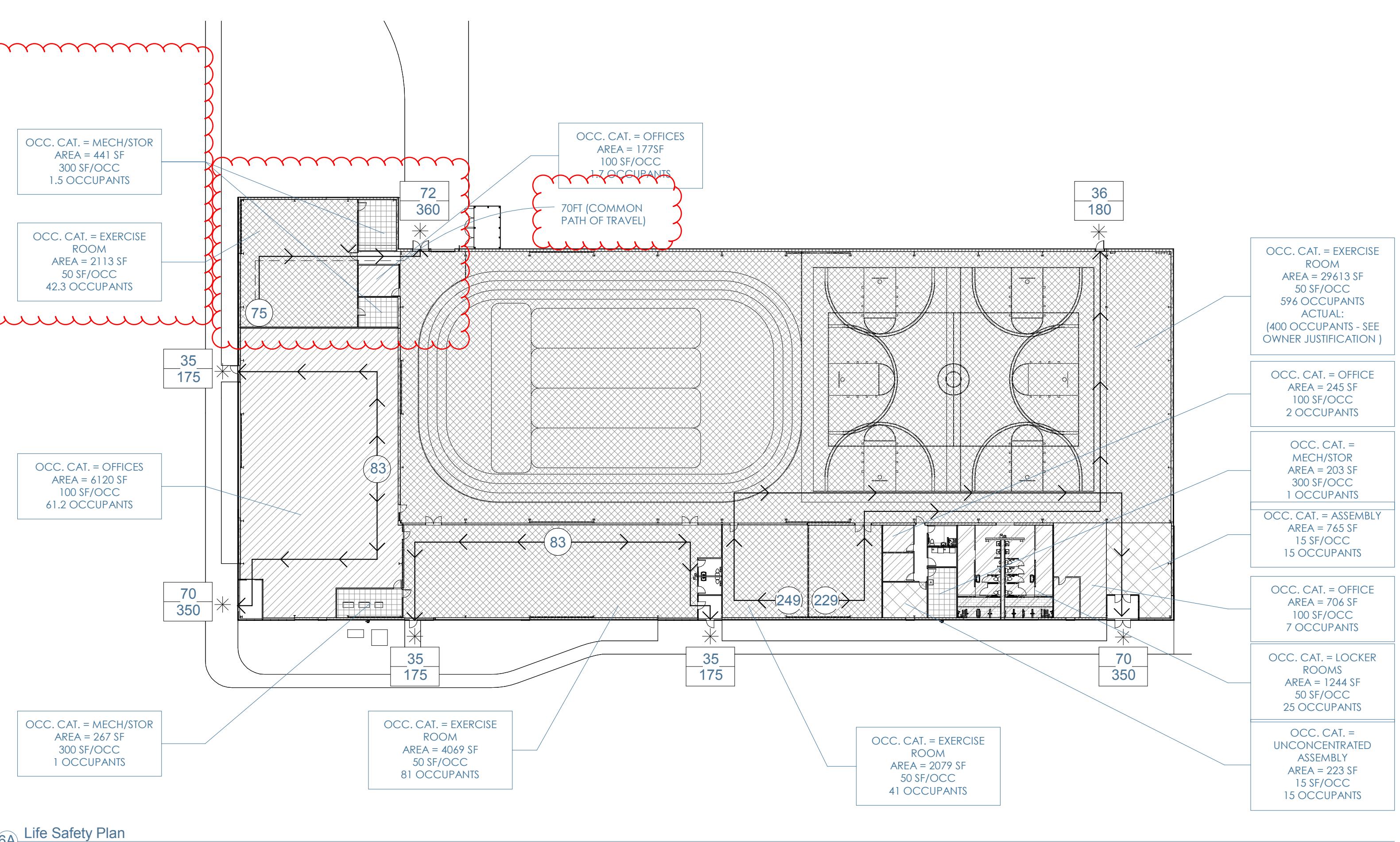
Xcel Sports Complex

Pitzner Parkway

SE 1/4 OF S3 T.6N. R.14E.
CITY OF JEFFERSON, WI



2 Site Locator Map
1" = 400'-0"



⑥A Life Safety Plan
1/32" = 1'-0"

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Sheet List	
Sheet Number	Sheet Name
XXX	Site Plan - 2nd Phase
C-101	Cover
C-102	Engineers Site Plan
C-103	Grading and Erosion Control Plan
C-104	Utility Plan STA
A-100.A	Utility Plan STA
A-100.B	Site Lighting Details
A-101	First Floor Plan
A-101.A	Enlarged First Floor Plan (West)
A-101.B	Enlarged First Floor Plan (East)
A-102	Roof Plans
A-111	Reflected Ceiling Plan
A-201	Elevations - Exterior
A-301	Building Sections
A-302	Building Sections
A-401	Wall Sections
A-402	Wall Sections
A-403	Wall Sections
A-404	Wall Sections
A-501	Restrooms - Plans and Elevations
A-502	Women's Showers - Plans and Elevations
A-503	Men's Showers - Plans and Elevations
A-504	Women's Locker Room - Plans and Elevations
A-505	Men's Locker Room - Plans and Elevations
A-506	Women's Locker Room - Plans and Elevations
A-601	Section Details - Exterior Envelope
A-602	Section Details - Exterior Envelope
A-603	Section Details - Exterior Envelope
A-604	Section Details - Exterior Envelope
A-620	Details - Trash Enclosure
A-650	Details - Exterior Envelope
A-801	Door and Finish Schedules & Wall Types
A-901	Rendings - Exterior (Overall)
A-903	Rendings 3 - Fieldhouse
A-904	Rendings - Reception and Fitness
A-905	Rendings 5
S-100	Schematic Structural Intent Only - not for Construction

6

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1

Xcel
Owner
4860 Highway Circle
Middleton, Wisconsin 53562
Terry Krause
todd@xcel.net
608-279-6960

KRAUSE CUSTOM BUILDERS
General Contractor
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920-285-6490

LCE
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970 S. Silver Lake Street, Suite 105
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Rob Davis
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Tom Bell
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262.593.8400

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Opening Design
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Ryan Schulz
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773-425-8456

NTRIVE
Structural
ntrive
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Green Bay, WI 54308
Steven Uecke
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608-480-4120x101

FOREMOST BUILDINGS, INC.
Metal Building Manufacturer
Foremost Buildings, Inc.
895 N Parkway Street
Jefferson, WI 53549
Jim Horn
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920-574-5028

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Jim Shuda
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414-573-1047

JEFFERSON CURRENT ELECTRIC INC.
Electrical
Jefferson Current Electric
1473 S. Industria Ave
Jefferson, WI 53549
Ross Davis
jeffcurrentelectric@att.net
920-674-6444

Pelikan Plumbing LLC
Plumbing
Pelikan Plumbing
144 Main St
Jefferson, WI 53549
Mike Pelikan
pelikanplumbing@yahoo.com
262-593-2290

CODE SUMMARY

Building Location:
Pitzner Parkway
SE 1/4 OF S3 T.6N. R.14E.
City of Jefferson, WI

Project Description:
This one story -50,000sf project includes a 24hr Fitness Center, two-story basketball courts, indoor running track and batting cages, and adjoining clinics.

Application Codes:
Building/Dwelling Code IBC 2009 (WI Commercial Building Code, Chapter 62)
Structural Code IBC 2009 (WI Commercial Building Code, Chapter 62)
Plumbing Code Wisconsin Commercial Building Code, Chapters 8-14
Electrical Code NEC 2008(WI Commercial Building Code, Chapter 16)
Fire/Life Safety Code 2009 NFPA-1 (WI Commercial Building Code, Chapters 14 & 30)
Accessibility Code ADA Standards (WI Commercial Building Code, Chapter 62)
Energy Code IECC 2009 (WI Commercial Building Code, Chapter 63)
Gas Code IFC 2009 (WI Commercial Building Code, Chapter 65)
Zoning - Common Council of the City of Jefferson Zoning Code

Use or Occupancy (304):
Assembly Group (A-3): Gymsnasiums (without spectator seating)

General Limitations - Height and Area (Table 503 & 507):
Will be an Unlimited Area Building per the following criteria:
- Building surrounded and abjoined by public ways or yards not less than 60 feet
- Equipped throughout with an automatic sprinkler system
- One-Story

Required Rating of Construction Components (Table 401):
Structural members supporting roof gravity loads: No Rating Required
Structural columns supporting floor gravity loads: No Rating Required
Interior Walls: non-bearing: Rating Required from Table 602
Interior Walls: non-bearing: No Rating Required
Floor Construction, including supporting beams and joists: No Rating Required
Roof Construction, including supporting beams and joists: No Rating Required
Exterior Walls: No Rating Required

Interior Egress: Fire Resistance-Rating (Chapter 8)
Exit enclosures and exit passageways: Class 8
Corridors: Class 8
Rooms and enclosed spaces: Class C
Interior floor finish: Class II

Means of Egress:
Max. Travel Length: 250' - Use w/sprinkler (Table 1016.1)
Dead-end Corridor: <50'-0" w/sprinkler

Egress Width per Occupant (Table 1005.1):
The total width of means of egress in inches shall not be less than the total width of the floor served by the means of egress multiplied by 0.2 inch per occupant

Common Path of Travel (1014.3): 75ft
Number of exits per story (1019): 3 (501-1,000 people)

Minimum Plumbing Facilities - Section 2902

- Sports Complex & Fitness Center
 - Total Occupant Load - 677
 - Male = 339
 - Female = 338
 - WC's = 1 (1 per 125)
 - Lavatories = 2 (1 per 200)
 - Drinking Fountains = 2 (1 per 500)

- 24hr Fitness Center Ord
 - Total Occupant Load - 82
 - Male = 41
 - Female = 31
 - WC's = 1 (1 per 125)
 - Lavatories = 1 (1 per 200)
 - Drinking Fountains = 1 (1 per 125)
 - WC's = 1 (1 per 200)
 - Lavatories = 1 (1 per 200)
 - Drinking Fountains = 1 (1 per 500)

- 1 Service Sink (entire facility)

No.	Description	Date
SITE PLAN REVIEW	05.13.2015	
PERMIT	08.18.2015	

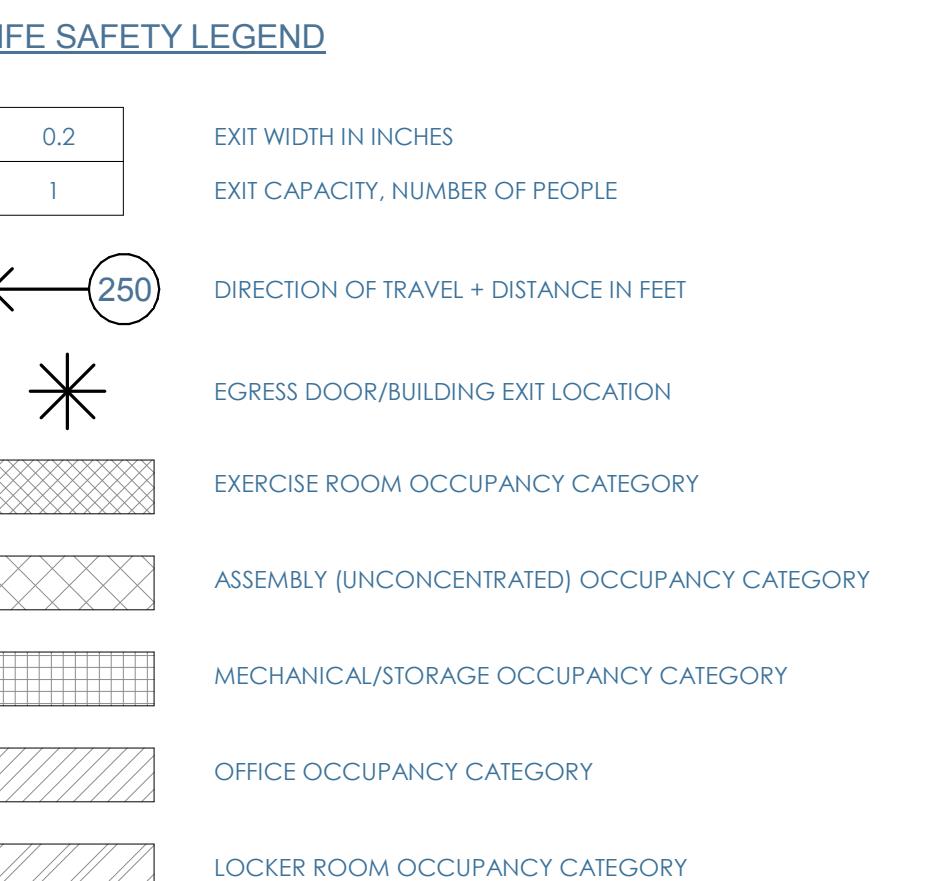
Cover

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-G-100

Scale As indicated

LIFE SAFETY LEGEND



6A Life Safety Plan
1/32" = 1'-0"

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6 | 5 | 4 | 3 | 2 | 1 |

The Xcel logo consists of the word "Xcel" in a red, cursive, handwritten-style font. The letter "X" has a thick red stroke and is partially enclosed by a light gray oval. The letters "cel" are written in a similar red, cursive style below it.

The logo for Krause Custom Builders features the company name in a bold, sans-serif font. The letters 'K', 'C', and 'B' are stylized with a wood-grain texture, while the 'U' and 'S' have a brick pattern. A small circular icon containing a stylized sun or leaf is positioned between the 'C' and 'U'. The entire logo is set against a dark green oval background.

General Contractor

Krause Custom Builders
N3897 Duck Creek Rd
Helenville, WI 53137
Toby Krause
tobykrause@gmail.com
608-295-6400

The logo consists of the letters "LCE" in a white, sans-serif font, enclosed within a dark red oval.

Civil

Lake Country Engineering

970 S. Silver Lake Street, Suite 105

Oconomowoc, WI 53066

Rob Davy robd@lce.biz

(262) 569-933

The logo for OpeningDesign features a stylized lowercase 'o' and 'd' in blue, with a smaller 'd' nested inside the 'o'. Below the letters, the word "openingdesign" is written in a lowercase, sans-serif font.

Structural
drive

The NTRIVE logo consists of three vertical bars: a blue bar on the left, an orange bar in the middle, and a dark blue bar on the right. To the right of the logo, the company name "NTRIVE" is written in a large, bold, sans-serif font. Below it, the words "INNOVATIVE ENGINEERING" are written in a smaller, all-caps, sans-serif font. To the right of the company name, there is a line of address information: "1600 S. Ashland Ave., #3200Z", "Chicago, IL 60608", "Steven Uecke", "s.uecke@ntrive.com", and "630-480-4120x101".

FOREMOST
BUILDINGS, INC.

Metal Building Manufacturer
Foremost Buildings, Inc.
895 N Parkway Street
Jefferson WI 53549
Jim Horn
JimH@foremostbuildings.com
920-674-5028

The logo for Lake Country Heating and Cooling features a central illustration of a mallard duck swimming among green reeds and brown cattails. The words "LAKE COUNTRY HEATING AND COOLING" are written in a circular, stylized font around the top and sides of the illustration.

Electrical
Jefferson Current Electric

1470 S. Industrial Ave
Jefferson, WI 53549
Ross Davis

TRUST ONLY THE BEST

Sullivan, WI 53178
Mike Pelikan
pelikanplumbing@yahoo.com
262-593-2290

Owner

Project Name

ection Details - terior Envelope

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
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A-002

3" = 1'-0"

**6A Wall Details @ G.L. 2-A & 3-A (Resin Panel)
3" = 1'-0"**

**5A Wall Detail @ Polycarbonate
3" = 1'-0"**



Polycarbonate - arcoPlus® 547



ASTM D635-06

Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position

Client: Gallina USA, Inc.
4335 Capital Circle
Janesville WI, 53546

Report No.: 3192452SAT-003A

Received Date: October 19, 2009 (The specimens were received in good condition.)
Test Date: December 17, 2009
Report Date: December 18, 2009

Specimen ID: 40mm Thick Mult Wall 547

Sample Description

Clear plastic sheet

Sample Dimensions: 125mm x 13mm x .74mm

Sample Preparation: Sample cut to standard size prior to test.

Sample Conditioning: 73±5°F and 50±5% R.H.

Environmental Conditions: 68°F and 47% r.h.

This Test Witnessed by: No witness

"This standard should be used to measure and describe the properties of materials, products, or assemblies in response to heat and flame under controlled laboratory conditions and should not be used to describe or appraise the fire hazard or fire risk of materials, products, or assemblies under actual fire conditions. However, results of this test may be used as elements of a fire risk assessment which takes into account all of the factors which are pertinent to an assessment of the fire hazard of a particular end use."

HB Category Designation

The behavior of specimens shall be classified HB (HB = horizontal burning) if,
a.) There is no visible signs of combustion after the source is removed, or **b.)** The flame front does not pass the 25 mm reference mark, or **c.)** The flame front passes the 25 mm reference mark but does not reach the 100 mm reference mark, or **d.)** The flame front reaches the 100 mm reference mark and the linear burning rate does not exceed 40 mm/min for specimens having a thickness between 3 and 13 mm or 75 mm/min for specimens having a thickness less than 3 mm.

International Building Code CC1 & CC2 Criteria

Class CC1: Plastic materials that have a burning extent of 25 mm or less where tested at a nominal thickness of 0.060 in. (1.5 mm), or in the thickness intended for use, in accordance with this test method. **Class CC2:** Plastic materials that have a burning rate of 2.5 in. per minute (63.6 mm/min.) or less where tested at a nominal thickness of 0.060 in. (1.5 mm), or in the thickness intended for use, in accordance with this test method.

Summary of Test Method

A bar of the material to be tested is supported horizontally at one end. The free end is exposed to a specified methane gas flame for 30s. Elapsed time (t) and Burned length (L) are measured and reported if the specimen burns between 25 mm and 100 mm. An average burning rate is reported for a material if it burns to the 100 mm mark from the ignited end. If 3 specimens burn to the 100 mm mark, the test is terminated and the average burning rate is reported. If the flames do not reach the 100 mm mark, 10 specimens are tested and the burn rate is not reported.

TEST RESULTS

Specimen	Did Flame Reach 25mm (Y/N)	Did Flame Reach 100mm (Y/N)	Elapsed Time* (sec)	Burned Length* (mm)
1	No	No	N/A	N/A
2	No	No	N/A	N/A
3	No	No	N/A	N/A
4	No	No	N/A	N/A
5	No	No	N/A	N/A
6	No	No	N/A	N/A
7	No	No	N/A	N/A
8	No	No	N/A	N/A
9	No	No	N/A	N/A
10	No	No	N/A	N/A
Average			N/A	N/A

* This data is not available because the flame did not reach the 25mm reference mark.

Conclusion

This specimen meets the HB classification requirements and in accordance with Section X2 of ASTM D635 for International Building Code Section 2606.4 referenced materials, the material tested also meets Class CC1 requirements.

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This report consists of three pages.



Thomas Haynes
Lab Technician

December 18, 2009

Reviewed and approved:



Servando Romo
Project Manager

December 18, 2009



Intertek



ASTM E-84-09
TEST FOR SURFACE BURNING
CHARACTERISTICS OF
BUILDING MATERIALS

“40 MM THICK MULTI WALL 547”

Report No. 3192452SAT-003

November 16, 2009

Prepared For:
Gallina U.S.A. Inc.
4335 Capital Circle
Janesville, WI 53546

Intertek Testing Services NA, Inc.
16015 Shady Falls Road, Elmendorf, TX 78112
Telephone: 1-800-966-5253 Fax: 1-210-635-8101
Web: www.intertek-etlsemko.com

ABSTRACT

Test Material: **“40 MM THICK MULTI WALL 547”**

Test Standard: **ASTM E – 84 TEST FOR SURFACE BURNING CHARACTERISTICS OF BUILDING MATERIALS (NFPA 255, UBC 8-1, UL 723)**

Test Date: **11/11/09**

Test Sponsor: **Gallina USA Inc.**

Test Results:

FLAME SPREAD INDEX	0
SMOKE DEVELOPED INDEX	120

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Date: November 16, 2009

Manuel Perez Jr.
Technician

Reviewed and approved



Date: November 16, 2009

Miguel Zamarripa
Project Manager



Intertek

I. INTRODUCTION

This report describes the results of the ASTM E-84 TEST FOR SURFACE BURNING CHARACTERISTICS OF BUILDING MATERIALS a method for determining the comparative surface burning behavior of building materials. This test is applicable to exposed surfaces, such as ceilings or walls, provided that the material or assembly of materials, by its own structural quality or the manner in which it is tested and intended for use, is capable of supporting itself in position or being supported during the test period.

The purpose of the method is to determine the relative burning behavior of the material by observing the flame spread along the specimen. Flame spread and smoke density developed are reported, however, there is not necessarily a relationship between these two measurements.

"The use of supporting materials on the underside of the test specimen may lower the flame spread index from that which might be obtained if the specimen could be tested without such support... This method may not be appropriate for obtaining comparative surface burning behavior of some cellular plastic materials... Testing of materials that melt, drip, or delaminate to such a degree that the continuity of the flame front is destroyed, results in low flame spread indices that do not relate directly to indices obtained by testing materials that remain in place."

This test method is also published under the following designations:

NFPA 255

UBC 8-1

UL 723

This standard should be used to measure and describe the properties of materials, products, or assemblies in response to heat and flame under controlled laboratory conditions and should not be used to describe or appraise the fire hazard or fire risk of materials, products, or assemblies under actual fire conditions. However, results of this test may be used as elements of a fire risk assessment which takes into account all of the factors which are pertinent to an assessment of the fire hazard of a particular end use.

II. PURPOSE

The ASTM E-84 (25 foot tunnel) test method is intended to compare the surface flame spread and smoke developed measurements to those obtained from tests of mineral fiber cement board and select grade red oak flooring. The test specimen surface (18 inches wide and 24 feet long) is exposed to a flaming fire exposure during the 10 minute test duration, while flame spread over its surface and density of the resulting smoke are measured and recorded. Test results are presented as the computed comparisons to the standard calibration materials.

The furnace is considered under calibration when a 10 minute test of red oak decking will pass flame out the end of the tunnel in five minutes, 30 seconds, plus or minus 15 seconds. Mineral fiber cement board forms the zero point for both flame spread and smoke developed indexes, while the red oak flooring smoke developed index is set as 100.



Intertek

III. DESCRIPTION OF TEST SPECIMENS

Specimen Identification: "40 MM THICK MULTI WALL 547"
Date Received: 11/06/2009
Date Prepared: 11/06/2009
Conditioning (73°F & 50% r.h.): 5 days
Specimen Width (in): 23.5-in.
Specimen Length (ft): 2
Specimen Thickness: 1.7500
Material Weight: N/A
Total Specimen Weight: 44
Adhesive or coating application rate: N/A

Mounting Method:

The specimen was self-supporting.

Specimen Description:

The test specimen was described by the client as the "40 MM THICK MULTI WALL 547". The specimen consisted of (15) 20.5-in. long x 23.5-in. wide x 1.7500-in. thick, clear panels. The samples were received in good condition. The specimen was identified by the client as "40 MM THICK MULTI WALL 547".

IV. TEST RESULTS & OBSERVATIONS

The test results, computed on the basis of observed flame front advance and electronic smoke density measurements are presented in the following table.

While no longer a part of this standard test method, the Fuel Contributed Value has been computed, and may be found on the computer printout sheet in the Appendix.

Test Specimen	Flame Spread Index	Smoke Developed Index
Mineral Fiber Cement Board	0	0
Red Oak Flooring		100
"40 MM THICK MULTI WALL 547"	0	120



The data sheets are included in Appendix A. These sheets are actual print-outs of the computerized data system which monitors the tunnel furnace, and contain all calibration and specimen data needed to calculate the test results.

V. OBSERVATIONS

During the test, the specimen was observed to behave in the following manner: The panels began to melt at 0:02 (min:sec.). The specimen ignited at 0:18 (min:sec.). Flaming drops were observed at 0:20 (min:sec.). The flames began to spread to the floor at 0:21 (min:sec.). The test continued for the 10:00 duration.

After the test the specimen was observed to be damaged as follows:
The sample was consumed from 0-ft. – 5-ft. melted to the floor from 5-ft. – 24-ft.

APPENDIX
ASTM E-84-09
DATA SHEETS



Intertek

Client: GALLINA USA, INC.

Date: 11/11/09

Project Number: 3192452SAT-003

Test Number: 2

Operator: TA/MP

Specimen ID: "40 MM THICK MULTI WALL 547". THE SPECIMEN WAS SELF-SUPPORTING.

TEST RESULTS

FLAMESPREAD INDEX: 0

SMOKE DEVELOPED INDEX: 120

SPECIMEN DATA . . .

Time to Ignition (sec): 18

Time to Max FS (sec): 0

Maximum FS (feet): 0.0

Time to 980 F (sec): Never Reached

Time to End of Tunnel (sec): Never Reached

Max Temperature (F): 450

Time to Max Temperature (sec): 427

Total Fuel Burned (cubic feet): 47.89

FS*Time Area (ft*min): 0.6

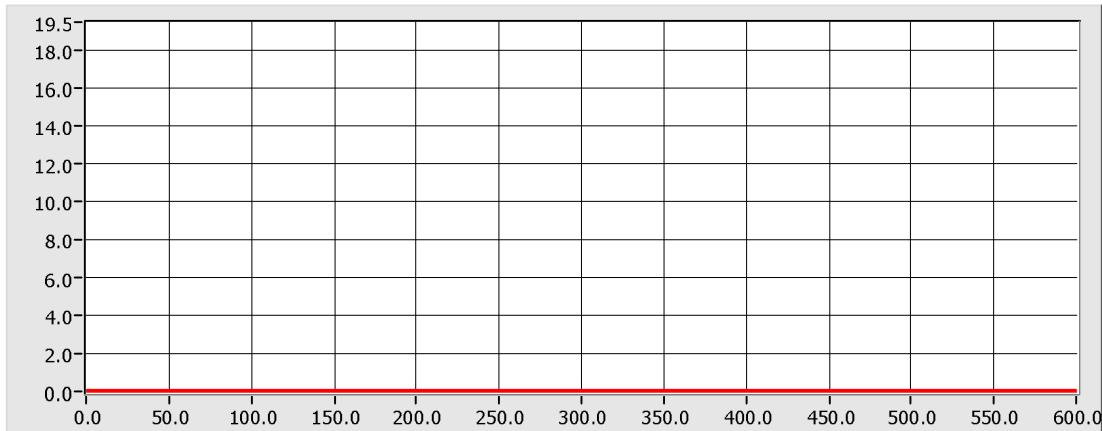
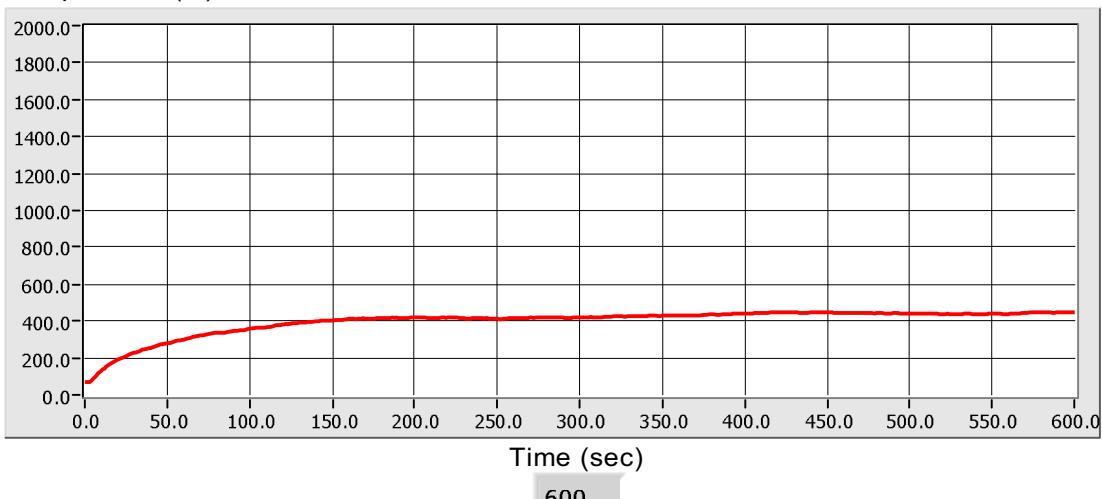
Smoke Area (%A*min): 132.4

Unrounded FSI: 0.3

CALIBRATION DATA . . .

Time to Ignition of Last Red Oak (Sec): 38.0

Red Oak Smoke Area (%A*min): 108.2

FLAME SPREAD (ft)**Smoke (%A)****Temperature (°F)**

Time (sec)

600

5/16"
PHENOLIC
RESIN PANELS

Xcel Sports Complex
Jefferson, WI

Resin Panel Analysis



Ntrive Engineering
280 Shuman Blvd Ste 270
Naperville, IL 60563

JOB XCEL SPORTS COMPLEX NO. N150104
SHEET NO. 201 OF 1
CALCULATED BY KZZ DATE 9/15/15
CHECKED BY _____ DATE _____
DESCRIPTION RESIN PANEL ANALYSIS

CHECK RESIN PANELS SPANNING BETWEEN U-CHANNELS:

CHECK STRENGTH (ON A PER FOOT BASIS):

$$p = -27.6 \text{ PSF}$$

$$w = 27.6 \text{ PSF} * 1' = 27.6 \text{ PLF}$$

$$L = 2'-0"$$

$$M = 0.125wL^2 = 0.125 * 27.6 * 2'^2 = 13.8 \text{ FT}*LB = 165.6 \text{ IN}*LB \text{ (PER AISC TABLE 3-22c)}$$

$$S = 1/6bd^2 = 1/6 * 12'' * 0.3125^2 = 0.195 \text{ IN}^3$$

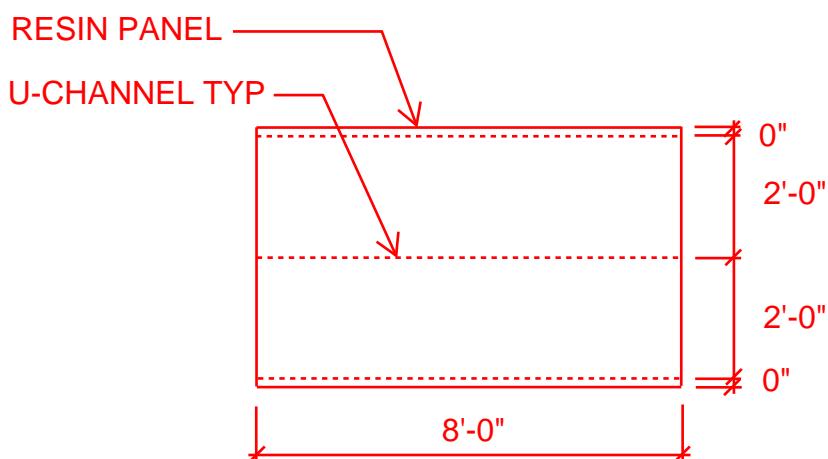
$$fb = M/S = 165.6 \text{ IN}*LB / 0.195 \text{ IN}^3 = 849 \text{ PSI}$$

$$SF = 4$$

FS = 16000 PSI (FLEXURAL STRENGTH OF PANEL; SEE APPENDIX A)

Fb = FS/SF = 16000 PSI / 4 = 4000 PSI > 849 PSI, OK

PROVIDE 5/16" STONEWOOD EXTERIOR RESIN PANELS TO SPAN 2'-0"



Xcel Sports Complex
Jefferson, WI

Appendix A: **Resin Panel Specifications**

Stonewood™ Architectural Panels by Fiberesin

Exterior Applications Technical Guidelines for Exterior Wall Cladding

Product Guide Specification in CSI 3-Part Format

This product guide specification is written according to the Construction Specifications Institute (CSI) 3-Part Format, as described in *The Project Resource Manual—CSI Manual of Practice*.

Stonewood Panels are solid phenolic, thermally-fused materials comprised of multiple sheets of kraft fiber paper. These kraft papers can be FSC® certified and contain 16% or more post-industrial, recycled wood fiber content. FSC® certification provides third-party assurance that all wood fibers are from responsible sources. The Stonewood Panel manufacturing facility has been BIFMA level® certified. A 100% post-consumer recycled Stonewood Panel with a Class B fire rating is available. This product is not FSC® certified. To produce Stonewood Panels, Fiberesin impregnates the raw core kraft sheets with phenolic resins. The treated papers are then hot pressed, fusing the layers into a solid panel. Stonewood Panels do not emit formaldehyde, are resistant to burning, and can support significant weight without breaking.

Stonewood Exterior Panels are manufactured with an acrylic surface layer containing additives that protect them from the effects of ultraviolet light. The acrylic layer has been thoroughly tested for UV protection and the panel is ideal for use as an interior wall-covering panel or building cladding.

Stonewood Exterior Panels come in standard thicknesses (5/16", 8 mm, 3/8", 10 mm, 1/2", 13 mm). Custom thicknesses are available. Panels are available in two fire ratings and surface flammability: Class A or Class B per ASTM E84.

The Execution Section of this specification document should be carefully reviewed and edited if necessary by the Architect to meet the requirements of the project and local building codes. Coordinate this section with other specification documents and the drawings, and consult with a Stonewood Panel local representative or Fiberesin customer service, if needed.

SECTION 074200

STONEWOOD ARCHITECTURAL PANELS (A SOLID PHENOLIC EXTERIOR WALL CLADDING)

Hereafter referred to as Stonewood Panels

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Stonewood Panels: Solid phenolic panels for exterior wall cladding of commercial and institutional buildings.

1.2 RELATED SECTIONS

- A. Section 05: "Cold-Formed Metal Framing"
- B. Section 07: "Thermal Insulation"
- C. Section 09: "Exterior Sheathing"

1.3 REFERENCES

- A. ASTM D638 - 10 Standard Test Method for Tensile Properties of Plastics.
- B. ASTM D790 - 10 Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.
- C. ASTM E84 - 12 Standard Test Method for Surface Burning Characteristics of Building Materials.

- D. NEMA Standards Publication LD3-2005. High pressure decorative laminates.
- E. 2012 International Building Code, Chapter 14 Exterior Walls.

1.4 SUBMITTALS

- A. Comply with Section 01330 (01 33 00) - Submittal Procedures.
- B. Product Data: Submit manufacturer's printed product literature and specifications including fabrication and assembly.
- C. Samples: Submit manufacturer's standard 3"x3" samples of panel cladding materials representative of colors and texture.
- D. Manufacturer's Certification: Submit manufacturer's certification that materials comply with specified requirements and are suitable for intended application.
- E. Warranty: Submit manufacturer's standard warranty.
- F. Installation Instructions (descriptive manual)
- G. Shop Drawings: Submit complete sets of fabrication/installation drawings including panel dimensions, thickness, location of joints, method of anchorage, number of anchors, supports, accessories, etc.

1.5 QUALITY ASSURANCE

- A. Manufacturer's Qualifications:
 - 1. Sufficient plant facilities to provide quality and quantity of materials as required without delaying progress of the work.
 - 2. Minimum of 40 years of experience in paper saturation of phenolic resin, and producing phenolic paper laminate.
- B. Fabricator
 - 1. Fabricated by the manufacturer, and/or
 - 2. Contracted by the customer, minimum 5 years of experience in fabrication work of exterior cladding system for the size and complexity of the projects.
 - 3. Approved by the manufacturer.
- C. Installer
 - 1. Proven professional cladding system installer with a minimum of 5 years of documented experience.
 - 2. Approved by the manufacturer.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Deliver materials in manufacturer's original unopened containers/packages, with labels clearly identifying product name, manufacturer, color/texture, and weight.
- B. Storage:
 - 1. Store materials in clean, dry area in accordance with manufacturer's instructions.
 - 2. Keep package sealed until ready for use.
- C. Handling:
 - 1. Handle materials in accordance with manufacturer's instructions.
 - 2. Protect materials during handling to prevent damage.

1.7 WARRANTY

- A. Limited warranty: Fiberesin warrants that Stonewood Architectural Panels shall be free from material defects for a period of 10 years. Refer to www.stonewoodpanels.com for details.

PART 2 PRODUCTS

2.1 MANUFACTURER

- A. Fiberesin Industries, Inc., PO Box 808, Oconomowoc, WI 53066. Phone: (262) 567-4427
Fax: (262) 567-4814, Web Site: www.fiberesin.com. Email: info@fiberesin.com.

2.2 STONEWOOD EXTERIOR ARCHITECTURAL PANELS

- A. Material: Solid phenolic laminate panel with UV protection
B. Colors/Patterns: 200+
C. Finish: #60 Matte
D. Standard Size: 48"x96"
E. Panel Thickness: 5/16", 8 mm, 3/8", 10 mm, 1/2", 13 mm (Custom thicknesses available upon request)
F. Panel Core: Standard black and natural (brown)

2.3 MINIMUM MATERIAL PROPERTIES

A. NEMA Requirements

Description	Test	NEMA Requirements	0.156"	0.250"	0.500"
Thickness			0.156"	0.250"	0.500"
Resistance to High Temperature	3.6	Slight Effect	No Effect	No Effect	No Effect
Ball Impact Resistance: Inches Drop	3.8	75"	90"+	96"+	96"+
Dimensional Change: Length (Machine Direction) Width (Cross Direction)	3.11	0.3% Maximum 0.7% Maximum	0.25% 0.50%	0.25% 0.50%	0.25% 0.50%
Weight Per Unit Area Lbs/ft ² Kg/m ²			1.07 5.2	1.71 8.35	3.42 16.7
Density (PCF)			82	82	82

B. Mechanical Properties

Property	NEMA Requirements	0.156"	0.250"	0.500"
Flexural Strength ASTM D-790 MD (psi) CD (psi)	18,000 12,000	20,000 16,000	20,000 16,000	20,000 16,000
Flexural Modulus ASTM D-790 MD (psi) CD (psi)	1.6×10^6 1.4×10^6	2.0×10^6 1.5×10^6	2.0×10^6 1.5×10^6	2.0×10^6 1.5×10^6
Tensile Modulus ASTM D-638 MD (psi) CD (psi)	18,000 12,000	18,000 13,000	18,000 13,000	18,000 13,000

C. Fire Resistance

Fire Resistance	Thickness	Product Type	
		Class A	Class B
Flame Spread Index - ASTM E-84 (BLDG)*	0.250"	0.250"	0.250"
Smoke Developed Values - ASTM E-84 (BLDG)*	15	30	105
Fire Rating* (Standard Product is Class B)	A	B*	

* Test Method: ASTM E84-13a - Standard Test Method for Surface Burning Characteristics of Building Materials. Also known as NFPA 255, UL 723, and UBC 8-1.

D. Manufacturing Tolerance

Thickness (.156 to .375)	+/- .020
Thickness (above .375 to 1.000)	+/- .030
CNC Shaped size (Length -Width)	+/- .020
Drill Diameter	+/- .003
Drill Depth	+/- .020
CNC Hole to Hole	+/- .020
CNC Hole to Edge (1 Oper)	+/- .020
CNC Hole to Edge (2 Oper)	+/- .030
Routing - (Slots Width and Length)	+/- .015
Routing - (Slots Depth)	+/- .020

2.4. ACCESSORIES (FASTENERS)

- A. Manufactured by approved supplier.
- B. Provide exterior wall cladding system designed to withstand the effects of dead load, live load, and accommodate hygrothermal expansion/contraction of the panel.

PART 3 EXECUTION

3.1 MANUFACTURER'S INSTRUCTIONS

- A. Compliance: Comply with manufacturer's/fabricator's/supplier's product data, handling and installation instruction/manual, shop drawings, shipping container/package ticket identification, etc.

3.2. EXAMINATION

- A. Verify correct panels received, including dimension, tolerance, color/texture.
- B. Verify correct attachment system received for the specific project/job.
- C. Verify all the documents, including shop drawings and installation guidelines.
- D. Verify installation conditions are satisfactory to receive work of this Section before the commencement.
- E. Verify substrate installation is complete, flat, and true to plane.

3.3. PREPARATION

- A. Field Measurements: Verify prior to fabrication and installation of the cladding panel.
- B. Protect surrounding areas and surfaces to preclude damage during work of this Section.
- C. Lay out work before beginning installation as necessary for true, plumb, and aligned panel installations.
- D. Verify locations of joints and panel lengths.

3.4. INSTALLATION

- A. Conform to manufacturer's instructions and provisions of shop drawings.
- B. Conform to fastener's instructions for installation of fasteners.
- C. Install to allow hygrothermal expansion/contraction.
- D. Use appropriate techniques/tools to work with the panel.
- E. Do not force to fit, bend, or stretch/compress.
- F. Make cutting and fitting neat, square, and true. Where required, cut, de-burr edges, and clean filings from adjacent surfaces.
- G. Do not install damaged or questionable panels.

3.5. FIELD QUALITY CONTROL

- A. Manufacturer's Field Service: Provide field services to ensure product installation is in accordance with manufacturer's/fabricator's/supplier's instructions and installation manuals, shop drawings, etc.

3.6. ADJUSTING

- A. Correct identified defects and irregularities.
- B. Replace damaged, soiled, and discolored work.

3.7. CLEANING

- A. Leave installation clean and free from residue and debris from work of this Section.

END OF SECTION