

**ADDENDUM THREE
AVONDALE YOUTH AND FAMILY DEVELOPMENT CENTER
CONTRACT NO. Y-15-008-201
CITY OF CHATTANOOGA, TENNESSEE**

The following changes shall be made to the Contract Documents, Specifications, and Drawings:

I. Specifications:

- a. 08-33-23 Coiling Counter Doors. Include in Contract Documents.

II. Substitution Requests

- a. CPI Uniquad translucent panels, are an approved substitution for the polycarbonate panels around the upper portion of the gymnasium
- b. Modernco is an approved substitution for the folding partition in the multi-purpose room. Note frame colors must match the basis of design standard colors.
- c. Action Floor Systems Pro Air AR is an approved substitution for the gym floor
- d. Action Floor Systems Pro Action Thrust is an approved substitution for the dance floor
- e. Versico roofing **is not** an approved substitution for the pvc roof specified
- f. Solutions in Polycarbonate **is not** an approved substitution for the polycarbonate panels around the upper portion of the gymnasium

III. Notes on Substitution requests

- a. Subject to conformance with all specifications and performance requirements an above approved product may be used as a substitute for what was originally included in the drawings or specifications.
- b. If items are standard in the 'basis of design' product, but they are an up charge in the proposed substitution, they must be provided without increased cost to the Owner.
- c. Approval of a substitution request shall not change the original requirements or constitute approval of an items of lesser quality. Product must be available in required colors, finishes, configurations, and warranty to be valid. If all configurations, colors, finishes, quality, configuration or warranty can not be provided to match the original documents, the item can not be used as a substitute.
- d. The GC shall still be responsible for installing items which conform to the design documents.

IV. Drawings

- a. AR-105 – FINISH PLAN

V. Pre-Bid Meeting Attendance Sheet

- a. The attendance list from the October 24, 2017 pre-bid meeting is appended to this addendum.

October 27, 2017

/s/ Justin C. Holland, Administrator
City of Chattanooga
Department of Public Works

SECTION 083313 - OVERHEAD COILING DOORS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Counter height coiling service doors.

B. Related Requirements:

1. Section 055000 "Metal Fabrications" for miscellaneous steel supports, door-opening framing, corner guards, and bollards.

1.2 ACTION SUBMITTALS

A. Product Data: For each type and size of overhead coiling door and accessory.

B. Shop Drawings: For each installation and for special components not dimensioned or detailed in manufacturer's product data.

1. Include points of attachment and their corresponding static and dynamic loads imposed on structure.
2. Show locations of controls, locking devices detectors or replaceable fusible links, and other accessories.
3. Include diagrams for power, signal, and control wiring.
4. Shop drawings must be field verified based on actual masonry opening dimension

C. Samples: For each exposed product and for each color and texture specified.

1. Slat color to be painted.

D. Sample warranty

1.3 CLOSEOUT SUBMITTALS

A. Maintenance data.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer for both installation and maintenance of units required for this Project.

1.5 WARRANTY

- A. Special Warranty: Manufacturer agrees to repair or replace components of doors that fail in materials or workmanship within specified warranty period.

1. Warranty Period: [**Two**] years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 DOOR ASSEMBLY

- A. [**Service**] Door: Overhead coiling counter door formed with curtain of interlocking metal slats.

1. Manufacturers Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the work include:

- a. Clopay Doors
- b. Cornell Iron Works
- c. Lawrence Doors
- d. Overhead Door Corporation

- B. Operation Cycles: Door components and operators capable of operating for not less than [**10,000**].

- C. Door Curtain Material: [**Galvanized steel**].

- D. Door Curtain Slats: [**Flat**] profile slats of center-to-center height.

- E. Bottom Bar: Two angles, each not less than [**1-1/2 by 1-1/2 by 1/8 inch (38 by 38 by 3 mm) thick**] fabricated from [**hot-dip galvanized steel**] and finished [**to match door**]

- F. Curtain Jamb Guides: [**Galvanised steel**] with exposed finish matching curtain slats. Provide with continuous intergal wear strips to prevent metal-to-metal contact and to minimize operation noise.

- G. Hood: [**Match curtain material and finish**]

1. Mounting: [**Face of wall, inside of door opening. Hood and tracks not visible from outside**]

- H. Locking Devices: Equip door with [**slide bolt for padlock, both sides**]

1. Locking Device Assembly: operable from [**inside**]

- I. Manual Door Operator: [~~Push-up operation~~][**Chain-hoist operator**] (addenda)

- J. Curtain Accessories: Equip door with [**push/pull handles**]

- K. Door Finish:
 - 1. Baked-Enamel or Powder-Coated Finish: [**Color matching Architect's sample**]
 - a. Refer to drawings, for colors.
 - b. This may have to be a custom color to match selected paint color (addenda)
 - 2. Interior Curtain-Slat Facing: [**Finish as selected by Architect from manufacturer's full range**] Match adjacent wall finishes
- L. Counter
 - 1. Provide stainless steel counter for the full width of the door opening.

2.2 MATERIALS, GENERAL

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

2.3 DOOR CURTAIN MATERIALS AND CONSTRUCTION

- A. Door Curtains: Unless otherwise indicated, provide slats of thickness and mechanical properties recommended by door manufacturer for performance, size, and type of door indicated, and as follows:

2.4 HOODS

- A. General: Form sheet metal hood to entirely enclose coiled curtain and operating mechanism at opening head. Contour to fit end brackets to which hood is attached. Roll and reinforce top and bottom edges for stiffness. Form closed ends for surface-mounted hoods and fascia for any portion of between-jamb mounting that projects beyond wall face. Equip hood with intermediate support brackets as required to prevent sagging.

2.5 LOCKING DEVICES

- A. Slide Bolt: Fabricate with side-locking bolts to engage through slots in tracks for locking by padlock, located on both left and right jamb sides, operable from coil side.
- B. Chain lock keeper (addenda)

2.6 CURTAIN ACCESSORIES

- A. Push/Pull Handles: Equip each push-up-operated or emergency-operated door with lifting handles on each side of door, finished to match door.

2.7 COUNTERBALANCE MECHANISM

- A. General: Counterbalance doors by means of manufacturer's standard mechanism with an adjustable-tension, steel helical torsion spring mounted around a steel shaft and contained in a spring barrel connected to top of curtain with barrel rings. Use grease-sealed bearings or self-lubricating graphite bearings for rotating members.
- B. Brackets: Manufacturer's standard mounting brackets of either cast iron or cold-rolled steel plate.

2.8 MANUAL DOOR OPERATORS

- A. General: Equip door with manual door operator by door manufacturer.
- B. Push-up Door Operation: Lift handles and pull rope for raising and lowering doors, with counterbalance mechanism designed so that required lift or pull for door operation does not exceed [**25 lbf (111 N)**]

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install overhead coiling doors and operating equipment complete with necessary hardware, anchors, inserts, hangers, and equipment supports; according to manufacturer's written instructions and as specified.
- B. Fire-Rated Doors: Install according to NFPA 80.
- C. Smoke-Control Doors: Install according to NFPA 80 and NFPA 105.
- D. Ensure door operates smoothly and without snags or difficulty operating. Adjust door, or replace components as required to ensure smooth and proper operation.

3.2 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain overhead coiling doors.

3.3 CLEANING AND PROTECTION

- A. Protect door from damage during remainder of the project.
- B. Clean door and hood at time of substantial completion and final turn over. Remove any accumulated dust and debris

- C. Touch up door if finish has been damaged. Touch up should not be visible.
- D. Replace any slats that have been damaged. Replace door if it is not possible to replace damaged slats.
- E. Ensure doors smooth operation at time of final turn over, adjust as required

END OF SECTION 083313

Tuesday, October 24, 2017

Hefferlin + Kronenberg Architects
1216 E Main Street, Suite 120
Chattanooga, TN 37402

RE: Avondale Youth and Family Development Center
Section: 08 45 19 – Polycarbonate Wall System

46000

Please direct all questions & responses to CPI's Point of Contact for this project:

Chuck Hakim

Translucent Design - Daylighting Consultant
3725 Walker Boulevard
Knoxville, TN 37917
Phone: (865) 688-8917
Cell: (865) 256-6576
chakim@translucent-design.net

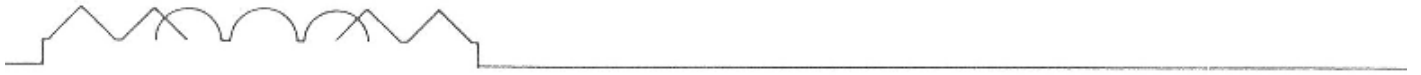
To whom it may concern,

CPI Daylighting presents a competitive, higher performing, value added unitized polycarbonate panel system for your consideration as an equal and viable alternate to tongue and groove. CPI UniQuad® daylighting system will outperform tongue and groove polycarbonate in a broad range of performance criteria, as documented in the attached product comparison chart.

Note: The spec calls for one (1) design of polycarbonate assembly; Tongue and Groove. As a result, we believe the Avondale Youth and Family Development Center will not receive competitive bids for the translucent daylighting components of the project. Approving our system as an equal will offer a financial benefit to the owner, providing durable quality and a competitive alternative daylighting system for this project.

Enclosed are the following for your review of our proposed substitution:

1. Formal CSI Substitution Request Form
2. UniQuad vs Tongue & Groove Comparison Chart
3. UniQuad Solar Data Chart
4. CPI Daylighting Brochure



For detailed product information, including technical data, specifications, cad details, online quotes, and literature requests with an extensive project gallery, please feel free to contact me: chakim@translucent-design.net

I thank you in advance for your consideration.

Sincerely,

Chuck Hakim

Chuck Hakim
Translucent Design, LLC.

Subject to conformance with all specifications, and performance requirements this product may be used as a substitute for what was originally included in the drawings or specifications.

If items are standard in the 'basis of design' product, but they are an up charge in the proposed substitution, they must be provided without increased cost to the owner.

Approval of this substitution request shall not change the original requirements or constitute approval of an items of lesser quality. Product must be available in required colors, finishes and configurations to be valid. The GC shall still be responsible for installing items which conform to the design documents.

HK

Standard CSI Form
Request for Approval as an Equal

TO: Hefferlin + Kronenberg Architects

46000

PROJECT NAME: Avondale Youth and Family Development Center

We hereby submit for consideration, the following product instead of the specified item for the above referenced project:

SECTION - SPECIFIED ITEMS
08 45 19 – Polycarbonate Wall Systems

Proposed Substitution: **CPI INSULATED TRANSLUCENT PANELS: UniQuad® Select From Standard Glazing Colors.**

Attach complete dimensional information and technical data/01300/01340, including laboratory tests, if applicable.

Include complete information on changes to Drawings and Specifications that proposed substitutions will require for its proper installation.

Submit with request all necessary samples and substantiating data to prove equal quality, performance and appearance to that specified. Clearly mark manufacturer's literature to indicate equality in performance. Indicate differences in quality of materials and construction.

Fill in Blanks Below:

- A. Does the substitution affect dimensions shown on Drawings? No: X
 Yes: _____ If yes, clearly indicate changes. _____

- B. Will the undersign pay for changes to the building design, including engineering and detailing costs caused by the requested substitution? No Effect
- C. What affect does substitution have on other trades, other Contracts and Completion date? No Effect
- D. What affect does substitution have on applicable code requirements? No Effect

Submitted on behalf of CPI Daylighting, Inc., by:

Tuesday, October 24, 2017

Date

Telephone: (865) 688-8917
Fax: (865) 688-8920

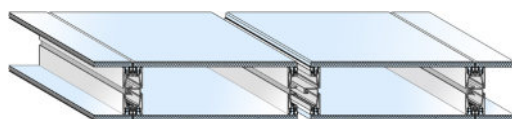
Remarks: _____

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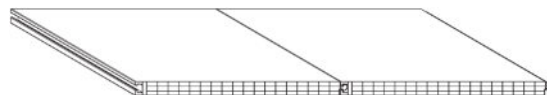
_____ **Accepted** _____ **Accepted As Noted**

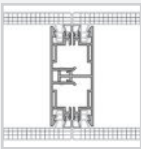

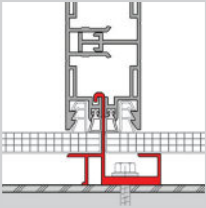
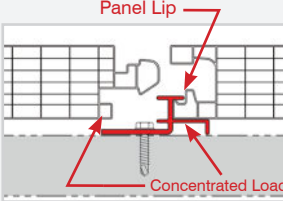
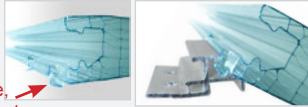
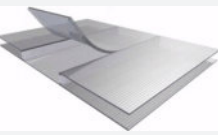
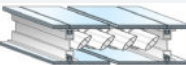
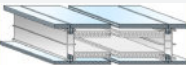

_____ **Not Accepted** _____ **Received Too Late**

CPI UniQuad System



Tongue & Groove Polycarbonate



System	Long spans up to 12'	Short spans - must be supported at a short span to meet building code deflection limitations																																	
Panel Assembly	2 Panel Assembly - available in 76mm (3"), 106mm (4") Two independent glazing panels made of extruded translucent polycarbonate, joined together by a metal interlocking connector	Single Panel Assembly - available in 40mm, 50mm, and various profiles per manufacturer specs One single translucent polycarbonate panel, joined together by a tongue and groove polycarbonate connector																																	
Panel Connector	Internal structural connector Aluminum connector provides structural integrity, deflection resistance, and enables the system to achieve longer spans and withstand higher loads (per IBC). 	Flexible Tongue & Groove connectors  Results in limited structural and deflection performance. Limited to short spans of 3-4 ft for typical loads per IBC requirements.																																	
Deflection Limitations <i>per IBC 1604.3.1 Building Code</i>	Meets the deflection limitation of L/120 for exterior walls with flexible finishes <i>per building codes IBC 1604.3.1 & ASTM E-330</i>	Unless supported at a short-span, it violates the deflection limitation, as required by the building code (L/120), and results in system failure																																	
Retaining Clips	Metal clips connect the internal metal structural member directly to the sub structure 	Metal clips connect a thin polycarbonate section directly to the sub structure. The structural integrity of the connection relies on the ability of each lip of each polycarbonate panel to withstand deflection 																																	
Retaining Clip Performance	Successfully tested to 2000 lb.	Failed at 220 lbs (40mm panel @ 8' span) <i>When subjected to excessive deflection, the clip acts as a knife, causing failure and disengagement</i> 																																	
Wind loads transfer from clips to Polycarbonate panels	No The polycarbonate panel is free to expand & contract. Panels do not experience direct concentrated pressure resulting from clips loads / deflection.	Yes - amplified by excessive deflection The entire panel load is concentrated onto a very small area of the polycarbonate lips and clip. Bending stress & engineering analysis of the lips and clip section shows failure at low load.																																	
Spanning Capabilities <i>based on deflection limitations per building code (IBC 1604.3.1)</i>	<table border="1"> <thead> <tr> <th>Span</th> <th>Load</th> <th>Deflection</th> </tr> </thead> <tbody> <tr> <td>4 ft</td> <td>200 psf</td> <td>L/120</td> </tr> <tr> <td>5 ft</td> <td>150 psf</td> <td>L/120</td> </tr> <tr> <td>8 ft</td> <td>60 psf</td> <td>L/120</td> </tr> <tr> <td>10 ft</td> <td>40 psf</td> <td>L/120</td> </tr> <tr> <td>12 ft</td> <td>20 psf</td> <td>L/120</td> </tr> </tbody> </table>	Span	Load	Deflection	4 ft	200 psf	L/120	5 ft	150 psf	L/120	8 ft	60 psf	L/120	10 ft	40 psf	L/120	12 ft	20 psf	L/120	<table border="1"> <thead> <tr> <th>Span</th> <th>Load</th> <th>Deflection</th> </tr> </thead> <tbody> <tr> <td>4 ft</td> <td>25 psf</td> <td>L/120</td> </tr> <tr> <td>5 ft</td> <td>18 psf</td> <td>L/120</td> </tr> <tr> <td>8 ft</td> <td>Failed at 30 psf*</td> <td>L/30 - Violates code</td> </tr> <tr> <td>9-12 ft</td> <td>Failed</td> <td></td> </tr> </tbody> </table> <p><i>*Test load, with no safety factor, for 40mm panel</i></p>	Span	Load	Deflection	4 ft	25 psf	L/120	5 ft	18 psf	L/120	8 ft	Failed at 30 psf*	L/30 - Violates code	9-12 ft	Failed	
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Infiltration Performance	Water & air resistant under loads per building codes & NFRC 400, ASTM E-283, ASTM E-331	Tongue and Groove connector open under deflection and loads, resulting in dust penetration and air & water leaks																																	
STC Acoustical Rating	*26 per ASTM E 90 *Specialized STC of 30-43 is available	Limited to STC of 21 per ASTM E90																																	
Removable Skin Technology (RST)	Yes Exterior glazing panel can be removed independently of the interior panel without compromising the integrity of the building envelope 	No - Panel damage or removal compromises the integrity of the building envelope In addition, once installed, tongue and groove panels cannot be removed individually. The full run of the system must be removed.																																	
Scalable options for specialized performance	   Controlled Daylighting STC - Sound Reduction Additional Insulation More options available...	Not Available																																	
Insulation U-Factor	0.08 - 0.22	0.28 - 0.30																																	
Evaluation Report for Code Compliance	ICC Evaluation Report available	Non-Compliant																																	

Solar Performance Data for Panel Only & System - per NFRC Standards

NFRC 100 - Insulated U-Factor 10mm / 10mm			
Glazing Panel Options	Panel Only (Center of Glass)	System - Panel & Frame (width x height)	
		2000mm x 2000mm (79" x 79"), mill	2000mm x 6096 mm (79" x 240"), mill
10mm/10mm - no added insulation insert	0.23	0.28	0.26
10mm/10mm - with nano 228 insulation insert	0.13	0.17	0.16
10mm/10mm - with super nano insulation insert	0.07	0.11	0.09

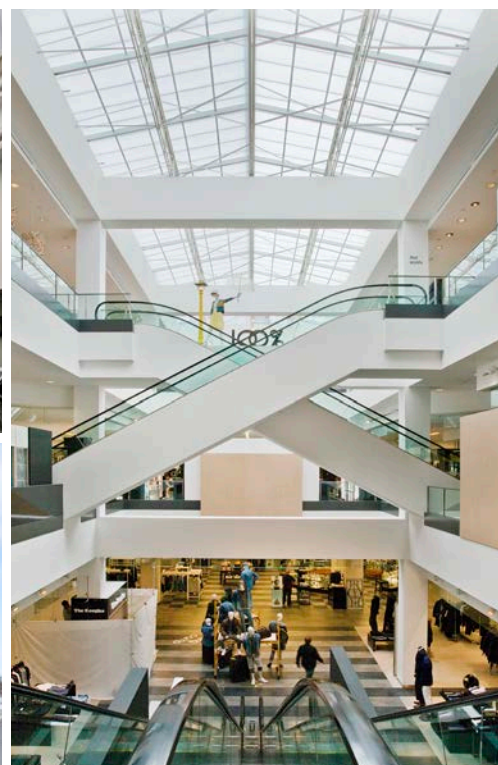
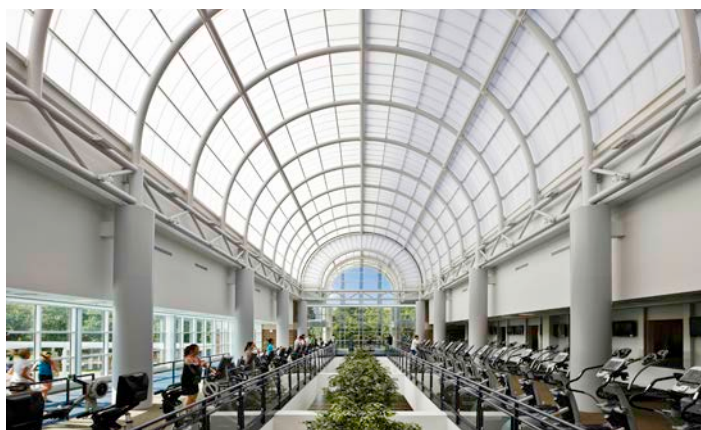
NFRC 202 & 201 - 10mm/10mm - Visible Transmittance & Solar Heat Gain								
-- Refer to the table above for the insulation value that corresponds with each insert type --								
Glazing Panel Combination			Panel Only (Center of Glass)		System - Panel & Frame (width x height)			
					2000mm x 2000mm (79" x 79"), mill		2000mm x 6096 mm (79" x 240"), mill	
Exterior	Interior	Additional Insert	VT%	SHGC	VT%	SHGC	VT%	SHGC
Clear	Clear	-	42%	0.44	37%	0.40	39%	0.41
Clear Matte	Ice White Matte	-	*30%	*0.37	*27%	*0.33	*28%	*0.34
Ice White Matte	Ice White Matte	-	25%	0.35	22%	0.32	23%	0.33
Green	Clear Matte	-	*40%	*0.42	*35%	*0.38	*37%	*0.39
Clear Matte	Clear Matte	-	35%	0.39	31%	0.35	33%	0.37
Blue	Clear Matte	-	25%	0.40	22%	0.36	23%	0.38
White Pearl Low-E	Clear Matte	-	18%	0.24	16%	0.22	17%	0.23
Clear Matte	White Matte	-	*24%	*0.32	*21%	*0.29	*22%	0.30
Ice White Matte	White Matte	-	*19%	*0.30	*17%	*0.27	*18%	*0.28
White Matte	White Matte	-	13%	0.25	11%	0.23	12%	0.23
Clear Matte	Clear Matte	nano 228 insulation	11%	0.18	10%	0.17	10%	0.17
Clear Matte	Clear Matte	super nano insulation	12%	0.19	11%	0.18	11%	0.18

Solar Performance Data - Panel Only (Center of Glass) per ASTM/Calorimeter				
Glazing Panel Color Combinations ^a		Visible Light Transmittance ^b	Solar Heat Gain Coefficient ^c	U-Factor Panel Only (Center of Glass)
Exterior	Interior	VT%	SHGC	
Clear	Ice White Matte	41%	0.41	0.23
Ice White	Ice White Matte	38%	0.34	0.23
Green	Ice White Matte	37%	0.34	0.23
Ice White Matte	Ice White Matte	36%	0.31	0.23
Bronze	Ice White Matte	24%	0.32	0.23
Blue	Ice White Matte	23%	0.32	0.23
White	Ice White Matte	17%	0.24	0.23
Clear	Clear Matte	52%	0.41	0.23
Clear Matte	Clear Matte	50%	0.39	0.23
Ice White	Clear Matte	44%	0.37	0.23
Green	Clear Matte	43%	0.37	0.23
Ice White Matte	Clear Matte	38%	0.34	0.23
Bronze	Clear Matte	27%	0.33	0.23
Blue	Clear Matte	27%	0.35	0.23
White	Clear Matte	18%	0.28	0.23
Clear	White Matte	19%	0.18	0.23
Ice White	White Matte	17%	0.17	0.23
Green	White Matte	15%	0.17	0.23
Bronze	White Matte	8%	0.15	0.23
Blue	White Matte	8%	0.17	0.23
White	White Matte	7%	0.13	0.23
White Pearl Low E	Clear Matte	30%	0.22	0.23
White Pearl Low E	Ice White Matte	24%	0.21	0.23
White Pearl Low E	White Matte	10%	0.12	0.23

Notes:

- Color tint variations effect the solar performances of the glazing. Color tints and insulation levels may be adjusted or customized to achieve other desired solar, optical, insulation and solar heat gain coefficient performance results.
- The visible optical properties were measured using a Licor visible light meter, and a blackened TRA box, under clear sky conditions, with the sun as the energy source, following the ASTM E 972-88 standard.
- The Solar Heat Gain Coefficients were measured using two side-by-sides, water-flow solar calorimeters. The calorimeter test system and the procedure used follow the methodology and procedures given in the NFRC/ASTM Calorimeter Standard, NFRC 200, or other acceptable calculation method.

*Indicates values that are calculated based on NFRC certification and the methodologies and procedures per NFRC 100/200/500.



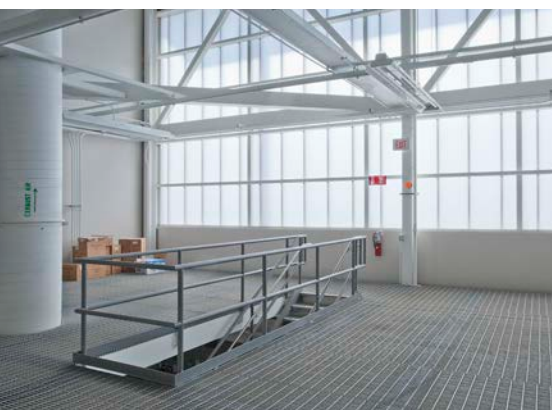
 **CPI Daylighting**
Building Envelope Solutions
Imagination Meets Innovation

Quality Comes to Light®

CPI Daylighting is an award-winning innovator of translucent daylighting technology for high-performance building envelopes – walls, skylights and canopies.

Since the 1980s, CPI Daylighting has been a pioneer and leader of the daylighting industry. From our beginnings as a translucent skylight manufacturer to our evolution into the premier innovator of daylighting technology, we have remained committed to raising the standards for daylighting design and inspiring architects to push the envelope.

Our team of highly-skilled & experienced professionals includes designers, architects, engineers and installers. Together, we leverage our knowledge and expertise to serve as the leading daylighting consultants for the architectural community and building industry.



▲ **Project:** AVCRAD Facility id 29452
Location: Springfield, MO
Architect: Jacobs



▲ **Project:** Hologic, Inc. id 34563
Location: San Diego, CA
Architect: Smith Group Consulting



▲ **Project:** UNF Student Center id 24863
Location: Jacksonville, FL
Architect: Rink Design Partnership



The CPI Difference

We believe that good design can have a profoundly positive effect on the built environment, and improve the way that we work, learn, play and live.

Our mission is to set new, higher standards for the quality and versatility of daylighting technology, as we strive to advance daylighting design.

▲ **Project:** Element LA id 39691
Location: Los Angeles, CA
Architect: Gensler

Collaboration is Key

As expert problem-solvers, we team up with architects and designers to develop solutions that will enhance and optimize the role that natural light plays in the design of buildings. We are here to assist you through each step of the process – from preliminary design to the final installation of the system.

Don't Compromise

As a designer, you shouldn't have to compromise your design due to product limitations or the rigidity of some manufacturers. Our goal is to enable architects to achieve the highest levels of building performance without sacrificing the aesthetic quality of their design. This is why we have worked tirelessly to develop the most versatile daylighting system on the market.

Challenge Us

We offer architects the unique opportunity to redefine daylighting. Be creative, and explore new ways to utilize our technology. Push the envelope with your designs, and inspire others to do the same.

We were founded on innovation, but it is your imagination that continues to drive our evolution. So, what's your next bright idea?



Our Innovative Technology

Two-Panel System

Our system is designed with two independent glazing panels that are mechanically connected to an internal support structure. A key feature of this design is the internal cavity between the two glazing panels. The cavity can be filled with various inserts to customize the performance of the system based on the building's requirements. Rather than sourcing a different system for each type of daylighting application, utilize a single, trusted system that is designed to adapt to meet your building performance needs.

Our translucent daylighting system delivers outstanding performance, offering the best ratio of light transmission to insulation value in the industry, and is the ultimate in design freedom and flexibility.



Removable Skin Technology (RST)

The system is designed so that the interior and exterior glazing panels are independent of one another. Once installed, the interior panels remain intact, and each of the exterior panels can be disengaged and removed without compromising the integrity of the building envelope.

Removable skin technology ensures that if there is a future need for updating the exterior, those panels can be changed without interrupting ongoing building operations. The flexibility to replace individual panels, rather than the entire system, adds another level of dimensionality to a system that is already extremely versatile.



▲ **Project:** Grandview Heights Aquatic Centre id 36690
Location: Surrey, B.C.
Architect: HCMA Architecture + Design

Bi-Color Panel Option

A different color can be selected for each of the two independent glazing panels that make up the system. As a designer, you may want to make a bold statement by using colorful panels on the exterior and utilize a neutral panel color on the interior for a clean, finished look.

While glazing color combinations offer an opportunity for creativity, they also serve a practical purpose when tailoring the performance of the system. Each glazing color has an inherent solar performance. By varying the combination of the glazing colors, not only can you create unique visual elements, but you can also customize the solar performance of the system. The optional matte finish on the panels will increase their ability to diffuse light and eliminate glare.



Longer Clear Spans

Due to the design of the internal support structure, the panel system can achieve longer spans and still comply with deflection and code requirements. The ability to span floor-to-slab minimizes the necessary support structure – reducing the cost of material and labor. It also improves the aesthetic quality of the system.

Nano-Cell® Glazing



Our patented Pentaglas® translucent glazing is precision engineered with Nano-Cell® technology. This specialized panel extrusion results in the cells measuring smaller than 0.18 inches, and provides the panel with increased durability and prolonged resistance to impact. The unique cell structure also significantly improves the quality and even distribution of glare-free natural light.



One trusted system
Infinite possibilities

What's your next bright idea?



▲ **Project:** Akron Children's Hospital Parking Garage id 35531
Location: Akron, OH
Architect: GPD Group



Dynamic Shading System



Military Facility per DoD Standards

Specialized Performance Options

We understand that due to budget, occupancy and building type, not all building envelopes are made equal. That is why CPI Daylighting designed a system with an internal cavity that can be modified with additional inserts to meet the performance requirements of any building. Whether you need a system that can dynamically manage light levels in a classroom, meet forced entry standards for a military facility, or anything in between, we can help you achieve your performance goals.

- Dynamic Shading System
- Additional Insulation
- LED Lighting
- Sound Reduction (STC)
- Forced Entry Resistance
- Perforated Metal Insert





▲ **Project:** Coquille Community Center id 31260
Location: Covington, LA
Architect: Holly & Smith Architects

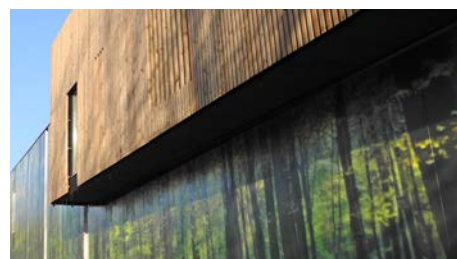
LED Lighting

With the integration of LED lighting, the daylighting system is transformed into an elegant night-lighting feature. With the flip of a switch, your building becomes a beacon of creativity.



Graphics

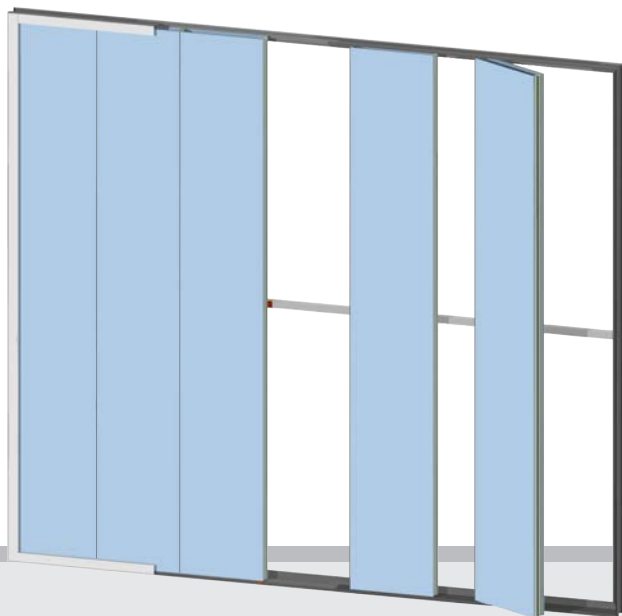
Graphics can be used to create an iconic look or to reinforce a building owner's brand through signage, logos, etc. Add textures, geometric patterns, or other unique visual elements to either the system's interior or exterior, and produce different effects that are sure to make your building stand out.



UniQuad® | Translucent Walls

Design + Engineer + Manufacture

The hallmark of the UniQuad® system is the innovative two piece panel connection, which enables the system to be unitized. The panels themselves are factory glazed and assembled for superior quality control. The unitized construction of the system results in quick, cost-effective installation.



Our Innovative Technology



Frame System

The two piece frame system consists of a sill and sub-sill. It is designed so that the necessary fasteners don't penetrate the sill frame. A thermally broken frame is also available.



UniClip™

The concealed UniClip™ is designed as a structural clip, capable of withstanding heavy loads. The specialized design enables the panels to be installed quickly and remain in place without needing frame caps.

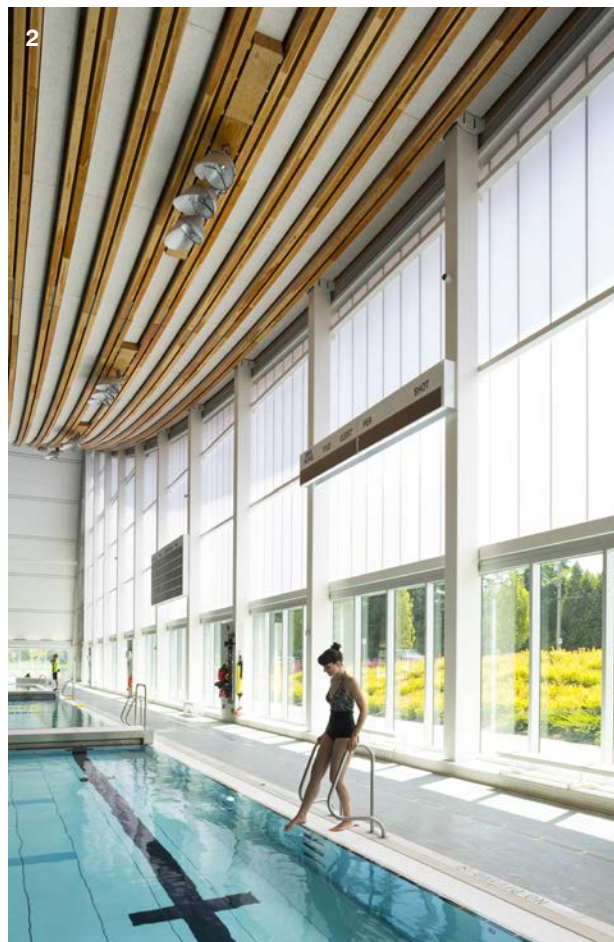


Panel Clip

The panel clip fastens directly to the internal UniQuad® structure, which prevents the glazing from breaking under extreme clip loads, as is common with other systems. The metal-to-metal connection enables the glazing to freely expand and contract. It also increases the system's ability to withstand high loads and span floor-to-slab.



1



2

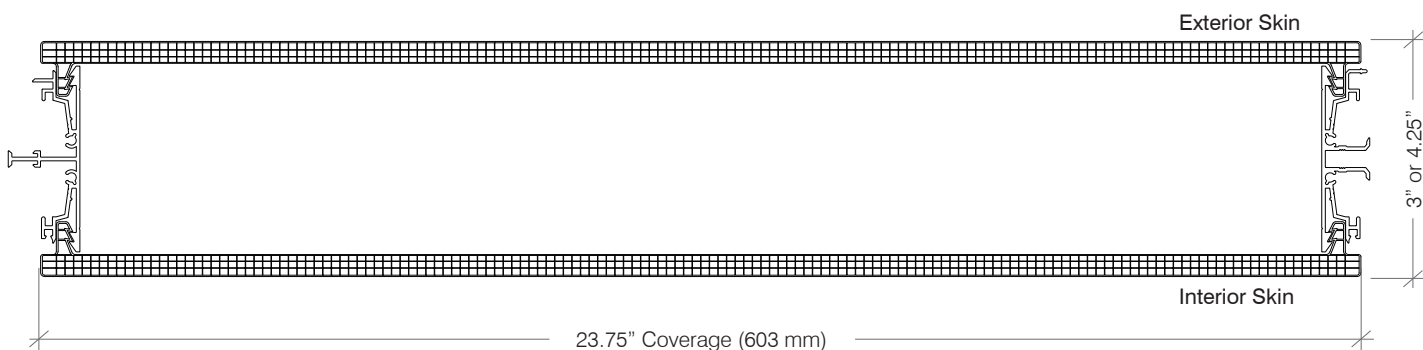


3

- ▲ 1 Eagle Academy id 35107
- 2 Grandview Heights Aquatic Centre id 36690
- 3 Virtua Health & Wellness Center id 23637

Product Specifications

Thickness:	4.25 in (108 mm) & 3 in (76 mm)
Width:	2 ft nominal (23.75 in) (603 mm)
Length:	Up to 44 ft long
Panel Weight:	1.5-2 lbs/ft ²
Technology:	Removable Skin Technology (RST) - Allows for the removal of the exterior panel while the interior panel remains in place
Panel Joint:	Structural member, mechanically interlocking, sealed joint
Exterior Skin:	10 mm Pentaglas® translucent panel with Nano-Cell® extrusion
Interior Skin:	10 mm Pentaglas® translucent panel with Nano-Cell® extrusion
Color Options:	Standard - Clear matte, white matte, ice white matte, blue matte, green matte Consult CPI for other available color options, including bronze matte, gray matte, white pearl low-E, and other exotic colors Note: all colors are available with a non-matte finish upon request
Bi-Color System:	Option to select one color for the exterior glazing panel, and a different color for the interior glazing panel



UniQuad® | Translucent Walls

Design + Engineer + Manufacture

The extreme versatility and unitized assembly of the UniQuad® system makes it the perfect system for walls and building facades. This system is also effective for clerestories and smaller scale punched openings.

UniQuad's sleek, linear aesthetic and modular construction enable the system to be easily integrated with other building envelope components.

With a wide range of colors, and the potential for incorporating graphics and lighting, UniQuad offers designers the opportunity to rethink daylighting in a creative and inspiring way.



- ▲ 1 AVCRAD Facility id 29452
- 2 Eagle Academy id 35107
- 3 Grandview Heights Aquatic Centre id 36690



Large Scale Facades

Individual panels can be manufactured up to 44 ft. tall and are able to span across floors of multi-level buildings. Panels can clear span floor-to-slab, depending on the height and loading conditions.

- ◀ **Project:** Richmond Olympic Oval id 20460
- Location:** Richmond, BC
- Architect:** Cannon Design

Daylighting Zones

Manage the level of transparency to create focal points and control views. Integrate a translucent system to maximize light while minimizing heat gain and glare.

- ◀ **Project:** Virtua Health & Wellness Center id 23637
- Location:** Washington Township, NJ
- Architect:** HGA

A Better, Brighter Building Envelope



▲ **Project:** Austin ISD Performing Arts Center id 35165
Location: Austin, TX
Architect: Pfluger Architects & Miró Rivera Architects



Pentaglas® | Cladding

Our Pentaglas® system can be used for cladding structures that enclose non-conditioned spaces.

Our cladding system can help you to achieve a variety of goals:

- Modernize the exterior of a building
- Meet hurricane standards
- Create an area for signage
- Backlighting

◀ **1** W Hotel Atlanta id 25591
2 Mission Creek Kayak Storage id 24532
3 Sarasota Police Station id 25772
4 3rd & Pine Parking Garage id 22125

Quadwall® | Skylights

Design + Engineer + Manufacture

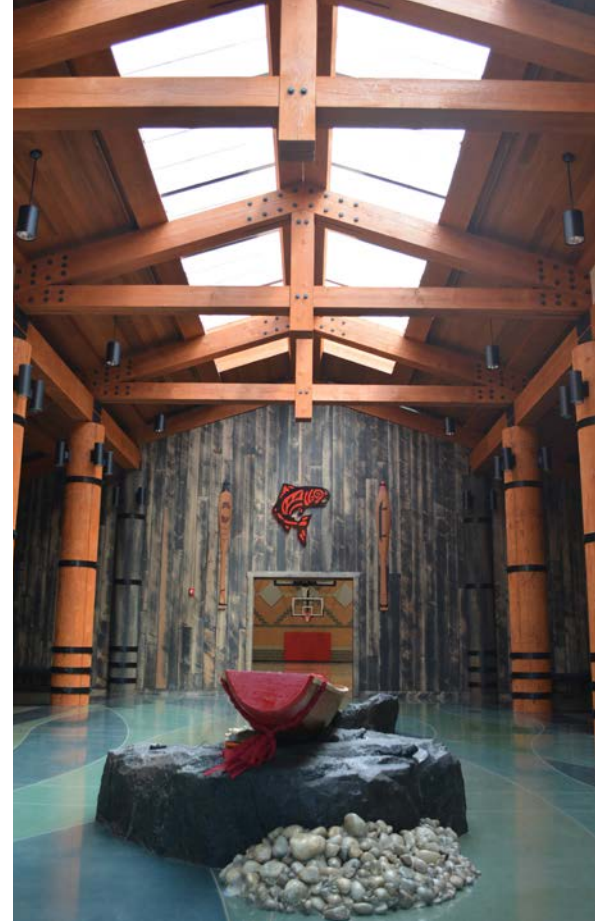
CPI Daylighting utilizes the latest in daylighting technology to provide the market with efficient and effective solutions to meet their daylighting needs and enhance the environments where we work, learn, play and live.

We offer a wide variety of skylight options - ranging in scale from small and simple to monumental and complex. These skylights are available in a variety of standard shapes, including vaults, ridges, single slopes, pyramids, polygons, and domes. We also work with architects and designers to develop custom skylight systems.



“Not only do we now have more light in our atrium, along with watertight integrity, but we have strengthened our relationship with employees and customers by providing an environment in which they can thrive.”

— Pete Flood | Construction project manager, SAS



▲ **Project:** Stillaguamish Community Center id 38391

Location: Arlington, WA

Architect: Womer and Associates

► **Project:** Bogan Park Aquatic Center id 33261

Location: Buford, GA

Architect: Wright & Mitchell Architects



Skylights over atriums and large common spaces are an impactful design feature that can make a space more inviting and create an open and comfortable environment for occupants.

◀◀ **Project:** Hologic, Inc. id 34563

Location: San Diego, CA

Architect: Smith Group Consulting

◀ **Project:** Bloomingdale's at Beverly Center id 35264

Location: Los Angeles, CA

► **1** Allen High School id 42976

2 University of Oregon Student Rec id 36496

3 Mall Del Norte id 23445





IntelalSun® is a dynamic shading system that adjusts based on the angle of the sun and user-controlled settings. IntelalSun effectively balances light-levels and eliminates solar heat gain and glare throughout the day. This dynamic system improves building efficiency by lowering peak loads and utility costs, and creates a comfortable environment for occupants. IntelalSun - the perfect solution for all your high-performance daylighting needs.

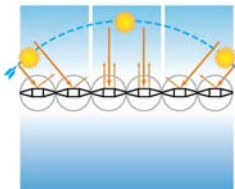
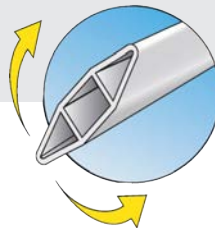
SolaBlades®

The key to IntelalSun's success is the series of rotating internal louvers, called SolaBlades®. The SolaBlades optimize building performance by regulating the amount of sunlight, solar heat gain and shading within a given space. With the ability to rotate a full 360 degrees, the blades gradually adjust their angle throughout the day to deliver and maintain the desired amount of light. With a system that adapts to harvest daylight when the sun is at a low angle and shade the space during peak sunlight hours, you are no longer limited to designing a system for a single daylighting scenario.

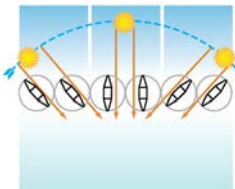
Dynamic Shading System for Controlled Daylighting



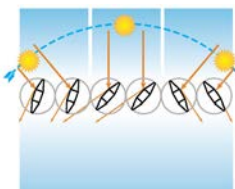
SolaBlade® Sun Tracking



Minimum light transmission and solar heat gain



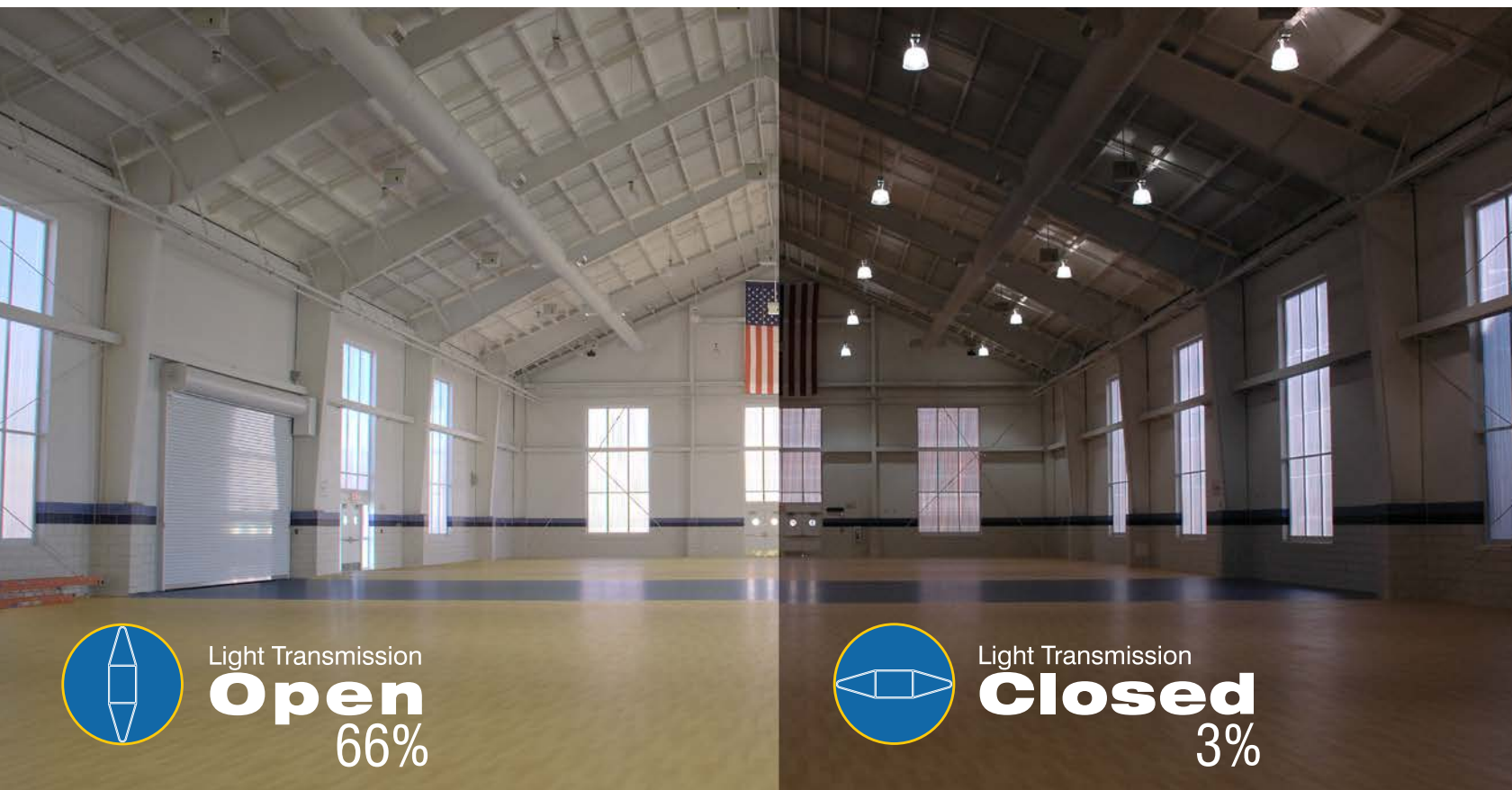
Maximum light transmission regardless of sun angle



Blades are angled to diffuse light transmission to suit user preferences



▲ **Project:** San Benito High School id 40711
Location: Hollister, CA
Architect: Aedis Architects



▲ **Project:** Great Lakes Naval Training Facility id 20405
Location: Great Lakes, IL
Architect: Wight & Company

Dynamic Daylighting

Sensors on the exterior and interior of the building enable the system to track the sun and adjust to maintain optimal light levels throughout the day. The system can be programmed to be fully automated or operated manually from a wall-mounted control. When completely open, the system achieves a light transmission of sixty-six percent, while closing the blades will reduce the light transmission to a mere three percent.



▲ **Project:** University of Oregon Student Rec id 36496
Location: Eugene, OR
Architect: Robertson Sherwood Architects & RDG Planning Group



▲ **Project:** da Vinci Arts Middle School id 26248
Location: Portland, OR
Architect: SRG Partnership

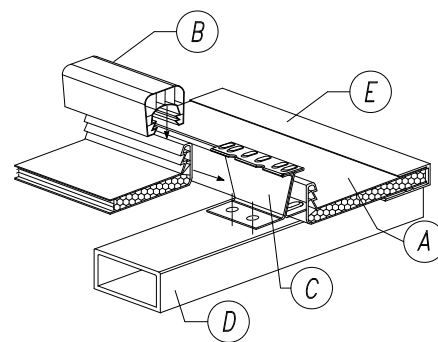
BriteWay™ | Canopies

Design + Engineer + Manufacture

CPI Daylighting is a single source provider of BriteWay™ translucent canopies, offering flexible design options that include both pre-engineered and customized systems from the ground up.

Our canopies utilize patented Pentaglas® translucent glazing, which is precision engineered and extruded to have a Nano-Cell® configuration. This unique glazing extrusion results in superior durability and produces a more even distribution of glare-free natural light into adjacent spaces that would otherwise be cast in shadow.

Pentaglas is designed as a standing seam system that utilizes an interlocking mechanical connection. The innovative double-toothed edge on the up-stands of the panels enables this system to withstand extremely high loads. Systems designed and certified for hurricane resistance are also available.



- A** Pentaglas® glazing panel
- B** Double-toothed panel connector
- C** Stainless steel panel clip
- D** Aluminum purlin substructure
- E** Aluminum framing system



◀ **Project** Tanger Outlet Mall id 36369
Location Oxon Hill, MD
Architect Adams + Associates Architecture

◀ **Project** Monrovia Station Square id 40160
Location Monrovia, CA
Architect IBI Group



Clearspan Canopies ▶

The innovative clearspan design eliminates the need for cross-bracing, which opens up the space below the canopy structure. Our clearspan canopies are pre-engineered based on specific design criteria, and are an economical solution that provides shelter while also allowing natural light into adjacent spaces. The rust-free aluminum structure offers excellent durability and system longevity.





▲ **Project** Norwalk Hospital id 32016
Location Norwalk, CT
Architect Freeman White

▲ **Project** CTA - Cermak Green Line Station id 37707
Location Chicago, IL
Architect Ross Barney Architects

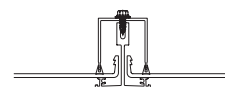
- ▼ 1 Metropolitan MSC id 40892
 2 Kaiser Town Park Community Medical Center id 3356
 3 USCB Recreation Center id 38857
 4 Moanalua Shopping Center id 20809

“The versatility of the Pentaglas® canopy and framing system allowed us to get creative with the concept.”

— Christopher Souza | Architect, AECOM



◀ U-Lite®

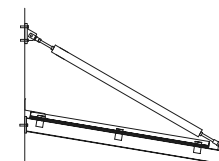


Monolithic standing seam panel system for low slope canopy applications

- High-impact resistant
- Long span capabilities
- Exposed edge design



◀ LiteBrow®



Suspended translucent canopy system

- Highly durable (designed for +/- 120 psf combined loads)
- Economical modular system (Standard sizes: 4 ft, 8 ft & 12 ft)
- Custom design options available

Retrofits & Renovations

Design + Engineer + Manufacture

Why Renovate?

- Outdated or degenerating systems are underperforming
- Discoloration has resulted in a significant decrease in light levels
- Deterioration is causing leaks and potential structural failures

We offer a variety of simple and effective turn-key retrofit and renovation solutions designed to reglaze, over-glaze or replace existing systems that are underperforming or are in desperate need of repair due to damage or deterioration.

Our two panel system ensures that your building envelope is not compromised in the future, as the interior panels will be able to remain intact indefinitely.

Skylight retrofits and renovations can play a key role in revitalizing environments that are suffering from lack of adequate natural lighting.

Deteriorating skylights often block out blue spectrum light, which accounts for the majority of health benefits associated with natural light.

We Renovate...

- Glass
- Acrylic
- Fiberglass
- Polycarbonate

Reglaze

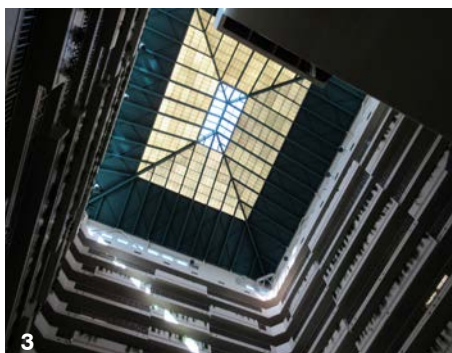
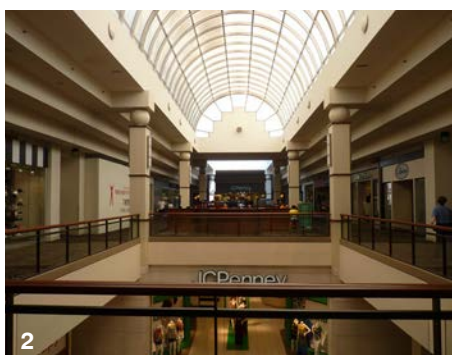
The glazing system will be replaced and the existing structure will be evaluated and reused when possible.

Overglaze

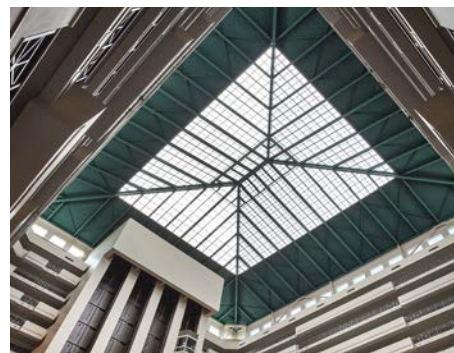
Pentaglas® systems can be designed to envelop leaking systems if their performance is otherwise uncompromised. This option is typical for systems that provide enough light, but may be deteriorating, leaking or need additional insulation performance.

Replace

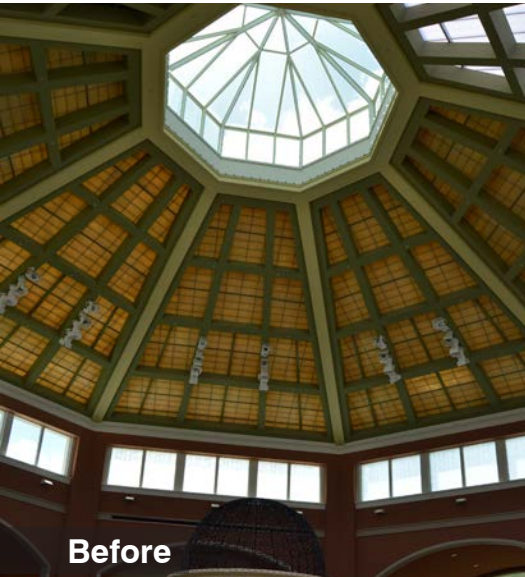
The entire existing system is disassembled and removed and a new system will be installed in its place.



Before



After



Before



After

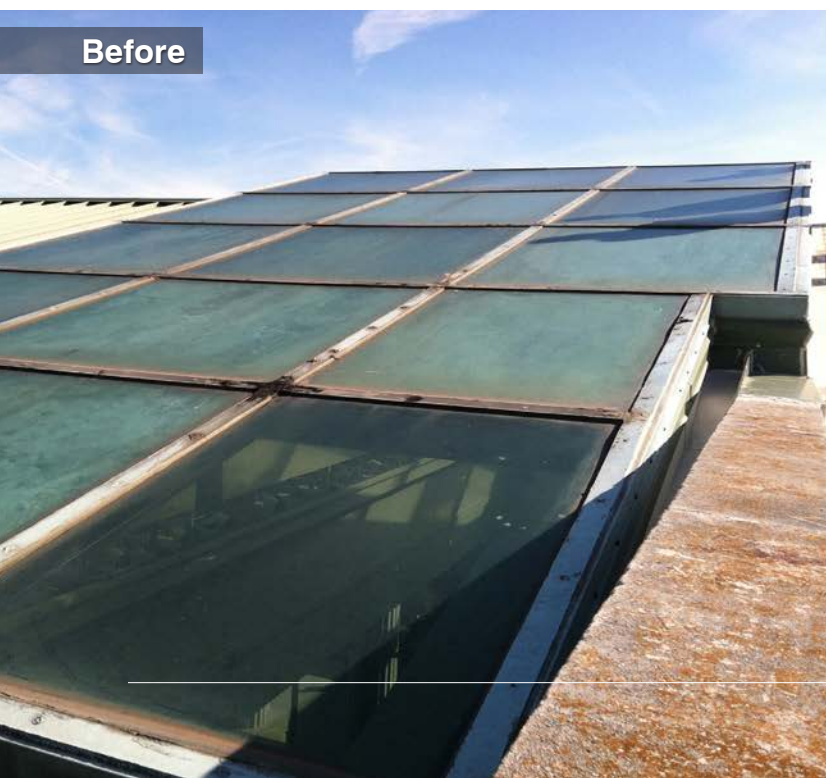
▲ **Project:** Pembroke Lakes Mall id 39972
Location: Pembroke Pines, FL

- ◀ 1 Lakewood Mall id 39224
- 2 Town Center at Cobb id 27224
- 3 Embassy Suites id 34534

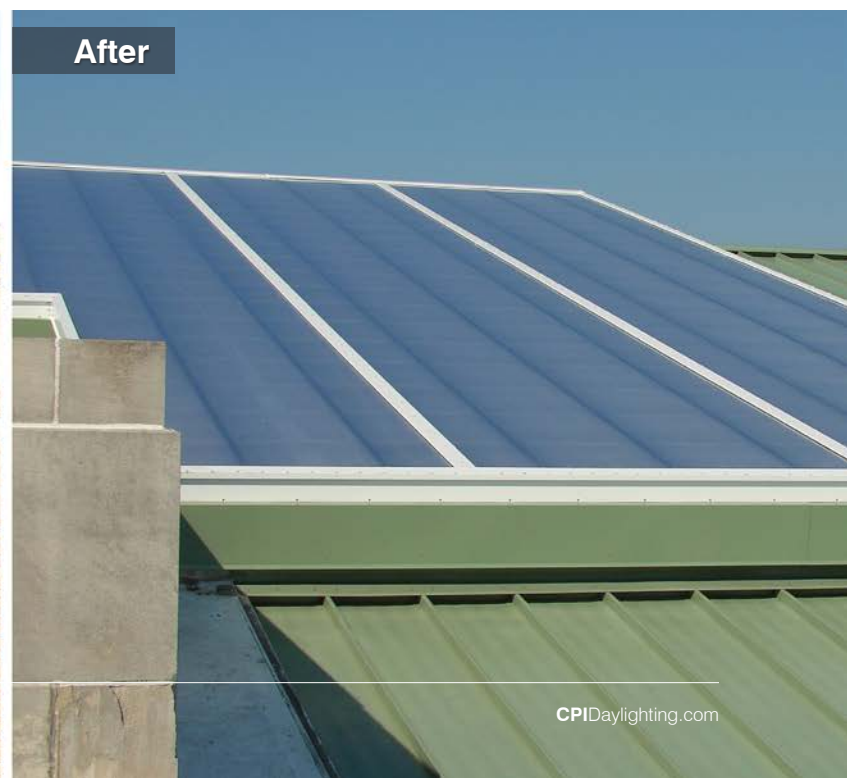
“The difference in the lighting in the hallway and the gym is dramatic. We rarely need to use the lights in the hall because there is so much natural light.”

– John Grote | Executive Director, Northside Community School

▼ **Project:** Raleigh Memorial Auditorium id 36730
Location: Raleigh, NC
Architect: REI Engineers



Before



After



To learn more, visit:

www.cpidaylighting.com
www.intelasun.com

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CPI Daylighting, Inc.

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 Lake Forest, IL 60045 U.S.A

800.759.6985 847.816.1060
 Fax 847.816.0425





SUBSTITUTION REQUEST

(During The Bidding Phase)

Project: The Avondale Youth & Family Development Center

To: Hefferlin Kronenberg Architects

ATTN: Heidi Hefferlin

Re: Substitution Request

Substitution Request Nbr: ONE

From: South Eastern Acoustics, Inc.

Date: 10/24/2017

A/E Project Number 16-057

Contract For: N/A

Specification Title: Folding Panel Partitions

Section: 10 22 39 Page:

Description: Manually Operated, Paired Panels

Article/Paragraph: 2.2 A

Proposed Substitution: MODERCO Series 700 Model 742

Manufacturer: MODERCO, INC. Address: 115 de Lauzon, Boucherville, Canada Phone: (450) 641-3150

Trade Name: MODERCO, INC. Model No: MODERCO MODEL # 742

Attached data includes product description, specifications, drawings, photographs, and performance and test data adequate for evaluation of the request; applicable portions of the data are clearly identified.

Attached data also includes a description of changes to the Contract Documents that the proposed substitution will require for its proper installation

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Proposed substitution does not affect dimensions and functional clearances.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.

Submitted By: Chrissy Smith, Estimator

Signed By: *Chrissy Smith*

Firm: South Eastern Acoustics, Inc.

Address: 4850 Golden Parkway, Suite B 338 Telephone: 678-482-6448

Buford, GA 30518

A/E's REVIEW AND ACTION

- ☐ Substitution approved - Make submittal in accordance with Specification Section noted.
- ☐ Substitution approved as noted - Make submittal in accordance with Specification Section noted.
- ☐ Substitution rejected - Use specified materials.
- ☐ Substitution Request received too late - Use specified materials.

Signed By: _____

Date: _____

Supporting Data Attached: ☐ Drawings ☒ Product Data ☐ Samples ☐ Tests ☐ Reports

Subject to conformance with all specifications, and performance requirements this product may be used as a substitute for what was originally included in the drawings or specifications.

If items are standard in the 'basis of design' product, but they are an up charge in the proposed substitution, they must be provided without increased cost to the owner.

Approval of this substitution request shall not change the original requirements or constitute approval of an items of lesser quality. Product must be available in required colors, finishes and configurations to be valid. The GC shall still be responsible for installing items which conform to the design documents.

HK



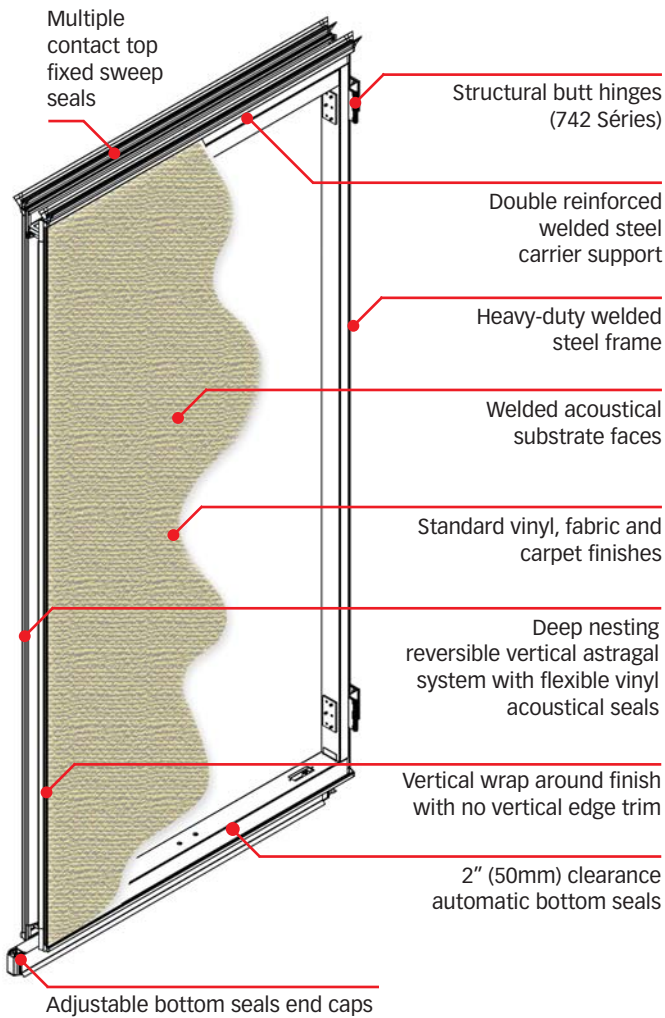
OPERABLE PARTITIONS



MODERCO

700 SERIES

700 SERIES



↑ Vertical wrap around finish with no vertical edge trim

Features



The Moderco 700 series offers a technologically advanced, aesthetically pleasing design. It uses a unique welded steel frame that permits all substrates (skins), both tackable and steel to be welded to the frame. It never requires substrates or skins to be glued or mechanically attached to the frame. This construction provides a durable, unitized panel that will last for years of rugged use.

The basic panel construction is combined with wraparound finishes for a trimless, monolithic appearance. Deep interlocking vertical astragals at all panel joints align panels ensuring a smooth wall face while providing an acoustic seal.

Automatically setting and retracting bottom seals provide 2 inches of operating clearance to accommodate for floor variation and or deflection.

This combination of features together with the 700 series options and many varied finishes make it an outstanding choice for your applications as it combines aesthetics, acoustics, and durability in one construction.





Available Features:

The Moderco 700 SERIES product offers numerous options including marker boards, marker/chalk trays, eraser pockets, same construction pass thru doors and inset exit signs. Consult with your local Moderco distributor or visit www.moderco.com for more details.

PASS DOOR FEATURES

The 700 SERIES pass door system from Moderco has a host of features and options:

Heavy-duty welded laser-cut steel panel and door framing systems

ADA compliant push-pull door hardware

Aluminum-reinforced protective door edge trim for durability and identification

Face-activated bottom seals with stabilizing downward force

Field-adjustable automatic bottom seals on door leaf

Complete panic bar hardware (available upgrade)

Concealed automatic door closer (available upgrade)

Inset exit sign (available upgrade)

Door viewer (available upgrade)

Door window (available upgrade)

Key lock on both standard or panic bar hardware (available upgrade)

ALUMINUM TRACK SYSTEMS

Moderco tracks available with the 700 SERIES are of clear anodized extruded architectural grade alloy. Moderco aluminum tracks feature quiet operation, consistent shape for end-to-end alignment, selection of 3 ceiling soffits, corrosion resistance and hard running surface for proper carrier movement. Moderco tracks have been tested for a minimum of 10 years of use.

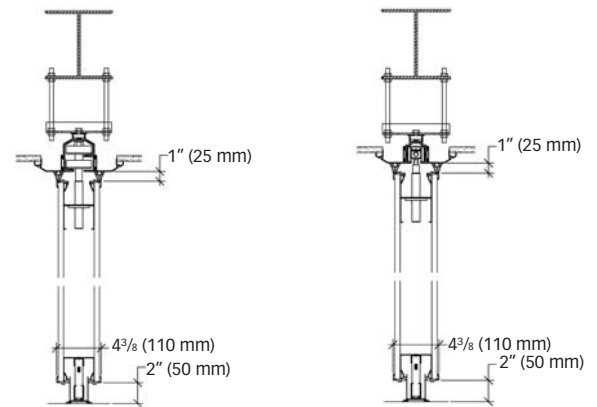
The 700 SERIES uses #33 track and trolleys on the 741 SERIES individual panels system and #45 track and trolleys on the 742 SERIES paired panels system.

CUSTOM-BUILT POCKET DOORS

Moderco offers with the 700 SERIES a complete range of acoustical and non-acoustical custom built pocket doors. These pocket doors consist of either one, two or even three sections and are designed for your specific utilisation.

WARRANTY

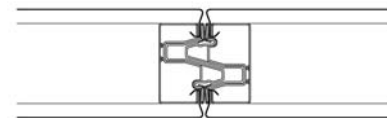
Moderco 700 SERIES products are guaranteed against defects in material and workmanship for two years. Aluminum track and trolleys systems are guaranteed for an extended period of five years. Compare our warranty with others available in the industry.



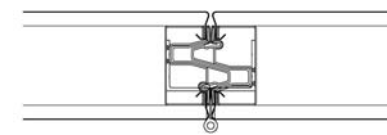
741 SERIES

742 SERIES

700 SERIES VERTICAL SECTIONS

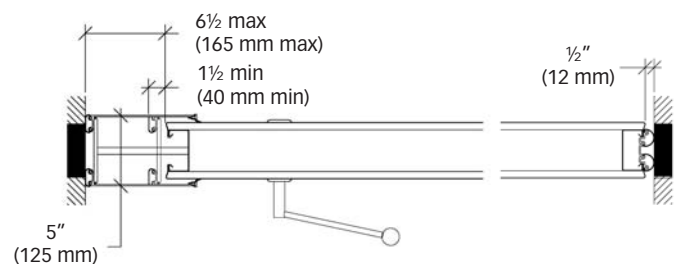


741 SERIES



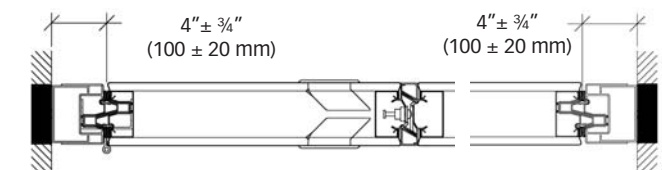
742 SERIES

700 SERIES HORIZONTAL SECTIONS



TELESCOPE CLOSURE

BULB SEAL



HINGED CLOSURE

WALL JAMB

END PANEL CLOSURES SECTIONS

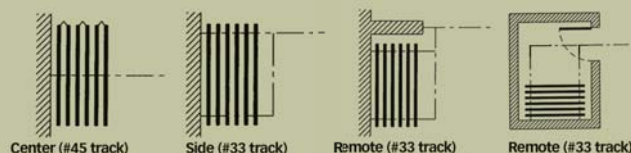
700 SERIES PRODUCT GUIDE

MODEL	STACK	CONFIGURATION	OPERATION	STC RATING	PANEL HANGING WEIGHT Lbs/sq. ft. (Kg/m²)	MAX. HEIGHT	MAX. WIDTH
741	Side	Single	Manual	43 / 48 / 50	5.5 @ 8.0 (27 @ 39)	16'-3"(4,95m)	Unlimited
741	Remote	Single	Manual	43 / 48 / 50	5.5 @ 8.0 (27 @ 39)	16'-3"(4,95m)	Unlimited
742	Center	Pairs	Manual	43 / 48 / 50	5.5 @ 8.0 (27 @ 39)	16'-3"(4,95m)	Unlimited

(PRODUCT GUIDE CONTINUED)

MODEL	TOP FIXED SWEEPS	AUTOMATIC BOTTOM SEALS	VERTICAL EDGE	THICKNESS	FINISHES
741	Std	Std	Trimless	4" (100mm)	Vinyl / Fabric / Carpet
741	Std	Std	Trimless	4" (100mm)	Vinyl / Fabric / Carpet
742	Std	Std	Trimless	4" (100mm)	Vinyl / Fabric / Carpet

STACK MODES



MATERIALS

A. Product to be top supported model [741 individual panels or 742 paired panels] as manufactured by Moderco inc.

1. Panels shall be nominally 4" [100mm] thick, in manufacturer's standard widths up to 48" [1230mm].
2. Panel faces shall be made of appropriate acoustical substrate to meet the STC requirement. Panel faces shall be welded to the internal steel frame. Panel faces shall be formed to protect the panel edges.
3. Frames shall be made of steel, they should be welded. No vertical face trim shall be allowed.
4. Interlocking vertical seals between the panels shall consist of tongue and groove aluminum and vinyl reversible astragals creating a shock-absorbing, deep nesting, impact resistant acoustical interlock between panels.
5. Horizontal top seals shall be continuous contact multi-fingered vinyl.
6. Horizontal bottom seals shall automatically operate as the panels are positioned, providing 2" [50mm] nominal operating clearance, and exert downward force when extended. Crank type seals shall not be acceptable.

B. Weight of the panels shall be between 5.5 and 8.0 lbs./sq. ft. [27,0 and 39,0 kg/sq.m] based on Options selected.

C. Suspension system

1. Track shall be clear anodized tempered aluminum with soffit trim of clear anodized aluminum providing a transition to the ceiling. Track shall include support brackets and hanger rods, spaced to manufacturer's standards.
(Select one) **741**
 - Each panel shall be supported by two dual horizontal wheel trolley assemblies made of glass-reinforced, self lubricating nylon with steel precision ground bearings. Carrier design shall use a counter rotating concept to move panels along the track and through 90 degree "L", "T", & "X" intersections. Carriers using friction discs shall not be permitted.
- or **742**
 - Each panel shall be supported by one 4-wheeled carrier. Wheels to be of hardened steel ball bearings encased with nylon tires. Carrier design shall ensure that all wheels remain in contact with the track during normal movement of the panels.]

D. Finishes

1. Face finish shall be: (select as required):
a. Factory applied reinforced vinyl wall-covering with woven backing, weighing 20 oz. or more per lineal yard [465 g/m]. Color shall be selected from manufacturer's standard color selector.

b. Standard up-grade finishes (color shall be selected from manufacturer's standard color selector):

- (1) Factory applied vertical ribbed carpet (N.R.C. .20)
- (2) Factory applied 100% polyolefin stain resistant fabric
2. Frame color shall be standard dark.
3. Aluminum track and soffit shall be clear anodized

E. Accessories/Options

1. ADA-compliant pass door of the same thickness, construction and finish as the basic panels.
2. Inset dry marker boards. Location and height as indicated on plans.
3. Inset porcelain marker boards. Location and height as indicated on plans.
4. Inset chalk boards. Location and height as indicated on plans.
5. Inset tack boards. Location and height as indicated on plans
6. Acoustical Pocket doors.

OPERATION

A. Panels shall be manually operated, top supported, moved [741 individually or 742 in pairs] from the storage area, positioned in the opening, and seals set.

B. Automatic Bottom Seals

1. Bottom seals shall automatically activate as panels are deployed / positioned without the use of any handle or action by the operator and shall automatically retract when panels are moved to be stored.

C. Final partition closure

1. Telescopic closure panel incorporating an expanding jamb member operated from either side of the panel with a removable handle. Panel shall be capable of compensating for minor out-of-plumb wall conditions and provide a positive vertical seal between partition and building structure.
or
1. Available under 12'-3" [3730 mm]: Hinged Closure Panel permanently attached to the structural wall. Panel permits access between adjacent rooms and shall be of the same finish as basic panels. Top and bottom seals shall be continuous contact multi-ply vinyl. Hardware shall be recessed.

ACOUSTICAL PERFORMANCE

A. Acoustical performance shall have been tested at an NIST and NVLAP-accredited, independent laboratory in accordance with ASTM E90-04 or more recent Test Standards. Standard panel construction shall have obtained a minimum STC rating of (select one): [43, 48 or 50].



MODERCO

For additional information:

www.moderco.com
info@moderco.com

More than 130 distributors Worldwide.
Free brochures,
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Moderco Inc.

115 de Lauzon,
Boucherville,
(Québec) J4B1E7
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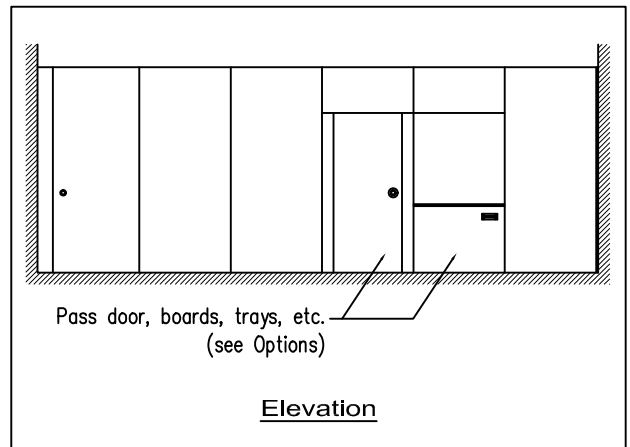
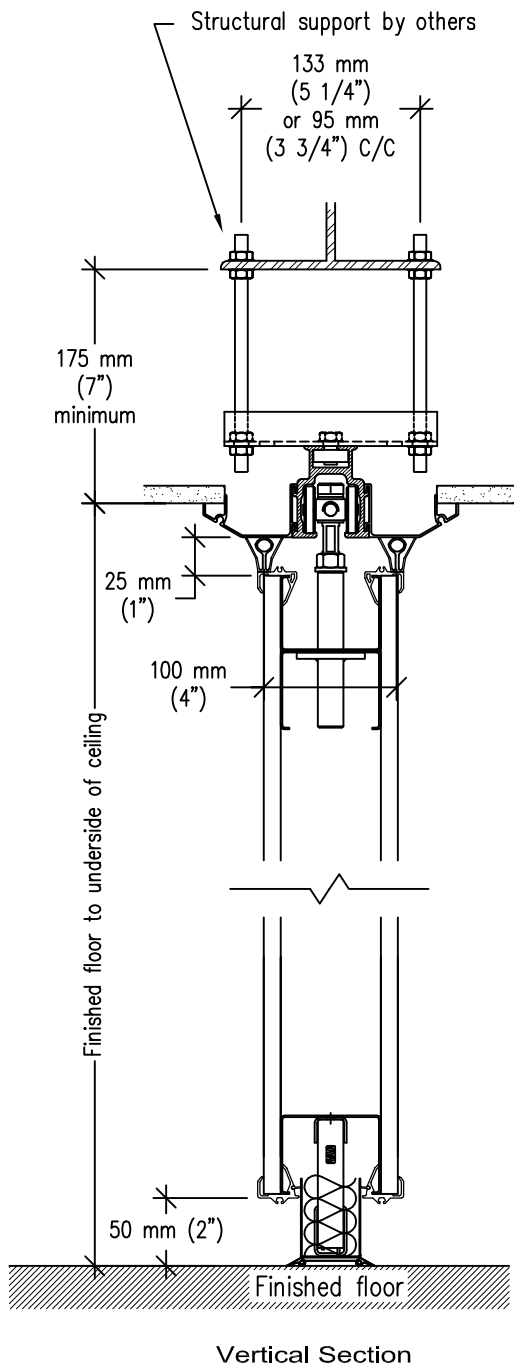


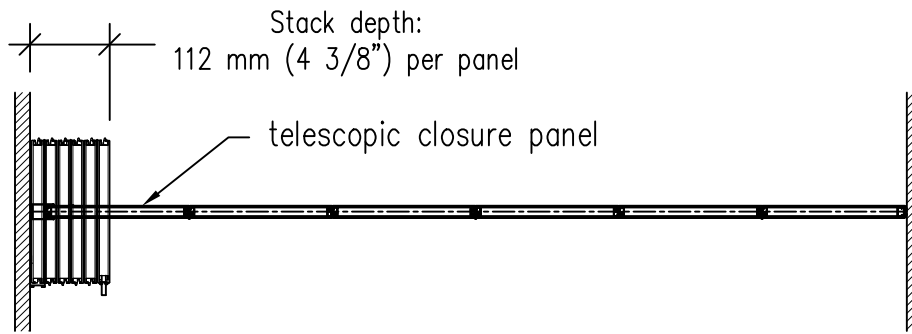
MODERCO

700 Series Model 742

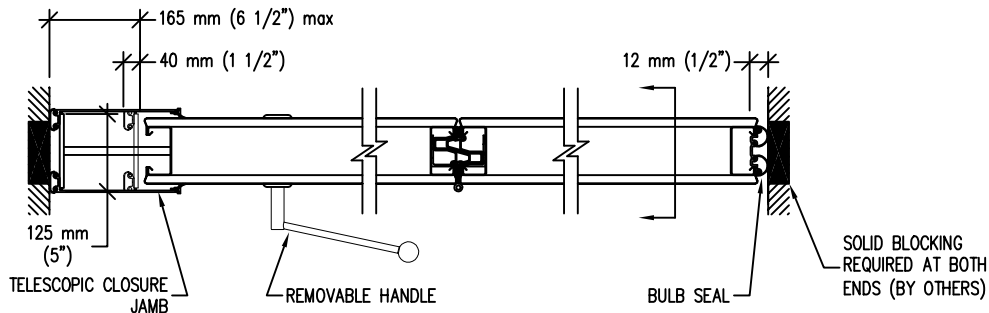
General description:

- Paired panels system
- STC 43, 48, 50, or 54
- Wraparound vertical panel edges (trimless)
- 25mm (1") fixed top sweeps
- 50mm (2") automatic bottom seals
- 13mm (1/2") acoustical board or 24ga minimum steel faces
- Clear anodized aluminum #45 track and W-shaped soffits
- Maintenance-free trolleys made of four, nylon-tired steel ball-bearing wheels
- Maximum height: 4950 mm (16'-3") to underside of track

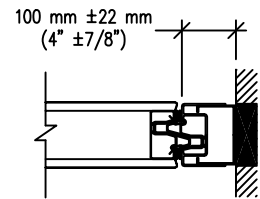




Plan view - Telescopic closure

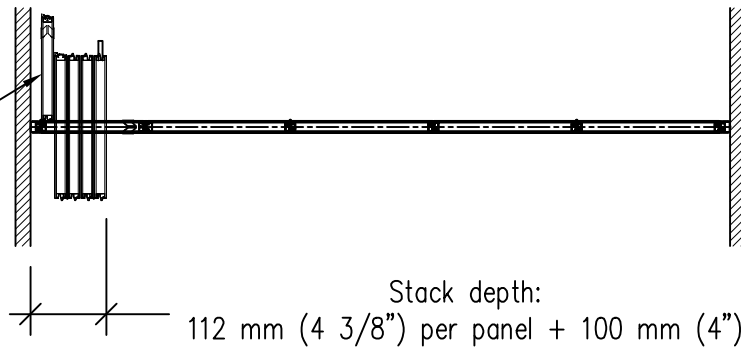


Horizontal Section - Telescopic closure panel/bulb

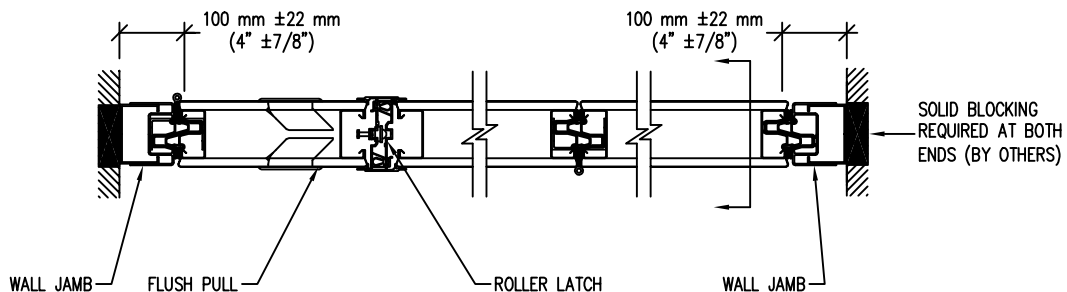


Fixed wall jamb

hinged closure panel:
610 mm (24") Min
1065 mm (42") Max



Plan view - Hinged closure



Horizontal Section - Hinged closure panel/jamb
(Not available for panels higher than 3658 mm (12'-0"))



742 Series Paired Panels

Part 1 - General

1.01 DESCRIPTION

A. General

1. Furnish and install operable partitions and suspension system. Provide all labor, materials, tools, equipment, and services for operable walls in accordance with provisions of contract documents.

1.02 RELATED WORK BY OTHERS

- A. Preparation of opening will be by General Contractor. Any deviation of site conditions contrary to approved shop drawings must be called to the attention of the architect.
- B. All header, blocking, support structures, jambs, track enclosures, surrounding insulation, and sound baffles as required in 1.04 Quality Assurance.
- C. Pre-punching of support structure in accordance with approved shop drawings.
- D. Paint or otherwise finishing all trim and other materials adjoining head and jamb of operable partitions.

1.03 SUBMITTALS

- A. Complete shop drawings are to be provided prior to fabrication indicating construction and installation details. Shop drawings must be submitted within 60 days after receipt of signed contract.

1.04 QUALITY ASSURANCE

- A. Preparation of the opening shall conform to the criteria set forth per ASTM E557 Standard Practice for Architectural Application and Installation of Operable Partitions.
- B. The partition STC (Sound Transmission Classification) shall be achieved per the standard test method ASTM E90-04 and E413-04. Test run under ASTM procedures prior to E90-04 shall not be permitted. All tests must be from an independent, currently operating, NIST and NVLAP-accredited Laboratory available to verify results.

1.05 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Proper storage of partitions before installation, and continued protection during and after installation will be the responsibility of the General Contractor.

1.06 WARRANTY

- A. Partition Panels shall be guaranteed for a period of two years with all mechanical parts including track and carriers guaranteed for a period of five years. This guarantee is against defects in material or workmanship of manufacturer's product.



Part 2 - Products

2.01 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by the following:
1. Moderco, Inc.

2.02 MATERIALS

- A. Product to be top supported 742 Series paired panels as manufactured by Moderco, Inc.

1. Panels shall be nominally 4" [100mm] thick, in manufacturer's standard widths up to 48" [1230mm], and hinged in pairs.
2. Panel faces shall be made of appropriate acoustical substrate to meet the STC requirement. Panel faces shall be welded to the internal steel frame. Panel faces shall be formed to protect the panel edges. *or*

Optional:

Panel faces shall be steel backed with proper acoustical material. Panel faces shall be welded to the internal steel frame. Panel faces shall be formed to protect the panel edges.

3. Frames shall be made of steel and be welded. No vertical face trim shall be allowed.

Optional:

Vertical astragals shall have integral protective trims.

4. Interlocking vertical seals between the panels shall consist of tongue and groove aluminum and vinyl reversible astragals creating a shock-absorbing, deep nesting, impact resistant acoustical interlock between panels.
 5. Horizontal top seals shall be continuous contact multi-fingered vinyl.
 6. Horizontal bottom seals shall automatically operate as the panels are positioned, providing 2" [50mm] nominal operating clearance, and exert downward force when extended. Crank type shall not be acceptable.
 7. Panels shall be connected with a minimum of two hinges.
- B. Weight of the panels shall be between 5,5 to 9,2 lbs./sq. ft. [27 to 45 kg/sq.m] (*based on STC value selected*) plus or minus 1 lb. based on options selected.
- C. Suspension system:
1. Track shall be tempered aluminum with integrated soffit trims providing a transition to the ceiling. Track shall include support brackets and rods, spaced to manufacturer's standards.
 - a. Each panel shall be supported by one 4-wheeled carrier. Wheels to be of hardened steel ball bearings encased with nylon tires. Carrier design shall ensure that all wheels remain in contact with the track during normal movement of the panels.



Optional:

1. Track shall be heavy gage steel supported by support brackets and hanger rods, spaced to manufacturer's standards for height and STC specified.
 - a. Each panel shall be supported by one 4-wheeled carrier. Wheels to be of hardened steel ball bearings with steel tires.

D. Finishes

1. Face finish shall be: (select as required):
 - a. Factory applied reinforced vinyl wall-covering with woven backing, weighing 20 oz. or more per lineal yard [465 g/m]. Color shall be selected from manufacturer's standard color selector.
 - b. Standard up-grade finishes (color shall be selected from manufacturer's standard color selector):
 - (1) Factory applied vertical ribbed carpet (N.R.C. 0.20)
 - (2) Factory applied 100% polyolefin stain resistant fabric

Optional:

- (1) C.O.M. / Customer's Own Material; Customer supplied & factory applied (requires factory approval for manufacturing compatibility)
- (2) C.S.M. / Customer's Specified Material; Factory supplied & factory applied (requires factory approval for manufacturing compatibility)

2. Frame color shall be standard Dark. *or*

Optional:

- a. Custom Color Painted (optional upgrade)

3. Track finish:

- a. Aluminum track shall be clear anodized. *or*

Optional upgrade:

- Custom Anodized. *or*
- Custom Color Painted.

Optional:

- a. Steel track shall be painted white.

E. Accessories/Options

1. ADA-compliant pass door of the same thickness, construction and finish as the basic panels. Locate where shown on the plans.

Optional:

- a. Concealed Automatic Door Closer
- b. Dead bolt Lock (not available on egress doors)
- c. Inset Panic Bar lockable on lever side
- d. Inset Self-Illuminated Exit Sign (above door)
2. Surface-mounted dry marker boards. Location and height as indicated on plans.
3. Surface-mounted tack boards. Location and height as indicated on plans
4. Acoustical Pocket doors.

Options:

- a. Non-Acoustical Pocket Door
- b. Dead bolt Lock



2.03 OPERATION

- A. Panels shall be manually operated, top supported, moved in pairs from the storage area, positioned in the opening, and seals set.
- B. Automatic Bottom Seals
 - 1. Bottom seals shall automatically activate as panels are deployed / positioned without the use of any handle or action by the operator and shall automatically retract when panels are moved to be stored.
- C. Final partition closure to be by:
 - 1. Telescopic closure panel incorporating an expanding jamb member operated from either side of the panel with a removable handle. Panel shall be capable of compensating for minor out-of-plumb wall conditions and provide a positive vertical seal between partition and building structure. *or*

Optional:

- 1. Available under 12'-3" [3730 mm]: Hinged Closure Panel permanently attached to the structural wall. Panel permits access between adjacent rooms and shall be of the same finish as basic panels. Top and bottom seals shall be continuous contact multi-ply vinyl. Hardware shall be recessed.

2.04 ACOUSTICAL PERFORMANCE

- A. Acoustical performance shall have been tested at an NIST and NVLAP-accredited, independent laboratory in accordance with ASTM E90-04 or more recent Test Standards. Standard panel construction shall have obtained a minimum STC rating of (*select one*) 43, 48, 50 or 54.
 - 1. Copies of the written test report are to be made available upon request. Tests must have been conducted at a laboratory available for verification of results.

Part 3 - Execution

- A. Installation.
 - 1. The complete installation of the operable wall system shall be by an authorized factory-trained installer and be in strict accordance with the approved shop drawings and manufacturer's standard printed specifications, instructions, and recommendations.
- B. Cleaning
 - 1. All track and panel surfaces shall be wiped clean and free of handprints, grease, and soil.
 - 2. Packing and other installation debris shall be removed from the job site.
- C. Training
 - 1. Installer shall demonstrate proper operation and maintenance procedures to owner's representative.
 - 2. Operating handle and owner's manuals shall be provided to owner's representative.

TEST REPORTFOR: Moderco Inc.
Boucherville, Quebec, CanadaSound Transmission Loss Test
RAL™-TL08-344ON: 700 Series Partition Wall (Operable)
[Gypsum Board – 22 Gauge Steel - Welded Steel Frame –
22 Gauge Steel - Gypsum Board]Page 1 of 4

CONDUCTED: 10 December 2008

REVISION: 19 October 2011

TEST METHOD

Unless otherwise designated, the measurements reported below were made with all facilities and procedures in explicit conformity with the ASTM Designations E90-04 and E413-04, as well as other pertinent standards. Riverbank Acoustical Laboratories has been accredited by the U.S. Department of Commerce, National Institute of Standards and Technology (NIST) under the National Voluntary Laboratory Accreditation Program (NVLAP) for this test procedure (NVLAP Lab Code: 100227-0). A description of the measuring technique is available separately.

DESCRIPTION OF THE SPECIMEN

The test specimen was designated by the manufacturer as 700 Series partition wall (operable). The overall dimensions of the specimen as measured were nominally 4.27 m (168 in.) wide by 2.68 m (105.5 in.) high and 102 mm (4 in.) thick. The full height closure panel at one end measured nominally 159 mm (6.25 in.) thick (included in specimen area). The full width header panel attached to the top of the laboratory test frame measured nominally 133 mm (5.25 in.) thick (not included in specimen area). The specimen was installed by the manufacturer directly into the laboratory's 2.74 m (9 ft) by 4.27 m (14 ft) wood-lined steel frame which was sealed on its periphery (both sides) with dense mastic.

The manufacturer's details of the specimen were as follows: The panels were composed as follows: Gypsum board – 22 gauge steel - welded steel frame – 22 gauge steel - gypsum board. The operable partition wall had retractable seals on the bottom and fixed seals on the top. The test specimen was a top supported, manually operated folding operable partition. The overhead track was covered on both sides by a gypsum board construction bulkhead covered with dense mastic and was not included in the overall area of the sample. The assembly consisted of a single No. 45 track system with a No. 45 trolley per panel. Each trolley was made of four (4) steel ball bearings with nylon tires. The specimen consisted of a header, end closure and three panels. Three movable panels measured 1.38 m (54.5 in.) wide by 2.69 m (106 in.) high and 102 mm (4 in.) thick and weighed a total of 485 kg (1,069 lbs.). The end closure panel measured 197 mm (7.75 in.) wide by 2.7 m (106.25 in.) high by 159 mm (6.25 in.) thick and weighed 30.4 kg (67 lbs.). The latching device was a positive acoustically designed seal. A visual inspection verified

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NVLAP Lab Code 100227-0

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TEST REPORT

Moderco Inc.

RAL™-TL08-344

10 December 2008

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REVISION: 19 October 2011

the manufacturer's details of the specimen. The specimen was opened and closed at least five times, and the test was conducted with no further adjustments.

The weight of the specimen as measured was 515.3 kg (1,136 lbs.), an average of 45.1 kg/m² (9.2 lbs/ft²). The transmission area used in the calculations was 11.4 m² (123 ft²). The source and receiving room temperatures at the time of the test were 21±2°C (71±2°F) and 52±1% relative humidity. The source and receive reverberation room volumes were 178 m³ (6,298 ft³) and 177 m³ (6,255 ft³), respectively.

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RIVERBANK ACOUSTICAL LABORATORIES

1512 S. BATAVIA AVENUE
GENEVA, ILLINOIS 60134

Alion Science and Technology

630/232-0104
FOUNDED 1918 BY
WALLACE CLEMENT SABINE

TEST REPORT

Moderco Inc.

RAL™-TL08-344

10 December 2008

Page 3 of 4

REVISION: 19 October 2011

TEST RESULTS

Sound transmission loss values are tabulated at the eighteen standard frequencies. A graphic presentation of the data and additional information appear on the following pages. The precision of the TL test data is within the limits set by the ASTM Standard E90-04.

<u>FREQ.</u>	<u>T.L.</u>	<u>C.L.</u>	<u>DEF.</u>	<u>FREQ.</u>	<u>T.L.</u>	<u>C.L.</u>	<u>DEF.</u>
100	20	0.75		800	50	0.16	2
125	30	0.51	4	1000	53	0.12	
160	31	0.65	6	1250	54	0.14	
200	35	0.35	5	1600	56	0.16	
250	38	0.39	5	2000	58	0.08	
315	44	0.29	2	2500	57	0.11	
400	46	0.30	3	3150	59	0.05	
500	47	0.20	3	4000	61	0.07	
630	49	0.24	2	5000	62	0.05	

STC=50

ABBREVIATION INDEX

FREQ. = FREQUENCY, HERTZ, (cps)

T.L. = TRANSMISSION LOSS, dB

C.L. = UNCERTAINTY IN dB, FOR A 95% CONFIDENCE LIMIT

DEF. = DEFICIENCIES, dB<STC CONTOUR (SUM OF DEF = 32)

STC = SOUND TRANSMISSION CLASS

Tested by Dean Victor

Dean Victor
Senior Experimentalist

Approved by David L. Moyer

David L. Moyer
Laboratory Manager

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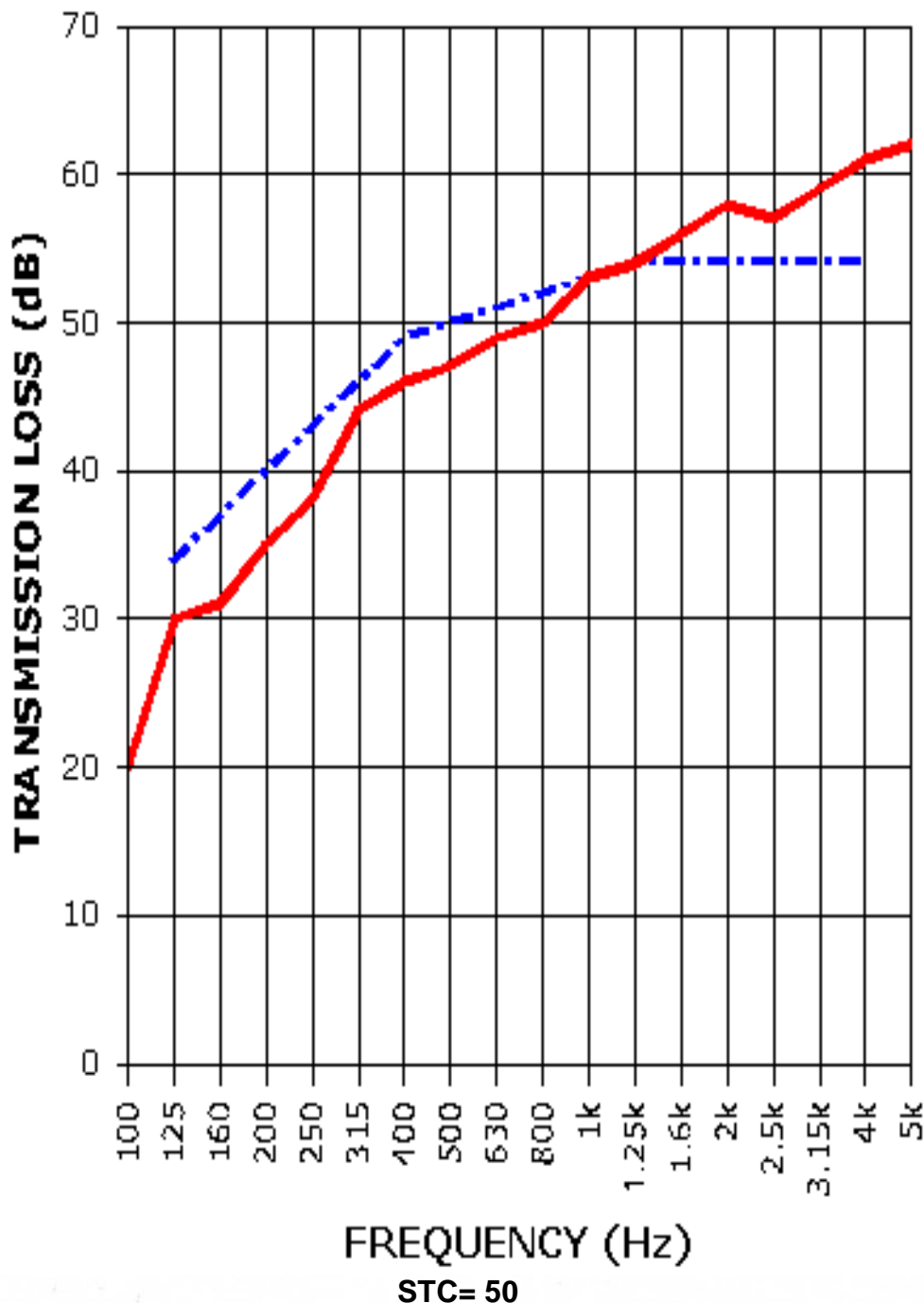
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TEST REPORT

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SOUND TRANSMISSION REPORT RAL - TL08-344



TRANSMISSION LOSS
SOUND TRANSMISSION LOSS CONTOUR

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Substitution Request Form

Architect: Hefferlin & Kronenberg Architects

Project: Avondale Youth & Family Development Center – Chaattanooga, TN

We hereby submit for your consideration the following product instead of the specified item(s) for the above project:

Section	Specified Manufacturer	Specified System
09640	Connor Sports	Rezill Sleepeer DIN
	Manufacturer	Proposed System
09640	Action Floor Systems	ProAir AR

Attach complete technical data including laboratory tests if applicable.

Include complete information changes to Drawings and/or Specifications which proposal substitution require for proper installation.

Fill in the blanks below, use additional sheets if necessary:

- A. Does the substitution affect dimensions shown in Drawings? **None**
- B. Will the undersigned pay for changes to building design, including engineering and detailing costs caused by substitution? **Not Applicable**
- C. What effect does substitution have on other trades? **None**
- D. Differences between substitution and specified item? **Floor Systems Are Of Equal Design and Quality.**
- E. Manufacturer's guarantees of proposed and specified items are: **Same**

The undersigned certifies that the function, appearance and quality are superior or equivalent to the specified item.

Submitted By,



David L. Fields
Regional Representative
Action Floor Systems, LLC.
4781 N US Hwy 51
Mercer, WI 54547
p. 843-312-5828
f. 715.476.3585
davef@actionfloors.com

For Use by the Design Consultant

Subject to conformance with all specifications, and performance requirements this product may be used as a substitute for what was originally included in the drawings or specifications.

If items are standard in the 'basis of design' product, but they are an up charge in the proposed substitution, they must be provided without increased cost to the owner.

Approval of this substitution request shall not change the original requirements or constitute approval of an items of lesser quality. Product must be available in required colors, finishes, configurations, and warranty to be valid. The GC shall still be responsible for installing items which conform to the design documents.

HK

Page 2

Avondale Youth & Family Development Center

Actions Pro Action Thrust system uses the same two stage dual durometer resilient pad two layers of 15/32" APA rated sheathing, 25/321" x 2 1/4" MFMA Maple Flooring.

Specification, Cut sheet, System Data Sheet, System Comparison Sheet, and Substitution Request Form attached.

Thank you for your consideration in this Approval Request.

Sincerely,

A handwritten signature in dark ink, appearing to read "David L. Fields", written in a cursive style.

David L. Fields

Eastern Regional Representative

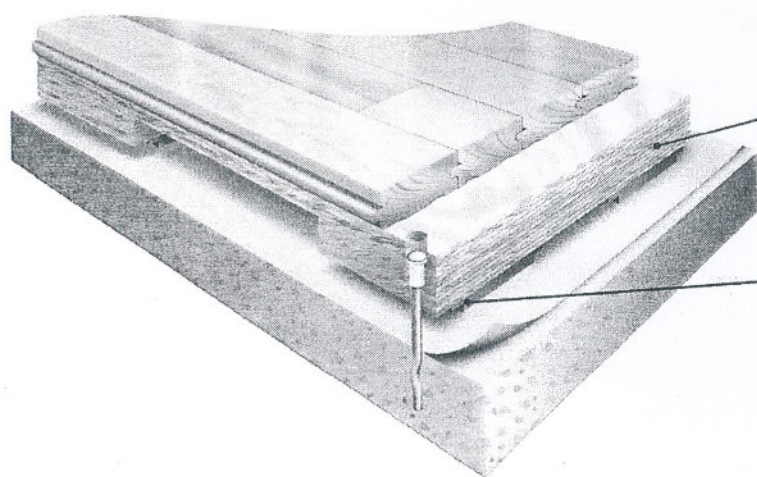
Action Floor Systems

SYSTEM DATA SHEET



Pro Air AR

SYSTEM TYPE: FIXED RESILIENT



Wide body laminated sleepers and plywood provide the system with dimensional strength and stability

Air Tech II+ 7/16" Natural Rubber Pads

MFMA NORTHERN HARD MAPLE
BY ACTION:

Random Length (RL)
Action Long Length (FJ)

TESTING AGENCY:

Certified by ISSS

PERFORMANCE MEETS OR EXCEEDS:

EN 14904 Type 4 Certified
DIN 18032 Part 2
FIBA Level 1

SLAB DEPRESSION:

25/32" (20 mm): 2-1/2" (64 mm)
33/32" (26 mm): 2-3/4" (70 mm)

LEED:

FSC Maple & Subfloor available, MR credits - based on products, selected materials and facility locations.

PERFORMANCE & SYSTEM STABILITY

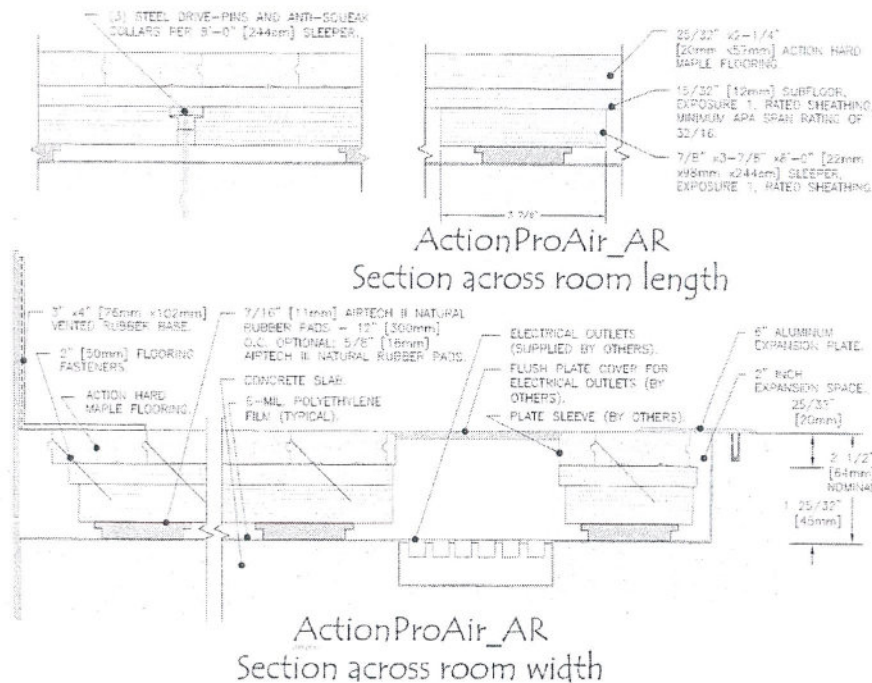
- Factory fabricated sleeper system
- Superior stability and strength
- Great ball response
- Anchored system confirms uniform performance



NEGATIVE
carbon
footprint
GO-WOOD 2016 VERIFIED

- Action Pro Air AR Floor system is EN Certified providing great ball response and uniform playability to maximize the athletes comfort and performance.
- Factory fabricated wide body sleepers and sheeting layer provide strength and dimensional stability.
- The manufacturer and flooring shall be independently verified by the guidelines of the ISO 14040-2006 and ISO 14044:2006 Life Cycle Assessment (LSA) confirming a negative carbon footprint.
- Carbon Evaluation must be inclusive and based on all corporate facilities, offices and mills
- The manufacturer and flooring shall be independently verified by the guidelines of the ISO 14040-2006 World Resource Institutes Greenhouse Gas Protocol, Scope 1, 2 and 3.
- The manufacturer and flooring shall be registered in the Collaborative for High Performance Schools (CHPS) Product Database.

Complete product specifications and system drawings (CAD and BIM) are available online at:
www.actionfloors.com



Action Pro Air AR



ACTION FLOOR SYSTEMS LLC
 4781 N. U.S. Hwy. 51 Mercer, WI 54547-9708 U.S.A
 PHONE: 800-746-3512 or 715-476-3512 FAX: 715-476-3585
 E-MAIL: info@actionfloors.com

www.actionfloors.com



Action Pro-Air AR Floor System

System Comparison:

Action Pro-Air AR Floor System and Connor Rezill Sleeper or ARS System

	<u>Pro-Air AR</u>	<u>Rezill Sleeper</u>
Slab Depression	2-1/2"	2-1/2"
Continuous 15/32" Subfloor Deck	Yes	Yes
EN 14904 (2006) Certified	Yes	Yes
DIN 18032 Part II Certified	Yes	Yes
ISO 1440:2006 Certified (Life Cycle)	Yes	No
Certified Negative Carbon Footprint	Yes	No
Zero Waste Production Facility	Yes	Yes
Plywood Sleepers	Yes	Yes
Wide-body Sleeper	Yes	Yes
15/32" Plywood Subfloor deck	Yes	Yes
Sleeper Spacing	16" o.c.	16" o.c.
Pad Spacing on Sleepers	12" o.c.	12" o.c.
Performance Pads	Yes	Yes
Pad Material	Natural Rubber	Granular
Pad Thickness	7/16"	7/16"
MFMA Member Mill	Yes	Yes
25/32" Thick Maple Flooring	Yes	Yes
Random Length Maple Flooring	Yes	Yes
Finger Jointed Maple Flooring	Yes	No
Expansion Ridge Technology	Yes	Yes
(1/64" built-in expansion)		

The above comparison is based on each system's standard construction. For optional or custom configurations contact Action Floor Systems, LLC.

The ProAir AR high performance design delivers a floor system to maximize playability, uniformity and longevity. The standard 2-1/2" system profile accommodates the slab depression of many existing slab depressions fitting many renovation applications.

For more information on our performance floor systems including CAD, 3-D BIM models or a Word doc. specification, visit our website or contact our corporate office at 800-746-3512.



*Action ProAir AR*TM

Anchored Resilient Floor System

SPORTS FLOOR SPECIFICATIONS

Action Floor Systems, LLC 4781 N. US Hwy 51 Mercer, WI 54547

toll free: 800-746-3512 | voice: 715-476-3512 | fax: 715-476-3585 | email: info@actionfloors.com | web: actionfloors.com

Contact ACTION FLOOR SYSTEMS, LLC. at www.actionfloors.com or (800)746-3512 for specific project conditions or modifications of this specification.

PART 1 – GENERAL

1.01 DESCRIPTION

A. Related Sections: Cast-in-Place Concrete

1. The general contractor shall provide a level slab, steel troweled to a tolerance of 1/8" (3mm) in a 10'0" (3m) radius and subject to the approval of the wood floor contractor. High spots shall be ground down and low spots shall be filled with an approved leveling compound by the general contractor to the tolerance specified above.
2. MFMA does not acknowledge the use of FF/FL numbers to measure levelness/flatness tolerances in gymnasium concrete slabs.
3. Concrete shall not use river gravel or pea gravel and have an average of 3500 psi. compressive strength after 28 days. Concrete must be cured for 60 days before installation can begin.
4. The concrete slab shall be depressed: 2-1/2" (64mm) for 25/32" (20mm) flooring.

B. Related Sections: Membrane Waterproofing

1. Concrete slabs on or below grade shall be adequately waterproofed beneath the slab and at the perimeter walls and on earth side of below grade walls by general contractor using suitable type membrane.

C. Related Sections: Thresholds

D. Related Sections: Game Standard Inserts

1.02 REFERENCES

- A. MFMA – Maple Flooring Manufactures Association
- B. MFMA PUR – MFMA Performance Uniformity Rating
- C. DIN 18032-2 - Performance Standard
- D. ASTM F2772 - Athletic Performance of Indoor Sport Systems
- E. EN 14904 – European Committee of Standardization for Indoor Sports Surfaces
- F. FIBA – International Basketball Federation
- G. FSC – Forest Stewardship Council
- H. FloorScore – Certified product by CDPH 01350

1.03 QUALITY ASSURANCE

A. Manufacturer Qualifications

1. Basis of design shall be Action ProAir AR as provided by Action Floor Systems, LLC. All system component parts must be supplied by Action Floor Systems, LLC.
2. Manufacturer shall be a MFMA Mill Member in good standing, an established firm experienced in the field, and have been in business a minimum of ten (10) years; Action Floor Systems, LLC or an approved equal.
3. Floor system manufacturer shall be solvent with no bankruptcy proceedings the previous seven (7) years.
4. Carbon Evaluation must be inclusive and based on all corporate facilities; offices and mills.
5. Floor system manufacturer and flooring shall be independently verified by the guidelines of the ISO 14064-1:2006 World Resource Institutes Greenhouse Gas Protocol, Scope 1, 2 and 3.
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9. Floor system manufacturer must provide a Life Cycle Assessment and an Environmental Product Declaration (EPD) in accordance with the Product Category Rule Version 2.2014.
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- B. Floor Contractor/Installer requirements
 1. The flooring contractor must be approved by Action Floor Systems, LLC.
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 - a. EN 14904 (2006)
 - b. DIN 18032 Part 2
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 2. Independent performance testing laboratory shall have Scientific Body Membership in the International Association of Sports Surface Sciences (ISSS).

1.04 SUBMITTALS

- A. Manufacturers product data: Submit **ProAir AR** specification sheets.
- B. Samples: Submit one (1) sample of **ProAir AR**, if requested by architect.
- C. Maintenance literature: Submit one (1) copy of manufactures maintenance instructions.

1.05 WORKING CONDITIONS

- A. The wood flooring shall not be installed until all masonry, plastering, tile, marble and terrazzo work is completed, and overhead mechanical trades and painters have finished in wood floor area. The building must be reasonably dry; all openings must be closed in; permanent heating and air conditioning installed and operating.
- B. The concrete subfloor shall be determined dry by industry standard testing procedures, free of foreign materials and turned over to the Flooring Contractor broom clean. Moderate room temperature of 65 degrees (18 C) or more shall be maintained a week preceding and throughout the duration of the work. Humidity conditions within the building shall approximate the humidity conditions that will prevail when the building is occupied.
- C. Permanent heat, light and ventilation shall be installed and operating during and after installation, maintaining a range of temperature and humidity compatible with the expected low and high moisture content of the flooring. The wood moisture content range is determined by the flooring contractor based on the facility's mechanical controls and geographical location.
- D. Flooring must be stored in a dry, well-ventilated area, not in contact with masonry, to acclimate to building conditions and shall be installed at moisture content compatible with the normally expected environmental range of temperature and relative humidity achieved while the facility is occupied.
- E. Industry standards recommend maintaining indoor relative humidity between 35 percent and 50 percent, and air temperatures between 55 degrees and 75 degrees year-round. By limiting wide swings in atmospheric conditions inside the facility, the expansion and contraction of the flooring system will be limited as the flooring is manufactured at a moisture content most compatible with this range. A 15 percent fluctuation in indoor relative humidity will not adversely affect the maple. Excessive shrinkage and/or expansion may occur with indoor relative humidity variations that exceed 15 percent. The geographical region and HVAC determine the typical range of temperature and humidity for each facility. In buildings where air conditioning is not available, the use of circulating or venting fans will help facilitate excessive shrinkage or expansion

- F. General Contractor shall lock floor area after floor is finished to allow proper cure time. If general contractor or owner requires use of gym after proper cure time, they shall protect the floor by covering with non-marring craft paper or red rosin paper with taped joints until acceptance by owner of complete gymnasium floor.

1.06 WARRANTY

- A. Action Floor Systems, LLC. warrants the material it ships to be free from defects in materials and workmanship for a period of one year and the flooring installer warrants the installation of the flooring to be free of defects in materials and workmanship for a period of one year. The exclusive remedy under this warranty shall be replacement of defective material supplied by Action Floor Systems, LLC. or correction of defective installation by the flooring installer. All implied warranties of merchantability or fitness for intended use are limited to the period of this warranty. This warranty excludes consequential damages.
- B. This warranty does not cover damage caused by fire, winds, floods, chemicals, or other abuse, or by failure of other contractors to adhere to specifications, or neglect of reasonable precaution to provide adequate ventilation during hot and humid weather. This warranty also excludes damage due to excessive dryness or excessive moisture from humidity, spillage, migration through the slab or wall or any other source. This warranty also excludes damage to floors due to ordinary wear and tear, faulty construction of the building, (other than the flooring installation), separation of the concrete slab underlying the floor, settlement of the walls, or use of water on the floor.
- C. During the warranty period, the floor cannot be coated without the permission of the floor contractor.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Flooring *25/32" x 2 1/4" - 2nd BTR Grade*
- * 1. Flooring shall be Northern Hard Maple standard strip flooring, 25/32" x 2-1/4" (20mm x 57mm) or ~~1-1/2" (38mm)~~, TGEM, MFMA grade marked & stamped as manufactured by Action Floor Systems, LLC.
 - * 2. Grades available are MFMA ~~1st, 2nd & Btr. 3rd & Dtr. and 3rd grade.~~
 - ~~3. Long Length Strip Flooring by Action Floor Systems, LLC (optional).~~
 - ~~4. FCC Certified Lumber (optional).~~
 - * 5. Expansion Ridge Technology (ERT) 1/64" milled expansion spacer (optional).
 - ~~6. Factory Sand and Seal Long Length Strip Flooring (optional).~~
- B. Subfloor
- * 1. Vapor barrier shall be 6-mil polyethylene.
 - * 2. Pre-drilled Action ProAir laminated sleepers 7/8" x 3-7/8" x 8', (23mm x 99mm x 2.4m) and AirTech natural rubber pads (AirTech II+ 7/16" (11mm), ~~AirTech III 5/8" (16mm) or AirTech IV 3/4" (19mm)~~) as required by project, attached 12" (300mm) on-center as supplied by Action Floor Systems, LLC.
 - * 3. Panels shall be 15/32" x 4' x 8' (12mm x 1.2M x 2.4m) exposure 1, rated sheathing, minimum APA span rating of 32/16.
- C. Fasteners
- * 1. Sleeper anchors shall be 1/4" x 2-1/2" (6 x 64mm) long anchors or longer to reflect the thickness of optional pads or concrete filler if leveling was required and nylon sleeves.
 - * 2. Subfloor fasteners shall be 1" (25mm) coated staples.
 - * 3. Flooring fasteners shall be 2" (50mm) cleats, or 15-gauge coated staples.
- D. Wall Base
- * 1. Wall base shall be 3" x 4" (76mm x 102mm) vented cove base with pre-molded outside corners (specify black or brown), as supplied by Action Floor Systems, LLC.
- ~~E. Protective Floor Cover (optional)~~
- ~~1. Action AirRide cover system with patented air blower system. System includes Phthalate-free, seamless 10' 0" wide, 20.5 ounce vinyl covers and A frame rack.~~

PART 3 - EXECUTION

3.01 INSPECTION

- A. Inspect concrete slab for proper tolerance and dryness reporting any discrepancies in writing to the general contractor.
- B. All work to put the concrete slab in acceptable condition shall be the responsibility of the general contractor.
- C. Slab shall be broom cleaned by the general contractor.

3.02 INSTALLATION

- A. Cover concrete slab with polyethylene lapping edges 6" (150mm) and seal with adhesive or 2" (50mm) duct tape.
- B. Place the Action ProAir AR laminated sleepers end-to-end in a brick pattern at right angles to the intended direction of the finished flooring, end joints staggered a minimum of 24" (600mm). The sleepers shall be spaced 16" (400mm) on-center (optional 12" (300mm) on-center). Allow 2" (50mm) voids at perimeter and vertical obstructions.
- C. The sleeper shall be secured to the concrete slab with nylon sleeves and anchors in the pre-drilled anchoring pockets.
- D. Place the sheathing in a brick pattern over sleepers with the long dimension of the sheet at a 90-degree angle to the direction of finish flooring, 1/4" (6mm) spacing on all edges and breaking joints 4' (1.2m). No sheathing joint shall fall on a sleeper joint. Attach with 1" (25mm) fasteners minimum of 12" (300mm) on-center on each sleeper. Allow 2" (50mm) expansion void at perimeter and all vertical obstructions.
- E. Machine nail strip flooring through subfloor at each sleeper crossing. Provide adequate expansion at regular intervals across the floor during installation as dictated by the average humidity conditions of the area according to the recommendations of the local Action Floor Systems, LLC. flooring contractor. Allow 2" (50mm) expansion voids at perimeter and all vertical obstructions. Provide 2" (50mm) expansion voids at perimeters and all vertical obstructions.
- F. Install solid blocking at doorways, bleacher stack areas or under portable goals as needed.

3.03 FLOOR SANDING

- A. Use coarse, medium and fine grade sandpaper.
- B. After sanding, buff entire floor using 100-grit screen or equal grit sandpaper, with a heavy-duty buffing machine.
- C. Vacuum or tack floor before first coat of finish.
- D. Floor shall present a smooth surface without drum stop marks, gouges, streaks or shiners.

3.04 FINISHING

- A. Inspect entire area of floor to ensure that the surface is acceptable for finishing, completely free from sanding dust and perfectly clean.
- B. Apply seal and finish per manufacturer's instructions.
- C. Buff and vacuum or tack between each coat after it dries.
- D. Apply game lines accurately after the seal coat, after buffing and vacuuming. Lay out in accordance with drawings. For game lines, use current rules of association having jurisdiction. Lines shall be straight with sharp edges in colors selected by the architect. Game line paint shall be compatible with finish.

3.05 BASE INSTALLATION

- A. Affix rubber base to wall with recommended adhesive or screws. Miter all corners carefully. Use pre-molded outside corners. Install aluminum thresholds as required, anchoring firmly in concrete floor beyond limits of wood flooring.

3.06 CLEAN UP

- A. Clean up all unused materials and debris and remove from premises, properly dispose of all waste materials.

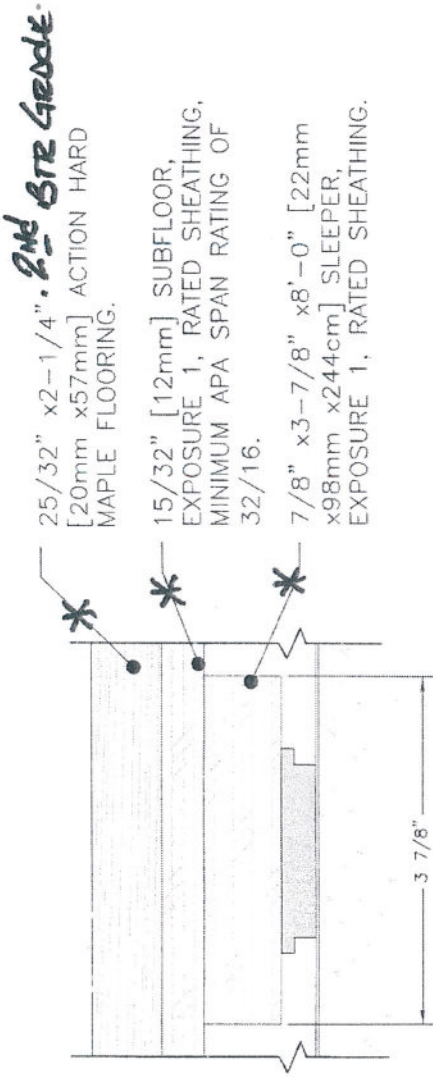
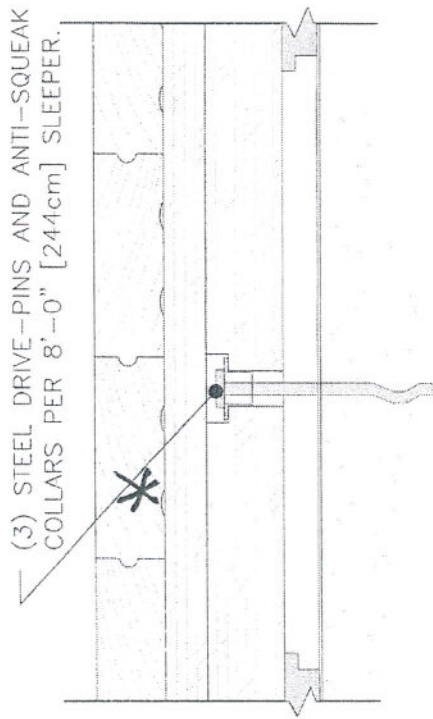
3.07 MAINTENANCE

- A. Upon completion of floor installation, the owners, attendants or individuals in charge and responsible for the upkeep of the building are to see that the care and maintenance instructions of the MFMA are followed. Failure to do so may void warranty.

NOTICE:

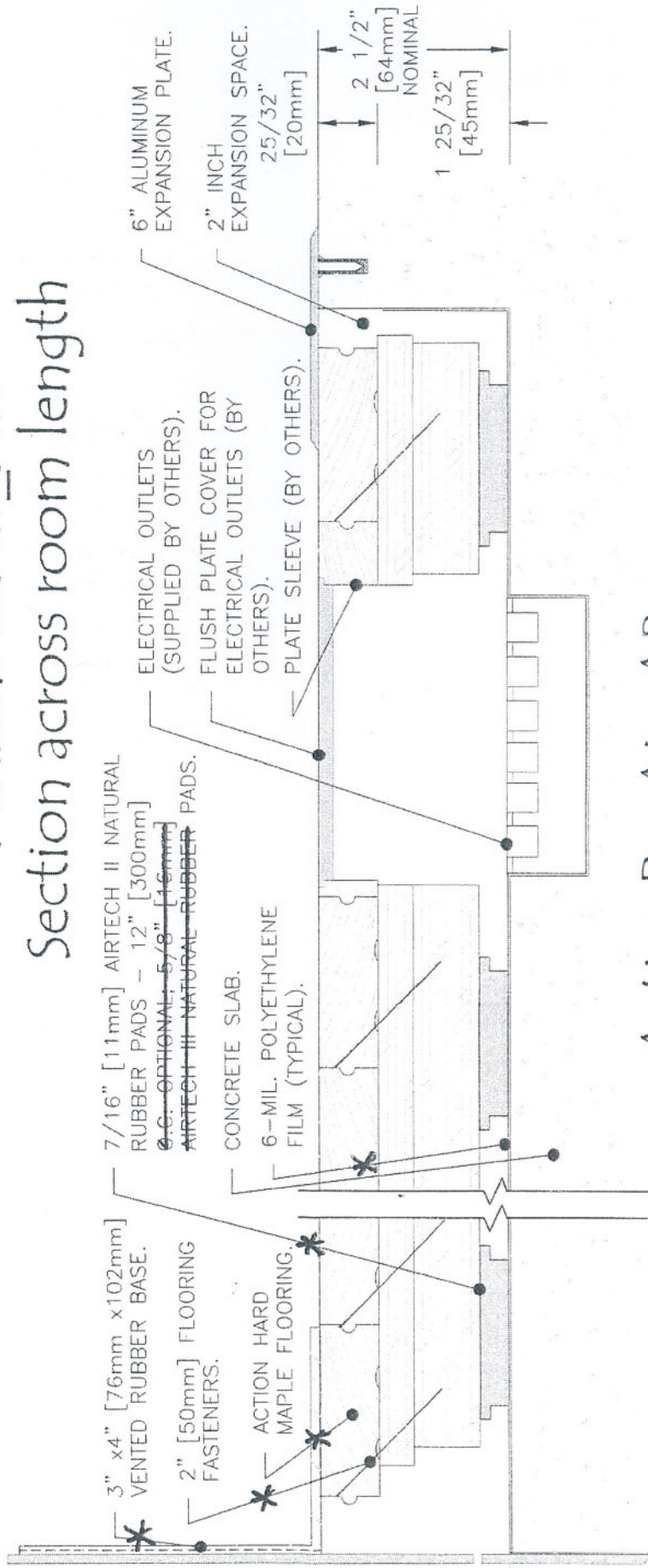
IT IS THE POLICY OF ACTION FLOOR SYSTEMS, LLC. TO CONTINUOUSLY UPDATE AND IMPROVE OUR PRODUCT LINES. THEREFORE, WE RESERVE THE RIGHT TO CHANGE, MODIFY OR DISCONTINUE SYSTEMS, SPECIFICATIONS AND ACCESSORIES OF ALL PRODUCTS AT ANY TIME WITHOUT ANY NOTICE OR OBLIGATION TO ANY PURCHASERS.

Rev 10/2016



ActionProAir_AR

Section across room length



ActionProAir_AR

Section across room width



6598 E Canton S. Boston Rd. | Salem, IN 47167 | USA

Engineering Consulting

Product Research

Field Testing and Inspections

Suitability Test Report

Issued To:
Action Floor Systems, LLC
4781 N U.S. Highway 61
Mercer, WI 54547
USA

Standard:
Suitability Test Report of a sports surface system according to
DIN 18032-2 (issue 1991)

System Name:
ProAir-AR w/ ProAction E Pads

Date of Suitability Testing	Mar 08, 2013
Valid Through	Mar 08, 2020
Report Number	91-030813-01
Pages	9

Evaluated Characteristic of DIN 18032-2 (1991)	Test Results (Avg Values)
Force Reduction	58%
Ball Rebound	96%
Vertical Deformation	2.3 mm
Area Indentation	14%
Rolling Load	1500 N (Pass)
See Appendix D for rolling load comments	

Note: This report contains 9 pages, and may not be used for commercial purposes unless it is reproduced in its entirety.



To: Action Floor Systems, LLC
4781 Highway 51
Mercer, WI 54547
USA

Subject: Suitability test carried out on a sports surface system according to DIN 18032-2
(issue 1991)

ASET Services, Inc was commissioned by Action Floor Systems, LLC of Wisconsin to conduct suitability testing of the ProAir-AR w/ ProAction E Pads area elastic sports surface system.

A sample of the sport surface system measuring 3.5 m x 3.5 m (12 ft x 12 ft) was constructed at ASET Services' test facility.

The date of the testing was Mar 08, 2013.

2) Testing Procedures

Testing was conducted according to DIN 18032-2 (issue 1991). The testing climate was 23 C, 45% relative humidity. Point locations are documented in Appendix 2

3) Average Test Results

The following table contains the average performance values obtained on the evaluated sport surface system, as well as the requirements of DIN 18032-2 (issue 1991).

Evaluated Characteristic of DIN 18032-2 (1991)	Test Results (Avg Values)	DIN 18032-2 (1991) Average Requirements
Force Reduction	58%	53% minimum
Ball Rebound	96%	90% minimum
Vertical Deformation	2.3 mm	2.3 mm minimum
Area Indentation	14%	15% maximum
Rolling Load	Pass	(1500 N)

4) Conclusions

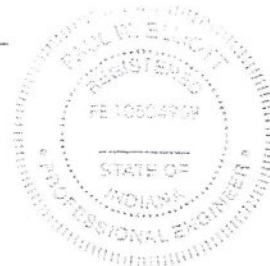
The ProAir-AR w/ ProAction E Pads area elastic sports surface system described in previous sections was found to meet the performance requirements for area elastic sports surfaces as specified in DIN 18032-2 (issue 1991).

Testing and report generation was performed by Paul W. Elliott, Ph.D., P.E. of ASET Services, Inc.

I hereby certify that the results presented in this report were obtained on the sample as described, on said date and are believed to be accurate representations of the performance of this sport surface system.

Paul W. Elliott

Date: Mar, 9, 2013



Substitution Request Form

Architect: Hefferlin & Kronenberg Architects

Project: Avondale Youth & Family Development Center – Chaattanooga, TN

We hereby submit for your consideration the following product instead of the specified item(s) for the above project:

Section	Specified Manufacturer	Specified System
096411	Connor Sports	NeoShok
	Manufacturer	Proposed System
09640	Action Floor Systems	ProAction Thrust

Attach complete technical data including laboratory tests if applicable.

Include complete information changes to Drawings and/or Specifications which proposal substitution require for proper installation.

Fill in the blanks below, use additional sheets if necessary:

- A. Does the substitution affect dimensions shown in Drawings? **None**
- B. Will the undersigned pay for changes to building design, including engineering and detailing costs caused by substitution? **Not Applicable**
- C. What effect does substitution have on other trades? **None**
- D. Differences between substitution and specified item? **Floor Systems Are Of Equal Design and Quality.**
- E. Manufacturer's guarantees of proposed and specified items are: **Same (1 year)**

The undersigned certifies that the function, appearance and quality are superior or equivalent to the specified item.

Submitted By,



David L. Fields
Regional Representative
Action Floor Systems, LLC.
4781 N US Hwy 51
Mercer, WI 54547
p. 843-312-5828
f. 715.476.3585
davef@actionfloors.com

For Use by the Design Consultant

Subject to conformance with all specifications, and performance requirements this product may be used as a substitute for what was originally included in the drawings or specifications.

If items are standard in the 'basis of design' product, but they are an up charge in the proposed substitution, they must be provided without increased cost to the owner.

Approval of this substitution request shall not change the original requirements or constitute approval of an items of lesser quality. Product must be available in required colors, finishes, configurations, and warranty to be valid. The GC shall still be responsible for installing items which conform to the design documents.

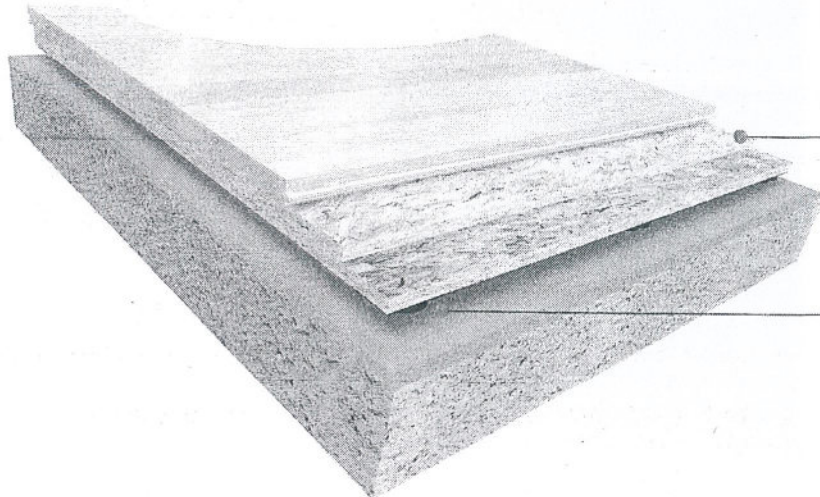
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SYSTEM DATA SHEET



ProAction Thrust™ Floor System

SYSTEM TYPE: FLOATING RESILIENT



Double layer of 15/32" (12 mm) thick APA exposure 1 rated sheathing minimum APA span rating of 32/16

ProAction 3/4" (19 mm) Natural Rubber Pads

MFMA NORTHERN HARD MAPLE
BY ACTION:

Random Length (RL)
Action Long Length (FJ)
Expansion Ridge Technology (ERT)

TESTING AGENCY:

Certified by ISSS

PERFORMANCE MEETS OR EXCEEDS:

MFMA PUR Compliant
DIN 18032 Part 2
FIBA Level 1
EN 14904

SLAB DEPRESSION:

25/32" (20 mm): 2-1/2" (64 mm)
33/32" (26 mm): 2-3/4" (70 mm)

LEED:

FSC Maple & Subfloor available, MR credits — based on products, selected materials and facility locations

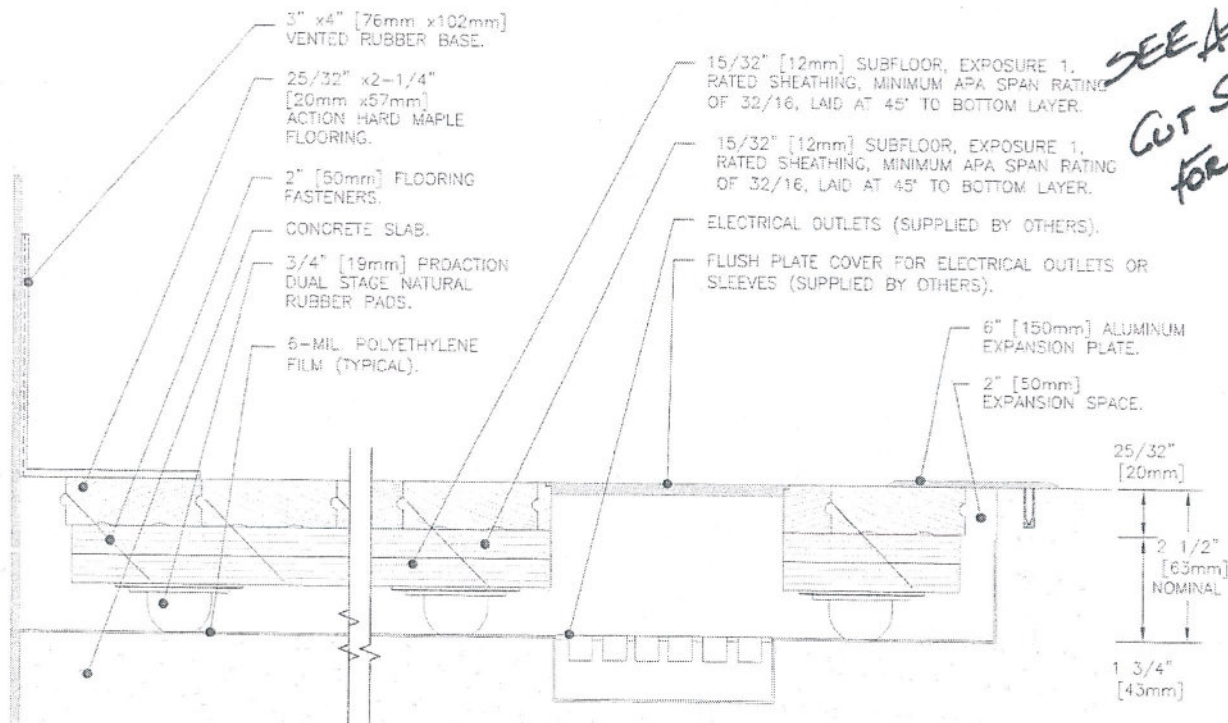
PERFORMANCE & SYSTEM STABILITY:

- Variable load response ProAction pads
- Excellent ball bounce
- SCORES Compliant
- Stable double layer subfloor system
- Excellent shock absorption



- ProAction Thrust is well suited to applications where high performance is important and FIBA certification is desired.
- Features the proven, durable double layer 15/32" (12 mm) subfloor design.
- The manufacturer and flooring shall be independently verified by the guidelines of the ISO 14040:2006 and ISO 14044:2006 Life Cycle Assessment (LSA) confirming a negative carbon footprint.
- Carbon Evaluation must be inclusive and based on all corporate facilities, offices and mills.
- The manufacturer and flooring shall be independently verified by the guidelines of the ISO 14064-1:2006 World Resources Institute Greenhouse Gas Protocol, Scope 1, 2 and 3.
- The manufacturer and flooring shall be registered in the Collaborative for High Performance Schools (CHPS) Product Database.

Complete product specifications and system drawings (CAD and BIM) are available online at:
www.actionfloors.com



Action ProAction Thrust



ACTION FLOOR SYSTEMS LLC
 4781 N. U.S. Hwy. 51 • Mercer, WI 54547-9708 U.S.A.
 PHONE: 800.746.3512 or 715.476.3512 • FAX: 715.476.3585
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ProAction Thrust Floor System

ProAction Thrust Floor System and Connor NeoShok Floor System

	<u>ProAction Thrust</u>	<u>NeoShok</u>
MFMA PUR Compliant	Yes	No
EN 14904 (2006) Certified	Yes	No
DIN 18032 Part-2 Certified	Yes	No
ISO 1440:2006 Certified (Life Cycle)	Yes	No
Certified Negative Carbon Footprint	Yes	No
Zero Waste Production Facility	Yes	Yes
Independent Laboratory Tested	Yes	Yes
Slab Depression	2-1/2"	2-1/2"
Floating Subfloor System	Yes	Yes
Continuous Subfloor	Yes	Yes
2-layers 15/32" Subfloor	Yes	Yes
Performance Dual-Stage Pad	Yes	Yes
Natural Rubber Pad	Yes	No
Dual Stage Pad	Yes	Yes
Pad Height	3/4"	3/4"
MFMA Member Mill	Yes	Yes
Standard 25/32" Maple Flooring	Yes	Yes
Random Length Maple Flooring	Yes	Yes
Finger Jointed Maple Flooring	Yes	No

The above comparison is based on each system's standard construction with 25/32" thick maple flooring and premium 3/4" performance pads.

The ProAction Thrust design is the only double layer padded floating system that is MFMA PUR Compliant. The ProAction Thrust delivers a floor system with great performance, playability, stability, and longevity. The ProAction Thrust features the pneumatic dual-stage Natural Rubber pads produced from sustainable, renewable natural rubber vs. man-made pads produced from petrochemicals such as urethane.

Contact Action Floor Systems, LLC for information on our performance floor systems.



*Action ProAction Thrust*TM

Floating Resilient Floor System

SPORTS FLOOR SPECIFICATIONS

Action Floor Systems, LLC 4781 N. US Hwy 51 Mercer, WI 54547

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MFMA PUR Compliant, EN, DIN, ASTM Certified

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1.06 WARRANTY

- A. Action Floor Systems, LLC. warrants the material it ships to be free from defects in materials and workmanship for a period of one year and the flooring installer warrants the installation of the flooring to be free of defects in materials and workmanship for a period of one year. The exclusive remedy under this warranty shall be replacement of defective material supplied by Action Floor Systems, LLC. or correction of defective installation by the flooring installer. All implied warranties of merchantability or fitness for intended use are limited to the period of this warranty. This warranty excludes consequential damages.
- B. This warranty does not cover damage caused by fire, winds, floods, chemicals, or other abuse, or by failure of other contractors to adhere to specifications, or neglect of reasonable precaution to provide adequate ventilation during hot and humid weather. This warranty also excludes damage due to excessive dryness or excessive moisture from humidity, spillage, migration through the slab or wall or any other source. This warranty also excludes damage to floors due to ordinary wear and tear, faulty construction of the building, (other than the flooring installation), separation of the concrete slab underlying the floor, settlement of the walls, or use of water on the floor.
- C. During the warranty period, the floor cannot be coated without the permission of the floor contractor.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Flooring

- 25/32" x 2 1/4" - 3rd F BTR GRADE*
- * 1. Flooring shall be Northern Hard Maple standard strip flooring, 25/32" x 2-1/4" (20mm x 57mm) ~~or 1 1/2" (38mm)~~, TGEM, MFMA grade marked & stamped as manufactured by Action Floor Systems, LLC.
 - * 2. Grades available are MFMA ~~1st, 2nd & Btr. 3rd & Btr. and 3rd grade.~~
 - * ~~3. Long Length Strip Flooring by Action Floor Systems, LLC. (optional).~~
 - * ~~4. FSC Certified Lumber (optional).~~
 - * 5. Expansion Ridge Technology (ERT) 1/64" milled expansion spacer (optional).
 - * ~~6. Factory Sand and Seal Long Length Strip Flooring (optional).~~

B. Subfloor

- * 1. Vapor barrier shall be 6-mil polyethylene.
- * 2. The pads shall be ProAction 3/4" (19mm) dual stage natural rubber pads.
- * 3. Panels shall be 15/32" x 4' x 8' (12mm x 1.2M x 2.4m) Action HPS, exposure 1, rated sheathing, minimum APA span rating of 32/16.

C. Fasteners

- * 1. Subfloor fasteners shall be 1" (25mm) coated staples.
- * 2. Flooring fasteners shall be 2" (50mm) cleats, or 15-gauge coated staples.

D. Wall Base

- * 1. Wall base shall be 3" x 4" (76mm x 102mm) vented cove base with pre-molded corners (specify black or brown), as supplied by Action Floor Systems, LLC.

E. Protective Floor Cover (optional)

- * ~~1. Action AirRide cover system with patented air blower system. System includes Phthalate-free, seamless 10'-0" wide, 20.5 ounce vinyl covers and A frame rack.~~

PART 3 - EXECUTION

3.01 INSPECTION

- A. Inspect concrete slab for proper tolerance and dryness reporting any discrepancies in writing to the general contractor.
- B. All work to put the concrete slab in acceptable condition shall be the responsibility of the general contractor.

- C. Slab shall be broom cleaned by the general contractor.

3.02 INSTALLATION

- A. Cover concrete slab with polyethylene lapping edges 6" (150mm) and seal with adhesive or 2" (50mm) duct tape.
- B. ProAction pads shall be attached to the underside of the first layer of sheathing as specified by the manufacturer.
- C. Place the first layer of sheathing diagonal or perpendicular to the intended direction of the finish flooring.
- D. Fasten the second layer of sheathing without pads at a 45-degree angle or at right angles to the first layer. The sheathing must be nailed or stapled together with 1" (25mm) fasteners starting from the center of the sheet working outward. No joint in the second layer of sheathing shall coincide with a joint in the first layer. Allow 1/4" (6mm) between panels at sides and edges, and a 2" (50mm) expansion void at walls and vertical obstructions on both sheets of sheathing.
- E. Machine nail strip flooring into the subfloor, parallel to the long dimension of the area nail approximately 12" (300mm) on-center. Provide adequate expansion at regular intervals across the floor during installation as dictated by the average humidity conditions of the area according to the recommendations of the local Action Floor Systems, LLC. flooring contractor. Provide 2" (50mm) expansion voids at perimeters and all vertical obstructions. Install vent cove base over perimeter voids and metal thresholds at doorways.

3.03 FLOOR SANDING

- A. Use coarse, medium and fine grade sandpaper.
- B. After sanding, buff entire floor using 100-grit screen or equal grit sandpaper, with a heavy-duty buffing machine.
- C. Vacuum or tack floor before first coat of finish.
- D. Floor shall present a smooth surface without drum stop marks, gouges, streaks or shiners.

3.04 FINISHING

- A. Inspect entire area of floor to ensure that the surface is acceptable for finishing, completely free of sanding dust and perfectly clean.
- B. Apply seal and finish per manufacturer's instructions.
- C. Buff and vacuum or tack between each coat after it dries.
- D. Apply game lines accurately after the seal coat, after buffing and vacuuming. Lay out in accordance with drawings. For game lines, use current rules of association having jurisdiction. Lines shall be straight with sharp edges in colors selected by the architect. Game line paint shall be compatible with finish.

3.05 BASE INSTALLATION

- A. Affix rubber base to wall with recommended adhesive or screws. Miter all corners carefully. Use pre-molded outside corners. Install aluminum thresholds as required, anchoring firmly in concrete floor beyond limits of wood flooring.

3.06 CLEAN UP

- A. Clean up all unused materials and debris and remove from premises, properly dispose of all waste materials.

3.07 MAINTENANCE

- A. Upon completion of floor installation, the owners, attendants or individuals in charge and responsible for the upkeep of the building are to see that the care and maintenance instructions of the MFMA are followed. Failure to do so may void warranty.

NOTICE:

IT IS THE POLICY OF ACTION FLOOR SYSTEMS, LLC. TO CONTINUOUSLY UPDATE AND IMPROVE OUR PRODUCT LINES. THEREFORE, WE RESERVE THE RIGHT TO CHANGE, MODIFY OR DISCONTINUE SYSTEMS, SPECIFICATIONS AND ACCESSORIES OF ALL PRODUCTS AT ANY TIME WITHOUT ANY NOTICE OR OBLIGATION TO ANY PURCHASERS.

Rev 11/16

3" x 4" [76mm x 102mm]
VENTED RUBBER BASE.

25/32" x 2-1/4" - **3rd & 6th Grade**
[20mm x 57mm]
ACTION HARD MAPLE
FLOORING.

2" [50mm] FLOORING
FASTENERS.

CONCRETE SLAB.

3/4" [19mm] PROACTION
DUAL STAGE NATURAL
RUBBER PADS.

6-MIL. POLYETHYLENE
FILM (TYPICAL).

11/32" [10mm] SUBFLOOR, EXPOSURE 1,
RATED SHEATHING, MINIMUM APA SPAN RATING
OF 32/16, LAID AT 45° TO BOTTOM LAYER.

15/32" [12mm] SUBFLOOR, EXPOSURE 1,
RATED SHEATHING, MINIMUM APA SPAN RATING
OF 32/16, LAID AT 45° TO BOTTOM LAYER.

ELECTRICAL OUTLETS (SUPPLIED BY OTHERS).

FLUSH PLATE COVER FOR ELECTRICAL OUTLETS OR
SLEEVES (SUPPLIED BY OTHERS).

6" [150mm] ALUMINUM
EXPANSION PLATE.

2" [50mm]
EXPANSION SPACE.

25/32"
[20mm]

2 3/8"
[60mm]
NOMINAL

1 5/8"
[40mm]

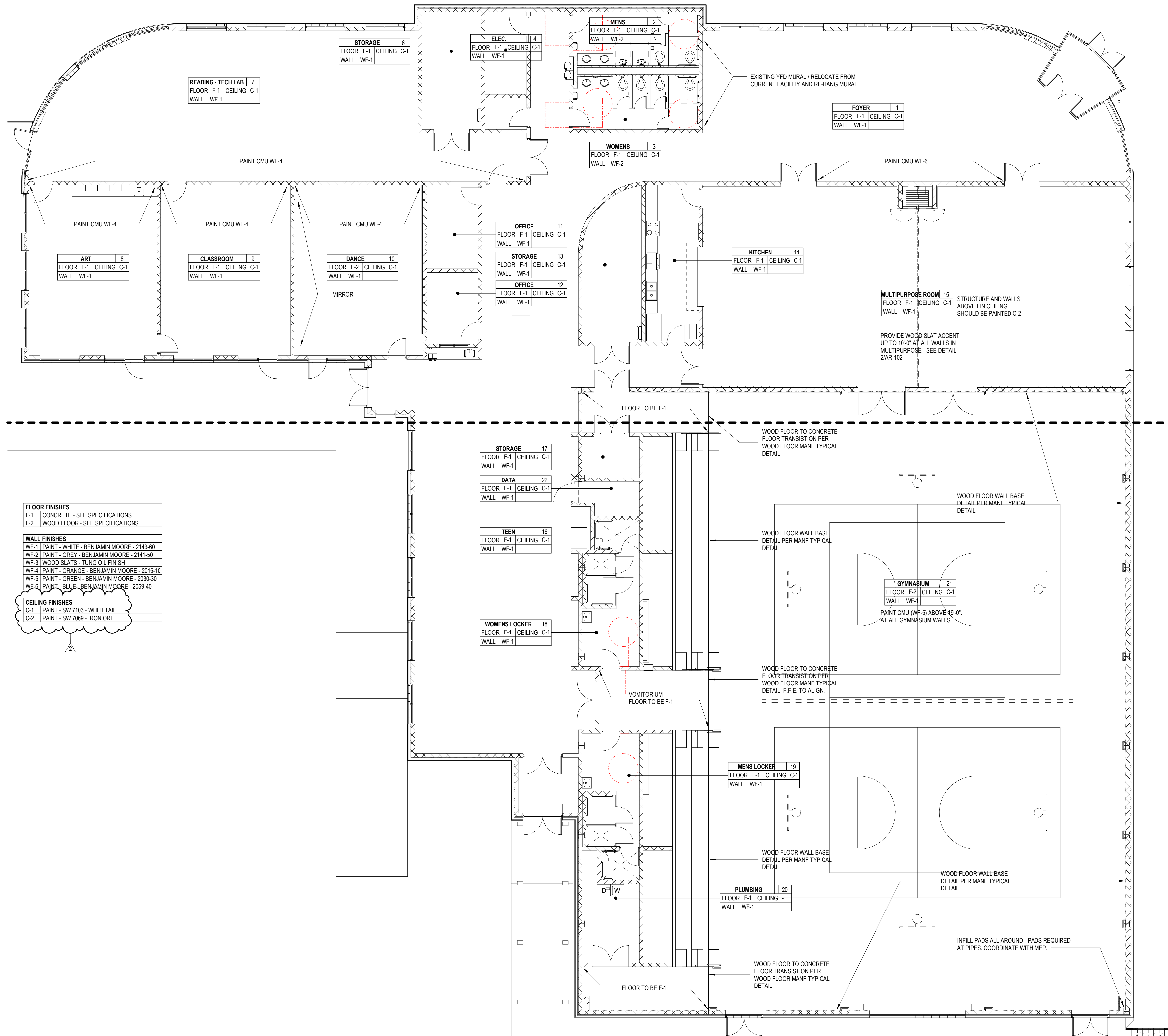
ProAction_Thrust

2017.07.03

AVONDALE YOUTH AND FAMILY DEVELOPMENT CENTER

1305 DODSON AVE, CHATTANOOGA TN 37406

No. Desc. Date



1 FINISH PLAN
1/8" = 1'-0"

CONSTRUCTION DOCUMENTS



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DATE: 9/6/17
JOB#: 16-057
SCALE: AS INDICATED
DRAWN: Author

FINISH PLAN

AR-105

Project Name **AVONDALE YFD**
Project Number **Y-15-008-201**
Meeting **PRE-BID**
Date **10/24/17**

- | | | |
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