

Inspiring Great Spaces®



TECTUM® Ceiling & Wall Panels

Tectum[®] ceiling and wall panels provide durable, sustainable, acoustical solutions with unlimited design options. Tectum 1" thick panels are part of the Sustain[®] portfolio and meet the most stringent sustainability standards today. They are the first and only acoustical ceiling and wall solutions that are Living Product Imperative Certified by the International Living Future Institute and now have UL[®] Certified acoustics.

Direct-Attach in custom colors; Kalamazoo Public Library, Kalamazoo, MI; David Milling Architects, Ann Arbor, MI



SUSTAINABILITY



BLADES & BAFFLES



SHAPES & CLOUDS





SIZES, COLORS & ACOUSTICAL PERFORMANCE



FINALE[™] HIGH NRC CEILINGS & WALLS



LAY-IN & TEGULAR CEILINGS









▲ Tectum[®] Direct-Attach Ceiling Panels; Temple School of Architecture. Philadelphia, PA: NELSON, Philadelphia, PA

THE SUSTAIN® SUSTAIN. High Performance Sustainable Ceiling Systems Portfolio Contributes To Better Spaces

1" Thick Tectum[®] Panels in White and Natural



Here's how:

- Contribute to LEED® v4 (including new Materials and Resources credits)
- Have Health Product Declarations (HPDs) which tell you what's in the products
- Are free of Red List chemicals per Living Building Challenge[™] 3.0 (including no added formaldehyde)
- Have Declare[™] labels easy reference "nutrition labels"
- Meet California Department of Public Health (CDPH) low emissions standards
- Have Environmental Product Declarations (EPDs) which tell you the impact of the products
- Contribute to Living Building Challenge
- Contribute to WELL Building Standard™

LIVING PRODUCT Challenge

Tectum[®] is made of fibers from one of the most sustainably harvested trees of its kind, the Wisconsin Aspen. The part of the Aspen that grows above ground can live between 40-150 years. The root system of the Aspen can survive thousands of years. Aspen quickly regenerate from their root system after the trunks have been harvested.

Tectum products are made of natural fibers and binders that are turned into unique, sound absorbing, textured ceiling and wall panels that bring nature inside. Ideal for spaces where sustainability, durability, and noise control are needed.

Tectum panels are the first and only acoustical ceiling and wall solution to be Living Product Imperative Certified by the International Living Future Institute.



Wisconsin Aspen Trees



- Upscale linear visual adds acoustics and aesthetics to any space
- Noise absorption up to 0.60 Sabins/SF

Hang with hanger wire or aircraft cables

- Custom shapes and sizes available to meet your project needs
- Mounting channels available to extend panel length beyond four feet

Blades & Baffles FIT TO THE MAX

Vertical elements control acoustics with an upscale linear visual.

6

▼ Tectum[®] Blades custom acoustical panels; Cisco Umbrella, San Francisco, CA





 \blacktriangle Tectum $^{\otimes}$ Clouds; Retail Me Not, Austin, TX; STG Design, Austin, TX

- Noise absorption up to 0.50 Sabins/SF
- Wide variety of color options available
- Installs with 15/16" Prelude® suspension system

Tectum[®] Clouds and Shapes

- Square or radius edges
- Made in sizes up to 4' and can be suspended or direct-attached to drywall grid system

Shapes & Clouds FLEXIBLE FIT

Shapes and Clouds offer design flexibility in a floating system.



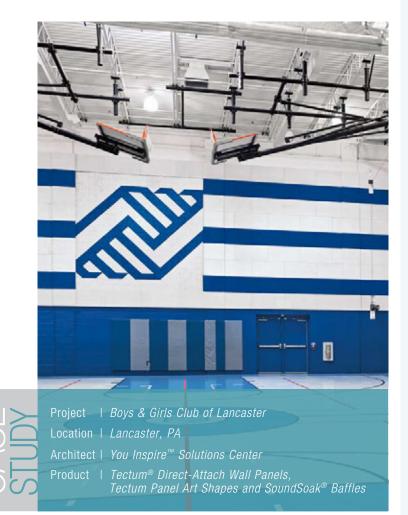
Tectum[®] Panel Art and Direct-Attach wall panels in White and custom colors; Boys & Girls Club of Lancaster, Lancaster, PA

Direct-Attach FIT THE BILL

Install panels directly to ceilings and walls to add durability and noise reduction to a wide variety of spaces using a sustainable solution.

- Tectum[®] Direct-Attach panels now have UL[®] Certified acoustics with acoustical testing and reporting that align with industry-wide best practices
 - 1" panels in White and Natural are Living Product Challenge Certified by the International Living Future Institute
 - 1" thick panels are part of the Sustain[®] portfolio
 - FSC[®] Certified panels
 - Excellent sound absorption NRC up to 1.0 (mounting and thickness dependent)
 - Retrofit solution for noise reduction
 - Can be mechanically fastened to a wide variety of surfaces
 - Now you can install 1" thick Tectum on Trusses and I-Beams for added acoustics while maintaining an exposed structure visual on the deck
 - Durable for heavy-use interiors, pools, and exterior-covered spaces





			Bo	ys &	Girl	s Clu	ıb G	ymna	asiur	n			
		_	— A	- Average (Before)				Average (After)					
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	5.00					/						_	
	4.00		~										5.05
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Reverberation time	3.00	-	~										
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	1.00 —												
	0.00												
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Frequency Hz													

the challenge:

The gymnasium at the Boys & Girls Club of Lancaster is in use every day, not only for sports activities but a variety of other functions as well. Its acoustic environment, however, was not always ideal. Acoustical testing showed that reverberation time in the gym was 5.05 seconds, far above the 2.00 seconds or less recommended for this type of space. As Karen Schloer, the Club's Chief Executive Officer, notes, "The noise level was putting a real strain on the staff because they had to shout so often when trying to communicate with the kids."

the solution:

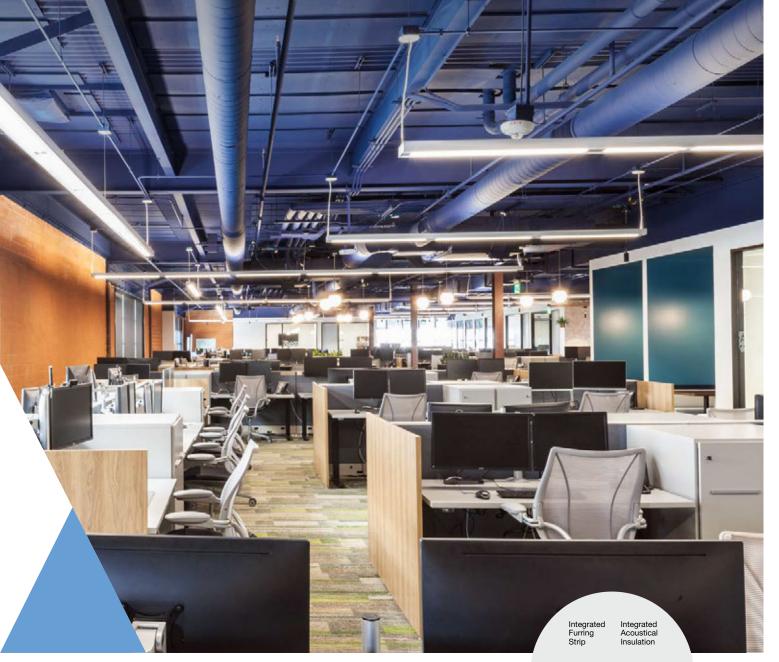
To solve the problem, Armstrong Ceiling and Wall Solutions installed more than 3,500 square feet of Tectum® Direct-Attach wall panels on the gym's masonry walls. The panels were chosen because of their ability to absorb both sound and the impact of basketballs, volleyballs, and other objects that hit the walls.

Aesthetically, the two-inch-thick, 2' x 4' panels are installed in ribbons of white and a custom blue that match the Club's colors. They start nearly 10-feet off the floor and continue up the wall another 18-feet.

In addition, a re-creation of the Boys & Girls Club logo is installed at each end of the gym. The 15-feet wide and 13-feet high visual of two interlocking hands was created using eight-inch triangular Tectum Panel Art shapes. The white triangles are one-inch thick, while the blue triangles are two-inches thick so that they stand out from the wall. Two rows of 12 SoundSoak® Baffles were installed in the center of the ceiling for added noise absorption.

Acoustically, the 2" Direct-Attach Tectum wall panels have a Noise Reduction Coefficient (NRC) of 0.70. Acoustical testing conducted after the installation of the combination acoustical treatment showed that reverberation time dropped to 1.85 seconds, a 63% reduction. According to Chief Operations Officer, Scott McLellan, "The difference is like night and day. The biggest takeaway is how much easier it is now for the staff to gain control of the space because the kids can hear directions much more clearly."

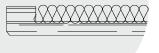
Looking back at the difference in the gym's acoustic comfort, McLellan adds, "The staff simply didn't realize how bad it was because they didn't realize how good it could be."



▲ Tectum[®] Finale[™] high NRC ceiling panels; Financial Services Company; United States

Finale[™] High NRC A SOUND FIT

Finale[™] ceiling and wall panels have built-in furring pieces with factory-filled panels that provide maximum sound control and install 2.5x faster than C-20 mount Direct-Attach panels for reduced installation costs. A perfect way to add acoustics to exposed structure spaces.



I " thick Tectum[®] Finale[™] ceiling and wall panels with 1" factory-attached furring are now available as standard items. Sold by the piece – get the quantity you need without extra material

- White & Natural standard Finale ceiling and wall panels included in FAST3 program – panels ship from manufacturer to shipping location in 3 weeks or less
 - Excellent sound absorption NRC up to 0.95 (mounting method dependent)
 - Available in White, Natural, and custom colors





Sound Absorption (NRC) + Sound Blocking (CAC)

Lay-In & Tegular FIT FOR PURPOSE



 Tectum[®] Direct-Attach panels now have UL[®] Certified acoustics with acoustical testing and reporting that align with industry-wide best practices

- 1" panels in White and Natural are Living Product Challenge Certified by the International Living Future Institute
- 1" thick panels are part of the Sustain[®] portfolio
- Tegular panels have Total Acoustics® Performance (NRC 0.90 CAC 35) with 1713 infill panel
- FSC[®] Certified panels
- Durable for heavy-use interiors



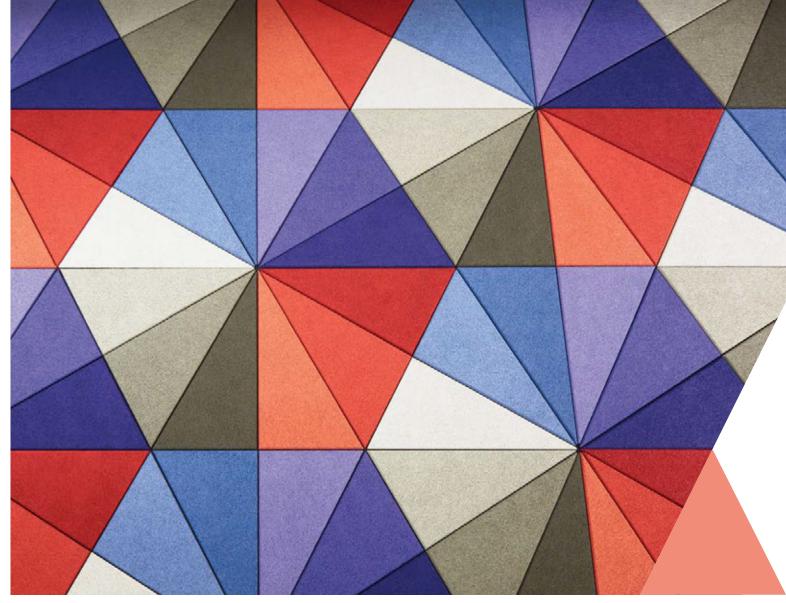
- Abuse-resistant, fabric-wrapped panels attach directly to walls
- Excellent Noise Absorption NRC up to 0.90
- Mounting is quick and easy using internal spline system
- Durable fabric options available

Fabric Walls TWICE THE FIT

Fabric walls do double duty, providing both acoustics and a tackable surface for displays and bulletin boards.

Tectum[®] Fabric wall panels; Southland Christian Church, Lexington, KY

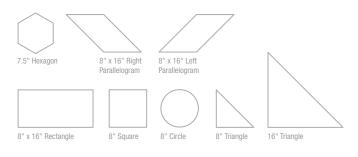




Panel Art FIT TO A "T"

Create your own custom shapes, or use one of eight prefabricated geometrics to help your ceiling and wall designs take shape. ▲ Tectum[®] Panel Art ceiling and wall panels; Armstrong World Industries, Lancaster, PA

- Available in eight shapes, or create custom shapes from panels up to 48" x 48"
- Excellent sound absorption NRC up to 1.0
- All panels have beveled edges on all four sides
- Can be mechanically fastened to a wide variety of surfaces
- Now, 1" panels in White and Natural are Living Product Challenge Certified by the International Living Future Institute
- White or Natural 1" thick panels are part of the Sustain® portfolio





Tectum[®] Direct-Attach Wall Panels; Chula Vista Elementary School, San Diego, CA; Ruhnau Ruhnau Clarke, Riverside, CA



Tectum Panel Art & Shapes Panels; Boys & Girls Club, Lancaster, PA

TECTUM[®] MADE TO FIT

Tectum[®] ceiling and wall panels are available in a variety of sizes, shapes, forms, and colors. Select from a natural factory finish, white, or made-to-order colors. Panels can be field-painted up to six times without impacting acoustic or fire performance. Tectum panels are made to fit your design needs.

RESTATION

TECTUM® PANELS

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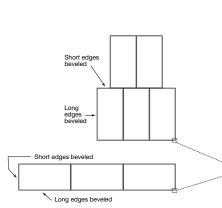
	Width	Length	Thickness
Blades [™] & Baffles	23-3/4" - 47-3/4"	11-3/4" - 23-3/4"*	1", 1-1/2", 2"
Shapes & Clouds	23-3/4" - 47-3/4"	Up to 96"	1-1/2", 2"
Direct-Attach	23-3/4" - 47-3/4"	48" - 144"	1", 1-1/2", 2"
Finale [™] High NRC	23-3/4" - 47-3/4"	48" - 144"	1", 1-1/2", 2"
Panel Art	47-3/4"	48" **	1", 1-1/2", 2"
Lay-in & Tegular	23-3/4" - 47-3/4"	23-3/4" - 47-3/4"	1", 1-1/2", 2"
Fabric Walls	23-3/4" - 47-3/4"	48" - 120"	1", 1-1/2", 2"

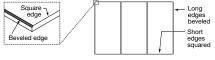
Available height for Blades & Baffles. Length can extend beyond 4' with mounting channels.

** Larger custom sizes available upon request.

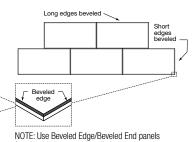
			Mounting						
					NRC Rating		I		
Product	Panel Thickness	Weight (Sq.Ft.)		A Mounting	D-20 Mounting	0	C-40 Mounting		
			NRC	NRC	NRC (T	NRC (T	NRC (T		
Blades & Baffles	1"	1.63 lbs/SF	0.40 (Sabins/Sq. Ft.)	-	-	-	-		
	1-1/2"	2.53 lbs/SF	0.50 (Sabins/Sq. Ft.)	-	-	-	-		
Shapes & Clouds	1-1/2"	2.55 lbs/SF	0.50 (Sabins/Sq. Ft.)	_	_	_	_		
Lay-in & Tegular	1"	1.63 lbs/SF	0.40	_	_	_	_		
Ceiling Panels	1" w/ 1713 Infill	-	0.90/CAC 33	_	_	_	_		
(YL)	1-1/2"	2.53 lbs/SF	0.50	_	_	_	_		
Fabric Walls	1"	1.63 lbs/SF	-	0.50	0.60	_	0.90		
Direct-Attach Ceiling & Wall Panels	1"	1.63 lbs/SF	I-Beam: 3.8 (Sabins/ 2'x 4'x 1" Tectum panel)	0.40	0.45	0.80	0.85		
(YL)			Truss: 2.9 (Sabins/ 2'x 4'x 1" Tectum panel)						
Panel Art Ceiling &	1-1/2"	2.53 lbs/SF		0.55	0.60	0.90	0.95		
Wall Panels	2"	3.30 lbs/SF		0.60	0.70	0.95	1.00		
Finale [™] Ceiling & Wall Panels	1" Panel with Integral Minwool Insert & 1" Furring	3.00 lbs/SF		0.85					
	1-1/2" Panel with Integral Minwool Insert & 1" Furring	3.50 lbs/SF		0.90					
	2" Panel with Integral Minwool Insert & 1" Furring	4.06 lbs/SF		0.95					

EDGE DETAIL RECOMMENDATIONS





NOTE: Use Beveled Edge/Square End for the above panel layout.



NOTE: Use Beveled Edge/Beveled End panels for all adjoining panel installations.

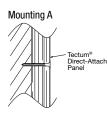
Long edges beveled ~ Short edges beveled

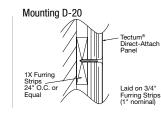
NOTE: Stacked bond patterns are possible, but not recommended. Field trimming panels may be required to achieve desired fit and alignment.

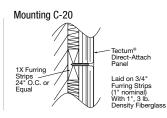
STANDARD COLORS

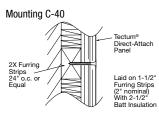












TAKE THE NEXT **STEP**

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TechLine - Technical information, detail drawings, CAD design assistance, installation information, other technical services - 8:00 a.m. to 5:30 p.m. EST, Monday through Friday. FAX 1 800 572-8324 or email: techline@armstrongceilings.com

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