



CREATIVE
COMPOSITES
GROUP



Composite Scaffolding Plank System



THE ALTERNATIVE TO STEEL AND WOOD:
SAFE, LIGHTWEIGHT, HIGH STRENGTH, EASY-TO-INSTALL

The Bothwell Composite Plank System is compatible with existing frames and bracing used throughout the scaffolding industry worldwide, and brings revolutionary features and benefits not available to the industry until now!



COMPLIANCE

- Meets ANSI A10.8-2001 Standards
- Meets OSHA 29 CFR 1926.451 Standards

SAFETY ADVANTAGES

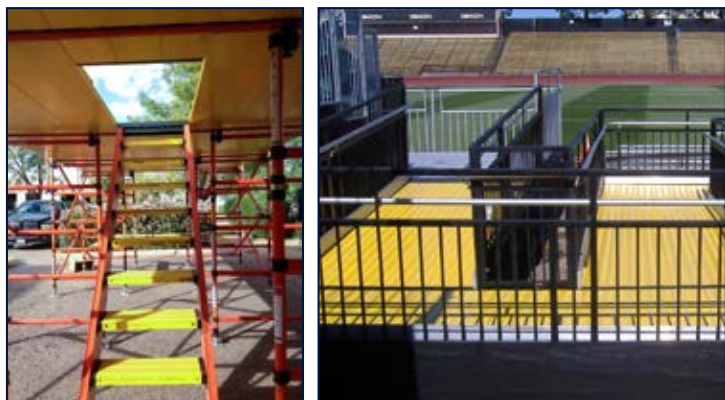
- No overlapping planks (reduces trip hazard)
- Characteristic Design Strengths per ASTM D7290
- Slip-resistant surface
- Non-Conductive

FEATURES & BENEFITS

- A modular scaffolding plank which can be ramped
- Can be Factory or Field Mitered
- Can be cut to any length, on-site
- Available in multiple colors
- 10 year lifespan
- Will not rust or corrode
- Resistant to fungal decay

ERGONOMICS

- Lightweight - reduced back/shoulder injuries
- No-tool assembly - reduces need for repetitive motions
- Easy fingertip handling
- Increased Field Assembly Efficiency



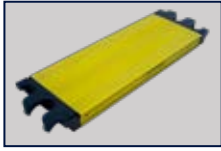
The Bothwell Composite Plank System used in a scaffolding deck (left) and as an access ramp at a University stadium (right).

FLOAT BAR DEMONSTRATION



Float Bar spans the gap between planks providing a "hook-on" bar to allow for use of a "floating plank" as filler board when navigating obstacles, pipes, etc. Quick, easy installation without tools or fasteners.

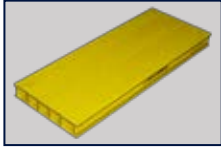
Products & Accessories



PLANK WITH HOOK ENDS - The Bothwell Planks with Hook Ends are designed for and are compatible with existing scaffolding frames worldwide. The planks are much lighter than all other planks on the market and have interlocking fingers eliminating tripping hazards, making for a safe transition when planks are interlocked. The unique design also allows for ramping capabilities.



PLANK WITH END CAPS - The Bothwell Planks with End Caps are standard scaffolding planks designed to overlap the ledger bar and can be lapped over each other as a traditional wood scaffolding plank. The End cap features a handle designed in it for easy handling.



PLANK SEGMENT - The Standard 1.75" x 9.5" pultruded plank is made from polyester resin and glass fiber reinforcements. The planks can be manufactured to any length. They incorporate a patented, permanently embedded non-slip surface for maximum traction. The planks feature integral c-rails along the edges to accommodate accessories. Wt. 2.53 lbs/ft



HOOK END - The patented Hook End-connector has interlocking fingers that loop over the scaffold bar creating a non-lap, non-trip system. The Hook Ends are injected molded with very durable nylon thermoplastic and incorporate a metal insert for increased strength and stiffness. Wt. 2.045 lbs.



END CAP - The End Cap is a uniquely designed impact resistant cap for the standard Bothwell composite plank. The End Cap features an integral handle for ease of handling and access holes for securing the plank. The Cap is injected molded with a durable nylon thermoplastic. Wt. .428 lbs.



LOCKING PIN - The patented locking pin is designed and engineered to fasten the end connector to the plank. The pin allows for easy removal of the end connector from the plank should it be damaged or a need arise to shorten the plank. The plank can be cut to any length and the connector reassembled with a new pin. The locking pin is injection molded with nylon resin and glass reinforcement.



SIDE CONNECTOR - The Side Connector is an injection molded profile designed to slide down the side rails of the plank. This feature connects multiple planks which permits them to flex in unison.



FLOAT BARS - The Float bars are essentially a ledger bar designed to fit between two planks to create a ledger to support the "Filler Plank" where obstacles create a problem to plank around. The steel Float bars are manufactured for a single wide and double wide plank application and are available in 9.5" and 19" configurations. Wt. 3.713 lbs., Wt. 5.725 lbs., respectively



FLOAT BRACKET - The Float bracket is a steel bracket attached to the end of the plank using the Locking Pin that can rest on another plank perpendicular to create a Filler Board. Once the Float Bracket is assembled, creating a Float Plank, the plank can be used on ledger bars as well. The bracket also features a handle in it for easy handling.



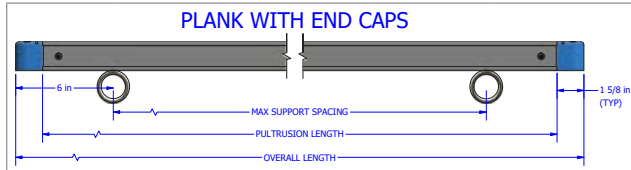
FIELD JIG - The Field jig is an aluminum jig that allows the plank to be modified in the field when cutting to different lengths. The Jig is designed to make perfect hole locations, when modifying planks.



WIND CLIP - Wind Clip integrated into hook end connector reduces or eliminates need for tie-wire or fasteners. Clip locked or unlocked by simple push-down and turn of screw.

Engineering Data - Plank With End Caps

Standard Sizes



Overall Length (ft)	Overall Length (in)	Pultruded Plank Length (in)	Max Support Spacing (in)	Weight of Plank Assembly (lbs/ft)
2	24	20.75	12	5.27
3	36	32.75	24	7.82
4	48	44.75	36	10.37
5	60	56.75	48	12.92
6	72	68.75	60	15.47
7	84	80.75	72	18.02
8	96	92.75	84	20.57
9	108	104.75	96	23.12
10	120	116.75	108	25.67
11	132	128.75	120	28.22
12	144	140.75	120	30.77



Physical Properties

Physical Properties for Plank with End Caps	Units	Bothwell Composite Plank
Moment of Inertia	in ⁴	1.627
Section Modulus	in ³	1.859
Shear Area of Web	in ²	1.1
Weight/ft (without hooks or caps)	lbs/ft	2.55
Standard Color		Safety Yellow
CLTE	in/in/°F	6E10 ⁻⁶
Max Use Temperature	°F	140

Technical Mechanical Properties

Mechanical Properties for Plank with End Caps	Test Method	Units	Values Published per ASTM D7290
Bending Strength	ASTM D8069-17a	psi	25,879
Modulus of Elasticity (Average)	ASTM D8069-17a	psi	4.30E+06
Shear Modulus of Elasticity	ASTM D5379	psi	500,000
In-plane Shear Strength	ASTM D5379	psi	1,501

Load Requirements

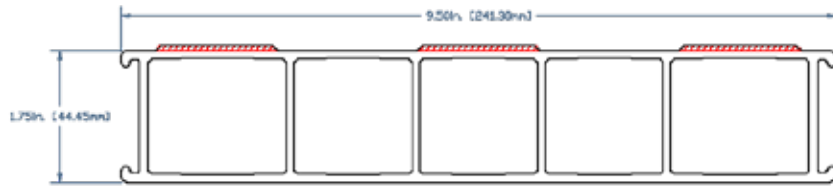
Duty Rating ANSI/ASSP A10.8-2011	Load (psf)	Load Position (in)	Max Span (ft)	Deflection Limit L/D = 60 (in)	Safety Factor
Light	25	Uniformly Distributed	14.64	2.9	> 4.0
Medium	50	Uniformly Distributed	11.63	2.3	> 4.0
Heavy	75	Uniformly Distributed	10.15	2.0	> 4.0
Duty Rating ANSI/ASSP A10.8-2011	Total Applied Load (Lbf)	Load Position (in)	Max Span (ft)	Deflection Limit L/D = 60 (in)	Safety Factor
1 Person	250	250lbf @ Center (CTR)	12.47	2.5	> 4.0
2 Person	500	250lbf @ 18" each side of CTR	9.48	1.9	> 4.0
3 Person	750	250lbf @ CTR & 18" each side of CTR	7.35	1.5	> 4.0

Note: Loads require a minimum safety factor of 4x. Per ANSI Platform Units and Platforms 5.1.1.2

Note: Scaffolding planks without hook ends require a minimum cantilever length of 6" on each side

Multiple Plank Assembly Load Chart - Plank With End Caps

Bothwell Plank - 9.50" wide x 1.75" high



$E_b = 4.301 \text{ Msi}$

$G_b = 0.5 \text{ Msi}$

Characteristic longitudinal compressive strength (F_L^c) = 25,879 psi

$I_x = 2.06 \text{ in}^4/\text{ft}$

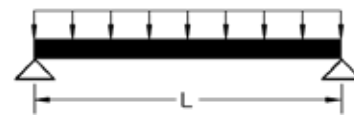
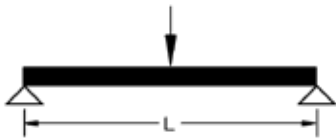
$S_x = 2.35 \text{ in}^3/\text{ft}$

Characteristic in-plane shear strength (F_{Lr}^v) = 1,501 psi

$A_w = 1.39 \text{ in}^2/\text{ft}$

Weight = 3.16 psf

Solid Top Decking with Non-Slip Strips



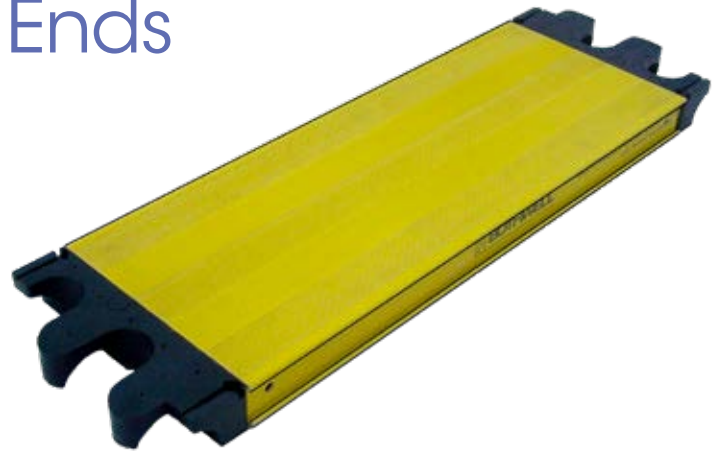
	Allowable Concentrated Load Tables <i>(lb/ft width of panel)</i>							Allowable Uniform Load Tables <i>(lb/ft²)</i>					
	L/D Ratios			Deflection <i>(in)</i>				L/D Ratios			Deflection <i>(in)</i>		
Span <i>(in)</i>	60	240	360	0.25	1	Max. Service Load	Span <i>(in)</i>	60	240	360	0.25	1	Max. Service Load
24	****	****	****	****	****	1043	24	****	****	****	****	****	522
36	****	****	815	****	****	1043	36	****	****	****	****	****	348
48	****	721	481	902	****	1043	48	****	****	195	****	****	261
60	****	472	315	472	****	1014	60	****	152	102	152	****	209
72	****	332	221	277	****	845	72	****	89	59	74	****	174
84	****	246	164	176	702	724	84	****	56	38	40	****	149
96	****	189	126	118	473	633	96	****	38	25	24	95	130
108	****	150	100	83	333	563	108	107	27	18	15	59	116
120	487	122	81	61	244	507	120	78	20	13	10	39	101
132	403	101	67	46	183	461	132	59	15	10	7	27	84
144	339	85	57	35	141	422	144	45	11	8	5	19	70

Maximum allowable load is determined by a 4.0 safety factor in flexure and in shear.

Engineering Data - Plank With Hooked Ends

Standard Sizes

PLANK WITH HOOK ENDS				
Overall Length (ft)	Overall Length (in)	Pultruded Plank Length (in)	Max Support Spacing (in)	Weight of Plank Assembly (lbs/ft)
2	26.5	19.5	24	8.23
3	38.5	31.5	36	10.78
4	50.5	43.5	48	13.33
5	62.5	55.5	60	15.88
6	74.5	67.5	72	18.43
7	86.5	79.5	84	20.98
8	98.5	91.5	96	23.53
9	110.5	103.5	108	26.08
10	122.5	115.5	120	28.63



Physical Properties

Physical Properties for Plank with Hooked Ends	Units	Bothwell Composite Plank
Moment of Inertia	in ⁴	1.627
Section Modulus	in ³	1.859
Shear Area of Web	in ²	1.1
Weight/ft (without hooks or caps)	lbs/ft	2.55
Standard Color		Safety Yellow
CLTE	in/in/°F	6E10 ⁻⁶
Max Use Temperature	°F	140

Technical Mechanical Properties

Mechanical Properties for Plank with Hooked Ends	Test Method	Units	Values Published per ASTM D7290
Bending Strength	ASTM D8069-17a	psi	26,637
Modulus of Elasticity (Average)	ASTM D8069-17a	psi	4.13E+06
Shear Modulus of Elasticity	ASTM D5379	psi	500,000
In-plane Shear Strength	ASTM D5379	psi	908

Load Requirements

Duty Rating ANSI/ASSP A10.8-2011	Load (psf)	Load Position (in)	Max Span (ft)	Deflection Limit L/D = 60 (in)	Safety Factor
Light	25	Uniformly Distributed	14.45	2.9	> 4.0
Medium	50	Uniformly Distributed	11.47	2.3	> 4.0
Heavy	75	Uniformly Distributed	8.41	1.7	> 4.0
Duty Rating ANSI/ASSP A10.8-2011	Total Applied Load (Lbf)	Load Position (in)	Max Span (ft)	Deflection Limit L/D = 60 (in)	Safety Factor
1 Person	250	250lbf @ Center (CTR)	12.22	2.4	> 4.0
2 Person	500	250lbf @ 18" each side of CTR	9.31	1.9	> 4.0

Note: Loads require a minimum safety factor of 4x. Per ANSI Platform Units and Platforms 5.1.1.2

Note: Hook ends required, centerline of hook end radial quadrant to quadrant equals the span

Note: Scaffolding Planks do not meet the 3-person Duty Rating when hook ends are utilized.

Note: Reference tables for free ends when not using hook ends for support.

Multiple Plank Assembly Load Chart - Plank With Hooked Ends

Bothwell Plank - 9.50" wide x 1.75" high



$E_b = 4.13 \text{ Msi}$

$G_b = 0.5 \text{ Msi}$

Characteristic longitudinal compressive strength (FLC) = 26,637 psi

$I_x = 2.06 \text{ in}^4/\text{ft}$

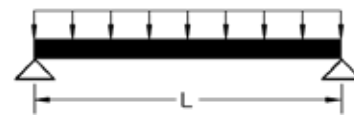
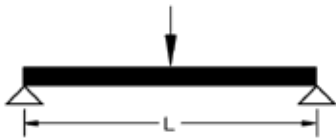
$S_x = 2.35 \text{ in}^3/\text{ft}$

Characteristic in-plane shear strength (F_{tr}^v) = 908 psi

$A_w = 1.39 \text{ in}^2/\text{ft}$

Weight = 3.16 psf

Solid Top Decking with Non-Slip Strips



Allowable Concentrated Load Tables (lb/ft width of panel)							Allowable Uniform Load Tables (lb/ft ²)						
L/D Ratios			Deflection (in)				L/D Ratios			Deflection (in)			
Span (in)	60	240	360	0.25	1	Max. Service Load	Span (in)	60	240	360	0.25	1	Max. Service Load
24	****	****	****	****	****	631	24	****	****	****	****	****	316
36	****	****	****	****	****	631	36	****	****	****	****	****	210
48	****	****	463	****	****	631	48	****	****	****	****	****	158
60	****	454	303	454	****	631	60	****	****	98	****	****	126
72	****	319	213	266	****	631	72	****	86	57	71	****	105
84	****	236	158	169	****	631	84	****	54	36	39	****	90
96	****	182	121	114	454	631	96	****	36	24	23	****	79
108	576	144	96	80	320	580	108	****	26	17	14	57	70
120	468	117	78	58	234	522	120	****	19	13	9	38	63

Maximum allowable load is determined by a 4.0 safety factor in flexure and in shear.

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Your Single Source for Innovative Engineered Solutions Using Fiber Reinforced Polymer Composites

Advance your products and projects beyond the limitations of traditional concrete, steel, and wood by leveraging the combined strength of Creative Composites Group.

We are the driving force of technical innovation that has created the industry's most advanced engineered FRP. Our team of industry leaders includes:

- Creative Pultrusions
- E.T. Techtonics
- Tower Tech
- Composite Advantage
- Kenway Composites

As Creative Composites Group, we can help you to create products and structures of any size or shape — for projects of any ambition or vision.

Other companies commoditize FRP in off-the-shelf shapes and forms; Creative Composites Group does not. We are the single source for the broadest range of engineered FRP solutions to build your ideal projects. That's possible only with our proven engineering processes and end-to-end collaboration, service and support resources.

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We're much more than a construction material supplier. Creative Composites Group is committed to becoming a trusted business partner who is keenly interested in your project's success.

Creative Composites Group works alongside your team, from facility owners to design engineers to contractors, to help you develop the most economical FRP solution that meets the most demanding structural requirements and environmental conditions.

*Have a project that you think engineered FRP is right for? Call us.
We'd be thrilled to discuss it with you.*

Contact Our Composites Specialists

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