



CREATIVE
COMPOSITES
GROUP

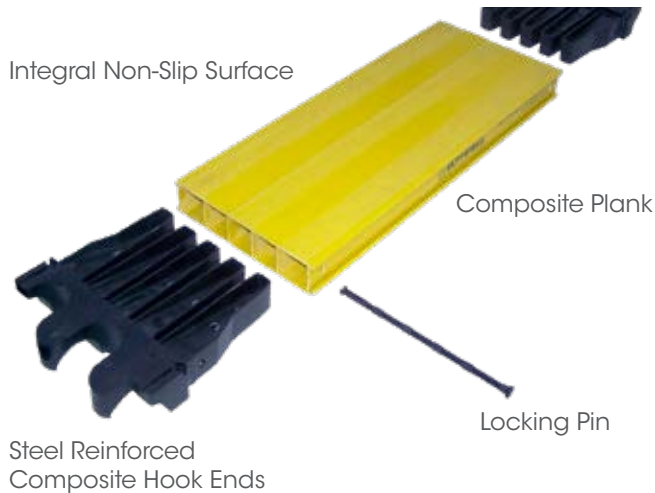


Composite Scaffolding Plank System



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

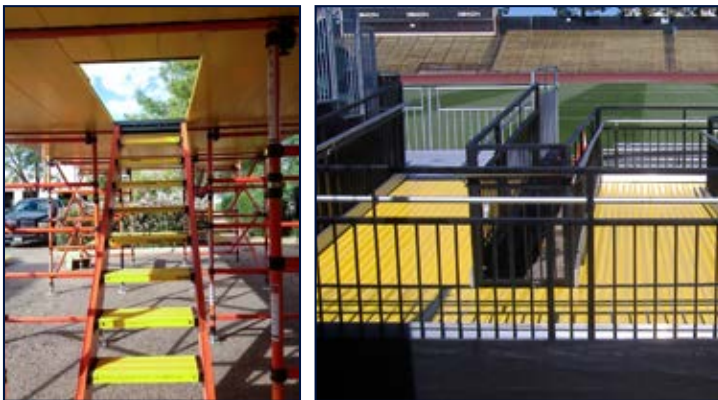
- No overlapping planks (reduces trip hazard)
- Characteristic Design Strengths per ASTM D7290
- Slip-resistant surface
- Non-Conductive

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



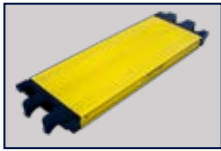
The Bothwell Composite Plank System used in a scaffolding deck (left) and as an access ramp at a University stadium (right).

FLOAT BAR DEMONSTRATION

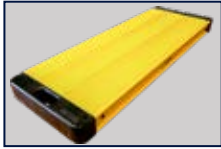


Float Bar spans the gap between planks providing a "hook-on" bar to allow for use of a "floating plank" as filler board when navigating obstacles, pipes, etc. Quick, easy installation without tools or fasteners.

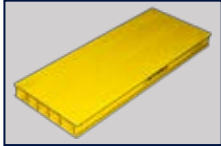
Products & Accessories



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



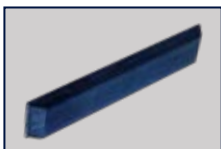
HOOK END - The patented Hook End-connector has interlocking fingers that loop over the scaffold bar creating a non-lap, non-trip system. The Hook Ends are injected molded with very durable nylon thermoplastic and incorporate a metal insert for increased strength and stiffness. Wt. 2.045 lbs.



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 injection 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.



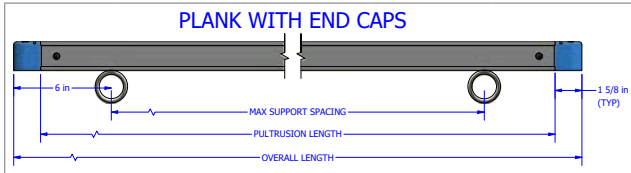
FIELD JIG - The Field jig is an aluminum jig that allows the plank to be modified in the field when cutting to different lengths. The Jig is designed to make perfect hole locations, when modifying planks.



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

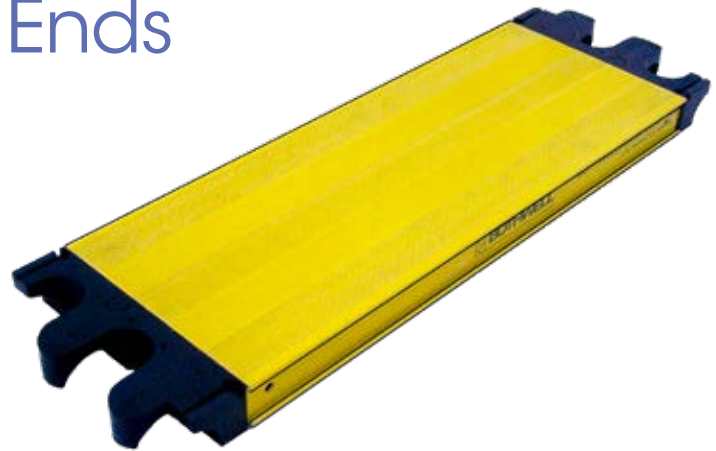
Note: Scaffolding planks without hook ends require a minimum cantilever length of 6" on each side

Multiple Plank Assembly Load Chart - Plank With End Caps

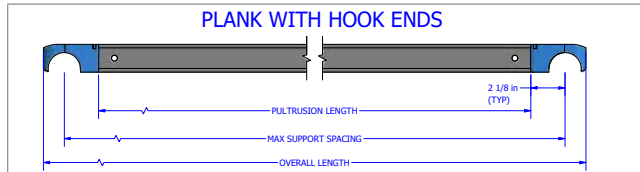
Bothwell Plank - 9.50" wide x 1.75" high													
$E_b = 4.301 \text{ Msi}$ $I_x = 2.06 \text{ in}^4/\text{ft}$ $A_w = 1.39 \text{ in}^2/\text{ft}$			$G_b = 0.5 \text{ Msi}$ $S_x = 2.35 \text{ in}^3/\text{ft}$ Weight = 3.16 psf			Characteristic longitudinal compressive strength (F_L^c) = 25,879 psi Characteristic in-plane shear strength (F_{Lr}^v) = 1,501 psi 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>						
Span (in)	L/D Ratios			Deflection (in)		Max. Service Load	Span (in)	L/D Ratios			Deflection (in)		Max. Service Load
	60	240	360	0.25	1			60	240	360	0.25	1	
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



Max Support Spacing (ft)	Overall Length (in)	Pultruded Plank Length (in)	Max Support Spacing (in)	Weight of Plank Assembly (lbs/ft)
2	26.5	19.75	24	8.23
3	38.5	31.75	36	10.78
4	50.5	43.75	48	13.33
5	62.5	55.75	60	15.88
6	74.5	67.75	72	18.43
7	86.5	79.75	84	20.98
8	98.5	91.75	96	23.53
9	110.5	103.75	108	26.08
10	122.5	115.75	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 Msi I_x = 2.06 in⁴/ft A_w = 1.39 in²/ft			G_b = 0.5 Msi S_x = 2.35 in³/ft Weight = 3.16 psf			Characteristic longitudinal compressive strength (FLc) = 26,637 psi Characteristic in-plane shear strength (F_{IT}^v) = 908 psi 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>							
Span <i>(in)</i>	L/D Ratios			Deflection <i>(in)</i>			Max. Service Load	Span <i>(in)</i>	L/D Ratios			Deflection <i>(in)</i>		Max. Service Load
	60	240	360	0.25	1	60			240	360	0.25	1		
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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