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August 24, 2017

Manufacturer: Wahoo Decks
203 Chesterra Dr,
Dahlonega GA 30533

Report: PER 5023

Product(s): AridDek Aluminum Decking
DryJoist Aluminum Decking
DryJoist EZ Aluminum Decking



Compliance:

This report is issued to comply with the requirements of the 2015 International Building Code, 2015 International Residential Code, and 2015 Aluminum Design Manual.

Scope:

The purpose of this report is to determine the allowable loads based on span, deflection and material fiberstress limitations used in the analyses in the Appendix of this report. All calculations are in compliance with the 2015 International Building Code, 2015 International Residential Code, and 2015 Aluminum Design Manual, accepted engineering practices, and industry design standards.

Analysis and Findings:

The AridDek, DryJoist, and DryJoist EZ products are Aluminum 6005-T5 decking extrusions typically used as a waterproof deck solution on residential and commercial decks, low-slope roofs, and boat docks. The deck products were analyzed using the following beam configurations to determine the maximum allowable loads (PSF) based on span, deflection and material fiberstress limitations:

1. Single Span – beam simply supported at both ends (All deck products listed)
2. Double Span – beam simply supported at both ends and at center (All deck products listed)
3. Multi Span – beam simply supported at multiple locations (All deck products listed)

All beam configurations were analyzed using three maximum deflection allowances $L/180$, $L/240$, and $L/360$. Material fiberstress limits were developed using the 2015 Edition of the Aluminum Design Manual (ASD). Allowable stresses are based upon the shape of the decking extrusion, material properties, and length of the unsupported span. All calculations can be found within the appendix of this report.

The following table shows the end results of the analysis. The maximum allowable load was taken for each of the beam configurations using the minimum value between deflections or bending stress limits.



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Maximum Allowable Loads (PSF): AridDek Aluminum Decking

Single Span, Total Load (PSF)			
Span Length, ft.	TL (PSF)		
	L/180	L/240	L/360
1.0	9426.67	7070.00	4713.33
1.5	2793.09	2094.81	1396.54
2.0	971.65	883.75	589.17
2.5	397.99	397.99	301.65
3.0	191.93	191.93	174.57
3.5	103.60	103.60	103.60
4.0	60.73	60.73	60.73

Double Span, Total Load (PSF)			
Span Length, ft.	TL (PSF)		
	L/180	L/240	L/360
1.0	20825.54	17030.60	11353.73
1.5	6728.14	5046.10	3364.07
2.0	1727.37	1727.37	1419.22
2.5	707.53	707.53	707.53
3.0	341.21	341.21	341.21
3.5	184.18	184.18	184.18
4.0	107.96	107.96	107.96

Multi-Span, Total Load (PSF)			
Span Length, ft.	TL (PSF)		
	L/180	L/240	L/360
1.0	35143.09	35143.09	23566.67
1.5	13965.43	10474.07	6982.72
2.0	2914.94	2914.94	2914.94
2.5	1193.96	1193.96	1193.96
3.0	575.79	575.79	575.79
3.5	310.80	310.80	310.80
4.0	182.18	182.18	182.18



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Maximum Allowable Loads (PSF): DryJoist Aluminum Decking

Single Span, Total Load (PSF)			
Span Length, ft.	TL (PSF)		
	L/180	L/240	L/360
4.0	653.83	490.38	326.92
5.0	278.20	251.07	167.38
6.0	134.16	134.16	96.86
7.0	72.42	72.42	61.00
8.0	42.45	42.45	40.86
9.0	26.50	26.50	26.50
10.0	17.39	17.39	17.39

Double Span, Total Load (PSF)			
Span Length, ft.	TL (PSF)		
	L/180	L/240	L/360
4.0	1574.99	1181.24	787.50
5.0	494.58	494.58	403.20
6.0	238.51	238.51	233.33
7.0	128.74	128.74	128.74
8.0	75.47	75.47	75.47
9.0	47.11	47.11	47.11
10.0	30.91	30.91	30.91

Multi-Span, Total Load (PSF)			
Span Length, ft.	TL (PSF)		
	L/180	L/240	L/360
4.0	3269.17	2451.88	1634.59
5.0	834.60	834.60	834.60
6.0	402.49	402.49	402.49
7.0	217.25	217.25	217.25
8.0	127.35	127.35	127.35
9.0	79.50	79.50	79.50
10.0	52.16	52.16	52.16



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Maximum Allowable Loads (PSF): DryJoist EZ Aluminum Decking

Single Span, Total Load (PSF)			
Span Length, ft.	TL (PSF)		
	L/180	L/240	L/360
4.0	447.58	335.68	223.79
5.0	229.16	171.87	114.58
6.0	132.62	99.46	66.31
7.0	83.51	62.64	41.76
8.0	42.70	41.96	27.97
9.0	22.65	22.65	19.65
10.0	12.92	12.92	12.92

Double Span, Total Load (PSF)			
Span Length, ft.	TL (PSF)		
	L/180	L/240	L/360
4.0	1078.15	808.62	539.08
5.0	552.01	414.01	276.01
6.0	319.45	239.59	159.73
7.0	157.35	150.88	100.59
8.0	75.91	75.91	67.38
9.0	40.26	40.26	40.26
10.0	22.96	22.96	22.96

Multi-Span, Total Load (PSF)			
Span Length, ft.	TL (PSF)		
	L/180	L/240	L/360
4.0	2237.90	1678.42	1118.95
5.0	1145.80	859.35	572.90
6.0	663.08	497.31	331.54
7.0	265.53	265.53	208.78
8.0	128.10	128.10	128.10
9.0	67.95	67.95	67.95
10.0	38.75	38.75	38.75



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Limits of Use:

Calculations and analyses in this report take into the main components of the decking systems listed herein. Decks are made up of multiple components that may, or may not, be mechanically fastened to one another.

Using only the 'main' components is conservative as other components will simply add to the performance of the deck. Components made up of several sub-components are assumed to be fastened together to adequately share loads between each other and deflect 'as one'.

This report does not take into account anchorage or fastening of the deck to any surrounding structure. These products shall be used and installed per manufacturer specifications and these aspects are beyond the scope of this report.

Conclusion:

The products in question have been calculated to be able to withstand the loads listed in the tables above at the corresponding maximum unsupported spans. These calculations are in compliance with the 2015 International Building Code, 2015 International Residential Code, and 2015 Aluminum Design Manual, accepted engineering practices, and industry design standards.

In my professional opinion, the calculated results, as presented above, for maximum loads are accurate and acceptable.

I trust that this will satisfy your needs, however feel free to call if you have any questions.

Respectfully,

Hermes F. Norero, P.E.
Florida Registered Professional Engineer #73778

Certification of Independence:

Please note that I do not have nor will I acquire a financial interest in any company manufacturing or distributing the product(s) for which this report is being issued. Also, I do not have nor will I acquire a financial interest in any other entity involved in the approval process of the listed product(s).



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APPENDIX

Allowable Loading Analyses: AridDek Aluminum Decking
Allowable Loading Analyses: DryJoist Aluminum Decking
Allowable Loading Analyses: DryJoist EZ Aluminum Decking



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Product Evaluation Report

Wahoo Decks

AridDek Aluminum Deck

Allowable Loads Based on Span Length & Type

Wahoo Decks

AridDek Aluminum Deck

All calculations herein are specific to the AridDek Aluminum Deck product taking into account deflection and material fiberstress limits. Analyses are based upon the Aluminum Design Manual (ADM) 2015 Edition and other accepted engineering practices.



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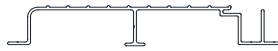
Wahoo Decks
 AridDek Aluminum Deck

AridDek Aluminum Deck-Determination of Allowable Stress

Reference: Aluminum Design Manual, 2015 Edition
 Design Method: Allowable Strength Design (ASD)
 Shape Assumption: Single Web Shape, Compression in Beams
 Section: 3.4.11

Material: Aluminum 6005-T5

Tensile Yield Strength (F_{Ty}): 35 KSI
 Compressive Yield Strength (F_{Cy}): 31.5 KSI
 Elastic Modulus (E): 10100 KSI
 Buckling Intercept (B_c): 39.37 KSI
 Buckling Slope (D_c): 245.80
 Buckling Intersection (C_c): 65.67
 Buckling Coeff. (C_b): 1
 Extreme fiber on the compressive side (cc): 0.408 in
 Extreme fiber on the Tension Side (ct): 0.667 in
 AutoCAD Moment of Inertias: 0.10500 in⁴
 Plastic Modulus (Z): 0.407985 in³
 Section Modulus on the Tension Side of the Neutral Axis (S_{nt}): 0.157421289 in³
 Section Modulus on the Compression Side of the Neutral Axis (S_{nc}): 0.257352941 in³
 Section Modulus About the Compression Side of the X-Axis (S_{xc}): 0.257352941 in³
 Nominal Flexural Strength (M_{nb}): 8.26 kip-in
 Radius of Gyration (r_{yb}): 0.363 in



----- REGIONS -----
 Area: 0.800
 Perimeter: 22.359
 Bounding box: X: -3.608 -- 3.242
 Y: -0.667 -- 0.408
 Centroid: X: 0.000
 Y: 0.000
 Moments of inertia: X: 0.119
 Y: 3.268
 Product of inertia: XY: -0.105
 Radii of gyration: X: 0.386
 Y: 2.021
 Principal moments and X-Y directions about centroid:
 I: 0.115 along [0.999 -0.033]
 J: 3.272 along [0.033 0.999]

ADM 2015, Section F.4

Unsupported Length (L_b), in.	λ	Nominal Flexural Strength (M_{nmb}), k-in	ASD Limit State (Ω')	Allowable Moment (k-in)	Allowable Bending Stress (Fb)	Slenderness Limit Result
12	15.121	17.67	1.65	10.71	41613.89	Inelastic
18	49.587	39.11	1.65	23.70	92100.87	Inelastic
24	66.116	5.86	1.65	3.55	13806.62	Elastic
30	82.645	3.75	1.65	2.27	8836.24	Elastic
36	99.174	2.61	1.65	1.58	6136.28	Elastic
42	115.702	1.91	1.65	1.16	4508.29	Elastic
48	132.231	1.47	1.65	0.89	3451.66	Elastic



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Product Evaluation Report

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AridDek Aluminum Deck

AridDek Aluminum Deck Load Tables

General Data and Assumptions

Elastic Modulus (E): 10100000 PSI
Moment of Inertia (I_x): 0.105 in⁴

TL: Total Load, PSF
δ: Deflection based on span length, in.
L: Span Length, in.
w: Linear Load, lbs/in .
b: 4 in. (board width)

Case 1: Single Span - Pinned at both ends : $\delta_{max} = (5*w*L^4)/(384*E*I)$

Total Load, PSF			
Span Length, ft.	L/180	L/240	L/360
1.0	9426.67	7070.00	4713.33
1.5	2793.09	2094.81	1396.54
2.0	1178.33	883.75	589.17
2.5	603.31	452.48	301.65
3.0	349.14	261.85	174.57
3.5	219.86	164.90	109.93
4.0	147.29	110.47	73.65

Case 2: Double span - Pinned at both ends and center $\delta_{max} = (w*L^4)/(185*E*I)$

Total Load, PSF			
Span Length, ft.	L/180	L/240	L/360
1.0	22707.47	17030.60	11353.73
1.5	6728.14	5046.10	3364.07
2.0	2838.43	2128.82	1419.22
2.5	1453.28	1089.96	726.64
3.0	841.02	630.76	420.51
3.5	529.62	397.22	264.81
4.0	354.80	266.10	177.40



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Case 3: Multi Span $\delta_{max} = (w \cdot L^4) / (384 \cdot E \cdot I)$

Total Load, PSF			
Span Length, ft.	L/180	L/240	L/360
1.0	47133.33	35350.00	23566.67
1.5	13965.43	10474.07	6982.72
2.0	5891.67	4418.75	2945.83
2.5	3016.53	2262.40	1508.27
3.0	1745.68	1309.26	872.84
3.5	1099.32	824.49	549.66
4.0	736.46	552.34	368.23



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AridDek Aluminum Deck Load Tables

General Data and Assumptions

Allowable Bending Stress (F_b): See ADM calculations

Section Modulus (S_x): 0.141 in³

TL, P: Total Load, PSF

δ : Deflection based on span length, in.

L: Span Length, in.

A: 0.5*L ft²

b: 4 in. (board width)

Case 1: Single Span - Pinned at both ends : $\sigma_{max} = (P*b*L^2)/(8*S_x)$

Total Load, PSF	
Span Length, ft.	TL
1.0	11714.36
1.5	11522.90
2.0	971.65
2.5	397.99
3.0	191.93
3.5	103.60
4.0	60.73

Case 2: Double Span - Pinned at both ends and center: $\sigma_{max} = (9*P*b*L^2)/(128*S_x)$

Total Load, PSF	
Span Length, ft.	TL
1.0	20825.54
1.5	20485.15
2.0	1727.37
2.5	707.53
3.0	341.21
3.5	184.18
4.0	107.96



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AridDek Aluminum Deck

Case 3: Multi Span - Pinned at both ends : $\sigma_{max} = (P*b*L^2/(24*S_x))$

Total Load, PSF	
Span Length, ft.	TL
1.0	35143.09
1.5	34568.69
2.0	2914.94
2.5	1193.96
3.0	575.79
3.5	310.80
4.0	182.18



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AridDek Aluminum Deck

AridDek Aluminum Deck Load Tables

Single Span, Total Load (PSF)			
Span Length, ft.	TL (PSF)		
	L/180	L/240	L/360
1.0	9426.67	7070.00	4713.33
1.5	2793.09	2094.81	1396.54
2.0	971.65	883.75	589.17
2.5	397.99	397.99	301.65
3.0	191.93	191.93	174.57
3.5	103.60	103.60	103.60
4.0	60.73	60.73	60.73

Double Span, Total Load (PSF)			
Span Length, ft.	TL (PSF)		
	L/180	L/240	L/360
1.0	20825.54	17030.60	11353.73
1.5	6728.14	5046.10	3364.07
2.0	1727.37	1727.37	1419.22
2.5	707.53	707.53	707.53
3.0	341.21	341.21	341.21
3.5	184.18	184.18	184.18
4.0	107.96	107.96	107.96

Multi-Span, Total Load (PSF)			
Span Length, ft.	TL (PSF)		
	L/180	L/240	L/360
1.0	35143.09	35143.09	23566.67
1.5	13965.43	10474.07	6982.72
2.0	2914.94	2914.94	2914.94
2.5	1193.96	1193.96	1193.96
3.0	575.79	575.79	575.79
3.5	310.80	310.80	310.80
4.0	182.18	182.18	182.18



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Wahoo Decks

DryJoist Aluminum Deck

Allowable Loads Based on Span Length & Type

Wahoo Decks

DryJoist Aluminum Deck

All calculations herein are specific to the DryJoist Aluminum Deck product taking into account deflection and material fiberstress limits. Analyses are based upon the Aluminum Design Manual (ADM) 2015 Edition and other accepted engineering practices.



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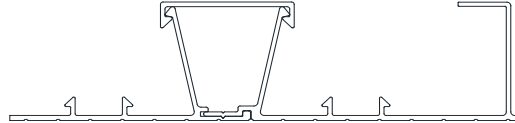
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 AridDek Aluminum Deck

AridDek Aluminum Deck-Determination of Allowable Stress

Reference: Aluminum Design Manual, 2015 Edition
 Design Method: Allowable Strength Design (ASD)
 Shape Assumption: Single Web Shape, Compression in Beams
 Section: 3.4.11

Material: Aluminum 6005-T5

Tensile Yield Strength (F_{ty}): 35 KSI
 Compressive Yield Strength (F_{cy}): 31.5 KSI
 Elastic Modulus (E): 10100 KSI
 Buckling Intercept (B_c): 39.37 KSI
 Buckling Slope (D_c): 245.80
 Buckling Intersection (C_c): 65.67
 Buckling Coeff. (C_b): 1
 Extreme fiber on the compressive side (cc): 1.337 in
 Extreme fiber on the Tension Side (ct): 0.669 in
 AutoCAD Moment of Inertias: 0.93220 in⁴
 Plastic Modulus (Z): 1.72426944 in³
 Section Modulus on the Tension Side of the Neutral Axis (S_{nt}): 1.393423019 in³
 Section Modulus on the Compression Side of the Neutral Axis (S_{nc}): 0.69723261 in³
 Section Modulus About the Compression Side of the X-Axis (S_{xc}): 0.69723261 in³
 Nominal Flexural Strength (M_{nb}): 32.94 kip-in
 Radius of Gyration (r_{yb}): 0.7715 in.



----- REGIONS -----
 Area: 1.5661
 Perimeter: 39.9849
 Bounding box: X: -4.1588 -- 3.8412
 Y: -0.6691 -- 1.3338
 Centroid: X: 0.0000
 Y: 0.0000
 Moments of inertia: X: 0.9322
 Y: 7.0111
 Product of inertia: XY: 0.2210
 Radii of gyration: X: 0.7715
 Y: 2.1159
 Principal moments and X-Y directions about centroid:
 I: 0.9241 along [0.9993 0.0363]
 J: 7.0191 along [-0.0363 0.9993]

ADM 2015, Section F.4

Unsupported Length (L_b), in.	λ	Nominal Flexural Strength (M_{nmb}), K-in	ASD Limit State (Ω')	Allowable Moment	Fb	Slenderness Limit Result
12	15.554	150.77	1.65	91.37	131053.23	Inelastic
18	23.331	209.68	1.65	127.08	182261.66	Inelastic
24	31.108	268.59	1.65	162.78	233470.09	inelastic
30	38.885	327.50	1.65	198.49	284678.52	inelastic
48	62.216	504.24	1.65	305.60	438303.81	inelastic
60	77.771	11.48	1.65	6.96	9978.52	Elastic
72	93.325	7.97	1.65	4.83	6929.53	Elastic
84	108.879	5.86	1.65	3.55	5091.08	Elastic
96	124.433	4.48	1.65	2.72	3897.86	Elastic
108	139.987	3.54	1.65	2.15	3079.79	Elastic
120	155.541	2.87	1.65	1.74	2494.63	Elastic



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DryJoist Aluminum Deck Load Tables

General Data and Assumptions

Elastic Modulus (E): 10100000 PSI
Moment of Inertia (I_x): 0.9322 in⁴

TL: Total Load, PSF
δ: Deflection based on span length, in.
L: Span Length, in.
w: Linear Load, lbs/in .
b: 8 in. (board width)

Case 1: Single Span - Pinned at both ends : $\delta_{max} = (5*w*L^4)/(384*E*I)$

Total Load, PSF			
Span Length, ft.	L/180	L/240	L/360
4.0	653.83	490.38	326.92
5.0	334.76	251.07	167.38
6.0	193.73	145.30	96.86
7.0	122.00	91.50	61.00
8.0	81.73	61.30	40.86
9.0	57.40	43.05	28.70
10.0	41.85	31.38	20.92

Case 2: Double span - Pinned at both ends and center $\delta_{max} = (w*L^4)/(185*E*I)$

Total Load, PSF			
Span Length, ft.	L/180	L/240	L/360
4.0	1574.99	1181.24	787.50
5.0	806.40	604.80	403.20
6.0	466.66	350.00	233.33
7.0	293.88	220.41	146.94
8.0	196.87	147.66	98.44
9.0	138.27	103.70	69.14
10.0	100.80	75.60	50.40



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Case 3: Multi Span $\delta_{max} = (w*L^4)/(384*E*I)$

Total Load, PSF			
Span Length, ft.	L/180	L/240	L/360
4.0	3269.17	2451.88	1634.59
5.0	1673.82	1255.36	836.91
6.0	968.64	726.48	484.32
7.0	609.99	457.49	305.00
8.0	408.65	306.49	204.32
9.0	287.01	215.25	143.50
10.0	209.23	156.92	104.61

Case 4: Cantilever Span - Fixed at one end : $\delta_{max} = (w*L^4)/(8*E*I)$

Total Load, PSF			
Overhang Length, ft.	L/180	L/240	L/360
1.0	4358.90	3269.17	2179.45
1.5	1291.53	968.64	645.76
2.0	544.86	408.65	272.43
2.5	278.97	209.23	139.48



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Report #: 2504

Date: 8/24/2017

Product Evaluation Report

Wahoo Decks

DryJoist Aluminum Deck

DryJoist Aluminum Deck Load Tables

General Data and Assumptions

Allowable Bending Stress (F_b): See ADM calculations

Section Modulus (S_x): 0.697 in³

TL, P: Total Load, PSF

δ : Deflection based on span length, in.

L: Span Length, in.

A: 0.67*L ft²

b: 8 in. (board width)

Case 1: Single Span - Pinned at both ends : $\sigma_{max} = (P*b*L^2)/(8*S_x)$

Total Load, PSF	
Span Length, ft.	TL
4.0	19093.61
5.0	278.20
6.0	134.16
7.0	72.42
8.0	42.45
9.0	26.50
10.0	17.39

Case 2: Double Span - Pinned at both ends and center: $\sigma_{max} = (9*P*b*L^2)/(128*S_x)$

Total Load, PSF	
Span Length, ft.	TL
4.0	33944.20
5.0	494.58
6.0	238.51
7.0	128.74
8.0	75.47
9.0	47.11
10.0	30.91



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Case 3: Multi Span - Pinned at both ends : $\sigma_{\max} = (P*b*L^2/(24*S_x))$

Total Load, PSF	
Span Length, ft.	TL
4.0	57280.83
5.0	834.60
6.0	402.49
7.0	217.25
8.0	127.35
9.0	79.50
10.0	52.16

Case 4: Cantilever Span - Fixed at one end : $\sigma_{\max} = (P*b*L^2/(2*S_x))$

Total Load, PSF	
Overhang Length, ft.	TL
1.0	22836.02
1.5	14115.15
2.0	10170.54
2.5	7936.84



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DryJoist Aluminum Deck

DryJoist Aluminum Deck Load Tables

Single Span, Total Load (PSF)			
Span Length, ft.	TL (PSF)		
	L/180	L/240	L/360
4.0	653.83	490.38	326.92
5.0	278.20	251.07	167.38
6.0	134.16	134.16	96.86
7.0	72.42	72.42	61.00
8.0	42.45	42.45	40.86
9.0	26.50	26.50	26.50
10.0	17.39	17.39	17.39

Double Span, Total Load (PSF)			
Span Length, ft.	TL (PSF)		
	L/180	L/240	L/360
4.0	1574.99	1181.24	787.50
5.0	494.58	494.58	403.20
6.0	238.51	238.51	233.33
7.0	128.74	128.74	128.74
8.0	75.47	75.47	75.47
9.0	47.11	47.11	47.11
10.0	30.91	30.91	30.91

Multi-Span, Total Load (PSF)			
Span Length, ft.	TL (PSF)		
	L/180	L/240	L/360
4.0	3269.17	2451.88	1634.59
5.0	834.60	834.60	834.60
6.0	402.49	402.49	402.49
7.0	217.25	217.25	217.25
8.0	127.35	127.35	127.35
9.0	79.50	79.50	79.50
10.0	52.16	52.16	52.16



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Wahoo Decks

DryJoist EZ Aluminum Deck

Allowable Loads Based on Span Length & Type

Wahoo Decks

DryJoist EZ Aluminum Deck

All calculations herein are specific to the DryJoist EZ Aluminum Deck product taking into account deflection and material fiberstress limits. Analyses are based upon the Aluminum Design Manual (ADM) 2015 Edition and other accepted engineering practices.



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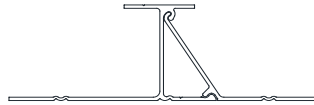
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Product Evaluation Report

Wahoo Decks
 AridDek Aluminum Deck

AridDek Aluminum Deck-Determination of Allowable Stress

Reference: Aluminum Design Manual, 2015 Edition
 Design Method: Allowable Strength Design (ASD)
 Shape Assumption: Single Web Shape, Compression in Beams
 Section: 3.4.11



Material: Aluminum 6005-T5

Tensile Yield Strength (F_{TY}): 35 KSI
 Compressive Yield Strength (F_{CY}): 31.5 KSI
 Elastic Modulus (E): 10100 KSI
 Buckling Intercept (B_c): 39.37 KSI
 Buckling Slope (D_c): 245.80
 Buckling Intersection (C_c): 65.67
 Buckling Coeff. (C_b): 1

Extream fiber on the compressive side (cc): 1.3645 in
 Extream fiber on the Tension Side (ct): 0.6355 in
 AutoCAD Moment of Inertias: 0.47800 in⁴
 Plastic Modulus (Z): 0.768 in³

Section Modulus on the Tension Side of the Neutral Axis (S_{nt}): 0.752163651 in³
 Section Modulus on the Compression Side of the Neutral Axis (S_{nc}): 0.350311469 in³
 Section Modulus About the Compression Side of the X-Axis (S_{xc}): 0.350311469 in³

Nominal Flexural Strength (M_{nb}): 16.55 kip-in
 Radius of Gyration (r_{yb}): 1.24 in.

----- REGIONS -----

Area: 0.8454
 Perimeter: 23.6281
 Bounding box: X: -3.0907 -- 2.9093
 Y: -0.6355 -- 1.3645

Centroid: X: 0.0000
 Y: 0.0000

Moments of inertia: X: 0.4786
 Y: 1.3106

Product of inertia: XY: -0.0224
 Radii of gyration: X: 0.7524
 Y: 1.2451

Principal moments and X-Y directions about centroid:
 I: 0.4780 along [0.9996 -0.0269]
 J: 1.3112 along [0.0269 0.9996]

ADM 2015, Section F.4						
Unsupported Length (L_b), in.	λ	Nominal Flexural Strength (M_{nmb}), k-in	ASD Limit State (Ω^*)	Allowable Moment	Fb	Slenderness Limit Result
12	9.677	33.84	1.65	20.51	58552.29	Inelastic
18	14.516	42.49	1.65	25.75	73510.25	Inelastic
24	19.355	51.14	1.65	30.99	88468.21	inelastic
30	24.194	59.78	1.65	36.23	103426.17	inelastic
36	29.032	68.43	1.65	41.47	118384.13	inelastic
42	33.871	77.07	1.65	46.71	133342.10	inelastic
48	38.710	85.72	1.65	51.95	148300.06	inelastic
60	48.387	103.01	2.65	38.87	110964.67	inelastic
72	58.065	120.30	3.65	32.96	94087.03	inelastic
84	67.742	7.60	4.65	1.63	4666.73	Elastic
96	77.419	5.82	5.65	1.03	2940.58	Elastic
108	87.097	4.60	6.65	0.69	1974.04	Elastic
120	96.774	3.72	7.65	0.49	1389.95	Elastic



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Product Evaluation Report

Wahoo Decks

DryJoist EZ Aluminum Deck

DryJoist EZ Aluminum Deck Load Tables

General Data and Assumptions

Elastic Modulus (E): 10100000 PSI
Moment of Inertia (I_x): 0.4786 in⁴

TL: Total Load, PSF
δ: Deflection based on span length, in.
L: Span Length, in.
w: Linear Load, lbs/in .
b: 6 in. (board width)

Case 1: Single Span - Pinned at both ends : $\delta_{max} = (5*w*L^4)/(384*E*I)$

Total Load, PSF			
Span Length, ft.	L/180	L/240	L/360
4.0	447.58	335.68	223.79
5.0	229.16	171.87	114.58
6.0	132.62	99.46	66.31
7.0	83.51	62.64	41.76
8.0	55.95	41.96	27.97
9.0	39.29	29.47	19.65
10.0	28.65	21.48	14.32

Case 2: Double span - Pinned at both ends and center $\delta_{max} = (w*L^4)/(185*E*I)$

Total Load, PSF			
Span Length, ft.	L/180	L/240	L/360
4.0	1078.15	808.62	539.08
5.0	552.01	414.01	276.01
6.0	319.45	239.59	159.73
7.0	201.17	150.88	100.59
8.0	134.77	101.08	67.38
9.0	94.65	70.99	47.33
10.0	69.00	51.75	34.50



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Case 3: Multi Span $\delta_{max} = (w \cdot L^4) / (384 \cdot E \cdot I)$

Span Length, ft.	Total Load, PSF		
	L/180	L/240	L/360
4.0	2237.90	1678.42	1118.95
5.0	1145.80	859.35	572.90
6.0	663.08	497.31	331.54
7.0	417.57	313.18	208.78
8.0	279.74	209.80	139.87
9.0	196.47	147.35	98.23
10.0	143.23	107.42	71.61



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DryJoist Aluminum Deck Load Tables

General Data and Assumptions

Allowable Bending Stress (F_b): See ADM calculations

Section Modulus (S_x): 0.697 in³

TL, P: Total Load, PSF

δ : Deflection based on span length, in.

L: Span Length, in.

A: 0.67*L ft²

b: 6 in. (board width)

Case 1: Single Span - Pinned at both ends : $\sigma_{max} = (P*b*L^2)/(8*S_x)$

Total Load, PSF	
Span Length, ft.	TL
4.0	8613.76
5.0	4124.93
6.0	2428.84
7.0	88.51
8.0	42.70
9.0	22.65
10.0	12.92

Case 2: Double Span - Pinned at both ends and center: $\sigma_{max} = (9*P*b*L^2)/(128*S_x)$

Total Load, PSF	
Span Length, ft.	TL
4.0	15313.35
5.0	7333.20
6.0	4317.94
7.0	157.35
8.0	75.91
9.0	40.26
10.0	22.96



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Case 3: Multi Span - Pinned at both ends : $\sigma_{max} = (P*b*L^2/(24*S_x))$

Total Load, PSF	
Span Length, ft.	TL
4.0	25841.29
5.0	12374.78
6.0	7286.52
7.0	265.53
8.0	128.10
9.0	67.95
10.0	38.75



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Single Span, Total Load (PSF)			
Span Length, ft.	TL (PSF)		
	L/180	L/240	L/360
4.0	447.58	335.68	223.79
5.0	229.16	171.87	114.58
6.0	132.62	99.46	66.31
7.0	83.51	62.64	41.76
8.0	42.70	41.96	27.97
9.0	22.65	22.65	19.65
10.0	12.92	12.92	12.92

Double Span, Total Load (PSF)			
Span Length, ft.	TL (PSF)		
	L/180	L/240	L/360
4.0	1078.15	808.62	539.08
5.0	552.01	414.01	276.01
6.0	319.45	239.59	159.73
7.0	157.35	150.88	100.59
8.0	75.91	75.91	67.38
9.0	40.26	40.26	40.26
10.0	22.96	22.96	22.96

Multi-Span, Total Load (PSF)			
Span Length, ft.	TL (PSF)		
	L/180	L/240	L/360
4.0	2237.90	1678.42	1118.95
5.0	1145.80	859.35	572.90
6.0	663.08	497.31	331.54
7.0	265.53	265.53	208.78
8.0	128.10	128.10	128.10
9.0	67.95	67.95	67.95
10.0	38.75	38.75	38.75