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Engineering Evaluation – PER # 1020

Manufacturer: Wahoo Decks
1604 Athens Highway
Gainesville, GA 30507

Product: AridDek Aluminum Decking

Compliance:

This report is issued to comply with the requirements of the 2006 International Building Code.

Scope:

The purpose of this report is to determine if the AridDek calculations for bending and shear strength, provided by Wahoo Decks, comply with the 2006 International Building Code and industry design standards.

Analysis and Findings:

The AridDek product is an aluminum 6005-T5 decking extrusion typically used as a waterproof deck solution on residential and commercial decks, low-slope roofs, and boat docks. The following three cases of simple beam deflection and stress were used to analyze the AridDek product and calculate the maximum load allowed:

1. Single Span - beam supported at both ends
2. Double Span – beam supported at both ends and at center
3. Multi Span – beam supported at multiple locations

All three cases were analyzed using three maximum deflection allowances $L/180$, $L/240$, and $L/360$. It should be noted that $L/180$ is the maximum allowed deflection for Miami Dade County, Florida.

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The following table shows the results of the analysis. The worst case maximum load was taken for each of the three cases and limited by the lesser of either deflection or bending stress.

| Case 1: | Single Span | TL (PSF) | | |
|---------|-------------------|-----------|-----------|-----------|
| | Board Length (ft) | TL[L/180] | TL[L/240] | TL[L/360] |
| | 1 | 5,573.73 | 4,666.67 | 3,111.11 |
| | 1.5 | 1,843.62 | 1,382.72 | 921.81 |
| | 2 | 777.78 | 583.33 | 388.89 |
| | 2.5 | 398.22 | 298.67 | 199.11 |
| | 3 | 230.45 | 172.84 | 115.23 |
| | 3.5 | 145.12 | 108.84 | 72.56 |
| | 4 | 97.22 | 72.92 | 48.61 |
| Case 2: | Double span | TL (PSF) | | |
| | Board Length (ft) | TL[L/180] | TL[L/240] | TL[L/360] |
| | 1 | 9,908.85 | 9,908.85 | 7,479.34 |
| | 1.5 | 4,403.93 | 3,324.15 | 2,216.10 |
| | 2 | 1,869.84 | 1,402.38 | 934.92 |
| | 2.5 | 957.36 | 718.02 | 478.68 |
| | 3 | 554.03 | 415.52 | 277.01 |
| | 3.5 | 348.89 | 261.67 | 174.45 |
| | 4 | 233.73 | 175.30 | 116.86 |
| Case 3: | Multi Span | TL (PSF) | | |
| | Board Length (ft) | TL[L/180] | TL[L/240] | TL[L/360] |
| | 1 | 16,721.18 | 16,721.18 | 15,555.56 |
| | 1.5 | 7,431.64 | 6,913.58 | 4,609.05 |
| | 2 | 3,888.89 | 2,916.67 | 1,944.44 |
| | 2.5 | 1,991.11 | 1,493.33 | 995.56 |
| | 3 | 1,152.26 | 864.20 | 576.13 |
| | 3.5 | 725.62 | 544.22 | 362.81 |
| | 4 | 486.11 | 364.58 | 243.06 |

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We have reviewed the information provided by Wahoo Decks in reference to the AridDek product. In review of the component materials, methods of assembly and overall construction, we have concluded that the products presented meet or exceed the requirements of the 2006 International Building Code and the industry standard calculations for beam deflection analysis.

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

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

Respectfully,

Kristina S. Daugherty, P.E.

Florida Registered Professional Engineer #68455

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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