

October 13, 2005

Mr. Kevin Morse
Morse Technologies, LLC
1000 Gold Mine Road
Brookeville, MD 20833

Dear Kevin,

The attached data is work in progress at the laboratory. I will provide you additional detail as it becomes available. The test specifications are briefly described below. We have completed three test of a 36" post connection using the DeckLok connection. The data is provided in Table 1. Photographs of the test configuration and failure mode are included in the Appendix.

Table 1. Post tests using the DeckLok fastener

Test	Specimen No.	Def. @ 200 lbf	Def. @ 500 lbf	Max. Load lbf	Comments
Config. 1	1	3.63	10.67	500	No Failure, Test stopped to avoid damage to instruments
	2	2.02	9.27	758	Post split near post-to-rim board connection
	3	4.50	10.90	397	Rim board split
Config. 3	1	1.58	9.82	964	Joist and rim board failure
	2	2.42	11.12	767	Joist and rim board failure
	3	1.70	9.23	766	Joist and rim board failure
Config. 5	1	1.76	11.26	510	See Figure A10
	2	1.37	9.52	627	See Figure A11
	3	1.37	8.00	558	See Figure A12

Test Specifications

1. Pressure Treated, Southern Yellow Pine lumber used in all tests.
2. The test will simulate a 36" handrail height.
3. Deck joists will be 2" X 8" dimension lumber.
4. Posts will be 4" X 4" dimension lumber.
5. The test configurations will be designed and built according to Figs. 1-3 shown below.

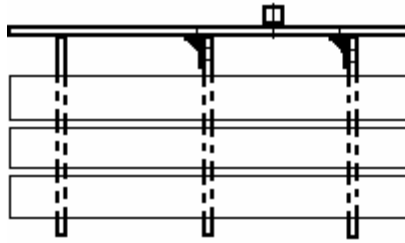


Figure 1. Test configuration 1

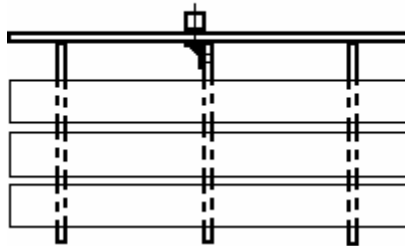


Figure 2. Test configuration 3

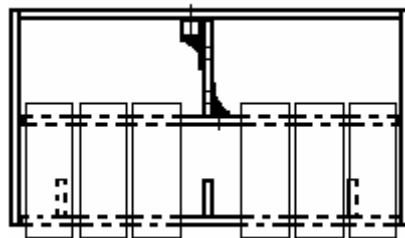


Figure 3. Test configuration 5

Test Summary

Test Configuration 1 (Figure 1)

You will notice that the limiting factor was either the wood materials or the testing equipment. Test specimen 1 represents a proof load to 500 lbf. This suggests that additional load carrying capacity was likely. For test specimens 2 and 3, the failure occurred in the post and rim board respectively. Therefore, the full load carrying capacity of the connection system was not determined for Configuration 1. That is, no failure was associated with the DeckLok connection, which suggests the DeckLok connection could carry additional load.

Test Configuration 3 (Figure 2)

For this configuration it appears that additional restraint for the joist containing the DeckLok connector should be improved. This would allow the DeckLok connection to received additional load. The average load carrying capacity for Configuration 3 was 832 lbf. Again these tests suggest that the DeckLok connection system is not the weak link.

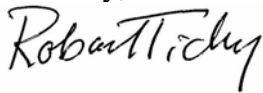
Test Configuration 5 (Figure 3)

In this configuration the blocking (containing the DeckLok connector) between the joists appears to be adequate to resist the load. The failure mode was one where the post pries the blocking and rim board away from the joist behind the rim board (Figures A10-A12). Here the joist behind the rim board is rotated and lifted upward. In test specimen 3 the blocking split, thereby separating from the joist behind. The average load carrying capacity for Configuration 5 was 565 lbf. Once again these tests suggest that the DeckLok connection system is not the weak link.

In all tests, it was shown that the load carrying capacity of the DeckLok connection system was limited by the framing materials. While the DeckLok connector exhibited ductile behavior, in no case did the connector fail. This suggests that improved framing systems are feasible that could utilize the full capacity of the connection system.

Additional testing is currently being planned. This report will be amended as these data become available. If you should have any questions, please feel free to contact us.

Sincerely,



Robert J. Tichy, Ph.D.
Sr. Research Engineer

Appendix 1. Test setup and failure photos



Figure A1. Test setup for configuration 1



Figure A2. Failure mode for test specimen 1, configuration 1

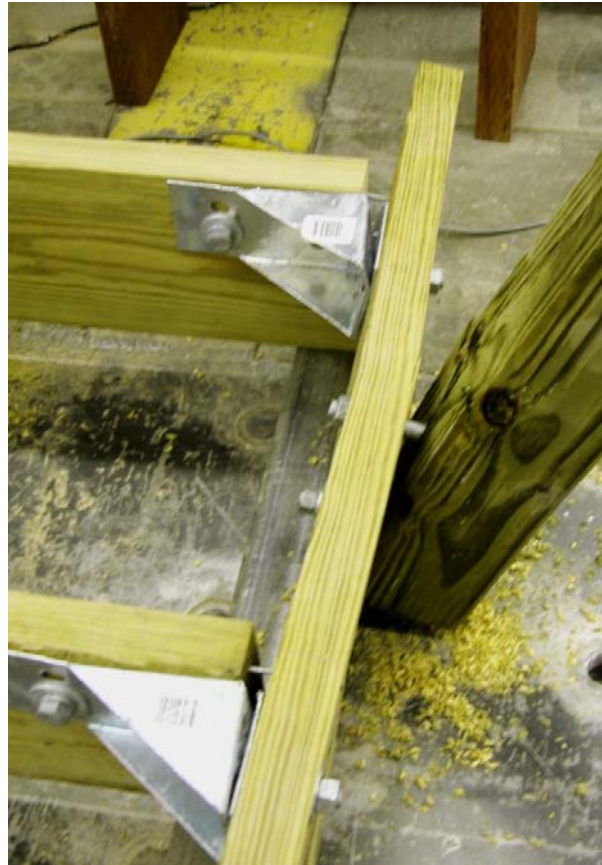


Figure A3. Failure mode for test specimen 2, configuration 1



Figure A4. Failure mode for test specimen 3, configuration 1



Figure A5. Test setup for configuration 3



Figure A6. Failure mode for test specimen 1, configuration 3



Figure A7. Failure mode for test specimen 2, configuration 3



Figure A8. Failure mode for test specimen 3, configuration 3



Figure A9. Test setup for configuration 5



Figure A10. Failure mode for test specimen 1, configuration 5



Figure A11. Failure mode for test specimen 2, configuration 5



Figure A12. Failure mode for test specimen 3, configuration 5