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Technical Bulletin No. LAD002, Rev. A

Subject: Corrosion Resistance of Ladder Safety System Wire Ropes

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The corrosion resistance of wire ropes used as the carrier component for ladder safety systems varies widely. Often the specific wire rope construction plays an important role in the ability to resist corrosion.

The carrier cable is an important part of the cable ladder safety systems. The carrier must withstand the effects of the environment that it is installed in, for extended periods of time (often several years). Minimal maintenance is performed on the ladder safety systems once they are installed, making the corrosion resistance a critical safety issue for those using the system and relying on it to provide fall protection.

Testing conducted on two different construction styles of 3/8 inch diameter galvanized wire rope has shown that significant corrosion resistance differences exist between a 1 x 7 construction and a 7 x 19 construction. Third party testing conducted by Stork /Twin City Testing Corporation has shown that a galvanized 1 x 7 construction will withstand over 5-1/2 times the duration of salt spray testing before red rust appears when compared to a galvanized 7 x 19 construction. The 1 x 7 construction has an average coating thickness of approximately 7 times that of the 7 x 19 construction.

Test Results Summary

Wire rope construction	avg. coating thickness	first sign of "red " rust *
1 x 7 galvanized	.0025 inches **	795 hrs.
7 x 19 galvanized	.00036 inches ** *	144 hrs.

1 x 7 construction conforms to Wire Rope and Strand ASTM A475. Minimum breaking strength –15,400 lbs.

7 x 19 construction conforms to Federal Specification Wire Rope and Strand RR-W-410. Minimum breaking strength – 14,400 lbs.

* salt spray tested in accordance with ASTM B117 standard

**minimum thickness .0012, maximum thickness .0051

*** minimum thickness. 0003, maximum thickness .0004

In severely corrosive environments the use of stainless steel cable and mounting brackets is recommended for optimum product life and product performance. Contact DBI/SALA for specific recommendations.