Technical Report 04012016: Pin Size Testing to WSTDA and CI standards

The current CI 1905 and the proposed WSTDA-RS-1HP both recommend maximum pin diameters when performing destructive testing on High Performance Fiber Roundslings. To demonstrate compliance with these standards the Slingmax® Technical Team completed testing on all sizes of Twin-Path® Slings in accordance with these recommendations.

Investment

15 Twin-Path® Slings were fabricated in order to meet the full range of capacities detailed in both the CI and WSTDA standards. Six different pin sizes were used, including 3 that had to be fabricated. The total cost invested by Slingmax® to complete this testing is shown in Table 1.

Table 1 – Cost of Testing

Description	Cost
15 slings	$21,330.50
Various Pins	$3,444.68
Testing Time/ Labor	$15,727.50
Total	**$40,502.68**

Testing

Each sling was tested on the maximum recommended pin size or smaller. See Figure 1. The slings were then proof tested and taken to ultimate failure. All slings exceeded the required 5:1 Design Factor. See Table 2.

Figure 1 – Sample Test Configuration

Table 2 – Test Results

Sling Capacity (Pounds)	CI Maximum Recommended Pin Size	WS&TDA Maximum Recommended Pin Size	Pin Size Used	Sling Tested	5:1 Design Factor achieved?
10,000	3.5"	3.5"	3.25"	TPXC1000	YES
15,000	3.5"	3.5"	3.25"	TPXCF1500	YES
20,000	3.5"	3.5"	3.25"	TPXCF2000	YES
25,000	3.5"	3.5"	3.25"	TPXCF2500	YES
30,000	3.5"	3.5"	3"	TPXCF3000	YES
40,000	5"	5"	4"	TPXCF4000	YES
50,000	5"	5"	4"	TPXCF5000	YES
60,000	5"	5"	5"	TPXCF6000	YES
70,000	5"	5"	5"	TPXCF7000	YES
85,000	5"	5"	5"	TPXCF8500	YES
100,000	7"	7"	7"	TPXC10,000	YES
125,000	7"	7"	7"	TPXCF12,500	YES
150,000	7"	7"	7"	TPXC15,000	YES
175,000	9"	9"	7"	TPXC17,500	YES
200,000	9"	9"	8"	TPXC20,000	YES

Conclusion

All slings tested met the requirements of both the current CI 1905 and proposed WSTDA-RS-1HP standards. This reinforces that Twin-Path® slings are the most versatile option for rigging on small diameter pins and hardware.

*Test Reports/ photos not included with this report