

# 6mm Anchor Cord Testing

## Edelrid Hard Line

Helix Product Webpage: [Helix Operations – Rescue – Ropes](#)

Edelrid EU DoC: [Technische Daten \(helixoperations.com\)](#)

User Information Booklet: [54522\\_GAL\\_AccessoryCords\\_EK\\_230201.indd \(helixoperations.com\)](#)

### Test Description

With the phasing out of the Edelrid Aramid 6mm cord and the Edelrid Hard Line becoming the replacement we needed to update our testing to ensure the product offered was suitable as an alternative selection to Sterling power cord.

Edelrid state a MBS of 23KN for Hard Line, for the test we wanted to look at how the Hard Line would compare when used in a standard focal point anchor as is when using Sterling Power cord and the previous 6mm Aramid Cord. This would be comparable to previous anchor system testing using a stable forward tensioned focal point with x3 anchor legs tied off with x3 strands per leg.

The typical method for building a system utilising these cords involves each anchor leg being built from three strands which form a tensioning system, the tension is taken in equally on all the anchor legs and they are tied off individually.

With this test we wanted to look at leg strand strength to reinforce the reasoning behind a three strand tie off as well as look at Hard Lines overall capability in this type of anchor setup.

### Details of Samples

Part Number: 76033-...

Date of Test: 29/05/2024

Colour: Red

Comments:

Single Strand Samples – Three samples were provided. Samples measured 30cm long\*

Double Strand Samples – Three samples were provided. Samples measured 30cm long

Triple Strand Samples - Five samples were provided. Samples measured 30cm long

\*NOTE: 3x Single Strand samples were made for single strand testing. Two of which measured 30cm in length eye to eye pre-tensioning. The final sample was short by 10cm.

### Date Tested

Date of Test: 29.05.2024

## Tests requested

Samples pulled to destruction. Peak force recorded in kN.

## Test Results

Detailed in Appendix A

## Apparatus

Testing carried out at DMM Engineering, Textile Manufacturing Building.

Tested on Testometric M500-100CT 100kN. Tensile test machine last calibrated 2024 by Zwick Roell Ltd (UKAS Accredited Calibration Laboratory Number 0167), Certificate Number 2404-1380 dated 05.04.2024

## Appendix A

### Test Results

Requirement	Tested	Result	Comment	
Single Strand Samples Pulled to destruction at rate of 150mm/min on Ø10mm pins. Record Peak Force in kN.	Yes	Pass	1.	8.225
			2.	8.701
			3.	8.190*
			Mean	8.372
			S.D.	0.285
			Mean - 3S.D.	7.516
			*Sample No. 3 was 20cm in length, all others were 30cm	
			All samples failed at Knot	
Double Strand Samples Pulled to destruction at a rate of 150mm/min on Ø10mm pins. Record Peak Force in kN.	Yes	Pass	1.	18.930
			2.	19.330
			3.	19.690
			Mean	19.317
			S.D.	0.380
			Mean - 3S.D.	18.176
			All samples failed at Knot	
			Double Strand Samples Pulled to destruction at a rate of 150mm/min on Ø10mm pins. Record Peak Force in kN.	Yes
2.	27.130			
3.	26.870			
4.	26.040			
5.	26.770			
Mean	26.864			
S.D.	0.542			
Mean - 3S.D.	25.237			
All samples failed at Knot				

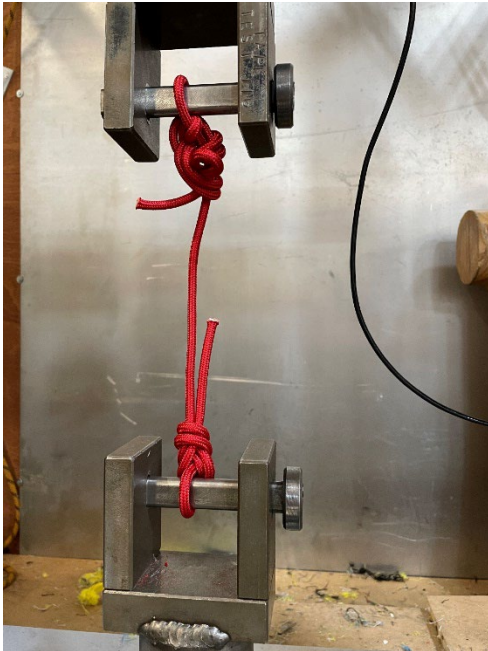
## Conclusion

The results show great consistency across all three tests, its important to note that a high tensile tie off wasn't done so the results shown shouldn't be used to compared just against the stated MBS from Edelrid.

When building a focal point type of anchor set up, we are always looking for 3 anchor legs with each leg achieving a minimum of 20kN. The Hard Line data we have from the test shows that a 3 strand tie would be needed on each leg for us to be able to achieve our 20kN target per leg. As such we can safely say from the test a 3 leg, 3 strand tied off focal point / beachhead anchor would very likely give us a highly redundant super strong anchor point which would far exceed a x2 person rescue load and litter.

## Appendix B

### Test Images



30cm Single Strand Sample



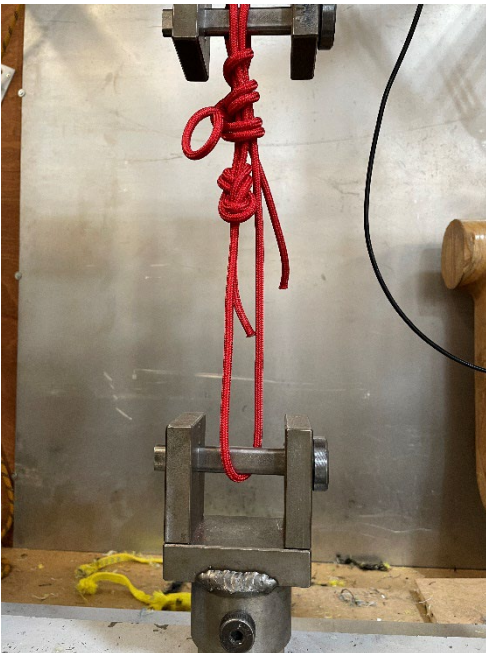
20cm Single Strand Measurement.



20cm Single Strand Sample



30cm Triple Strand Sample



30cm Double Strand Sample

**END OF REPORT**