

TENSILE STRENGTH & SLIPPAGE OF THE STANDARD TAPE KNOT

Size	19 mm flat	25 mm flat	50 mm flat	25 mm tube
Material	Polyester tape	Polyester tape	Polyester tape	Polyamide tape
Brand	Donaghys	Donaghys	Donaghys	Blue Water
Age	New	New	New	New
Theoretical Sling strength				
Rated Strength when new (kN)	5.88	7.25	25.77	18.71
Sling Strength without knot (kN)	11.76	14.5	51.54	37.42
Results				
Lowest Breaking Strength (kN)	5.82	6.44	26.00	22.84
Mean Breaking Strength (kN)	7.04	7.76	27.75	26.33
Std Deviation (kN)	0.67	0.86	1.55	2.41
2 std Dev back from Mean (kN)	5.70	6.04	24.64	21.52
Mean "Tail" slippage at failure (mm)	<i>Not recorded</i>	<i>Not recorded</i>	21	9
Total "Tension" slippage at failure (mm)	<i>Not recorded</i>	<i>Not recorded</i>	124	65
Analysis				
% Loss of Strength due to knot	51%	58%	52%	42%
% Strength remaining in rope	49%	42%	48%	58%
Remaining Factor of Safety with a 1.96 kN load (min should be 5)	2.9	3.1	12.6	11.0

Note: The results data in each column is from a sample of 6 specimens

TENSILE STRENGTH & SLIPPAGE OF THE STANDARD DOUBLE FISHERMAN'S KNOT

Size	7 mm Cord	9mm static	11mm static	11mm static	10mm	12mm
Material	Polyamide rope	Polyamide rope	Polyamide rope	Polyamide rope	Sisal (3 strand laid)	Sisal (3 strand laid)
Brand	Riviory	Riviory	Blue Water	Blue Water	Zenith	Zenith
Age	New	New	1 year old	18 years	New	New
Theoretical Sling strength						
Rated Strength when new (kN)	9.8	18	31.36	31.36	6.08	9.11
Sling Strength without knot (kN)	19.6	36	62.72	62.72	12.16	18.22
Results						
Lowest Breaking Strength (kN)	19.36	34.40	36.74	19.36	8.52	18.01
Mean Breaking Strength (kN)	22.03	36.72	37.74	27.25	9.54	19.01
Std Deviation (kN)	1.39	1.49	0.65	4.10	0.87	1.17
2 std Dev back from Mean (kN)	19.26	33.73	36.43	19.06	7.81	16.67
Mean "Tail" slippage at 1.96 kN (mm)	5	6	5	Not recorded	Not recorded	5
Total "Tension" slippage at 1.96 kN (mm)	56	50	48	Not recorded	Not recorded	30
Mean "Tail" slippage at 3.67 kN (mm)	10	9	7	Not recorded	Not recorded	6
Total "Tension" slippage at 3.67 kN (mm)	102	94	102	Not recorded	Not recorded	43
Mean "Tail" slippage at failure (mm)	16	24	20	21	4	19
Total "Tension" slippage (mm)	173	245	336	298	90	164
Analysis						
% Loss of Strength due to knot	2%	6%	42%	70%	36%	9%
% Strength remaining in rope	98%	94%	58%	30%	64%	91%
Remaining Factor of Safety with a 1.96 kN load (min should be 5)	9.8	17.2	18.7	9.7	4.0	8.5

Note: The results data in each column is from a sample of 6 specimens