

TYPICAL GRADE 316 STAINLESS STEEL WIRE ROPE BREAKING LOADS

WIRE DIAMETER		1 x 19			7 x 19			7 x 7			1 x 61			1 x 91		
mm	in.	kN	kg	lb	kN	kg	lb	kN	kg	lb	kN	kg	lb	kN	kg	lb
1.2mm	3/64 in.	1.08	110	243	0.81	83	183	0.85	87	192	–	–	–	–	–	–
1.5mm	1/16 in.	1.76	180	397	1.23	126	278	2.01	205	452	–	–	–	–	–	–
2.0mm	5/64 in.	3.14	320	705	2.26	275	606	2.37	242	534	–	–	–	–	–	–
–	3/32 in.	4.74	484	1065	4.08	417	917	3.25	332	730	–	–	–	–	–	–
2.5mm	–	4.90	500	1102	3.82	428	944	3.71	378	833	–	–	–	–	–	–
3.0mm	1/8 in.	7.06	720	1587	6.00	612	1349	5.34	544	1200	–	–	–	–	–	–
4.0mm	5/32 in.	12.60	1285	2833	8.89	907	2000	9.40	959	2115	–	–	–	–	–	–
–	3/16 in.	18.90	1930	4255	12.60	1280	2822	14.10	1437	3168	–	–	–	–	–	–
5.0mm	–	19.60	2000	4410	13.90	1418	3127	14.80	1509	3327	–	–	–	–	–	–
5.6mm	7/32 in.	24.20	2470	5445	17.20	1750	3858	18.10	1850	4080	–	–	–	–	–	–
6.0mm	–	28.00	2876	6340	20.00	2040	4498	21.40	2181	4810	–	–	–	–	–	–
–	1/4 in.	34.00	3440	7584	22.00	2280	5027	25.90	2642	5825	–	–	–	–	–	–
7.0mm	9/32 in.	35.00	3549	7807	36.00	2785	6127	29.10	2966	6526	–	–	–	–	–	–
8.0mm	5/16 in.	45.40	4640	10229	35.60	3632	8009	38.00	3874	8540	–	–	–	–	–	–
–	3/8 in.	64.00	6546	14434	51.00	5150	11354	57.20	5830	12850	–	–	–	–	–	–
10.0mm	–	71.00	7250	15984	56.00	5673	12480	59.30	6045	13330	–	–	–	–	–	–
–	7/16 in.	86.00	8770	19335	68.00	6950	15322	76.70	7820	17240	–	–	–	–	–	–
12.0mm	–	102.00	10401	22930	80.00	8163	17958	85.40	8700	19180	–	–	–	–	–	–
–	1/2 in.	119.00	12101	26678	90.00	9150	20172	107.00	10900	24030	–	–	–	–	–	–
14.0mm	9/16 in.	139.00	14174	31248	109.00	11122	24524	117.00	11930	26300	–	–	–	–	–	–
16.0mm	5/8 in.	182.00	18559	40916	133.00	14387	31723	–	–	–	–	–	–	–	–	–
19.0mm	3/4 in.	212.00	21618	47660	191.00	19500	44730	–	–	–	–	–	–	–	–	–
22.0mm	7/8 in.	285.00	29062	64071	–	–	–	–	–	–	–	–	–	–	–	–
26.0mm	1 in.	398.00	40585	89475	–	–	–	–	–	–	–	–	–	–	–	–
28.0mm	–	–	–	–	–	–	–	–	–	–	517.00	52770	116338	–	–	–
30.0mm	–	–	–	–	–	–	–	–	–	–	–	–	–	594.00	60571	133536
32.0mm	1 1/4 in.	–	–	–	–	–	–	–	–	–	–	–	–	675.00	68922	151948
34.0mm	–	–	–	–	–	–	–	–	–	–	–	–	–	763.00	77824	171574
36.0mm	–	–	–	–	–	–	–	–	–	–	–	–	–	855.00	87185	192211

STRETCH IN WIRE ROPES

Stretch is a characteristic of all wire ropes, initially as permanent stretch when the load is first applied and the individual wires bed down, and then as conventional elastic stretch within the wires. Where stretch is critical to the application, initial stretch can be accounted for with cables pre-tensioned or pre-stressed during swaging and cable manufacturing. Elastic stretch can be calculated by the following formula:

$$\text{Elastic stretch (mm)} = \frac{W \times L}{E \times A}$$

where:

W = Applied load (kN)

L = Cable length (mm)

E = Strand modulus (kN/mm²)

$$A = \text{Area of cable} = \frac{D^2 \times \pi}{4}$$

where D = Nominal diameter of cable (mm)

Typical values for E are:

7 x 19 47.5 kN/mm² (6.89 x 10⁶ P.S.I.)

7 x 7 57.3 kN/mm² (8.31 x 10⁶ P.S.I.)

1 x 19 107.5 kN/mm² (15.59 x 10⁶ P.S.I.)

1 x 61 130 ± 10 kN/mm²

1 x 91 130 ± 10 kN/mm²



WIRE ROPE – STAINLESS STEEL

PRODUCT No.	WIRE DIAM.		REEL LENGTH		B.L.		WEIGHT PER METRE	
	mm	(in.)	m	(ft)	kg	(lb)	kg	(lb)

1 x 19 Grade 316

WR6119-1.5M	1.5	-	305	(1000)	180	(397)	0.011	(0.024)
WR6119-02M	2.0	-	305	(1000)	320	(706)	0.019	(0.042)
WR6119-2.5M	2.5	-	305	(1000)	500	(1103)	0.031	(0.068)
WR6119-03M	3.0	-	305	(1000)	720	(1588)	0.045	(0.099)
WR6119-04M	4.0	-	305	(1000)	1285	(2833)	0.079	(0.174)
WR6119-05M	5.0	-	305	(1000)	2000	(4410)	0.124	(0.273)
WR6119-06M	6.0	-	305	(1000)	2876	(6342)	0.178	(0.392)
WR6119-07M	7.0	-	305	(1000)	3549	(7807)	0.243	(0.536)
WR6119-08M	8.0	-	305	(1000)	4640	(10231)	0.317	(0.699)
WR6119-12*	9.5	(3/8)	305	(1000)	6546	(14434)	0.446	(0.983)
WR6119-10M	10.0	-	305	(1000)	7250	(15986)	0.495	(1.091)
WR6119-14*	11.1	(7/16)	305	(1000)	8770	(19338)	0.624	(1.376)
WR6119-12M	12.0	-	305	(1000)	10401	(22934)	0.713	(1.572)
WR6119-14M	14.0	-	305	(1000)	14174	(31254)	0.971	(2.141)
WR6119-16M	16.0	-	305	(1000)	18559	(40922)	1.270	(2.800)
WR6119-19M	19.0	-	305	(1000)	21618	(47668)	1.780	(3.925)
WR6119-22M	22.0	-	305	(1000)	29062	(64082)	2.360	(5.204)
WR6119-26M	26.0	-	305	(1000)	40585	(89490)	3.300	(7.277)

7 x 19 Grade 316

WR6719-1.5M	1.5	-	305	(1000)	126	(278)	0.009	(0.020)
WR6719-02M	2.0	-	305	(1000)	275	(606)	0.017	(0.037)
WR6719-2.5M	2.5	-	305	(1000)	428	(944)	0.027	(0.060)
WR6719-03M	3.0	-	305	(1000)	612	(1349)	0.034	(0.075)
WR6719-04M	4.0	-	305	(1000)	907	(2000)	0.061	(0.135)
WR6719-05M	5.0	-	305	(1000)	1418	(3127)	0.095	(0.209)
WR6719-06M	6.0	-	305	(1000)	2040	(4498)	0.138	(0.304)
WR6719-07M	7.0	-	305	(1000)	2785	(6127)	0.199	(0.439)
WR6719-08M	8.0	-	305	(1000)	3632	(8009)	0.243	(0.536)
WR6719-10M	10.0	-	305	(1000)	5673	(12480)	0.381	(0.840)
WR6719-12M	12.0	-	305	(1000)	8163	(17956)	0.548	(1.208)
WR6719-14M	14.0	-	305	(1000)	11122	(24524)	0.746	(1.645)
WR6719-16M	16.0	-	305	(1000)	14387	(31723)	0.974	(2.148)

7 x 7 Grade 316

WR677-03M	3.0	-	305	(1000)	544	(1200)	0.035	(0.077)
WR677-04M	4.0	-	305	(1000)	959	(2115)	0.063	(0.139)
WR677-03MP†	3.0	-	305	(1000)	544	(1200)	0.072	(0.159)
WR677-04MP†	4.0	-	305	(1000)	959	(2115)	0.082	(0.181)

1 x 61 Grade 316 (DIN 18800)◇

WR6161-28M	28.0	-	-	-	52770	(116338)	3.79	(8.356)
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1 x 91 Grade 316 (DIN 18800)◇

WR6161-30M	30.0	-	-	-	60571	(133536)	4.34	(9.568)
WR6161-32M	32.0	-	-	-	68922	(151948)	4.93	(10.869)
WR6161-34M	34.0	-	-	-	77824	(171574)	5.57	(12.280)
WR6161-36M	36.0	-	-	-	87185	(192211)	6.24	(13.757)

* Standard imperial diameter wire. Refer imperial diameter fitting tables.

† PVC coated wire rope.

◇ 1 x 61 and 1 x 91 constructions are available only as completed cable assemblies.

**1 x 19 Grade 316****CONSTRUCTION**

19 single strands

- ▶ Strongest
- ▶ Lowest Stretch
- ▶ Least flexible

USES

Structural rigging,
Balustrades

**7 x 19 Grade 316****CONSTRUCTION**

7 strands of 19 wires

- ▶ Most flexible

USES

Lifting, Running rigging

**7 x 7 Grade 316****CONSTRUCTION**

7 strands of 7 wires

- ▶ Semi-flexible
- ▶ PVC coated (optional)

USES

Balustrades

**1 x 61 Grade 316****CONSTRUCTION**

61 single strands

- ▶ Strong
- ▶ Low Stretch
- ▶ Least flexible

USES

Structural rigging

**1 x 91 Grade 316****CONSTRUCTION**

91 single strands

- ▶ Strong
- ▶ Low Stretch
- ▶ Least flexible

USES

Structural rigging