

GR8
INDUSTRIES



steel wire rope
for general purpose

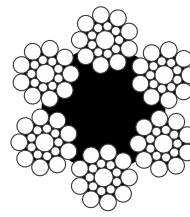
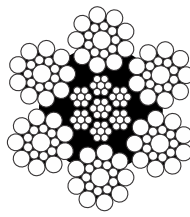


labour

Department:
Labour
REPUBLIC OF SOUTH AFRICA

6x19S

made to EN12835 specifications
lay-up of wires 1-9-9

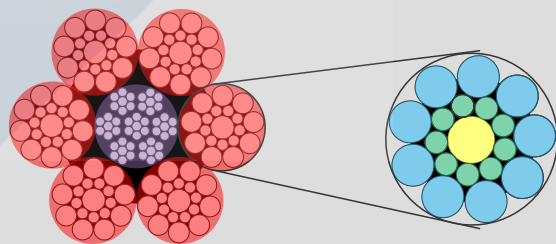


SWR dia	IWRC			
	Weight	Minimum breaking load		
		1770 N/mm ²	1960 N/mm ²	2160 N/mm ²
[mm]	[kg/m]	[kN]	[kN]	[kN]
3	-	-	-	-
4	-	-	-	-
5	-	-	-	-
6	-	-	-	-
8	0.256	40.3	44.7	-
10	0.400	63.0	69.8	-
12	0.576	90.7	100.5	-
13	0.676	106.5	117.9	-
14	0.784	124.0	137.0	-
16	1.024	161.0	179.0	-
18	1.296	204.0	226.0	-
20	1.600	252.0	279.0	-
22	1.936	305.0	338.0	-
24	2.304	363.0	402.0	-
26	2.704	426.0	472.0	-
28	3.136	494.0	547.0	-
30	3.600	567.0	628.0	-

FC		
Weight	Minimum breaking load	
	1770 N/mm ²	1960 N/mm ²
[kg/m]	[kN]	[kN]
0.030	4.9	5.2
0.054	8.7	9.2
0.084	13.6	14.4
0.121	19.6	20.7
0.230	37.4	41.4
0.359	58.4	64.7
0.517	84.1	93.1
0.607	98.7	109.3
0.704	114.0	127.0
0.919	150.0	166.0
1.163	189.0	210.0
1.436	234.0	259.0
1.738	283.0	313.0
2.068	336.0	373.0
2.427	395.0	437.0
2.815	458.0	507.0
3.231	526.0	582.0

Understanding constructions of steel wire rope
example: 6 x 19s IWRC 1960 b sZ

6 = no of strands
19 = number of wires in each strand
IWRC = type of core
1960 = rope grade
b = drawn galvanised
sZ = right hand ordinary lay



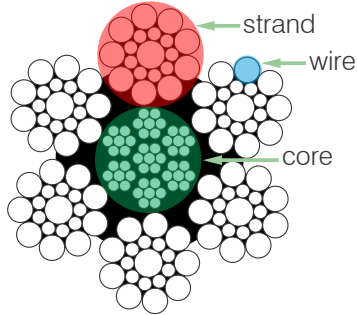
General information



Wire rope is made by spinning individual wires together to form a strand and then closing a number of strands helically around a centre core to form the rope.

Core

Steel wire ropes are supplied with either fibre or steel cores, the choice being dependent on the use for which the rope is intended. The principle function of the core is to provide support to the strands and maintain them in the correct positions under working conditions.



Diameter

Measurements are taken at 2 points at least one meter apart and 2 diameters are measured at 90° one from the other. The average thus obtained is the practical diameter.



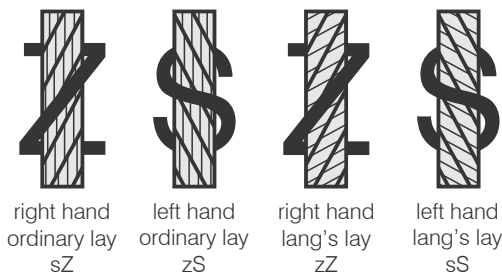
Rope grades

Wire ropes are supplied in various Tensile Strength grades to meet the varied requirements on many applications.

Rope grade designation	Equivalent rope grade
IPS	1770
EIPS	1960
EEIPS	2160

Rope lay

When the wires in the outer strands lie in the same direction as the strands themselves, this is known as Lang's Lay and when they lie in the opposition direction to the strands, this is known as Ordinary or Regular Lay. Ordinary lay ropes are generally used because of their stability, however Lang's lay has increased resistance to abrasion and is more flexible.



Lubrication

Wire ropes are lubricated as protection against oxidization and to reduce friction between wire and strands. During the closing of the rope, all wires and all strands are lubricated. the type of lubrication varies according to the application. Re-lubrication should be carried out periodically to extend the lifespan of the rope.

Galvanising

Zinc coating known as galvanising provides sacrificial protection to the underlying steel wire for protection against corrosion, where the rope is exposed to corrosive agents such as salt, water and moisture. Galvanised rope generally has a lower breaking load than bright ropes (uncoated). For hoisting equipment in locations where corrosive conditions are present, heavily lubricated bright ropes are usually preferred to galvanised.

Preformed wire rope

Generally, ropes are supplied preformed. In preformed rope the wires and strands are pre-shaped by running the rope through a preforming head, giving it the helix it takes up, prior to assembly into the finished rope. This prevents the wires from straitening and leaves them relaxed in their normal positions. The benefits of this process are:

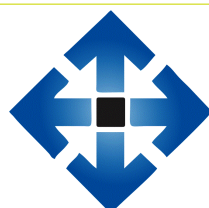
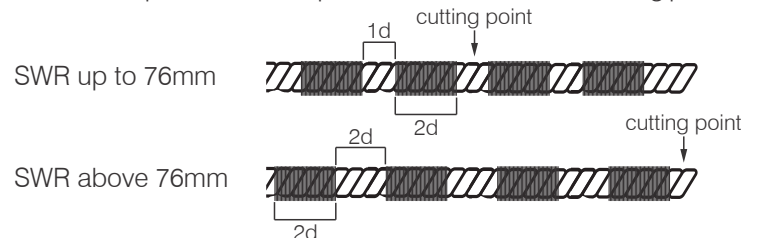
- the exposed ends do not untwist
- broken wire ends lie flat
- easy handling during installation
- less prone to kinking and twisting

Rotating resistant ropes should not be regarded as preformed.

Cutting wire rope

When cutting wire rope up to 76mm diameter, a minimum of 2 wire servings, each twice the rope diameter in length and placed one rope diameter apart, should be placed either side of the cutting point.

For wires above 76mm diameter, a minimum of 4 wire servings, each twice the rope diameter in length and placed two rope diameters apart, should be placed either side of the cutting point.



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JOHANNESBURG (HEAD OFFICE) +2711 869 0566

sales@gr8industries.co.za
www.gr8industries.co.za