Gebruik van lieren in de bosbouw

PRAKTIJK
CENTRUM
BOMEN

Wie ben ik: Frits Spek

Geschiedenis

- Onderwijs
- Materiaal

Waarom lieren

Organisatie houtoogst

Photograph 2. The winch on the 3 point linkage of a Ferguson 35 tractor hauling timber at Alice Holt.

Onderwijs

Vroeger: centraal

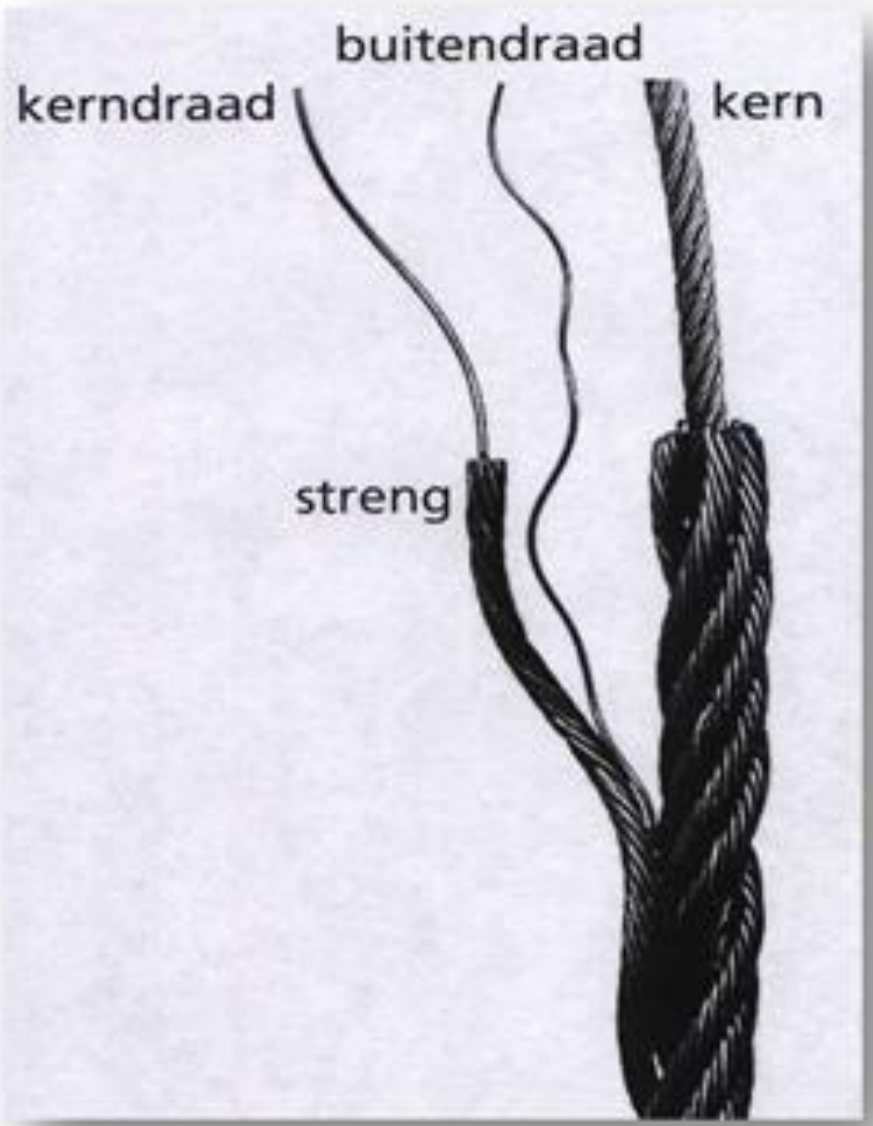
- Velp
- Apeldoorn
- Schaarsbergen

Nu: verspreid

Materiaal: lieren

Photograph 2. The winch on the 3 point linkage of a Ferguson 35 tractor hauling timber at Alice Holt.

Opbouw staalkabel

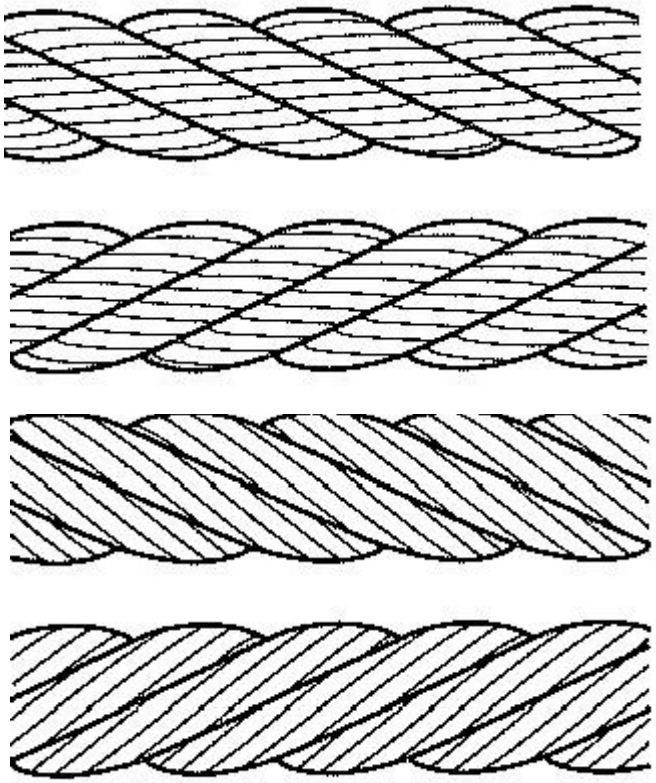


Materiaal: staaldraad

Diameter:	Minimum breekkracht 1.770 N/mm2		Minimum breekkracht 1.960 N/mm2		Gewicht per 100 meter
mm	kN	kg	kN	kg	kg
3	5.77	590	6.39	650	3.43
4	10.30	1.050	11.40	1.160	6.10
5	16.00	1.630	17.70	1.810	9.53
6	23.10	2.350	25.50	2.610	13.70
7	31.40	3.200	34.80	3.550	18.70
8	41.00	4.180	45.40	4.630	24.40
10	64.10	6.540	71.00	7.240	38.10
12	92.30	9.410	102.20	10.400	54.90
14	126.00	128.900	139.00	14.200	74.70

Type staalkabels

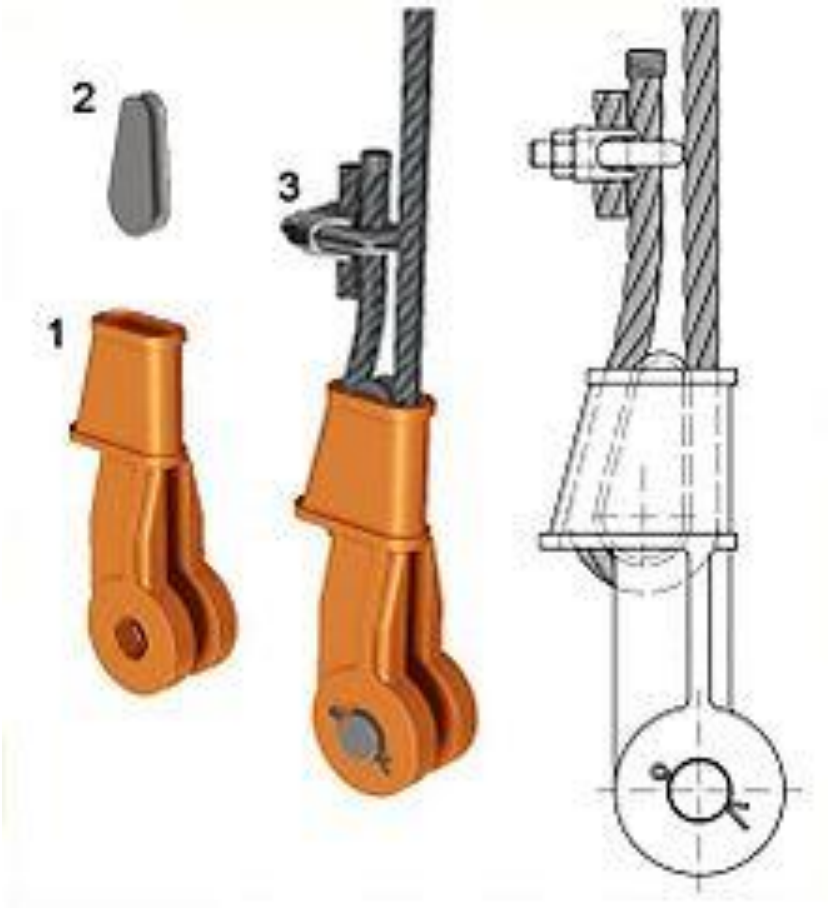
1. Rechts geslagen kruisslag
2. Linksageslagen kruisslag
3. Rechts geslagen langslag
4. Links geslagen langslag



Materiaal: Dynema

SIZE DIAMETER MILLIMETERS	SIZE CIRC. MILLIMETERS	WEIGHT PER 100 m KILOGRAMS	AVERAGE STRENGTH* KILOGRAMS	MINIMUM STRENGTH* KILOGRAMS
2.5† mm	7.5 mm	0.45 kg	730 kg	650 kg
3 mm	9 mm	0.74 kg	1,100 kg	1,000 kg
4 mm	12 mm	1.1 kg	1,800 kg	1,600 kg
5 mm	15 mm	1.5 kg	2,400 kg	2,200 kg
6 mm	18 mm	2.4 kg	3,900 kg	3,500 kg
8 mm	24 mm	4.0 kg	6,200 kg	5,600 kg
9 mm	27 mm	5.1 kg	8,900 kg	8,000 kg
11 mm	33 mm	6.7 kg	10,800 kg	9,800 kg
12 mm	36 mm	8.8 kg	15,400 kg	13,900 kg
14 mm	42 mm	11.8 kg	18,400 kg	16,500 kg
16 mm	48 mm	15.2 kg	24,000 kg	21,600 kg
18 mm	54 mm	19.8 kg	29,200 kg	26,300 kg
20 mm	60 mm	25.3 kg	37,200 kg	33,500 kg
22 mm	66 mm	29.2 kg	41,200 kg	37,100 kg
24 mm	72 mm	32.4 kg	49,400 kg	44,500 kg
26 mm	78 mm	40.9 kg	60,800 kg	54,700 kg
28 mm	84 mm	47.5 kg	67,100 kg	60,400 kg
30 mm	90 mm	53.9 kg	74,800 kg	67,400 kg
32 mm	96 mm	62.2 kg	84,000 kg	75,600 kg
34 mm	100 mm	67.0 kg	93,000 kg	83,700 kg
36 mm	108 mm	76.9 kg	103,000 kg	93,100 kg

Eindverbindingen



- Draadhuis
- Talarudkoppeling

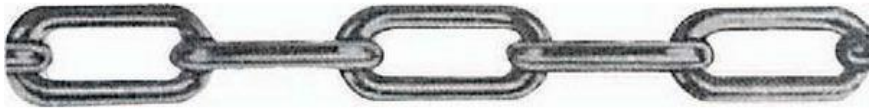
Haken en verbinding

Inkorthaak

Veiligheidshaak

Verbindingsschalm

Ketting types



Klasse aanduiding hoogwaardig staal

Klasse-aanduiding	s brkr.th min.	Rek bij breuk min.
	N/mm^2	%
L[1,2] of [3]	315	25
M of [4]	400	20
P [2] of [5]	500	20
S of [6]	630	17
T of [8]	800	17
V [2] of [10]	1.000	15

Lierblokken

Omstandigheden en organisatie

- Hellingen
- Rabatten
- Natte omstandigheden
- Kwetsbare omstandigheden
- Water
- Specifieke vellingssituaties