

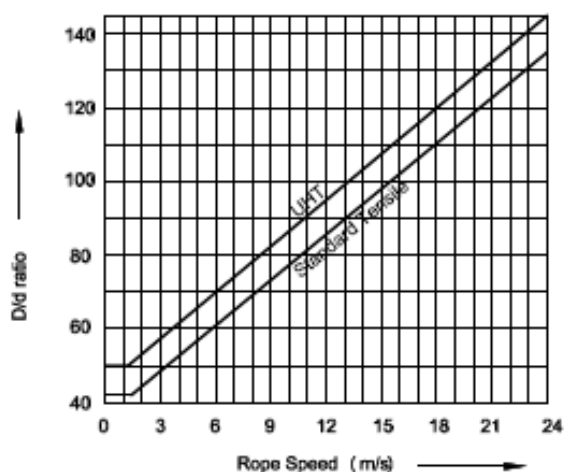
## Tech Edge Winder Selection Charts ISO R10 Series

The selection of a winder is influenced by various factors, primarily the D/d ratio. This refers to the ratio of the winder drum Diameter and rope diameter. Next would be the desired production level, which can be reduced to the required "end-load" for each winding cycle as well as the speed at which this end-load is brought to the surface. From a commercial aspect it would be sensible to select a winder that is fully utilised.

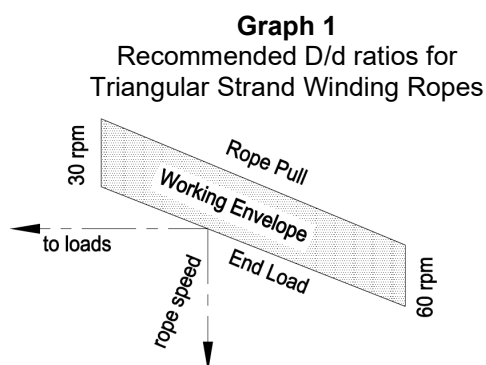
The graphs provide an overview and allow you to consider various options, such as a slow winder with a higher end-load or a faster winder with a lower end-load. Our experienced engineers, however, can provide a bespoke solution to suit individual requirements.

Graphs are based on 30 and 60 drum rpm (45 rpm and 60 rpm in the case of Large Range), on three rope layers, and on a 6:1 rope FOS (reduced FOS per the new regulations for Medium and Large Range).

The sloping "working envelope" illustrates that as the speed increases, the end-load reduces, due to the D/d requirement, which at higher speeds requires a smaller rope diameter with a smaller load capacity.

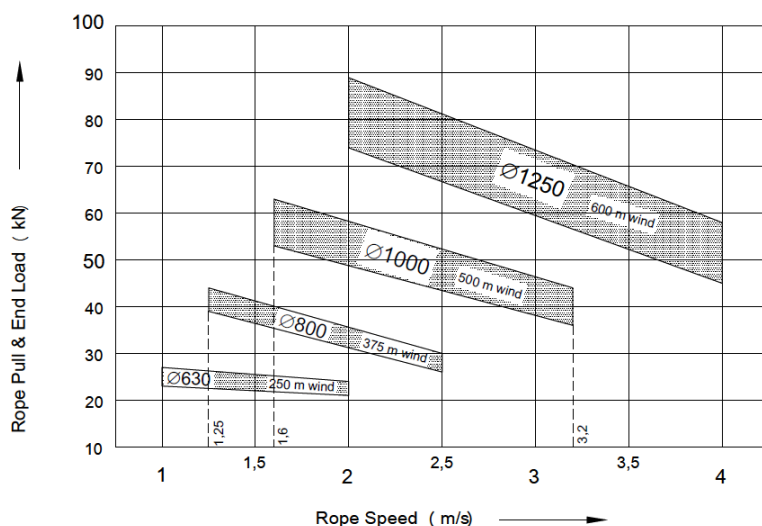


**Graph 2 – Small Range – ISO R10 Series**



**Please note:**

The "working envelope" is based on the parameters as indicated above, which are based on reasonable assumptions and allow for an early selection



Assuming a desired end-load of 50 kN, two options are available:

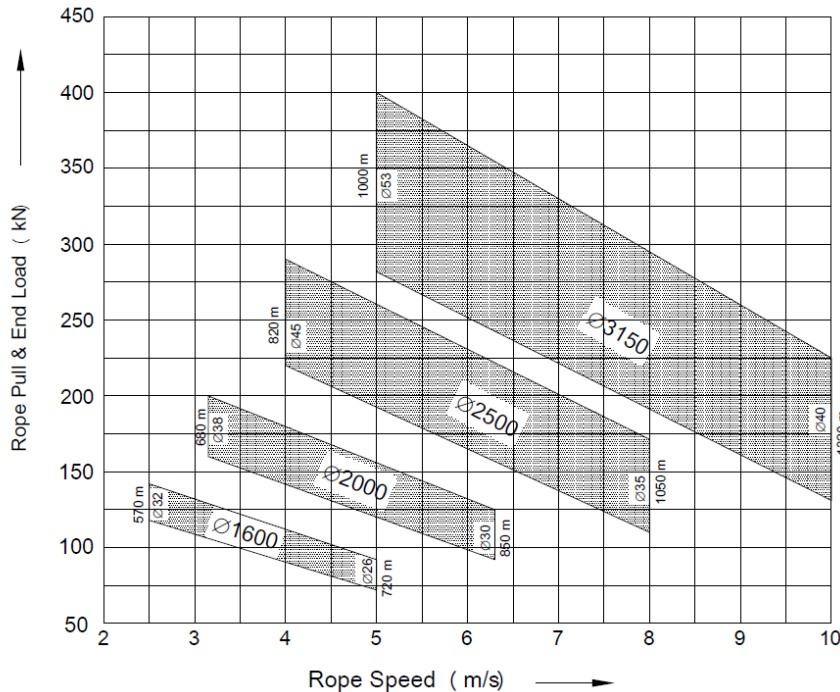
- A drum diameter of 1000 mm at a maximum length of wind of 500 m and at a rope speed of roughly 1.75 m/s.
- A drum diameter of 1250 mm allows a maximum length of wind of 600 m and hoist at a rope speed of roughly 3.7 m/s.

The choice of winder will be governed by the desired production level.

Additional Range - ISO R20 Series  
Ø1400 Ø1800 Ø2240 Ø2800

# Tech Edge Winder Selection Charts

**Graph 3 – Medium Range – ISO R10 Series**



Assuming a desired end-load of 150kN, three options are available: Ø2000, Ø2500 and Ø3150 drum diameters.

The maximum length of wind for a constant load ranges from 680m to 1050m and up to 1320m.

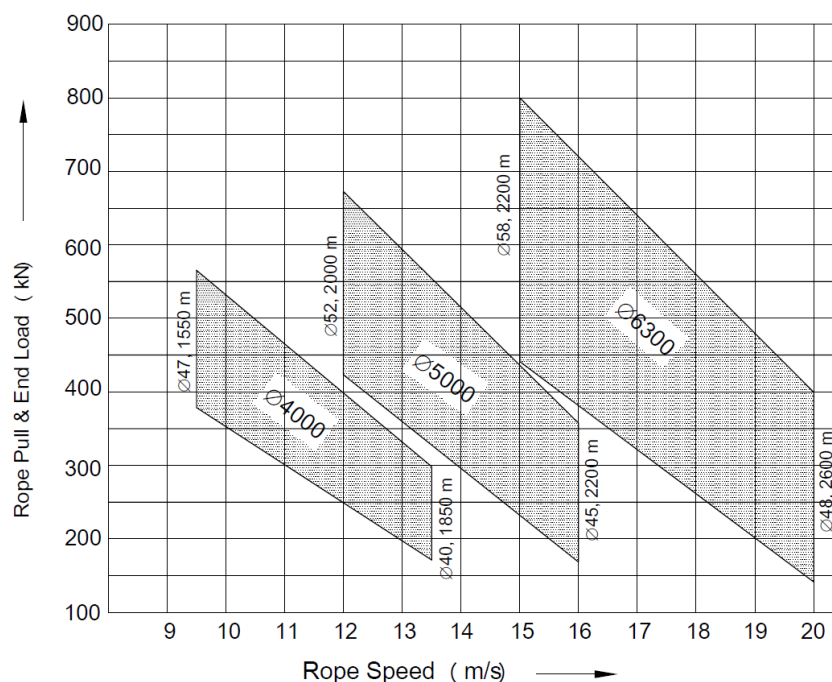
The rope speed ranges from approximately 3.6 m/s to 6.5 m/s and up to 9.3 m/s.

The selection of the winder would be influenced by the daily or monthly production requirement, and as a result would directly impact the cost of the equipment.

Rope masses are increasing and the new regulations are reflected in the graph in an average manner.

Additional Range - ISO R20 Series  
Ø1400 Ø1800 Ø2240 Ø2800

**Graph 4 – Large Range – ISO R10 Series**



The Large Range graph is particularly interesting as it shows the impact of larger rope masses.

The distance between the upper slope (rope pull) and the lower slope (end-load) indicates the suspended rope mass.

As can be seen, this represents between 33% (Ø4000 mm drum) and 45% (Ø6300 mm drum) of the rope pull.

For this reason, new regulations allow a reduction in the rope factor of safety and thus an increase in the payload as a proportion of the total suspended mass to be hoisted. This is reflected in the graph in an average manner.

A 5600 mm drum diameter is available.

Additional Range - ISO R20 Series  
Ø3550 Ø4500 Ø5600 Ø7100