Steel wire ropes for a variety of applications

Wire ropes are used for a wide variety of purposes. Every application has its own specific requirements for the cable, and wire rope technicians have strived to meet these requirements in the best way possible. As such, there is a wide range of wire rope types.

Minimum Breaking Load (MBL)
Depending on the diameter and type, Dulimex supplies wire ropes from stock with Minimum Breaking Load (MBL) ranging from 55 kg up to 5,970 kg. When determining the appropriate wire rope for a particular application, the MBL cannot be followed blindly however.

Safety is paramount when using wire ropes. The environment in which the wire rope is used and how it is used are important aspects to be considered.

Safe Working Load (SWL)
Various immeasurable factors (e.g. effect of weather conditions, dynamic/static load, use of a pulley, etc.) affect the lifespan of a wire rope. Because of these immeasurable factors, a broad safety margin between the Safe Working Load (SWL) and the Minimum Breaking Load (MBL) is adopted for wire ropes.

The SWL indicates the load that a wire rope can withstand safely. The safety factor for wire ropes is generally 5. Wire ropes that can be used for lifting purposes are always designated with a safety factor. It is however recommended to adopt a minimum safety factor of 5 for regular applications too.

When a wire rope is pressed with a ferrule, the MBL must be lowered by 10%. This automatically results in a lower SWL.

SAFETY!
Safe Working Load (SWL)
Minimum Breaking Load (MBL)

In order to calculate the SWL, the MBL must be divided by the safety factor.

A safety factor of 5 generally applies to the specified MBL values.
Steel wire rope constructions and tensile strength

The wide variety of types and applications can make it challenging to select the right construction. It is also not possible to show all the constructions in combination with different applications. You should always be aware that safety is most important when using steel wire ropes.

Dulimex B.V. offers the most common constructions for general use, supplied on spools of 100 or 50 metres and on bundles of 25 metres available from stock. Deviating constructions, diameters or lengths may also be requested.

Below you can find the product details and possible product applications.

**Construction 6x12+7 FC / Galvanized / Tensile strength: 1770 N/mm²**  
Wire rope with 7 fibre cores. Flexible cable with relatively high stretch.  
Easy to process cable for general use. Not suitable for lifting applications.

**Construction 6x7+1 FC / Galvanized / Tensile strength: 1960 N/mm²**  
Wire rope with 1 fibre core. Less stretch and less flexible than the 6x12+7 FC.  
Suitable for general use. Not suitable for lifting.

**Construction 6x7+1 FC / Galvanized, PVC-coated / Tensile strength: 1960 N/mm²**  
PVC-coated for extra protection against weather effects and/or to prevent damage to other objects. Suitable for securing deck chairs against theft, for example. Not suitable for lifting. Not suitable for fitness equipment.

**Construction 4x3+1 FC / Galvanized / Tensile strength: 1770 N/mm²**  
Flexible 1 mm cable for general use. Not suitable for lifting.

**Construction 1x19 / Galvanized / Tensile strength: 1960 N/mm²**  
Wire rope without a fibre core. Relatively stiff cable with little stretch. Not suitable for lifting.

**Construction 7x7 / Galvanized / Tensile strength: 1960 N/mm²**  
Wire rope without a fibre core, relatively stiff cable with low stretch; suitable for light tethering work. Not suitable for lifting.

**Construction 6x19+1 FC / Galvanized / Tensile strength: 1960 N/mm²**  
Wire rope with 1 fibre core, suitable as a winch rope and for making slings.

**Construction 7x19 / Galvanized / Tensile strength: 1960 N/mm²**  
Wire rope without a fibre core, suitable as a winch rope and for making slings.

**Construction 7x7 / Stainless steel (AISI 316) / Tensile strength: 1570 N/mm²**  
Wire rope without a fibre core. Stiff cable with low stretch. Stainless steel wire rope, very resistant to corrosion and is commonly used in water sports, machine building, chemical industry, fallarrest, landscape architecture, lighting industry.

**Construction 7x19 / Stainless steel (AISI 316) / Tensile strength: 1570 N/mm²**  
Wire rope without a fibre core. Flexible cable suitable for pulleys. RVS steel cable is very resistant to corrosion and is commonly applied in water sports, machine building, chemical industry, landscape architecture, lighting industry.
Wire rope slings

Wire rope slings are in general used for lifting purposes. In addition to the assortment of accessories with which you can construct slings yourself, Dulimex also offers the option of supplying ready-made slings. In general, these consist of slings ordered in large quantities or slings for which the ferrules have to be machine-pressed.

Not every sling is by definition suitable for lifting. A sling that is suitable for lifting must meet national regulations and safety standards.

Compiling your sling

When constructing a wire rope sling, the following points have to be considered:

- Construction and diameter of the wire rope
- Material of the ferrule
- Wire rope accessories
- Effective length

You can find a request form at our website www.dulimex.nl to place your inquiry for a custommade sling.

Wire rope with pressed terminals

For our AISI stainless steel wire ropes Dulimex has the necessary fittings to be rolled or pressed onto the wire rope. We can offer customers wire rope with pressed terminals under certain conditions. Please check our website request form for the possible custom made pressed terminal stainless steel wire ropes (www.dulimex.nl).

Regular inspection

Wire ropes are affected by wear, weather conditions, overload, etc.

Regulations require that these products be inspected on a regular basis. Inspections must be carried out in accordance with the safety standards of the country where the product is being used.

Inspection must take place at least every 6 months. If the product is being applied in severe operating conditions, the inspection must take place even more frequently.

IMPORTANT!

A variety of environmental factors can strongly affect the durability of steel steel wire ropes.

Inspection of the delivered products must take place at least every 6 months (more frequently for more demanding conditions).
Wire ropes, ferrules and crimping tools

In addition to machine-pressing ferrules it is also possible to do this manually. Dulimex B.V. supplies 6 different ferrule crimping tools for the manual pressing of standard ferrules. In addition, Nicopress crimping tools are available for Nicopress ferrules.

Manual pressing occurs in multiple steps, as opposed to a single action during pressing by machine. That is why these connections can never be considered adequate. When applying these connections a reduced MBL of at least 10% must be adhered to.

All the ferrules and crimping tools are shown in Chapter 11. The tables below show the combination between wire rope diameter, ferrule size and the required crimping tool. A description of the method for manual pressing is also shown.

<table>
<thead>
<tr>
<th>COMBINATION OF WIRE ROPE Ø AND FERRULE</th>
<th>COMBINATION OF FERRULE CRIMPING TOOL AND FERRULE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ferrule labelcode</td>
<td>For wire rope Ø with fibre core* (mm)</td>
</tr>
<tr>
<td></td>
<td>Min.</td>
</tr>
<tr>
<td>430-10AL</td>
<td>0,9</td>
</tr>
<tr>
<td>430-15AL</td>
<td>1,1</td>
</tr>
<tr>
<td>430-20AL</td>
<td>1,6</td>
</tr>
<tr>
<td>430-25AL</td>
<td>2,1</td>
</tr>
<tr>
<td>430-30AL</td>
<td>2,7</td>
</tr>
<tr>
<td>430-35AL</td>
<td>3,2</td>
</tr>
<tr>
<td>430-40AL</td>
<td>3,7</td>
</tr>
<tr>
<td>430-45AL</td>
<td>4,2</td>
</tr>
<tr>
<td>430-50AL</td>
<td>4,7</td>
</tr>
<tr>
<td>430-60AL</td>
<td>5,2</td>
</tr>
<tr>
<td>430-65AL</td>
<td>6,2</td>
</tr>
<tr>
<td>430-70AL</td>
<td>6,7</td>
</tr>
<tr>
<td>430-80AL</td>
<td>7,3</td>
</tr>
</tbody>
</table>

* Not for 6x12+7FC
Wire ropes, ferrules and crimping tools (continuation)

<table>
<thead>
<tr>
<th>Ferrule labelcode</th>
<th>Wire rope Ø (mm)</th>
<th>Min.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>425-010</td>
<td>0,8</td>
<td>1,0</td>
<td></td>
</tr>
<tr>
<td>425-014</td>
<td>1,0</td>
<td>1,4</td>
<td></td>
</tr>
<tr>
<td>425-020</td>
<td>1,5</td>
<td>2,0</td>
<td></td>
</tr>
<tr>
<td>425-025</td>
<td>2,5</td>
<td>2,5</td>
<td></td>
</tr>
<tr>
<td>425-030</td>
<td>2,8</td>
<td>3,0</td>
<td></td>
</tr>
<tr>
<td>425-035</td>
<td>3,1</td>
<td>3,5</td>
<td></td>
</tr>
<tr>
<td>425-040</td>
<td>4,0</td>
<td>4,5</td>
<td></td>
</tr>
<tr>
<td>425-050</td>
<td>5,0</td>
<td>5,0</td>
<td></td>
</tr>
<tr>
<td>425-060</td>
<td>6,0</td>
<td>6,0</td>
<td></td>
</tr>
<tr>
<td>425-070</td>
<td>7,0</td>
<td>7,0</td>
<td></td>
</tr>
<tr>
<td>425-080</td>
<td>8,0</td>
<td>8,0</td>
<td></td>
</tr>
</tbody>
</table>

* For wire rope 7x7 and 7x19

Method when making a loop

► Cut the wire rope to the desired length.

► Guide the wire rope through the ferrule and make the desired loop. The protruding end must be 1.5 X (1.5d) of the wire rope.

► The first ferrule is pressed in the middle (1);
The second ferrule is pressed at the side of the loop (2);
The third ferrule is pressed on the end of the wire rope (3).