

SCOPE OF APPLICATION AND ROPE CHARACTERICS

General guidelines for selection of industrial wire ropes

Industrial ropes are the ones commonly used in industrial equipment such as:

building machines (concrete mixers, bulldozers, winches, etc.),
machines for earth works (excavators, machines for melioration),
any handling equipment, which is not classified as a crane (for example, lifter for iron blast furnace, conveyor drives, etc.),
ropes for fixing or clamping the loads when handling (for example, towing ropes, slings, etc.),
drives of various industrial equipment (rolls, tube drawing machines, etc.).

Selection of rope structure for the specific equipment depends mainly on the equipment structure and rope working conditions.

Below the criteria are shown, which should be used when selecting rope structure:

1. Twisted ropes - strands - structure 1x7, 1x19 and 1x37, shall be used mainly in such cases, where the rope is tensioned only, that means for tensioning and supporting ropes (for example, for television and radio masts) and load-bearing ropes (e. g. for bridges). Twisted ropes made of thin wires may be used for links mounted in various industrial equipment to transfer forces and moments. The strength of those ropes shall be selected so that the rope safety coefficient is not less than 3.
2. Double twisted ropes, structures 6c19M - FC, and 6x37M - FC, are used in cases, where the rope works with sheaves and where proper bending properties are required in addition to proper strength properties. The type of rope structure depends on sheave diameter. When selecting the rope, use the following rule (if Equipment Operation Conditions do not specify otherwise): the ration D/δ (where: D - sheave diameter, δ - rope wire diameter) should be minimum 350, and the ration D/d (where: D - sheave diameter, d - rope diameter) should be higher than 12.
3. If the rope works on sheaves and frequency of movements is large and fatigue is a main cause of rope wear and tear, use the ropes with linear or point-linear contact between wires in strands in the equipment of such type. Depending on the type of the equipment, rope diameter and operation conditions, it is recommended to use the following rope structures: 6x19S - FC, 6x31WS - FC, 6x19W - FC and 8x31WS - FC.
4. If, during operation, the rope not only bent, but, also, there are large transversal pressures, which cause rope deformation, or rope working conditions do not allow the use of natural fibre rope core, then use the ropes with steel core. In such cases, the following rope structures are recommended: 6x7 - WSC, 6x19 - IWR C, 6x19S - IWRC, 6x19F - IWR C, 8x31WS - IWR C, 8x36WS - IWRC and 6x36WS - IWRC.
5. For low D/d ratio and large loads, the ropes with steel core show higher fatigue durability than the ones with natural fibre core. When selecting industrial ropes - if there are no special customer requirements regarding rope flexibility and roller and sheave diameter - use the rule saying that it is better to use the ropes made of smaller number wires. For each industrial equipment, the safety factor should be higher than 3.
6. For building machines and machinery for earth works, use the ropes with linear contact between wires in strands, type Seale or Warrington-Seale. In case of rope operation with large dynamic loads, it is recommended to use Warrington-Seale rope structure. Use the ropes with linear contact of wires in transporting equipment, if the fatigue is a main cause of rope wear and tear.
7. If the rope works mainly with tensile loads, use the ropes with point contact between wires. Similar recommendations are valid for the ropes for industrial equipment drives.
8. The Lang lay ropes (the ropes, where external strand layer wires and external rope layer strands are laid in the same direction, sS or zZ) feature with high flexibility and, comparing with regular-lay ropes (the ropes, where external strand layer wires and external rope layer strands are laid in opposite directions, zS or sZ), their life is few times longer, but they tend to untwist and may be used, where the rope is protected against "spinning" and the load being lifted is protected against rotating only (this rule is not valid for non-rotating Lang-lay ropes).
9. In case when, first of all, resistance to spinning is required from the rope together with high rope flexibility to ensure long enough rope life in fatigue conditions - that is in lifting equipment of any type, where intensive load lifting is carried out, what includes building cranes, travelling cranes, harbour cranes, overhead cranes, etc. - non-rotating ropes should be used.

The use of non-rotating ropes guarantees that sheave rotation problems are eliminated and ensures higher operational safety of the crane. Especially, the latter feature of non-rotating ropes is valuable and demanded, safety issues and possibility to improve the safety considerably are currently the most important motivation for buying the ropes of this structure.

Range of application and features

Strands (1x7, 1x19M, 1x37M)

Round strands (rope components consisting of a set of wires of adequate shape and size, laid spirally in the rope in one direction and in one or more layers around the rope core, where, in a strand, 1, 2 or 3 wire layers are laid around the centre wire) feature with high rigidity (strands, where wire layers are laid in various directions, are especially rigid), therefore, they are not good in applications, where a rope is bent on sheaves or guides having small radius.

Most commonly, the strands are used:

* within smallest diameter range: in automotive industry, for strings, for example, brake rods (made of, e. g., stainless steel), coupling rods, etc. For many years, DRUMET Ropes and Wires sp. z o.o. is a producer of strings used in cars, which are used in cars produced by FIAT Auto Poland, and which meet strict FIAT standards.

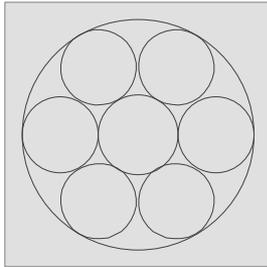
* for guys and tensioning strings for different applications (the ones made of thicker galvanized wires are applied for mast guys, e. g. for roof antenna masts).

The strands may be manufactured of galvanized, bare or stainless steel wires.

The strands made of stainless steel wires are used in various special applications - for example, as surgery strings.

Depending on application, the strands may be either oiled to protect them against corrosion or dry of high cleanness degree, for example, to ensure high adherence to rubber or plastics.

1x7¹

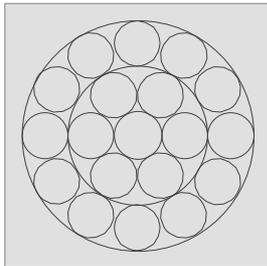


The strand structure 1x7 (the strand produced in one operation, where one layer of wires only is laid around the centre wire - 1-6).

The strand structure 1x7, diameters from 1.6 to 3 mm, are used as core carrier strands in power and telecommunication cables of steel and aluminium, as well as for suspending power and telecommunication cables.

Other properties - see general description.

1x19M



The strand structure 1x19M (the strand produced in two operations, where two layers of wires are laid around the centre wire - 1-6/12) are used in different applications for tension strings and guys.

Within the range of smallest diameters, they are used in the automotive industry for links and rods, for example, brake rods (sometimes made of stainless steel wires), coupling rods, etc. Also, they are used for strings in bicycles.

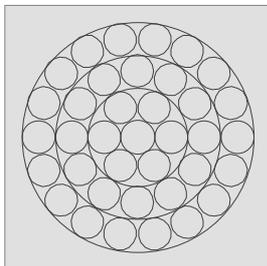
The strand structure 1x19M, diameters from 3 to 5 mm, are used as core carrier strands in power and telecommunication cables of steel and aluminium, as well as for suspending power and telecommunication cables.

Strand structures 1x19M are produced with various directions of wires in layers: either the same direction, left-lay **S** or right-lay **Z**, in all layers, or opposite wire directions in outer and intermediate layers, that is **ZS** or **SZ**.

Higher flexibility and lower resistance to abrasion are the basic parameters of the rope of that structure, which are different than the same parameters for the rope 1x7.

Other properties - see general description.

1x37M



The strand structure 1x37M (the strand produced in three operations, where three layers of wires are laid around the centre wire - 1-6/12/18).

The strand structure 1x37M are produced with various directions of wires in layers: either the same direction, left-lay **s** or right-lay **z**, in all layers, or opposite wire directions in outer, intermediate and inner layers (that is **zss** and **szz** or **zsz** and **ssz**).

Higher flexibility and lower resistance to abrasion are the basic parameters of the rope of that structure, which are different than the same parameters for the ropes 1x7 and 1x19.

Other properties - see general description.

¹ Marking in accordance with EN 12385-2

Single-layer six-strand wire ropes with cross-spliced strand wires

Single-layer ropes are the ropes, where a single layer of strands is laid around the (fibre or wire) core.

The strands of those ropes are produced by spiral winding around the central wire, in separate technological operations, one, two or three layers of wires twisted in the same direction, where laying pitch changes. The wires of overlapping layers run crosswise, and point contact of wires is achieved.

The ropes with regular lay feature with good flexibility, and their resistance to transversal pressure and fatigue durability are low.

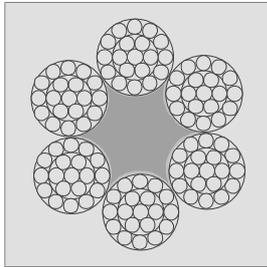
The rope core may be made of either natural (cotton, sisal) or man-made (polypropylene, etc.) fibres, or of steel wire(s). The core role in the rope is, first of all, to support rope strands, and ensuring the continuity of lubrication of rope strands (so called lubricant tank).

The ropes with wire core feature with higher resistance to transversal pressures and larger breaking force, but the rope is stiffer. As well as, their resistance to high temperatures is higher.

The ropes may be made of bare or galvanized steel wires, and, for special applications, of stainless steel wires.

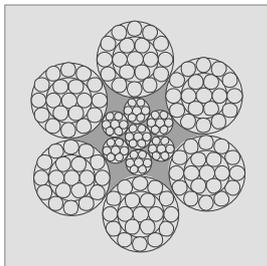
Special version ropes of stainless steel wires with polypropylene core are applied, where high resistance of the rope to extremely harmful weather conditions is required, the ropes are exposed to chemicals or high rope cleanliness is required (for example, ropes used in conveyors in food industry).

6x19M – FC²



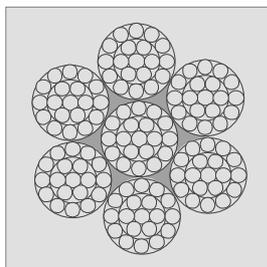
Wire ropes, structure 6x19M - FC (strand structure 1x19 - 1-6/12), are used for general applications in various industries. Those ropes are adequate for operation with sheave blocks and guides with typical radii and normal work intensity. They are often used in small hoists and jacks. Also, that rope structure is used in farming and gardening, where they are used in automatic shovels and manure hoists, as well as in fishing (trawl warps, anchor ropes, auxiliary ropes), etc.

6x19M – IWRC



Wire ropes, structure 6x19M - IWRC, with the core of independent IWRC wire rope [7x7] are used for similar applications as the ropes of same structure with fibre core, but, comparing with fibre core ropes, wire rope core ropes feature with higher stiffness, larger breaking force and higher resistance to transversal pressures and extreme temperatures, also, they feature with higher tensile strength and lower flexibility.

6x19M – WSC

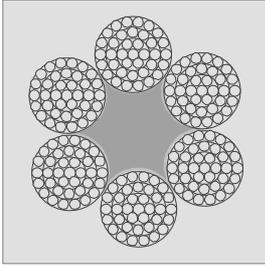


Wire ropes, structure 6x19M - WSC, with the core of WSC strand - core strand is of the same structure as rope strands - are used for similar applications as rope structures 6x19M - IWRC, but, comparing with the last ones, WSC ropes feature with higher stiffness.

Very often, that rope structure is used for production of ropes for rubber conveyors - wire strength more >2500 MPa is used - rope surface is cleaned of grease in order to ensure good adhesion with rubber.

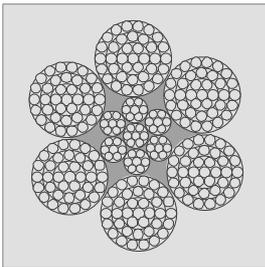
² Marking In accordance with EN 12385-2

6x37M – FC



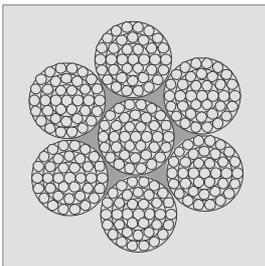
Wire ropes, structure 6x37M - FC (strand structure 1x37 - 1-6/12/18), are used for general applications. Because, in the outer layer, there are many of small diameter wires comparing with other rope structures, the ropes feature with lower resistance to abrasion and their flexibility is very high. Those ropes are used in shipbuilding and building industries, mining, for many types of winches, in agriculture, etc.

6x37M – IWRC



Wire ropes, structure 6x37M - IWRC, with the core of independent IWRC wire rope [7x7], are used for similar applications as the ropes of same structure with fibre core, but, comparing with fibre core ropes, wire rope core ropes feature with higher stiffness, larger breaking force and higher resistance to transversal pressures and extreme temperatures, also, they feature with higher tensile strength and lower flexibility.

6x37M – WSC



Wire ropes, structure 6x37M - WSC, with the core of WSC strand - core strand is of the same structure as rope strands - are used for similar applications as rope structures 6x37M - IWRC, but, comparing with the last ones, WSC ropes

Single-layer six-strand wire ropes with strand wires spliced in a single layer and in parallel

Strands of these ropes are produced in one technological operation by laying minimum two layers of wires of different diameters with the same pitch, where the number of wires in the next layer is the same or twice as number of wires in the previous one.

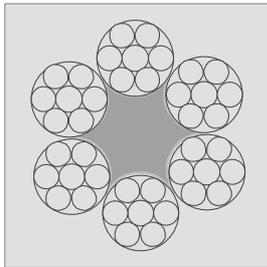
Ropes with parallel lay of wires between layers feature with relatively good flexibility together with high resistance to transversal pressures and fatigue durability.

The rope core may be made of either natural (cotton, sisal) or man-made (polypropylene, etc.) fibres, or of steel wire(s). The core role in the rope is, first of all, to support rope strands, and ensuring the continuity of lubrication of rope strands (so called lubricant tank).

The ropes with wire core feature with higher resistance to transversal pressures and larger breaking force, but the rope is stiffer, as well as, their resistance to high temperatures is higher.

The ropes may be made of bare or galvanized steel wires, and, for special applications, of stainless steel wires.

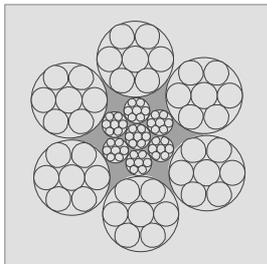
6x7 – FC³



Wire ropes, structure 6x7 - FC (single-layer strands, strand structure 1x7 - 1-6), are used as special purpose ropes.

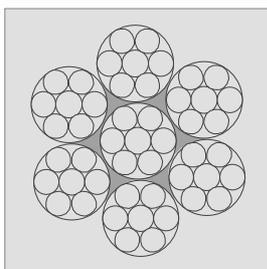
These ropes, comparing with other rope structures, feature with high resistance to abrasion and very low flexibility (due to the fact that outer layer wire diameters are much larger than the ones in ropes of other structures). Ropes of larger diameters are not adequate for operation with sheave blocks and small radius guides due to large rope stiffness. For marine applications, they sometimes are used as trawl warps. Also, they are used for ski lifts. Wire rope smallest diameters, 1.8 up to 2.5 mm, are used in drop window mechanisms in cars.

6x7 – IWRC



Wire ropes, structure 6x7 - IWRC, with the core of independent IWRC wire rope [7x7] are used for similar applications as the ropes of same structure with fibre core, but, comparing with fibre core ropes, wire rope core ropes feature with higher stiffness, larger breaking force and higher resistance to transversal pressures and extreme temperatures.

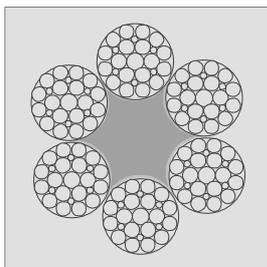
6x7 – WSC



Wire ropes, structure 6x7 - WSC with the core of WSC strand - core strand is of the same structure as rope strands - are used for similar applications as special purpose ropes. They are used for similar applications as the ropes of same structure with fibre core, but, comparing with fibre core ropes, wire rope core ropes feature with higher stiffness.

Wire rope smallest diameters, 1.8 up to 3 mm, are used for production of galvanized wire ropes for rubber conveyor belt reinforcements - wire strength more >2500 MPa is used. Those ropes are produced in versions of special cleanness to ensure proper rope adhesion to rubber

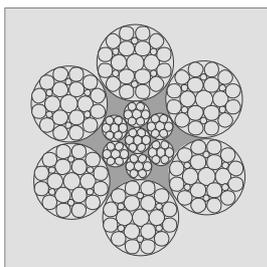
6x25 F – FC



Wire ropes, structure 6x25F - FC (Filler, the strand with wires laid in parallel - linear contact between wires - where the outer strand layer contains doubled number of wires comparing with inner strand layer, and filler wires are laid between strand layers - hence the structure name - wire arrangement in strand: 1-6-6F-12), are used for general applications in various industries, first of all, due to beneficial combination of the resistance to abrasion with resistance to bending. Good flexibility and resistance to transverse pressures make that that rope structure is used in many applications, for example, in overhead cranes, cranes, winches, etc.

In execution according to the EN 12385-5 Standard, the ropes (also, with polypropylene cores) are used for passenger and goods lifts with drive via friction disks. Those ropes are produced in few versions with various tensile strengths of outer strand layer wires.

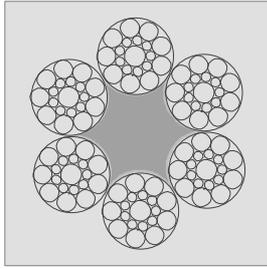
6x25 F – IWRC



Ropes of that structure feature with properties similar to the ones of ropes with fibre core, but they offer higher breaking force, better resistance to squeezing and higher stiffness.

³ Marking In accordance with EN 12385-2

6x19 S – FC

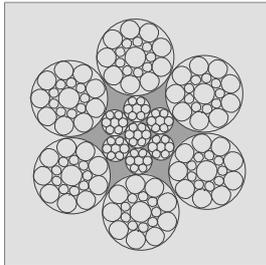


Wire ropes, structure 6x19S - FC (Seale, the strand with wires laid in parallel, where the number of wires is the same both in outer and inner strand layers, wire arrangement in the strand: 1-6-6F-12), are used for general applications in various industries, first of all, due to high resistance to abrasion and relatively good flexibility. High resistance to abrasion results from the use of large diameter wires in outer strand layer.

Due to high resistance to abrasion, those ropes are used in fishery for trawl warps.

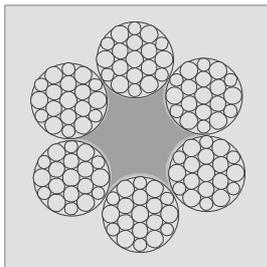
In execution according to the EN 12385-5 Standard, those ropes (also, with polypropylene cores) are used for passenger and goods lifts with drive via friction disks. Those ropes are produced in few versions with various tensile strengths of outer strand layer wires.

6x19 S – IWRC



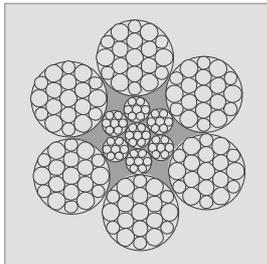
Ropes of that structure feature with properties similar to the ones of ropes with fibre core, but they offer higher breaking force, better resistance to squeezing and higher stiffness.

6x19W – FC



Wire ropes, structure 6x19W - FC (Warrington, the strand with wires laid in parallel, where the outer strand layer contains thick and thin wires laid alternately, number of wires in the outer layer is twice as number of wires in the inner layer, wire arrangement in strand: 1-6-6+6), have thicker and thinner wires laid alternately in the outer layer, where the developed surface is obtained. Those ropes belong to general purpose ones, and they are used in many industries. The linear contact between layers and good flexibility of that rope structure makes that they are proper for many applications

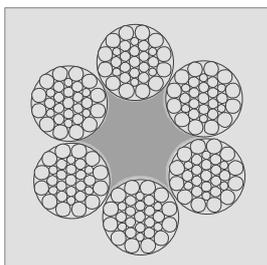
6x19W – IWRC



Ropes of that structure 6x19W – IWRC feature with properties similar to the ones of ropes with fibre core, but they offer higher breaking force, better resistance to squeezing and higher stiffness.

Warrington ropes, structure 6x25W - WSC (wire arrangement in strand and in core strand: 1-8-8+8), are used for production of steel wire - rubber SAG ropes (developed outer strand surface is perfect for pouring the rope with rubber, thus, perfect wire adhesion to rubber is ensured).

6x31WS – FC



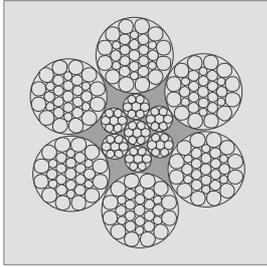
Wire ropes, structure 6x31WS - FC (Warrington-Seale, the combined strand with wires laid in parallel, the strand has three wire layers produced in one operation and it consists of combined Warrington and Seale type strands, arrangement of wires in the strand: 1-6-6+6-12), are general purpose ropes used in many industries, first of all, due to optimum combination of rope flexibility and resistance to abrasion.

The features mentioned above make that those ropes are used in many applications, amongst others, for rigging of medium work intensity cableways and medium ratio of drum (winding)

wheel) diameter to rope diameter (D/d), for auxiliary and balancing crane ropes, for cranes, winches, in building industry and many other industries.

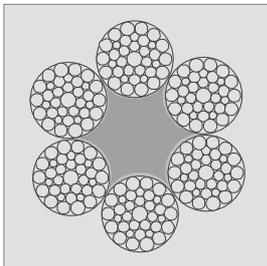
In case, when it is impossible to find out, what rope structure has been used in the specific equipment or application, this rope structure may be used to ensure reliability of operation.

6x31WS – IWRC



Ropes of that structure feature with properties similar to the ones of ropes with fibre core, but they offer higher breaking force, better resistance to squeezing and higher stiffness. Ropes 6x31WS - IWRC (core rope structure: 6x19S - FC) are used in mining for horizontal and sloped up to 45 degrees (floor railway) transport.

6x36WS – FC



Wire ropes, structure 6x36WS - FC (Warrington-Seale, the combined strand with wires laid in parallel, the strand has three wire layers produced in one operation and it consists of combined Warrington and Seale type strands, arrangement of wires in the strand: 1-7-7+7-14), are general purpose ropes.

This is the most popular and most often used rope structure. It is used in many industries, first of all, due to optimum combination of rope flexibility and resistance to abrasion.

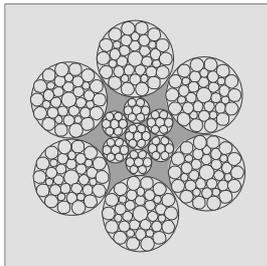
The feature mentioned above makes that those ropes are recommended for many applications, amongst others, for rigging of medium work intensity cableways and medium ratio of drum (winding wheel) diameter to rope diameter (D/d).

In case, when it is impossible to find out, what rope structure has been used in the specific equipment or application, this rope structure may be used to ensure reliability of operation.

The features, which differ that rope structure from the structure 6x31WS, are the higher flexibility and slightly lower resistance to abrasion (due to larger number of wires in the strand).

DRUMET Ropes and Wires sp. z o.o. offer the special version of rope structure 6x36WS - FC, called DRUSTAR - FC, which is produced of wires, which tensile strength is higher than 2060 MPa.

6x36WS – IWRC

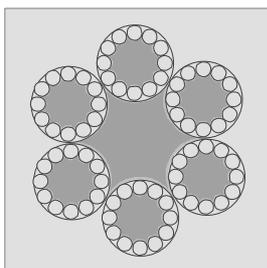


Ropes of that structure feature with properties similar to the ones of ropes with fibre core, but they offer higher breaking force, better resistance to squeezing and higher stiffness.

Ropes 6x36WS - IWRC (core rope structure: 6x19S - FC) are used in mining for horizontal and sloped up to 45 degrees (floor railway) transport.

DRUMET Ropes and Wires sp. z o.o. offer the special version of rope structure 6x36WS - IWRC, called DRUSTAR - IWRC, which is produced of wires, which tensile strength is higher than 2060 MPa.

6x12 – FC

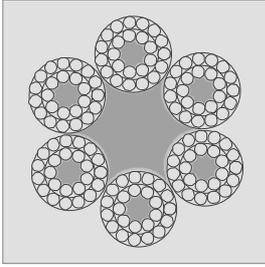


Rope structure 6x12 - FC (single-layer strands, strand structure: 12FC - FC-12) feature with high flexibility and low unit weight. On the main fibre core (currently, the core of man-made (polypropylene) fibres is used more and more often) six strands are laid, in which the fibre core is used instead of central wire.

Those ropes are used as marine ones, they are produced of galvanized wires, which, additionally, are covered with proper greases during production, to protect the ropes against corrosion in the aggressive environment of salty sea-water.

Ropes of that structure are used as springs, topping lifts, mooring ropes, other ropes and towing ropes - larger rope diameters.

6x24M – FC



Rope structure 6x24 - FC (two-layer strand with crosswise laid wires, strand structure 24FC - FC-9/15) feature with high flexibility and low unit weight. On the main fibre core (currently, the core of man-made (polypropylene) fibres is used more and more often) six strands are laid, in which the fibre core is used instead of central wire. The splices are made in the form of two layers of wires laid crosswise around the central fibre core instead of central wire (FC-9/15).

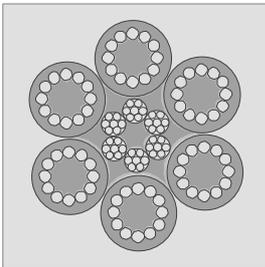
The rope structure 6x30M - FC, strand structure (FC-12/18), is another version of this rope, where slightly thinner wires are used for production of the rope, thus, the rope flexibility is higher.

Also, the structure 6x24 - FC, which has lower flexibility, but is more resistant to abrasion, is produced, where the wire contact in layers is linear, the strand (FC-12-12) is produced in one operation, the strand wires are laid in Seale arrangement around the fibre core (instead of central wire).

Those ropes are used as marine ones, they are produced of galvanized wires, which, additionally, are covered with proper greases during production, to protect the ropes against corrosion in the aggressive environment of salty sea-water.

Ropes of that structure are used as springs, topping lifts, mooring ropes, other ropes and towing ropes - larger rope diameters.

„HERKULES”+FC oraz „HERKULES”+IWRC



Marine ropes made of polypropylene reinforced with galvanized steel wires, intended mainly for top fisherman rigging and wherever there is a possibility of rope contact with human hands (for example, playgrounds for children).

Two versions of those ropes are produced, one version with fibre main core made of man-made fibres, and another one with steel wire main core. The last version features with higher strength and slightly larger stiffness.

The ropes are produced in accordance with WT (Technical Specifications) prepared by DRUMET Ropes and Wires sp. z o.o..

Single-layer eight-strand wire ropes with strand wires laid in parallel

Comparing with six-strand ropes, eight-strand ones feature with higher flexibility and resistance to fatigue and are less resistant to abrasion (due to smaller wire diameters in strands than wire diameters used for production of six-strand ropes). At the same time strength parameters are lower, because the metal cross-section of eight-strand wire ropes is smaller than the one for six-strand ropes.

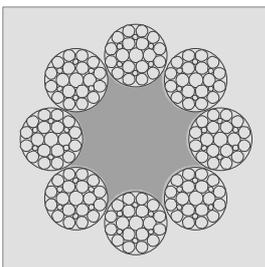
Comparing with six-strand ropes of the same structure and diameter, eight-strand wire ropes may be bent with smaller radii. For eight-strand wire ropes, the surface of rope contact with grooved sheaves is larger, because four instead of three (for six-strand rope) strands are in contact with sheave bottom.

The rope core may be made of either natural (cotton, sisal) or man-made (polypropylene, etc.) fibres, or of steel wire(s). The core role in the rope is, first of all, to support rope strands, and ensuring the continuity of lubrication of rope strands (so called lubricant tank).

The ropes with wire core feature with higher resistance to transversal pressures and larger breaking force, but the rope is stiffer. As well as, their resistance to high temperatures is higher.

The ropes may be made of either bare or galvanized steel wires.

8x25F – FC



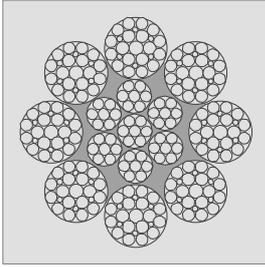
Wire ropes, structure 8x25F - FC (Filler, the strand with wires laid in parallel - linear contact between wires - where the outer strand layer contains doubled number of wires comparing with inner strand layer, and filler wires are laid between strand layers - hence the structure name - wire arrangement in strand: 1-6-6F-12), are used for passenger and goods lifts with drive via friction disks.

The ropes for applications mentioned above have narrowed dimensional tolerance comparing with general purpose ropes, and they are produced in few versions with various tensile

strengths of outer strand layer wires. Lower tensile strength wires of outer layer are used in order to reduce wear and tear of friction drums.

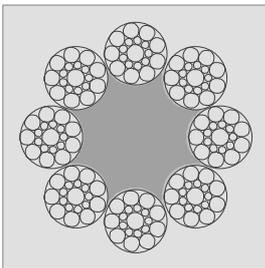
Ropes of that structure combine good flexibility and high resistance to fatigue.

8x25F – IWRC



Basic properties of wire ropes 8x25F - IWRC are similar to the ones of ropes with fibre core and of the same structure. Good supporting of rope strands by the wire core eliminates the tendency to flattening of ropes, which is characteristic for ropes of this structure with fibre cores. These ropes combine good flexibility and high resistance to fatigue.

DRULIFT

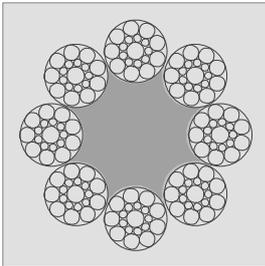


DRULIFT ropes are the offer of DRUMET Ropes and Wires sp. z o.o. intended for passenger and goods lifts with the drive via friction disks (the strand with wires laid in parallel and the same number of wires in both layers, wire arrangement in the strand: 1-9-9). (the strand with wires laid in parallel and the same number of wires in both layers, wire arrangement in the strand: 1-9-9).

Ropes for such applications have narrowed dimensional tolerance comparing with general purpose ropes, and they are produced in few versions with various tensile strengths of outer strand layer wires. Lower tensile strength wires of outer layer are used in order to reduce wear and tear of friction drums.

The ropes with relatively good flexibility and high resistance to abrasion.

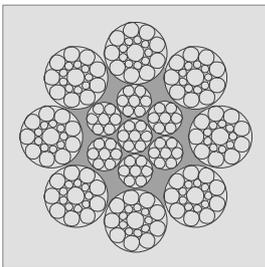
8x19S - FC



Wire ropes, structure 8x19S - FC (Seale, the strand with wires laid in parallel, where the number of wires is the same both in outer and inner strand layers, wire arrangement in the strand: 1-9-9), are used for applications, where the resistance to abrasion, flexibility and good operation with rollers is required from the wire rope.

The ropes with relatively good flexibility and high resistance to abrasion.

8x19S – IWRC

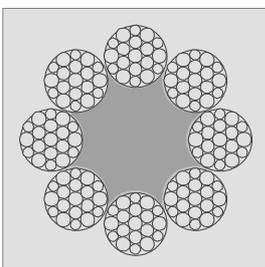


Basic properties of wire ropes 8x19S - IWRC are similar to the ones of ropes with fibre core and of the same structure.

Good supporting of rope strands by the wire core eliminates the tendency to flattening of ropes, which is characteristic for ropes of this structure with fibre cores.

The ropes with relatively good flexibility and high resistance to abrasion.

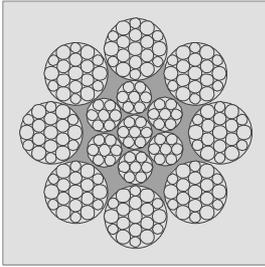
8x19W – FC



Wire ropes, structure 8x19W - FC (Warrington, the strand with wires laid in parallel, where the outer strand layer contains thick and thin wires laid alternately, number of wires in the outer layer is twice as number of wires in the inner layer, wire arrangement in strand: 1-6-6+6), are used for passenger and goods lifts with the drive via friction disks. Ropes for such applications have narrowed dimensional tolerance comparing with general purpose ropes, and they are

produced in few versions with various tensile strengths of outer strand layer wires. Lower tensile strength wires of outer layer are used in order to reduce wear and tear of friction drums.

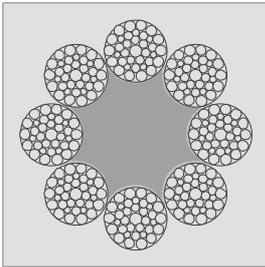
8x19W – IWRC



Basic properties of wire ropes 8x19W - IWRC are similar to the ones of ropes with fibre core and of the same structure.

Good supporting of rope strands by the wire core eliminates the tendency to flattening of ropes, which is characteristic for ropes of this structure with fibre cores.

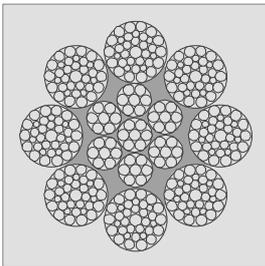
8x36WS – FC



Wire ropes, structure 8x36WS - FC (Warrington-Seale, the combined strand with wires laid in parallel, the strand has three wire layers produced in one operation and it consists of combined Warrington and Seale type strands, arrangement of wires in the strand: 1-7-7+7-14), are used for low load capacity cranes, where they are not exposed to high temperatures, as well as in any application, where high wire rope flexibility is required.

DRUMET Ropes and Wires sp. z o.o. recommends the use of non-rotating ropes for cranes!

8x36WS – IWRC



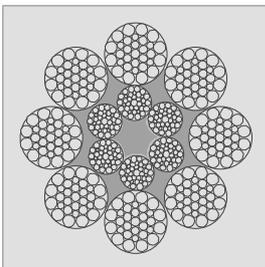
Basic properties of wire ropes 8x19WS - IWRC are similar to the ones of ropes with fibre core and of the same structure.

Good supporting of rope strands by the wire core eliminates the tendency to flattening of ropes, which is characteristic for ropes of this structure with fibre cores.

Rope structures 8x19WS - IWRC are applied for teeming cranes in steel works. The ropes mentioned above shall be installed in accordance with all crane rigging rules, because they are very easy to damage and/or susceptible to premature wear caused by incorrect installation of new ropes in the crane.

In case of installation of new ropes with the use of old ones, in no case connect new ropes with old ones permanently by welding. Such connection should be made with the use of either a section of a single strand or thick sisal rope in order to eliminate (transfer) the stresses.

8x31WS – IWRC



Wire ropes, structure 8x31WS - IWRC (Warrington-Seale, the combined strand with wires laid in parallel, the strand has three wire layers produced in one operation and it consists of combined Warrington and Seale type strands, arrangement of wires in the strand: 1-6-6+6-12), rope core made of independent wire rope 6x31WS - FC, has been designed for and are used in oil wells operated by domestic oil and gas exploration plants. The ropes feature with very high resistance to rope surface pressures of high values.