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Crane and Industrial
Wire rope solutions for the world's most demanding applications
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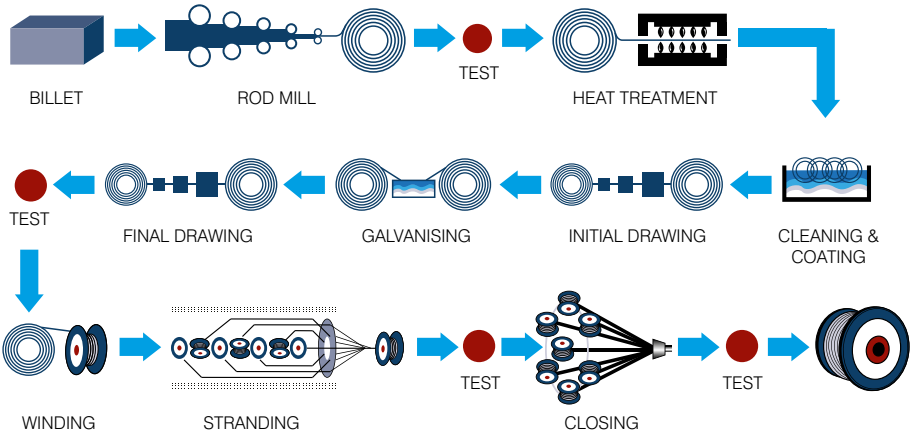
General Guidance

Crane and Industrial wire and rope solutions
for the world's most demanding applications

GENERAL GUIDANCE ON ROPE SELECTION

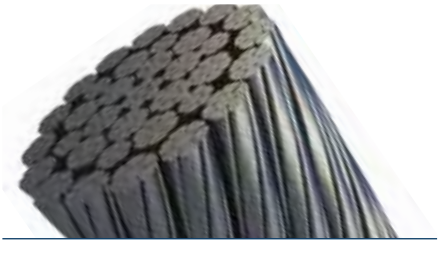
Global technology leader in the manufacture of wire and rope solutions for the world's most demanding applications

Manufacturing from Rod to Rope



General Guidance on Wire Rope Construction

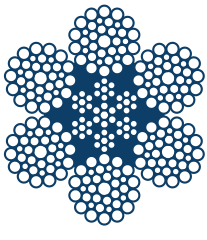
A wire rope is made from spinning individual steel wires together with a lubricant. Multi-strand wire ropes are made by closing a number of wire ropes (or strands) around a central core with a lubricant. The core is a wire rope with a central king wire that runs parallel to the length of the rope.



This is a very simplified overview of the basic construction of a wire rope. In reality the increasing demands facing wire rope for lifting and lowering ever larger loads in more arduous conditions means that modern wire ropes require extensive technical knowledge and manufacturing capability to achieve the right balance of strength, flexibility and endurance that will ensure safe and economic operation in diverse applications and industry sectors.

Indeed, due to the complex interaction between the many individual components of a wire rope under heavy load and from fatigue due to bending, wire rope is classified as a machine. These interactions have become ever more complex as synthetic materials have been combined into the construction of wire ropes in order to reach new levels of performance.

To help you understand the complex nature of wire rope this guide aims to impart an understanding of the key factors that need to be considered and correctly balanced when choosing which type of rope will provide optimum service life and safety for a specific task, type of machinery and working environment.



An example rope nomenclature for the rope shown above is given below;

6 x 36WS - IWRC 1960 B sZ

What it means;

6 = numbers of strands

36 = number of wires in each strand

1-7-7+7-14 = Lay-up of wires in the strand

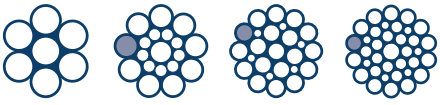
IWRC = Type of core

1960 = Rope grade

B = Drawn galvanised B(Zn)

sZ = Right Hand Ordinary (RHO) Lay

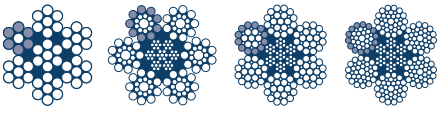
Equal lay strand constructions



7-wires (1-6) | Seale 19S(1-9-9) | Filler 25F (1-6-6F-12) | Warrington Seale 36WS (1-7-7+7-14)

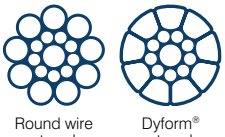
6-stranded rope constructions

(for example nominal diameter 22mm)

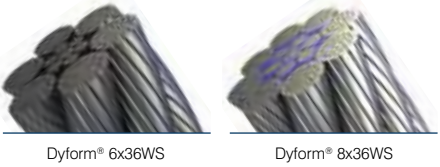


6x7 Outer wire 2.2mm² Metallic area 3.8mm² | 6x19S Outer wire 1.8mm² Metallic area 2.5mm² | 6x25F Outer wire 1.5mm² Metallic area 1.8mm² | 6x36WS Outer wire 1.3mm² Metallic area 1.3mm²

The Dyforming process is where the strand having been produced from round wires is passed through a die or rollers to squeeze the steel inwards, increasing the steel fill factor and creating a smooth surface on the exterior of the strand.



Round wire strand | Dyform® strand



Dyform® 6x36WS | Dyform® 8x36WS

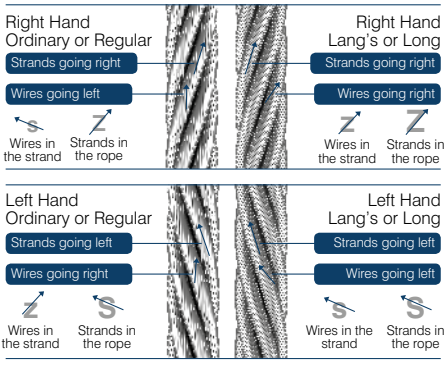
Dyform® 50DB | Dyform® 34LR

Parallel laid or DSC (Double Seale Closed) ropes

Dyform® DSC 8

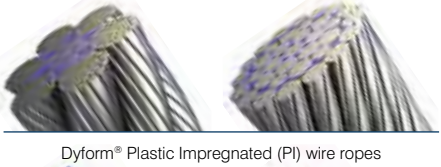
The rope lay of a wire rope may be described as;

sZ = Right hand ordinary/regular lay
zZ = Right hand lang's lay
aZ = Right hand alternate lay
zS = Left hand ordinary/regular lay
sS = Left hand lang's lay
aS = Left hand alternate lay

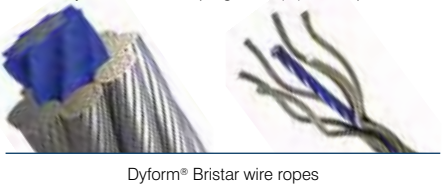


Lang's lay ropes offer greater wear resistance and minimise spooling damage at the cross-over zones when multi-layer wound on winch drum. It must be noted that single layer ropes (6 and 8 stranded ropes) and parallel laid rope constructions in lang's lay can be used only when both ends of the ropes are fixed or prevented from rotation. Rotation resistant rope constructions in lang's lay may be used with one end free to rotate, for example, when attached to a hook or swivel.

Historically, wire ropes were constructed with either natural fibre (Hemp, Jute, Manila, Sisal) or Synthetic fibre (Polypropylene) cores, however today's high performance crane ropes are produced with steel cores or with steel cores having a plastic coating which can take several different forms and material.

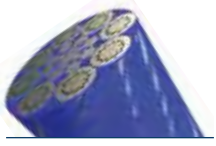


Dyform® Plastic Impregnated (PI) wire ropes



Dyform® Bristar wire ropes

The completed rope may also be plastic coated, either sheathed or by impregnation which totally fills the rope. As an alternative to extruding plastic in to the rope, extruded plastic sections may be spun in to the rope during the manufacturing process.



Tiger Blue

Dyform® Zebra

Wire ropes can also be swaged or Dyformed after completion, further increasing the steel fill factor, whilst creating a smooth surface to the exterior of the rope.

Cores

Steel Wire ropes are supplied with either fibre or steel cores, the choice being largely dependent on the use for which the rope is intended.

The principal function of the core is to provide support to the strands and maintain them in the correct positions under working conditions.

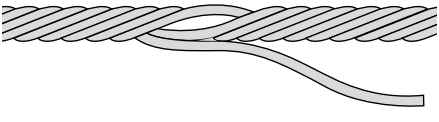
Steel Cores

Steel cores comprise an independent wire rope (IWRC) or in the case of small ropes, a wire strand (WSC). Such cores prove advantageous in severe working conditions involving low factors of safety, high operating speeds, wide fleet angles and are more resistant to crushing on drums and pulleys. The steel core provides better support for the outer strands, so that the rope retains its shape, resulting in a more effective distribution of stress in the individual wires.

Preforming

Generally, ropes are supplied preformed.

In a preformed rope the wires and strands are given the helix they take up in the completed rope.



Note: Rotation-resistant ropes should be considered as 'non-preformed' when cutting.

Advantages of pre-formed ropes:

- Exposed ends will not untwist
- Broken wire ends lie flat
- Easy to handle during installation
- Less prone to kinking and are free form liveliness and twisting tendencies.

Coatings

Zinc Coated Wire Ropes – Galvanising

Zinc coatings provide sacrificial protection to the underlying steel wire for protection against corrosion where the rope is exposed to corrosive agents – salt, water, moisture, weather etc.

Various coat weights of zinc are available for particular application; Bridon is ready to advise on the alternative procedures for achieving corrosion protection of wire rope appropriate to the particular environment and manner of usage.

Protective Sheathing

Ropes and strands protected by synthetic sheathing can provide excellent additional corrosion protection where environmental conditions dictate, such as deep water mooring lines etc, the plastic sheath providing a barrier between the rope and environment. The method of extrusion employed for these ropes results in a finished product, which will meet all the environmental and mechanical demands required of the rope. The standard range of coverings includes polypropylene, PVC and polyethylene.

Rope Grades

Rope Grade	Approximate Equivalent API 9A Grade
1770	IPS
1860	EIPS
1960	EIPS
2160	EEIP

Definition of Breaking Loads and Forces

1. **Minimum Breaking Force:** The force, in kilonewtons or pounds force below which the rope shall not break when tested to destruction.
2. **Minimum Breaking Load:** The load in tonnes or tons corresponding to the minimum breaking force.
3. **Minimum aggregate breaking force:** The value calculated from the product of the sum of the cross-sectional metallic areas of all the individual wires in the rope and the tensile strength grades(s) of the wires.

Note: The minimum aggregate breaking force is sometimes used when Regulations permit, particularly in Europe. There is a direct relationship between minimum aggregate breaking force and minimum breaking force (through the spinning loss) and users must be absolutely sure that they are comparing like for like when ordering replacement ropes.

When selecting a steel wire rope to suit a particular application the following characteristics should be taken into consideration.

- Strength
- Rotation resistance
- Fatigue resistance
- Resistance to wear and abrasion
- Resistance to crushing
- Resistance to corrosion
- Rope extension

Strength

The responsibility for determining the minimum strength of a rope for use in a given system rests with the manufacturer of the machine, appliance, or lifting equipment. As part of this process the manufacturer of the machine, appliance or lifting equipment will need to be aware of any local regulations, standards or codes of practice which might govern the design factor of the rope (often referred to nowadays as the coefficient of utilisation), and other factors which might influence the design of sheaves and drums, the shape of the groove profiles and corresponding radius, the drum pitch and the angle of fleet, all of which have an effect on rope performance.

Once the strength (referred to as minimum breaking force or minimum breaking load) of the rope has been determined it is then necessary to consider which type of rope will be suitable for the intended duty. It is important therefore for the designer to be fully aware of the properties, characteristics and limitations on use of the many different kinds of steel wire ropes which are available.

IMPORTANT NOTE FOR CRANE OPERATORS

Bridon recommends that once the machine, appliance or lifting equipment has been taken into service, any replacement rope should possess the required characteristics for the duty in question and should, as a minimum, at least comply with the minimum guaranteed breaking force stated by the original equipment manufacturer.

Every rope produced by Bridon is “Powerchecked” to confirm compliance with the minimum guaranteed breaking force or load stated in this catalogue

Resistance to Rotation

It is important to determine whether there is a requirement to use a low rotation or rotation resistant rope. Such ropes are often referred to as multi - strand ropes.

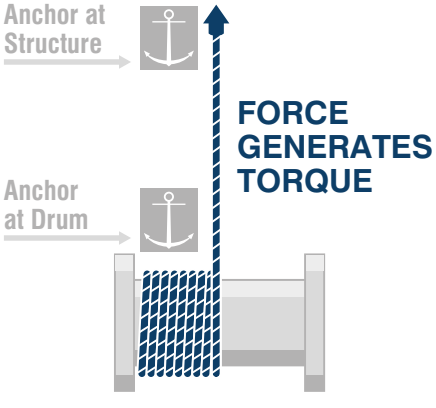
Six or eight strand rope constructions are usually selected unless load rotation on a single part system or “cabling” on a multi - part reeving system are likely to cause operational problems.

When loaded, steel wire ropes will generate:

- “Torque” if both ends are fixed
- “Turn” if one end is unrestrained

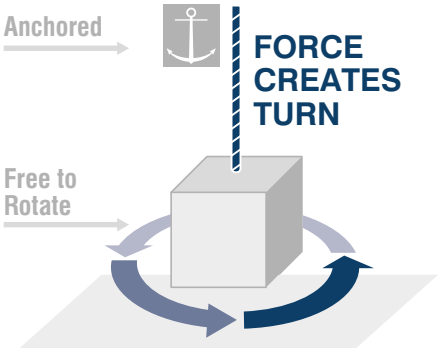
Torque

When both ends of a rope are fixed, the applied force generates “torque” at the fixing points.



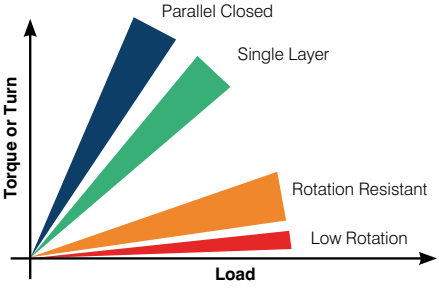
Turn

When one end of a rope is free to rotate, the applied load causes the rope to turn.



The torque or turn generated will increase as the load applied increases. The degree to which a wire rope generates torque or turn will be influenced by the construction of the rope. Having recognised what can happen when a rope is loaded it is necessary to select the correct type of rope. It should be noted that all ropes will rotate to some degree when loaded.

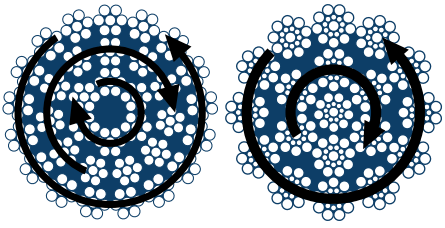
The diagram below serves to illustrate the differences in rotational properties between the four basic types of stranded rope.



Specific information including the torque factor and the turn value expressed in degrees per lay length for individual rope constructions can be found on page 11.

The tendency for any rope to turn will increase as the height of lift increases. In a multi - part reeving system the tendency for the rope to cable will increase as the spacing between the parts of rope decreases. Selection of the correct rope will help to prevent “cabling” and rotation of the load.

“Endurance” low rotation and rotation resistant ropes ensure that problems associated with cabling and load rotation are minimised.



3 layer - Low Rotation

2 layer - Rotation Resistant

Bridon is pleased to offer advice on any specific problems associated with rope rotation.

Bridon is able to verify the rotational characteristics of individual wire ropes through testing on its specially designed in house torque/turn machine. All Bridon products intended for lifting applications have been subject to this “Twistcheck” testing programme.

Fatigue Resistance

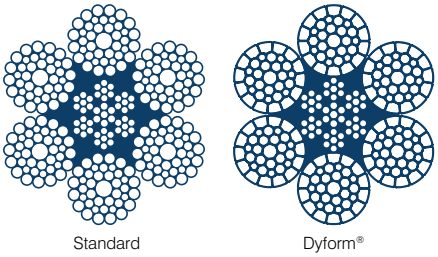
Steel wire ropes are likely to deteriorate due to bend fatigue when subjected to bending around a sheave or drum. The rate of deterioration will be influenced by the number of sheaves in the system, the diameter of the sheaves and drum, and the loading conditions.

Bridon carries out extensive testing on their products, providing comparative fatigue data to allow customers to make an informed choice.

When selecting a wire rope for an application where bending fatigue is a principal cause of deterioration it is important to select a rope containing small wires e.g.

6x36WS(1-7-7+7-14) as opposed to a 6x19S(1-9-9).

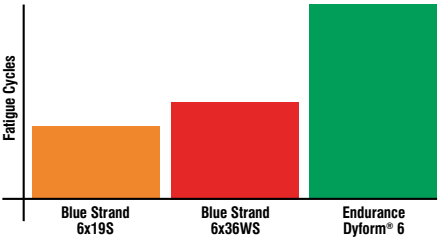
Additional resistance to fatigue leading to real cost savings can be achieved by selecting a “Dyform®” wire rope.



Standard

Dyform®

The smooth surface of the “Dyform®” product provides improved rope to sheave contact leading to reduced wear on both rope and sheave . Increased cross-sectional steel area and improved inter - wire contact ensures that the rope will operate with lower internal stress levels resulting in longer bending fatigue life and lower costs.

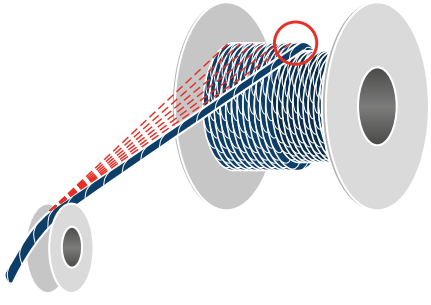


This graph illustrates a “doubling” in life when moving from Blue Strand 6x36 to Endurance Dyform® 6. This same relationship can be found when moving from any construction into an equivalent Dyform® construction e.g. 18x7 to Endurance Dyform® 18 or 35x7 to Endurance Dyform® 34LR.

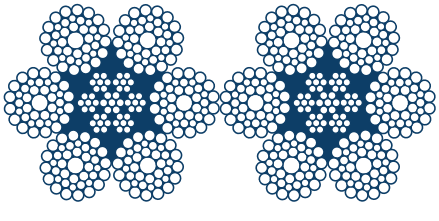
Resistance to Abrasive Wear

Abrasive wear can take place between rope and sheave and between rope and drum but the greatest cause of abrasion is often through “interference” at the drum.

If abrasion is determined to be a major factor in rope deterioration then a wire rope with relatively large outer wires should be selected.

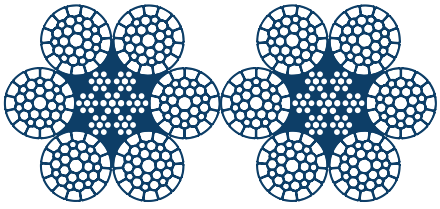


Wire rope on adjacent drum laps can cause point contact and accelerated wear .



Non Dyform® wire rope on adjacent drum laps can cause point contact and accelerated wear.

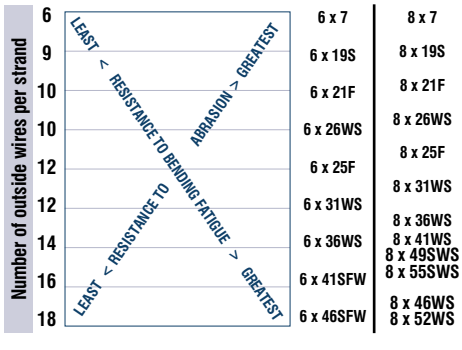
Selection of a Dyform® product will reduce abrasion through improved contact conditions.



The smooth surface of Dyform® rope creates better contact and leads to longer life.

Abrasion Resistance vs Bending Fatigue Resistance

When choosing a rope for a specific application it is often necessary to reach a balance between the two important rope characteristics of abrasion resistance and the resistance to bending fatigue. An established method of determining the best construction for the rope for the particular operating conditions is by use of the “X- Chart”. By referring to this chart when selecting a rope, the mid-point of the “X” comes closest to a balance between resistance to abrasion and resistance to bending fatigue. As with most engineering challenges, some degree of compromise and trade off of the two properties may be required in order to choose the best rope for the application. This will ultimately depend on the prevailing conditions under which the rope will be expected to operate in and the need to reach an efficient, economical solution.

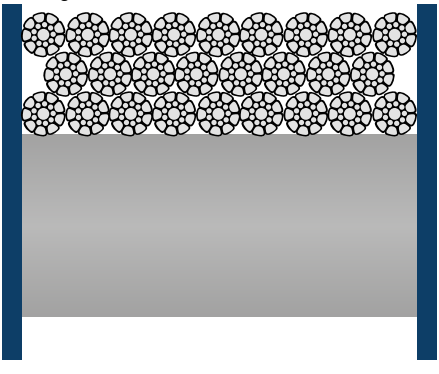


Crush Resistance

In multi - layer coiling applications where there is more than one layer of rope on the drum it is essential to install the rope with some back tension. Bridon recommends a minimum installation tension of between 2.5% and 10% of the minimum breaking force of the rope. If this is not achieved, or in certain applications where high pressure on underlying rope layers is inevitable e.g. a boom hoist rope raising a boom from the horizontal position, severe crushing damage can be caused to underlying layers. Selection of a steel core as opposed to a fibre core will help this situation. Additional resistance to crushing is offered by a Dyform® rope resulting from its high steel fill-factor.

Dyform® ropes are recommended for multi - layer coiling operations where crushing on lower layers is inevitable.

Rotary hammer swaged Constructex ropes excel to combat problem spooling to minimise damage and crushing on the drum.



Corrosion resistance

If the wire rope is to be used in a corrosive environment then a galvanised coating is recommended. If corrosion is not a significant issue then a bright rope can be selected.

Where moisture can penetrate the rope and attack the core, plastic impregnation (PI) can be considered.

In order to minimise the effects of corrosion it is important to select a wire rope with a suitable manufacturing lubricant. Further advantages can be gained by lubricating the rope regularly whilst it is in service.

Properties of Extension of Steel Wire Ropes

Any assembly of steel wires spun into a helical formation either as a strand or wire rope, when subjected to a tensile load, can extend in three separate phases, depending on the magnitude of the applied load.

There are also other factors which produce rope extension which are very small and can normally be ignored.

Phase 1 - Initial or Permanent Constructional Extension

At the commencement of loading a new rope, extension is created by the bedding down of the assembled wires with a corresponding reduction in overall diameter. This reduction in diameter creates an excess length of wire which is accommodated by a lengthening of the helical lay. When sufficiently large bearing areas have been generated on adjacent wires to withstand the circumferential compressive loads, this mechanically created extension ceases and the extension in Phase 2 commences. The Initial Extension of any rope cannot be accurately determined by calculation and has no elastic properties.

The practical value of this characteristic depends upon many factors, the most important being the type and construction of rope, the range of loads and the number and frequency of the cycles of operation. It is not possible to quote exact values for the various constructions of rope in use, but the following approximate values may be employed to give reasonably accurate results.

	% of rope length	
	Fibre Core	Steel Core
Lightly loaded Factor of safety about 8:1	0.25	0.125
Normally loaded Factor of safety about 5:1	0.50	0.25
Heavily loaded Factor of safety about 3:1	0.75	0.50
Heavily loaded with many bends and/or deflections	Up to 2.00	Up to 1.00

The above figures are for guidance purposes. More precise figures are available upon request.

Phase 2 - Elastic Extension

Following Phase 1, the rope extends in a manner which complies approximately with Hookes Law (stress is proportional to strain) until the Limit of Proportionality or Elastic Limit is reached.

It is important to note that wire ropes do not possess a Young's Modulus of Elasticity, but an 'apparent' Modulus of Elasticity can be determined between two fixed loads.

The Modulus of Elasticity also varies with different rope constructions, but generally increases as the cross-sectional area of steel increases.

By using the values given, it is possible to make a reasonable estimate of elastic extension, but if greater accuracy is required it is advisable to carry out a modulus test on an actual sample of the rope.

$$\text{Elastic Extension} = \frac{WL}{EA} \quad mm$$

W = *load applied (kN)*
L = *rope length (m)*
EA = *axial stiffness MN*

Phase 3 - Permanent Extension
The permanent, non-elastic extension of the steel caused by tensile loads exceeding the yield point of the material.

If the load exceeds the Limit of Proportionality, the rate of extension will accelerate as the load is increased, until a loading is reached at which continuous extension will commence, causing the wire rope to fracture without any further increase of load.

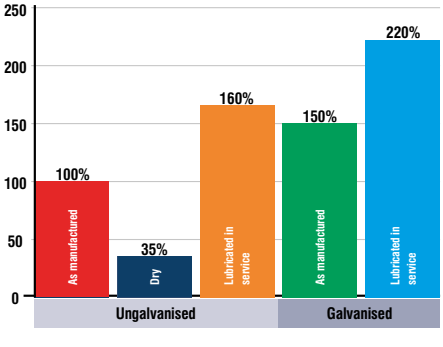
Lubrication

During the wire rope manufacturing process, the space between the wires is normally filled with petrolatum based grease, these greases having a temperature operating range typically of 0°C to +60°C. Synthetic grease with an operating temperature range of -40°C to +90°C may be incorporated. It is important when specifying a particular rope to consider the type of lubricant required for the application and the amount of lubricant required on the exterior of the rope, as the tendency is to produce ropes with less grease on their exterior.

Lubricants may be applied to wire ropes during service to both increase their fatigue performance and protect the ropes from corrosion.

Typical wire rope bend fatigue results

(Bridon Endurance Dyform® 34LR)



General Notes

Galvanized

The Bridon group has the capability to offer any crane product in either Bright or Galvanized finish. Typically, cranes use Bright ropes in North American and Galvanized ropes in the European Union and the GOM. Globally, local usage standards, application conditions and preference may define the actual rope finish selected.

Smooth Drum

"When using multi-strand, rotation resistant products in multi-layer applications, the use of Lebus type grooved drums may provide superior spooling performance over smooth faced drums."

Minimum Breaking Force

Many wire rope applications, mobile cranes and deep water mooring systems in particular benefit from very high strength to weight ratios. As a result, designers are constantly pushing the specific strength envelope of the wire rope used in their products. Bridon and many other rope companies have responded to these requirements with innovative materials and manufacturing techniques to push rope strengths past the highest values listed in national and international standards.

Properties like strength, fatigue life, crush resistance and stability of physical properties are a function of the materials used, geometry of the design and manufacturing processes employed in the specific rope configuration. Optimizing the configuration to produce highest strength is not achieved without effecting other properties. Fatigue life and long term stability of physical properties are most affected by the techniques employed to produce extremely high strength wire rope. Because of these effects, characteristics of extremely high strength rope need to be understood for specific applications.
Please contact Bridon Technical sales to review your specific use.

Cross Sections

The cross section image is for reference only.
Actual cross sections vary due to diameter.

Summary Technical Information and Conversion Factors

(For guidance purposes only)

Bridon supply a range of 'Endurance' High Performance steel wire ropes specifically designed and manufactured to meet the needs of today's cranes and the demanding applications to which they are exposed. High performance ropes are normally selected by customers when they require the specific characteristics of improved performance, high strength, low extension or low rotation.

Rope construction	Fill Factor f'	Nominal Metallic Area Factor	Extension Characteristics			Rotational Characteristics			Nominal Rope Lay (mm)
			Rope Modulus at 20% MBF		Initial Permanent Extension %	Torque Factor at 20% of Breaking Force		Turn value at 20% breaking force degrees/ rope lay	
						Ordinary	Lang's		
	%	C'	kN/mm²	Mpsi	%	%	%		x Nom. Rope dia.
Conventional 6 & 8 Strand									
Blue Strand 6x19-IWRC Class	0.57	0.4490	104	14.8	0.15	7.0	9.0	50	6.5
Blue Strand 6x36-IWRC Class	0.59	0.4600	104	14.8	0.17	7.0	9.0	60	6.5
High Performance 6 & 8 Strand									
Dyform® 6 & 6-PI (8 to 40mm)	0.67	0.5262	103	1	0.10	6.9	10.9	60	6.5
Dyform® Bristar 6 (18 to 76mm)	0.67	0.5260	103	14.7	0.10	6.9	10.9	60	6.5
Endurance 8x19 class & 8-PI (12 to 34mm)	0.58	0.4570	96	14.7	0.20	7.0	9.0	90	6.5
Endurance 8x36 class & 8-PI (36 to 60mm)	0.60	0.4680	96	13.7	0.20	7.0	9.0	90	6.5
Dyform® 8 (10 to 142mm)	0.68	0.5340	100	13.7	0.15	7.0	9.0	90	6.5
Dyform® 8-PI (10 to 60mm)					0.15			90	6.5
Dyform® Bristar 8 (10 to 142mm)	0.68	0.5340	100	14.2	0.20	7.0	9.0	90	6.5
Dyform® DSC 8 (10 to 60mm)	0.75	0.5890	107	14.2	0.09	8.1	11.0	70	6.5
Constructex	0.72	0.5650	107	15.2	0.05	7.0	n/a	60	6.0
Brifil 6-strand (16 to 60mm)	0.59	0.4600	104	14.8	0.15	7.0	9.0	60	6.5
Rotation Resistant									
Dyform® 18 & 18-PI (16 to 38mm)	0.71	0.5576	95	13.5	0.10	3.0	n/a	4	6.25
Dyform® 50DB (8 to 26mm)	0.73	0.5731	97	13.8	0.24	n/a	3	3	6.5
Low Rotation Ropes									
Dyform® 34LR & 34LR-PI (10 to 40mm)	0.74	0.5810	99	14.1	0.05	0.8	1.3	0.7	6.0
Dyform® 34LR-XL (16 to 32mm)	0.74	0.5810	99	14.1	0.05	0.8	1.3	0.7	6.0
Dyform® 34LR MAX (25 to 32mm)	0.79	0.6200	99	14.1	0.05	0.8	1.3	0.7	6.4
Dyform® 28HML	0.79	0.6200	99	14.1	0.05	0.8	1.3	0.7	6.4

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BRIDON

Product Selection

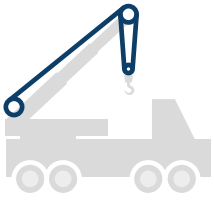
Crane and Industrial wire and rope solutions
for the world's most demanding applications

PRODUCT SELECTION

Contents

Global technology leader in the manufacture of wire and rope solutions for the world's most demanding applications

Telescopic Mobile Crane Ropes



		Blue Strand 6x19 & 6x36 Class	Endurance Dyform® 6	Endurance Dyform® 8 PI	Endurance Dyform® 8 Max	Endurance Dyform® 18 PI	Endurance Dyform® 18	Endurance Dyform® 50DB	Endurance Dyform® 28 HML	Endurance Dyform® 34LR Max	Endurance Dyform® 34LR PI	Endurance Dyform® 34LR
Application	Main Hoist	■	■	■	■	■	■	■	■	■	■	■
	Auxiliary Hoist	■	■	■	■	■	■	■	■	■	■	■
Construction	Single Layer (6&8-strand)	■	■	■	■							
	Multi-Layer (multi-strand)					■	■	■	■	■	■	■
	Dyform®/Compacted		■	■	■	■	■	■	■	■	■	■
	Plastic Impregnated/Bristar			■		■					■	
Resistance	Rotation Resistant					■	■	■	■	■	■	■
	Crush Resistant		■	■	■	■	■	■	■	■	■	■
	Less Corrosion			■	■						■	
	Reduced Stretch			■	■				■	■	■	■
Performance	High Breaking Force			■	■				■	■	■	■
	High Performance		■	■	■	■	■	■	■	■	■	■
	Excellent Spooling		■	■	■	■	■	■	■	■	■	■
	Long life		■	■	■			■	■	■	■	■
	Decreased Downtime		■					■	■	■	■	■

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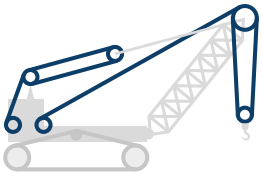
Mobile Lattice Boom Crane Ropes



		Constructex	Blue Strand 6x36 class	Endurance Dyform® 6	Endurance Dyform® 8 PI	Endurance Dyform® 8	Endurance Dyform® Bristar 8	Endurance Dyform® DSC 8	Endurance Dyform® 8 Max	Endurance Dyform® DSC 8 Max	Endurance Dyform® 18 PI	Endurance Dyform® 18	Endurance Dyform® 50DB	Endurance Dyform® 28 HML	Endurance Dyform® 34LR Max	Endurance Dyform® 34LR PI	Endurance Dyform® 34LR
Application	Main Hoist		■	■	■	■	■		■		■	■	■	■	■	■	■
	Auxiliary/Whip Hoist										■	■	■	■	■	■	■
	Boom Hoist	■	■	■	■	■	■	■	■	■							
	Boom Pendants		■	■	■	■	■		■								
Construction	Single Layer (6&8-strand)	■	■	■	■	■	■	■	■	■							
	Multi-Layer (multi-strand)										■	■	■	■	■	■	■
	Dyform®/Compacted	■		■	■	■	■	■	■	■	■	■	■	■	■	■	■
	Plastic Impregnated/Bristar				■		■				■					■	
Resistance	Rotation Resistant										■	■	■	■	■	■	■
	Crush Resistant	■		■	■	■	■	■	■	■	■	■	■	■	■	■	■
	Less Corrosion				■		■									■	
	Reduced Stretch	■			■		■	■		■				■	■	■	■
Performance	High Breaking Force	■			■		■	■		■				■	■	■	■
	High Performance	■		■	■		■	■		■	■	■	■	■	■	■	■
	Excellent Spooling	■		■	■	■	■	■	■	■	■	■	■	■	■	■	■
	Long life	■			■								■	■	■	■	■
	Decreased Downtime	■		■	■		■							■	■	■	■

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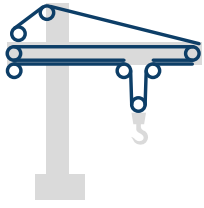
Tower Crane Ropes



		Constructex	Endurance Dyform® 8 PI	Endurance Dyform® 6	Endurance Dyform® 8 Max	Endurance Dyform® 18 PI	Endurance Dyform® 18	Endurance Dyform® 50DB	Endurance Dyform® 28 HML	Endurance Dyform® 34LR Max	Endurance Dyform® 34LR PI	Endurance Dyform® 34LR
Application	Main Hoist					■	■	■	■	■	■	■
	Derricking/Luffing	■	■	■	■							
	Trolley	■	■	■	■							
Construction	Single Layer (6&8-strand)	■	■	■	■							
	Multi-Layer (multi-strand)					■	■	■	■	■	■	■
	Dyform®/Compacted	■	■	■	■			■	■	■	■	■
	Plastic Impregnated/Bristar		■			■					■	
Resistance	Rotation Resistant					■	■	■	■	■	■	■
	Crush Resistant	■	■	■	■			■	■	■	■	■
	Less Corrosion		■		■						■	
	Reduced Stretch	■	■		■				■	■	■	■
Performance	High Breaking Force	■	■		■				■	■	■	■
	High Performance	■	■		■			■	■	■	■	■
	Excellent Spooling	■	■		■			■	■	■	■	■
	Long life		■		■				■	■	■	■
	Decreased Downtime			■				■	■	■		■

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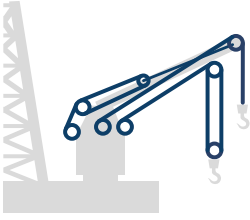
Offshore Pedestal Crane Ropes



		Endurance Dyform® 6	Endurance Dyform® 8 PI	Endurance Dyform® Bristar 8	Endurance Dyform® DSC 8	Endurance Dyform® 8 Max	Endurance Dyform® DSC 8 Max	Endurance Dyform® 18 PI	Endurance Dyform® 18	Constructex	Endurance Dyform® 50DB	Endurance Dyform® 28 HML	Endurance Dyform® 34LR Max	Endurance Dyform® 34LR PI (10mm to 50mm)	Endurance Dyform® 34LR (10mm to 50mm)
Application	Main Hoist							■	■		■	■	■	■	■
	Whip/Auxiliary Lines							■	■		■	■	■	■	■
	Boom Hoist	■	■	■	■	■	■			■					
	Boom Pendants	■	■	■		■									
Construction	Single Layer (6&8-strand)	■	■	■	■	■	■			■					
	Multi-Layer (multi-strand)							■	■		■	■	■	■	■
	Dyform®/Compacted	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	Plastic Impregnated/Bristar		■	■				■						■	
Resistance	Crush Resistant	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	Less Corrosion	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	Reduced Stretch	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Performance	Increased strength to diameter ratio	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	Reduced Torque & Turn							■	■		■	■	■	■	■
	Increased diameter tolerance	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	Increased Service life	■	■	■	■	■	■	■	■	■	■	■	■	■	■

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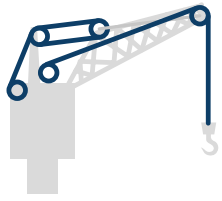
Dockside Crane Ropes



		Constructex	Endurance Dyform® 6	Endurance Dyform® 8 PI	Endurance Dyform® Bristar 8	Endurance Dyform® DSC 8	Endurance Dyform® 8 Max	Endurance Dyform® DSC Max	Endurance Dyform® 50DB	Endurance Dyform® 18 PI	Endurance Dyform® 18	Endurance Dyform® 28 HML	Endurance Dyform® 34LR Max	Endurance Dyform® 34LR PI	Endurance Dyform® 34LR
Application	Main Hoist		■	■	■		■		■	■	■	■	■	■	■
	Auxiliary Hoist		■	■	■		■		■	■	■	■	■	■	■
	Holding Ropes		■	■	■		■								
	Closing Ropes		■	■	■		■								
	Boom	■	■	■	■	■	■	■							
	Boom Pendants		■	■	■		■								
Construction	Single Layer (6&8-strand)	■	■	■	■	■	■	■							
	Multi-Layer (multi-strand)								■	■	■	■	■	■	■
	Dyform®/Compacted	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	Plastic Impregnated/Bristar			■	■					■				■	
Resistance	Rotation Resistant								■	■	■	■	■	■	■
	Crush Resistant	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	Less Corrosion			■	■		■							■	
	Reduced Stretch	■		■	■	■	■	■				■	■	■	■
Performance	High Breaking Force	■		■	■	■	■	■				■	■	■	■
	High Performance	■			■									■	
	Excellent Spooling	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	Long life	■	■	■	■	■	■	■				■	■	■	■
	Decreased Downtime	■		■	■		■					■	■	■	■

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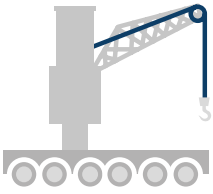
Mobile Harbour Crane Ropes



		Endurance Dyform® 6	Endurance Dyform® 8 PI	Endurance Dyform® Bristar 8	Endurance Dyform® DSC 8	Endurance Dyform® 8 Max	Endurance Dyform® DSC 8 Max	Endurance Dyform® 18 PI	Endurance Dyform® 18	Endurance Dyform® 50DB	Endurance Dyform® 28 HML	Endurance Dyform® 34LR Max	Endurance Dyform® 34LR PI	Endurance Dyform® 34LR
Application	Main Hoist	■	■	■		■		■	■	■	■	■	■	■
	Auxiliary Hoist	■	■	■		■		■	■	■	■	■	■	■
	Holding Ropes	■	■	■		■								
	Closing Ropes	■	■	■		■								
	Boom	■	■	■	■	■	■							
	Boom Pendants	■	■	■		■								
Construction	Single Layer (6&8-strand)	■	■	■	■	■	■							
	Multi-Layer (multi-strand)							■	■	■	■	■	■	■
	Dyform®/Compacted	■	■	■	■	■	■	■	■	■	■	■	■	■
	Plastic Impregnated/Bristar		■	■				■					■	
Resistance	Rotation Resistant							■	■	■	■	■	■	■
	Crush Resistant	■	■	■	■	■	■	■	■	■	■	■	■	■
	Less Corrosion		■	■		■							■	
	Reduced Stretch		■	■	■	■	■				■	■	■	■
Performance	High Breaking Force		■	■	■	■	■				■	■	■	■
	High Performance			■									■	
	Excellent Spooling	■	■	■	■	■	■	■	■	■	■	■	■	■
	Long life	■	■	■	■	■	■				■	■	■	■
	Decreased Downtime		■	■		■					■	■	■	■

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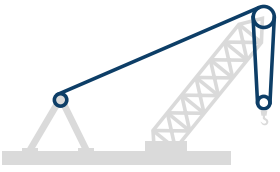
Floating Crane Ropes



		Endurance Dyform® 6 (8mm to 52mm)	Endurance Dyform® 8 PI	Endurance Dyform® Bristar 8	Endurance Dyform® DSC 8	Endurance Dyform® 8 Max	Endurance Dyform® DSC 8 Max	Endurance Dyform® 28 HML	Endurance Dyform® 34LR Max	Endurance Dyform® 34LR PI (10mm to 50mm)	Endurance Dyform® 34LR (10mm to 50mm)
Application	Main Hoist	■	■	■		■		■	■	■	■
	Auxiliary/Whip Hoist							■	■	■	■
	Boom	■	■	■	■	■	■				
	Boom Pendants	■	■	■		■					
Construction	Single Layer (6&8-strand)	■	■	■	■	■	■				
	Multi-Layer (multi-strand)							■	■	■	■
	Dyform®/Compacted	■	■	■	■	■	■	■	■	■	■
	Plastic Impregnated/Bristar		■	■						■	
Resistance	Rotation Resistant							■	■	■	■
	Crush Resistant		■		■	■	■	■	■	■	■
	Less Corrosion		■			■		■	■	■	■
	Reduced Stretch		■			■		■	■	■	■
Performance	High Breaking Force		■		■	■	■	■	■	■	■
	High Performance							■	■	■	■
	Excellent Spooling	■	■		■	■	■	■	■	■	■
	Long life		■			■		■	■	■	■
	Decreased Downtime		■			■		■	■	■	■

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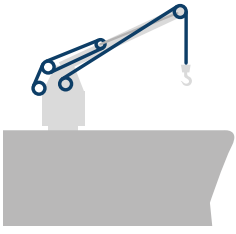
Ships Crane Ropes



		Endurance 6x36 class	Endurance Dyform® 6	Endurance Dyform® 8 PI	Endurance Dyform® 8	Endurance Dyform® 8 Max	Endurance Dyform® 18 PI	Endurance Dyform® 18	Endurance Dyform® 50DB	Endurance Dyform® 28 HML	Endurance Dyform® 34LR Max	Endurance Dyform® 34LR PI (10mm to 50mm)	Endurance Dyform® 34LR (10mm to 50mm)
Application	Main Hoist	■	■	■	■	■	■	■	■	■	■	■	■
	Boom	■	■	■	■	■							
Construction	Single Layer (6&8-strand)	■	■	■	■	■							
	Multi-Layer (multi-strand)						■	■	■	■	■	■	■
	Dyform®/Compacted		■	■	■	■	■	■	■	■	■	■	■
	Plastic Impregnated/Bristar			■			■					■	
Resistance	Rotation Resistant						■	■	■	■	■	■	■
	Crush Resistant			■						■	■	■	■
	Less Corrosion			■								■	
	Reduced Stretch			■						■	■	■	■
Performance	High Breaking Force			■						■	■	■	■
	High Performance			■						■	■		■
	Excellent Spooling		■	■	■	■	■	■	■	■	■	■	■
	Long life			■						■	■		■
	Decreased Downtime			■						■	■		■

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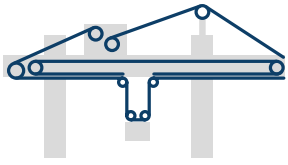
Ship to Shore Container Crane Ropes



		Blue Strand 6x36 Class	Endurance Dyform® 6 PI	Endurance Dyform® 6	Endurance Dyform® 8 PI	Endurance Dyform® 8	Endurance Dyform® 8 Max	Endurance Dyform® DSC 8	Endurance Dyform® DSC 8 Max
Application	Hoist	■	■	■	■	■	■		
	Trolley	■	■	■	■	■	■		
	Boom/Derrick	■	■	■	■	■	■	■	■
Construction	Single Layer (6&8-strand)	■	■	■	■	■	■	■	■
	Multi-Layer (multi-strand)								
	Dyform®/Compacted		■	■	■	■	■	■	■
	Plastic Impregnated/Bristar		■		■				
Resistance	Rotation Resistant								
	Crush Resistant		■	■	■	■	■	■	■
	Less Corrosion		■		■				
	Reduced Stretch		■		■			■	■
Performance	High Breaking Force							■	■
	High Performance		■	■	■				
	Excellent Spooling		■	■	■	■	■	■	■
	Long life		■	■	■				
	Decreased Downtime		■		■				

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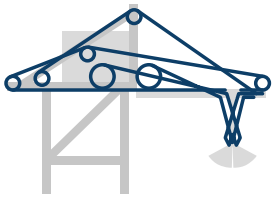
Bulk Unloader Ropes



		Constructex	Blue Strand 6x36 class	Endurance Dyform® Bristar 6	Endurance Dyform® 6	Endurance Brfil	Endurance Dyform® Bristar 8
Application	Holding Ropes	■	■	■	■	■	■
	Closing Ropes	■	■	■	■	■	■
	Racking Ropes		■	■	■	■	■
	Boom/Derricking	■	■	■	■	■	■
Construction	Single Layer (6&8-strand)	■	■	■	■	■	■
	Multi-Layer (multi-strand)						
	Dyform®/Compacted	■		■	■		■
	Plastic Impregnated/Bristar					■	
Resistance	Rotation Resistant						
	Crush Resistant	■		■	■	■	■
	Less Corrosion						
	Reduced Stretch	■		■			■
Performance	High Breaking Force	■					■
	High Performance	■		■			■
	Excellent Spooling	■		■	■	■	■
	Long life	■					
	Decreased Downtime	■					

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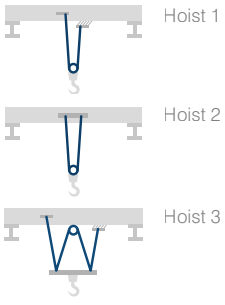
Overhead Hoist/Gantry Crane Ropes



		Blue Strand 6x19 & 6x36 Class	Endurance Dyform® 6	Endurance Dyform® 8	Endurance Dyform® DSC 8	Endurance Dyform® 8 PI	Endurance Dyform® 8 Max	Endurance Dyform® DSC 8 Max	Endurance Dyform® 18 PI	Endurance Dyform® 18	Endurance Dyform® 50DB	Endurance Dyform® 28 HML	Endurance Dyform® 34LR Max	Endurance Dyform® 34LR
Application	Hoist 1	■	■	■	■	■	■	■	■	■	■	■	■	■
	Hoist 2	■	■	■	■	■	■	■						
	Hoist 3	■	■	■	■	■	■	■	■	■	■	■	■	■
Construction	Single Layer (6&8-strand)	■	■	■	■	■	■	■						
	Multi-Layer (multi-strand)								■	■	■	■	■	■
	Dyform®/Compacted		■	■	■	■	■	■	■	■	■	■	■	■
	Plastic Impregnated/Bristar					■			■					
Resistance	Rotation Resistant								■	■	■	■	■	■
	Crush Resistant		■	■	■	■	■	■	■	■	■	■	■	■
	Less Corrosion					■								
	Reduced Stretch				■	■		■				■	■	■
Performance	High Breaking Force				■			■						
	High Performance					■								
	Excellent Spooling		■	■	■	■	■	■	■	■	■	■	■	■
	Long life		■			■						■	■	■
	Decreased Downtime		■			■						■	■	■

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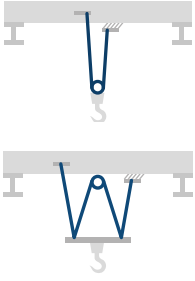
Steel Works Ladle Crane Ropes



		Blue Strand 6x36 Class	Endurance Dyform® 6	Endurance Dyform® 8	Endurance Dyform® 8 Max	Endurance Dyform® 8 PI
Application	Hoist	■	■	■	■	■
Construction	Single Layer (6&8-strand)	■	■	■	■	■
	Multi-Layer (multi-strand)					
	Dyform®/Compacted		■	■	■	■
	Plastic Impregnated/Bristar					■
Resistance	Rotation Resistant					
	Crush Resistant		■	■	■	■
	Less Corrosion					■
	Reduced Stretch					■
Performance	High Breaking Force					■
	High Performance					■
	Excellent Spooling		■	■	■	■
	Long life		■			■
	Decreased Downtime		■			■

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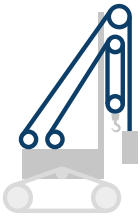
Piling Ropes

Displacement Piles - Drop weight, Diesel hammer, Vibration & Jacking
Replacement Piles - Open auger, Continuous flight auger & Drilled



		Constructex	Endurance Dyform® 8 PI	Endurance Dyform® 6	Endurance Dyform® 34LR Max	Endurance Dyform® 34LR	Endurance Dyform® 28 HML
Application	Main Winch	■	■	■	■	■	■
	Service Winch	■	■	■	■	■	■
Construction	Single Layer (6&8-strand)	■	■	■			
	Multi-Layer (multi-strand)				■	■	■
	Dyform®/Compacted	■	■	■	■	■	■
	Plastic Impregnated/Bristar		■				
Resistance	Rotation Resistant				■	■	■
	Crush Resistant	■	■				
	Less Corrosion						
	Reduced Stretch	■	■				
Performance	High Breaking Force	■			■	■	■
	High Performance	■					
	Excellent Spooling	■	■	■	■	■	■
	Long life						
	Decreased Downtime						

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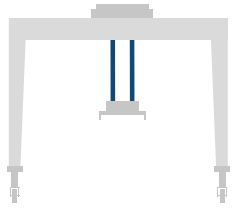
Container Handling Crane Ropes (Straddle Carriers & RTGs)



		Blue Strand 6x36 Class	Endurance Dyform® 6	Endurance Dyform® 8	Endurance Dyform® 8 Max	Endurance Dyform® 8PI
Application	Hoist	■	■	■	■	■
Construction	Single Layer (6&8-strand)	■	■	■	■	■
	Multi-Layer (multi-strand)					
	Dyform®/Compacted		■	■	■	■
	Plastic Impregnated/Bristar					■
Resistance	Rotation Resistant					
	Crush Resistant		■	■	■	■
	Less Corrosion					■
	Reduced Stretch					■
Performance	High Breaking Force					
	High Performance					
	Excellent Spooling					
	Long life					
	Decreased Downtime					

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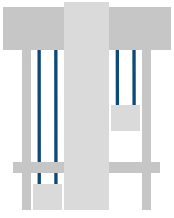
Ship Lift Ropes



		Endurance Dyform® 6PI	Endurance Dyform® 8PI	Endurance Dyform® Brifil	Endurance Dyform® Bristar 8
Application	Hoist	■	■	■	■
Construction	Single Layer (6&8-strand)	■	■	■	■
	Multi-Layer (multi-strand)				
	Dyform®/Compacted	■	■	■	■
	Plastic Impregnated/Bristar	■	■	■	■
Resistance	Rotation Resistant				
	Crush Resistant	■	■	■	■
	Less Corrosion	■	■	■	■
	Reduced Stretch			■	■
Performance	High Breaking Force		■	■	■
	High Performance			■	■
	Excellent Spooling	■	■	■	■
	Long life			■	■
	Decreased Downtime			■	■

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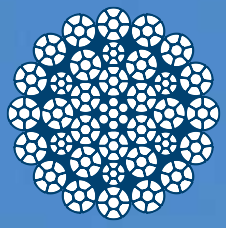
BRIDON

Endurance

Dyform 34LR

Galvanized



ENDURANCE DYFORM 34LR (GALVANIZED)

Benefits:

- Low rotation
- Recommended for high lifting operations
- High breaking force
- Reduced rope sheave wear
- Accurate diameter, recommended for multi-layer spooling
- Suitable for single part and multi-part reeving
- Long service life
- Crush resistant
- Reduced down time
- Resistance to bending fatigue
- Reduced elongation

High Performance Crane Ropes

The Bridon Endurance brand - High quality performance wire ropes for the lifting industry.

Our world leading manufacturing capabilities are accompanied by a high level of quality assurance and in-house expertise in research and development and design engineering.

Applications

Telescopic mobile cranes	Mobile harbour cranes
Mobile lattice boom cranes	Floating cranes
Tower cranes	Ship cranes
Offshore pedestal cranes	Overhead hoists/gantry cranes
Dockside cranes	Piling ropes

Endurance Dyform 34LR (Galvanized)

Diameter		Nominal length mass		Minimum Breaking Force						Axial stiffness @20% load	Torque generated @20% load		Metallic cross section
				EIP/1960			EEIP/2160				Ordinary	Lang's	
mm	inch	kg/m	lb/ft	kN	Tons (short)	Tons (metric)	kN	Tons (short)	Tons (metric)	MN	Nm	Nm	mm²
	3/8	0.454	0.305	83.6	9.39	8.52	88.1	9.90	8.98	5.26	1.21	2.77	52.7
10.0		0.500	0.336	92.1	10.3	9.39	97.1	10.9	9.90	5.80	1.40	3.20	58.1
11.0		0.610	0.410	111	12.4	11.3	117	13.1	11.9	7.02	1.86	4.26	70.3
	7/16	0.610	0.410	111	12.4	11.3	117	13.1	11.9	7.16	1.92	4.39	71.7
12.0		0.720	0.484	133	14.9	13.5	139	15.6	14.1	8.35	2.42	5.53	83.7
	1/2	0.808	0.543	149	16.7	15.1	156	17.5	15.9	9.35	2.87	6.56	93.7
13.0		0.850	0.571	156	17.5	15.9	164	18.4	16.7	9.80	3.08	7.03	98.2
14.0		0.980	0.659	181	20.3	18.4	190	21.3	19.3	11.4	3.84	8.78	114
	9/16	1.02	0.687	188	21.1	19.1	198	22.2	20.1	11.8	4.08	9.33	119
15.0		1.13	0.759	207	23.2	21.1	218	24.5	22.2	13.1	4.73	10.8	131
	5/8	1.28	0.860	236	26.5	24.0	244	27.4	24.8	14.6	5.60	12.8	146
16.0		1.28	0.860	236	26.5	24.0	248	27.8	25.2	14.8	5.73	13.1	149
17.0		1.45	0.974	266	29.8	27.1	280	31.4	28.5	16.8	6.88	15.7	168
18.0		1.62	1.09	298	33.4	30.3	314	35.2	32.0	18.8	8.17	18.7	188
19.0		1.81	1.22	333	37.4	33.9	350	39.3	35.6	20.9	9.60	22.0	210
	3/4	1.81	1.22	333	37.4	33.9	350	39.3	35.6	21.0	9.68	22.1	211
20.0		2.00	1.34	368	41.3	37.5	388	43.6	39.5	23.2	11.2	25.6	232
21.0		2.21	1.49	406	45.6	41.4	428	48.1	43.6	25.6	13.0	29.6	256
22.0		2.42	1.63	446	50.1	45.4	469	52.7	47.8	28.1	14.9	34.1	281
	7/8	2.42	1.63	446	50.1	45.4	469	52.7	47.8	28.6	15.4	35.1	287
23.0		2.65	1.78	487	54.7	49.6	513	57.6	52.3	30.7	17.0	38.9	307
24.0		2.88	1.94	531	59.6	54.1	559	62.8	57.0	33.4	19.4	44.2	335
25.0		3.13	2.10	576	64.7	58.7	606	68.1	61.7	36.3	21.9	50.0	363
	1.0	3.23	2.17	594	66.7	60.5	626	70.3	63.8	37.4	22.9	52.4	375
26.0		3.38	2.27	623	70.0	63.5	656	73.7	66.8	39.2	24.6	56.2	393
27.0		3.65	2.45	672	75.5	68.5	707	79.4	72.0	42.3	27.6	63.0	424
28.0		3.92	2.63	722	81.1	73.6	760	85.4	77.4	45.5	30.7	70.3	456
	1.1	4.09	2.75	752	84.5	76.6	792	89.0	80.7	47.4	32.7	74.7	474
29.0		4.21	2.83	775	87.1	79.0	816	91.7	83.2	48.8	34.1	78.1	489
30.0		4.50	3.02	829	93.1	84.5	873	98.1	89.0	52.2	37.8	86.4	523
	1.3	5.12	3.44	943	105	96.1	978	109	99.7	58.5	44.8	102	586
32.0		5.12	3.44	943	105	96.1	993	111	101	59.4	45.9	105	595
34.0		5.78	3.88	1060	119	108				67.0	55.0	126	672
	1.4	6.11	4.10	1120	125	114				70.7	59.6	136	709
35.0		6.13	4.12	1120	125	114				71.1	60.0	137	712
36.0		6.48	4.35	1190	133	121				75.2	65.3	149	753
38.0		7.22	4.85	1330	149	135				83.8	76.8	176	839
	1.5	7.27	4.88	1330	149	135				84.2	77.4	177	843
40.0		8.00	5.38	1470	165	149				92.8	89.6	205	930
	1.6	8.53	5.73	1560	175	159				98.8	98.4	225	990
42.0		8.82	5.93	1620	182	165				102	104	237	1020
44.0		9.68	6.50	1780	200	181				112	119	273	1120
	1.8	9.89	6.65	1780	200	181				115	123	281	1150
46.0		10.6	7.12	1940	218	197				123	136	311	1230
	1.9	11.4	7.63	2110	237	215				132	151	346	1320
48.0		11.5	7.73	2110	237	215				134	155	354	1340
50.0		12.5	8.40	2290	257	233				145	175	400	1450
	2.0	12.9	8.68	2370	266	241				150	184	420	1500
52.0		13.5	9.07	2480	278	252				157	197	450	1570
	2.1	14.6	9.80	2670	300	272				169	220	503	1690
54.0		14.6	9.81	2670	300	272				169	220	504	1690
56.0		15.7	10.5	2880	323	293				182	246	562	1820
	2.3	16.4	11.0	3000	337	305				189	261	597	1900
58.0		16.8	11.3	3090	347	315				195	273	624	1950
60.0		18.0	12.1	3250	365	331				209	302	691	2090
	2.4	18.2	12.2	3250	365	331				211	307	703	2110
62.0		19.2	12.9	3470	390	353				223	334	763	2230
	2.5	20.2	13.6	3690	414	376				234	358	819	2340
64.0		20.5	13.8	3690	414	376				238	367	839	2380
66.0		21.8	14.6	3930	441	400				253	403	920	2530
	2.6	22.3	15.0	3930	441	400				258	415	949	2580
68.0		23.1	15.5	4030	452	410				268	440	1010	2690
	2.8	24.4	16.4	4270	479	435				283	477	1090	2830
70.0		24.5	16.5	4270	479	435				284	480	1100	2850
72.0		25.9	17.4	4520	508	460				301	523	1190	3010
	2.9	26.7	17.9	4650	522	474				309	545	1250	3100
74.0		27.4	18.4	4770	536	486				318	567	1300	3180
76.0		28.9	19.4	5040	566	513				335	615	1400	3360
	3.0	29.1	19.5	5040	566	513				337	619	1420	3370

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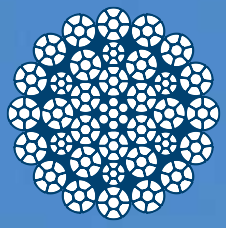
BRIDON

Endurance

Dyform 34LR

Bright



Benefits:

- Low rotation
- Recommended for high lifting operations
- High breaking force
- Reduced rope sheave wear
- Accurate diameter, recommended for multi-layer spooling
- Suitable for single part and multi-part reeving
- Long service life
- Crush resistant
- Reduced down time
- Resistance to bending fatigue
- Reduced elongation

High Performance Crane Ropes

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Applications

Telescopic mobile cranes	Mobile harbour cranes
Mobile lattice boom cranes	Floating cranes
Tower cranes	Ship cranes
Offshore pedestal cranes	Overhead hoists/gantry cranes
Dockside cranes	Piling ropes

Endurance Dyform 34LR (Bright)

Diameter		Nominal length mass		Minimum Breaking Force					
				EIP/1960			EEIP/2160		
mm	inch	kg/m	lb/ft	kN	Tons (short)	Tons (metric)	kN	Tons (short)	Tons (metric)
	3/8	0.454	0.305	83.6	9.40	8.52	88.1	9.9	8.98
10.0		0.500	0.336	92.1	10.4	9.39	98.3	11.0	10.0
11.0		0.610	0.410	111	12.5	11.3	119	13.4	12.1
	7/16	0.610	0.410	111	12.5	11.3	119	13.4	12.1
12.0		0.720	0.484	133	14.9	13.6	140	15.7	14.3
	1/2	0.808	0.543	149	16.7	15.2	155	17.4	15.8
13.0		0.850	0.571	156	17.5	15.9	162	18.2	16.5
14.0		0.980	0.659	181	20.3	18.5	191	21.5	19.5
	9/16	1.02	0.687	188	21.1	19.2	201	22.6	20.5
15.0		1.13	0.759	207	23.3	21.1	220	24.7	22.4
	5/8	1.28	0.860	236	26.5	24.1	251	28.2	25.6
16.0		1.28	0.860	236	26.5	24.1	251	28.2	25.6
17.0		1.45	0.974	266	29.9	27.1	282	31.7	28.7
18.0		1.62	1.09	298	33.5	30.4	319	35.9	32.5
19.0		1.81	1.22	333	37.4	34.0	356	40.0	36.3
	3/4	1.81	1.22	333	37.4	34.0	356	40.0	36.3
20.0		2.00	1.34	368	41.4	37.5	397	44.6	40.5
21.0		2.21	1.49	406	45.6	41.4	429	48.2	43.8
22.0		2.42	1.63	446	50.1	45.5	487	54.7	49.7
	7/8	2.42	1.63	446	50.1	45.5	487	54.7	49.7
23.0		2.65	1.78	487	54.7	49.7	514	57.8	52.4
24.0		2.88	1.94	531	59.7	54.1	569	64.0	58.0
25.0		3.13	2.10	576	64.7	58.7	607	68.2	61.9
	1	3.23	2.17	594	66.8	60.6	623	70.0	63.5
26.0		3.38	2.27	623	70.0	63.5	660	74.2	67.3
27.0		3.65	2.45	672	75.5	68.5	707	79.5	72.1
28.0		3.92	2.63	722	81.2	73.6	758	85.2	77.3
	1 1/8	4.09	2.75	752	84.5	76.7	773	86.9	78.8
29.0		4.21	2.83	775	87.1	79.0	815	91.7	83.2
30.0		4.50	3.02	829	93.2	84.5	836	94.0	85.2
	1 1/4	5.12	3.44	943	106	96.2	980	110	100
32.0		5.12	3.44	943	106	96.2	980	110	100

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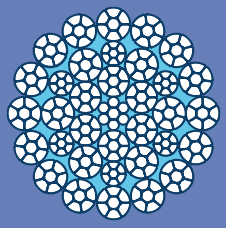
BRIDON

Endurance

Dyform 34LR PI

Galvanized



ENDURANCE DYFORM 34LR PI (GALVANIZED)

Benefits:

- Plastic impregnated
  - Extends fatigue life
  - Improves structural stability
  - Resists corrosion
- Low rotation
- Recommended for high lifting operations
- High strength
- Reduced rope sheave wear
- Accurate diameter, recommended for multi-layer spooling
- Suitable for single part and multi-part reeving
- Long service life
- Resistance to bending fatigue
- Reduced elongation

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Mobile lattice boom cranes	Mobile harbour cranes
Tower cranes	Floating cranes
Offshore pedestal cranes	Ship cranes

Endurance Dyform 34LR PI (Galvanized)

Diameter		Nominal length mass		Minimum Breaking Force						Axial stiffness @20% load	Torque generated @20% load		Metallic cross section
				EIP/1960			EEIP/2160				Ordinary	Lang's	
mm	inch	kg/m	lb/ft	kN	Tons (short)	Tons (metric)	kN	Tons (short)	Tons (metric)	MN	Nm	Nm	mm²
	3/8	0.454	0.305	83.6	9.39	8.52	88.1	9.90	8.98	5.26	1.21	2.77	52.7
10.0		0.500	0.336	92.1	10.3	9.39	97.1	10.9	9.90	5.80	1.40	3.20	58.1
11.0		0.610	0.410	111	12.4	11.3	117	13.1	11.9	7.02	1.86	4.26	70.3
	7/16	0.610	0.410	111	12.4	11.3	117	13.1	11.9	7.16	1.92	4.39	71.7
12.0		0.720	0.484	133	14.9	13.5	139	15.6	14.1	8.35	2.42	5.53	83.7
	1/2	0.808	0.543	149	16.7	15.1	156	17.5	15.9	9.35	2.87	6.56	93.7
13.0		0.850	0.571	156	17.5	15.9	164	18.4	16.7	9.80	3.08	7.03	98.2
14.0		0.980	0.659	181	20.3	18.4	190	21.3	19.3	11.4	3.84	8.78	114
	9/16	1.02	0.687	188	21.1	19.1	198	22.2	20.1	11.8	4.08	9.33	119
15.0		1.13	0.759	207	23.2	21.1	218	24.5	22.2	13.1	4.73	10.8	131
	5/8	1.28	0.860	236	26.5	24.0	244	27.4	24.8	14.6	5.60	12.8	146
16.0		1.28	0.860	236	26.5	24.0	248	27.8	25.2	14.8	5.73	13.1	149
17.0		1.45	0.974	266	29.8	27.1	280	31.4	28.5	16.8	6.88	15.7	168
18.0		1.62	1.09	298	33.4	30.3	314	35.2	32.0	18.8	8.17	18.7	188
19.0		1.81	1.22	333	37.4	33.9	350	39.3	35.6	20.9	9.60	22.0	210
	3/4	1.81	1.22	333	37.4	33.9	350	39.3	35.6	21.0	9.68	22.1	211
20.0		2.00	1.34	368	41.3	37.5	388	43.6	39.5	23.2	11.2	25.6	232
21.0		2.21	1.49	406	45.6	41.4	428	48.1	43.6	25.6	13.0	29.6	256
22.0		2.42	1.63	446	50.1	45.4	469	52.7	47.8	28.1	14.9	34.1	281
	7/8	2.42	1.63	446	50.1	45.4	469	52.7	47.8	28.6	15.4	35.1	287
23.0		2.65	1.78	487	54.7	49.6	513	57.6	52.3	30.7	17.0	38.9	307
24.0		2.88	1.94	531	59.6	54.1	559	62.8	57.0	33.4	19.4	44.2	335
25.0		3.13	2.10	576	64.7	58.7	606	68.1	61.7	36.3	21.9	50.0	363
	1.0	3.23	2.17	594	66.7	60.5	626	70.3	63.8	37.4	22.9	52.4	375
26.0		3.38	2.27	623	70.0	63.5	656	73.7	66.8	39.2	24.6	56.2	393
27.0		3.65	2.45	672	75.5	68.5	707	79.4	72.0	42.3	27.6	63.0	424
28.0		3.92	2.63	722	81.1	73.6	760	85.4	77.4	45.5	30.7	70.3	456
	1.1	4.09	2.75	752	84.5	76.6	792	89.0	80.7	47.4	32.7	74.7	474
29.0		4.21	2.83	775	87.1	79.0	816	91.7	83.2	48.8	34.1	78.1	489
30.0		4.50	3.02	829	93.1	84.5	873	98.1	89.0	52.2	37.8	86.4	523
	1.3	5.12	3.44	943	105	96.1	978	109	99.7	58.5	44.8	102	586
32.0		5.12	3.44	943	105	96.1	993	111	101	59.4	45.9	105	595
34.0		5.78	3.88	1060	119	108				67.0	55.0	126	672
	1.4	6.11	4.10	1120	125	114				70.7	59.6	136	709
35.0		6.13	4.12	1120	125	114				71.1	60.0	137	712
36.0		6.48	4.35	1190	133	121				75.2	65.3	149	753
38.0		7.22	4.85	1330	149	135				83.8	76.8	176	839
	1.5	7.27	4.88	1330	149	135				84.2	77.4	177	843
40.0		8.00	5.38	1470	165	149				92.8	89.6	205	930
	1.6	8.53	5.73	1560	175	159				98.8	98.4	225	990
42.0		8.82	5.93	1620	182	165				102	104	237	1020
44.0		9.68	6.50	1780	200	181				112	119	273	1120
	1.8	9.89	6.65	1780	200	181				115	123	281	1150
46.0		10.6	7.12	1940	218	197				123	136	311	1230
	1.9	11.4	7.63	2110	237	215				132	151	346	1320
48.0		11.5	7.73	2110	237	215				134	155	354	1340
50.0		12.5	8.40	2290	257	233				145	175	400	1450
	2.0	12.9	8.68	2370	266	241				150	184	420	1500
52.0		13.5	9.07	2480	278	252				157	197	450	1570
	2.1	14.6	9.80	2670	300	272				169	220	503	1690
54.0		14.6	9.81	2670	300	272				169	220	504	1690
56.0		15.7	10.5	2880	323	293				182	246	562	1820
	2.3	16.4	11.0	3000	337	305				189	261	597	1900
58.0		16.8	11.3	3090	347	315				195	273	624	1950
60.0		18.0	12.1	3250	365	331				209	302	691	2090
	2.4	18.2	12.2	3250	365	331				211	307	703	2110
62.0		19.2	12.9	3470	390	353				223	334	763	2230
	2.5	20.2	13.6	3690	414	376				234	358	819	2340
64.0		20.5	13.8	3690	414	376				238	367	839	2380
66.0		21.8	14.6	3930	441	400				253	403	920	2530
	2.6	22.3	15.0	3930	441	400				258	415	949	2580
68.0		23.1	15.5	4030	452	410				268	440	1010	2690
	2.8	24.4	16.4	4270	479	435				283	477	1090	2830
70.0		24.5	16.5	4270	479	435				284	480	1100	2850
72.0		25.9	17.4	4520	508	460				301	523	1190	3010
	2.9	26.7	17.9	4650	522	474				309	545	1250	3100
74.0		27.4	18.4	4770	536	486				318	567	1300	3180
76.0		28.9	19.4	5040	566	513				335	615	1400	3360
	3.0	29.1	19.5	5040	566	513				337	619	1420	3370

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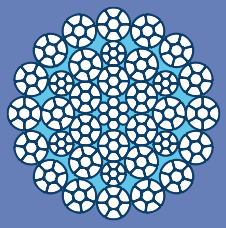
BRIDON

Endurance

Dyform 34LR PI

Bright



ENDURANCE DYFORM 34LR PI (BRIGHT)

Benefits:

- Plastic impregnated
  - Extends fatigue life
  - Improves structural stability
  - Resists corrosion
- Low rotation
- Recommended for high lifting operations
- High strength
- Reduced rope sheave wear
- Accurate diameter, recommended for multi-layer spooling
- Suitable for single part and multi-part reeving
- Long service life
- Resistance to bending fatigue
- Reduced elongation

High Performance Crane Ropes

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Our world leading manufacturing capabilities are accompanied by a high level of quality assurance and in-house expertise in research and development and design engineering.

Applications

Telescopic mobile cranes	Dockside cranes
Mobile lattice boom cranes	Mobile harbour cranes
Tower cranes	Floating cranes
Offshore pedestal cranes	Ship cranes

Endurance Dyform 34LR PI (Bright)

Diameter		Nominal length mass		Minimum Breaking Force					
				EIP/1960			EEIP/2160		
mm	inch	kg/m	lb/ft	kN	Tons (short)	Tons (metric)	kN	Tons (short)	Tons (metric)
	3/8	0.454	0.305	83.6	9.40	8.52	88.1	9.9	8.98
10.0		0.500	0.336	92.1	10.4	9.39	98.3	11.0	10.0
11.0		0.610	0.410	111	12.5	11.3	119	13.4	12.1
	7/16	0.610	0.410	111	12.5	11.3	119	13.4	12.1
12.0		0.720	0.484	133	14.9	13.6	140	15.7	14.3
	1/2	0.808	0.543	149	16.7	15.2	155	17.4	15.8
13.0		0.850	0.571	156	17.5	15.9	162	18.2	16.5
14.0		0.980	0.659	181	20.3	18.5	191	21.5	19.5
	9/16	1.02	0.687	188	21.1	19.2	201	22.6	20.5
15.0		1.13	0.759	207	23.3	21.1	220	24.7	22.4
	5/8	1.28	0.860	236	26.5	24.1	251	28.2	25.6
16.0		1.28	0.860	236	26.5	24.1	251	28.2	25.6
17.0		1.45	0.974	266	29.9	27.1	282	31.7	28.7
18.0		1.62	1.09	298	33.5	30.4	319	35.9	32.5
19.0		1.81	1.22	333	37.4	34.0	356	40.0	36.3
	3/4	1.81	1.22	333	37.4	34.0	356	40.0	36.3
20.0		2.00	1.34	368	41.4	37.5	397	44.6	40.5
21.0		2.21	1.49	406	45.6	41.4	429	48.2	43.8
22.0		2.42	1.63	446	50.1	45.5	487	54.7	49.7
	7/8	2.42	1.63	446	50.1	45.5	487	54.7	49.7
23.0		2.65	1.78	487	54.7	49.7	514	57.8	52.4
24.0		2.88	1.94	531	59.7	54.1	569	64.0	58.0
25.0		3.13	2.10	576	64.7	58.7	607	68.2	61.9
	1	3.23	2.17	594	66.8	60.6	623	70.0	63.5
26.0		3.38	2.27	623	70.0	63.5	660	74.2	67.3
27.0		3.65	2.45	672	75.5	68.5	707	79.5	72.1
28.0		3.92	2.63	722	81.2	73.6	758	85.2	77.3
	1 1/8	4.09	2.75	752	84.5	76.7	773	86.9	78.8
29.0		4.21	2.83	775	87.1	79.0	815	91.7	83.2
30.0		4.50	3.02	829	93.2	84.5	836	94.0	85.2
	1 1/4	5.12	3.44	943	106	96.2	980	110	100
32.0		5.12	3.44	943	106	96.2	980	110	100

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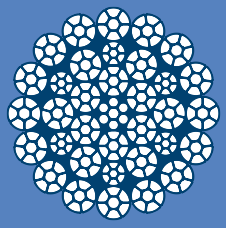
BRIDON

Endurance

Dyform 34LR Max



ENDURANCE DYFORM 34LR MAX

Benefits:

- Low rotation
- Recommended for high lifting operations
- High breaking force
- Reduced rope sheave wear
- Accurate diameter, recommended for multi-layer spooling
- Suitable for single part and multi-part reeving
- Long service life
- Resistance to bending fatigue
- Reduced elongation

High Performance Crane Ropes

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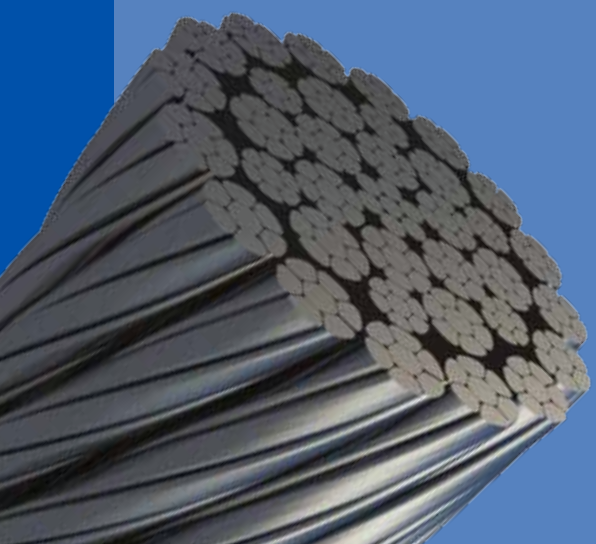
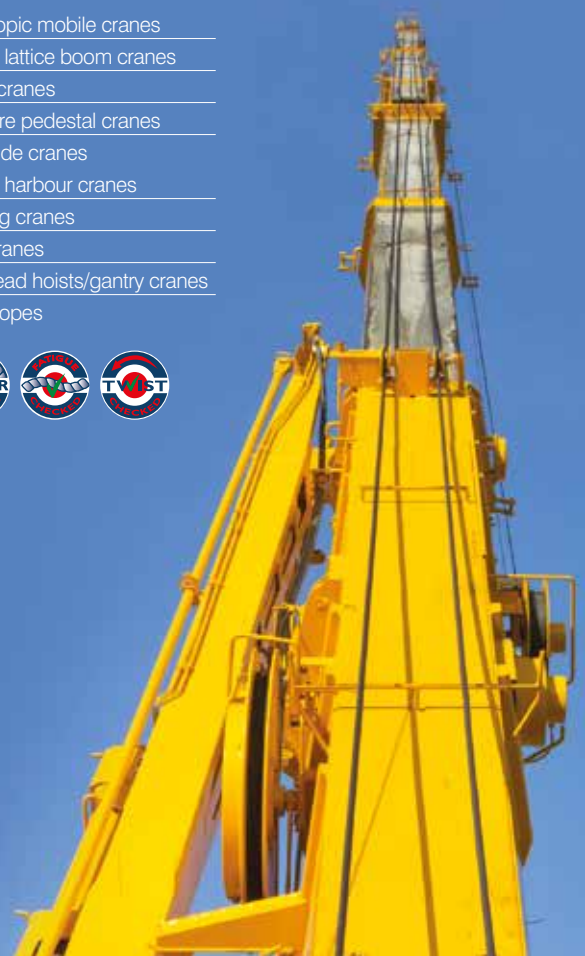
Applications

- Telescopic mobile cranes
- Mobile lattice boom cranes
- Tower cranes
- Offshore pedestal cranes
- Dockside cranes
- Mobile harbour cranes
- Floating cranes
- Ship cranes
- Overhead hoists/gantry cranes
- Piling ropes





Endurance Dyform 34LR Max

Diameter		Nominal length mass		Minimum Breaking Force		
				MAX		
mm	inch	kg/m	lb/ft	kN	Tons (short)	Tons (metric)
12.0		.740	.498	153	17.2	15.6
	1/2	.842	.566	171	19.2	17.4
13.0		.887	.596	179	20.1	18.3
14.0		1.04	.702	208	23.4	21.2
	9/16	1.09	.733	216	24.3	22.0
15.0		1.21	.814	239	26.9	24.4
	5/8	1.37	.919	272	30.6	27.7
16.0		1.37	.919	272	30.6	27.7
17.0		1.58	1.06	307	34.5	31.3
18.0		1.78	1.20	344	38.7	35.1
19.0		1.99	1.34	385	43.3	39.3
	3/4	1.99	1.34	385	43.3	39.3
20.0		2.21	1.49	424	47.7	43.2
22.0		2.69	1.81	524	58.9	53.4
	7/8	2.69	1.81	524	58.9	53.4
24.0		3.20	2.15	611	68.7	62.3
	1	3.36	2.26	684	76.9	69.7
26.0		3.56	2.39	705	79.2	71.9
28.0		4.11	2.76	814	91.5	83.0
	1 1/8	4.55	3.06	848	95.3	86.5
30.0		5.02	3.37	935	105	95.3
	1 1/4	5.57	3.74	1085	122	111
32.0		5.57	3.74	1085	122	111
34.0		6.32	4.25	1180	133	120
	1 3/8	6.79	4.56	1240	139	126
36.0		7.11	4.78	1320	148	135
38.0		7.95	5.34	1480	166	151
	1 1/2	8.07	5.42	1480	166	151
40.0		8.82	5.93	1630	183	166
	1 5/8	9.46	6.36	1730	194	176
42.0		9.72	6.53	1780	200	182
44.0		10.6	7.12	1930	217	197
	1 3/4	10.8	7.29	1930	217	197
46.0		11.6	7.77	2120	238	216
	1 7/8	12.4	8.30	2300	259	235
48.0		12.6	8.44	2300	259	235
50.0		13.6	9.17	2500	281	255
	2	14.0	9.43	2560	288	261
52.0		14.9	10.0	2720	306	277

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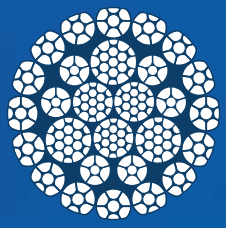
NEW

BRIDON Endurance

BRIDON

Endurance

Dyform 28 HML MAX



ENDURANCE DYFORM 28 HML MAX

Benefits:

- Provides up to 20% greater fatigue performance (Based on internal tests)
- Dimensional stability
- Crush resistant
- Robust and stable core
- Tightly controlled diameter tolerance

High Performance Crane Ropes

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Our world leading manufacturing capabilities are accompanied by a high level of quality assurance and in-house expertise in research and development and design engineering.

Applications

Telescopic mobile cranes	Mobile harbour cranes
Mobile lattice boom cranes	Floating cranes
Tower cranes	Ship cranes
Offshore pedestal cranes	Overhead hoists/gantry cranes
Dockside cranes	Piling ropes

Endurance Dyform 28 HML MAX

Diameter		Approximate Mass		Minimum Breaking Force MAX	
mm	inch	kg/m	lb/ft	kN	Tons
15		0.363	0.799	239	26.9
17		0.466	1.03	307	34.5
18		0.522	1.15	344	38.7
20		0.645	1.42	424	47.7
21		0.711	1.57	468	52.6
22		0.780	1.72	524	58.9
	7/8	0.796	1.75	524	58.9
23		0.853	1.88	561	63.1
25		1.01	2.22	663	74.5
	1	1.03	2.26	684	76.9
26		1.09	2.39	705	79.2
28		1.25	2.76	814	91.5
	1 1/8	1.32	2.90	848	95.3
30		1.45	3.20	935	105
32	1 1/4	1.64	3.74	1,085	122

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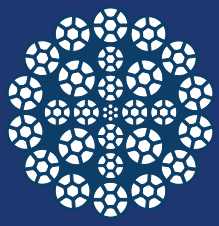
BRIDON

Endurance

Dyform 50DB



ENDURANCE DYFORM 50DB

Benefits:

- High breaking force
- Excellent rotation resistant characteristics
- Excellent spooling
- Good wear characteristics
- Crush resistant
- Reduced sheave wear

High Performance Crane Ropes

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Applications

Telescopic mobile cranes	Dockside cranes
Mobile lattice boom cranes	Mobile harbour cranes
Tower cranes	Ship cranes
Offshore pedestal cranes	Overhead hoists/gantry cranes

Endurance Dyform 50DB

Diameter		Nominal length mass		Minimum Breaking Force			Axial stiffness @20% load	Torque generated @20% load		Metallic cross section
				EIP/1960				Ordinary	Lang's	
mm	inch	kg/m	lb/ft	kN	Tons (short)	Tons (metric)	MN	Nm	Nm	mm^2
	5/16	0.297	0.200	57.2	6.43	5.83	3.51	n/a	2.68	36.1
8.00		0.302	0.203	57.2	6.43	5.83	3.57	n/a	2.74	36.7
9.00		0.382	0.257	72.4	8.14	7.38	4.52	n/a	3.90	46.4
	3/8	0.428	0.288	81.1	9.12	8.27	5.06	n/a	4.63	52.0
10.0		0.472	0.317	89.4	10.0	9.12	5.58	n/a	5.36	57.3
11.0		0.571	0.384	108	12.1	11.0	6.75	n/a	7.14	69.3
	7/16	0.583	0.392	108	12.1	11.0	6.88	n/a	7.36	70.8
12.0		0.680	0.457	129	14.5	13.2	8.03	n/a	9.27	82.5
	1/2	0.761	0.512	144	16.2	14.7	8.99	n/a	11.0	92.4
13.0		0.798	0.536	151	17.0	15.4	9.42	n/a	11.8	96.9
14.0		0.925	0.622	175	19.7	17.8	10.9	n/a	14.7	112
	9/16	0.964	0.647	183	20.6	18.7	11.4	n/a	15.7	117
15.0		1.06	0.714	201	22.6	20.5	12.5	n/a	18.1	129
	5/8	1.19	0.799	229	25.7	23.4	14.0	n/a	21.5	144
16.0		1.21	0.812	229	25.7	23.4	14.3	n/a	22.0	147
17.0		1.36	0.917	258	29.0	26.3	16.1	n/a	26.4	166
18.0		1.53	1.03	289	32.5	29.5	18.1	n/a	31.4	186
19.0		1.70	1.14	323	36.3	32.9	20.1	n/a	36.9	207
	3/4	1.71	1.15	323	36.3	32.9	20.2	n/a	37.2	208
20.0		1.89	1.27	357	40.1	36.4	22.3	n/a	43.0	229
21.0		2.08	1.40	393	44.2	40.1	24.6	n/a	49.8	253
22.0		2.28	1.54	432	48.6	44.1	27.0	n/a	57.3	277
	7/8	2.33	1.57	422	47.4	43.0	27.5	n/a	59.1	283
23.0		2.50	1.68	473	53.2	48.2	29.5	n/a	65.5	303
24.0		2.72	1.83	515	57.9	52.5	32.1	n/a	74.4	330
25.0		2.95	1.98	559	62.8	57.0	34.8	n/a	84.1	358
	1	3.05	2.05	576	64.7	58.7	36.0	n/a	88.2	370
26.0		3.19	2.14	604	67.9	61.6	37.7	n/a	94.6	387

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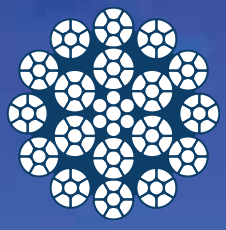
BRIDON Endurance

BRIDON



Endurance
Dyform 18

ENDURANCE DYFORM 18

Benefits:

- High breaking force
- Rotation resistant
- Reduced sheave wear
- Long service life
- Reduced downtime

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Applications

Telescopic mobile cranes	Dockside cranes
Mobile lattice boom cranes	Mobile harbour cranes
Tower cranes	Ship cranes
Offshore pedestal cranes	Overhead hoists/gantry cranes

Endurance Dyform 18

Diameter		Nominal length mass		Minimum Breaking Force			Axial stiffness @20% load	Torque generated @20% load		Metallic cross section
				Dyform				Ordinary	Lang's	
mm	inch	kg/m	lb/ft	kN	Tons (short)	Tons (metric)	MN	Nm	Nm	mm²
	3/8	0.454	0.305	76.6	8.61	7.81	4.82	4.42	6.46	50.6
10.0		0.500	0.336	84.4	9.49	8.61	5.31	5.11	7.48	55.8
11.0		0.605	0.407	104	11.7	10.6	6.43	6.80	9.97	67.5
	7/16	0.617	0.415	104	11.7	10.6	6.56	7.01	10.3	68.9
12.0		0.720	0.484	122	13.7	12.4	7.65	8.83	13.0	80.3
	1/2	0.806	0.542	136	15.3	13.9	8.56	10.5	15.4	90.0
13.0		0.845	0.568	143	16.1	14.6	8.97	11.2	16.5	94.3
14.0		0.980	0.659	165	18.5	16.8	10.4	14.0	20.6	109
	9/16	1.02	0.686	172	19.3	17.5	10.8	14.9	21.9	114
15.0		1.13	0.756	190	21.4	19.4	11.9	17.2	25.4	126
	5/8	1.26	0.847	216	24.3	22.0	13.4	20.4	30.1	141
16.0		1.28	0.860	216	24.3	22.0	13.6	20.9	30.8	143
17.0		1.45	0.971	244	27.4	24.9	15.3	25.1	37.0	161
18.0		1.62	1.09	274	30.8	27.9	17.2	29.8	43.9	181
19.0		1.81	1.21	306	34.4	31.2	19.2	35.3	52.1	201
	3/4	1.81	1.22	306	34.4	31.2	19.3	35.3	52.1	202
20.0		2.00	1.34	337	37.9	34.4	21.2	40.8	60.3	223
21.0		2.21	1.48	372	41.8	37.9	23.4	47.3	69.9	246
22.0		2.42	1.63	416	46.8	42.4	25.7	54.4	80.3	270
	7/8	2.47	1.66	416	46.8	42.4	26.2	56.0	82.8	276
23.0		2.65	1.78	446	50.1	45.5	28.1	62.1	91.8	295
24.0		2.88	1.94	486	54.6	49.6	30.6	70.6	104	321
25.0		3.13	2.10	527	59.2	53.7	33.2	79.8	118	349
	1	3.23	2.17	544	61.1	55.5	34.3	83.6	124	360
26.0		3.38	2.27	570	64.1	58.1	35.9	89.7	133	377
27.0		3.65	2.45	615	69.1	62.7	38.7	100	149	407
28.0		3.92	2.63	661	74.3	67.4	41.6	112	166	437
	1 1/8	4.08	2.74	688	77.3	70.2	43.4	119	176	455
29.0		4.21	2.83	709	79.7	72.3	44.7	124	184	469
30.0		4.50	3.02	759	85.3	77.4	47.8	138	204	502
	1 1/4	5.04	3.39	863	97.0	88.0	53.5	163	242	562
32.0		5.12	3.44	863	97.0	88.0	54.4	167	248	571
34.0		5.78	3.88	975	110	99.4	61.4	201	297	645
	1 3/8	6.10	4.10	1030	116	105	64.8	217	322	680
36.0		6.48	4.35	1090	123	111	68.8	238	353	723
38.0		7.22	4.85	1210	136	123	76.7	280	415	805
	1 1/2	7.26	4.88	1210	136	123	77.1	282	419	810

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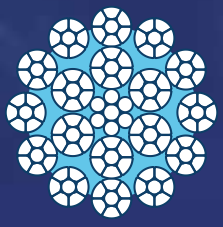
BRIDON

Endurance

Dyform 18 PI



ENDURANCE DYFORM 18 PI

Benefits:

- Plastic impregnated
  - Extends fatigue life
  - Improves structural stability
  - Resists corrosion
- High breaking force
- Rotation resistant
- Reduced sheave wear
- Long service life
- Reduced downtime

High Performance Crane Ropes

The Bridon Endurance brand - High quality performance wire ropes for the lifting industry.

Our world leading manufacturing capabilities are accompanied by a high level of quality assurance and in-house expertise in research and development and design engineering.

Applications

Telescopic mobile cranes	Dockside cranes
Mobile lattice boom cranes	Mobile harbour cranes
Tower cranes	Ship cranes
Offshore pedestal cranes	Overhead hoists/gantry cranes

Endurance Dyform 18 PI

Diameter		Nominal length mass		Minimum Breaking Force			Axial stiffness @20% load	Torque generated @20% load		Metallic cross section
				Dyform				Ordinary	Lang's	
mm	inch	kg/m	lb/ft	kN	Tons (short)	Tons (metric)	MN	Nm	Nm	mm^2
	3/8	0.454	0.305	76.6	8.61	7.81	4.82	4.42	6.46	50.6
10.0		0.500	0.336	84.4	9.49	8.61	5.31	5.11	7.48	55.8
11.0		0.605	0.407	104	11.7	10.6	6.43	6.80	9.97	67.5
	7/16	0.617	0.415	104	11.7	10.6	6.56	7.01	10.3	68.9
12.0		0.720	0.484	122	13.7	12.4	7.65	8.83	13.0	80.3
	1/2	0.806	0.542	136	15.3	13.9	8.56	10.5	15.4	90.0
13.0		0.845	0.568	143	16.1	14.6	8.97	11.2	16.5	94.3
14.0		0.980	0.659	165	18.5	16.8	10.4	14.0	20.6	109
	9/16	1.02	0.686	172	19.3	17.5	10.8	14.9	21.9	114
15.0		1.13	0.756	190	21.4	19.4	11.9	17.2	25.4	126
	5/8	1.26	0.847	216	24.3	22.0	13.4	20.4	30.1	141
16.0		1.28	0.860	216	24.3	22.0	13.6	20.9	30.8	143
17.0		1.45	0.971	244	27.4	24.9	15.3	25.1	37.0	161
18.0		1.62	1.09	274	30.8	27.9	17.2	29.8	43.9	181
19.0		1.81	1.21	306	34.4	31.2	19.2	35.3	52.1	201
	3/4	1.81	1.22	306	34.4	31.2	19.3	35.3	52.1	202
20.0		2.00	1.34	337	37.9	34.4	21.2	40.8	60.3	223
21.0		2.21	1.48	372	41.8	37.9	23.4	47.3	69.9	246
22.0		2.42	1.63	416	46.8	42.4	25.7	54.4	80.3	270
	7/8	2.47	1.66	416	46.8	42.4	26.2	56.0	82.8	276
23.0		2.65	1.78	446	50.1	45.5	28.1	62.1	91.8	295
24.0		2.88	1.94	486	54.6	49.6	30.6	70.6	104	321
25.0		3.13	2.10	527	59.2	53.7	33.2	79.8	118	349
	1	3.23	2.17	544	61.1	55.5	34.3	83.6	124	360
26.0		3.38	2.27	570	64.1	58.1	35.9	89.7	133	377
27.0		3.65	2.45	615	69.1	62.7	38.7	100	149	407
28.0		3.92	2.63	661	74.3	67.4	41.6	112	166	437
	1 1/8	4.08	2.74	688	77.3	70.2	43.4	119	176	455
29.0		4.21	2.83	709	79.7	72.3	44.7	124	184	469
30.0		4.50	3.02	759	85.3	77.4	47.8	138	204	502
	1 1/4	5.04	3.39	863	97.0	88.0	53.5	163	242	562
32.0		5.12	3.44	863	97.0	88.0	54.4	167	248	571
34.0		5.78	3.88	975	110	99.4	61.4	201	297	645
	1 3/8	6.10	4.10	1030	116	105	64.8	217	322	680
36.0		6.48	4.35	1090	123	111	68.8	238	353	723
38.0		7.22	4.85	1210	136	123	76.7	280	415	805
	1 1/2	7.26	4.88	1210	136	123	77.1	282	419	810

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BRIDON Endurance

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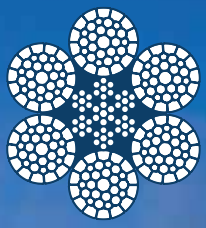
ENDURANCE DYFORM® 6

Endurance
Dyform 6



Benefits:

- Exceptional service life
- Robust crush resistant Dyform construction
- Accurate diameter recommended for multi-layer spooling
- Long life, reduced lifetime costs

High Performance Crane Ropes

The Bridon Endurance brand - High quality performance wire ropes for the lifting industry.

Our world leading manufacturing capabilities are accompanied by a high level of quality assurance and in-house expertise in research and development and design engineering.

Applications

- Telescopic mobile cranes
- Mobile lattice boom cranes
- Tower cranes
- Offshore pedestal cranes
- Dockside cranes
- Mobile harbour cranes
- Floating cranes
- Ship cranes
- Ship to shore container cranes
- Bulk unloader cranes
- Overhead hoists/gantry cranes
- Steel works ladle cranes
- Piling ropes
- Container handling cranes

Endurance Dyform 6

Diameter		Nominal length mass		Minimum Breaking Force						Axial stiffness @20% load	Torque generated @20% load		Metallic cross section
				EIP/1960			EEIP/2160				Ordinary	Lang's	
mm	inch	kg/m	lb/ft	kN	Tons (short)	Tons (metric)	kN	Tons (short)	Tons (metric)	MN	Nm	Nm	mm²
	5/16	0.289	0.194	55.2	6.20	5.63	57.5	6.46	5.86	3.43	5.66	9.00	33.2
8.00		0.294	0.197	55.2	6.20	5.63	57.5	6.46	5.86	3.49	5.79	9.22	33.7
9.00		0.372	0.250	69.9	7.86	7.13	72.8	8.18	7.42	4.41	8.25	13.1	42.7
	3/8	0.416	0.280	78.2	8.79	7.97	81.5	9.16	8.31	4.94	9.79	15.6	47.8
10.0		0.459	0.308	86.2	9.69	8.79	89.9	10.1	9.17	5.45	11.3	18.0	52.7
11.0		0.555	0.373	106	11.9	10.8	109	12.3	11.1	6.59	15.1	24.0	63.7
	7/16	0.567	0.381	106	11.9	10.8	109	12.3	11.1	6.73	15.6	24.7	65.0
12.0		0.661	0.444	124	13.9	12.6	129	14.5	13.2	7.84	19.6	31.1	75.9
	1/2	0.740	0.497	136	15.3	13.9	145	16.3	14.8	8.79	23.2	36.9	85.0
13.0		0.776	0.521	142	16.0	14.5	152	17.1	15.5	9.21	24.9	39.5	89.0
14.0		0.900	0.605	165	18.5	16.8	176	19.8	17.9	10.7	31.1	49.4	103
	9/16	0.937	0.630	172	19.3	17.5	183	20.6	18.7	11.1	33.1	52.5	108
15.0		1.03	0.694	190	21.4	19.4	202	22.7	20.6	12.3	38.3	60.8	119
	5/8	1.16	0.777	212	23.8	21.6	230	25.9	23.5	13.7	45.4	72.0	133
16.0		1.18	0.790	212	23.8	21.6	230	25.9	23.5	13.9	46.5	73.7	135
17.0		1.33	0.891	239	26.9	24.4	260	29.2	26.5	15.7	55.8	88.4	152
18.0		1.49	1.00	268	30.1	27.3	291	32.7	29.7	17.6	66.3	105	171
19.0		1.66	1.11	299	33.6	30.5	324	36.4	33.0	19.7	77.9	123	190
	3/4	1.67	1.12	299	33.6	30.5	324	36.4	33.0	19.8	78.6	124	191
20.0		1.84	1.23	331	37.2	33.8	359	40.4	36.6	21.8	90.9	144	211
22.0		2.22	1.49	401	45.1	40.9	435	48.9	44.4	26.4	121	192	255
	7/8	2.27	1.52	401	45.1	40.9	435	48.9	44.4	26.9	125	198	260
24.0		2.64	1.78	477	53.6	48.6	518	58.2	52.8	31.4	157	249	303
	1	2.96	1.99	534	60.0	54.5	580	65.2	59.1	35.1	186	295	340
26.0		3.10	2.09	560	62.9	57.1	607	68.2	61.9	36.8	200	316	356
28.0		3.60	2.42	649	73.0	66.2	704	79.1	71.8	42.7	250	395	413
	1 1/8	3.75	2.52	676	76.0	68.9	734	82.5	74.8	44.5	265	420	430
30.0		4.13	2.78	745	83.7	76.0	809	90.9	82.5	49.0	307	486	474
	1 1/4	4.63	3.11	848	95.3	86.5	920	103	93.8	54.9	364	576	531
32.0		4.70	3.16	848	95.3	86.5	920	103	93.8	55.8	373	590	539
34.0		5.31	3.57	957	108	97.6	1040	117	106	63.0	447	707	609
	1 3/8	5.60	3.76	1010	114	103	1100	124	112	66.4	485	767	643
36.0		5.95	4.00	1070	120	109	1160	130	118	70.6	531	840	683
38.0		6.63	4.45	1200	135	122	1300	146	133	78.7	625	988	761
	1 1/2	6.66	4.48	1200	135	122	1300	146	133	79.1	629	996	765
40.0		7.34	4.93	1320	148	135	1440	162	147	87.2	728	1150	843
	1 5/8	7.82	5.25	1410	158	144				92.8	800	1270	897
42.0		8.10	5.44	1460	164	149				96.1	843	1330	929
44.0		8.89	5.97	1600	180	163				105	970	1530	1020
	1 3/4	9.07	6.09	1600	180	163				108	1000	1580	1040
46.0		9.71	6.53	1750	197	178				115	1110	1750	1110
	1 7/8	10.4	7.00	1910	215	195				124	1230	1940	1190
48.0		10.6	7.11	1910	215	195				125	1260	1990	1210
50.0		11.5	7.71	2070	233	211				136	1420	2250	1320

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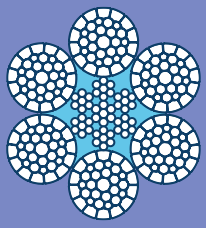
BRIDON

Endurance

Dyform 6 PI



ENDURANCE DYFORM 6 PI

Benefits:

- Engineered flutes define exact location of outer strands extending bending fatigue life
- Exceptional service life
- Robust, crush resistant
- Dyform construction
- Accurate diameter
- Long life, reduced lifetime costs
- Plastic encapsulated core
- Reduced stretch

High Performance Crane Ropes

The Bridon Endurance brand - High quality performance wire ropes for the lifting industry.

Our world leading manufacturing capabilities are accompanied by a high level of quality assurance and in-house expertise in research and development and design engineering.

Application

Ship to shore container cranes

Ship lift ropes

Endurance Dyform 6 PI

Diameter		Nominal length mass		Minimum Breaking Force						Axial stiffness @20% load	Torque generated @20% load		Metallic cross section
				EIP/1960			EEIP/2160				Ordinary	Lang's	
mm	inch	kg/m	lb/ft	kN	Tons (short)	Tons (metric)	kN	Tons (short)	Tons (metric)	MN	Nm	Nm	mm²
	5/16	0.289	0.194	55.2	6.20	5.63	57.5	6.46	5.86	3.43	5.66	9.00	33.2
8.00		0.294	0.197	55.2	6.20	5.63	57.5	6.46	5.86	3.49	5.79	9.22	33.7
9.00		0.372	0.250	69.9	7.86	7.13	72.8	8.18	7.42	4.41	8.25	13.1	42.7
	3/8	0.416	0.280	78.2	8.79	7.97	81.5	9.16	8.31	4.94	9.79	15.6	47.8
10.0		0.459	0.308	86.2	9.69	8.79	89.9	10.1	9.17	5.45	11.3	18.0	52.7
11.0		0.555	0.373	106	11.9	10.8	109	12.3	11.1	6.59	15.1	24.0	63.7
	7/16	0.567	0.381	106	11.9	10.8	109	12.3	11.1	6.73	15.6	24.7	65.0
12.0		0.661	0.444	124	13.9	12.6	129	14.5	13.2	7.84	19.6	31.1	75.9
	1/2	0.740	0.497	136	15.3	13.9	145	16.3	14.8	8.79	23.2	36.9	85.0
13.0		0.776	0.521	142	16.0	14.5	152	17.1	15.5	9.21	24.9	39.5	89.0
14.0		0.900	0.605	165	18.5	16.8	176	19.8	17.9	10.7	31.1	49.4	103
	9/16	0.937	0.630	172	19.3	17.5	183	20.6	18.7	11.1	33.1	52.5	108
15.0		1.03	0.694	190	21.4	19.4	202	22.7	20.6	12.3	38.3	60.8	119
	5/8	1.16	0.777	212	23.8	21.6	230	25.9	23.5	13.7	45.4	72.0	133
16.0		1.18	0.790	212	23.8	21.6	230	25.9	23.5	13.9	46.5	73.7	135
17.0		1.33	0.891	239	26.9	24.4	260	29.2	26.5	15.7	55.8	88.4	152
18.0		1.49	1.00	268	30.1	27.3	291	32.7	29.7	17.6	66.3	105	171
19.0		1.66	1.11	299	33.6	30.5	324	36.4	33.0	19.7	77.9	123	190
	3/4	1.67	1.12	299	33.6	30.5	324	36.4	33.0	19.8	78.6	124	191
20.0		1.84	1.23	331	37.2	33.8	359	40.4	36.6	21.8	90.9	144	211
22.0		2.22	1.49	401	45.1	40.9	435	48.9	44.4	26.4	121	192	255
	7/8	2.27	1.52	401	45.1	40.9	435	48.9	44.4	26.9	125	198	260
24.0		2.64	1.78	477	53.6	48.6	518	58.2	52.8	31.4	157	249	303
	1	2.96	1.99	534	60.0	54.5	580	65.2	59.1	35.1	186	295	340
26.0		3.10	2.09	560	62.9	57.1	607	68.2	61.9	36.8	200	316	356
28.0		3.60	2.42	649	73.0	66.2	704	79.1	71.8	42.7	250	395	413
	1 1/8	3.75	2.52	676	76.0	68.9	734	82.5	74.8	44.5	265	420	430
30.0		4.13	2.78	745	83.7	76.0	809	90.9	82.5	49.0	307	486	474
	1 1/4	4.63	3.11	848	95.3	86.5	920	103	93.8	54.9	364	576	531
32.0		4.70	3.16	848	95.3	86.5	920	103	93.8	55.8	373	590	539
34.0		5.31	3.57	957	108	97.6	1040	117	106	63.0	447	707	609
	1 3/8	5.60	3.76	1010	114	103	1100	124	112	66.4	485	767	643
36.0		5.95	4.00	1070	120	109	1160	130	118	70.6	531	840	683
38.0		6.63	4.45	1200	135	122	1300	146	133	78.7	625	988	761
	1 1/2	6.66	4.48	1200	135	122	1300	146	133	79.1	629	996	765
40.0		7.34	4.93	1320	148	135	1440	162	147	87.2	728	1150	843
	1 5/8	7.82	5.25	1410	158	144				92.8	800	1270	897
42.0		8.10	5.44	1460	164	149				96.1	843	1330	929
44.0		8.89	5.97	1600	180	163				105	970	1530	1020
	1 3/4	9.07	6.09	1600	180	163				108	1000	1580	1040
46.0		9.71	6.53	1750	197	178				115	1110	1750	1110
	1 7/8	10.4	7.00	1910	215	195				124	1230	1940	1190
48.0		10.6	7.11	1910	215	195				125	1260	1990	1210
50.0		11.5	7.71	2070	233	211				136	1420	2250	1320

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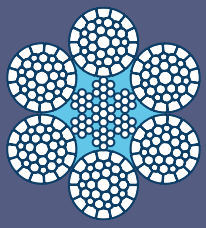
Dyform Bristar 6



ENDURANCE DYFORM BRISTAR 6

Benefits:

- Engineered flutes define exact location of outer strands extending bend fatigue life
- High breaking force
- Plastic Bristar profile encapsulated core
- Consistent performance
- Robust, crush resistant
- Dyform construction
- Reduced stretch
- Exceptional service life
- Corrosion protected core
- Recommended for multi-layer spooling

High Performance Crane Ropes

The Bridon Endurance brand - High quality performance wire ropes for the lifting industry.

Our world leading manufacturing capabilities are accompanied by a high level of quality assurance and in-house expertise in research and development and design engineering.

Application

Bulk unloader cranes

Endurance Dyform Bristar 6

Diameter		Nominal length mass		Minimum Breaking Force						Axial stiffness @20% load	Torque generated @20% load		Metallic cross section
				EIP/1960			EEIP/2160				Ordinary	Lang's	
mm	inch	kg/m	lb/ft	kN	Tons (short)	Tons (metric)	kN	Tons (short)	Tons (metric)	MN	Nm	Nm	mm^2
	5/8	1.16	0.777	212	23.8	21.6	230	25.9	23.5	13.7	45.4	72.0	133
16.0		1.18	0.790	212	23.8	21.6	230	25.9	23.5	13.9	46.5	73.7	135
17.0		1.33	0.891	239	26.9	24.4	260	29.2	26.5	15.7	55.8	88.4	152
18.0		1.49	1.00	268	30.1	27.3	291	32.7	29.7	17.6	66.3	105	171
19.0		1.66	1.11	299	33.6	30.5	324	36.4	33.0	19.7	77.9	123	190
	3/4	1.67	1.12	299	33.6	30.5	324	36.4	33.0	19.8	78.6	124	191
20.0		1.84	1.23	331	37.2	33.8	359	40.4	36.6	21.8	90.9	144	211
22.0		2.22	1.49	401	45.1	40.9	435	48.9	44.4	26.4	121	192	255
	7/8	2.27	1.52	401	45.1	40.9	435	48.9	44.4	26.9	125	198	260
24.0		2.64	1.78	477	53.6	48.6	518	58.2	52.8	31.4	157	249	303
	1	2.96	1.99	534	60.0	54.5	580	65.2	59.1	35.1	186	295	340
26.0		3.10	2.09	560	62.9	57.1	607	68.2	61.9	36.8	200	316	356
28.0		3.60	2.42	649	73.0	66.2	704	79.1	71.8	42.7	250	395	413
	1 1/8	3.75	2.52	676	76.0	68.9	734	82.5	74.8	44.5	265	420	430
30.0		4.13	2.78	745	83.7	76.0	809	90.9	82.5	49.0	307	486	474
	1 1/4	4.63	3.11	848	95.3	86.5	920	103	93.8	54.9	364	576	531
32.0		4.70	3.16	848	95.3	86.5	920	103	93.8	55.8	373	590	539
34.0		5.31	3.57	957	108	97.6	1040	117	106	63.0	447	707	609
	1 3/8	5.60	3.76	1010	114	103	1100	124	112	66.4	485	767	643
36.0		5.95	4.00	1070	120	109	1160	130	118	70.6	531	840	683
38.0		6.63	4.45	1200	135	122	1300	146	133	78.7	625	988	761
	1 1/2	6.66	4.48	1200	135	122	1300	146	133	79.1	629	996	765

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NEW

BRIDON Endurance

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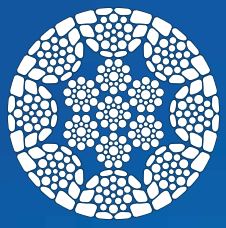
Endurance

Dyform 8 Max



ENDURANCE DYFORM 8 MAX

Benefits:

- Higher MBF than CTX
- Superior crush resistance
- Better fatigue life
- Excellent service life
- Lower downtime
- Recommended multi-layer spooling

High Performance Crane Ropes

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Our world leading manufacturing capabilities are accompanied by a high level of quality assurance and in-house expertise in research and development and design engineering.

Applications

Telescopic mobile cranes	Floating cranes
Mobile lattice boom cranes	Ship cranes
Tower cranes	Ship to shore container cranes
Offshore pedestal cranes	Overhead hoists/gantry cranes
Dockside cranes	Steel works ladle cranes
Mobile harbour cranes	Container handling cranes

Endurance Dyform 8 Max

Diameter		Nominal length mass		Minimum Breaking Force		
				MAX		
mm	inch	kg/m	lbs/ft	kN	Tons (short)	Tons (metric)
24.0		2.88	1.94	544	61.1	55.5
	1	3.23	2.17	610	68.6	62.2
26.0		3.38	2.27	639	71.8	65.2
28.0		3.92	2.64	741	83.3	75.6
	1 1/8	4.09	2.75	773	86.9	78.8
30.0		4.50	3.03	851	95.7	86.8
	1 1/4	5.04	3.39	968	109	98.7
32.0		5.12	3.44	968	109	98.7

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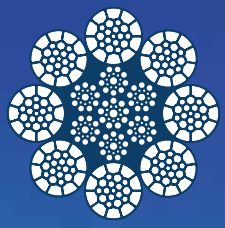
Dyform 8



ENDURANCE DYFORM 8

Benefits:

- Excellent service life
- Lower downtime
- Flexible eight strand construction
- High temperature lubricant available
- Robust crush resistant Dyform construction
- Recommended for multi-layer spooling
- Reduced lifetime costs

High Performance Crane Ropes

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Applications

Mobile lattice boom cranes	Overhead hoists/gantry cranes
Ship cranes	Steel works ladle cranes
Ship to shore container cranes	Container handling cranes

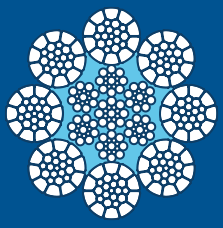
Endurance Dyform 8

Diameter		Nominal length mass		Minimum Breaking Force						Axial stiffness @20% load	Torque generated @20% load		Metallic cross section
				EIP/1960			EEIP/2160				Ordinary	Lang's	
mm	inch	kg/m	lb/ft	kN	Tons (short)	Tons (metric)	kN	Tons (short)	Tons (metric)	MN	Nm	Nm	mm²
	3/8	0.427	0.287	86.2	9.69	8.79				4.83	10.6	13.8	48.5
10.0		0.471	0.316	89.2	10.00	9.10				5.32	12.3	15.9	53.4
11.0		0.570	0.383	110	12.4	11.2				6.44	16.4	21.2	64.6
	7/16	0.582	0.391	110	12.4	11.2				6.57	16.9	21.9	65.9
12.0		0.678	0.456	128	14.4	13.1				7.66	21.3	27.5	76.9
	1/2	0.760	0.510	144	16.2	14.7				8.58	25.3	32.6	86.1
13.0		0.796	0.535	150	16.9	15.3				8.99	27.1	35.0	90.3
14.0		0.923	0.620	174	19.6	17.7				10.4	33.8	43.7	105
	9/16	0.961	0.646	181	20.3	18.5				10.9	36.0	46.4	109
15.0		1.06	0.712	198	22.3	20.2				12.0	41.6	53.7	120
	5/8	1.19	0.798	226	25.4	23.0	236	26.5	24.1	13.4	49.4	63.7	135
16.0		1.21	0.810	226	25.4	23.0	236	26.5	24.1	13.6	50.6	65.2	137
17.0		1.36	0.915	255	28.7	26.0	267	30.0	27.2	15.4	60.7	78.2	154
18.0		1.53	1.03	286	32.1	29.2	299	33.6	30.5	17.2	72.0	92.8	173
19.0		1.70	1.14	318	35.7	32.4	333	37.4	34.0	19.2	84.7	109	193
	3/4	1.71	1.15	318	35.7	32.4	333	37.4	34.0	19.3	85.4	110	194
20.0		1.88	1.27	353	39.7	36.0	369	41.5	37.6	21.3	98.8	127	214
22.0		2.28	1.53	427	48.0	43.5	446	50.1	45.5	25.8	132	169	258
	7/8	2.33	1.56	427	48.0	43.5	446	50.1	45.5	26.3	136	175	264
24.0		2.71	1.82	508	57.1	51.8	531	59.7	54.1	30.7	171	220	308
	1	3.04	2.04	569	64.0	58.0	595	66.9	60.7	34.3	203	261	345
26.0		3.18	2.14	596	67.0	60.8	623	70.0	63.5	36.0	217	280	361
28.0		3.69	2.48	691	77.7	70.5	723	81.3	73.7	41.7	271	349	419
	1 1/8	3.85	2.58	720	80.9	73.4	753	84.6	76.8	43.5	289	371	436
30.0		4.24	2.85	794	89.2	81.0	830	93.3	84.6	47.9	334	430	481
	1 1/4	4.75	3.19	903	102	92.1	944	106	96.3	53.6	396	509	538
32.0		4.82	3.24	903	102	92.1	944	106	96.3	54.5	405	521	547
34.0		5.44	3.66	1020	115	104	1070	120	109	61.5	486	625	617
	1 3/8	5.75	3.86	1080	121	110	1130	127	115	64.9	527	678	651
36.0		6.10	4.10	1140	128	116	1200	135	122	69.0	577	742	692
38.0		6.80	4.57	1270	143	130	1330	149	136	76.8	679	873	771
	1 1/2	6.84	4.59	1270	143	130	1330	149	136	77.3	684	880	775
40.0		7.54	5.06	1410	158	144	1480	166	151	85.2	792	1020	854
	1 5/8	8.02	5.39	1500	169	153	1570	176	160	90.7	870	1120	910
42.0		8.31	5.58	1560	175	159	1630	183	166	93.9	917	1180	942
44.0		9.12	6.13	1710	192	174	1790	201	183	103	1050	1360	1030
	1 3/4	9.31	6.25	1710	192	174	1790	201	183	105	1090	1400	1060
46.0		9.97	6.70	1870	210	191	1950	219	199	113	1210	1550	1130
	1 7/8	10.7	7.18	2030	228	207	2130	239	217	121	1340	1720	1210
48.0		10.9	7.29	2030	228	207	2130	239	217	123	1370	1760	1230
50.0		11.8	7.91	2210	248	225	2310	260	236	133	1550	1990	1340

BRIDON

Endurance

Dyform 8 PI



ENDURANCE DYFORM 8 PI

Benefits:

- High breaking force
- Excellent service life
- Reduced downtime
- Flexible eight strand construction
- High temperature lubricant available
- Consistent performance
- Reduced lifetime costs
- Plastic encapsulated core
- Reduced stretch
- Recommended for multi-layer spooling

High Performance Crane Ropes

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Applications

- Telescopic mobile cranes
- Mobile lattice boom cranes
- Tower cranes
- Offshore pedestal cranes
- Dockside cranes
- Mobile harbour cranes
- Floating cranes
- Ship cranes
- Ship to shore container cranes
- Overhead hoists/gantry cranes
- Steel works ladle cranes
- Piling ropes
- Container handling cranes
- Ship lift ropes

Endurance Dyform 8 PI

Diameter		Nominal length mass		Minimum Breaking Force						Axial stiffness @20% load	Torque generated @20% load		Metallic cross section
				EIP/1960			EEIP/2160				Ordinary	Lang's	
mm	inch	kg/m	lb/ft	kN	Tons (short)	Tons (metric)	kN	Tons (short)	Tons (metric)	MN	Nm	Nm	mm²
	3/8	0.427	0.287	86.2	9.69	8.79				4.83	10.6	13.8	48.5
10.0		0.471	0.316	89.2	10.00	9.10				5.32	12.3	15.9	53.4
11.0		0.570	0.383	110	12.4	11.2				6.44	16.4	21.2	64.6
	7/16	0.582	0.391	110	12.4	11.2				6.57	16.9	21.9	65.9
12.0		0.678	0.456	128	14.4	13.1				7.66	21.3	27.5	76.9
	1/2	0.760	0.510	144	16.2	14.7				8.58	25.3	32.6	86.1
13.0		0.796	0.535	150	16.9	15.3				8.99	27.1	35.0	90.3
14.0		0.923	0.620	174	19.6	17.7				10.4	33.8	43.7	105
	9/16	0.961	0.646	181	20.3	18.5				10.9	36.0	46.4	109
15.0		1.06	0.712	198	22.3	20.2				12.0	41.6	53.7	120
	5/8	1.19	0.798	226	25.4	23.0	236	26.5	24.1	13.4	49.4	63.7	135
16.0		1.21	0.810	226	25.4	23.0	236	26.5	24.1	13.6	50.6	65.2	137
17.0		1.36	0.915	255	28.7	26.0	267	30.0	27.2	15.4	60.7	78.2	154
18.0		1.53	1.03	286	32.1	29.2	299	33.6	30.5	17.2	72.0	92.8	173
19.0		1.70	1.14	318	35.7	32.4	333	37.4	34.0	19.2	84.7	109	193
	3/4	1.71	1.15	318	35.7	32.4	333	37.4	34.0	19.3	85.4	110	194
20.0		1.88	1.27	353	39.7	36.0	369	41.5	37.6	21.3	98.8	127	214
22.0		2.28	1.53	427	48.0	43.5	446	50.1	45.5	25.8	132	169	258
	7/8	2.33	1.56	427	48.0	43.5	446	50.1	45.5	26.3	136	175	264
24.0		2.71	1.82	508	57.1	51.8	531	59.7	54.1	30.7	171	220	308
	1	3.04	2.04	569	64.0	58.0	595	66.9	60.7	34.3	203	261	345
26.0		3.18	2.14	596	67.0	60.8	623	70.0	63.5	36.0	217	280	361
28.0		3.69	2.48	691	77.7	70.5	723	81.3	73.7	41.7	271	349	419
	1 1/8	3.85	2.58	720	80.9	73.4	753	84.6	76.8	43.5	289	371	436
30.0		4.24	2.85	794	89.2	81.0	830	93.3	84.6	47.9	334	430	481
	1 1/4	4.75	3.19	903	102	92.1	944	106	96.3	53.6	396	509	538
32.0		4.82	3.24	903	102	92.1	944	106	96.3	54.5	405	521	547
34.0		5.44	3.66	1020	115	104	1070	120	109	61.5	486	625	617
	1 3/8	5.75	3.86	1080	121	110	1130	127	115	64.9	527	678	651
36.0		6.10	4.10	1140	128	116	1200	135	122	69.0	577	742	692
38.0		6.80	4.57	1270	143	130	1330	149	136	76.8	679	873	771
	1 1/2	6.84	4.59	1270	143	130	1330	149	136	77.3	684	880	775
40.0		7.54	5.06	1410	158	144	1480	166	151	85.2	792	1020	854
	1 5/8	8.02	5.39	1500	169	153	1570	176	160	90.7	870	1120	910
42.0		8.31	5.58	1560	175	159	1630	183	166	93.9	917	1180	942
44.0		9.12	6.13	1710	192	174	1790	201	183	103	1050	1360	1030
	1 3/4	9.31	6.25	1710	192	174	1790	201	183	105	1090	1400	1060
46.0		9.97	6.70	1870	210	191	1950	219	199	113	1210	1550	1130
	1 7/8	10.7	7.18	2030	228	207	2130	239	217	121	1340	1720	1210
48.0		10.9	7.29	2030	228	207	2130	239	217	123	1370	1760	1230
50.0		11.8	7.91	2210	248	225	2310	260	236	133	1550	1990	1340

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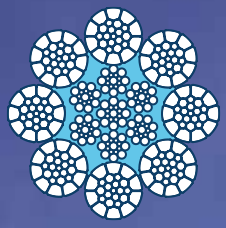
Dyform Bristar 8



ENDURANCE DYFORM BRISTAR 8

Benefits:

- Engineered flutes define exact location of outer strands extending bend fatigue life
- High breaking force
- Flexible eight strand construction
- High temperature lubricant available
- Consistent performance
- Enhanced bending fatigue
- Superior crush resistance
- Accurate diameter tolerance
- Long life, reduced lifetime costs
- Reduced stretch
- Corrosion protected core
- Recommended for multi-layer spooling

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Applications

- Mobile lattice boom cranes
- Offshore pedestal cranes
- Dockside cranes
- Mobile harbour cranes
- Floating cranes
- Bulk unloader cranes
- Ship lift ropes

Endurance Dyform Bristar 8

Diameter		Nominal length mass		Minimum Breaking Force						Axial stiffness @20% load	Torque generated @20% load		Metallic cross section
				EIP/1960			EEIP/2160				Ordinary	Lang's	
mm	inch	kg/m	lb/ft	kN	Tons (short)	Tons (metric)	kN	Tons (short)	Tons (metric)	MN	Nm	Nm	mm²
	5/8	1.19	0.798	226	25.4	23.0	236	26.5	24.1	13.4	49.4	63.7	135
16.0		1.21	0.810	226	25.4	23.0	236	26.5	24.1	13.6	50.6	65.2	137
17.0		1.36	0.915	255	28.7	26.0	267	30.0	27.2	15.4	60.7	78.2	154
18.0		1.53	1.03	286	32.1	29.2	299	33.6	30.5	17.2	72.0	92.8	173
19.0		1.70	1.14	318	35.7	32.4	333	37.4	34.0	19.2	84.7	109	193
	3/4	1.71	1.15	318	35.7	32.4	333	37.4	34.0	19.3	85.4	110	194
20.0		1.88	1.27	353	39.7	36.0	369	41.5	37.6	21.3	98.8	127	214
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32.0		4.82	3.24	903	102	92.1	944	106	96.3	54.5	405	521	547
34.0		5.44	3.66	1020	115	104	1070	120	109	61.5	486	625	617
	1 3/8	5.75	3.86	1080	121	110	1130	127	115	64.9	527	678	651
36.0		6.10	4.10	1140	128	116	1200	135	122	69.0	577	742	692
38.0		6.80	4.57	1270	143	130	1330	149	136	76.8	679	873	771
	1 1/2	6.84	4.59	1270	143	130	1330	149	136	77.3	684	880	775
40.0		7.54	5.06	1410	158	144	1480	166	151	85.2	792	1020	854
	1 5/8	8.02	5.39	1500	169	153	1570	176	160	90.7	870	1120	910
42.0		8.31	5.58	1560	175	159	1630	183	166	93.9	917	1180	942
44.0		9.12	6.13	1710	192	174	1790	201	183	103	1050	1360	1030
	1 3/4	9.31	6.25	1710	192	174	1790	201	183	105	1090	1400	1060
46.0		9.97	6.70	1870	210	191	1950	219	199	113	1210	1550	1130
	1 7/8	10.7	7.18	2030	228	207	2130	239	217	121	1340	1720	1210
48.0		10.9	7.29	2030	228	207	2130	239	217	123	1370	1760	1230
50.0		11.8	7.91	2210	248	225	2310	260	236	133	1550	1990	1340

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NEW

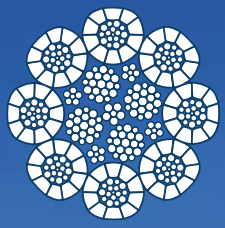
BRIDON Endurance

BRIDON

ENDURANCE DYFORM DSC8 MAX

Endurance

Dyform DSC8 Max



Benefits:

- Bridon's highest effective strength
- Very high breaking force
- Best compression resistance and crush resistance
- Superior fatigue life
- Parallel laid rope
- Recommended for multi-layer spooling
- Only recommended for boom hoist applications where both ends are fixed

High Performance Crane Ropes

The Bridon Endurance brand - High quality performance wire ropes for the lifting industry.

Our world leading manufacturing capabilities are accompanied by a high level of quality assurance and in-house expertise in research and development and design engineering.

Applications

- Mobile lattice boom cranes
- Offshore pedestal cranes
- Dockside cranes
- Mobile harbour cranes
- Floating cranes
- Ship to shore container cranes
- Overhead hoists/gantry cranes

Endurance Dyform DSC8 Max

Diameter		Nominal length mass		Minimum Breaking Force		
				MAX		
mm	inch	kg/m	lbs/ft	kN	Tons (short)	Tons (metric)
	1	3.46	2.33	707	79.5	72.1
26.0		3.63	2.44	740	83.2	75.5
28.0		4.21	2.83	858	96.4	87.5
	1 1/8	4.38	2.95	894	100	91.2
30.0		4.83	3.25	986	111	101
	1 1/4	5.41	3.64	1120	126	114
32.0		5.50	3.70	1120	126	114

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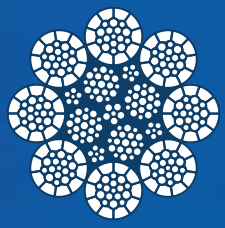
BRIDON

Endurance

Dyform DSC8



ENDURANCE DYFORM DSC8

Benefits:

- Parallel laid rope
- Very high breaking force
- Crush resistant
- Recommended for multi-layer spooling
- Only recommended for boom hoist applications where both ends are fixed

High Performance Crane Ropes

The Bridon Endurance brand - High quality performance wire ropes for the lifting industry.

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Applications

Mobile lattice boom cranes
Offshore pedestal cranes
Dockside cranes
Mobile harbour cranes
Floating cranes
Ship to shore container cranes
Overhead hoists/gantry cranes

Endurance Dyform DSC8

Diameter		Nominal length mass		Minimum Breaking Force						Axial stiffness @20% load	Torque generated @20% load		Metallic cross section
				EIP/1960			EEIP/2160				Ordinary	Lang's	
mm	inch	kg/m	lb/ft	kN	Tons (short)	Tons (metric)	kN	Tons (short)	Tons (metric)	MN	Nm	Nm	mm^2
	3/8	0.445	0.299	83.6	9.40	8.52	92.5	10.4	9.43	5.68	13.0	17.5	53.5
10.0		0.491	0.330	92.1	10.4	9.39	102	11.5	10.4	6.27	15.0	20.2	58.9
11.0		0.594	0.399	111	12.5	11.3	123	13.8	12.5	7.58	20.0	26.9	71.3
	7/16	0.606	0.407	111	12.5	11.3	123	13.8	12.5	7.74	20.6	27.8	72.8
12.0		0.707	0.475	133	14.9	13.6	146	16.4	14.9	9.02	25.9	35.0	84.8
	1/2	0.792	0.532	149	16.7	15.2	164	18.4	16.7	10.1	30.7	41.5	95.0
13.0		0.830	0.558	156	17.5	15.9	172	19.3	17.5	10.6	32.9	44.5	99.6
14.0		0.962	0.647	181	20.3	18.5	199	22.4	20.3	12.3	41.1	55.6	115
	9/16	1.00	0.674	188	21.1	19.2	207	23.3	21.1	12.8	43.6	59.2	120
15.0		1.10	0.742	207	23.3	21.1	228	25.6	23.2	14.1	50.5	68.5	133
	5/8	1.24	0.831	236	26.5	24.1	260	29.2	26.5	15.8	59.8	81.2	148
16.0		1.26	0.845	236	26.5	24.1	260	29.2	26.5	16.0	61.2	83.1	151
17.0		1.42	0.954	266	29.9	27.1	293	32.9	29.9	18.1	73.4	100	170
18.0		1.59	1.07	298	33.5	30.4	329	37.0	33.5	20.3	87.1	118	191
19.0		1.77	1.19	333	37.4	34.0	366	41.1	37.3	22.6	102	139	213
	3/4	1.78	1.20	333	37.4	34.0	366	41.1	37.3	22.7	103	140	214
20.0		1.96	1.32	368	41.4	37.5	406	45.6	41.4	25.1	119	163	236
22.0		2.38	1.60	446	50.1	45.5	491	55.2	50.1	30.3	159	216	285
	7/8	2.43	1.63	446	50.1	45.5	491	55.2	50.1	31.0	164	223	291

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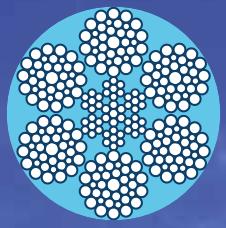
BRIDON

Endurance Brifill



ENDURANCE BRIFILL

Benefits:

- Extruded plastic coated rope
- Robust crush resistant construction
- Exceptional fatigue properties
- Reduced stretch
- Reduced lifetime costs

High Performance Crane Ropes

The Bridon Endurance brand - High quality performance wire ropes for the lifting industry.

Our world leading manufacturing capabilities are accompanied by a high level of quality assurance and in-house expertise in research and development and design engineering.

Applications

Bulk unloader cranes

Ship lift ropes

Endurance Brifill

Diameter		Nominal length mass		Minimum Breaking Force									Axial stiffness @20% load	Torque generated @20% load		Metallic cross section
				IP/1770			EIP/1960			EEIP/2160				Ordinary	Lang's	
mm	inch	kg/m	lb/ft	kN	Tons (short)	Tons (metric)	kN	Tons (short)	Tons (metric)	kN	Tons (short)	Tons (metric)	MN	Nm	Nm	mm²
	5/8	1.02	0.688	161	18.1	16.4	183	20.6	18.7	202	22.7	20.6	11.8	39.5	51.4	115
16.0		1.02	0.688	161	18.1	16.4	183	20.6	18.7	202	22.7	20.6	11.8	39.5	51.4	115
18.0		1.30	0.871	204	22.9	20.8	226	25.4	23.0	249	28.0	25.4	15.0	56.3	73.2	145
19.0		1.45	0.975	228	25.6	23.2	262	29.4	26.7	288	32.4	29.4	16.8	66.8	86.8	163
	3/4	1.45	0.975	228	25.6	23.2	262	29.4	26.7	288	32.4	29.4	16.8	66.8	86.8	163
20.0		1.60	1.08	252	28.3	25.7	279	31.4	28.4	308	34.6	31.4	18.5	77.4	100	180
22.0		1.98	1.33	308	34.6	31.4	354	39.8	36.1	390	43.8	39.8	22.8	106	138	222
	7/8	1.98	1.33	308	34.6	31.4	354	39.8	36.1	390	43.8	39.7	22.8	106	138	222
24.0		2.30	1.55	363	40.8	37.0	402	45.2	41.0	443	49.8	45.2	26.6	134	173	259
	1	2.58	1.73	399	44.9	40.7	460	51.7	46.9	506	56.9	51.6	29.8	159	206	290
26.0		2.70	1.82	426	47.9	43.4	472	53.1	48.1	520	58.5	53.0	31.3	171	221	304
28.0		3.14	2.11	494	55.5	50.4	547	61.5	55.8	603	67.8	61.5	36.3	213	275	352
	1 1/8	3.27	2.19	503	56.5	51.3	578	65.0	59.0	636	71.5	64.9	37.8	227	293	367
	1 1/4	4.10	2.75	645	72.5	65.8	715	80.4	72.9	787	88.5	80.3	47.4	319	411	460
32.0		4.10	2.75	645	72.5	65.8	715	80.4	72.9	787	88.5	80.3	47.4	319	411	460
	1 3/8	4.88	3.28	743	83.5	75.7	854	96.0	87.1	943	106	96.2	56.4	416	534	548
36.0		5.18	3.48	817	91.8	83.3	904	102	92.2	997	112	102	59.9	456	585	582
38.0		5.81	3.90	910	102	92.8	1010	114	103	1110	125	113	67.1	541	694	652
	1 1/2	5.81	3.90	910	102	92.8	1010	114	103	1110	125	113	67.1	541	694	652
40.0		6.40	4.30	1010	114	103	1120	126	114	1230	138	125	74.0	626	803	718
	1 5/8	6.81	4.58	1020	115	104	1170	132	119	1300	146	133	78.8	688	882	765
44.0		7.90	5.31	1220	137	124	1360	153	139	1500	169	153	91.4	861	1100	887
	1 3/4	7.90	5.31	1220	137	124	1360	153	139	1500	169	153	91.4	861	1100	887
	1 7/8	9.22	6.19	1450	163	148	1610	181	164	1770	199	180	107	1080	1390	1030
48.0		9.22	6.19	1450	163	148	1610	181	164	1770	199	180	107	1080	1390	1030

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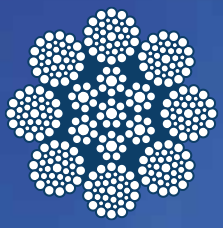
BRIDON Endurance

BRIDON

Endurance 8



ENDURANCE 8

Benefits:

- High quality six strand flexible crane rope
- Consistent bending fatigue performance
- Fully lubricated
- Steel Core

High Performance Crane Ropes

The Bridon Endurance brand - High quality performance wire ropes for the lifting industry.

Our world leading manufacturing capabilities are accompanied by a high level of quality assurance and in-house expertise in research and development and design engineering.

Applications

Telescopic mobile cranes	Bulk unloader cranes
Mobile lattice boom cranes	Overhead hoists/gantry cranes
Ship cranes	Steel works ladle cranes
Ship to shore container cranes	Container handling cranes

Endurance 8

Diameter		Nominal length mass		Minimum Breaking Force						Axial stiffness @20% load	Torque generated @20% load		Metallic cross section
				EIP/1960			EEIP/2160				Ordinary	Lang's	
mm	inch	kg/m	lb/ft	kN	Tons (short)	Tons (metric)	kN	Tons (short)	Tons (metric)	MN	Nm	Nm	mm²
12.0		0.586	0.394	100	11.2	10.2	111	12.5	11.3	6.82	16.9	21.7	71.3
	1/2	0.656	0.441	113	12.7	11.5	124	13.9	12.6	7.64	20.0	25.7	79.8
13.0		0.688	0.462	118	13.3	12.0	130	14.6	13.3	8.00	21.4	27.5	83.6
14.0		0.798	0.536	137	15.4	14.0	151	17.0	15.4	9.28	26.8	34.4	97.0
	9/16	0.831	0.558	142	16.0	14.5	157	17.6	16.0	9.67	28.5	36.5	101
	5/8	1.03	0.689	179	20.1	18.3	197	22.1	20.1	11.9	39.0	50.1	125
16.0		1.04	0.700	179	20.1	18.3	197	22.1	20.1	12.1	40.0	51.3	127
18.0		1.32	0.886	226	25.4	23.0	249	28.0	25.4	15.3	56.9	73.0	160
19.0		1.47	0.987	252	28.3	25.7	278	31.2	28.3	17.1	67.0	85.9	179
	3/4	1.48	0.993	252	28.3	25.7	278	31.2	28.3	17.2	67.5	86.5	180
20.0		1.63	1.09	279	31.4	28.4	308	34.6	31.4	18.9	78.1	100	198
22.0		1.97	1.32	338	38.0	34.5	372	41.8	37.9	22.9	104	133	239
	7/8	2.01	1.35	338	38.0	34.5	372	41.8	37.9	23.4	107	137	244
24.0		2.34	1.58	402	45.2	41.0	443	49.8	45.2	27.3	135	173	285
	1	2.63	1.76	450	50.6	45.9	496	55.8	50.6	30.5	160	205	319
26.0		2.75	1.85	472	53.1	48.1	520	58.5	53.0	32.0	172	220	334
28.0		3.19	2.14	547	61.5	55.8	603	67.8	61.5	37.1	215	275	388
	1 1/8	3.32	2.23	570	64.1	58.1	628	70.6	64.0	38.7	228	292	404
30.0		3.66	2.46	628	70.6	64.0	692	77.8	70.6	42.6	264	338	445
	1 1/4	4.10	2.76	715	80.4	72.9	787	88.5	80.3	47.7	313	400	499
32.0		4.17	2.80	715	80.4	72.9	787	88.5	80.3	48.5	320	410	507
34.0		4.70	3.16	807	90.7	82.3	889	100	90.7	54.7	384	491	572
	1 3/8	4.96	3.34	851	95.7	86.8	938	105	95.6	57.8	416	533	604
36.0		5.27	3.54	904	102	92.2	997	112	102	61.4	456	583	641
38.0		5.88	3.95	1010	114	103	1110	125	113	68.4	537	686	714
	1 1/2	5.91	3.97	1010	114	103	1110	125	113	68.7	541	691	718

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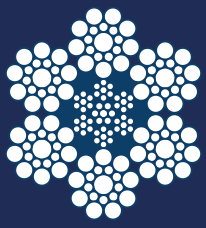
BRIDON

Blue Strand

6 x 19 Class



BLUE STRAND 6 X 19 CLASS

Benefits:

- High quality six strand crane rope
- Excellent resistance to wear
- Fully lubricated
- Steel Core

High Performance Crane Ropes

High quality performance wire ropes for the lifting industry.

Our world leading manufacturing capabilities are accompanied by a high level of quality assurance and in-house expertise in research and development and design engineering.

Applications

Telescopic mobile cranes

Overhead hoists/gantry cranes

Blue Strand 6 x 19 Class

Diameter		Nominal length mass		Minimum Breaking Force									Axial stiffness @20% load	Torque generated @20% load		Metallic cross section
				IP/1770			EIP/1960			EEIP/2160				Ordinary	Lang's	
mm	inch	kg/m	lb/ft	kN	Tons (short)	Tons (metric)	kN	Tons (short)	Tons (metric)	kN	Tons (short)	Tons (metric)	MN	Nm	Nm	mm²
6.00		0.144	0.097	22.7	2.55	2.34	25.1	2.82	2.56				1.67	2.05	2.72	16.2
	1/4	0.161	0.108	26.2	2.94	2.69	30.2	3.40	3.08				1.86	2.43	3.22	18.1
7.00		0.196	0.132	30.9	3.47	3.18	34.2	3.84	3.49				2.27	3.26	4.31	22.0
	5/16	0.252	0.169	40.7	4.58	4.20	46.9	5.27	4.78				2.91	4.76	6.28	28.3
8.00		0.256	0.172	40.3	4.53	4.15	44.7	5.02	4.56				2.96	4.88	6.43	28.7
9.00		0.324	0.218	51.0	5.73	5.25	56.5	6.35	5.76				3.75	6.96	9.16	36.4
	3/8	0.363	0.244	58.4	6.56	6.01	67.2	7.55	6.85				4.20	8.25	10.9	40.7
10.0		0.400	0.269	63.0	7.08	6.49	69.8	7.85	7.12				4.63	9.56	12.6	44.9
11.0		0.494	0.332	79.1	8.89	8.15	90.7	10.20	9.25				5.71	13.1	17.2	55.4
	7/16	0.494	0.332	79.1	8.89	8.14	90.7	10.2	9.25	100	11.2	10.2	5.71	13.1	17.2	55.4
12.0		0.576	0.387	90.7	10.2	9.34	100	11.2	10.2	111	12.5	11.3	6.66	16.6	21.7	64.7
	1/2	0.645	0.434	102	11.5	10.5	118	13.3	12.1	130	14.6	13.2	7.46	19.7	25.7	72.4
13.0		0.676	0.454	106	11.9	10.9	118	13.3	12.0	130	14.6	13.3	7.82	21.1	27.6	75.9
14.0		0.784	0.527	124	13.9	12.8	137	15.4	14.0	151	17.0	15.4	9.07	26.4	34.5	88.0
	9/16	0.817	0.549	129	14.5	13.3	149	16.8	15.2	165	18.5	16.8	9.44	28.0	36.6	91.7
	5/8	1.02	0.688	161	18.1	16.4	183	20.6	18.7	202	22.7	20.6	11.8	39.5	51.4	115
16.0		1.02	0.688	161	18.1	16.4	183	20.6	18.7	202	22.7	20.6	11.8	39.5	51.4	115
18.0		1.30	0.871	204	22.9	20.8	226	25.4	23.0	249	28.0	25.4	15.0	56.3	73.2	145
19.0		1.45	0.975	228	25.6	23.2	262	29.4	26.7	288	32.4	29.4	16.8	66.8	86.8	163
	3/4	1.45	0.975	228	25.6	23.2	262	29.4	26.7	288	32.4	29.4	16.8	66.8	86.8	163
20.0		1.60	1.08	252	28.3	25.7	279	31.4	28.4	308	34.6	31.4	18.5	77.4	100	180
22.0		1.98	1.33	308	34.6	31.4	354	39.8	36.1	390	43.8	39.8	22.8	106	138	222
	7/8	1.98	1.33	308	34.6	31.4	354	39.8	36.1	390	43.8	39.7	22.8	106	138	222
24.0		2.30	1.55	363	40.8	37.0	402	45.2	41.0	443	49.8	45.2	26.6	134	173	259
	1	2.58	1.73	399	44.9	40.7	460	51.7	46.9	506	56.9	51.6	29.8	159	206	290
26.0		2.70	1.82	426	47.9	43.4	472	53.1	48.1	520	58.5	53.0	31.3	171	221	304
28.0		3.14	2.11	494	55.5	50.4	547	61.5	55.8	603	67.8	61.5	36.3	213	275	352
	1 1/8	3.27	2.19	503	56.5	51.3	578	65.0	59.0	636	71.5	64.9	37.8	227	293	367
	1 1/4	4.10	2.75	645	72.5	65.8	715	80.4	72.9	787	88.5	80.3	47.4	319	411	460
32.0		4.10	2.75	645	72.5	65.8	715	80.4	72.9	787	88.5	80.3	47.4	319	411	460
	1 3/8	4.88	3.28	743	83.5	75.7	854	96.0	87.1	943	106	96.2	56.4	416	534	548
36.0		5.18	3.48	817	91.8	83.3	904	102	92.2	997	112	102	59.9	456	585	582
38.0		5.81	3.90	910	102	92.8	1010	114	103	1110	125	113	67.1	541	694	652
	1 1/2	5.81	3.90	910	102	92.8	1010	114	103	1110	125	113	67.1	541	694	652
40.0		6.40	4.30	1010	114	103	1120	126	114	1230	138	125	74.0	626	803	718
	1 5/8	6.81	4.58	1020	115	104	1170	132	119	1300	146	133	78.8	688	882	765
44.0		7.90	5.31	1220	137	124	1360	153	139	1500	169	153	91.4	861	1100	887
	1 3/4	7.90	5.31	1220	137	124	1360	153	139	1500	169	153	91.4	861	1100	887
	1 7/8	9.22	6.19	1450	163	148	1610	181	164	1770	199	180	107	1080	1390	1030
48.0		9.22	6.19	1450	163	148	1610	181	164	1770	199	180	107	1080	1390	1030
	2	10.3	6.94	1530	172	156	1760	198	179	1930	217	197	119	1290	1640	1160
52.0		10.8	7.27	1700	191	173	1890	212	193	2080	234	212	125	1380	1760	1210
	2 1/8	11.7	7.83	1710	192	174	1970	221	201	2160	243	220	135	1550	1970	1310
56.0		12.5	8.43	1980	223	202	2190	246	223	2410	271	246	145	1730	2200	1410
	2 1/4	13.1	8.78	1910	215	195	2200	247	224	2420	272	247	151	1840	2340	1470
60.0		14.6	9.81	2270	255	231	2510	282	256	2770	311	282	168	2160	2750	1630
	2 3/8	14.6	9.78	2270	255	231	2510	282	256	2770	311	282	168	2160	2750	1630

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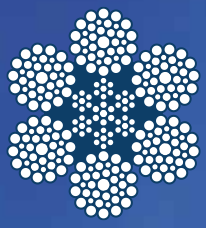


Blue Strand

6 x 36 Class

BLUE STRAND 6 X 36 CLASS

Benefits:

- High quality six strand flexible crane rope
- Consistent bending fatigue performance
- Fully lubricated
- Steel Core

High Performance Crane Ropes

High quality performance wire ropes for the lifting industry.

Our world leading manufacturing capabilities are accompanied by a high level of quality assurance and in-house expertise in research and development and design engineering.

Applications

Telescopic mobile cranes	Bulk unloader cranes
Mobile lattice boom cranes	Overhead hoists/gantry cranes
Ship cranes	Steel works ladle cranes
Ship to shore container cranes	Container handling cranes

Blue Strand 6 x 36 Class

Diameter		Nominal length mass		Minimum Breaking Force									Axial stiffness @20% load	Torque generated @20% load		Metallic cross section
				IP/1770			EIP/1960			EEIP/2160				Ordinary	Lang's	
mm	inch	kg/m	lb/ft	kN	Tons (short)	Tons (metric)	kN	Tons (short)	Tons (metric)	kN	Tons (short)	Tons (metric)	MN	Nm	Nm	mm²
6.00		0.144	0.097	22.7	2.55	2.31	25.1	2.82	2.56				1.67	2.05	2.72	16
	1/4	0.161	0.108	26.2	2.94	2.67	30.2	3.40	3.08				1.86	2.43	3.22	18
7.00		0.196	0.132	30.9	3.47	3.15	34.2	3.84	3.49				2.27	3.26	4.31	22.0
	5/16	0.252	0.169	40.7	4.58	4.15	46.9	5.27	4.78				2.91	4.76	6.28	28.3
8.00		0.256	0.172	40.3	4.53	4.11	44.7	5.02	4.56				2.96	4.88	6.43	28.7
9.00		0.324	0.218	51.0	5.73	5.20	56.5	6.35	5.76				3.75	6.96	9.16	36.4
	3/8	0.363	0.244	58.4	6.56	5.95	67.2	7.55	6.85				4.20	8.25	10.9	40.7
10.0		0.400	0.269	63.0	7.08	6.42	69.8	7.85	7.12				4.63	9.6	12.6	44.9
11.0		0.494	0.332	79.1	8.89	8.07	90.7	10.20	9.25				5.71	13.1	17.2	55.4
	7/16	0.494	0.332	79.1	8.89	8.06	90.7	10.2	9.25	100	11.2	10.2	5.71	13.1	17.2	55.4
12.0		0.576	0.387	90.7	10.2	9.25	100	11.2	10.2	111	12.5	11.3	6.66	16.6	21.7	64.7
	1/2	0.645	0.434	102	11.5	10.4	118	13.3	12.1	130	14.6	13.2	7.46	19.7	25.7	72.4
13.0		0.676	0.454	106	11.9	10.8	118	13.3	12.0	130	14.6	13.3	7.82	21.1	27.6	75.9
14.0		0.784	0.527	124	13.9	12.6	137	15.4	14.0	151	17.0	15.4	9.07	26.4	34.5	88.0
	9/16	0.817	0.549	129	14.5	13.2	149	16.8	15.2	165	18.5	16.8	9.44	28.0	36.6	91.7
	5/8	1.02	0.688	161	18.1	16.4	183	20.6	18.7	202	22.7	20.6	11.8	39.5	51.4	115
16.0		1.02	0.688	161	18.1	16.4	183	20.6	18.7	202	22.7	20.6	11.8	39.5	51.4	115
18.0		1.30	0.871	204	22.9	20.8	226	25.4	23.0	249	28.0	25.4	15.0	56.3	73.2	145
19.0		1.45	0.975	228	25.6	23.2	262	29.4	26.7	288	32.4	29.4	16.8	66.8	86.8	163
	3/4	1.45	0.975	228	25.6	23.2	262	29.4	26.7	288	32.4	29.4	16.8	66.8	86.8	163
20.0		1.60	1.08	252	28.3	25.7	279	31.4	28.4	308	34.6	31.4	18.5	77.4	100	180
22.0		1.98	1.33	308	34.6	31.4	354	39.8	36.1	390	43.8	39.8	22.8	106	138	222
	7/8	1.98	1.33	308	34.6	31.4	354	39.8	36.1	390	43.8	39.7	22.8	106	138	222
24.0		2.30	1.55	363	40.8	37.0	402	45.2	41.0	443	49.8	45.2	26.6	134	173	259
	1	2.58	1.73	399	44.9	40.7	460	51.7	46.9	506	56.9	51.6	29.8	159	206	290
26.0		2.70	1.82	426	47.9	43.4	472	53.1	48.1	520	58.5	53.0	31.3	171	221	304
28.0		3.14	2.11	494	55.5	50.4	547	61.5	55.8	603	67.8	61.5	36.3	213	275	352
	1 1/8	3.27	2.19	503	56.5	51.3	578	65.0	59.0	636	71.5	64.9	37.8	227	293	367
	1 1/4	4.10	2.75	645	72.5	65.8	715	80.4	72.9	787	88.5	80.3	47.4	319	411	460
32.0		4.10	2.75	645	72.5	65.8	715	80.4	72.9	787	88.5	80.3	47.4	319	411	460
	1 3/8	4.88	3.28	743	83.5	75.7	854	96.0	87.1	943	106	96.2	56.4	416	534	548
36.0		5.18	3.48	817	91.8	83.3	904	102	92.2	997	112	102	59.9	456	585	582
38.0		5.81	3.90	910	102	92.8	1010	114	103	1110	125	113	67.1	541	694	652
	1 1/2	5.81	3.90	910	102	92.8	1010	114	103	1110	125	113	67.1	541	694	652
40.0		6.40	4.30	1010	114	103	1120	126	114	1230	138	125	74.0	626	803	718
	1 5/8	6.81	4.58	1020	115	104	1170	132	119	1300	146	133	78.8	688	882	765
44.0		7.90	5.31	1220	137	124	1360	153	139	1500	169	153	91.4	861	1100	887
	1 3/4	7.90	5.31	1220	137	124	1360	153	139	1500	169	153	91.4	861	1100	887
	1 7/8	9.22	6.19	1450	163	148	1610	181	164	1770	199	180	107	1080	1390	1030
48.0		9.22	6.19	1450	163	148	1610	181	164	1770	199	180	107	1080	1390	1030
	2	10.3	6.94	1530	172	156	1760	198	179	1930	217	197	119	1290	1640	1160
52.0		10.8	7.27	1700	191	173	1890	212	193	2080	234	212	125	1380	1760	1210
	2 1/8	11.7	7.83	1710	192	174	1970	221	201	2160	243	220	135	1550	1970	1310
56.0		12.5	8.43	1980	223	202	2190	246	223	2410	271	246	145	1730	2200	1410
	2 1/4	13.1	8.78	1910	215	195	2200	247	224	2420	272	247	151	1840	2340	1470
60.0		14.6	9.81	2270	255	231	2510	282	256	2770	311	282	168	2160	2750	1630
	2 3/8	14.6	9.78	2270	255	231	2510	282	256	2770	311	282	168	2160	2750	1630

BRIDON Endurance

BRIDON

CONSTRUCTEX

Constructex

Benefits:

- Rotary hammer swaged effect for maximum resistance to damage
- Exceptional service life in the most demanding applications
- Robust construction
- High breaking force
- Excellent crush resistance

High Performance Crane Ropes

High quality performance wire ropes for the lifting industry.

Our world leading manufacturing capabilities are accompanied by a high level of quality assurance and in-house expertise in research and development and design engineering.

Applications

- Mobile lattice boom cranes
- Offshore pedestal cranes
- Dockside cranes
- Bulk unloader cranes
- Piling
- Tower Cranes

Constructex

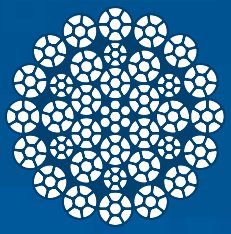
Diameter		Nominal length mass		Minimum Breaking Force			Axial stiffness @20% load	Torque generated @20% load	Metallic cross section
				CTX				Ordinary	
mm	inch	kg/m	lb/ft	kN	Tons (short)	Tons (metric)	MN	Nm	mm^2
	5/8	1.34	0.900	227	25.5	23.1	15	51	143
16.0		1.34	0.900	227	25.5	23.1	15	51	143
19.0		1.64	1.102	325	36.5	33.1	22	87	206
	3/4	1.64	1.102	325	36.5	33.1	22	87	206
22.0		2.23	1.498	432	48.6	44.1	30	134	279
	7/8	2.23	1.498	432	48.6	44.1	30	134	279
	1	2.98	2.002	556	62.5	56.7	39	198	365
	1 1/8	3.87	2.601	707	79.5	72.1	50	283	463
	1 1/4	4.76	3.199	868	97.6	88.5	61	387	572
32.0		4.76	3.199	868	97.6	88.5	61	387	572
	1 3/8	5.66	3.803	1060	119	108	74	517	689
38.0		6.85	4.603	1240	139	126	88	660	822
	1 1/2	6.85	4.603	1240	139	126	88	660	822
	1 5/8	7.89	5.302	1440	162	147	103	833	965
44.0		9.23	6.202	1650	185	168	120	1030	1120
	1 3/4	9.23	6.202	1650	185	168	120	1030	1120

This table is for guidance purposes only with no guarantee or warranty (express or implied) as to its accuracy. The products described may be subject to change without notice, and should not be relied on without further advice from Bridon. For general notes please refer to page 10 of the General Guidance brochure.

BRIDON Endurance

BRIDON

Endurance Dyform 34 XL



ENDURANCE DYFORM 34 XL

Benefits:

- Low rotation
- Recommended for high lifting operations
- High breaking force
- Reduced rope sheave wear
- Accurate diameter, recommended for multi-layer spooling
- Suitable for single part and multi-part reeving
- Long service life
- Crush resistant
- Reduced down time
- Resistance to bending fatigue
- Reduced elongation

High Performance Crane Ropes

High quality performance wire ropes for the lifting industry.

Our world leading manufacturing capabilities are accompanied by a high level of quality assurance and in-house expertise in research and development and design engineering.

Applications

Mobile lattice boom cranes
Offshore pedestal cranes
Dockside cranes
Bulk unloader cranes
Piling
Tower Cranes

Endurance Dyform 34XL

Diameter		Approx mass WSC		Minimum Breaking Force	
				Rope grade	
mm	inch	kg/ft	lb/ft	kN	Tons
16	5/8	0.84	0.37	30.60	272.00
19	5/8	1.21	0.53	42.90	382.00
	1	2.15	0.95	71.70	638.00
26		2.28	1.04	74.00	658.00
28		2.63	1.19	84.40	751.00
	1 1/8	2.73	1.20	86.90	773.00
29		2.94	1.30	86.90	829.00
32	1 1/4	3.37	1.49	110.2	980.00

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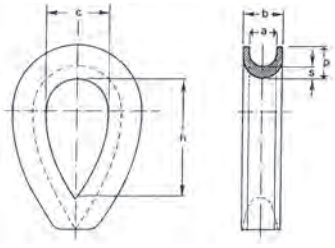
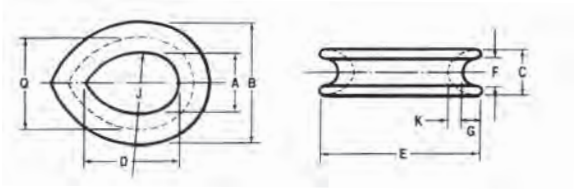
Terminations



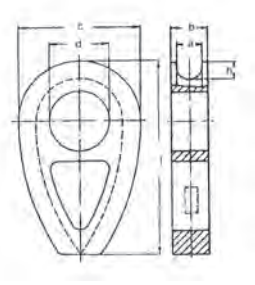
Ordinary Thimble - to DIN 3090

Nominal size (dia of rope)	a	b	c	s	p (min)		Approx. weight per 100 pieces
mm	mm	mm	mm	mm	mm	mm	Kg
4	5	9	10	2.1	5.1	20	1.2
6	7	12	15	2.6	7.1	30	2.8
8	9	13	20	4	11	40	5.7
10	11	16	25	5	14	50	15.2
12	13	19	30	6	16	60	24
14	16	22	35	7	17	70	38
16	18	25	40	8	19	80	52
18	20	27	45	9	21	90	66
20	22	30	50	10	23	100	88
22	24	33	55	10	24	110	104
24	26	37	60	11	27	120	129
26	29	46	65	12	30	130	260
28	31	50	70	12	33	140	277
32	35	55	80	14	38	160	440
36	40	60	90	16	42	180	460
40	44	65	100	18	46	200	700
44	48	70	110	20	53	220	1000



Ordinary Thimble - to BS464:1958

Nominal size (dia of rope)	a	b	c (min)	d	e	f (min)	g	j (min)	k (min)	q
mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
8	22.2	38.1	12.7	33.3	54.0	7.9	4.0	63.5	4.0	30.2
9	25.4	47.6	14.3	38.1	63.5	10.3	6.4	76.2	4.8	34.9
11	28.6	54.0	17.5	41.3	73.0	12.7	7.9	76.2	4.8	38.1
13	31.8	58.7	20.6	44.4	79.4	14.3	7.9	88.9	5.6	42.9
14	31.8	58.7	20.6	44.4	79.4	14.3	7.9	88.9	5.6	42.9
16	41.3	74.6	22.2	58.7	98.4	15.9	8.7	114	7.9	57.2
17	44.4	79.4	28.6	66.7	108	19.0	9.5	127	7.9	60.3
19	50.8	92.1	28.6	73.0	124	20.6	11.1	152	9.5	69.8
21	50.8	92.1	28.6	73.0	124	20.6	11.1	152	9.5	69.8
22	57.2	102	31.8	82.6	133	22.2	12.7	165	9.5	76.2
24	63.5	110	33.3	92.1	146	25.4	12.7	178	10.3	84.1
25	69.8	119	34.9	108	162	27.0	14.3	203	10.3	90.5
29	76.2	133	38.1	111	178	28.6	15.9	229	12.7	102
32	95.2	152	41.3	133	197	33.3	15.9	254	12.7	121
35	105	175	47.6	152	229	38.1	19.0	305	15.9	137
38	114	197	54.0	165	254	41.3	23.8	330	17.5	149

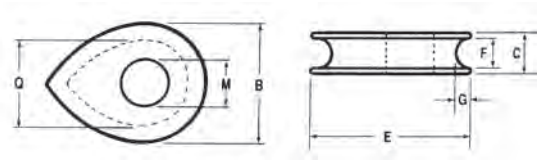


Solid Thimble - to DIN 3091

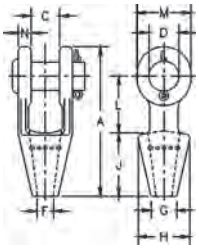
Nominal size (dia of rope)	a	b	d (min)	c	h	l	Approximate weight per 100 pieces
mm	mm	mm	mm	mm	mm	mm	kg
8	9	15	17	40	4.5	66	18.1
10	11	17.5	21	50	6	82	31.8
12	13	20	24	60	7.5	98	51.5
14	16	23.5	29	70	9	114	79.9
16	18	26	32	80	10.5	130	89.5
18	20	28.5	35	90	12	145	121
20	22	31	40	100	13.5	161	161
22	24	33.5	43	110	15	177	211
24	26	36	46	120	16.5	193	271
26	29	39.5	49	130	18	209	355
28	31	42	52	140	20	224	420
32	35	47	58	160	23	256	630
36	40	53	65	180	26	288	884
40	44	58	71	200	29	320	1100
44	48	63	76	220	32	352	1500

Recommended for multi-strand ropes.

Solid Thimble - to BS464:1958



Nominal size (dia of rope)	q	b	c	e	f (min)	g	m (max)
mm	mm	mm	mm	mm	mm	mm	mm
8	25.4	34.9	11.1	47.6	7.9	4.8	12.7
9	31.8	44.4	14.3	57.2	11.1	6.4	15.9
11	38.1	52.4	17.5	69.8	12.7	7.1	19.0
13	44.4	60.3	20.6	82.6	14.3	7.9	22.2
14	44.4	60.3	20.6	82.6	14.3	7.9	22.2
16	50.8	69.8	22.2	95.2	15.9	9.5	25.4
18	57.2	79.4	25.4	105	19.0	11.1	28.6
19	63.5	85.7	28.6	118	22.2	11.1	31.8
20	63.5	85.7	28.6	118	22.2	11.1	31.8
22	69.8	95.2	31.8	127	23.8	12.7	34.9
24	76.2	105	33.3	140	25.4	14.3	38.1
26	82.6	114	36.5	152	27.0	15.9	41.3
28	88.9	124	39.7	165	30.2	17.5	44.4
32	102	140	44.4	191	33.3	19.0	50.8
35	114	156	50.8	210	38.1	20.6	57.2
38	127	171	57.2	235	41.3	22.2	63.5

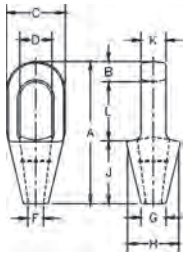


Open Spelter Socket - Fed Spec RR-S-55OE, Type A

Size Number*	Structural strand dia.	Weight each	a	c	d	f	g	h	j	l	m	n
mm	mm	kg	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
6-7	-	0.5	116	19.1	17.5	9.65	17.5	39.6	57	39.6	33.3	9.1
8-10	-	0.59	123	20.6	20.6	12.7	20.6	42.9	57	44.5	38.1	11.2
11-13	-	1.02	141	25.4	25.4	14.2	23.9	47.8	63.5	51	47.8	12.7
14-16	12-13	1.63	171	31.8	30.2	17.5	28.7	57	76	63.5	57	14.2
18	14-16	2.64	202	38.1	35.1	20.6	31.8	66.5	89	76	66.5	15.7
20-22	18-19	4.38	235	44.5	41.4	23.9	38.1	82.5	102	89	79.5	20.3
24-26	20-22	7.03	268	51	51	28.7	44.5	95.5	114	102	95.5	22.4
28-30	24-26	9.75	300	57	57	31.8	51	105	127	117	105	25.4
32-35	28	14.1	335	63.5	63.5	38.1	57	121	140	127	121	28.7
38	30-32	21.4	384	76	70	41.4	70	133	152	152	137	30.2
40-42*	33-35	24.9	413	76	76	44.5	76	140	165	165	146	33.3
44-48*	36-40	37.2	464	89	89	51	79.5	162	191	178	165	39.6
50-54*	42-45	59	546	102	95.5	57	95.5	187	216	229	178	46
56-60*	46-48	76	597	114	108	63.5	102	210	229	254	197	54
64-67*	50-54	114	648	127	121	73	114	235	248	274	216	60.5
70-73*	56-62	143	692	133	127	79	124	267	279	279	229	73
75-80*	64-67	172	737	146	133	86	133	282	305	287	241	76
82-86*	70-73	197	784	159	140	92	146	302	330	300	254	79
88-92*	76-80	255	845	171	152	98.5	165	314	356	318	274	82.5
94-102*	-	355	921	191	178	108	184	346	381	343	318	89

*Cast Alloy Steel

- Forged Steel Sockets through 38 mm, cast alloy steel 40 mm through 100 mm. Spelter socket terminations have an efficiency rating of 100%, based on the catalogue strength of wire rope. Ratings are based on recommended use with 6 x 7, 6 x 19, or 6 x 37, IPS or XIP (EIP), XXIP (EEIP), RRL, FC, or IWRC wire rope.
- Open Grooved Sockets meet the performance requirements of Federal Specification RR-S-550D, Type A, except for those provisions required of the contractor.
- **NOTICE:** All cast steel sockets 40 mm and larger are magnetic particle inspected and ultrasonic inspected. Proof testing available on special order.
- Drawing illustrates one groove used on sockets 6 mm through 19 mm. Sizes 22 mm through 38 mm use 2 grooves. Sizes 40 mm and larger use 3 grooves.

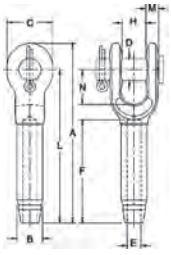


Closed Spelter Socket - Fed Spec RR-S-55OE, Type B

Rope dia.	Structural strand dia.	Weight each	a	b	c	d**	f	g	h	j	k	l
mm	mm	kg	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
6-7	-	0.23	116	12.7	39.6	22.4	9.65	17.5	39.6	57.2	12.7	46
8-10	-	0.34	125	15.8	42.9	24.6	12.7	20.6	42.9	57.2	17.5	52.3
11-13	-	0.68	140	17.5	51	29.5	14.2	23.9	51	63.5	22.4	58.7
14-16	12-13	1.13	162	20.6	67	35.8	17.5	30.2	67	76.2	25.4	65
18	14-16	1.92	194	26.9	76.2	42.2	22.4	33.3	70	89	31.8	77.7
20-22	18-19	3.28	226	33.3	92	49.3	25.4	38.1	82.5	102	38.1	90.5
24-26	20-22	4.76	254	36.6	105	58.5	28.7	44.5	95.5	114	44.5	103
28-30	24-26	6.46	283	39.6	114	65	31.8	51	105	127	51	116
32-35	28	8.95	309	41.4	127	71	38.1	58.5	119	138	56.5	129
38	30-32	13.24	355	49.3	137	81	41.4	70.5	132	151	62.5	155
40-42*	33-35	16.32	390	54	146	82.5	44.5	76.2	140	165	70	171
44-48*	36-40	25.96	445	55.5	171	95.5	51	79.5	162	191	76.2	198
50-54*	42-45	35.83	505	62	194	111	57.2	95.5	187	216	82.5	224
56-60*	46-48	47.62	546	70	216	127	66.8	105	210	229	92	248
64-67*	50-54	63.50	597	79.5	241	140	74.5	114	235	248	102	270
70-73*	56-62	99.79	645	79.5	273	159	79.5	124	259	279	124	286
75-80*	64-67	125	689	85.6	292	171	86	133	292	305	133	298
82-86*	70-73	142	743	102	311	184	92	146	311	330	146	311
88-92*	76-80	181	787	102	330	197	98.5	160	330	356	159	330
94-102*	-	246	845	108	362	216	108	184	362	381	178	356

*Cast Alloy Steel **Diameter of pin must not exceed pin used on companion 416 socket.

- Forged Steel Sockets through 38 mm, cast alloy steel 40 mm through 100 mm.
- Spelter socket terminations have an efficiency rating of 100%, based on the catalogue strength of wire rope. Ratings are based on the recommended use with 6 x 7, 6 x 19 or 6 x 37, IPS or XIP (EIP) , XXIP (EEIP), RRL, FC or IWRC wire rope.
- Closed grooved Sockets meet the performance requirements of Federal Specification RR-S-550D, Type B, except for those provisions required of the contractor.
- **NOTE:** All cast steel sockets 40 mm and larger are magnetic particle inspected and ultrasonic inspected. Proof testing available on special order.
- Drawing illustrates one groove used on sockets 6 mm through 19 mm. Sizes 22 mm through 38 mm use 2 grooves. Sizes 40 mm and larger use 3 grooves.

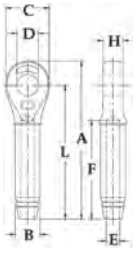


Crosby Open Swaged Socket S-501

Rope size*	Stock no.	Weight each	a	b	c	d	e	f	h	l	m	n	Max. after swage
mm	S-501	kg											mm
6	1039021	0.24	122	12.7	35.1	17.5	6.85	54	17.5	102	9.65	38.1	11.7
8	1039049	0.51	159	19.6	41.1	20.6	8.65	81	20.6	135	11.9	44.5	18
9-10	1039067	0.59	159	19.6	41.1	20.6	10.4	81	20.6	135	11.9	44.5	18
11-12	1039085	0.94	198	24.9	51	25.4	12.2	108	25.4	170	14.2	51	23.1
13	1039101	0.94	198	24.9	51	25.4	14	108	25.4	170	14.2	51	23.1
14	1039129	2.12	241	31.8	60.5	30.2	15.5	135	31.8	207	17.3	57	29.5
16	1039147	2.05	241	31.8	60.5	30.2	17	135	31.8	207	17.3	57	29.5
18-20	1039165	3.62	294	39.4	70	35.1	20.3	162	38.1	254	19.8	70	36.1
22	1039183	5.23	341	43.2	79.5	41.1	23.9	189	44.5	295	23.9	82.5	39.4
24-26	1039209	8.07	393	50.5	93.5	51	26.9	216	51	340	26.9	95.5	45.7
28	1039227	11.5	440	57	103	57	30.2	243	57	381	30.2	108	52
32	1039245	16.1	484	64.5	114	63.5	33.8	270	63.5	419	31	121	58.5
34-36	1039263	19.8	532	71	127	63.5	36.8	297	63.5	461	35.1	133	65
38-40	1039281	26.5	581	78	140	70	40.1	324	76	502	42.9	146	71.5
44	1039307	40.3	676	86	170	89	47.2	378	89	584	53.5	171	77.5
48-52	1042767	66	799	100	203	95.5	53.5	432	102	683	60	203	90.5

*Maximum Proof Load shall not exceed 50% of XXIP rope catalogue breaking strength.

- Forged from special bar quality carbon steel, suitable for cold forming.
- Swage Socket terminations have an efficiency rating of 100% based on the catalogue strength of wire rope.
- Hardness controlled by spheroidize annealing.
- Stamp for identification after swaging without concern for fractures (as per directions in National Swaging Brochure).
- Swage sockets incorporate a reduced machined area of the shank which is equivalent to the proper “After Swage” dimension. Before swaging, this provides for an obvious visual difference in the shank diameter. After swaging, a uniform shank diameter is created allowing for a QUIC-CHECK® and permanent visual inspection opportunity.
- Designed to quickly determine whether the socket has been through the swaging operation and assist in field inspections, it does not eliminate the need to perform standard production inspections which include gauging for the proper “After Swage” dimensions or proof loading.
- U.S. Patent 5,152,630 and foreign equivalents.
- **NOTE:** S-501 Swage Sockets are recommended for use with 6 x 19 or 6 x 37, IPS or XIP (EIP), XXIP (EEIP), RRL, FC or IWRC wire rope.
- Before using any National Swage fitting with any other type lay, construction or grade of wire rope, it is recommended that the termination be destructive tested and documented to prove the adequacy of the assembly to be manufactured.
- In accordance with ANSI B30.9, all slings terminated with swage sockets shall be proof loaded.*

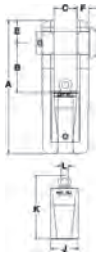


Crosby Closed Swaged Socket S-502

Rope size*	Stock no.	Weight each	Before swage dimensions								Max. after swage
			a	b	c	d	e	f	h	l	
mm	S-502	kg									mm
6	1039325	0.15	109	12.7	35.1	19.1	6.85	54	12.7	89	11.7
8	1039343	0.34	138	19.6	41.1	22.4	8.65	81	17	114	18
9-10	1039361	0.33	138	19.6	41.1	22.4	10.4	81	17	114	18
11-12	1039389	0.64	176	24.9	51	26.9	12.2	108	21.8	146	23.1
13	1039405	0.64	176	24.9	51	26.9	14	108	21.8	146	23.1
14	1039423	1.32	220	31.8	60.5	31.8	15.5	135	28.7	184	29.5
16	1039441	1.29	220	31.8	60.5	31.8	17	135	28.7	184	29.5
18-20	1039469	2.27	261	39.4	73	36.6	20.3	162	33.3	219	36.1
22	1039487	3.08	303	43.2	79	42.9	23.9	189	38.1	257	39.4
24-26	1039502	4.72	344	50.5	92	52.5	26.9	216	44.5	292	45.7
28	1039520	6.72	382	57	102	58.5	30.2	243	51	324	52
32	1039548	9.78	430	64.5	114	65	33.8	270	57	365	58.5
34-36	1039566	12.9	473	71	127	65	36.8	297	57	400	65
38-40	1039584	17.3	511	78	140	71.5	40.1	324	63.5	432	71.5
44	1039600	23.1	598	86	159	90.5	47.2	378	76	508	77.5
48-52	1042589	40.5	702	100	184	96.5	53.5	432	82.5	584	90.5

*Maximum Proof Load shall not exceed 50% of XXIP rope catalogue breaking strength.

- Forged from special bar quality carbon steel, suitable for cold forming.
- Swage Socket terminations have an efficiency rating of 100% based on the catalogue strength of wire rope.
- Hardness controlled by spheroidize annealing.
- Stamp for identification after swaging without concern for fractures (as per directions in National Swaging Brochure).
- Swage sockets incorporate a reduced machined area of the shank which is equivalent to the proper “After Swage” dimension. Before swaging, this provides for an obvious visual difference in the shank diameter. After swaging, a uniform shank diameter is created allowing for a QUIC-CHECK® and permanent visual inspection opportunity.
- Designed to quickly determine whether the socket has been through the swaging operation and assist in field inspections, it does not eliminate the need to perform standard production inspections which include gauging for the proper “After Swage” dimensions or proof loading.
- U.S. Patent 5,152,630 and foreign equivalents.
- **NOTE:** S-502 Swage Sockets are recommended for use with 6 x 19 or 6 x 37, IPS or XIP (EIP), XXIP (EEIP), RRL, FC or IWRC wire rope.
- Before using any National Swage fitting with any other type lay, construction or grade of wire rope, it is recommended that the termination be destructive tested and documented to prove the adequacy of the assembly to be manufactured.
- In accordance with ANSI B30.9, all slings terminated with swage sockets shall be proof loaded.*

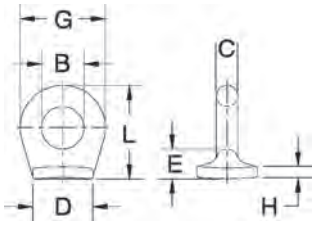


Crosby Button Spelter Sockets SB-427

Nominal size		SB-427 stock no.	Weight each	Socket only stock no.	Button only stock no.	a	b	c	d	e	f	j	k	l
in	mm		kg			mm	mm	mm	mm	mm	mm	mm	mm	mm
1/2 - 5/8	13-16	1052005	2.76	1052107	1052309	183	67.6	32.5	30.2	31	15.7	38.1	88.9	6.35
5/8 - 3/4	16-19	1052014	4.67	1052116	1052318	217	79.2	38.8	35.1	36.6	19.1	44.5	109	9.65
3/4 - 7/8	19-23	1052023	7.75	1052125	1052327	254	92	45.2	41.1	42.9	22.4	52.3	121	9.65
7/8 - 1	22-26	1052032	13.24	1052134	1052336	298	111	51.6	51	51	26.2	61.9	143	15.7
1-1/8 - 1-1/4	28-32	1052041	20.86	1052143	1052345	351	127	64.3	57.2	63.5	28.2	74.7	180	19.1
1-3/8 - 1-1/2	35-38	1052050	35.38	1052152	1052354	424	152	77	69.9	79.2	32.3	91.9	205	19.1

- Available in six sizes from 13mm to 38mm.
- Button Spelter terminations have a 100% efficiency rating, based on the catalogue strength of the wire rope.
- Designed for use with mobile cranes. Can be used to terminate high performance, rotation resistant ropes, and standard 6 strand ropes.
- Easy to install assembly utilises Crosby® **WIRELOCK®** socketing compound. Refer to the Crosby Group Inc. general catalogue, April 2006 for **WIRELOCK®** requirements.
- Sockets and buttons are re-usable.
- Replacement buttons and sockets are available.

See **WIRELOCK®** warning and application instructions in the Crosby Group Inc. general catalogue



Becket Eye - Bridon Type 1 (Welded Eye)

Rope Dia.	Pad Eye	Approx. Ultimate Strength
mm	Crosby S264	tf
18 - 24	0	1.4
25 - 30	1	2
32 - 38	1.5	3
40 - 52	2	6
54 - 64	4	8
66 - 84	5	12.8

Size number*	S-264 stock number	weight per 100	b	c	d	e	g	h	l
		kg	mm	mm	mm	mm	mm	mm	mm
*0	1090722	1.27	6.35	4.85	16	7.85	16	2.3	19.1
*1	1090740	2.95	9.65	6.35	22.4	10.4	22.4	3.3	26.2
*1.5	1090768	4.72	16	6.35	25.4	11.2	28.7	4.05	33.3
2	1090786	9.57	19.1	9.65	26.9	12.7	38.1	4.85	41.4
4	1090802	23.7	25.4	14.2	36.6	19.8	54	5.6	59.5
5	1090820	37.4	31.8	17.5	44.5	20.6	67	6.35	70

*Meets the requirements of Military Specification MS-51930A

Rope Dia.	Eyebolt	Approx. Ultimate Strength
mm	BS 4278:1984 (table 1)	tf
86 - 115	M30	16
117 - 125	M36	25
>127	M42	32

Bridon recommend a factor or safety of at least 4:1 is applied to these values

- This method of manufacture entails complete welding of the rope end and the final welding of an appropriate sized Pad Eye or Eyebolt.
- Because of the variables associated with the manufacture of this termination, a Working Load Limit is not provided for Type No.1 Becket.

Crosby Wedge Socket S-421T Terminator™ - to EN13411-6:2003

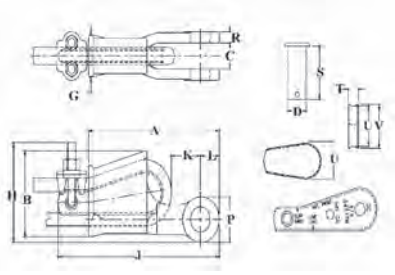
Wire rope dia.	S-421T stock number*	Weight each	S-421T stock number wedge only	Wedge only weight each	Optional G-4082 bolt, nut & cotter stock number	Optional G-4082 bolt, nut & cotter weight each
mm		kg		kg		kg
9-10	1035000	1.44	1035555	0.23	1092227	0.17
11-13	1035009	2.79	1035564	0.48	1092236	0.31
14-16	1035018	4.4	1035573	0.81	1092254	0.52
18-19	1035027	6.58	1035582	1.18	1092281	0.86
20-22	1035036	9.75	1035591	1.82	1092307	1.46
24-26	1035045	13.9	1035600	2.44	1092325	2.44
28	1035054	20.5	1035609	3.56	1092343	3.4
30-32	1035063	29.4	1035618	4.8	1092372	4.7

Wire rope dia.	S-421T stock number*	a	b	c	d	g	h	j**	k**	l	p	r	s	t	u	v
mm																
9-10	1035000	145	69.1	20.6	20.6	35.1	77.7	198	47.8	22.4	39.6	11.2	54.1	11.2	31.8	35.1
11-13	1035009	175	88.1	25.4	25.4	41.1	95.5	226	32	26.9	49.3	12.7	65	13.5	44.5	47.8
14-16	1035018	210	109	31.8	30.2	53.8	114	273	50.5	31	57.2	14.2	82.6	17.5	51	55.5
18-19	1035027	251	130	38.1	35.1	62	134	314	61.2	35.6	66.8	16.8	92.2	19.8	59.5	65
20-22	1035036	286	149	44.5	41.4	68.5	156	365	63	42.4	79.5	19.1	109	22.4	68.5	74.5
24-26	1035045	325	161	51	51	74.7	177	414	77.2	51	95.5	22.4	119	26.2	73	83.5
28	1035054	365	176	57	57	84	194	466	65	57	108	25.4	138	27.9	82.6	90.5
30-32	1035063	415	222	66.5	63.5	90.5	239	520	74.7	59.5	114	26.9	156	30.2	117	125

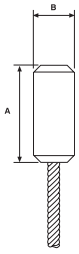
*S-421T TERMINATOR™ Assembly includes Socket, Wedge, Pin and Wire Rope Clip. **Nominal

NOTE: For intermediate wire rope sizes, use next larger size socket.

See **WIRELOCK®** warning and application instructions in the Crosby Group Inc. general catalogue



- Basket is cast steel.
- Wedge socket terminations have an efficiency rating of 80% based on the catalogue strength of XXIP wire rope.
- Crosby products meet or exceed all requirements of ASME B30.26 including identification, ductility, design factor, proof load and temperature requirements. Importantly, Crosby products meet other critical performance requirements including fatigue life, impact properties and material traceability, not addressed by ASME B30.26.
- Individually magnetic particle inspected.
- Pin diameter and jaw opening allows wedge and socket to be used in conjuction with open swage and spelter sockets.
- Secures the tail or “dead end” of the wire rope to the wedge, thus eliminates loss or “Punch out” of the wedge.
- Eliminates the need for an extra piece of rope, and is easily installed.
- The TERMINATOR™ wedge eliminates the potential breaking off of the tail due to fatigue.
- The tail, which is secured by the base of the clip and the wedge, is left undeformed and available for reuse.
- Incorporates Crosby’s patented QUIC-CHECK® “Go” and “No-Go” feature cast into the wedge. The proper size rope is determined when the following criteria are met:
  1) The wire rope should pass through the “Go” hole in the wedge.
  2) The wire rope should NOT pass through the “No-Go” hole in the wedge.
- Utilises standard Crosby Red-U-Bolt® wire rope clip.
- Standard S-421 wedge socket can be retrofitted with the new style TERMINATOR™ wedge.
- Available with Bolt, Nut, and Cotter Pin.
- U.S. patent 5,553,360 and foreign equivalents.



Bridon Crane Rope End Stop

Nominal size	Nominal size	Nominal size
	a	b
13	92	33.0
16 - 18	108	39.4
19 - 22	124	45.8
23 - 26	144	52.0

- For use when pocket type housing has been selected for the crane as opposed to the traditional wire rope wedge socket.
- Fully load bearing.
- Factory fitted, therefore ensuring the integrity of the rope.
- Designed for easy assembly and re-reeving operations.

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