



*Partnership  
is the key to  
success*

*Heavy lift*

Unitex

# High strength, low weight, heavy lift

Unitex manufacturing sites are specialised in the manufacture of high quality round slings especially for heavy lifts. Unitex has a wide range of high quality round slings to meet almost every expectation and requirements of the market.

Unitex heavy lift round slings are produced out of Polyester, the ULTRALIFT slings are being produced out of a High Performance Polyethylene yarn.

Besides the heavy lift round slings Unitex has a wide range of protection materials. One of these protection materials is ULTRAPROTECT a highly cut- and abrasion – resistant protection sleeve made with Dyneema® fiber, developed in close cooperation with DSM Dyneema.



# Dyneema®, the world's strongest fiber™

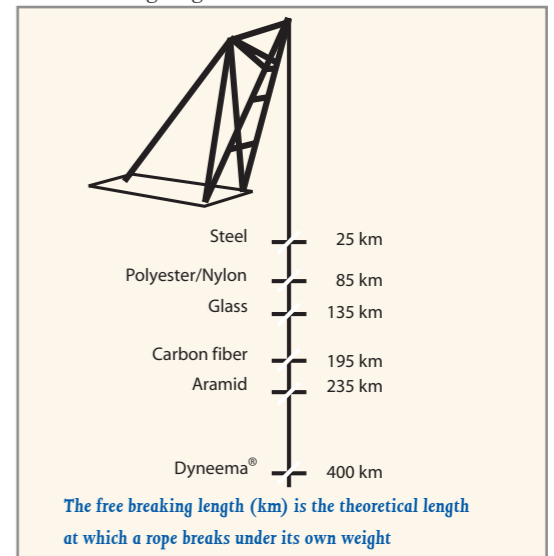
DSM Dyneema is the inventor and manufacturer of Dyneema®, the world's strongest fibre™. Dyneema® is a superstrong polyethylene fibre that offers maximum strength combined with minimum weight. It is up to 15 times stronger than quality steel and up to 40% stronger than aramid fibres, both on weight for weight basis. Dyneema® floats on water and is extremely durable and resistant to moisture, UV light and chemicals. The applications are therefore more or less unlimited. Dyneema® is an important component in ropes, cables and nets in the fishing, shipping and offshore industries. Dyneema® is also used in safety gloves for the metalworking industry and in fine yarns for applications in sporting goods and the medical sector. In addition, Dyneema® is also used in bullet resistant armour and clothing for police and military personnel.

Besides the fact that it is a very strong fibre it is much lighter than the materials which are commonly used such as Steel wire ropes and Polyester.



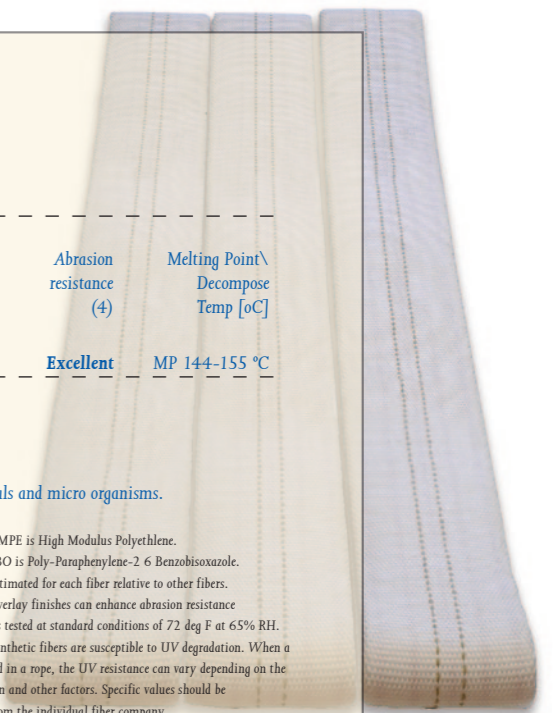
The weight factor of a sling made with Dyneema® fibre is approximately 2.5 in comparison to polyester and factor 8-10 in comparison to steel. Another feature of Dyneema® fibre is its abrasion and cut resistance, which are outrageous compared with the physics of Polyester.

Free breaking length



Source Cordage institute

Descriptive Properties						
Generic Description	Trade Name	Yarn Sizes dpf/denier	Yarn Finishes	Standard color		
HMPE/HPPE (1)	Dyneema®	1-3 dpf 100-1760 den.	Standard Spin finish	white		
Physical Properties						
Specific Gravity [g/cm3]	Breaking Tenacity gpd	Modulus gpd	Elongation at break %	Creep resistance (3)	Abrasion resistance (4)	Melting Point\ Decompose Temp [oC]
0,97	32-44	1020-1377	3,5-3,8	fair	Excellent	MP 144-155 °C
Environmental Properties						
Moisture Regain % (5)	Sunlight (UV) resistance (6)	Effects of Chemical Exposure				
0,0	See note 6	Excellent resistance to water, moisture, most chemicals and micro organisms. Good resistance to acids and alkalis.				
<p><b>Definitions:</b> Notes Trademarks:  <b>Specific Gravity:</b> Ratio of yarn density to that of water.  <b>Breaking Tenacity:</b> in grams/denier, tested per ASTM D885-98.  <b>Elongation at Break:</b> Yarn elongation expressed as percent of length change, tested per ASTM D885-98.  <b>Modulus:</b> Reflects stretch resistance or stiffness versus load, tested per ASTM D885-98.  <b>Yarn Sizes:</b> dpf is denier per filament; den. is denier. under both dry and wet conditions.</p>						
<p><b>Note 1:</b> HMPE is High Modulus Polyethylene.  <b>Note 2:</b> PBO is Poly-Paraphenylene-2,6-Benzobisoxazole.  <b>Note 3:</b> Estimated for each fiber relative to other fibers.  <b>Note 4:</b> Overlay finishes can enhance abrasion resistance  <b>Note 5:</b> As tested at standard conditions of 72 deg F at 65% RH.  <b>Note 6:</b> Synthetic fibers are susceptible to UV degradation. When a fiber is used in a rope, the UV resistance can vary depending on the construction and other factors. Specific values should be obtained from the individual fiber company</p>						





# ULTRALIFT Coil Sling

A new and patented development made with Dyneema® fibre is the ULTRALIFT coil sling especially designed to handle heavy steel coils with sharp edges. To lift the steel coils Unitex has designed a special round sling with an extremely high cut resistance. Therefore it is not necessary to use extra protection. Through out the development phase a lot of tests have been carried out as well in practice as in a laboratory. Under supervision of the certifying body AIB Vincotte, Unitex has gone through all the necessary tests as breaking tests, fatigue tests and practical tests.

The slings have withstood all the test. Unitex have even implemented a cyclic test where a Round sling with a WLL of 20 tonnes had to withstand a force between 20 tonnes and 40 tonnes 75,000 times. The sling still had the required safety factor after testing was complete and the sling was tested to destruction for strength.

As a result Unitex has a Lloyds type approval and therefore is authorised to use the Lloyds logo on the Coil sling.

As an extra every individual patented Coil sling which all have a safety factor of 7:1 will provided with a personalised User Manual, CE- declaration and certificate.



• Slings in use during lifting coils.



• Less damaging of the load



• Easy handling - higher efficiency



• Less injuries



• Equals lower utilization costs

The ULTRALIFT Coil Sling is very light in comparison with the commonly used lifting slings or equipment. The sling is very manageable ( own weight of 20 ton 4 meter effective is 12 kgs compared to a braided wire rope sling which weighs 100 kgs) Due to the fact it is a soft product you have less damage on the load and less work related injuries. As a result you have a big reduction on the utilization costs.

# ULTRALIFT round slings with Dyneema®

Parallel with the development of the ULTRALIFT coil sling Unitex has developed the ULTRALIFT round sling with Dyneema® for heavy lift which are available in 100% Dyneema®. As well the core as the sleeve are produced out of Dyneema® which is a HPPE (high performance Polyethylene ) fibre. Also available is a round sling with a core of Dyneema® and a highly abrasion resistant Cordura® cover.

These ULTRALIFT slings are a factor 8-10 lighter than a comparable steel wire based slings.

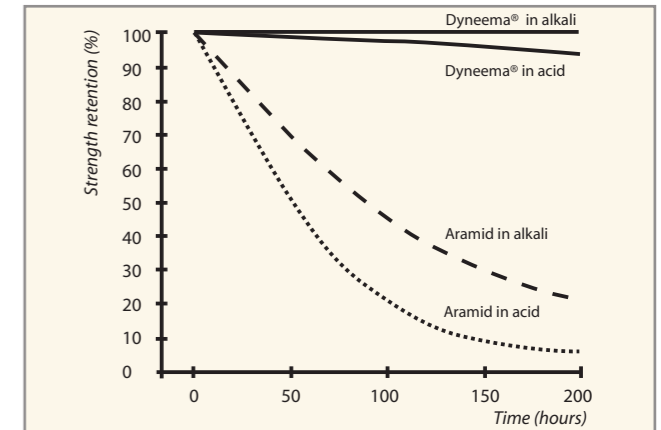
Our ULTRALIFT slings fiber show similar elongation as steel wire based slings. Elongation at rated load is only 0.5%.

ULTRALIFT slings with core and cover of Dyneema® are very resistant against chemicals such as alkalis and acids, due to the nature of the fibre.

ULTRALIFT round slings are suitable for use in extremely low temperatures. They can be used from -50C to 60C. The roundslings are hardly affected by UV light.

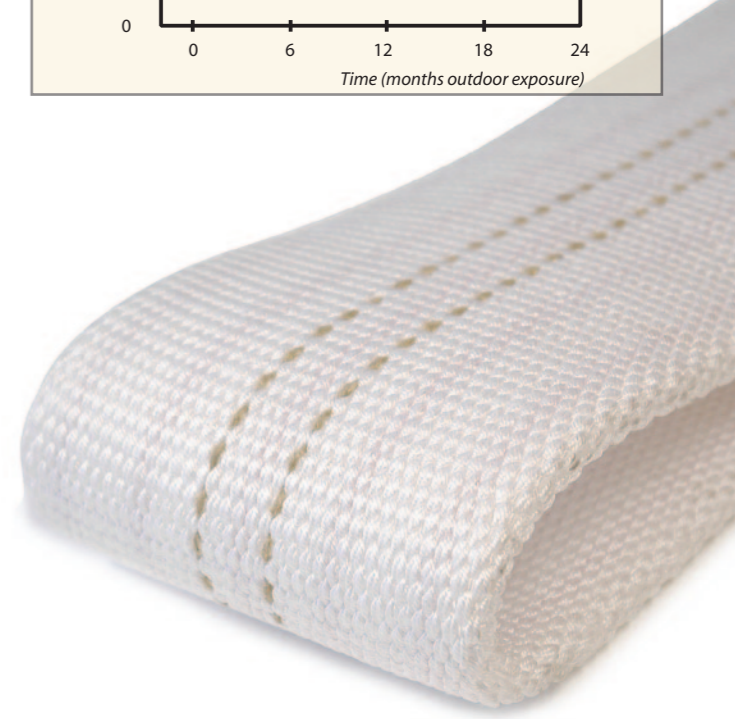
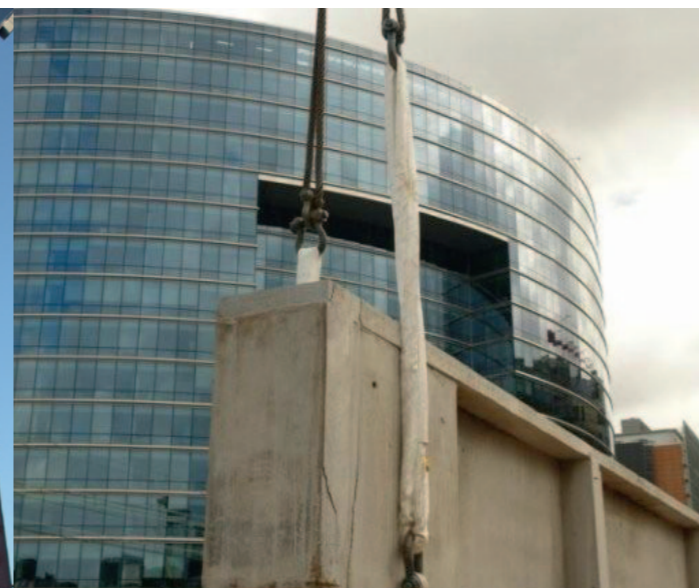
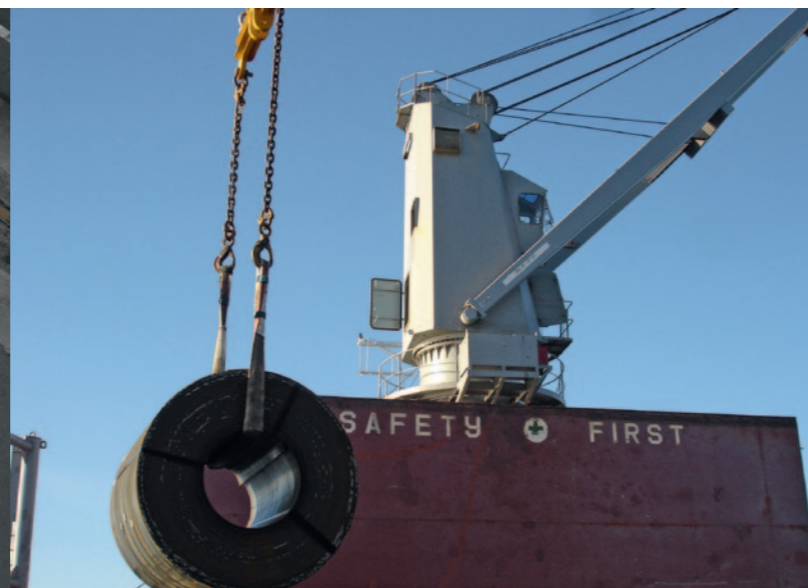
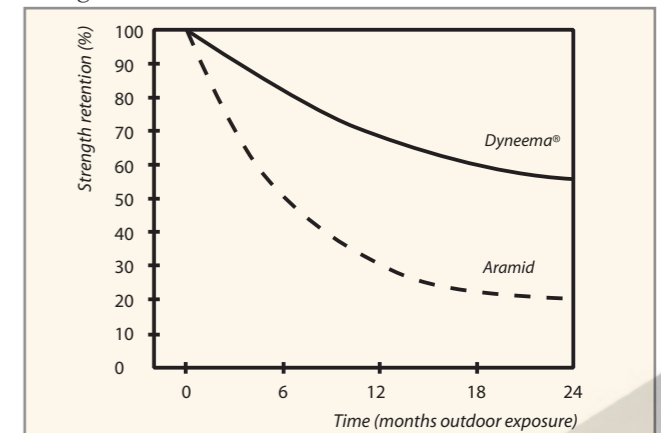


Resistance to acids and alkalis



Dyneema® is less effected by light. Round slings are hardly effected due to the protective sleeve

Light resistance

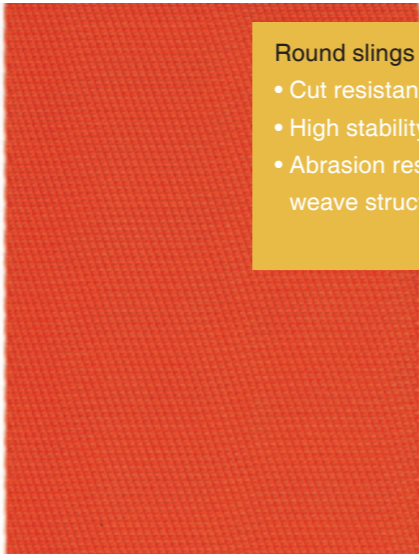


# Polyester Heavy lift Round slings

A common material used for round slings is polyester. Unitex has a product range from 1 tonne up to 150 tonnes working load limit. The maximum working length varies from 23 metres effective working length up to 50 metres effective working length depending on the tonnage.

Unitex uses a specially developed round sling sleeve for which they used their experience on seatbelt webbing for the automotive and aviation industry. This has resulted in a highly abrasive herring bone weave round sling sleeve called Techlon.

Polyester round slings can be used in a temperature range of -40°C up to 100°C These temperature ranges may alter in a chemical environments. Polyester is generally resistant against mineral acids but is destroyed by alkalis.



- Round slings**
- Cut resistance: due to high twisted Yarn
  - High stability: due to special warp
  - Abrasion resistance: due to the rip and weave structure

Cordage institute Industrial Fibers Chart

Fiber	PET/PES (polyester)
Generic Description	Polyethylene terephthalate
Specific Gravity	1.38
Melting Temperature C	254-260
Breaking Tenacity (gpd)	7.0 – 10.0
Elongation at Break %	12-18
Abrasion Resistance*	Very Good
Creep Resistance*	Good
Moisture Regain* %	< 0,5
Microbial Resistance*	Excellent
Sunlight Resistance*	very good

**Chemical Exposure Effects**

Resistant to mineral acids, decomposed by strong sulfuric acids. Decomposed by strong alkalis at high temperature. Resistant to organic solvents, soluble in phenols. (Acid solutions or harmless alkali can become so concentrated through evaporation that they cause damage)



# Protection

The number one cause of damage on a slings is cutting and excessive abrasion.

Using wear pads or protection sleeve can help to reduce this problem. It acts like a buffer between the sling and the load.

Unitex has developed ULTRAPROTECT, a special wear sleeve made with Dyneema® fibre which is very abrasion resistant in comparison to PES. The abrasion resistance is 34 times higher.

**Unitex has developed two qualities**

- 1) UPLD very flexible and extremely resistant against abrasion
  - 2) UPHD extremely resistant against abrasion and very cut resistant
- Unitex introduced the ULTRAPROTECT corner- and sling protection.

**Features:**

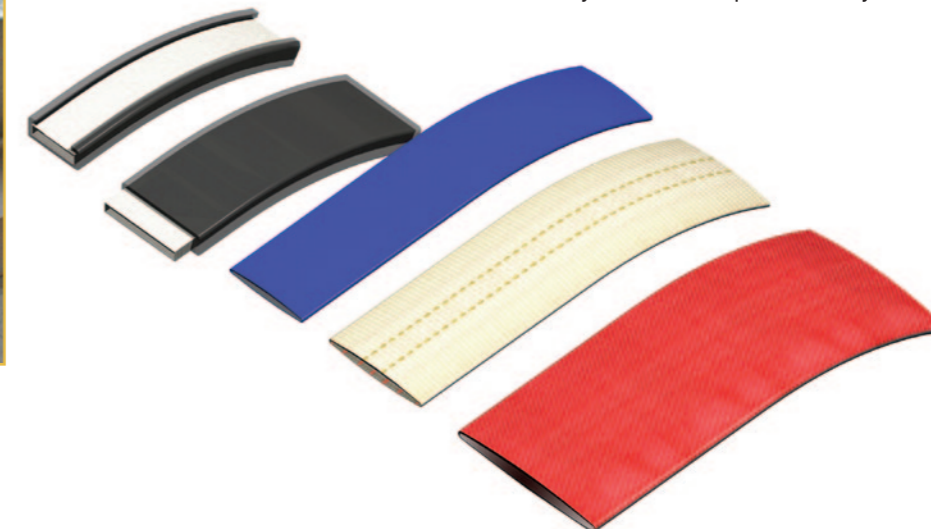
- As an extra the protection sleeve has red warning fibres inside
- Is a woven fabric and therefore very flexible.
- Is resistant against almost every acids and alkalis
- Light weight
- White in colour – the colour will not transfer to the load
- Slides easily along the sling

**Besides the newly developed protection sleeve with Dyneema® Unitex offers a wide range of other protection materials such as:**

- Polyurethane sleeve and coatings
- PES- sleeve and wear pads with or without Velcro®
- PVC protection sleeve in various qualities



\* Registered trademark of Velcro Corp



- Protection with Dyneema®**
- If a high abrasion resistance is necessary
  - If a high cut-resistance is a must
  - If flexibility-manageability is required
  - If a high chemical resistance is required (is resistant against alkaline and acids)



Polyester Material Sample A	Polyester Material Sample B	Dyneema Material Sample C	Dyneema Material Sample C
1524 cycles	3450 cycles	4974 cycles	15,000 cycles

Abrasion of Dyneema® compared to Polyester.



## The Unitex group

Unitex manufactures and produces webbing right through from the basic yarn to the finished product thus interchanging our technical ability and development expertise.

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More info



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