



DuraTEN / DuraTEN+ HyperTEN / HyperTEN+

High performance UHMWPE / Dyneema® fiber ropes
for industrial applications

DuraTEN / DuraTEN+ and HyperTEN / HyperTEN+

With DuraTEN / DuraTEN+ and HyperTEN / HyperTEN+, TEUFELBERGER offers customers superlative ropes that, depending on their respective configuration, provide very high breaking forces, abrasion resistance, and flexural fatigue strength, as well as an extremely long lifetime. DuraTEN and HyperTEN are made of UHMWPE (ultra-high-molecular-weight polyethylene), while DuraTEN+ and HyperTEN+ are made of original Dyneema® SK78 or, on request, of Dyneema® XBO.

What are the advantages that all TEUFELBERGER high strength fiber ropes have in common:

- ✓ 1/7th of the weight of comparable steel wire ropes
- ✓ No corrosion or soiling caused by rope grease
- ✓ No risk of injury, easy and quick handling
- ✓ Flexible design
- ✓ Highly abrasion resistant, especially when provided with a cover
- ✓ The kinetic energy unleashed when damage to the rope occurs is significantly lower than with steel wire ropes
- ✓ For the lifting of loads, certification to Machinery Directive 2006/42/EC as amended from time to time is possible



⚠ WARNING

Using these products may involve hazards. Therefore, never use our products for any purposes other than those they are designed for. Customers must ensure that all users are familiar with their correct use and the necessary safety precautions. Please keep in mind that any of the products may cause damage or harm when misused or overloaded. STS - Stronger Than Steel®, TEUFELBERGER®, and 拖飞宝® are internationally registered trademarks of the TEUFELBERGER Group. Dyneema® is a registered trademark of DSM.

Characteristics of DuraTEN / DuraTEN+ and HyperTEN / HyperTEN+

| | |
|--|---|
| Material | DuraTEN / HyperTEN: UHMWPE (Ultra-high-molecular-weight polyethylene) DuraTEN+ / HyperTEN+: Dyneema® SK78, (optionally XBO) |
| Design | 12-strand braid, optionally with a cover of PES or UHMWPE |
| Rope color | DuraTEN / DuraTEN+: dark gray HyperTEN / HyperTEN+: silver-gray |
| Specific gravity (g/cm³) | 0.97 (buoyant) |
| Melting point (°C) | 140 |
| Elongation at break (%) | 3.5 |
| Weight tolerance | +/- 5 % |
| Diameter tolerance | +/- 5 % |
| Water absorption (%) | 0 |
| UV resistance | without or with UHMWPE cover: good, with PES cover: very good |
| Abrasion resistance without cover | dry: very good / wet: very good |
| Abrasion resistance with PES cover | dry: good / wet: very good |
| Abrasion resistance with UHMWPE cover | dry: very good / wet: very good |
| Temperature resistance | 70 °C max. permanently |
| Resistance to chemicals | very good |
| Characteristics dry/wet | breaking force (dry) = breaking force (wet) |
| Creep | DuraTEN / HyperTEN: in case of high, persisting loads DuraTEN+ / HyperTEN+: with reduced tendency to creep as compared to UHMWPE |
| Flexural fatigue strength | DuraTEN / HyperTEN: good DuraTEN+ / HyperTEN+: very good (excellent when made of XBO) |

Fields of use of DuraTEN / DuraTEN+ and HyperTEN / HyperTEN+

| | Use | DuraTEN | DuraTEN+ | HyperTEN | HyperTEN+ |
|---------|---|----------------|-----------------|-----------------|------------------|
| Dynamic | Vehicle winches for off-road, maintenance, recovery and military vehicles | x | | x | |
| | Overhead line construction | x | | x | |
| | Motor winches | x | | x | |
| | Mounting ropes | x | | x | |
| | Pulling lines for ropeways | | | x | |
| | Indoor cranes | | x | | x |
| | Lifting tackles / Slings | | x | | x |
| | High-tech winches | | x | | x |
| | High performance ropes for camera systems | | | | x |
| | Storage and retrieval machines | | | | x |
| Static | Bracings that allow low elongation | x | x | | |
| | Bracings that allow minimal elongation | | | x | x |
| | Bracings that require reduced tendency to creep | | x | | x |

DuraTEN / DuraTEN+

Our high-strength fiber rope made of high-tech fibers provides high strength in relation to its weight. Its high flexural fatigue strength and long lifetime make this rope perfect for the high-end segment.

Specifications

- Diameter: 5 - 72 mm
- Core:
 - DuraTEN: UHMWPE
 - DuraTEN+: Dyneema® SK78
- Variants:
 - DuraTEN / DuraTEN+: without cover
 - DuraTEN Pro-P / DuraTEN+ Pro-P: with PES cover
- Colors:
 - Core: dark-gray
 - Cover: in various possible colors or color combinations
- For the lifting of loads, certification to Machinery Directive 2006/42/EC as amended from time to time is possible



DuraTEN / DuraTEN+



DuraTEN Pro-P / DuraTEN+ Pro-P

DuraTEN

THE JACK OF ALL TRADES MADE OF UHMWPE

Characteristics

- ✓ 1/7th of the weight of comparable steel wire ropes
- ✓ Extremely high breaking force - comparable with the breaking force of a steel wire rope of the same diameter
- ✓ No corrosion and/or soiling caused by rope grease
- ✓ No risk of injury, easy and quick handling
- ✓ Flexible design
- ✓ Very high abrasion resistance, especially when provided with a cover
- ✓ High flexural fatigue strength and extremely long service life
- ✓ The kinetic energy unleashed when damage to the rope occurs is significantly lower than with steel wire ropes

Application and fields of use

Industrial applications which require high breaking forces, flexural fatigue strength, and low elongation in combination with minimal weight such as:

- vehicle winches for off-road, maintenance, recovery and military vehicles
- overhead line construction
- motor winches
- mounting ropes
- and many others





DuraTEN+



SIMPLY STRONG THROUGH DYNEEMA®

Characteristics

DuraTEN+ comes with all the characteristics of DuraTEN, plus:

- ✓ made of original Dyneema® SK78 fiber
- ✓ possesses reduced UHMWPE-typical creep characteristics
- ✓ features highest flexural fatigue strength and extremely long lifetime
 - compared to the standard fiber, the XBO variant offers 300 - 400 % more lifetime in terms of bending cycles.

Application and fields of use

Industrial applications which require high breaking forces, flexural fatigue strength, and low elongation in combination with minimal weight such as:

- indoor cranes
- lifting tackles / slings
- high-tech winches
- static applications that allow low elongation and no “creep”

Technical specifications of DuraTEN / DuraTEN+ and DuraTEN Pro-P* / DuraTEN+ Pro-P*

| Core Ø / Rope Ø without cover | Rope Ø with cover | Weight | | MBF** |
|----------------------------------|----------------------|--------------------|--------------------------------|-------|
| | | DuraTEN / DuraTEN+ | DuraTEN Pro-P / DuraTEN+ Pro-P | |
| mm | mm | g/m | g/m | kN |
| 5 | 7 | 15 | 35 | 21 |
| 6 | 8 | 20 | 42 | 35 |
| 7 | 9 | 27 | 52 | 43 |
| 8 | 10 | 34 | 61 | 55 |
| 9 | 11 | 44 | 75 | 72 |
| 10 | 12 | 54 | 88 | 85 |
| 11 | 13 | 65 | 101 | 107 |
| 12 | 15 | 76 | 137 | 125 |
| 14 | 17 | 107 | 179 | 160 |
| 16 | 20 | 144 | 259 | 220 |
| 18 | 23 | 183 | 332 | 275 |
| 22 | 28 | 248 | 442 | 378 |
| 24 | 30 | 291 | 508 | 436 |
| 26 | 32 | 332 | 569 | 500 |
| 28 | 34 | 392 | 653 | 591 |
| 30 | 36 | 445 | 749 | 663 |
| 33 | 40 | 502 | 902 | 738 |
| 35 | 42 | 564 | 985 | 823 |
| 36 | 44 | 620 | 1,050 | 912 |
| 40 | 48 | 850 | 1,447 | 1,134 |
| 42 | 50 | 1,042 | 1,657 | 1,343 |
| 48 | 60 | 1,223 | 2,197 | 1,525 |
| 52 | 64 | 1,510 | 2,610 | 1,810 |
| 56 | 68 | 1,704 | 2,848 | 2,148 |
| 60 | 72 | 1,914 | 3,106 | 2,353 |
| 64 | 77 | 2,283 | 3,729 | 2,651 |
| 66 | 82 | 2,405 | 4,255 | 2,800 |
| 72 | 88 | 2,817 | 4,786 | 3,332 |

*with protective polyester cover, **minimum breaking load when spliced



HyperTEN / HyperTEN+

With STS - Stronger Than Steel® technology

This superlative fiber rope offers users minimal weight combined with highest breaking force and reduced UHMWPE-typical creep. Produced with STS - Stronger Than Steel® technology. Optionally available with PES (HyperTEN+ Pro-P), UHMWPE (HyperTEN+ Pro-U) cover, or as XBO variant (HyperTEN+ XBO) offering compellingly high flexural fatigue strength.

Specifications

- Diameter: 3 - 34 mm
- Core:
 - HyperTEN: thermally pre-stretched UHMWPE
 - HyperTEN+: thermally pre-stretched Dyneema®
 - Each with STS - Stronger Than Steel® technology.
- Variants:
 - HyperTEN / HyperTEN+: without cover
 - HyperTEN Pro-P / HyperTEN+ Pro-P: with PES cover
 - HyperTEN Pro-U / HyperTEN+ Pro-U: with UHMWPE cover
- Colors:
 - Core: silver-gray
 - Cover: in various possible colors or color combinations
- For the lifting of loads, certification to Machinery Directive 2006/42/EC as amended from time to time is possible



HyperTEN / HyperTEN+



HyperTEN Pro-P / Pro-U / HyperTEN+ Pro-P / Pro-U

STS – Stronger Than Steel® technology

When looking for particularly high-performing ropes, one automatically thinks of steel wire ropes. But now we have STS – Stronger Than Steel®. Conceived and constructed by TEUFELBERGER's development team, this fiber rope is not only much lighter than a steel wire rope, but also much more effective. This is made possible by a combination of high-tech fibers, an optimized rope design, and an innovative pre-stretching

process. This process lends highest breaking forces to the rope that, combined with minimal weight and diameter, make it ideally suited for a variety of industrial applications.

HyperTEN

ULTIMATE BREAKING FORCE MADE FROM UHMWPE

Characteristics

- ✓ 1/7th of the weight of comparable steel wire ropes
- ✓ Extremely high breaking force – higher than that of most commercially available steel wire ropes of the same diameter
- ✓ No corrosion and/or soiling caused by rope grease
- ✓ Reduced risk of injury, easy and quick handling
- ✓ Flexible design
- ✓ Extremely high abrasion resistance due to smooth surface, especially when provided with a cover
- ✓ Very high flexural fatigue strength and extremely long lifetime
- ✓ The kinetic energy unleashed when damage to the rope occurs is significantly lower than with steel wire ropes
- ✓ Very low initial and working stretch (already eliminated during production)
- ✓ Very smooth running behavior thanks to the extremely compact cross-section that offers high transverse pressure stability

Application and fields of use:

Wherever highest breaking forces in combination with lowest weight and minimal stretch are needed (especially to replace identically dimensioned steel wire ropes without having to modify the equipment), for example:

- vehicle winches for off-road, maintenance, recovery and military vehicles
- overhead line construction
- motor winches
- mounting ropes
- pulling lines for ropeways
- and many others



HyperTEN+



THE LONG-DISTANCE RUNNER MADE OF DYNEEMA®

Characteristics

HyperTEN+ comes with all the characteristics of HyperTEN, plus:

- ✓ made of original Dyneema® SK78 fiber
- ✓ extremely high breaking force – higher than that of almost all commercially available steel wire ropes of the same diameter
- ✓ reduced UHMWPE-typical creep
- ✓ completely abrasion resistant due to very smooth surface, especially when provided with a cover
- ✓ features highest flexural fatigue strength and extremely long lifetime – compared to the standard fiber, the XBO variant offers 300 - 400 % more lifetime in terms of bending cycles
- ✓ highest running smoothness thanks to the extremely compact cross-section that is very stable under transverse pressure

Application and fields of use:

Industrial applications which require high breaking forces, flexural fatigue strength, and lowest elongation in combination with minimal weight such as:

- indoor cranes
- lifting tackles / slings
- high-tech winches
- high performance ropes for camera systems
- storage and retrieval machines
- static applications that allow lowest elongation and no “creep”

Technical specifications of HyperTEN / Pro-P* / Pro-U** and HyperTEN+ / Pro-P* / Pro-U**

| Core Ø / Rope Ø without cover | Rope Ø with cover | Weight HyperTEN / HyperTEN+ | HyperTEN Pro-P / HyperTEN+ Pro-P | HyperTEN Pro-U / HyperTEN+ Pro-U | MBF*** |
|----------------------------------|----------------------|-----------------------------------|-------------------------------------|-------------------------------------|--------|
| mm | mm | g/m | g/m | g/m | kN |
| 3 | 5 | 7 | 15 | 12 | 13 |
| 4 | 6 | 12 | 22 | 19 | 23 |
| 5 | 7 | 20 | 47 | 39 | 40 |
| 6 | 8 | 25 | 53 | 44 | 48 |
| 7 | 9 | 36 | 69 | 60 | 70 |
| 8 | 10 | 47 | 84 | 73 | 90 |
| 9 | 11 | 59 | 100 | 88 | 105 |
| 10 | 12 | 65 | 105 | 94 | 120 |
| 11 | 13 | 73 | 114 | 102 | 145 |
| 12 | 15 | 101 | 171 | 150 | 180 |
| 14 | 17 | 130 | 217 | 192 | 235 |
| 15 | 18 | 146 | 237 | 210 | 270 |
| 16 | 20 | 176 | 293 | 259 | 300 |
| 18 | 23 | 215 | 381 | 332 | 355 |
| 20 | 25 | 253 | 454 | 395 | 440 |
| 22 | 28 | 270 | 507 | 437 | 500 |
| 24 | 30 | 350 | 629 | 547 | 600 |
| 26 | 32 | 366 | 650 | 568 | 650 |
| 28 | 34 | 425 | 710 | 627 | 700 |
| 30 | 36 | 488 | 792 | 703 | 800 |
| 32 | 39 | 555 | 936 | 824 | 900 |
| 34 | 41 | 626 | 1,028 | 910 | 1,010 |

*with polyester protective cover (Pro-P), ** with UHMWPE protective cover (Pro-U), ***minimum breaking force, spliced





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