





Perfect traceability and highest quality standards in whole automated process from fiber to tape, link and chain



Dyneema®, The world's strongest fiber™ is DSM's premium product brand for Ultra High Molecular Weight PolyEthylene (UHMWPE) fiber.



Highest efficiency: yarn selection and engineered construction

Perfect yarn stress distribution, top edge manufacturing process



Certified and fully tested in breaking load, fatigue and abrasion. CE "stamp". EC Declaration of Conformity

Fully pre-stretched @ 50% of Minimum Breaking Load

YOUR CERTIFIED LIFTING AND LASHING SOLUTION AND SERVICE PROVIDER



## Why the best?

TIMES STRONGER than Steel equivalent

80%
LIGHTER
than Steel equivalent

< 2,5%
LOAD ELONGATION

35-50%
MORE EFFICIENT
AND PRODUCTIVE
than Steel equivalent



WITH Dyneema®,

the world's strongest fiber™

**CUSTOMIZED DIMENSIONS** 

For any required application and task

**MÖBIUS DESIGN** 

Delivers highest efficiency

50.000
CYCLES ABRASION
satisfactorily improved



## A COMPLETE SOLUTION





## EFFICIENT AND COST SAVING

COST SAVING IN OPERATIONS BASED ON AGILITY, PRECISION IN EXECUTION, TEAM MANAGEMENT AND SAFETY AT WORK

#### **AGILITY**

The synthetic chain is 80% lighter. It allows an easy use in lifting operations and lashing installations with reduced cost in operation.

### PRECISION IN EXECUTION

Increased uptime in operations with highest teams' performance

Full care and respect of cargo handling

#### **TEAM MANAGEMENT**

Getting the best of your team by optimizing lifting and lashing operations

### **SAFETY AT WORK**

Reduced number of incidences at work with improved safety records



## THE MOST ENDURANT AND REUSABLE CHAIN

### **DYNEEMA® FIBER**

Dyneema®, the world's strongest fiber™ is DSM's premium product brand for Ultra High Molecular Weight PolyEthylene (UHMWPE) fiber.

### **MURLINK DESIGN AND PRODUCTION**

Tailorized to achieve the highest durability

### **EXCLUSIVE MURLINK AUTOMATED PROCESS**

Translates into highest quality standard with full traceability

### **MURLINK INSTRUCTIONS MANUAL**

Murlink synthetic chains have a longer life-time

### **MAINTENANCE**

Longer lifetime & less obsolescence Repair of damage links in our factory



**On-site service** on request

**Chain selection** and specification (customized project)

**Troubleshooting** and guidance for chains in use, maintenance and repair



Manufacturing records and certification management

5

Training in chain use, installation supervision and life extension

Life management support

4





# All Advantages in **OPERATIONS**

### **The Chain**









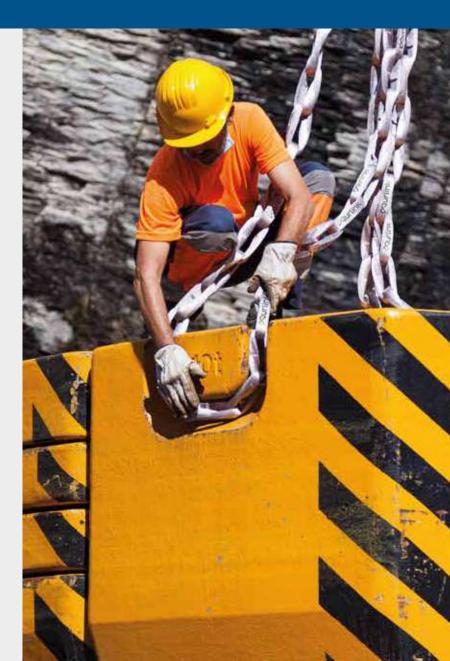




### The System











## **STRONGER AND LIGHTER**

The low own weight of Murlink® synthetic chain enables to move heavier loads with existing lifting system.

The synthetic chain is 80% lighter than equivalent steel chain for equivalent breaking load.

Murlink® is **made with Dyneema®**, wich has extremely long molecular chains that transfer load more effectively to the polymer backbone compared to regular polyethylene.

Murlink® Möbius link design equalizes the load across all layers. So it is stronger than existing lashing and lifting alternatives.





## **SOFT AND RESISTANT**

It protects the cargo, which is getting heavier and bulkier every day.

It avoids damage which occur by use of steel chain or wire rope elements.

The synthetic chain does not corrode, is extremely resistant to chemical, abrasion and cuts.

### Perfect grip and adaptability to metal parts and softness

**It prevents surface damage** (on equipment - of the cargo by the lifting system, or when the synthetic chain runs over the edges of the machine to secure).

**Does not require any lubrication** to protect it from water and marine environment The **low friction properties** of the fiber and the design of Murlink® tape/link and chain **protect it from internal abrasion.** 

Murlink® has passed sand and abrasion tests for 50.000 cycles

The cut-resistant properties of Dyneema® are very well proven and known, they are even massively used as cut-resistant textile to level 3 (EN388) and level A2 (ANSI).





## **USEFUL PROPERTIES**

No risk to accidentally loose a sling or a lashing system when operated in offshore or in marine / maritime environment

Murlink<sup>®</sup> is made with links in Dyneema<sup>®</sup>, a super strong dielectric material.

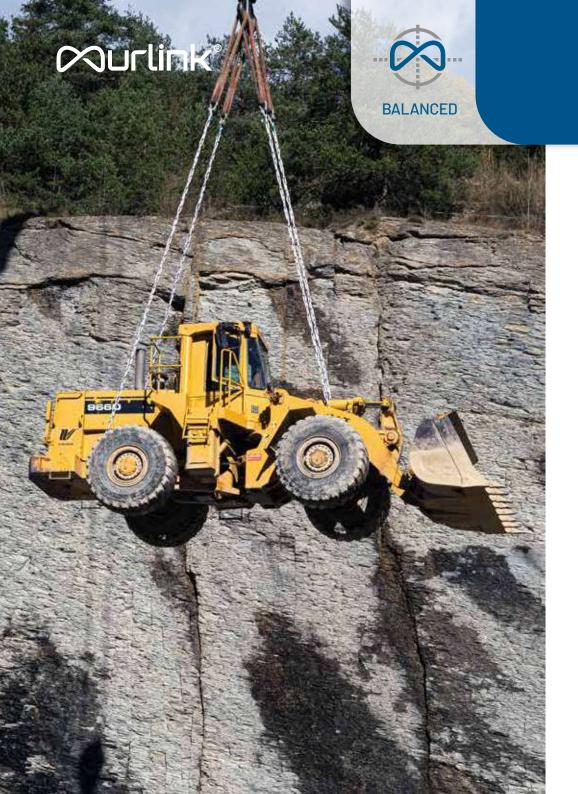
The synthetic chain floats on water.

UHMwPE (Dyneema®) Specific density is lower than water.

It provides the basis for the Murlink® light weight and high strength, as well as for its floatability.

Murlink<sup>®</sup> nonconductive properties reduce electric shock risks. International operation standards apply for crane operations.

High voltage damage is a main cause crane and operators' accidents.



## **CENTER OF GRAVITY**

An improvement of your operations by fast and effective on-site length and tension chain adjustment

Low elongation combined with length adjustable, **no need to readjust, "perfect balance" of center of gravity** 

It is maintenance free solution (no lubrication needed). The elongation of the Murlink® synthetic chain under constant load, during lashing operations, is <2,5%.

The Murlink® synthetic chain is **compatible with most metal accessories available on the market**: hooks, connectors (hammerlock, connecting and coupling link), shackles, master links and load binders to facilitate the replacement of existing slings in metal.



## **CUSTOMER REQUEST**

We design and offer specific Synthetic Chain in different dimensions, including protections and covers for the most demanding, aggressive and harsh operations. We have maximum flexibility to produce any customer request.

Murlink® is integrated from fibre to tape, link and chain.

Murlink® can be supplied in a wide range of tailor-made specs.

To serve any specific customer challenge in lifting and lashing.



## All Advantages in **QSHE**

### **The Chain**







### **The Values**









## **COMFORT and SAFETY at WORK**



**ERGONOMIC** 





The exceptional lightness of the Murlink® synthetic chain brings an enormous easiness on cargo handling operation.

International standard ISO 11228-1:2003
Ergonomics — Manual handling — Part 1: Lifting and carrying limits the mass carried at 25kg but local regulations may be applicable.

Murlink® reduces risk of personnel injuries under repetitive physical efforts

Handling (the use of) much longer lifting and lashing systems by one single operator

Much easier to shorten and to adapt to the required length of use The synthetic chain can be guided around the load in a very flexible way. Synthetic lifting chains are made with Dyneema® polyethylene fibers. It is then more silent during the lifting and lashing operations than steel alternatives.

Improves operator/crew communication in complex and dense operations.

Reduces risk of accidents Reduces the risk of hearing damage and noise pollution.





## **CERTIFIED and SUSTAINABLE**

You purchase a tested and certified product which complies with the latest safety regulations.

Fully proved and certified solution by a third party, Applus+. It complies with the Machinery Directive 2006/42/EC.

Murlink® is delivered with an EC marking and an EC declaration of conformity.

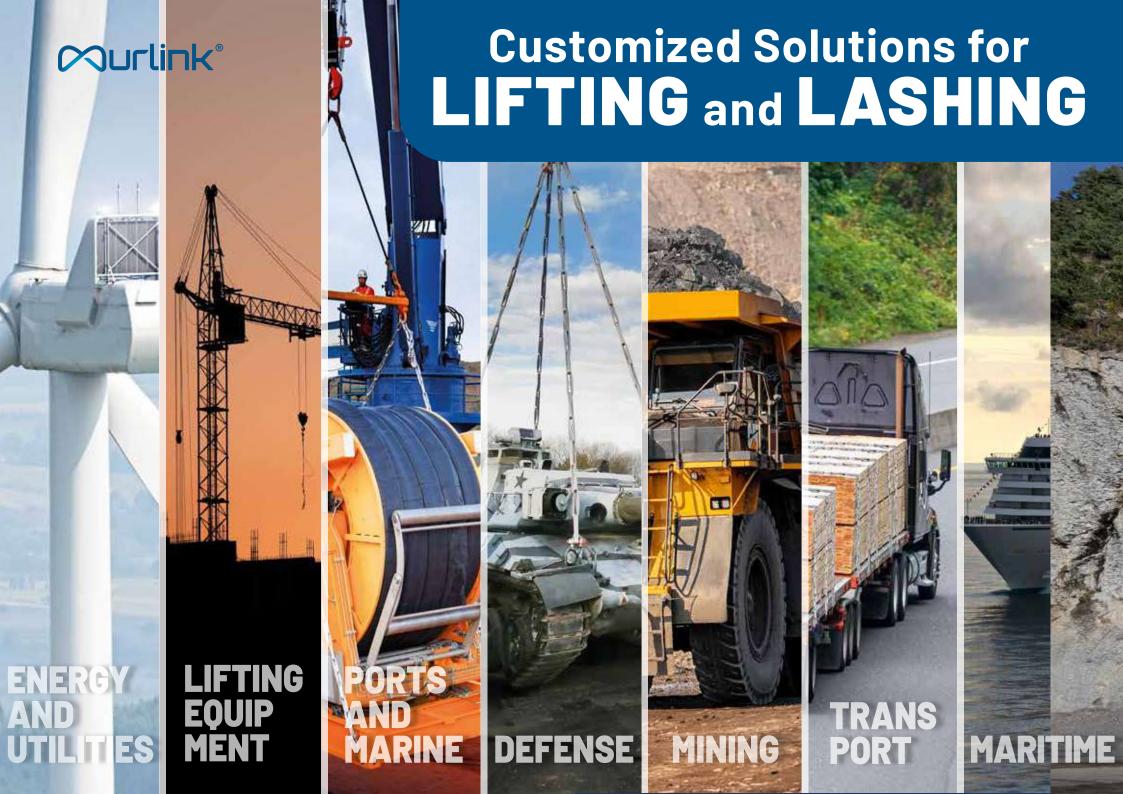
Murlink® based on Dyneema® fiber will enable our partners and downstream customers to reduce their carbon footprint while maintaining the same trusted performance.

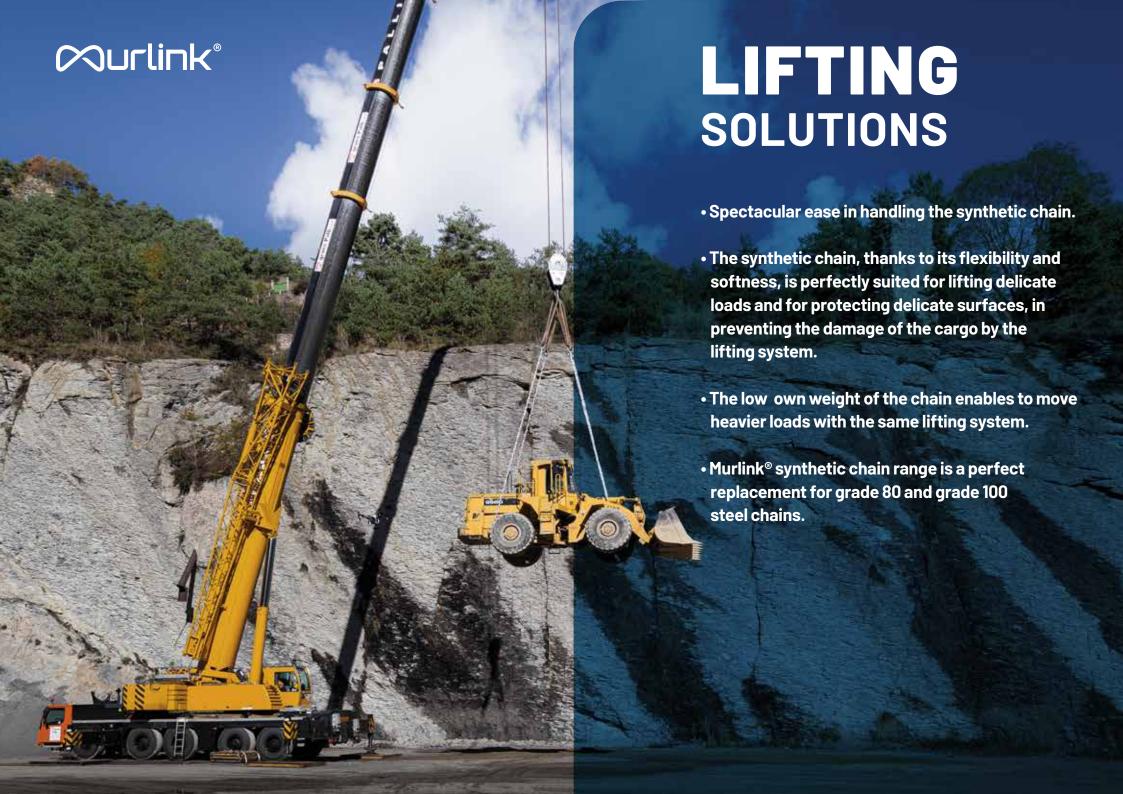
Available with bio-based Dyneema® fiber

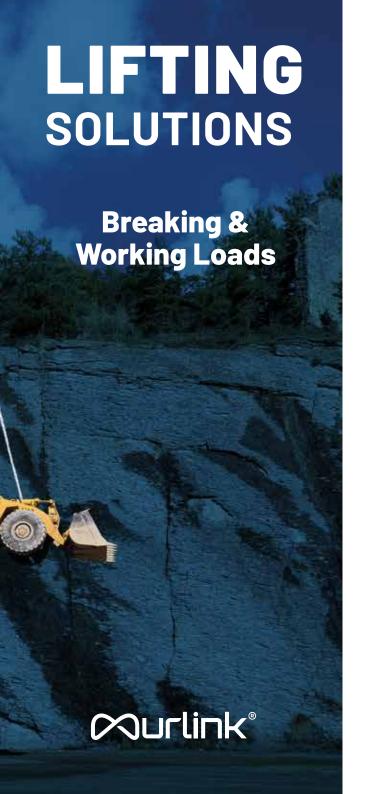


Applus<sup>⊕</sup> (€



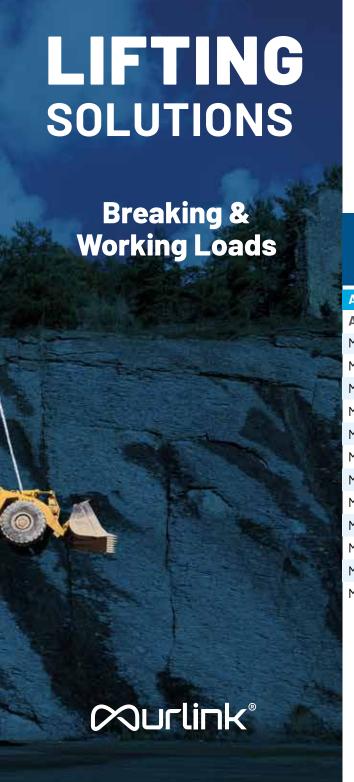






CHAIN REFERENCE	MINIMUM BREAKING LOAD(ton)	WORKING LOAD LIMIT WLL (ton) LIFTING	WEIGHT (kg/m)
MURLINK 102004	10.00	2.50	0.32
MURLINK 152006	15.00	3.75	0.47
MURLINK 172007	17.00	4.38	0.58
MURLINK 202008	20.00	5.00	0.62
MURLINK 243006	24.00	6.00	0.71
MURLINK 283007	28.00	7.00	0.83
MURLINK 323008	32.00	8.00	0.94
MURLINK 423010	42.00	10.50	1.13
MURLINK 503013	50.00	12.50	1.18
MURLINK 524010	52.00	13.00	1.31
MURLINK 644012	64.00	16.00	1.14
MURLINK 724013	72.00	18.00	1.75

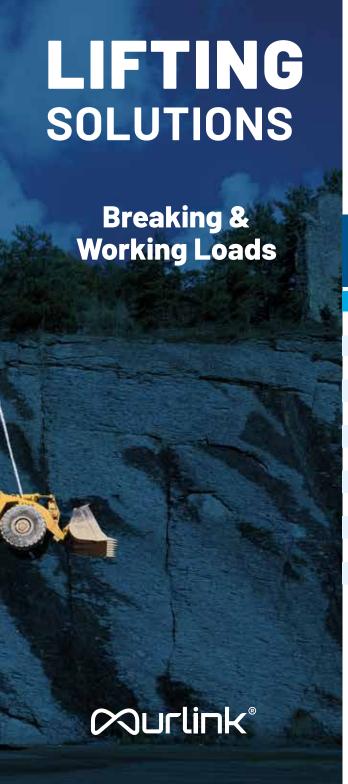
Tailorized Murlink® chains with highest MBL and specific length/link dimensions available on request



The Murlink® chain is compatible with most metal accessories available on the market: hooks, connectors (hammerlock, connecting and coupling link), shackles, master links and load binders. The Murlink® chain can be directly connected to grade 80 and grade 100 metal fittings.

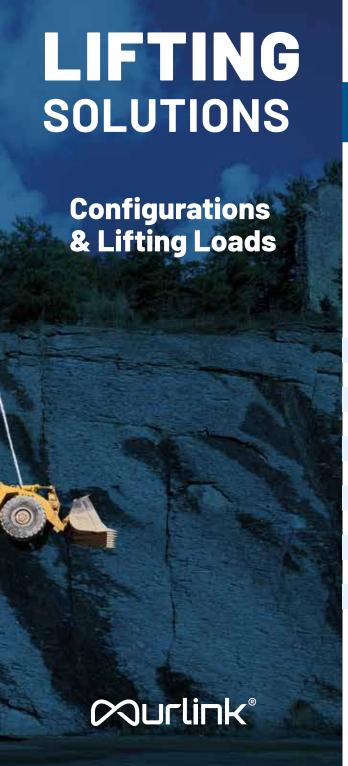
### Compatible 80 - 60 grade accessories hitched directly to MURLINK chain

ACCESSORY	EYE HOOK	HAMMERLOCK	D-SHACKLE SHORTENER	MASTER LINK 1 LEG	MASTER LINK 2 LEGS ANGLE<45º	MASTER LINK 4 LEGS ANGLE<45º
Accessory grade	G80	G80	G60	G80	G80	G80
Accessory WL	WLL (ton)	WLL (ton)	WLL (ton)	WLL (ton)	WLL (ton)	WLL (ton)
MURLINK 102004	3.15	5.30	3.25	3.15	5.30	6.70
MURLINK 152006	3.15	5.30	4.75	5.30	5.30	11.20
MURLINK 172007	5.30	5.30	4.75	5.30	8.00	11.20
MURLINK 202008	5.30	8.00	6.50	5.30	8.00	11.20
MURLINK 243006	8.00	8.00	8.50	8.00	11.20	17.00
MURLINK 283007	8.00	8.00	8.50	8.00	11.20	17.00
MURLINK 323008	8.00	8.00	8.50	8.00	11.20	17.00
MURLINK 423010	12.00	12.50	12.00	11.20	14.00	26.50
MURLINK 503013	15.00	21.20	13.50	14.00	17.00	31.50
MURLINK 524010	15.00	15.00	17.00	17.00	17.00	31.50
MURLINK 644012	21.20	21.20	17.00	17.00	31.50	45.00
MURLINK 724013	31.50	31.50	25.00	21.20	31.50	45.00



### Compatible 100 grade accessories hitched directly to MURLINK chain

ACCESSORY	EYE HOOK	HAMMERLOCK	D-SHACKLE SHORTENER	MASTER LINK 1 LEG	MASTER LINK 2 LEGS ANGLE<45º	MASTER LINK 4 LEGS ANGLE<45°
Accessory grade	G100	G100	G100	G100	G100	G100
Accessory WL	WLL (ton)	WLL (ton)	WLL (ton)	WLL (ton)	WLL (ton)	WLL (ton)
MURLINK 102004	4.00	6.70	6.70	3.50	3.50	5.30
MURLINK 152006	4.00	6.70	6.70	5.00	7.60	11.00
MURLINK 172007	5.30	6.70	6.70	5.00	7.60	11.00
MURLINK 202008	6.70	6.70	6.70	7.60	8.00	14.00
MURLINK 243006	10.00	10.00	10.00	7.60	10.00	21.20
MURLINK 283007	10.00	10.00	10.00	7.60	10.00	21.20
MURLINK 323008	10.00	10.00	16.00	10.00	14.00	21.20
MURLINK 423010	16.00	19.00	16.00	14.00	25.10	33.60
MURLINK 503013	16.00	26.50	25.00	14.00	25.10	33.60
MURLINK 524010	16.00	26.50	25.00	14.00	25.10	33.60
MURLINK 644012	16.00	26.50	25.00	14.00	25.10	33.60
MURLINK 724013	40.00	31.50	25.00	25.10	27.60	41.60



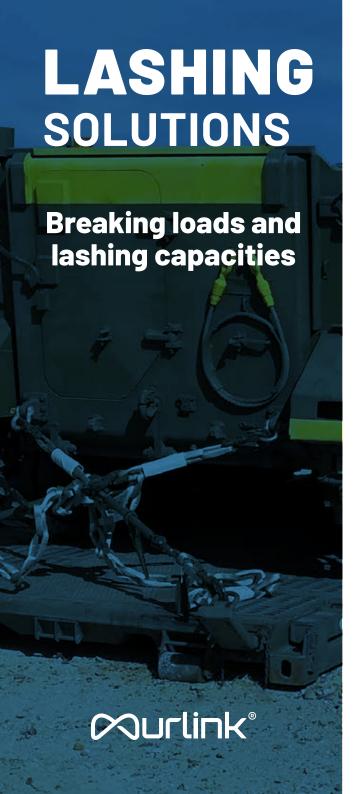
CHAIN REFERENCE	WLL (ton)	VERTICAL LIFT (ton)	ELE	ANGLED VATION ton)	STRANGLED BASKET (ton)		SLING 2 LEGS (ton)		SLING 3 & 4 LEGS (ton)		
			(			B		B	2	B	
		M = Cor	rection fo	actors		ß= 0 a 45°	ß= 45 a 60°	ß= 0 a 45°	<b>ß=</b> 45 a 60°	ß= 0 a 45°	ß= 45 a 60°
		M = 1	M = 0,8	M = 0,8	M = 2	M = 1,4	M = 1	M = 1,4	M = 1	M = 2,1	M = 1,5
MURLINK 102004	4	2.50	2.50	2.00	5.00	3.50	2.50	3.50	2.50	5.25	3.75
MURLINK 102006	6	3.75	3.75	3.00	7.50	5.25	3.75	5.25	3.75	7.875	5.62
MURLINK 172007	7	4.38	4.38	3.50	8.75	6.125	4.375	6.125	4.375	9.19	6.56
MURLINK 20200	8	5.00	5.00	4.00	10.00	7.00	5.00	7.00	5.00	10.50	7.50
MURLINK 24300	6	6.00	6.00	4.80	12.00	8.40	6.00	8.40	6.00	12.60	9.00
MURLINK 28300	7	7.00	7.00	5.60	14.00	9.80	7.00	9.80	7.00	14.70	10.50
MURLINK 32300	8	8.00	8.00	6.40	16.00	11.20	8.00	11.20	8.00	16.80	12.00
MURLINK 423010	)	10.50	10.50	8.40	21.00	14.70	10.50	14.70	10.50	22.05	15.75
MURLINK 503013	3	12.50	12.50	10.00	25.00	17.50	12.50	16.52	12.50	26.25	18.75
MURLINK 524010	)	13.00	13.00	10.40	26.00	18.20	13.00	18.34	13.00	27.30	19.50
MURLINK 644012	2	16.00	16.00	12.80	32.00	22.40	16.00	20.16	16.00	33.60	24.40
MURLINK 724013	3	18.00	18.00	14.40	36.00	25.20	18.00	20.16	18.00	37.80	27.00

Full range of lifting accessories available on request, preassembled to Murlink® chains Tailorized sets available on request



# LASHING SOLUTIONS

- The exceptional lightness of the synthetic chain brings an enormous easiness on cargo handling. Thus, allowing the use of much longer lashing systems (i.e. 20 meters) by one single operator.
- Protects the cargo which is getting heavier and bulkier every day. In this way, it avoids claims and complaints.
- The synthetic chain offers a longer life-time due to its non-rusty properties and it is highly resistant to abrasion and cuts.
- Much easier to shorten and to adapt to the required length of use. The synthetic chain can be guided around the load in a more flexible way.
- The elongation of the Murlink® synthetic chain under constant load is lower than <2,5%.

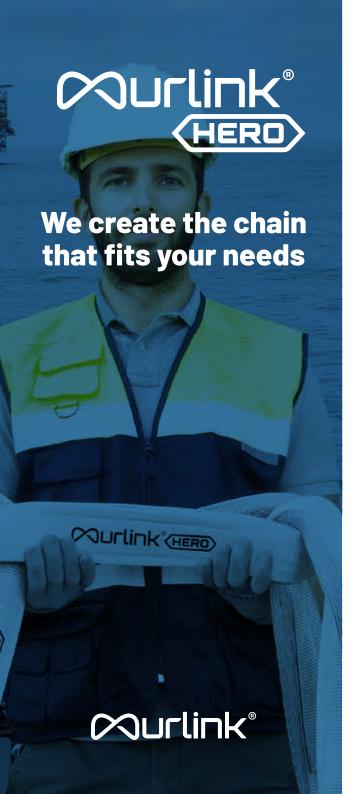


CHAIN REFERENCE	MINIMUM BREAKING LOAD (ton)	LASHING CAPACITY (kg)
MURLINK 102004	10.50	5.00
MURLINK 152006	15.00	7.50
MURLINK 172007	17.50	8.75
MURLINK 202008	20.00	10.00
MURLINK 243006	24.00	12.00
MURLINK 283007	28.00	14.00
MURLINK 323008	32.00	16.00
MURLINK 423010	42.00	21.00

Tailorized Murlink® chains projects with highest MBL available on request Specific length/link Murlink® chains dimensions available on request Full range of lashing accessories available on request, preassembled to Murlink® chains



Murlink® goes further, and if its synthetic chain is already the best chain in the world, with the **Murlink® Hero** range it offers unequaled load support with up to 44 tons lifting capacity enabling us to service projects with MBL requirements from **72 to 176 tons**, which seemed impossible until now with Synthetic Chains. In addition to producing the largest range and highest capacities in Synthetic Chains, all Murlink® products are certified in accordance with the CE machinery directive, tried and fully tested in the laboratory, Third Party Certified and used by customers from all continents in diverse sectors such as offshore, oil and gas, renewables, and marine. **Murlink® is the only one with 44 tons of lifting and 88 tons of lashing for special projects.** 



**Murlink® Hero** is a unique product on the market, a result of years of R&D, investigating different materials and constructions in order to offer a revolutionary solution to the market. Thus, **Murlink® Hero** chains are made from Dyneema®, the strongest fiber in the world  $^{\text{TM}}$ . We have moved beyond heavy steel chains and slings to offer this new product that is eight times stronger, 80% lighter, and 35–50% more efficient. It is **more productive**, **adjustable**, **resistant**, **sustainable**, **and softer** keeping all the advantages of QSHE.

CHAIN REFERENCE	MINIMUM BREAKING LOAD (Ton)	WLL LIFTING CAPACITY (Ton)	LINEAR WEIGHT (kg/m)
MURLINK 764014	76	19	2,05
MURLINK 885012	88	22	2,10
MURLINK 1005013	100	25	2,27
MURLINK 1085014	108	27	2,45
MURLINK 1287511	128	32	3,06
MURLINK 1447512	144	36	3,33
MURLINK 1607513	160	40	3,61
MURLINK 1767514	176	44	3,89

Tailorized Murlink® Hero chains with highest MBL and specific length/link dimensions available on request



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### **OPERATIONAL HEADQUARTERS**



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### **MURTRA®**

Specialized in industrial market technical-textile solutions

Widest selection of technical webbings and slings for lifting and lashing and work safety applications

Continuous innovation in processes and products, adding value by customising through design, confection and assembly

### **TAVIL®**

Specializes in the construction of machinery and automatic lines

A leading Company in constant evolution

TAVIL designs, develops and produces customized solutions and turnkey projects worldwide

