

Product Catalogue



Company Profile

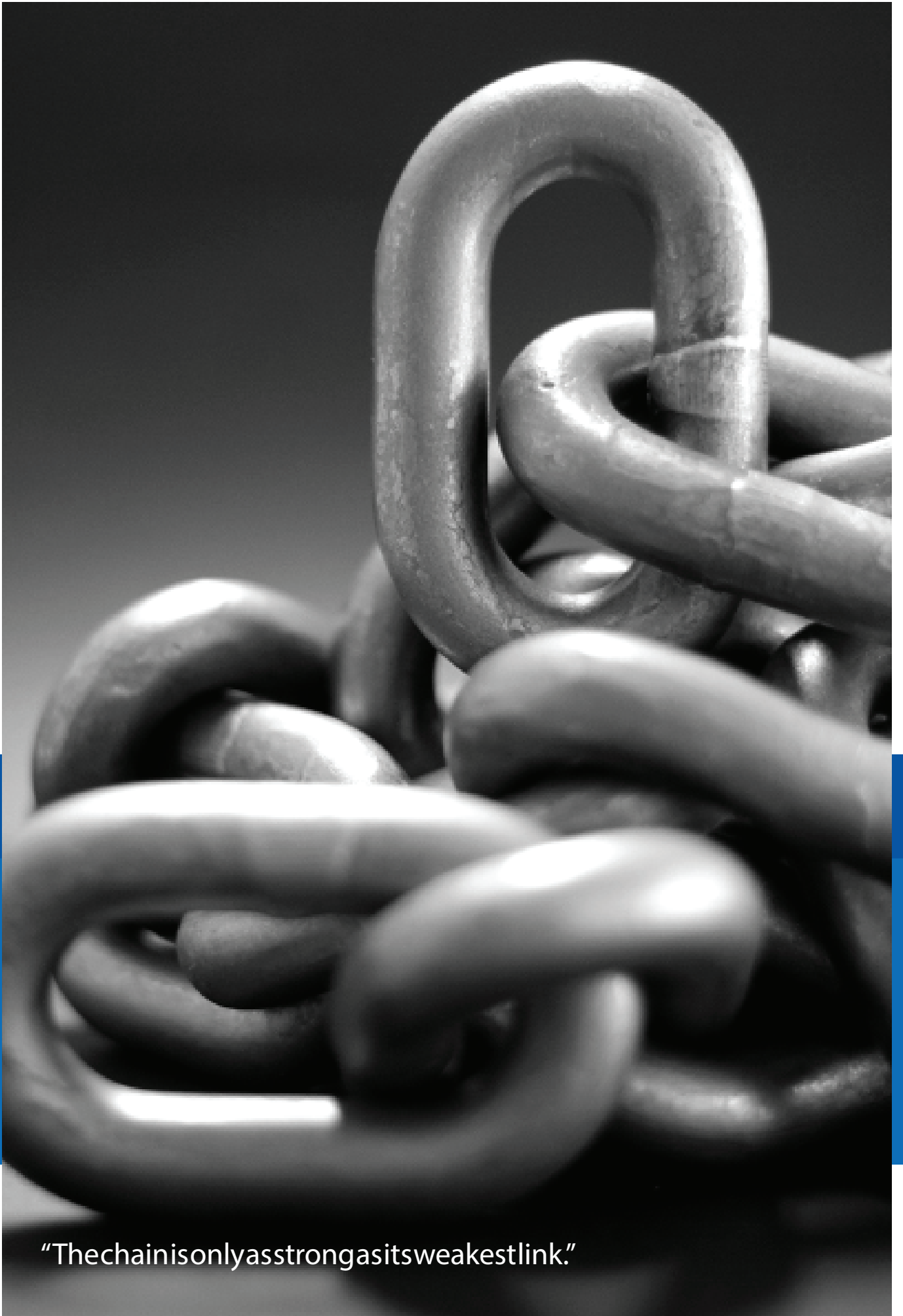
ZINTAS is an international chain processing company which founded at the end of 1970's with the vision of becoming a global brand based on the belief in the power of high technology and continuous improvement

ZINTAS manufactures industrial chains that are used worldwide for mining and conveying, high-alloyed G100 chains for moving and lifting, hoisting and stud and studless chains for marine industry, high alloyed calibrated chains for agriculture industry, high wear and temperature resistant specially designed chains for cement industry, specially designed chains for forestry, snow chains, transmission chains and chain accessories exporting to more than 30 countries today. The ZINTAS factory ground covers a total area of 25.000 square meters of which approximately 10.000 square meters are built on and consists of technologically advanced 125 machines. The customer satisfaction is the result of our appropriate pricing policy and high quality standards.

ZINTAS Co. was the first organization in Turkey that has certified its chain manufacturing according to the international standard ISO 9001 Quality Management System Certification in 1996.

ZINTAS Co. guarantees high quality products and services with over 35 years' experience, reliability, versatility and developing production technology.

ZINTAS Co. acts with the consciousness of the quality target based on the principle of customer satisfaction, environmentally friendly production processes and recyclable raw materials and products. Over 35 years ZINTAS Company has served its customers with its successful, dynamic, flexible employees. As a reflection of our corporate culture, all of our employees behave and think as a part of chain link, and always challenge to be the most powerful chain link of the whole system and aware of the priority of their responsibilities.



"The chain is only as strong as its weakest link."

Quality

"The chain is only as strong as its weakest link."

Our goal is to improve and perfect each process step starting from supply of raw materials until placing on the market. To provide this, every process and product is subjected to accurate and comprehensive control process and test according to our quality management system and international standards.

The quality management system is our guiding principle for the reliability of our products. Certificates that we received from both regional and international institutions are the basis of our quality system approach.

Customer Relations & Reliability

A continuous interest in our customer needs, demonstrated amongst others by the development and production of several "tailor made" special chains.

We are an independent family business since 1979 and a reliable business partner. We cooperate with our customers and suppliers in a true in a true collaboration and pursuance of mutual success. Our Customer Relationship Management is an essential, extensive and sensitive to maintain our customer relationship permanently. Our customer-oriented strategy is based on customer satisfaction with our high quality products and services.

Kastamonu'nun ombudsmanı

Sadece Kastamonu'daki değil, Ankara'da bulunan diğer şehirlerde de en büyük zincirler üreticisi Zintaş'ın patronu Huseyin Çeliker'in en büyük hedefi, Kastamonu'da bir altın zincirler üretimi merkezini kurmaktır. Zintaş'ın en büyük hedefi...

1999

Paranada Kastamonu'da Zintaş tarafından özel olarak üretilen zincirler kullanılıyor



Kastamonu'nun ombudsmanı

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Kapalı zincirler Zintaş'ın Kastamonu'da ürettiği zincirler kullanıyor.

Üreticilerin zinciri Türkiye'den

Zintaş Zincir Sanayi ve Ticaret, Türkiye'de en büyük zincirler üreticisi olarak faaliyet göstermektedir. Zintaş'ın en büyük hedefi, Kastamonu'da bir altın zincirler üretimi merkezini kurmaktır.

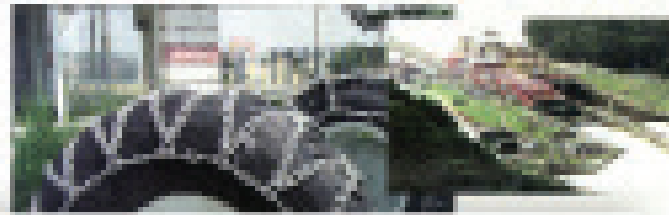
Zintaş Zincir Sanayi Kurdu Başkanlığı tarafından üretilen zincirler, Paranada'da üretilen zincirler gibi kaliteli zincirlerdir. Zintaş Zincir Sanayi Kurdu Başkanlığı...

1 KANALI Z ORYANUS...
Bu zincirler sadece Paranada'da üretilmektedir. Üretimi Zintaş Zincir Sanayi Kurdu Başkanlığı tarafından gerçekleştirilmektedir.



Panama Kanalı'nı Türk zincirleri trafiğe açıyor

Rosatom'un ortak yatırım yaptığı Çinli, Türk ve Fransız ortaklarından Atlantik Çiğneme ile Pasifik Çiğnemesi'nin birleşimi ile oluşan Fokosun Rosatom'a liderlik yapıyor



Konkret bir adım daha atıldı. Rosatom'un ortak yatırım yaptığı Çinli, Türk ve Fransız ortaklarından Atlantik Çiğneme ile Pasifik Çiğnemesi'nin birleşimi ile oluşan Fokosun Rosatom'a liderlik yapıyor. Fokos'un Panama Kanalı'na girişini sağlayacak olan Rosatom'un liderliğiyle, Çinli, Türk ve Fransız ortaklarından Atlantik Çiğneme ile Pasifik Çiğnemesi'nin birleşimi ile oluşan Fokosun Rosatom'a liderlik yapıyor.

İhtiyaç



İhtiyaçları karşılamak için, Türkiye'de satılan araçların, özellikle SUV'lerin, ihtiyaçları karşılamak için geliştirildi. Özellikle SUV'lerin, ihtiyaçları karşılamak için geliştirildi.

Safaricilerin zinciri Türkiye'den

Zinciri olan bir araç, Türkiye'de satılan araçların, özellikle SUV'lerin, ihtiyaçları karşılamak için geliştirildi. Özellikle SUV'lerin, ihtiyaçları karşılamak için geliştirildi.

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15.05.2014 Rosatom'un ortak yatırım yaptığı Çinli, Türk ve Fransız ortaklarından Atlantik Çiğneme ile Pasifik Çiğnemesi'nin birleşimi ile oluşan Fokosun Rosatom'a liderlik yapıyor. Fokos'un Panama Kanalı'na girişini sağlayacak olan Rosatom'un liderliğiyle, Çinli, Türk ve Fransız ortaklarından Atlantik Çiğneme ile Pasifik Çiğnemesi'nin birleşimi ile oluşan Fokosun Rosatom'a liderlik yapıyor.

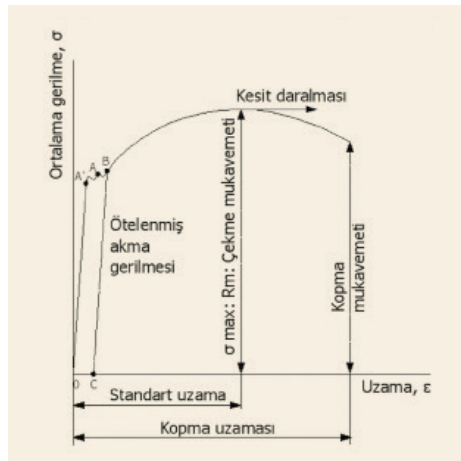
Steels For Chains

Industrial steels for chains are chosen specifically for applications of mining, conveying, moving, lifting, hoisting and marine, agriculture industry, forestry and snow chains.

Round steel link chains are used for the moving, conveying and securing of large loads. They can be found in extraction plants in mining, as lifting appliances for cranes, during the conveyance of bulk materials, as anchor chains in shipbuilding and for securing of cargo. Round steel link chains include the corresponding chain components such as chain connectors, etc. Non-alloyed, alloyed steels, low carbon, and special types of modern steels are base materials for the manufacture of round steel link chains and chain components up to Grade 100. They are specified as technical delivery conditions in DIN 17115/2012-07 (TS 2835/1977) standard, namely with regard to the manufacture, delivery condition, chemical composition and their mechanical characteristics and technological features.

The constitution and structure of all steels and iron starts with iron-carbon equilibrium diagram lightens the principle of heat treatment of the chains. There are important temperatures or critical points in the diagram.

- A1: Temperature at which the eutectic reaction occurs (723 °C)
- A3: Temperature when α -iron transforms to γ -iron (for pure iron 910 °C, but the transformation temperature is progressively lowered by addition of carbon)
- A4: Temperature at which γ -iron transforms to δ -iron (for pure iron 1390 °C, but the transformation temperature is raised by addition of carbon)
- A2: Curie point when iron changes from the ferro- to paramagnetic condition



(769 °C for pure iron, but no change in crystal structure is involved)

The diagram is based on the transformation that occurs as a result of slow heating. However the fast heating and cooling rates encountered in welding will have a significant influence on these temperatures, making the accurate prediction of weld metallurgy using this diagram is difficult.

Heat treatment process after welding requires a professional infrastructure and specialized systems. ZINTAS Co. performs chain quenching & tempering and case hardening processes that require different techniques

for different applications in-plant. Thus, while maintaining the toughness and ductility of the core, the mechanical properties are brought to the optimum level.

The Effects Of Alloying Elements On Steel Welds

Alloying elements are added to reinforce the mechanical properties of steels used in chain production. Low-alloyed, alloyed, low carbon and special modern steels are used in chain production due to different types of chain applications and load conditions.

Appropriate and correct raw material selection is crucial in the beginning of chain production process. The process fails unless the election is not done professionally. The material selection belongs to the properties of chains such as high strength for lifting, conveying and moving applications, wear-resistant applications for mining and agriculture industry, high corrosion resistance applications for marine industry, capability of heat treatment and case hardening, etc. Manufacturing of chains requires advanced technology to produce chains of high properties. For the raw material supply, ZINTAS Co. cooperates and works with well-known and professional companies in Turkey, which also provides products abroad.

Stress Strain Curve

Chain links can be deformed by subjecting external loads. The recovery of the original dimensions of deformed body when the load is removed is known as elastic behavior. The limiting load beyond which the material no longer behaves elastically is the elastic limit. If the elastic limit is exceeded, the body will experience a permanent set or deformation when the load is removed off the chain links is said to have plastic deformation. As long as the load does not exceed the elastic limit, the deformation is proportional to the load, that states stress is proportional to strain.

- OA : Elastic region within which Hooke's law is obeyed.
- A : Elastic limit, defined as the greatest stress that the metal can withstand without experiencing a permanent strain when the load is removed.
- A' : The determination of the elastic limit is dependent on the sensitivity of the strain measuring instrument and replaced by the proportional limit. The proportional limit is the stress at which the stress-strain curve deviates from linearity. The slope of the stress-strain curve is the modulus of elasticity.
- B : For engineering purposes the limit of usable elastic behavior is the yield strength which is defined as the stress which will produce a small amount of permanent deformation, generally equal to a strain of 0.002.
- OC : Permanent strain (offset). Plastic deformation begins when the elastic limit is exceeded. As the plastic deformation increases with further straining, the chain metal becomes stronger (strain hardening) so that the load required to extend the metal with further straining.
- Rm : Ultimate tensile strength. For the chain links the diameter of the link begins to decrease rapidly beyond maximum load, so that the load required to continue deformation until the link fractures.

Stress Strain Curve

For chain production process, as a result of tensile tests according to TS 138 EN 10002-1 : 2004, the behavior of chain links as ductile or brittle is crucial depending upon whether or not the material the material exhibits the ability to undergo plastic deformation. The process after welding operation and/or heat treatment or case hardening, for our both press butt welding type of machines and flash butt welding type of machines is determining the behavior of fracture by tensile test. It's also critical determining if the fracture behaves to be ductile or brittle after suitable heat treatment.

The quality control calibration and tensile tests applied to chain for the purpose of verifying material and weld quality. To optimize the quality control processes, in addition to tensile tests the Rockwell Hardness tests and metallographic examinations are performed in our laboratory with devices certified and calibrated by independent organizations.

Selection Criteria

While selection of chains multiple criteria such as dimensions, workload, fatigue, operating temperature, intended use, impact effects, factors such as friction and wear effects in the working environment is considered. Before placing order, consultation is held with customers on the application and the most suitable raw materials and chains are selected.

The value of stress for a particular material is considered to be safe is working stress σ_w . Values of working stress is established by local agencies and by technical organizations such as the American Society of Mechanical Engineers (ASME), International Standard Organization (ISO). Chain applications are combined static and dynamic applications so that the working stress is considered as the tensile strength (ultimate strength) divided by factor of safety.

$$\sigma_w = \sigma_u / N_u$$

σ_w : Working stress

σ_u : Tensile (ultimate) strength

N_u : Factor of safety based on tensile strength

Working load limits for Grade 80 and Grade 100 lifting and mining chains are based on a 4 to 1 design factor from ISO.

WL : PL : BL = 1 : 2.5 : 4

WL (Working Load - [kg]) limit is the maximum combined static and dynamic load in kilograms that shall be applied in direct tension to an undamaged straight length of chain.

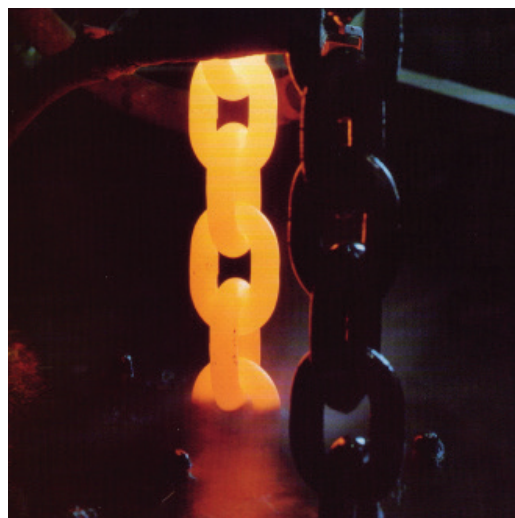
PL (Proof Load=Test Load - [N]) is the minimum force in newtons when the chain has withstood at the time it left our company, under a test in which a constantly increasing force has been applied in direct tension to a straight length of chain. Proof test loads are a manufacturing accuracy test and shall not be used as criteria for design and service.

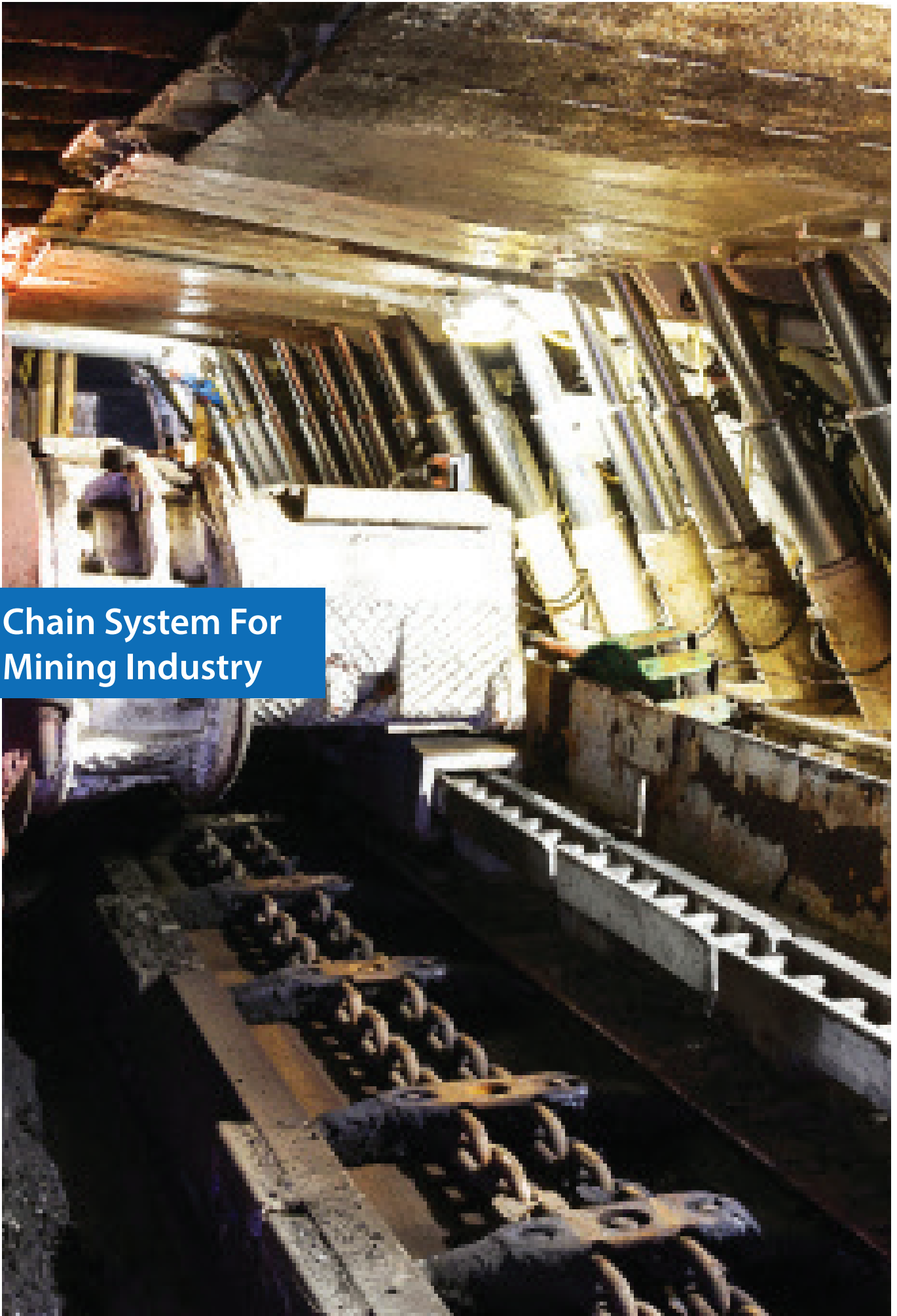
BL (Minimum Breaking Load – [N]) is the force in newtons at which the chain, in the condition it leaves ZINTAS Co. plant, has been found by representative testing to break when a constantly increasing force was applied in direct tension to a straight length of chain on the standard testing machine. Breaking force values are statistical attribute test results and not guarantee that all chain links will endure these loads.

Heat Treatment

We make heat treatment of chains in order to increase high strength and usefulness. Thus, fine grain size is often desired for high strength, large additions of solute atoms are added to increase strength and bring out new phase relationships, fine particles may be added to increase strength and phase transformations may be utilized to increase strength.

The traditional route to high strength in steels is by quenching to form martensite which is subsequently reheated or tempered at an intermediate temperature, increasing the toughness of the steel without to great loss in strength. Therefore, for the optimum development of strength, the chain steel first is converted fully to martensite. The effectiveness of the quench depends on primarily on two factors: The geometry of the chain and the composition of the steel material.





Chain System For Mining Industry



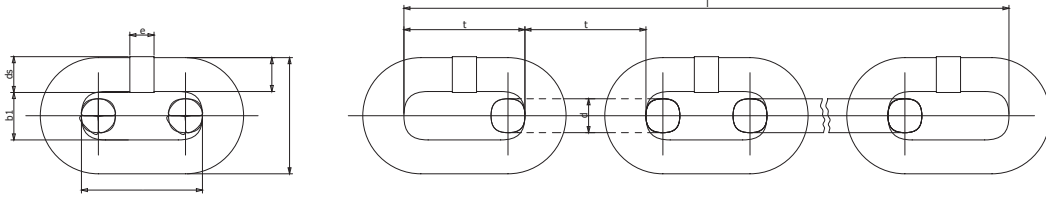
ZINTAS Co is a leading manufacturer of chains and accessories used in the mining sector. Production is carried out according to the quality DIN 22252-1 (Grade 60) and DIN 22252-2 (Grade 80) in addition to Grade 100 quality (Type D).

ZINTAS produces round link chains for the mining industry in rated sizes of 14 up to 42 mm according to DIN 22252. However, we also able to produce chains larger than 42 mm diameter on demand from our customers.

Mining components for underground coal mining such as chains and connectors are used without surface hardening but heat treated to very high tensile strength up to Grade 100 quality to achieve maximum service life.

Technologically advanced computer supported calibration process allows us to produce chains in higher precision.

DIN 22252 Mining Chains for Conveyors and Loaders

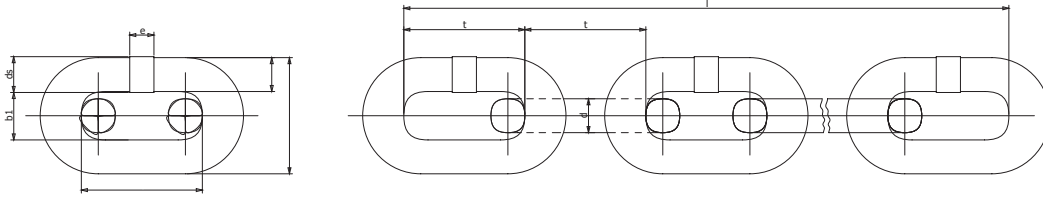


Dimensions and Mechanical Properties

Nominal Diameter & Tolerans	Pitch & Tolerans	Inside Width (Min.)	Outside Width (Max.)	Proof Load	Elongation Under Test Load	Breaking Load (Min.)	Quality	Weight
d mm	t mm	bi mm	ba mm	kN	Max. %	kN		Kg/m
14 ±0,4	50 ±0,5	17	48	150 185	1,4 1,6	190 246	1 2	4
18 ±0,5	64 ±0,6	21	60	260 305	1,4 1,6	320 407	1 2	6,6
19 ±0,5	64,5 ±0,6	22	63	283 340	1,4 1,6	357 454	1 2	7,6
22 ±0,7	86 ±0,9	26	73	380 490	1,6	480 610	1 2	9,5
24 ±0,7	86 ±0,9	28	79	460 580	1,6	570 720	1 2	11,6
24 ±0,7	87,5 ±0,9	28	79	460 580	1,6	570 720	1 2	11,5
26 ±0,8	92 ±0,9	30	85	540 680	1,6	670 850	1 2	13,7
30 ±0,9	108 ±1,1	34	97	710 900	1,6	890 1130	1 2	18
34 ±1,0	126 ±1,3	38	109	1090	1,6	1450	2	22,7
38 ±1,1	137 ±1,4	42	121	1360	1,6	1820	2	29
42 ±1,1	146 ±1,5	48	137	1660	1,6	2220	2	36,5

*Min. Elongation under Breaking Load: %14

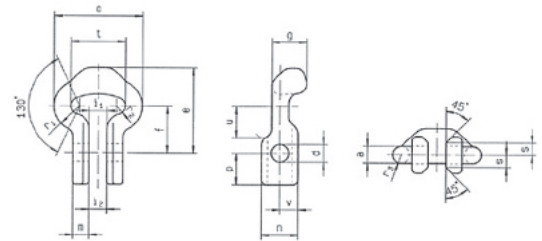
DIN 22252 Mining Chains for Conveyors and Loaders (Grade 100)



Dimensions and Mechanical Properties

Nominal Diameter & Tolerans	Pitch & Tolerans	Inside Width (Min.)	Outside Width (Max.)	Proof Load	Elongation Under Test Load	Breaking Load (Min.)	Quality	Weight
d mm	t mm	bi mm	ba mm	kN	Max. %	kN		Kg/m
14 ±0,4	50 ±0,5	17	48	250	1,9	310	Grade 100	4
18 ±0,5	64 ±0,6	21	60	410	1,9	510	Grade 100	6,6
22 ±0,7	86 ±0,9	26	73	610	1,9	760	Grade 100	9,5
24 ±0,7	86 ±0,9	28	79	720	1,9	900	Grade 100	11,6
24 ±0,7	87,5 ±0,9	28	79	720	1,9	900	Grade 100	11,5
26 ±0,8	92 ±0,9	30	85	850	1,9	1060	Grade 100	13,7
30 ±0,9	108 ±1,1	34	97	1130	1,9	1410	Grade 100	18
34 ±1,0	126 ±1,3	38	109	1450	1,9	1820	Grade 100	22,7
38 ±1,1	137 ±1,4	42	121	1820	1,9	2270	Grade 100	29

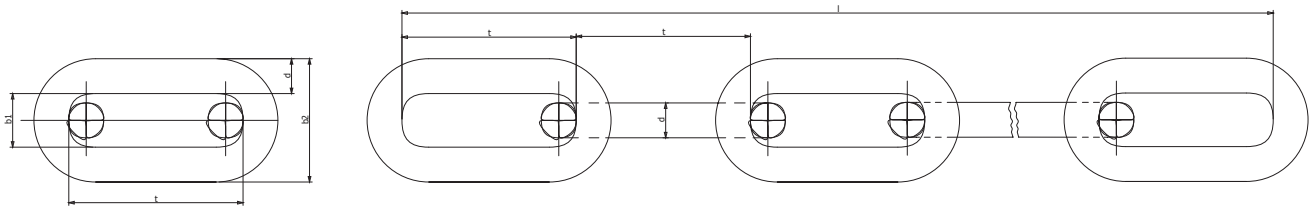
DIN 22253 Chain Connectors



Nominal Size	t (mm)	b (mm)	c (mm)	d (mm)	e (mm)	f (mm)	g (mm)
14 x 50	50	15	78	17	78	51	29
18 x 64	64	19	100	21	100	55	40
19 x 64.5	64,5	20	103	21	100	55	41
22 x 86	86	23	132	25	133	75	46
24 x 86	86	25	137	25	133	78	55,5
26 x 92	92	27	146	25	141	85	56

Nominal Size	i1 (mm)	m (mm)	n (mm)	p (mm)	r1 (mm)	r2 (mm)	v (mm)
14 x 50	18	14,5	32	17	22	7,5	16
18 x 64	21	19	43	37	28	9,5	21,5
19 x 64.5	21	19	43	37	29,5	10	21,5
22 x 86	24,5	22,5	52	44	34	11,5	26
24 x 86	26	25	53	44	37	13	26,5
26 x 92	28	26	58	45	40	14	29

DIN 762 Round Steel Link Chains For Conveyors

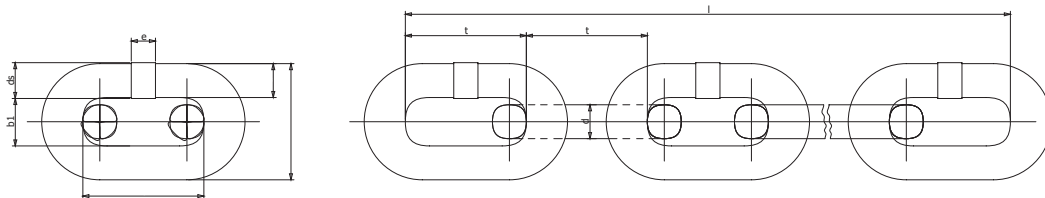


Dimensions and Mechanical Properties

Nominal Diameter & Tolerance	Pitch & Tolerance	Inside Width (Min.)	Outside Width (Max.)	Weight	Working Load	Proof Load	Breaking Load	11 x t Length
d mm	t mm	bi mm	ba mm	Kg/m	kN Max. GK 2	kN Max. GK 2	kN Max. GK 2	mm
10 ±0,4	50 +0,8 -0,4	14	36	1,8	8	16	40	550
13 ±0,5	65 +1,0 -0,5	18,2	46,8	3,1	12,5	25	63	715
16 ±0,6	80 +1,3 -0,6	22,4	57,6	4,7	20	40	100	880
18 ±0,9	90 +1,4 -0,7	25	65	6	25	50	125	990
20 ±1,0	100 +1,6 -0,8	28	72	7,4	32	63	160	1100

Nominal Diameter & Tolerance	Pitch & Tolerance	Inside Width (Min.)	Outside Width (Max.)	Weight	Working Load	Proof Load	Breaking Load	11 x t Length
d mm	t mm	bi mm	ba mm	Kg/m	kN Max. GK3	kN Max. GK3	kN Max. GK 3	mm
10 ±0,4	50 +0,8 -0,4	14	36	1,8	10	25	50	550
13 ±0,5	65 +1,0 -0,5	18,2	46,8	3,1	16	40	80	715
16 ±0,6	80 +1,3 -0,6	22,4	57,6	4,7	25	63	125	880
18 ±0,9	90 +1,4 -0,7	25	65	6	32	80	160	990
20 ±1,0	100 +1,6 -0,8	28	72	7,4	40	100	200	1100

DIN 764 Conveyor Chains

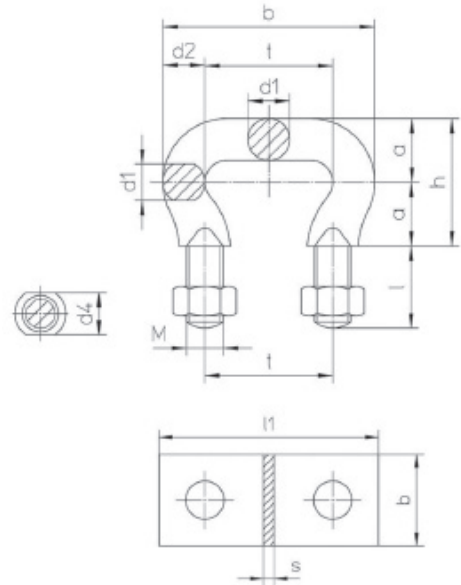


Dimensions and Mechanical Properties

Nominal Diameter & Tolerance	Pitch & Tolerance	Inside Width (Min.)	Outside Width (Max.)	Weight	Working Load	Working Load	Breaking Load	Breaking Load	11 x t Length
d mm	t mm	bi mm	Ba mm	Kg/m	kN Max. GK 2	kN Max. GK 3	kN Min. GK 2	kN Min. GK 3	mm
10 ±0,4	35 +0,6-0,3	14	36	2	10	12,5	40	50	385
13 ±0,5	45 +0,7-0,4	18	47	3,5	16	21,2	63	85	495
16 ±0,6	56 +0,9-0,5	22	58	5,2	25	32	100	125	616
18 ±0,9	63 +1,0-0,5	24	65	6,5	32	40	125	160	693
20 ±1,0	70 +1,1-0,6	27	72	8,2	40	50	160	200	770
23 ±1,2	80 +1,3-0,7	31	83	11	50	67	200	265	880
26 ±1,3	91 +1,5-0,8	35	94	14	63	85	250	340	1001
28 ±1,4	98 +1,6-0,9	36	101	16,5	75	100	300	400	1078
30 ±1,5	105 +1,7-0,9	39	108	19	85	112	340	450	1115
33 ±1,7	115 +1,9-1,0	43	119	22,5	100	132	400	530	1265
36 ±1,8	126 +2,1-1,1	47	130	26,5	125	160	500	630	1386
39 ±2,0	136 +2,2-1,2	51	140	31	140	190	560	750	1496
42 ±2,1	147 +2,4-1,3	55	151	36	170	224	680	900	1617

DIN 745 Chain Shackles

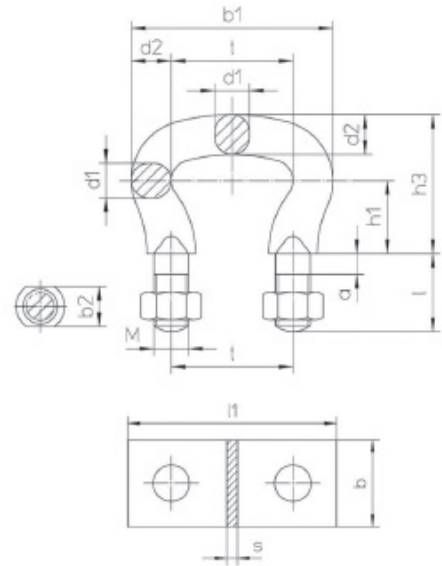
DIN 745 chain shackles used for connecting chain ends according to DIN 764 and DIN 766. Chain shackles should be used with distance collars. In most cases, the lack of plates is the reason for broken shackles. Chain shackles made from steel C45 and CrNi-alloyed steel, shackles C45 are heat-treated and case hardened up to a tensile strength of 1100N/mm², inner contact surfaces are inductive hardened to a surface hardness of min. 55 HRC. Shackles according to G80 quality made from CrNi-alloyed steel are additionally surface hardened of min. 62 HRC.



t	a	b	d1	d2	d4	M	h	l	Weight	Min Breaking Load		Distance collar			Weight	Corresponding chainends	
										C45	G 80	l1	b	s		for plain chain wheels	for toothed sprockets
[mm]									[kg]	[kN]		[mm]			[kg]	Diameter d	
45	20	73	11,5	14	12,5	M10	40	25	0,15	76	80	75	30	5	0,08	10	13
56	25	92	15	18	16,5	M12	50	32	0,32	112	125	95	40	6	0,17	13	16
63	30	105	18	21	20	M16	60	40	0,55	142	150	110	40	6	0,18	16	18
70	34	116	20	23	23	M20	68	45	0,86	176	200	120	50	6	0,25	18	20
80	37	132	23	26	25	M20	74	45	1,08	230	250	130	50	6	0,27	20	23
91	43	149	26	29	29	M24	86	55	1,65	300	315	150	60	8	0,50	23	26
105	50	173	30	34	31	M24	100	55	2,20	395	425	165	60	8	0,56	26	30
126	59	206	36	40	37	M30	118	70	3,95	570	600	200	70	10	0,97	30	34
147	68	239	42	46	42	M30	136	70	5,50	775	850	230	80	12	1,15	36	42

DIN 5699 Chain Shackles

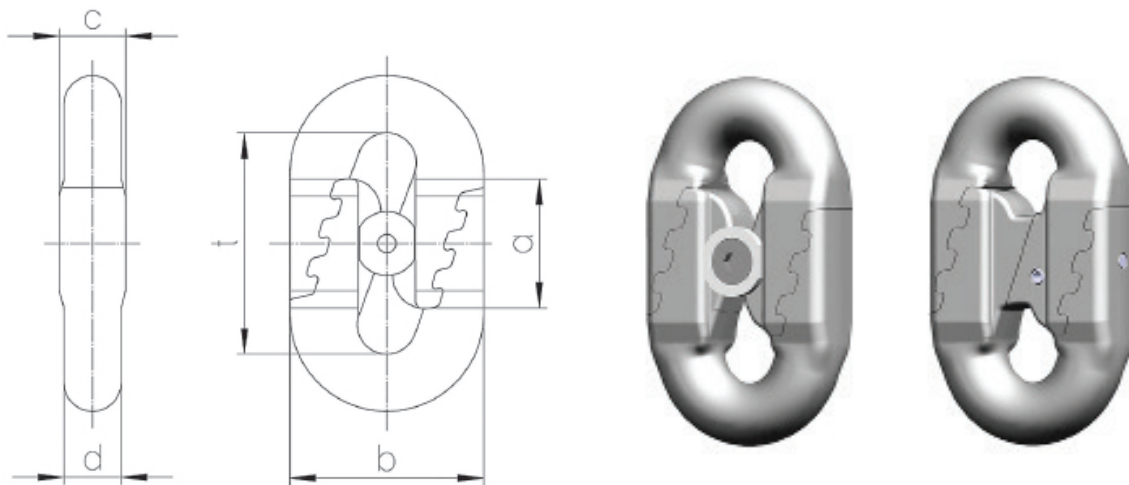
DIN 5699 chain shackles have a higher breaking load compared with DIN 745 chain shackles. This ensures higher service life and safety in operations. DIN 5699 chain shackles are used at cement industry, stones and mines industry, asphalt mixing plants and recycling plants. Surface finish is black or oiled.



t	a	b1	b2	d1	d2	M	h1	h3	l	Weight	Distance collar			Weight	Min. Breaking Load	
											l1	b	s		C45	G80
[mm]										[kg]	[mm]			[kg]	[kN]	
35	8	59	11	10	12	M10	23	43	25	0,14	65	30	5	0,07	50	56
45	8	75	13	13	15	M12	28	53	30	0,26	75	30	5	0,08	85	95
56	10	92	17	16	18	M14	34	64	35	0,34	95	40	6	0,17	125	140
63	10	105	20	18	21	M16	37	71	40	0,60	110	40	6	0,21	160	180
70	12	116	23	20	23	M20	42	80	45	0,87	120	50	6	0,25	200	224
80	12	132	25	23	26	M20	47	89	45	1,12	130	50	6	0,27	265	280
91	14	149	29	26	29	M24	52	99	55	1,86	150	60	8	0,56	335	355
105	14	173	31	30	34	M24	60	114	55	2,56	165	60	8	0,62	450	500
126	18	206	37	36	40	M30	71	134	65	4,40	200	70	10	0,97	630	700
147	22	241	42	42	47	M36	81	157	75	7,30	230	80	12	1,73	850	950

Zintas Chain Couplings

Zintas chain couplings have the same technological characteristics as the corresponding highly wear resistant chains. These couplings can only be mounted as vertical links. Run as vertical links over sprockets, plain and grooved wheels.



Type	d	t	a	b	c	Weight
	[mm]					[kg]
22 x 86	22	86	58	74	27	1,7
26 x 100	26	100	62	87	30	2,2
30 x 120	30	120	70	105	36	3,2
34 x 136	34	136	82	117	40	4,8
38 x 144	38	144	95	134	47	5,5
26 x 92	92	27	146	25	141	85

Special Quality Highly-Wear Resistant Round-Link Chains for Conveying and Cement Industry

Zintas ZG special quality highly-wear resistant chains are used for abrasive environments. Surface and case hardened chains with high surface hardness (up to 68 HRC) and increased case hardening depth of 52 HRC (up to 0.1 x d) are produced in a wide range of chain steels and hardened steels, according to application requirements.

Benefits

- High toughness in accordance with high tensile strength
- High wear resistance
- Corrosion protective coating available for increased service life

Nominal Diameter & Tolerans	Pitch & Tolerans	Inside Width (min)	Outside Width (max)	Weight	Proof Load	Breaking Load	Proof Load	Breaking Load
d mm	t mm	bi mm	ba mm	Kg/m	kN Min. ZG 2480	kN Min. ZG 2480	kN Min. ZG 4080	kN Min. ZG 4080
8 ±0,32	31 ±0,6	10,3	28	1,3	24	40	-	-
10 ±0,4	28 ±0,6	12,8	35,2	2,25	20	40	80	125
10 ±0,4	35 +0,6-0,3	14	36	2	20	40	80	125
10 ±0,4	38 ±1,2	12,5	34	2,1	38	64	-	-
10 ±0,4	50 +0,8-0,4	14	36	1,8	16	40	-	-
11 ±0,4	31 ±1,0	12,8	37,2	2,7	22,4	44,8	95	150
12 ±0,5	36 ±1,0	14,7	41,3	3,1	28	56	120	200
13 ±0,5	36 ±1,0	15,6	44,2	3,8	32	64	132	212
13 ±0,5	45 +0,7-0,4	18	47	3,5	32	64	48	95
13 ±0,5	65 +1,0-0,5	18,2	46,8	3,1	25	63	37	74
13 ±0,5	82 ±1,7	23,5	54,5	2,95	32	64	-	-
14 ±0,6	41 ±1,0	17,5	48,5	4,4	43	86	150	250
14 ±0,5	50 ±0,5	16,3	47	4,0	-	-	74	128
16 ±0,6	45 ±1,0	19,2	54,4	5,7	50	100	200	315
16 ±0,6	56 +0,9-0,5	22	58	5,2	50	100	70	140
16 ±0,6	64 ±0,6	20	55	5,0	50	100	98	164
16 ±0,6	80 +1,3-0,6	22,4	57,6	4,7	40	100	80	160
18 ±0,9	50 ±1,0	21,6	61,6	7,3	63	126	250	400
18 ±0,9	63 +1,0-0,5	24	65	6,5	63	126	70	140
18 ±0,9	80 ±1,7	22	62	5,9	63	126	75	150
19 ±0,7	75 ±0,7	22	63	7,7	-	-	135	227
20 ±1,0	56 ±1,5	25	69	9,0	80	160	88	175
20 ±1,0	70 +1,1-0,6	27	72	8,2	80	160	113	225
22 ±0,7	86 ±0,9	26	74	9,7	160	266	182	304
23 ±1,0	64 ±1,5	28,5	79,5	12	100	200		265
23 ±1,2	80 +1,3-0,7	31	83	11	100	200	150	300
26 ±1,3	73 ±2,0	32,5	89,5	15	126	252	149	298
26 ±1,3	91 +1,5-0,8	35	94	14	125	250	190	380
26 ±0,8	100 ±1,0	31	87	13,9	222	370	255	425
28 ±1,4	78 ±2,0	35,2	96,8	17,5	150	300	172	344
30 ±1,5	84 ±2,0	38	104	20	170	340	200	400
30 ±1,5	105 +1,7-0,9	39	108	19	85	112	255	510
30 ±0,5	120 ±1,2	36	103	17,5	300	500	340	566
34 ±1,0	136 +2,2-1,2	39	113	23,8	375	630	425	710
36 ±1,8	101 ±2,5	46,5	125,5	29	250	500	284	567
36 ±1,8	126 +2,1-1,1	47	130	26,5	250	500	365	730
38 ±1,1	144 ±1,4	44	127	30	480	800	510	910
39 ±2,0	109 ±2,5	50	136	34	280	560	336	672
39 ±2,0	136 +2,2-1,2	51	140	31	280	560	336	672
45 ±2,2	126 ±3,0	57	157	45,5	380	760	-	-



ZINTAS conveyor chains for the Poultry Industry are manufactured in accordance with the distance of 4", 6", 8" between the attachments of pulleys. These type of chains, as they require very accurate tolerance value, calibrated and tested according to CLS simulation system special to ZINTAS.

We have a variety of qualities for continuous use on individual slaughterhouse lines. Our CLS simulation system

and decades of experience enable us to meet the high demands regarding fracture properties, dimensional accuracy and resistance to wear. Round steel chains made of non-corrosive materials are also used in special cases.

Our conveyor chains for poultry slaughterhouses abattoirs are electro-galvanised according to customary market practice.

Calibrated Round Steel Chain

Dimension	8 x 25.4 mm
Outside Width	Max. 26.1 mm
Hardening Depth	min. 0.6 - 1.0 mm, min. 550 HV
Measuring Length	$11 \times t = 279.4 \text{ mm}_{0.4}^{+0.5}$
Surface Hardness	min. 720 -800 HV 10
Breaking Force	min. 40 kN
Finish	Electro Galvaniz
Marking	ZINTAS
Weigth Per Meter	~ 1.32 kg



Stainless Steel Chain and Acid Resistant Chains



Stainless steel differs from carbon steel by the amount of chromium present. Unprotected carbon steel rusts readily when exposed to air and moisture. This iron oxide film (the rust) is active and accelerates corrosion by forming more iron oxide; and, because of the greater volume of the iron oxide, this tends to flake and fall away.

Stainless steels contain sufficient chromium to form a passive film of chromium oxide, which prevents further surface corrosion by blocking oxygen diffusion to the steel surface and blocks corrosion from spreading into the metal's internal structure, and, due to the similar size of the steel and oxide ions, they bond very strongly and remain attached to the surface. The formation of the passive layer is the reason why Stainless Steels do not need any further corrosion treatment and appear to be as good as new, even after so many decades.

The many unique values provided by stainless steel make it a powerful candidate in materials selection. Engineers and technical designers often underestimate or overlook these values because of what is viewed as the higher initial cost of stainless steel. However, over the total life of a project, stainless is often the best value option.

COMPOSITION		
	Type 316 %T	Type 316L %
Carbon	0,08 max	0,03 max
Manganese	2,00 max	2,00 max
Phosphorus	0,045 max	0,045 max
Sulphur	0,030 max	0,03 max
Silicon	0,75 max	0,75 max
Chromium	16,00-18,00	16,00-18,00
Nickel	10,00-14,00	10,00-14,00
Molybdenum	2,00-3,00	2,00-3,00
Nitrogen	0,10 max	0,10 max
Iron	Balance	Balance

COMPOSITION		
	Type 304 %	Type 304 L %
Carbon	0,08 max	0,03 max
Manganese	2,00 max	2,00 max
Phosphorus	0,045 max	0,045 max
Sulphur	0,030 max	0,030 max
Silicon	0,75 max	0,75 max
Chromium	18,00-20,00	18,00-20,00
Nickel	8,00-12,00	8,00-12,00
Nitrogen	0,10 max	0,10 max
Iron	Balance	Balance

Corrosion Resistance

Lower alloyed grades resist corrosion in atmospheric and pure water environments, while high-alloyed grades can resist corrosion in most acids, alkaline solutions, and chlorine bearing environments, properties which are utilized in process plants.

Fire And Heat Resistance

Special high chromium and nickel-alloyed grades resist scaling and retain strength at high temperatures.

Hygiene

The easy cleaning ability of stainless makes it the first choice for strict hygiene conditions, such as hospitals, kitchens, abattoirs and other food processing plants.

Aesthetic Appearance

The bright, easily maintained surface of stainless steel provides a modern and attractive appearance. Strength-to-weight advantage The work-hardening property of austenitic grades, that results in insignificant strengthening of the material from cold-working alone, and the high strength duplex grades, allow reduced material thickness over conventional grades, therefore cost savings.

Long Term Value

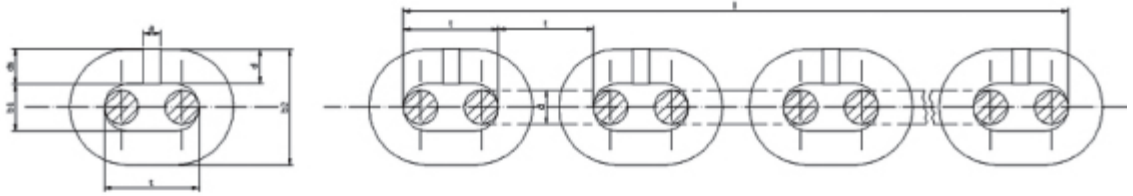
When the total life cycle costs are considered, stainless is often the least expensive material option.

In chain production 304 and 316 quality stainless steels are used for various applications for corrosive and acidic environment. Type 304L is an extra low-carbon variation of Type 304 with a 0.03% maximum carbon content that eliminates carbide precipitation due to welding. As a result, this alloy can be used in the "as-welded" condition, even in severe corrosive conditions. It often eliminates the necessity of annealing weldments except for applications specifying stress relief. It has slightly lower mechanical properties than Type 304.

Type 316 is an austenitic chromium-nickel stainless steel containing molybdenum. This addition increases general corrosion resistance, improves resistance to pitting from chloride ion solutions, and provides increased strength at elevated temperatures. Properties are similar to those of Type 304 except that this alloy is somewhat stronger at elevated temperatures. Corrosion resistance is improved, particularly against sulfuric, hydrochloric, acetic, formic and tartaric acids; acid sulfates and alkaline chlorides.

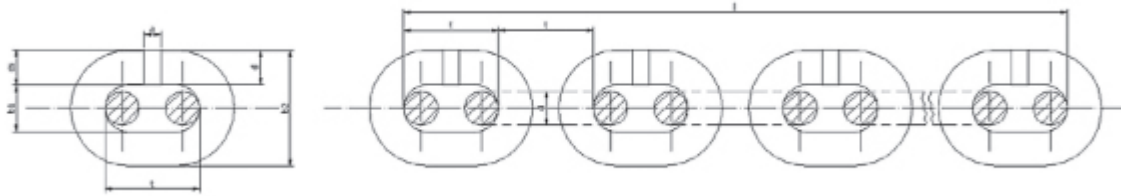
Type 316L is an extra-low carbon version of Type 316 that minimizes harmful carbide precipitation due to welding. Stainless steel grade 316Ti contains a small amount of titanium. Titanium content is typically only around 0.5%. The titanium atoms stabilize the structure of the 316 at temperatures over 800°C. This prevents carbide precipitation at the grain boundaries and protects the metal from corrosion. The main advantage of 316Ti is that it can be held at higher temperatures for a longer period without sensitization (precipitation) occurring. 316Ti retains physical and mechanical properties similar to standard grades of 316.

DIN 766 Stainless Steel Chains



Nominal Diameter	Hatve Pitch	Inside Width (Min.)	Outside Width (Max.)	Weight	Working Load	Proof Load	Breaking Load
d mm	t mm	bi mm	Ba mm	Kg/m	Kg Max.	kN Min.	kN Min
4 ±0,2	16 +0,3 -0,2	4,8	13,6	0,32	200	5	8
5 ±0,2	18,5 +0,4 -0,2	6	17	0,5	320	8	12,5
6 ±0,2	18,5 +0,4 -0,2	7,2	20,4	0,8	400	10	16
7 ±0,3	22 +0,4 -0,2	8,4	23,8	1,1	630	16	25
8 ±0,3	24 +0,4 -0,2	9,6	27,2	1,4	800	20	32
9 ±0,4	27 +0,5 -0,3	10,8	30,6	1,8	1000	25	40
10 ±0,4	28 +0,5 -0,3	12	36	2,3	1250	32	50
11 ±0,4	31 +0,5 -0,3	13,2	40	2,7	1600	40	63
13 ±0,5	36 +0,6 -0,3	15,6	47	3,9	2000	50	80
14 ±0,6	41 +0,7 -0,4	16,8	50	4,4	2500	63	100
16 ±0,6	45 +0,8 -0,4	19,2	58	5,8	3200	80	125
18 ±0,9	50 +0,8 -0,4	21,6	65	7,4	4000	100	160
20 ±1,0	56 +1,0 -0,5	24	72	9	5000	125	200

High Tensile Strength Chains for Fertilizer Scraper Systems



Nominal Diameter	Hatve Pitch	Inside Width (Min.)	Outside Width (Max.)	Weight	Working Load	Proof Load	Breaking Load
d mm	t mm	b1 mm	Ba mm	Kg/m	Kg Max.	kN Min.	kN Min
12 ±0,5	36 +0,6 -0,3	13,2	40	3,1	4800	120	200
13 ±0,5	36 +0,6 -0,3	15,6	47	3,9	5280	132	212
14 ±0,6	41 +0,7 -0,4	16,8	50	4,4	6000	150	250



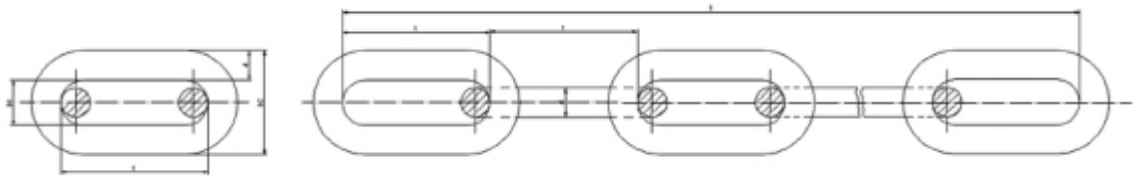
High alloyed steel chains according to DIN 766 standard for fertilizer scraper systems and machines used in agriculture. It has high strength and wear resistance that ensures much longer service life compared to other chains.

Chains For Lifting Purposes

Chains according to DIN 763 and DIN 766 are suitable for the lifting of loads.

DIN 763 Round Long Link Steel Chains, Tested Non-Calibrated

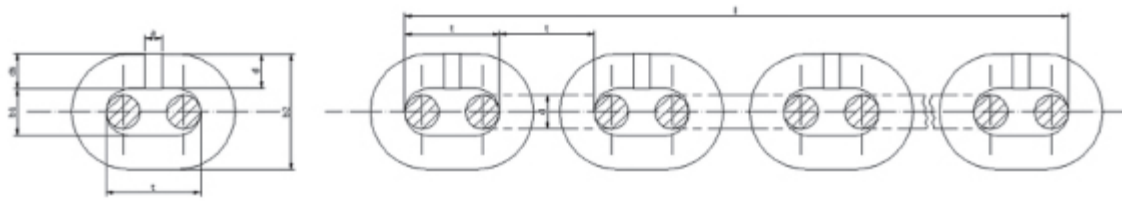
Chains according to DIN 763 are suitable for lifting purposes including static applications.



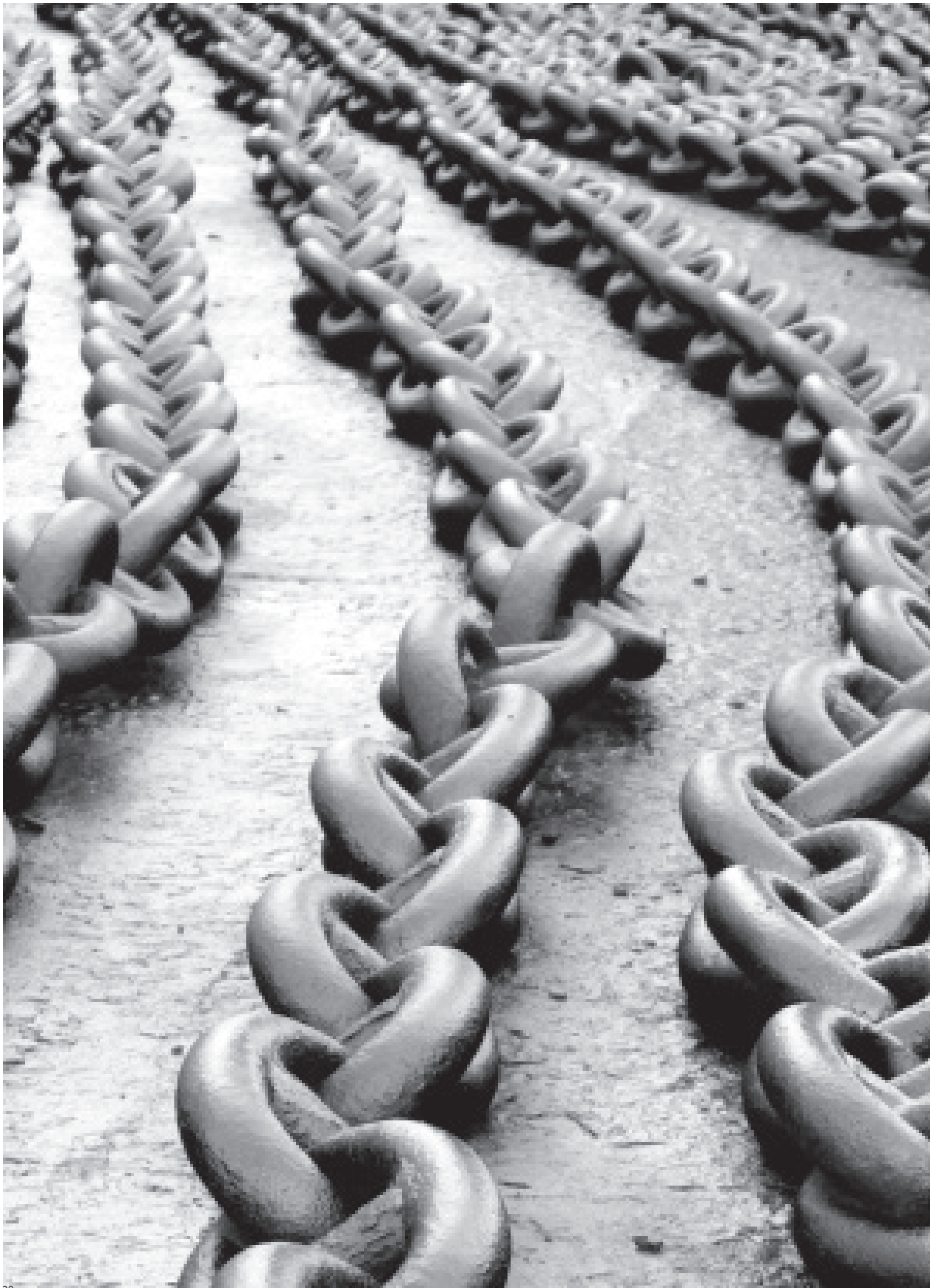
Nominal Diameter	Hatve Pitch	Inside Width (Min.)	Outside Width (Max.)	Weight	Working Load	Proof Load	Breaking Load
d mm	t mm	b1 mm	Ba mm	Kg/m	Kg Max.	kN Min.	kN Min
4 ±0,2	32 ±1,0	7,2	16,8	0,27	100	2,5	6,3
5 ±0,25	35 ±1,1	9	21	0,43	160	4	10
6 ±0,3	42 ±1,3	10,8	25,2	0,63	200	5	12,5
7 ±0,35	49 ±1,5	12,6	29,4	0,86	300	7,5	19
8 ±0,4	52 ±1,6	14,4	33,6	1,1	400	10	25
10 ±0,5	65 ±2,0	18	42	1,75	630	16	40
13 ±0,65	82 ±2,5	23,4	54,6	2,95	1000	25	63
16 ±0,8	100 ±3,0	28,8	67,2	4,45	1600	40	100

DIN 766 Round Steel Link Chains, Grade 3, Tested and Calibrated

Chains according to DIN 766 are approved for all lifting processes including combined static and dynamic load applications. High strength chains of G40, G50 and G60 quality are made of high-alloyed materials according to customer needs for lifting operations.



Nominal Diameter	Hatve Pitch	Inside Width (Min.)	Outside Width (Max.)	Weight	Working Load	Proof Load	Breaking Load
d mm	t mm	b1 mm	Ba mm	Kg/m	Kg Max.	kN Min.	kN Min
4 ±0,2	16 +0,3 -0,2	4,8	13,6	0,32	200	5	8
5 ±0,2	18,5 +0,4 -0,2	6	17	0,5	320	8	12,5
6 ±0,2	18,5 +0,4 -0,2	7,2	20,4	0,8	400	10	16
7 ±0,3	22 +0,4 -0,2	8,4	23,8	1,1	630	16	25
8 ±0,3	24 +0,4 -0,2	9,6	27,2	1,4	800	20	32
9 ±0,4	27 +0,5 -0,3	10,8	30,6	1,8	1000	25	40
10 ±0,4	28 +0,5 -0,3	12	36	2,3	1250	32	50
11 ±0,4	31 +0,5 -0,3	13,2	40	2,7	1600	40	63
13 ±0,5	36 +0,6 -0,3	15,6	47	3,9	2000	50	80
14 ±0,6	41 +0,7 -0,4	16,8	50	4,4	2500	63	100
16 ±0,6	45 +0,8 -0,4	19,2	58	5,8	3200	80	125
18 ±0,9	50 +0,8 -0,4	21,6	65	7,4	4000	100	160
20 ±1,0	56 +1,0 -0,5	24	72	9	5000	125	200
23 ±1,2	64 +1,1 -0,5	27,6	83	12	6300	160	250
26 ±1,3	73 +1,2 -0,6	31,2	94	15	8000	200	320
28 ±1,4	78 +1,3 -0,6	33,6	101	18	10000	250	400
30 ±1,5	84 +1,4 -0,7	36	108	20	11200	280	450
32 ±1,6	90 +1,5 -0,7	38,4	115	23	12500	320	500
36 ±1,8	101 +1,7 -0,8	43,2	130	29	16000	400	630
40 ±2,0	112 +1,9 -0,8	48	144	35	20000	500	800
42 ±2,1	118 +2,0 -1,0	50	151	40	22400	560	900

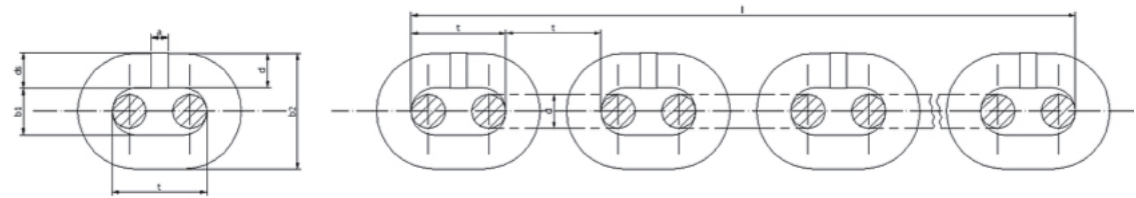




Hot-Dip Galvanized Anchor Chains for Yachts

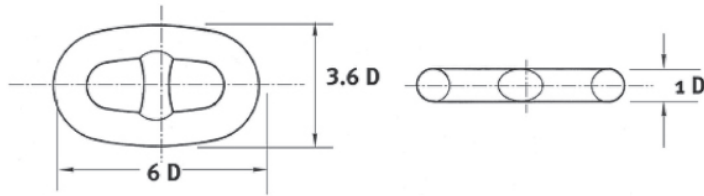


Zintas marine chain is continuously Hot Dip Galvanized to provide a deep strong protective coating which has over 30% more zinc per unit volume than mechanical coatings. In the Hot Dip process the galvanized zinc coating is alloyed with the base steel creating a metallurgical bond that is several orders of magnitude stronger than mechanical bonding (zinc electroplating used by most chain manufacturers). In the hot dip process this chain is mechanically cleaned before galvanizing to create the longest lasting protection against corrosion. This zinc-steel bond is immune to further corrosion for the life of the zinc. If the chain's steel base is exposed by cuts or nicks the base steel will not rust until the nearby zinc is consumed. Hot-dip galvanized chains are calibrated according to DIN 766 standard.



Nominal Diameter	Hatve Pitch	Inside Width (Min.)	Outside Width (Max.)	Weight	Working Load	Proof Load	Breaking Load
d mm	t mm	b1 mm	Ba mm	Kg/m	Kg Max.	kN Min.	kN Min
4 ±0,2	16 +0,3 -0,2	4,8	13,6	0,32	200	5	8
5 ±0,2	18,5 +0,4 -0,2	6	17	0,5	320	8	12,5
6 ±0,2	18,5 +0,4 -0,2	7,2	20,4	0,8	400	10	16
7 ±0,3	22 +0,4 -0,2	8,4	23,8	1,1	630	16	25
8 ±0,3	24 +0,4 -0,2	9,6	27,2	1,4	800	20	32
9 ±0,4	27 +0,5 -0,3	10,8	30,6	1,8	1000	25	40
10 ±0,4	28 +0,5 -0,3	12	36	2,3	1250	32	50
11 ±0,4	31 +0,5 -0,3	13,2	40	2,7	1600	40	63
13 ±0,5	36 +0,6 -0,3	15,6	47	3,9	2000	50	80
14 ±0,6	41 +0,7 -0,4	16,8	50	4,4	2500	63	100
16 ±0,6	45 +0,8 -0,4	19,2	58	5,8	3200	80	125
18 ±0,9	50 +0,8 -0,4	21,6	65	7,4	4000	100	160
20 ±1,0	56 +1,0 -0,5	24	72	9	5000	125	200
23 ±1,2	64 +1,1 -0,5	27,6	83	12	6300	160	250
26 ±1,3	73 +1,2 -0,6	31,2	94	15	8000	200	320
28 ±1,4	78 +1,3 -0,6	33,6	101	18	10000	250	400
30 ±1,5	84 +1,4 -0,7	36	108	20	11200	280	450
32 ±1,6	90 +1,5 -0,7	38,4	115	23	12500	320	500
36 ±1,8	101 +1,7 -0,8	43,2	130	29	16000	400	630
40 ±2,0	112 +1,9 -0,8	48	144	35	20000	500	800
42 ±2,1	118 +2,0 -1,0	50	151	40	22400	560	900

Anchor Chain



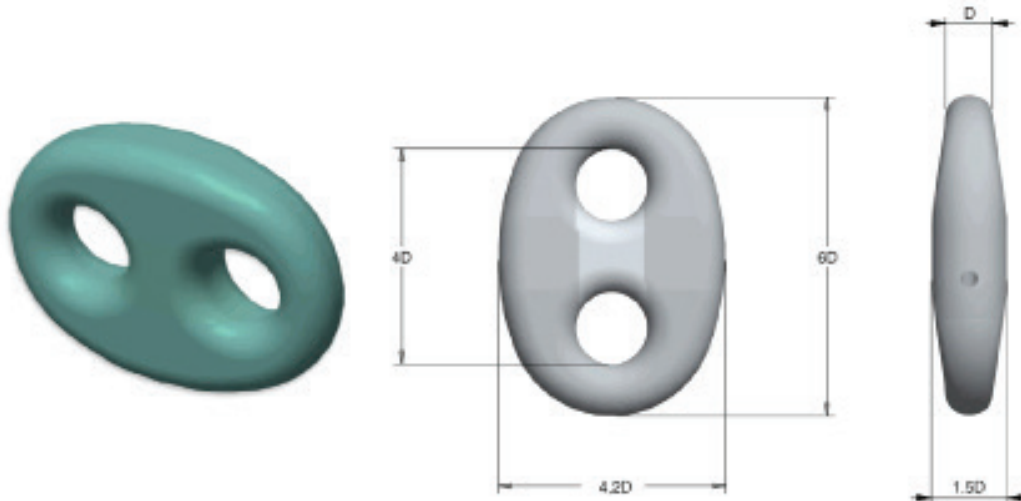
Chain Diameter		Grade 1		Grade 2		Grade 3		Weigth 27.5 m	Weigth 1 Metre	Number of Links Per (27.5m)
inches	mm	Proof Load kN	Breaking Load kN	Proof Load kN	Breaking Load kN	Proof Load kN	Breaking Load kN			
1/2	Ø 12.5	46	66	66	92	92	132	96	3.5	549
9/16	Ø 14	58	82	82	116	116	165	121	4.4	491
5/8	Ø 16	76	107	107	150	150	216	160	5.8	429
11/16	Ø 17.5	89	127	127	179	179	256	193	7	391
3/4	Ø 19	105	150	150	211	211	301	223	8.1	357
13/16	Ø 20,5	123	175	175	244	244	349	275	10.0	329
7/8	Ø 22	140	200	200	280	280	401	305	11.1	305
15/16	Ø 24	167	237	237	332	332	476	366	13.3	285
1	Ø 26	194	278	278	359	389	556	432	15.7	259
1 1/8	Ø 28	225	321	321	449	449	642	503	18.3	245
1 3/16	Ø 30	257	368	368	514	514	735	578	21.0	225
1 1/4	Ø 32	291	417	417	583	583	833	658	23.9	213
1 5/16	Ø 34	328	468	468	655	655	937	743	27.0	195
1 7/16	Ø 36	366	523	523	732	732	1050	831	30.2	187
1 1/2	Ø 38	406	581	581	812	812	1160	927	33.7	179
1 9/16	Ø 40	448	640	640	896	896	1280	1020	37.1	171
1 5/8	Ø 42	492	703	703	981	981	1400	1115	40.5	165
1 3/4	Ø 44	538	769	769	1080	1080	1540	1220	44.3	153
1 13/16	Ø 46	585	837	837	1170	1170	1680	1335	48.5	147
1 7/8	Ø 4-8	635	908	908	1270	1270	1810	1455	52.8	143
2	Ø 50	886	981	981	1370	1370	1960	1569	57	137
2 1/16	Ø 52	739	1060	1060	1480	1480	2110	1710	62	129
2 1/8	Ø 54	794	1140	1140	1590	1590	2270	1815	66	125
2 3/16	Ø 56	851	1220	1220	1710	1710	2430	1959	71	123
2 5/16	Ø 58	909	1290	1290	1810	1810	2600	2120	77	119
2 3/8	Ø 50	969	1380	1380	1940	1940	2770	2285	83	113
2 7/16	Ø 62	1030	1470	1470	2060	2060	2940	2420	88	111
2 1/2	Ø 64	1100	1560	1560	2190	2190	3130	2585	94	107
2 5/8	Ø 66	1160	1660	1660	2310	2310	3300	2750	100	105
2 11/16	Ø 68	1230	1750	1750	2450	2450	3500	2943	107	99
2 3/4	Ø 70	1290	1840	1840	2580	2580	3690	3135	114	97
2 7/8	Ø 73	1390	1990	1990	2790	2790	3990	3410	124	93
3	Ø 76	1500	2150	2150	3010	3010	4300	3715	135	89
3 1/16	Ø 78	1580	2260	2260	3160	3160	4500	3910	142	87
3 3/16	Ø 81	1690	2410	2410	3380	3380	4820	4235	154	85
3 5/16	Ø 84	1800	2580	2580	3610	3610	5160	4565	166	81
3 7/16	Ø 87	1920	2750	2750	3850	3850	5500	4895	178	79
3 9/16	Ø 90	2050	2920	2920	4090	4090	5840	5198	189	77
3 5/8	Ø 92	2130	3040	3040	4260	4260	6080	5473	199	73
3 3/4	Ø 95	2260	3230	3230	4510	4510	6440	5810	211	71
3 13/16	Ø 97	2340	3340	3340	4650	4680	6690	6050	220	71
3 15/16	Ø 100	2470	3530	3530	4940	4940	7060	6435	234	69
4	Ø 102	2560	3660	3660	5120	5120	7320	6685	243	67
4 1/8	Ø 105	2700	3850	3850	5390	5390	7700	7320	266	65
4 3/16	Ø 107	2790	3980	3980	5570	5570	7960	7895	287	63
4 3/8	Ø 111	2970	4250	4250	5940	5940	8480	8360	304	61
4 1/2	Ø 114	3110	4440	4440	6230	6230	8890	8720	317	59
4 5/8	Ø 117	3260	4650	4650	6510	6510	9300	9490	345	57
4 3/4	Ø 120	3400	4850	4850	6810	6810	9720	10313	375	57

Marine Accessories



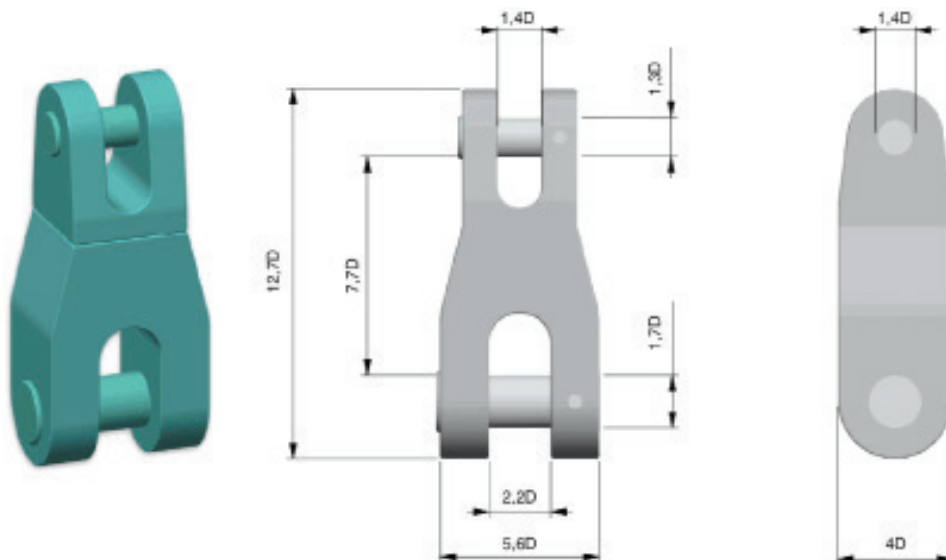
Kenter Joining Shackle

A kenter joining-shackle is used to join two stud link chain elements ending in a common or enlarged link.



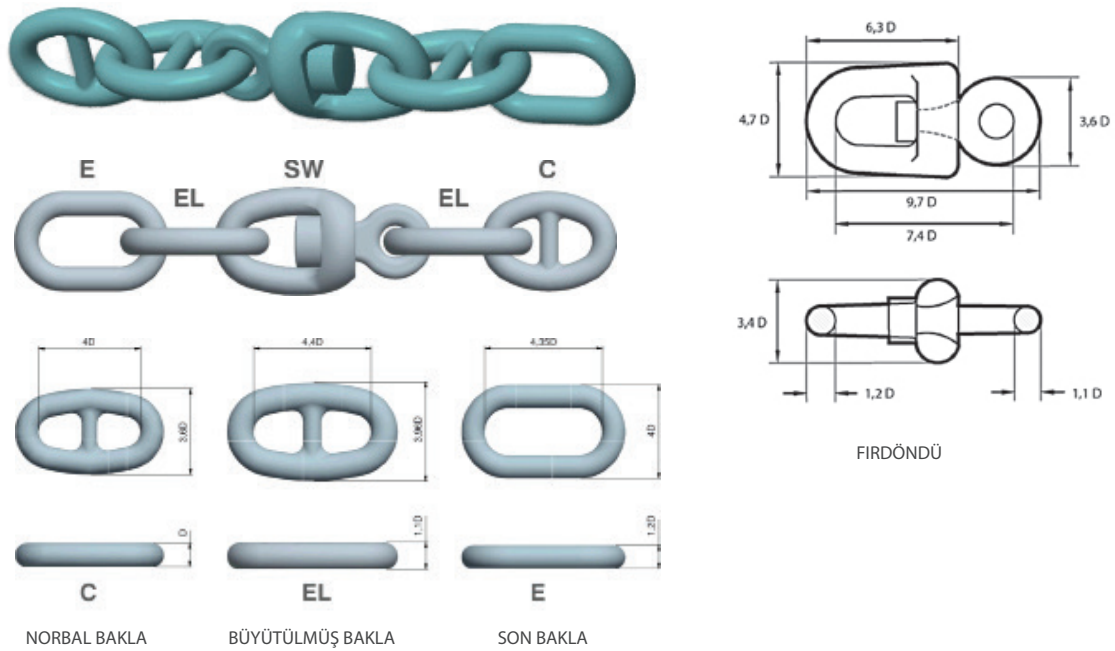
Swivel Shackle

The swivel-shackle is used to minimize the space between the anchor and the chain. One end can connect to crown-shackle or anchor-shank. The other end fit a studless endlink or a common link.



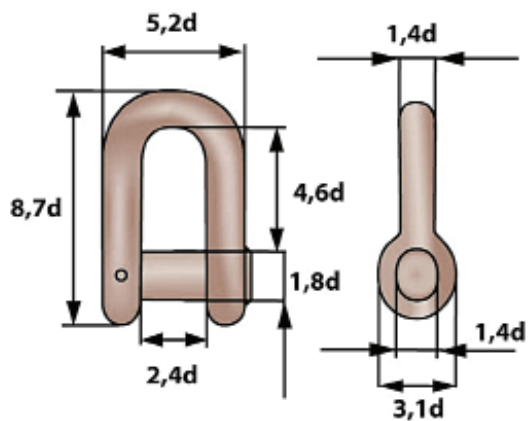
Swivel Forerunner

The swivel-forerunner is the most common swivel-connection used on ships. The end with a studless endlink fit the anchor-shackle, and the end with a common link for the kenter-shackle.



Anchor Shackle

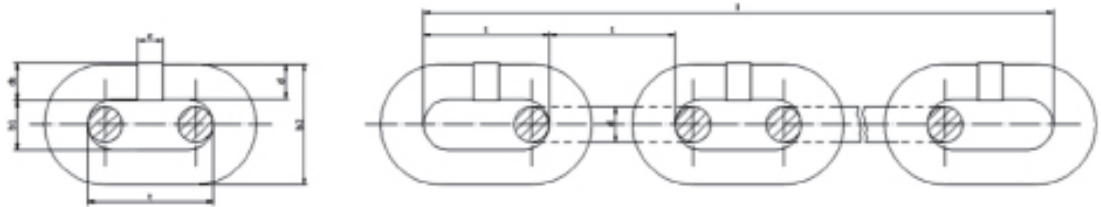
Anchor Shackle is used to connect the anchor to the anchor-chain. The shackle require a studless endlink at the chain-side.





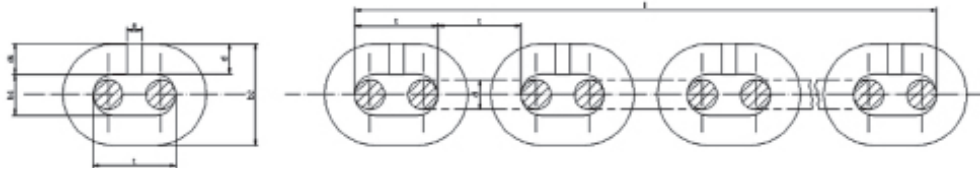


DIN 32891 Round Link Chains, Grade 2, Tested and Non-Calibrated

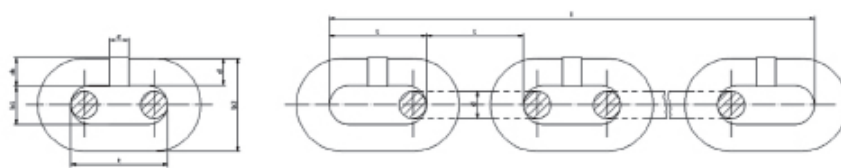


Nominal Diameter	Hatve Pitch	Inside Width (Min.)	Outside Width (Max.)	Weight	Working Load	Proof Load	Breaking Load
d mm	t mm	b1 mm	Ba mm	Kg/m	Kg Max.	kN Min.	kN Min
6 ±0,2	18 ±0,5	8	21,5	0,8	320	6,3	12,5
8 ±0,3	24 ±0,7	10,8	28,8	1,4	630	12,5	25
10 ±0,4	30 ±0,9	13,5	36	2,2	1000	20	40
13 ±0,5	39 ±1,2	17,5	46,8	3,8	1600	32	63
16 ±0,6	48 ±1,4	21,5	57,6	5,7	2500	50	100
18 ±0,9	54 ±1,6	24,3	64,8	7,3	3200	63	125
20 ±1,0	60 ±1,8	27	72	9	4000	80	160
23 ±1,2	69 ±2,1	31	82,8	12	5000	100	200
26 ±1,3	78 ±2,3	35	93,6	15,2	6000	125	250
28 ±1,4	84 ±2,5	37,8	100,8	17,6	8000	160	320
32 ±1,6	96 ±2,9	43,2	115	23	10000	200	400
36 ±1,8	108 ±3,2	48,5	130	29	12500	250	500
40 ±2,0	120 ±3,6	54	144	36	16000	320	630
45 ±2,3	135 ±4,1	61	162	45,5	20000	400	800

DIN 5685 Round Steel Link Chains Non-Proof Loaded

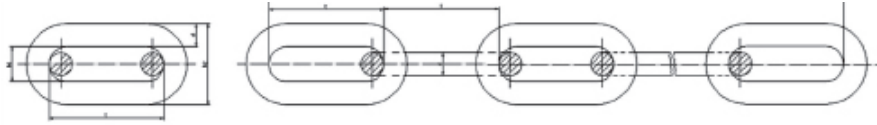


Nominal Diameter	Diameter Tolerans	Pitch	Pitch Tolerance	Inside Width	Weight	Marking
d mm	mm	t mm	mm	Min. mm	Kg / m	
5	±0,30	18,5	±0,9	7	0,51	C kısa
6	±0,30	18,5	±0,9	8	0,78	C kısa
7	±0,40	22	±1,1	9,5	1,1	C kısa
8	±0,40	24	±1,2	11	1,4	C kısa
10	±0,50	28	±1,4	14	2,3	C kısa
13	±0,70	36	±1,8	18	3,9	C kısa
16	±0,80	45	±2,3	22	5,8	C kısa



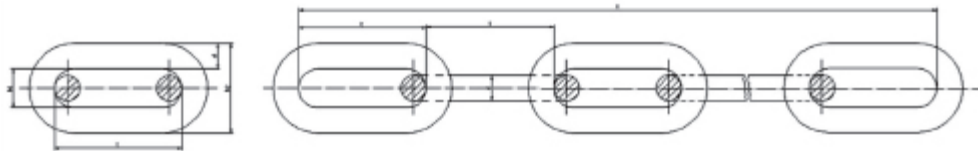
Nominal Diameter	Diameter Tolerans	Pitch	Pitch Tolerance	Inside Width	Weight	Marking
d mm	mm	t mm	mm	Min. mm	Kg / m	
5	±0,30	21	±1,1	9	0,5	B orta
6	±0,30	24	±1,2	11	0,73	B orta
7	±0,40	28	±1,4	12	0,99	B orta
8	±0,40	32	±1,6	14	1,3	B orta
10	±0,50	40	±2	18	2,00	B orta
13	±0,70	52	±2,6	23	3,40	B orta

DIN 5685 Round Steel Link Chains Non-Proof Loaded



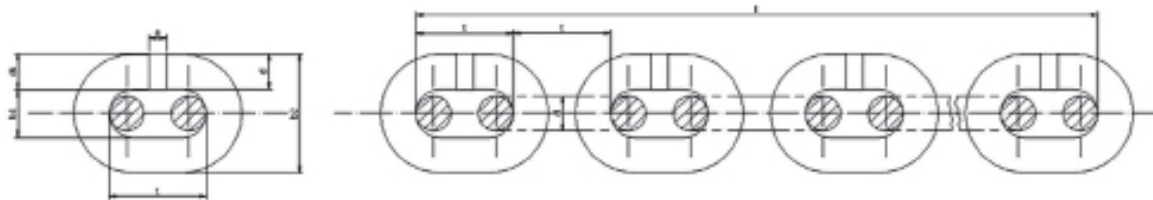
Nominal Diameter	Diameter Tolerans	Pitch	Pitch Tolerance	Inside Width	Weight	Marking
d mm	mm	t mm	mm	Min. mm	Kg / m	
5	±0,30	35	±1,8	9	0,42	A uzun
6	±0,30	42	±2,1	11	0,61	A uzun
7	±0,40	49	±2,5	12	0,82	A uzun
8	±0,40	52	±2,6	14	1,1	A uzun
10	±0,50	65	±3,3	18	1,7	A uzun
13	±0,70	82	±4,1	23	2,9	A uzun

DIN 20637 Monorails for Mining – Tested Round Steel Chains for Suspensions – Long Link



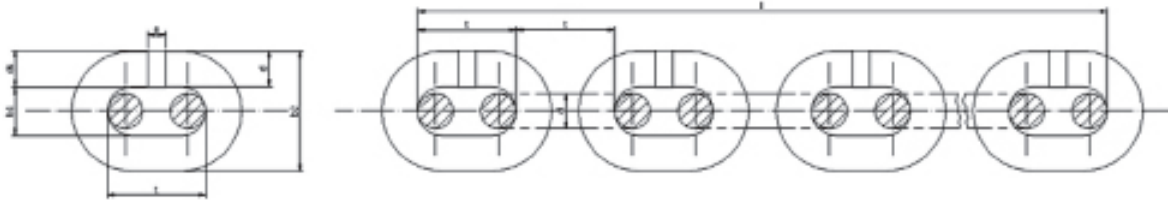
Nominal Diameter & Tolerance	Pitch & Tolerans	Inside Width (Min.)	Weight	Materials (DIN 17115)	Proof Load	Breaking Load
d mm	t mm	b1 mm	Kg/m		kN Min.	kN Min
16 ±0,6	80 ±1,5	22,4 +3	4,7	15Mn3Al	60	180
18 ±0,9	90 ±1,5	25 +3	6	21Mn5	100	250

DIN 5684 Round Steel Link Chains for Lifting Purposes, Grade 5-6, Calibrated and Tested



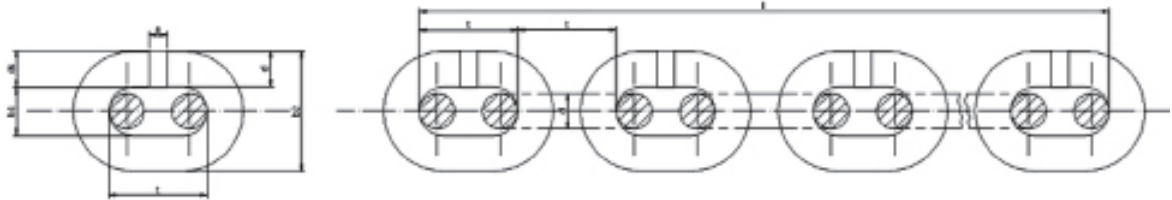
Nominal Diameter Tolerance	Pitch & Tolerance	Inside Length (Min.)	Outside Length (Max.)	Weight	Quality	Working Load	Working Load	Proof Load	Breaking Load
d mm	t mm	b1 mm	b2 mm	Kg/m	Grade	Kg Max.	Kg Max.	kN Min.	kN Min
4 ±0,2	12 +0,15 -0,1	5	13,7	0,35	5	250	320	6,3	12,5
					6	320	400	8	16
5 ±0,2	15 +0,2 -0,1	6	16,9	0,54	5	400	500	10	20
					6	500	630	12,5	25
6 ±0,2	18 +0,25 -0,1	7,2	20,2	0,8	5	600	750	15	30
					6	750	900	18	37,5
7 ±0,3	21 +0,3 -0,15	8,4	23,6	1,1	5	800	1000	20	40
					6	1000	1250	25	50
8 ±0,3	24 +0,3 -0,15	9,6	27	1,4	5	1000	1250	25	50
					6	1250	1600	32	63
9 ±0,4	27 +0,35 -0,2	10,8	30,4	1,8	5	1250	1600	32	63
					6	1600	2000	40	80
10 ±0,4	28 +0,35 -0,2	12	34	2,2	5	1600	2000	40	80
					6	2000	2500	50	100
11 ±0,4	31 +0,4 -0,2	13,2	37,4	2,7	5	2000	2500	50	100
					6	2500	3000	60	125
13 ±0,5	36 +0,45 -0,25	15,6	44,2	3,8	5	2650	3350	67	132
					6	3200	4250	85	170
14 ±0,6	41 +0,5 -0,3	16,8	47,6	4,4	5	3200	4000	80	160
					6	4000	5000	100	200
16 ±0,6	45 +0,6 -0,3	19,2	54,4	5,7	5	4000	5000	100	200
					6	5000	6300	125	250
18 ±0,9	50 +0,65 -0,3	21,6	61,2	7,3	5	5000	6300	125	250
					6	6300	8000	160	320

DIN 5684 Round Steel Link Chains for Lifting Purposes, Grade 5-6, Calibrated and Tested



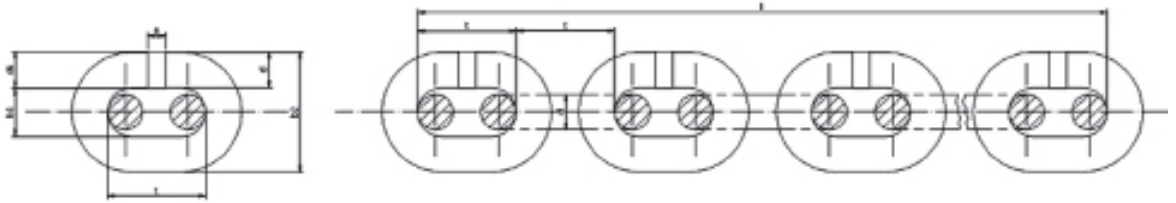
Nominal Diameter Tolerance	Pitch & Tolerance	Inside Length (Min.)	Outside Length (Max.)	Weight	Quality	Working Load	Proof Load	Breaking Load
d mm	t mm	b1 mm	Ba mm	Kg/m	Grade	Kg Max.	kN Min.	kN Min
4 ±0,2	12 +0,15 -0,1	5	13,7	0,35	8	500	12,5	20
5 ±0,2	15 +0,2 -0,1	6	16,9	0,54	8	750	20	32
6 ±0,2	18 +0,25 -0,1	7,2	20,2	0,8	8	1120	28	45
7 ±0,3	21 +0,3 -0,15	8,4	23,6	1,1	8	1500	40	60
8 ±0,3	24 +0,3 -0,15	9,6	27	1,4	8	2000	50	80
9 ±0,4	27 +0,35 -0,2	10,8	30,4	1,8	8	2500	63	100
10 ±0,4	28 +0,35 -0,2	12	34	2,2	8	3200	80	125
11 ±0,4	31 +0,4 -0,2	13,2	37,4	2,7	8	3750	95	150
13 ±0,5	36 +0,45 -0,25	15,6	44,2	3,8	8	5300	132	212
14 ±0,6	41 +0,5 -0,3	16,8	47,6	4,4	8	6000	150	250
16 ±0,6	45 +0,6 -0,3	19,2	54,4	5,7	8	8000	200	315
18 ±0,9	50 +0,65 -0,3	21,6	61,2	7,3	8	10000	250	400

DIN 5687 Round Link Chains,
Grade 5, Tested



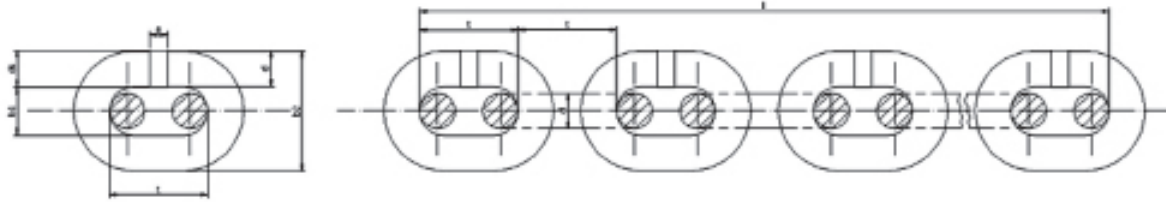
Nominal Diameter Tolerance	Pitch & Tolerance	Inside Length (Min.)	Outside Length (Max.)	Weigth	Working Load	Proof Load	Breaking Load
d mm	t mm	b1 mm	b2 mm	Kg/m	Kg	kN	kN
6 ±0,2	18 ±0,5	8	21,6	0,8	750	19	30
8 ±0,3	24 ±0,7	10,8	28,8	1,4	1250	32	50
10 ±0,4	30 ±0,9	13,5	36	2,2	2000	50	80
13 ±0,5	39 ±1,2	17,5	46,8	3,8	3200	80	125
16 ±0,6	48 ±1,4	21,5	57,6	5,7	5000	125	200
18 ±0,9	54 ±1,6	24,3	64,8	7,3	6300	160	250
20 ±1,0	60 ±1,8	27	72	9	8000	200	320
22 ±1,1	66 ±2,0	29,5	79,2	10,9	10000	250	400
26 ±1,3	78 ±2,3	35	93,6	15,2	12500	320	500
28 ±1,4	84 ±2,5	37,8	100,8	17,6	16000	400	630
32 ±1,6	96 ±2,9	43,2	115	23	20000	500	800
36 ±1,8	108 ±3,2	48,5	130	29	25000	630	1000
40 ±2,0	120 ±3,6	54	144	36	32000	800	1250
45 ±2,3	135 ±4,1	61	162	45,5	40000	1000	1600

EN 818-2-8 Sling Chains Grade 80



Nominal Diameter & Tolerance	Welding Diameter (Max.)	Pitch & Tolerans	Inside Width (Min.)	Outside Width (Max.)	Weight	Working Load Limit	Proof Load (Min.)	Breaking Load (Min.)
dn	ds	t	b1	b2	Kg/m	Kg	kN	kN
4 ±0,16	4,4	12 ±0,4	5,2	14,8	0,35	500	12,6	20,1
5 ±0,2	5,5	15 ±0,4	6,5	18,5	0,5	800	19,6	31,4
6 ±0,24	6,6	18 ±0,5	7,8	22,2	0,8	1120	28,3	45,2
7 ±0,28	7,7	21 ±0,6	9,1	25,9	1,1	1500	38,5	61,6
8 ±0,32	8,8	24 ±0,7	10,4	29,6	1,4	2000	50,3	80,4
10 ±0,4	11	30 ±0,9	13	37	2,2	3150	78,5	126
13 ±0,52	14,3	39 ±1,2	16,9	48,1	3,8	5300	133	212
16 ±0,64	17,6	48 ±1,4	20,8	59,2	5,7	8000	201	322
18 ±0,9	19,8	54 ±1,6	23,4	66,6	7,3	10000	254	407
19 ±1,0	20,9	57 ±1,7	24,7	70,3	8,1	11200	284	454
20 ±1,0	22	60 ±1,8	26	74	9	12500	314	503
22 ±1,1	24,2	66 ±2,0	28,6	81,4	10,9	15000	380	608
23 ±1,2	25,3	69 ±2,1	29,9	85,1	12	16000	415	665
25 ±1,3	27,5	75 ±2,2	32,5	92,5	14,1	20000	419	785
26 ±1,3	28,6	78 ±2,3	33,8	96,2	15,2	21200	531	849
28 ±1,4	30,8	84 ±2,5	36,4	104	17,6	25000	616	985
32 ±1,6	35,2	96 ±2,9	41,6	118	23	31500	804	1290
36 ±1,8	39,6	108 ±3,0	46,8	133	29	40000	1020	1630
40 ±2,0	44	120 ±4,0	52	148	36	50000	1260	2010
45 ±2,3	49,5	135 ±4,0	58,5	167	45,5	63000	1590	2540

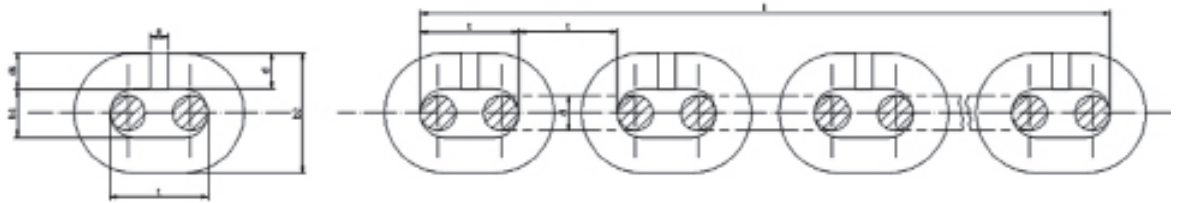
EN 818-2 Sling Chains
Grade 100



Nominal Diameter & Tolerance	Welding Diameter (Max.)	Pitch & Tolerans	Inside Width (Min.)	Outside Width (Max.)	Weight	Working Load Limit	Proof Load (Min.)	Breaking Load (Min.)
dn mm	ds mm	t mm	b1 mm	b2 mm	Kg/m	Kg	kN	kN
6 ±0,24	6,6	18 ±0,5	7,8	22,2	0,8	1400	35,3	56,5
7 ±0,28	7,7	21 ±0,6	9,1	25,9	1,1	1900	48,1	77
8 ±0,32	8,8	24 ±0,7	10,4	29,6	1,4	2500	62,8	101
10 ±0,4	11	30 ±0,9	13	37	2,2	4000	98,2	157
13 ±0,52	14,3	39 ±1,2	16,9	48,1	3,8	6700	166	265
16 ±0,64	17,6	48 ±1,4	20,8	59,2	5,7	10000	251	402
18 ±0,9	19,8	54 ±1,6	23,4	66,6	7,3	12500	318	509
19 ±1,0	20,9	57 ±1,7	24,7	70,3	8,1	14000	354	567
20 ±1,0	22	60 ±1,8	26	74	9	16000	393	628
22 ±1,1	24,2	66 ±2,0	28,6	81,4	10,9	19000	475	760
23 ±1,2	25,3	69 ±2,1	29,9	85,1	12	20000	519	831
26 ±1,3	28,6	78 ±2,3	33,8	96,2	15,2	26500	664	1060

EN 818-7 Hoist Chains Grade 80

These chains are short link lifting chains of medium tolerance for used in chain slings and for general lifting purposes.

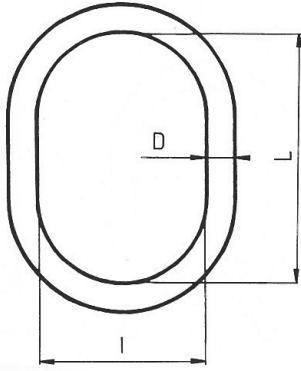


Nominal Diameter	Pitch	Tolerance	Inside Width b1	Outside Width b2	Weight	Working Load kg			Proof Load	Breaking Load
						T	DAT	DT		
mm	mm	mm	mm	mm	Kg/m	T	DAT	DT	kN	kN
4± 0,2	12	0,25	4,8	13,6	0,35	500	400	250	12,6	20,1
5± 0,2	15	0,3	6	17	0,54	800	630	400	19,6	31,4
6± 0,2	18	0,35	7,2	20,4	0,8	1.100	900	560	28,3	45,2
7± 0,3	21	0,4	8,4	23,8	1,1	1.500	1.200	750	38,5	61,6
8± 0,3	24	0,5	9,6	27,2	1,4	2.000	1.600	1.000	50,3	80,4
9± 0,4	27	0,5	10,8	30,6	1,8	2.500	2.000	1.250	63,6	102
10± 0,4	30	0,6	12	34	2,2	3.200	2.500	1.600	78,5	126
11± 0,4	31	0,6	13,2	37,4	2,7	3.800	3.000	1.900	95	152
12± 0,5	36	0,7	14,4	40,8	3,1	4.500	3.600	2.200	113	181
13± 0,5	39	0,8	15,6	44,2	3,7	5.300	4.200	2.600	133	212
14± 0,6	42	0,8	16,8	47,6	4,3	6.000	5.000	3.000	154	246
16± 0,6	48	0,9	19,2	54,4	5,6	8.000	6.300	4.000	201	322
18± 0,9	54	1	21,6	61,2	7	10.000	8.000	5.000	254	407
20± 1,0	60	1,2	24	68	8,7	12.500	10.000	6.300	314	503
22± 1,1	66	1,3	26,4	74,8	10,5	15.000	12.500	7.500	380	608

T - Hardened and tempered

DAT - Surface hardened

DT - Surface hardened, with higher surface hardness and higher hardening depth than DAT



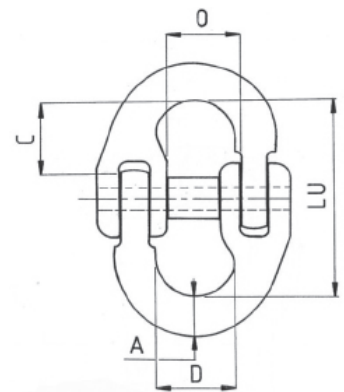
Chain Accessories Master Link



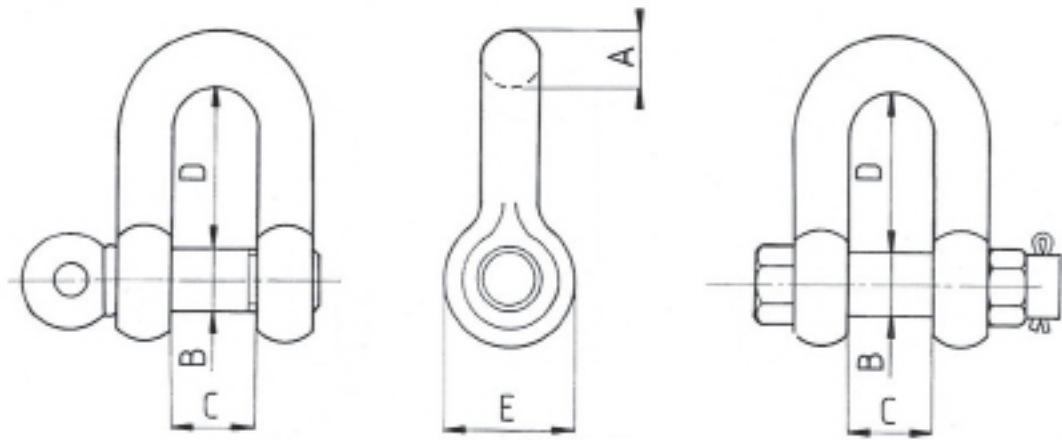
Chain Ø (mm)		D mm	L mm	I mm	Weight kg	Working Load Limit (TON)
1'li	2'li					
6	6	13	110	60	0,35	1,6
8	6	16	110	60	0,53	2
10	8	18	135	75	0,80	3,2
13	10	22	160	90	1,50	5
16	13	26	180	100	2,30	8
18	16	32	200	110	3,90	11,2
20	18	36	260	140	6,35	14
22	20	40	300	160	9,00	18
26-28	22	45	340	180	12,80	25
32	26-28	51	350	190	17,20	32
36	32	57	400	200	24,20	40
40	36	63	430	220	32,00	50
45	40	72	460	250	46,00	63
-	45	80	500	270	62,00	80

Chain Connecting Link

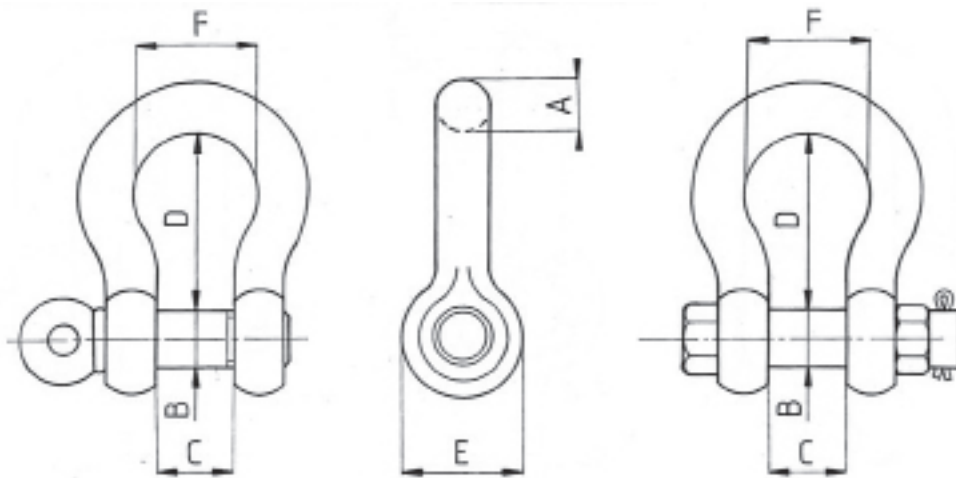
Chain Ø (mm)	A mm	LU mm	C mm	D mm	O mm	Weight Kg	Working Load Limit TON
6	7	43	16	18	14	0,07	1,12
7	8	49	18	20	17	0,10	1,50
8	9	70	26	25	21	0,25	2,00
10	12	77	30	27	23	0,35	3,15
13	17	83	31	30	28	0,68	5,30
16	20	101	38	39	33	1,10	8,00
20	23	117	45	46	41	1,65	12,50
22	27	133	51	55	45	2,90	15,00
26	30	146	52	67	56	4,16	21,20
32	37	183	69	79	67	7,19	31,50



U Type Chain Shackle



A mm	B mm	C mm	D mm	E mm	Weight Kg	Working L. Limit TON
6	8	12	22	18	0,05	0,50
8	10	14	26	21	0,06	0,75
10	11	16	32	25	0,11	1,00
11	13	18	37	27	0,18	1,50
13	16	21	41	30	0,34	2,00
16	19	27	51	40	0,67	3,25
19	22	32	60	48	1,14	4,75
22	25	37	71	54	1,74	6,50
25	29	43	81	60	2,52	8,50
28	32	46	90	67	3,45	9,50
32	35	52	100	76	4,90	12,00
35	38	57	111	84	6,47	13,50
38	41	60	122	92	8,63	17,00
45	51	73	146	110	14,20	25,00
50	57	83	171	127	21,20	35,00
65	70	105	203	152	38,50	55,00
76	82	127	216	165	56,50	85,00
89	95	133	266	203	93,00	120,00



A mm	B mm	C mm	D mm	E mm	F mm	Weight Kg	Working L. Limit TON
5	6	10	22	14	18	0,02	0,33
6	8	12	29	18	20	0,05	0,50
8	10	14	31	21	21	0,08	0,75
10	11	16	37	25	26	0,14	1,00
11	13	18	43	27	29	0,20	1,50
13	16	21	48	30	33	0,36	2,00
16	19	27	60	40	43	0,73	3,25
19	22	32	71	48	51	1,23	4,75
22	25	37	84	54	58	1,79	6,50
25	29	43	95	60	68	3,75	8,50
28	32	46	108	67	74	3,75	9,50
32	35	52	119	76	83	5,31	12,00
35	38	57	132	84	89	7,18	13,50
38	41	60	146	92	98	9,43	17,00
45	51	73	178	110	127	15,40	25,00
50	57	83	197	127	146	23,50	35,00
65	70	105	267	152	184	46,10	55,00
76	82	127	330	165	170	81,00	85,00
89	95	133	371	203	200	120,00	120,00
100	108	140	368	229	240	153,00	150,00

Quality Certificates



TS 663



TSE 11987



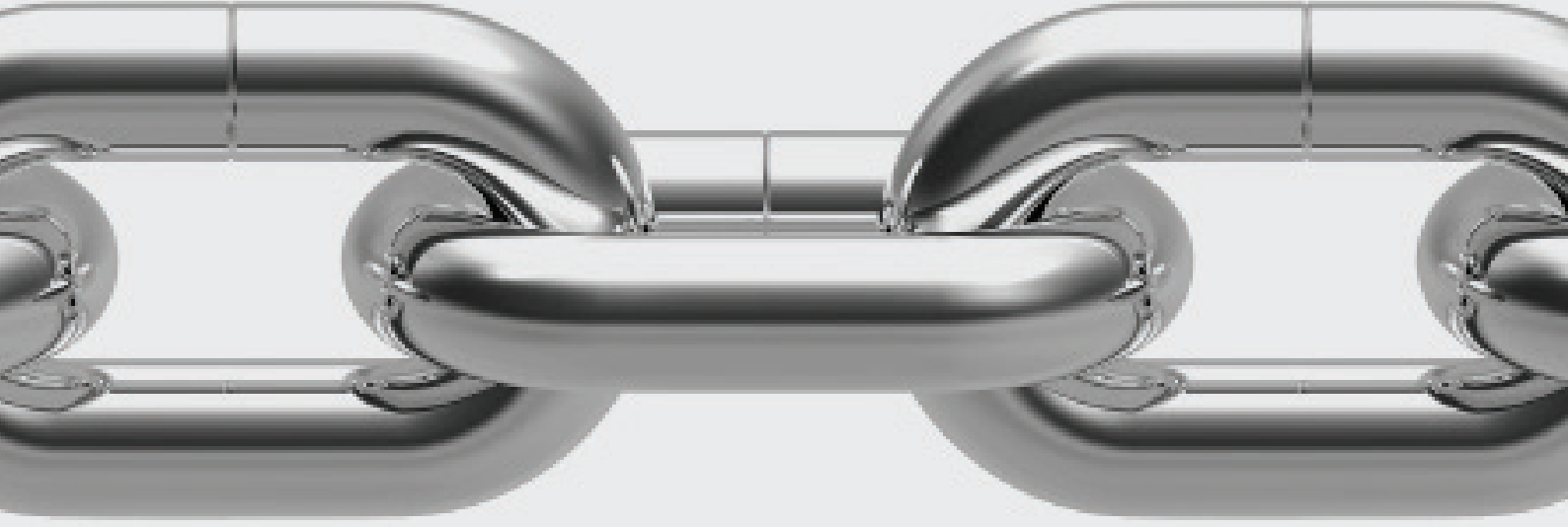
TS 1363



IQNet Quality Certificate



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