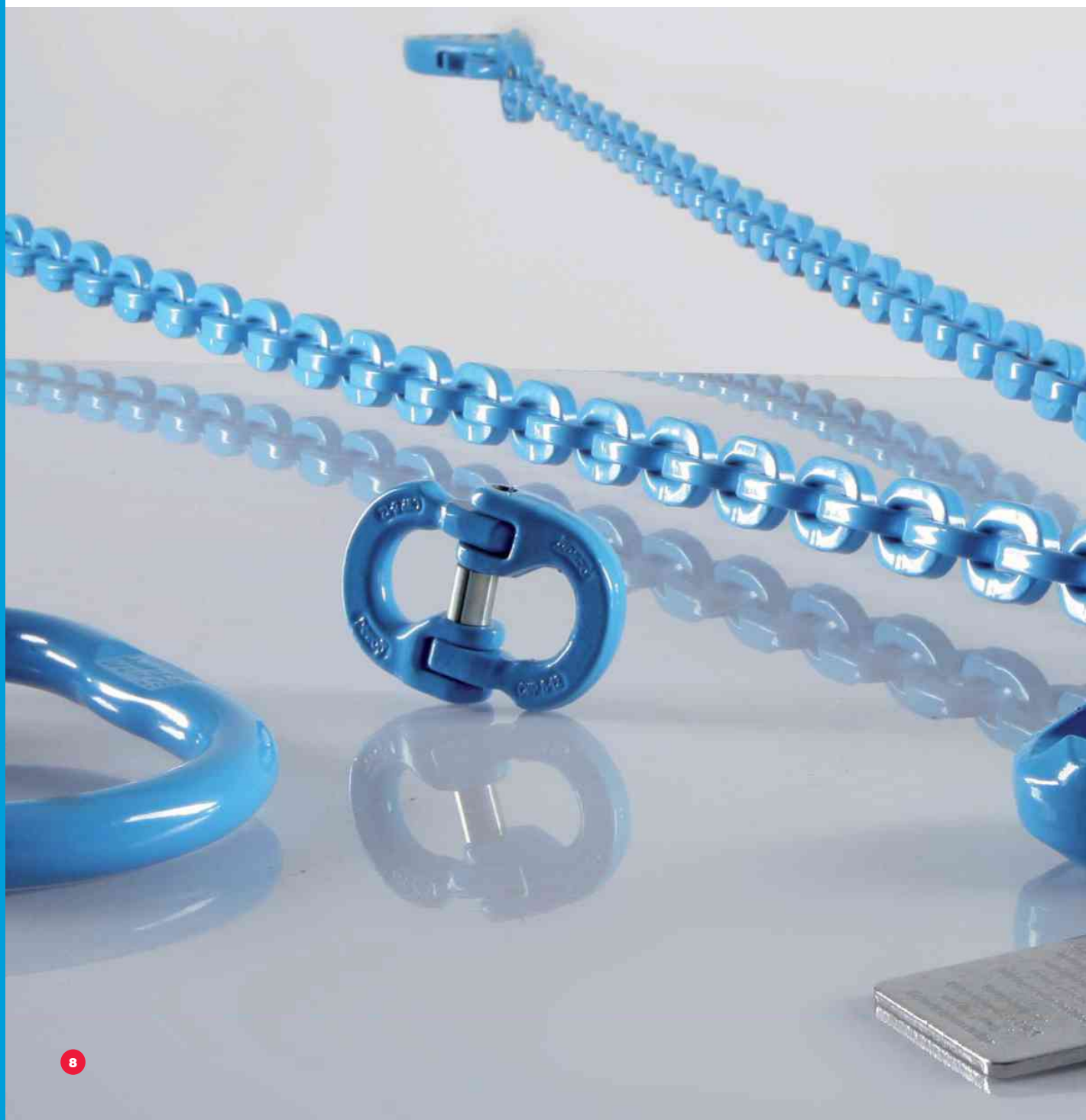




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**pewag**

## Grade 120 Winner Pro

Chain and Accessories





Features and benefits

The higher Working Load Limits (WLL) of the pewag winner-pro Grade 120 program (50% more compared to Grade 80 programs) allows significant weight reduction. Reducing the weight of the chain sling makes the assembly easier to use for the end-user. Additionally, the profile of the chain improves the bending resistance of the chain. This is significant when loading the chain over a corner.

**Intelligent profile** – because of the intelligent use of material, the major characteristics of the chain (i.e. fatigue resistance and bending resistance) were improved in a remarkable way, when you compare the cross section of the profile chain versus the round steel chain. In order to reach the best mechanical performance, the material use was optimized on effective areas (blue area) and reduced on less relevant areas (red area).



**Optimized bending resistance:** The section modulus which is important for preventing undesirable bending deformation is up to 16% higher with the profile chain compared to round steel chain with the same trade size section. Therefore the max. stress in the chain is reduced (no red areas).



50% higher load capacity compared

**Patent-registered material** with optimized strength and toughness properties at both high and low temperatures.

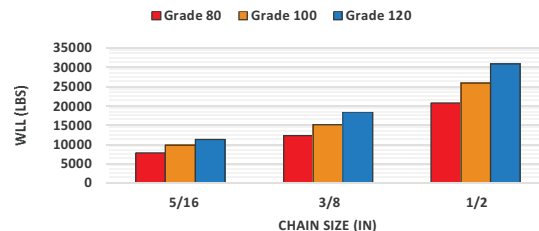
Load	Sling Weight G80 (in lbs)	5 ft. DOS GRADE 120 (in lbs)	% Reduction
11,000	21.70	15.55	40%
18,000	36.67	26.59	38%
31,000	57.44	46.00	25%

**Weight based performance - pewag Grade 120 represents the "Formula 1" of the technical chains**

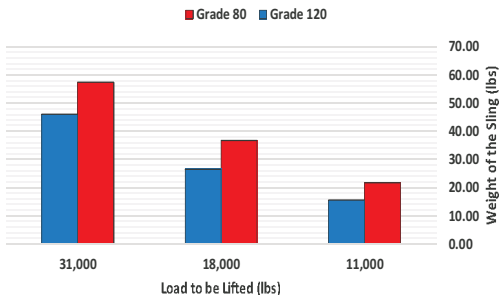
Load capacity [lbs]	Previous chain-Ø	pewag winner pro chain-Ø
9,300	3/8"	5/16"
15,600	1/2"	3/8"
24,600	5/8"	1/2"

**Longer lasting** due to higher wear resistance and less abrasion.

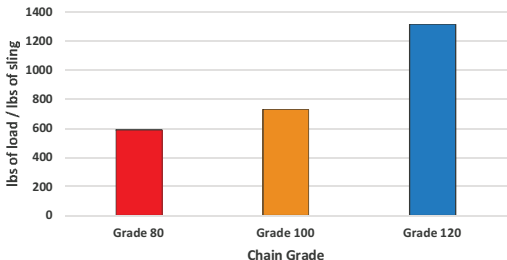
WLL of Slings



Sling Weight



Strength to Weight of Chain



**Innovative chain system** that due to its ruggedness can be used for many applications not just for lifting.

**Complete traceability** – chains and components are stamped with an identification mark so that the whole production process can be tracked.

**Easy visual identification** due to profiled chain and Grade 120 marking on every link.

**Corrosion protection** by means of light blue powder coating of chains and components.

**Quality approved European** production by an ISO 9001 certified company.

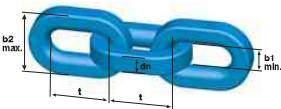
**Worldwide distribution network** – easy delivery of spare parts - premium service.

**Experience** – pewag is the first supplier of an innovative Grade 120 chain system.



NI | Lifting Chain Pewag Winner Pro

Specially rugged profile chain in Grade 120.



Code	Material thickness dn <small>[inch]</small>	Standard delivery length <small>[feet]</small>	Pitch t <small>[inch]</small>	Inside b1 min. <small>[inch]</small>	Outside b2 max. <small>[inch]</small>	WLL <small>[lb]</small>	Break. force <small>[lb]</small>	Weight <small>[lb/ft]</small>
NI720	9/32"	800	0.87	0.39	1.02	5,200	20,800	0.874
NI820	5/16"	500	0.98	0.43	1.14	6,600	26,550	1.040
NI1020	3/8"	400	1.30	0.55	1.46	10,600	42,400	1.747
NI1320	1/2"	200	1.61	0.75	1.97	17,900	71,600	3.091

Pewag Winner Pro Identification

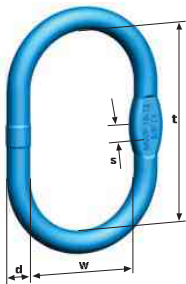
Sling working load tags with warning information made of stainless steel material which guarantee a longer lasting than standard working load tags and therefore increases the safety of the sling chain.







M | Enlarged Master Link

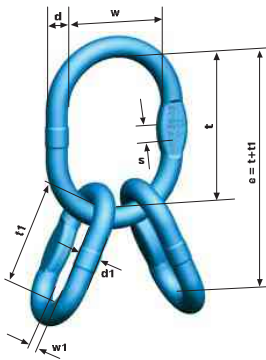


Code	For single leg sling	WLL [lb]	d [inch]	t [inch]	w [inch]	s [inch]	Weight [lb/pc.]
M1320	9/32"	6,100	0.55	4.72	2.76	0.39	0.97
M1620	5/16"	8,400	0.67	5.51	3.15	0.51	1.48
M1820	3/8"	12,800	0.75	6.30	3.74	0.55	2.67
M2620	1/2"	30,000	1.06	7.48	4.33	0.79	5.84

VM | Enlarged Master Link Assembly

Enlarged master link assembly for 2, 3 and 4 leg chain slings. Match to chain size according to table.

Code	For 2 leg sling	For 3 or 4 leg sling	WLL [lb]	e [inch]	d [inch]	t [inch]	w [inch]	d1 [inch]	t1 [inch]	w1 [inch]	Weight [lb/pc.]
VM720	9/32"	-	12,800	8.43	0.75	6.30	3.74	0.51	2.13	0.98	3.42
VM10720	3/8"	9/32"	22,000	10.24	1.06	7.48	4.33	0.67	2.76	1.34	7.43
VM131020	1/2"	3/8"	33,200	12.40	1.30	9.06	5.12	0.79	3.35	1.57	13.23
VM1320	-	1/2"	61,100	16.34	1.50	10.83	5.91	1.06	5.51	2.56	24.52





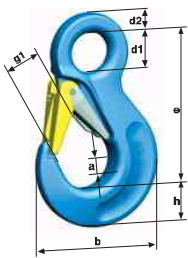
C | Connex Connecting Link

Connex connecting link for easy assembly of chains, master links, master link assemblies and components.

	Code	Size [inch]	WLL [lb]	e [inch]	c [inch]	s [inch]	d [inch]	b [inch]	g [inch]	Weight [lb/pc.]
	C720	9/32"	5,200	2.48	0.43	0.51	0.35	1.85	0.67	0.26
	C820	5/16"	6,600	2.44	0.55	0.59	0.39	2.28	0.83	0.64
	C1020	3/8"	10,600	2.76	0.63	0.79	0.51	2.60	0.87	0.73
	C1320	1/2"	17,900	3.74	0.83	0.94	0.67	3.31	1.02	1.54

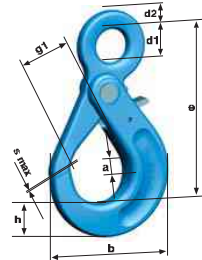
HS | Eye Sling Hook

For general lifting applications. All hooks with forged and galvanised safety latch.

	Code	Size [inch]	WLL [lb]	e [inch]	h [inch]	a [inch]	d1 [inch]	d2 [inch]	g1 [inch]	b [inch]	Weight [lb/pc.]
	HS720/820	9/32" - 5/16"	6,600	4.17	1.06	0.75	0.98	0.43	1.02	3.46	1.10
	HS1020	3/8"	10,600	5.16	1.30	1.02	1.34	0.63	1.22	4.25	2.43
	HS1320	1/2"	17,900	6.46	1.69	1.30	1.69	0.75	1.54	5.20	4.85

LH | Safety Hook

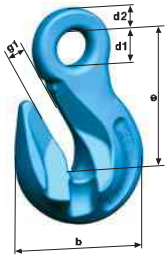
Safety hook with larger opening than the eye sling hook. Closes and locks automatically under load. Ensures high level of safety.

	Code	Size [inch]	WLL [lb]	e [inch]	h [inch]	a [inch]	b [inch]	d1 [inch]	d2 [inch]	g1 [inch]	s max. [inch]	Weight [lb/pc.]
	LH720/820	9/32" - 5/16"	6,600	4.96	0.98	0.94	3.50	0.98	0.55	1.34	0.04	1.98
	LH1020	3/8"	10,600	6.22	1.22	1.10	4.41	1.22	0.67	1.77	0.08	3.53
	LH1320	1/2"	17,900	8.07	1.61	1.34	5.71	1.57	0.87	2.13	0.08	7.28



**P | Grab Hook**

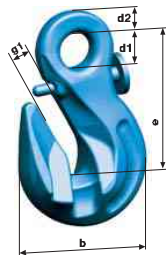
Special design of the chain contact area for optimal interaction between chain and hook.



Code	Size [Inch]	WLL [lb]	e [Inch]	b [Inch]	d1 [Inch]	d2 [Inch]	g1 [Inch]	Weight [lb/pc.]
P 720/820	9/32" - 5/16"	6,600	2.68	2.48	0.71	0.43	0.39	1.06
P 1020	3/8"	10,600	3.46	3.19	0.87	0.55	0.51	2.27
P 1320	1/2"	17,900	4.33	4.06	1.02	0.71	0.67	4.63

**PS | Grab Hook With Safety Pin**

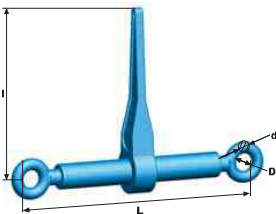
Hook for shortening which prevents the accidental release of the chain. Special design of the chain contact area for optimal interaction between chain and hook.



Code	Size [Inch]	WLL [Inch]	e [Inch]	b [Inch]	d1 [Inch]	d2 [Inch]	g1 [Inch]	Weight [lb/pc.]
PS720/820	9/32" - 5/16"	6,600	2.68	2.48	0.71	0.43	0.39	1.06
PS1020	3/8"	10,600	3.46	3.19	0.87	0.55	0.51	2.27
PS1320	1/2"	17,900	4.33	4.06	1.02	0.71	0.67	4.63

**RLB | Loadbinder**

For pewag winner pro connex system. Load binder with optimized lever length.




Code	Size [Inch]	Length closed L [Inch]	Length open L [Inch]	Tension range [Inch]	length of lever [Inch]	D [Inch]	d [Inch]	Weight [lb/pc.]
7G120RLB	9/32"	13.98	19.69	5.71	9.33	0.79	0.63	7.06
10G120RLB	3/8"	14.37	20.08	5.71	13.98	1.02	0.71	8.38
13G120RLB	1/2"	22.68	34.09	11.42	14.13	1.22	0.87	21.83

Image as shown is for dimensional purposes only. Load binders sold assembled (connector and grab hook included).




**CBH | Connex Bolt And Bushing Set**

Spare parts for CWP connex.

	Code	for connex type
	CBH7	C720
	CBH8	C820
	CBH10	C1020
	CBH13	C1320


**SFG | Forged Safety Latch Set**

Safety latch set for HSWP.

	Code	for hook type
	SFG7/8	HS720/820
	SFG10	HS1020
	SFG13	HS1320


**VLH | Trigger Set**

Trigger set for LHWP safety hooks.

	Code	for hook type
	VLH720	LH720/820
	VLH1020	LH1020
	VLH1320	LH1320

**PSG | Safety Pin Set**

Spare parts for PSG grab hooks with safety pin.

	Code	for hook type
	PSG720	PS720
	PSG1020	PS1020
	PSG1320	PS1320





## User Manual

**User manual for the assembly, use, storage and maintenance of pewag winner pro chain slings**

### General

The pewag winner pro chain system can be used in a wide range of applications. These applications must be checked for suitability by a competent authorized person, or by pewag itself in the event of doubt. One major application field of the pewag winner pro chain system is overhead lifting. The following information was prepared in acc. with ASME B30.9 assembling chain slings and rating of the capacity only refer to the uniform load method with angle ranges of 90°, 60°, 45°, 30° Degrees.

In addition, there is also an alternative method of rating the capacity. This method should only be used where weight and distribution of the load and the angles of the sling legs are known. In such cases please contact our technical department as the information given in this catalogue does not include details for chain sling rating using this alternative rating method! pewag winner pro lifting chains may only be assembled, tested and used by competent authorized people.

If used properly pewag winner pro lifting chains have a long service life and provide a high level of safety. Personal injury and damage to property can, only be prevented by proper use. Therefore, It is very important that you read and understand this user manual and act in a responsible and forward-thinking manner when using lifting equipment.

### Limitations on use

The shape of the chain slings must not be modified – e.g. by bending, grinding, detaching individual parts, drilling, etc. The chain slings may also not be heated to above 400°F. Do not remove any safety components, such as latches, safety pins, safety catches, etc. Do not apply any surface coatings to pewag winner pro chain slings, e.g. do not subject them to hot dip galvanizing or electro-galvanizing. Dipping or removing the coating with chemicals is also dangerous and must approved by pewag.

If necessary, please contact our technical department who will be pleased to provide assistance.

### Assembling chain slings

pewag winner pro chains and accessories may only be assembled by competent authorized people using pewag winner pro chains and accessories from the pewag winner pro chain system. When modifying or repairing pewag winner pro chain slings use only original parts supplied by pewag (e.g. bolts, safety pins, screws, etc.). pewag Winner Pro chains and components have

only limited compatibility with chains and components of other suppliers. Compatibility should be checked in advance by competent authorized people. pewag will not be responsible for any damage arising as a result of combination with products from a different supplier.

It is imperative to adapt the WLL to the weakest link in the assembly. Appropriate marking/coloring must be used to prevent the user from misinterpreting the load capacity. pewag Winner pro chain slings must be labeled with specially developed identification tags. This tag may only be used if the WLL of the sling conforms to the values provided in the table on page 4. Deviating WLLs must be highlighted on a separate tag (e.g. round shape)

### Restrictions of use

#### Effects of temperature

pewag winner pro lifting accessories may not be used outside the temperature range stated. If this has nevertheless been the case, do not use the chain slings and remove them from service.

#### Effects of acids, caustics and chemicals

Do not subject pewag winner pro lifting accessories to acid or caustic solutions, or use them in acid or caustic-laden atmospheres. Certain production procedures release acids and/or fumes. Use of pewag winner pro lifting accessories in highly concentrated chemicals in combination with high temperatures is only permitted with explicit prior approval.

#### Working load limit

The working load limits in this catalogue and those on the chain sling have been determined on the basis that the loading of the chain sling is symmetrical and there are no particularly hazardous conditions. Hazardous conditions would be offshore applications, lifting of people, and lifting of dangerous loads. (e.g. liquid metals, corrosive materials, caustic materials, nuclear materials, etc.) If the chain sling is to be used for such purposes, the extent of the risk is to be assessed by an expert and the safe working load be adjusted accordingly.

#### Inspection and tests

Before using any lifting equipment for the first time, it should be ensured that:

- The chain sling corresponds exactly to the order.
- The inspection certificate or certificate of conformity has been supplied.
- Marking and load capacity stated on the chain sling correspond to the information given on the inspection certificate or certificate of conformity.
- All particularities of the chain sling have been entered into a register of lifting equipment, if required.
- Instructions for the proper use of chain sling has been supplied, read and understood by personnel.

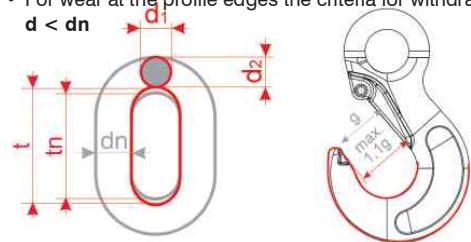


Check the chain slings before each use for visible damage or signs of wear. In case of doubt or damage, do not use the chain slings, and have them inspected by a competent person. After extraordinary or unusual events that could cause impairment of the chain sling, the chain sling must be checked by an expert (e.g. after exposure to uncontrolled heat). As per ASME B30.9-1.9.3 standard we recommend subjecting the chain sling to a periodic inspection intervals which shall not exceed a year. Also, to a load test with 1.5 times the load capacity, followed by a visual inspection, or another type of crack test (fluxing).

#### Elimination criteria following visual inspection

- Broken part
- Missing or illegible marking of the chain sling, i.e. identification data and/or load capacity data
- Deformation of suspension or sling parts or the chain itself
- Elongation of the chain. The chain must be discarded if  $t > 1.05 t_n$
- Wear is determined as the mean value of two measurements of diameters (d1 and d2) carried out at a right angle (see picture). The chain must be discarded if  $dm = \frac{d_1 + d_2}{2} \leq 0.9 dn$

- For wear at the profile edges the criteria for withdrawal is  $d < dn$



- Cuts, notches, grooves, surface cracks, excessive corrosion, discoloration due to heat, signs of subsequent welding, bent or twisted links or other flaws.
- Cracks: Chains with cross-cracks that are visible to the naked eye must be discarded.
- Missing or non-functional safety device (safety latches if fitted) as well as signs of widening or twisting of hooks, i.e. noticeable enlargement of the opening or other forms of deformation. The enlargement of the opening must not exceed 10% of the nominal value. A jumped out safety catch shows an overload of the hook.

#### Maximum approved dimensional change:

Designation	Dimensions	Admissible deviation
chain	dn	-10%
	tn	+5%
	wear at edges	d = dn
links	d	-10%
	t	+10%
hooks	e	+5%
	d2 and h	-10%
	g	+10%
connecting links	halves must be moveable	must be given
	e	+5%
	c	-10%
	d	-10%

#### Maintenance and repair

pewag lifting accessories and chain slings should only be repaired by qualified personnel using genuine pewag parts.

#### Documentation

Records of inspections, and in particular their findings, as well as details of repairs carried out must be kept on file during the entire service life of the chain sling.

#### Storage

pewag chain sling should be stored in cleaned and dried condition and protected from corrosion, e.g. lightly lubricated.

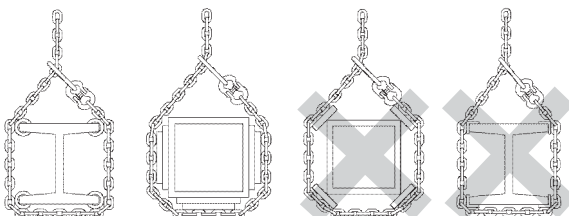
## Correct use of pewag winner pro chain sling

#### Angle of inclination – sling points

Select slinging points and chain sling type in such a way that the angles of inclination of all chain strands (legs) lie within the data given on the CE marked plate. All angles of inclination should preferably be the same. Never use chain slings angles of less than 30°.

#### Edge load – protection of load and chain

The maximum load capacity of pewag chain slings was defined under the assumption that the individual chain legs are pulled straight under load, i.e. that they do not run over edges. In the case of edge loading, load protection (packing) should be used to avoid damage. For correct and incorrect use see illustrations.



If chains are guided over edges without proper protection, their load capacity is reduced. For the corresponding load factors please refer to the table on page 4. If chains are looped around a beam or other round shaped loads, the diameter should be minimum 2 times the chain pitch. For smaller diameters the WLL of the chains must be reduced by 50%.

#### Impact

The maximum load capacity of pewag chain slings are defined under the assumption that the load on the individual chain strands (legs) is applied without any impact or shock loading. In cases of possible impact/shock, the load factors on page 23 must be taken into consideration.

Impact/shock is defined as follows:

- Slight impact: created, for example, when accelerating the lifting or lowering movement.
- Medium impact: created, for example, when the chain slips when adjusting to the shape of the load.
- High impact created, for example, when the load falls into the



## User Manual (continues)

unloaded chain.

### Vibrations/ Dynamic Forces

pewag winner pro chains and accessories are rated according to regulations for 20,000 load cycles. At high dynamic forces there may nevertheless be a risk of damage to the chain and accessories. According to the employer's liability insurance association Metall Nord Süd this risk may be prevented if the stress at load capacity limit is reduced by using a larger chain dimension.

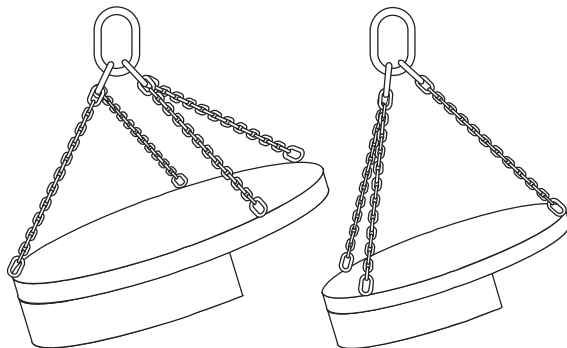
### Symmetrical loading

The load capacities of pewag chain slings are defined with the assumption that the load of the individual chain strands (legs) is symmetrically distributed. Lifting of the load then leads to identical angles of inclination, and the individual strands (legs) are symmetrical to each other.

The load can still be considered symmetrical when the following conditions are met:

- The load is smaller than 80 % of the stated load capacity (WLL)
- The chain sling leg angles to the vertical are all not less than 15°
- The angles to the vertical of all chain legs are identical or deviate max. 15° from each other
- In the case of three and four strand sling chains, the corresponding plan angles are all within 15° of each other.

### Example of asymmetry



The majority of the load is carried by 1 strand (leg)

The majority of the load is carried by 2 strand (legs)

If all of the listed parameters are not met, the load is considered to be asymmetric and an expert must be called in to assess the lifting process. In case of doubt, only one chain strand (leg) should be considered as load-bearing. For the corresponding load capacity please refer to the load capacity table.

### Use of pewag chain slings for other than the intended purposes

Use chain slings only for the intended purpose. In cases where not all individual strands (legs) are used simultaneously or where several chain slings are used at the same time, please refer to the load capacity table to find out the load capacity. In case of doubt or as an alternative, change the load capacity according to the following table.

Type of chain sling	Number of individual strands used	Use factor in relation to the load capacity given on the tag
two (2-leg)	1	1/2
three- and four- (3/4-leg)	2	2/3
three- and four (3/4-leg)	1	1/3
2x single (single leg)	2	1.4
2x (2 leg)	3 or 4	1.5

Hang any individual chain legs that you do not use, back into the master link to prevent hazards caused by freely swinging chains or unintended hooking.

Before using several chain slings at the same time, make sure that the crane hook is big enough for all the master rings. Make sure that the master rings cannot fall out of the hook during lifting. No angles of inclination of less than 30° allowed. Use only chain slings of the same nominal thickness and grade at the same time.



Detailed user manuals are available for download at [www.pewag.com](http://www.pewag.com).

