

# Tire protection chains

Protection and traction







# Content

## Powerful chains for individual applications.

pewag tire protection chains  
are used on all 5 continents from  
-35 °C in mining applications  
to +600 °C in hot slag.  
For more than 60 years pewag  
tire protection chains contribute  
to keep the machines in mines  
and steel mills moving.



### pewag group

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# Welcome to the pewag group

**We are an internationally operating group of companies. Our track record goes back to the year 1479.**

## Mission Statement

**pewag group's Mission Statement expresses the goals of our actions as follows:**

With our joy for innovation, we strive to make all products of the pewag group the best in the respective markets. The high quality of our products and services as well as our employees' passionate dedication are the foundation to our pursuit of outstanding services and complete customer satisfaction.

## Principles of pewag group

### Leading in Quality

The values of our product brands are demonstrated by our first-class quality and innovations and are communicated consistently and coherently.

We anticipate market demands and changes in the environment and adapt our strategies, organizations and actions accordingly to satisfy our customers' needs through providing an optimal price-performance ratio: timely delivery, efficient and obliging service.

### Leading in Responsibility

We commit ourselves to careful treatment of the environment, by reducing the use of energy and raw materials, ensuring the longevity of our products and making them recyclable.

We value an open, honest and team-oriented work-style, which is based on transparent communication honoring ideas, opinions and experience of our employees as valuable inputs for our decision making process.

We strive for stable and fair partnerships with our employees, customers, suppliers and other business partners and take social aspects into consideration when making business decisions.

### Leading in Technology

We secure our technological strength by striving for product quality, constant improvements and innovations of products, as well as manufacturing processes.

We strive to be the best in product technology. This ensures that our customers always have optimal solutions available and that we expand and protect our market position.

### Leading in Economics

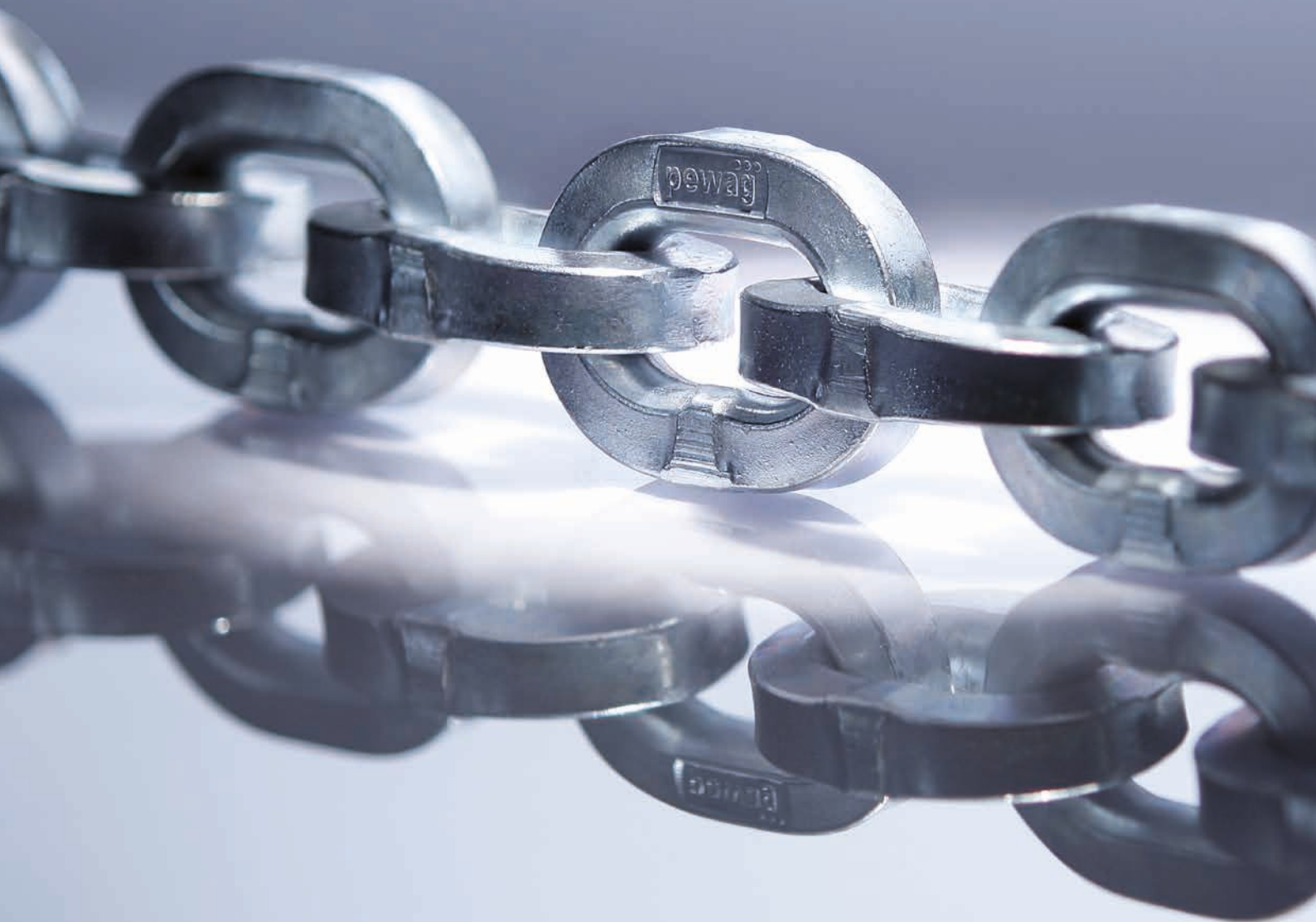
In all our processes we use due diligent business practices and efficiency and strive to improve these continuously.

In the long-term, we will continuously increase our economic performance to raise corporate value, achieve sustained growth and thus secure a successful future of the organization.



We are a modern group of companies which looks back to a tradition and experience of more than 500 years. Since our founding years, a lot has changed, but the values that made our success possible from the beginning remain.

**pewag group –  
Innovation. Quality. Partnership.**



# History of the pewag group

## Advantage through tradition

The history of pewag group goes back to the 15<sup>th</sup> century and therefore makes us one of the oldest chain manufacturer worldwide. With our experience we are ready for the future.

### Timetable of important events

- 1479** First documented references of a forging plant in Brückl
- 1787** Foundation of a chain forge in Kapfenberg
- 1803** Foundation of a chain forge in Graz
- 1836** Establishment of an iron casting plant in Brückl
- 1912** Production of the first pewag snow chain
- 1923** Merger of plants in Graz and Kapfenberg –  
Creation of the name “pewag”
- 1972** Foundation of a sales company in Germany
- 1975** Foundation of a sales company in the USA
- 1993** Foundation of pewag austria GmbH
- 1994** Foundation of the first subsidiary in Czech Republic
- 1999** Acquisition of the Weissenfels Group
- 2003** Separation from the Weissenfels Group
- 2005** Reorganization into 2 groups:  
Schneeketten Beteiligungs AG Group – Snow Chains  
pewag austria GmbH Group – Technical Chains
- 2009** Acquisition of Chaineries Limousines S.A.S.
- 2012** Foundation of the first manufacturing company  
in the USA
- 2013/** Foundation of various international sales
- 2014** companies



Lithography forging plant Brückl 1855



Anchor chain forge 1878



Chain forgers 1956

# Quality management

## Our main goal is customer satisfaction.

In this instance, quality means that only those products and services are developed, manufactured and delivered which completely and without compromise satisfy the customer.

The pewag group's quality policy, is underlined by the following basic principle: **“we supply high-end products and services to our customers that conform to the technical standards and requirements”**, can be summarised in the subsequent four points.

### Market-oriented Quality

In order to maintain and to widen the competitive position of the pewag group, the quality of finished goods and services must be consistent with the specifications of the customer and also with their expectations of one of the leading companies. No product should ever pose a danger to people or the environment.

### Economic Quality

As a profit-oriented company, quality is achieved by taking into consideration the material, personnel and financial resources; this means that we establish an appropriate best price/performance ratio for the customer within the acknowledged framework.

### Quality Responsibility

Stringent demands are placed on all employees to ensure high standards of quality. No matter what hierarchical level, all managers are in charge of managing quality. Every employee within the pewag group should be educated, motivated and instructed by the management team. It is important for promoting high quality awareness that the education and training of employees is at the forefront, as each employee is responsible for the quality of his/her own work.

For each of our employees, the statement **“QUALITY STARTS WITH ME”** must be true!

### Process-oriented Quality

The close interaction between sales, product development, production and customer service is regulated within the individual companies by fixed processes and activities, as well as responsibilities with the aim to reach and maintain the defined quality standards.





## Business areas

### Working with pewag products

The pewag group has a substantial and diverse spectrum of products and services.

Our range of products varies from traction chains for tires (snow chains for passenger cars, trucks and special-purpose vehicles, tire protection chains for mining vehicles) over different industrial chains to products for the do-it-yourself sector (light chains, belts, etc.)



**Segment A**  
Snow and forestry chains



**Segment B**  
Hoist and conveyor chains



**Segment C**  
Do-it-yourself



**Segment D**  
Engineering



**Segment F**  
Lifting and lashing chains



**Segment G**  
Tire protection chains

## Environment – we take responsibility

### Ecological awareness in all areas



Our company's manufacturing location in Kapfenberg, Austria, has been used for iron and steel production for over 270 years. A second facility located in Brückl, Austria, was first documented in records dating back to 1479. Based on this long manufacturing tradition, we take serious responsibility for our products, employees and the environment at all our international locations. Hence, one of our major concerns is to improve energy efficiency and, in doing so, to minimise energy consumption over a long period of time with the development of new production technologies. An important goal is to increase energy efficiency and consequently lower energy demand. Consequently, we develop our products to achieve longer product life-cycles and lower weight but simultaneously, increasing their working load capacities and the safety for our customers. We are committed to upholding all relevant energy and environmental standards by setting clearly defined goals and continually improving our performance. To achieve this goal, we use modern manufacturing technologies. An important step is to provide the necessary resources and to include our employees in the process. We are convinced that well-informed and motivated employees can actively participate in environmental conservation.

Wherever we are unable to avoid an environmental impact, we have set ourselves the goal to continually reduce our energy consumption, waste and environmentally harmful emissions. When purchasing new equipment, we strive to find the best and most efficient technical solution possible. It is important for us to promote the purchase of energy efficient products and services.

Our process-oriented management system regulates the documentation concerning all environmental relevant procedures. It also encompasses preventative measures for possible failures, as well as behavioural instructions for regular and/or extraordinary operational procedures. By systematically monitoring and assessing our environmental activities, we are quickly able to resolve deviances and to take corrective action. This process extends throughout the whole organisation to optimise all business processes. We strive to engage in an open dialogue with our customers, neighbours and authorities to inform them of our energy and environmental engagements.

Through specific communication we want to inform our customers about the environmental aspects of our products – specifically inform them about the longevity of our products. Through meaningful communication, we strive to motivate our suppliers and customers to think – in turn – about their environmental footprint and to put into practice similar environmental standards in their businesses.

# Customer proximity

## International presence

In the ambitious five-hundred year history pewag has evolved from a small and modest company to a global organization with several subgroups.

With 12 production and 40 sales and other locations on all five continents, pewag documented its claim as one of the world's leading chain manufacturers.

In addition to the numerous locations pewag as an international company relies on his capillary, strong, and professional partner network. These collaborations provide optimal customer service in currently more than 100 countries around the world.

## Production and sales locations

### Europe

Austria	pewag austria GmbH, Graz pewag austria GmbH, Kapfenberg pewag Schneeketten GmbH, Graz pewag Schneeketten GmbH, Brückl pewag engineering GmbH, Kapfenberg pewag austria Vertriebsgesellschaft mbH, Graz pewag Ketten GmbH, Klagenfurt pewag International GmbH, Klagenfurt
Germany	pewag Deutschland GmbH, Unna pewag Schneeketten Deutschland GmbH, Unna
France	pewag France SAS, Limoges Chaineries Limousines SAS, Bellac
Italy	pewag italia srl, Andrian
Croatia	pewag d.o.o, Rijeka
The Netherlands	pewag nederland BV, Rijnsburg APEX International BV, Hillegom APEX Automotive BV, Hillegom
Poland	pewag polska Sp. z o.o., Buczkowice
Portugal	pewag Portugal – Comercio de Produtos e Equipamentos Industriais, Lda, Santo Antão do Tojal
Romania	pewag Romania SRL, Sibiu County
Russia	OOO "PEWAG", Moscow
Sweden	pewag sweden AB, Emmaboda
Slovakia	pewag Slovakia sro, Nováky
Czech Republic	pewag Czech sro, Vamberk Řetězárna Česká Třebová sro, Vamberk pewag sro, Vamberk pewag Czech sro, Česká Třebová peform Chrudim sro, Chrudim

### Europe

Ukraine	TOV pewag Ukraine GmbH, Lviv
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### North America

USA	pewag Inc, Bolingbrook, Illinois pewag Inc, Rocklin, California pewag Traction Chain Inc, Pueblo, Colorado
Canada	pewag Canada Inc., Mississauga
Mexico	pewag Mexico SA de CV, Mexico

### South America

Brazil	Helevar Comércio e Importação de Produtos Metalúrgicos Ltda., Porto Alegre
Colombia	pewag Columbia S.A.S, Medellín

### Africa

South Africa	pewag chain south africa (pty) ltd., Rivonia
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### Australia

Australia	pewag australia Pty Limited, Barrack Heights
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### Asia

India	pewag India Private Limited, Bangalore
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pewag group presents  
itself on the internet. More ...  
[www.pewag-group.com](http://www.pewag-group.com)  
[www.pewag.com](http://www.pewag.com)

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Innovation. Quality. Partnership.**



# Benefits and service

## Overview

### Benefits and Service

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# pewag tire protection chains

## Benefits

Earth Mover Tires are the highest single cost factor for the operation of a wheeled unit and sensitive to cuts, punctures and other damages.

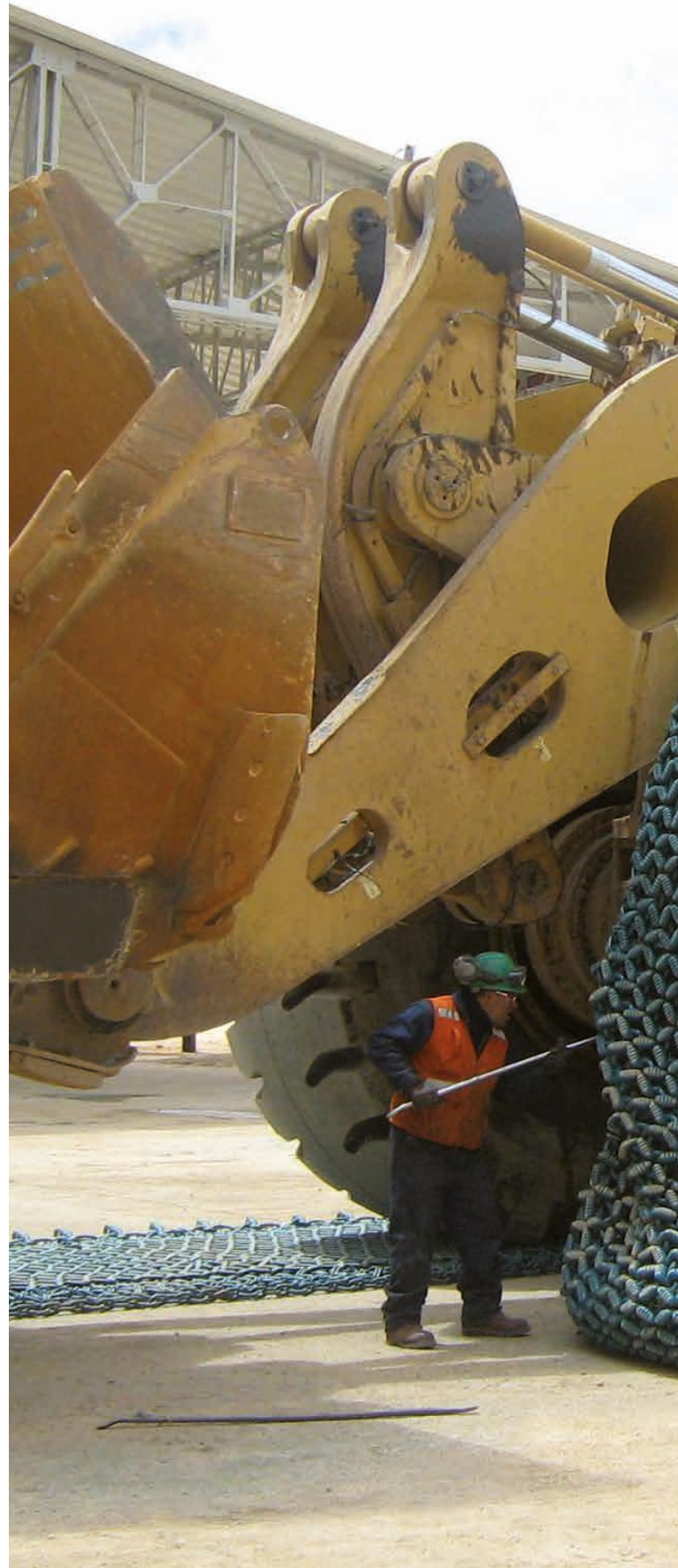
Their high value means that pewag tire protection chains solve many of these problems by providing the following advantages:

### Lower direct hourly operating costs:

- Multiplied tire life – significant reduction of tire costs
- Predictable service life of chains and tires – accurate budgeting at lower costs, low financial costs
- Minimized down-time due to tire failure – maximum equipment availability
- Improved stability, increased traction and better penetration for digging and break-out – increased productivity in output per hour

### Additional benefits:

- Optimum tire protection – reduced tire maintenance
- Protection plus traction with chain use – safe operation even in worst conditions

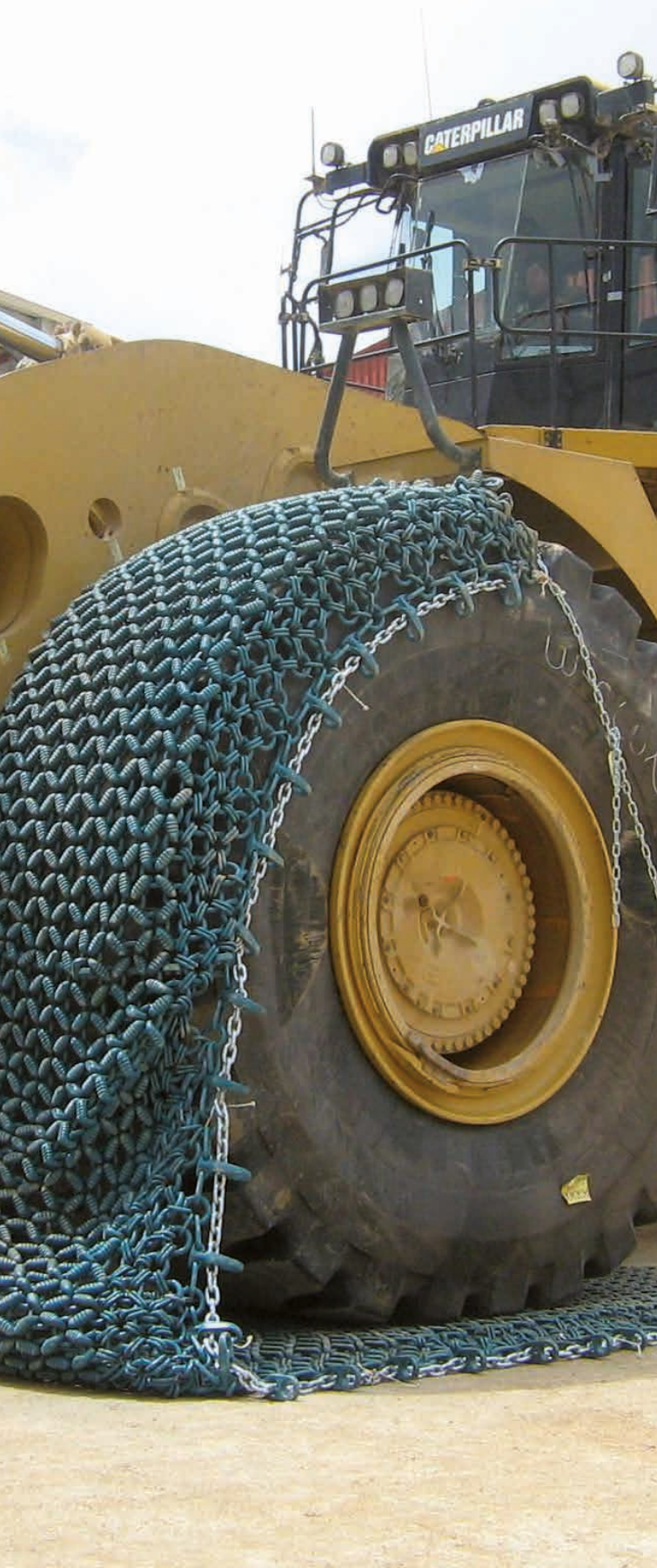




## Service

After Sales Service, an elementary key point of pewag's long-term partnership with our customers, is offered by the pewag worldwide network:

- Technical assistance and repair by chain experts
- Training in chain handling (mounting, correct tensioning, repair, adjustment, dismantling, etc.)
- Inspection calls including performance reporting
- Availability of spare parts
- Special tools and accessories facilitating chain handling and maintenance
- Manuals and relevant risk assessments





# Application areas

## Overview

### Application Areas

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# Open pit mining

## Strong chains for great performance

pewag is always in the forefront when it comes to chaining the world's largest machines and tires. Large-scale mining operations owned by renowned international companies are choosing pewag as their reliable and innovative partner for the protection of their tires.







## Characteristics

- Large fleet of earthmovers
- Expensive and vulnerable tires
- Huge mining areas
- Millions of tonnes to be moved
- 24/7 operation

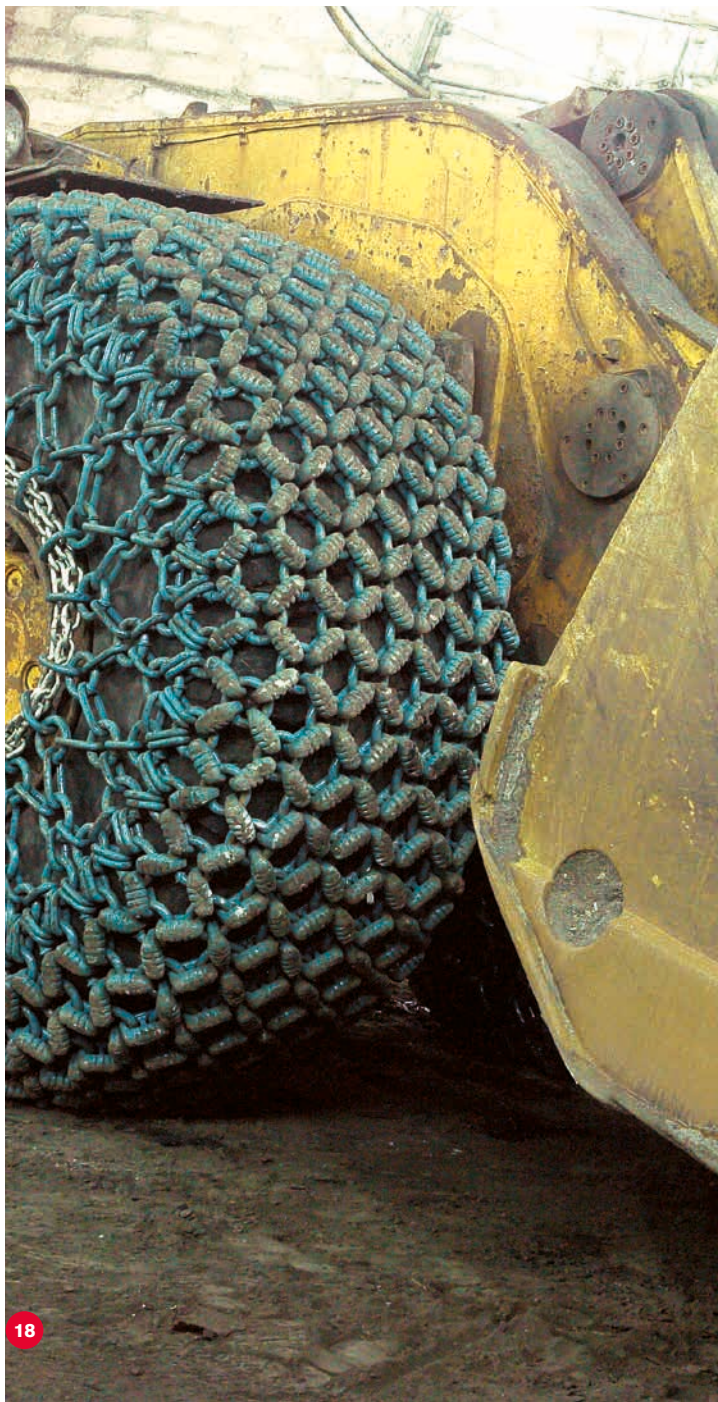




# Underground mining and tunnelling

## High quality in deepest grounds

From low surface tunnelling to deepest level mining at 4,785 m pewag tire protection chains keep underground operations going. pewag chains are used with a wide range of highly specialized equipment like loaders, shuttle cars, scoops and other wheeled vehicles, for both protection and traction.







## Characteristics

- Limited space for chain installation
- Narrow operating space and long driving distances
- Extreme stress and load for the machine, tires and chains
- Difficult equipment and tire maintenance
- Frequent tire failures
- 24/7 operation





# Quarrying

## The right choice for every need

The largest group of users exploiting all kind of materials, from aggregates to ornamental rock. Their very specific and numerous requirements are fully covered by pewag's wide range of chain solutions.







## Characteristics

- High diversity of rock, from soft limestone to hard granite, in all sizes
- Load and carry operation
- Seasonal operation
- Premature tire wear and failure
- 1 to 2, maximum 3 shift operation





## Slag and scrap handling

### Tire protection in extreme applications

Very high temperatures, liquid steel slag, large and solid scrap pieces, concrete driveways, etc. mean toughest working conditions. pewag's successful answer: reinforced, highly wear resistant and customized chain designs.







## Characteristics

- Temperatures up to 1,200 °C (2,190 °F)
- Punctures and tire burning
- Abrasive ground conditions
- Exceptional stress and load
- Limited time for maintenance
- Operation with time limitation





# Traction

## Safety with pewag traction chains

pewag chains ensure that mining operations keep on rolling! A great diversity of machines can be chained such as loaders, dozers, graders, dump and service trucks. For seasonal use on ice and snow as well as for continuous use on slippery and muddy ground.





## Characteristics

- Ice and snow
- Slippery or muddy surfaces
- Steep inclines
- Spinning wheels
- Safety requirements for operator and machine
- Seasonal or continuous use throughout the year





# Products

## Product overview

### Products

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Mohs hardness 5-7	34-35
Mohs hardness 7-10	36-39
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# Traction

## Mesh design

### hexa

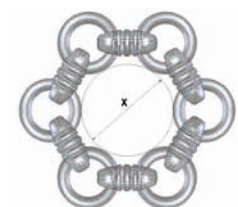
The hexagonal mesh design ensures excellent grip and sufficient tire protection. Suitable for all vehicles where traction is needed before protection.

### quad cross

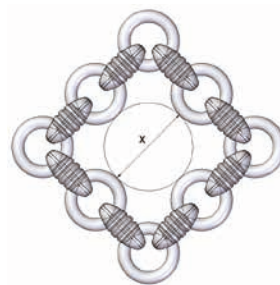
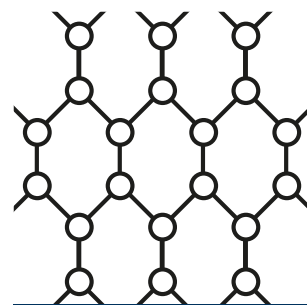
Special 8-link net construction. Traction chains for tough applications.

### compact cross

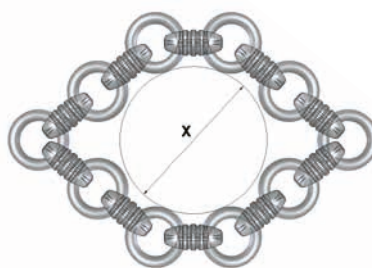
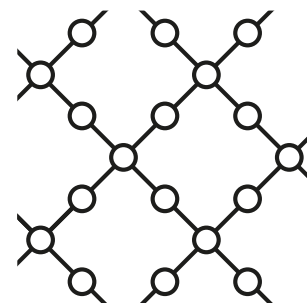
Special 10-link net construction provides excellent grip, stable running and the necessary self cleaning. Suitable for all vehicles that require extra traction to fulfil their operational duties.



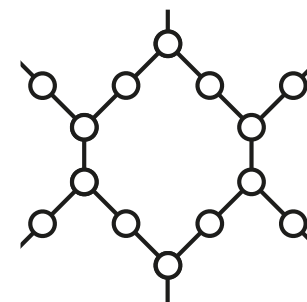
hexa



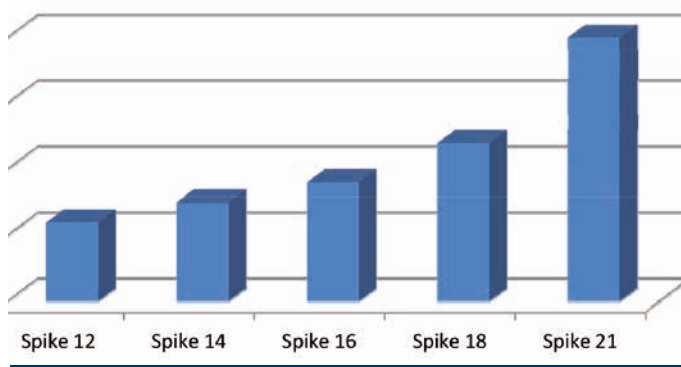
quad cross



compact cross



■ ring strength





Recommended link

pewag spike

Narrow link design with prominent grip teeth provides excellent traction and self cleaning. For all applications where traction is needed.

Available sizes: 12 | 14 | 16 | 18  
Suitable mesh design: hexa, quad cross, compact cross

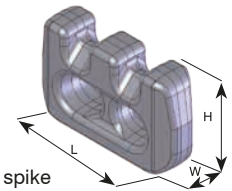
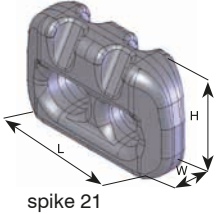


pewag spike 21

Available sizes: 21  
Suitable mesh design: hexa, quad cross, compact cross



Measurements

 	Link measurements			Ring measurements		Mesh opening (x)		
	L	W	H	d	D	hexa	quad cross	compact cross
12								
spike	60	16	40	12	45	96	99	169
14								
spike	71	19	47	14	50	112	112	194
16								
spike	86	22	54	16	54	130	130	222
18								
spike	88	24	60	18	64	138	140	241
21								
spike	108	30	72	21	70	163	164	275



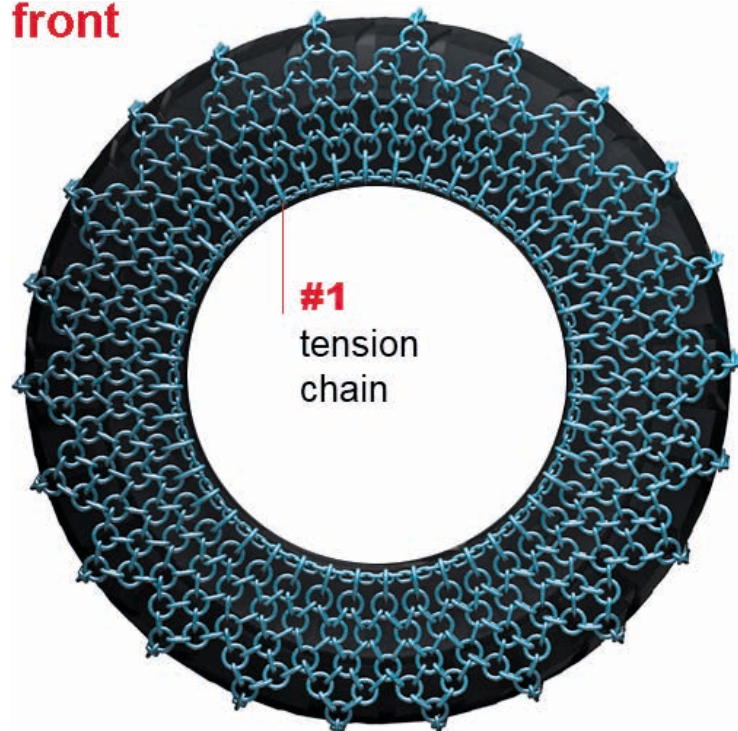
# Flank Protection

## New solution for dump truck

Sidewall damage is one of the leading causes of tire failure and often happens when trucks get too close to berms and high bank faces. These raised surfaces may contain rocks and other hazards that can slash tire sidewalls



front

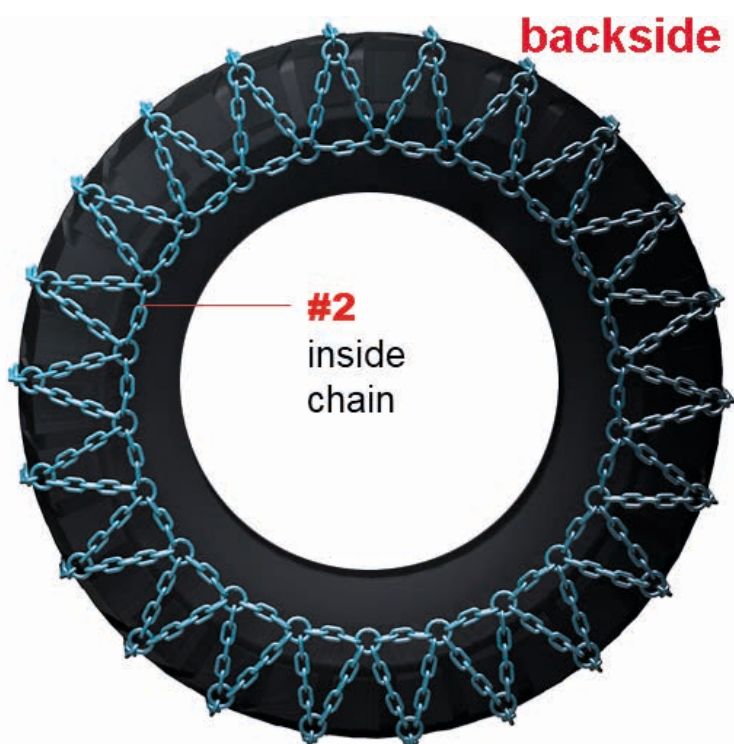






## Characteristics

- New design solution on market
- No Speedlimit
- Maximum sidewall protection guarantees to reach the maximum tire lifetime
- No downtime due to tire failure (no sudden death)
- All tiresizes available from 18.00-25 up to 59/80-63
- Easy installation
- Long lifetime of sidewall and inside chain construction
- Very easy and fast hammer less change of center tread possible
- Very economic compared to other sidewall protection solutions on the market
- Hammer free Spare Parts
- Supports also traction when required
- Keeps machines rolling





# Application abrasiveness

## For mohs hardness (1-5)

The Mohs scale of mineral hardness is a qualitative ordinal scale which characterizes the scratch resistance of various minerals through the ability of a harder material to scratch a softer material.

The hardness of a material is measured against the scale by finding the hardest material that the given material can scratch, and/or the softest material that can scratch the given material. For example, if some material is scratched by apatite but not by fluorite, its hardness on the Mohs scale would fall between 4 and 5.

### For example

- 1-5: Talc, Gypsum, Calcite
- 5-7: Apatite, Quartz, Mangan
- 7-10: Topaz, Corundum, Diamond

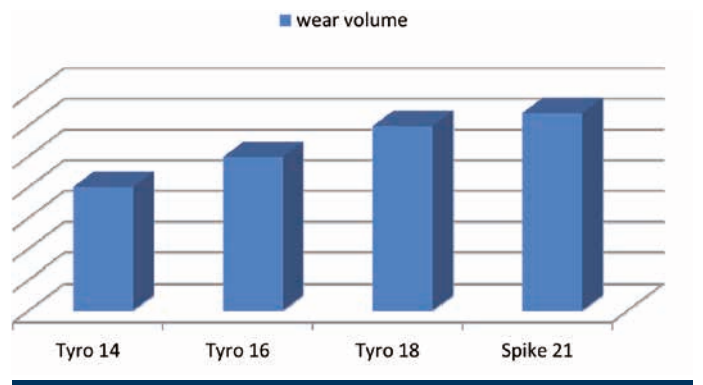
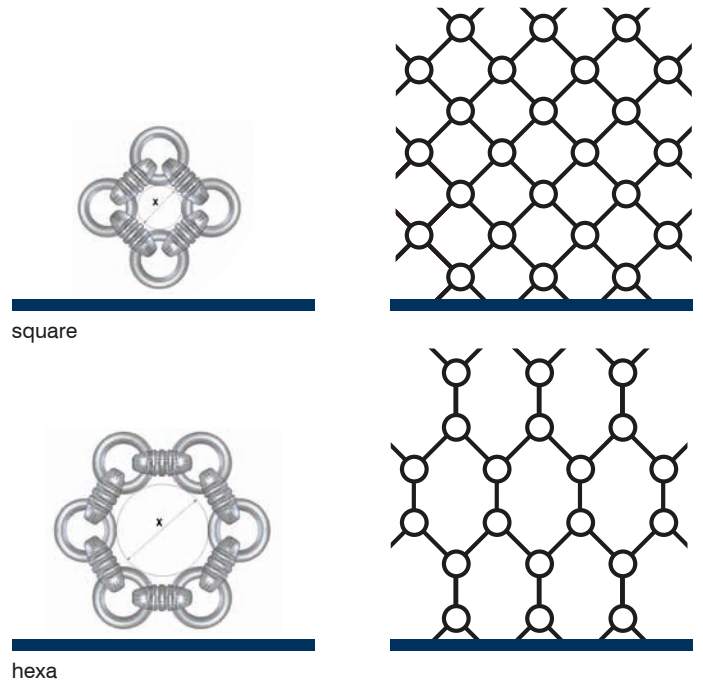
## Mesh design

### square

The fine mesh of square design provides optimum tire protection even on the sharpest rock.

### hexa

The hexagonal mesh design ensures excellent grip and sufficient tire protection. Suitable for all vehicles where traction is needed before protection.



Mohs 1-5



Recommended link

pewag tyro

**Mohs hardness (1-5)**  
Innovative link design with excellent wear volume. By offering best protection and sufficient traction it is suitable for S-L sized earth moving equipment working in soft to medium hard rock applications.

Available sizes: 14 | 16 | 18  
Suitable mesh design: square, hexa



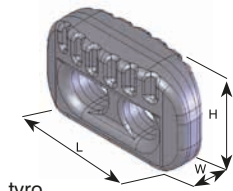
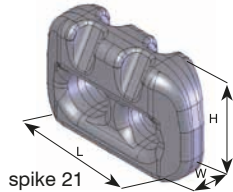
pewag spike 21

**Mohs hardness (1-5)**  
Narrow link design with prominent grip teeth provides excellent traction and self cleaning. For all applications where traction is needed.

Available sizes: 21  
Suitable mesh design: square, hexa



Measurements

	Link measurements			Ring measurements		Mesh opening (x)		
	L	W	H	d	D	square	hexa	
 tyro								
	14							
	tyro	76	26	46	14	50	63	122
 tyro								
	16							
	tyro	88	30	54	16	54	67	130
 spike 21								
	18							
	tyro	97	34	62	18	64	81	156
 spike 21								
	21							
	spike	108	30	72	21	70	83	163



# Application abrasiveness

## For mohs hardness (5-7)

The Mohs scale of mineral hardness is a qualitative ordinal scale which characterizes the scratch resistance of various minerals through the ability of a harder material to scratch a softer material.

The hardness of a material is measured against the scale by finding the hardest material that the given material can scratch, and/or the softest material that can scratch the given material. For example, if some material is scratched by apatite but not by fluorite, its hardness on the Mohs scale would fall between 4 and 5.

### For example

- 1-5: Talc, Gypsum, Calcite
- 5-7: Apatite, Quartz, Mangan
- 7-10: Topaz, Corundum, Diamond

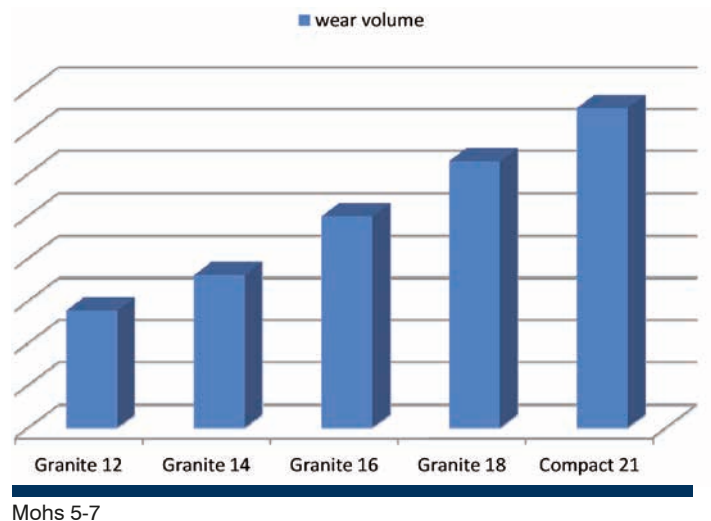
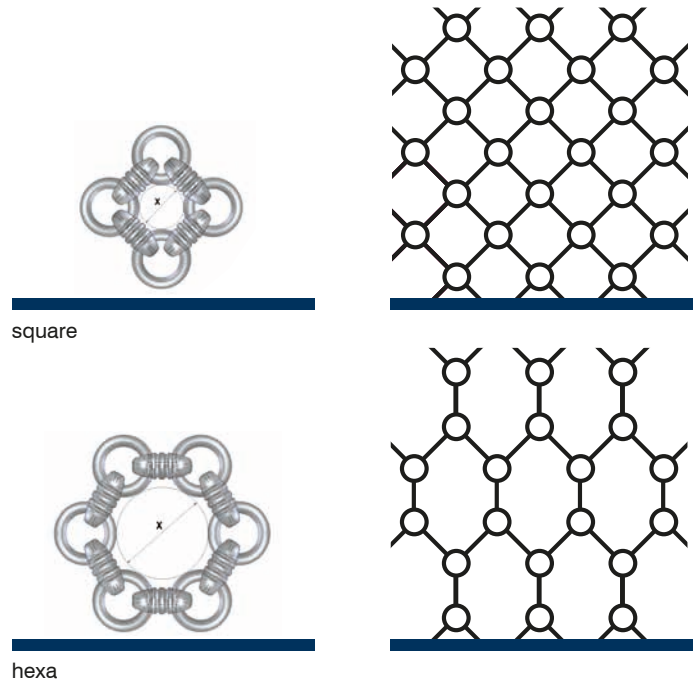
## Mesh design

### square

The fine mesh of square design provides optimum tire protection even on the sharpest rock.

### hexa

The hexagonal mesh design ensures excellent grip and sufficient tire protection. Suitable for all vehicles where traction is needed before protection.



Mohs 5-7



Recommended link

pewag granite

**Mohs hardness (5-7)**  
The multipurpose chain link suitable for slag and scrap handling as well as for all rock applications. This link design offers excellent tire protection and traction.

Available sizes: 12 | 14 | 16 | 18 | 18/20S  
Suitable mesh design: square, hexa



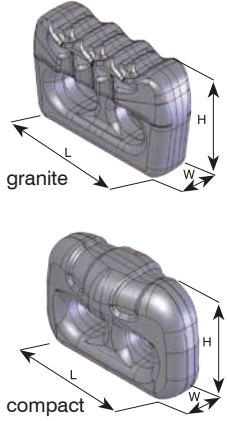
pewag compact

**Mohs hardness (5-7)**  
Heavy duty link for giant loaders with large wear volume for maximum service life. Suitable for all rock applications and in large scale mining operations.

Available sizes: 21  
Suitable mesh design: square, hexa



Measurements

	Link measurements			Ring measurements		Mesh opening (x)	
	L	W	H	d	D	square	hexa
<b>12</b>							
granite	63	22	38	12	45	53	103
<b>14</b>							
granite	79	27	46	14	50	63	122
<b>16</b>							
granite	90	34	53	16	54	67	130
<b>18</b>							
granite	100	38	65	18	64	81	156
<b>18/20S</b>							
granite	100	38	65	19.5	64	78	153
<b>21</b>							
compact	108	46	72	21	70	83	163



# Application abrasiveness

## For mohs hardness (7-10)

The Mohs scale of mineral hardness is a qualitative ordinal scale which characterizes the scratch resistance of various minerals through the ability of a harder material to scratch a softer material.

The hardness of a material is measured against the scale by finding the hardest material that the given material can scratch, and/or the softest material that can scratch the given material. For example, if some material is scratched by apatite but not by fluorite, its hardness on the Mohs scale would fall between 4 and 5.

### For example

- 1-5: Talc, Gypsum, Calcite, Fluorite
- 5-7: Apatite, Quartz, Mangan
- 7-10: Topaz, Corundum, Diamond

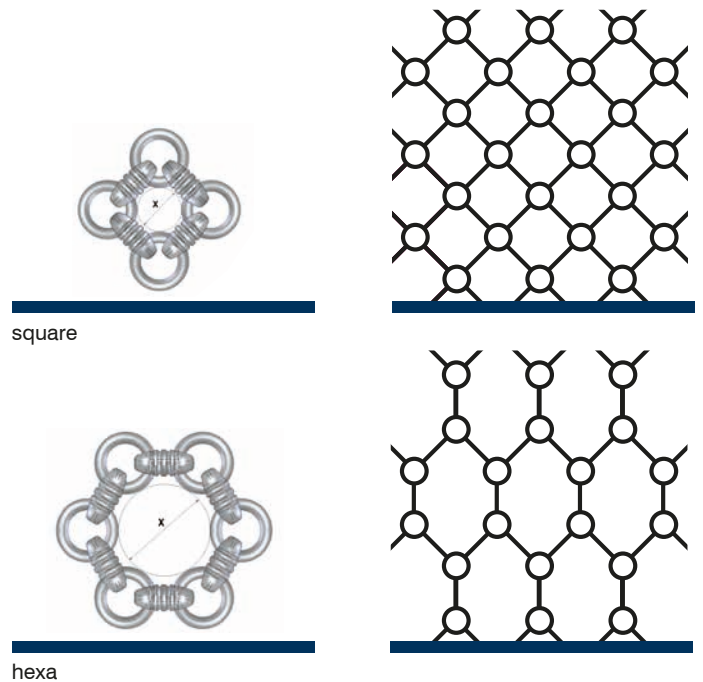
## Mesh design

### square

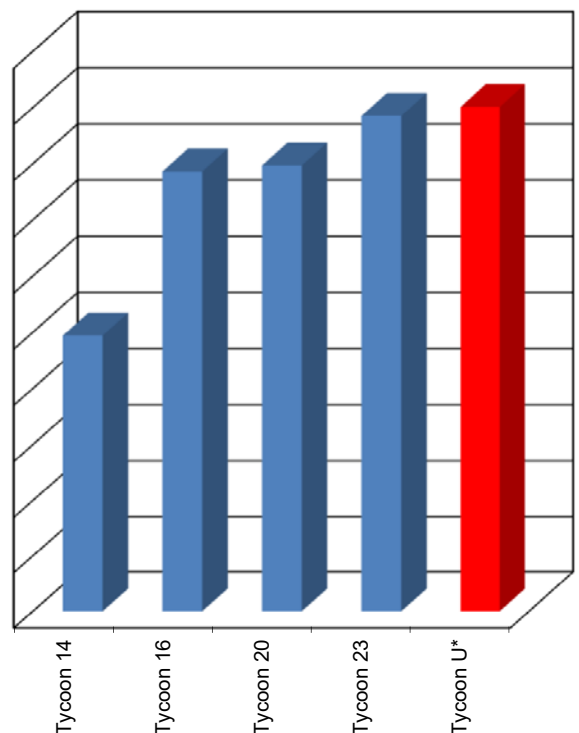
The fine mesh of square design provides optimum tire protection even on the sharpest rock.

### hexa

The hexagonal mesh design ensures excellent grip and sufficient tire protection. Suitable for all vehicles where traction is needed before protection.



■ Lifetime of Tire Protection Chain



Mohs 7-10



## Recommended link

### pewag tycoon ultimate

**Mohs hardness (7-10)**  
Ultra-resistant heavy duty wear link especially developed for the world's largest wheel loaders as well as for operations in most abrasive hard rock conditions.

Suitable mesh design: square, hexa



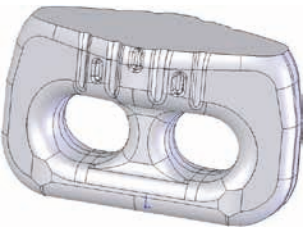
### Characteristics

- Lower acquisition price than Tycoon 23
- Longer lifetime than Tycoon 23
- Is lower in weight than the Tycoon 23 -- 7.2% less weight
- Better fuel efficiency
- Easier installation
- Lower shipping costs
- Lowest cost of ownership per operating hour
- Required clearances are reduced
- Less chain re-tensioning as inner link and ring bearing points are more wear resistant

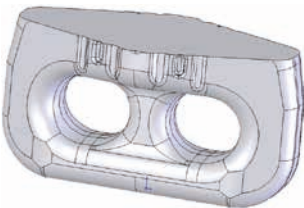
### Measurements

	Link measurements			Ring measurements		Mesh opening (x)	
	L	W	H	d	D	square	hexa
tycoon ultimate	108	57	72	21	70	81	163

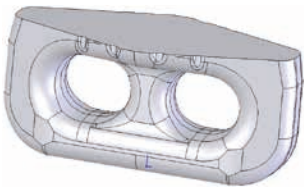
### Wear indicators



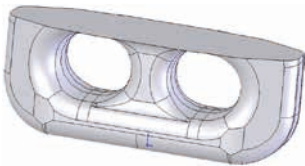
Wear 25 %



Wear 50 %



Wear 75 %



Wear 100 %



## Recommended link

### pewag tycoon

#### Mohs hardness (7-10)

Ultra-resistant heavy duty wear link especially developed for the world's largest wheel loaders as well as for operations in most abrasive hard rock conditions.

Available sizes: 14 | 16 | 20 | 23

Underground: 14/16 | 16/18S | 20

Suitable mesh design: square, hexa



### pewag ringstar

#### Mohs hardness (7-10)

Extremely tight (square) mesh design for optimum tire protection and long service life in wet and abrasive conditions. Excellent traction on ice and snow in hexagonal mesh design.

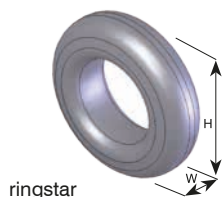
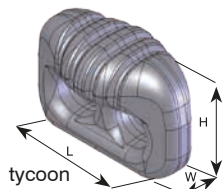
Available sizes: 16

Suitable mesh design: square, hexa



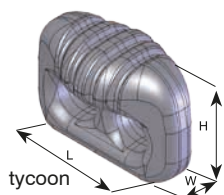
## Measurements

	Link measurements			Ring measurements		Mesh opening (x)	
	L	W	H	d	D	square	hexa
<b>14</b>							
tycoon	79	39	47	14	50	61	122
<b>16</b>							
tycoon	88	48	59	16	54	60	130
ringstar	-	21	69	14x17	54(*45)	44	96
<b>20</b>							
tycoon	97	54	67.5	19.5	64	74	153
<b>23</b>							
tycoon	112	60	76	23	72	84	170



## Underground

	Link measurements			Ring measurements		Mesh opening (x)	
	L	W	H	d	D	square	hexa
<b>14/16</b>							
tycoon	79	39	47	16	54	64	122
<b>16/18S</b>							
tycoon	88	48	59	18	54	60	126
<b>20</b>							
tycoon	97	54	67.5	19.5	64	74	153



With reinforced rings for long driving distance in wet underground applications.







## Mesh design

### square

The fine mesh of square design provides optimum tire protection even on the sharpest rock.



### hexa

The hexagonal mesh design ensures excellent grip and sufficient tire protection. Suitable for all vehicles where traction is needed before protection.



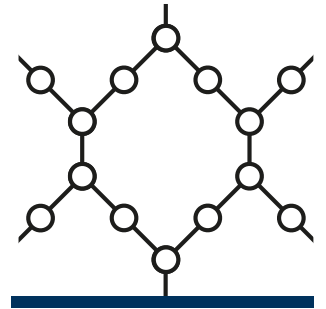
### quad cross

Special 8-link net construction. Traction chains for tough applications.

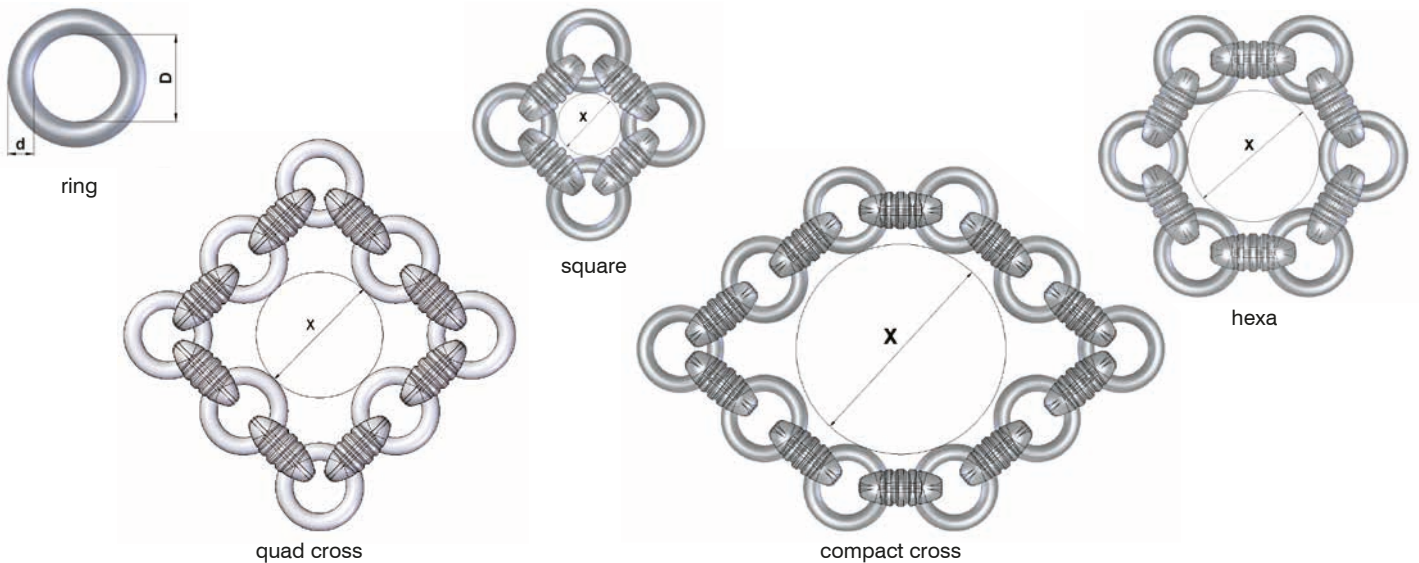


### compact cross

Special 10-link net construction provides excellent grip, stable running and the necessary self cleaning. Suitable for all vehicles that require extra traction to fulfil their operational duties.

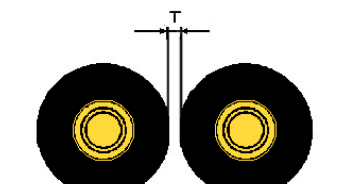
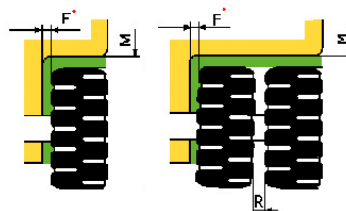
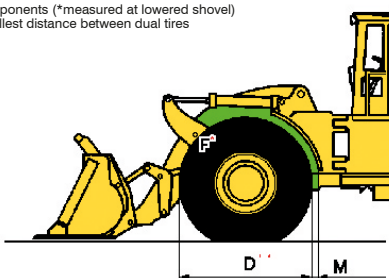


## Ring measurements and mesh opening (x)

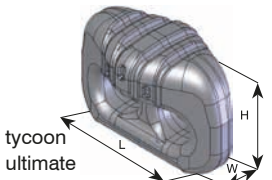


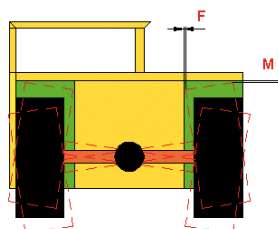
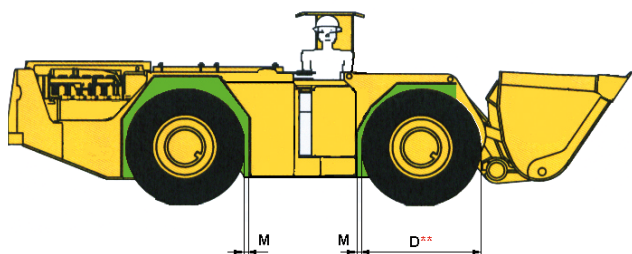
## Clearance required for TPC

Attention: „F“ & „M“ measured at fully oscillated axle  
 M smallest distance between tire surface and machine components  
 F smallest distance between tire sidewall and machine components (\*measured at lowered shovel)  
 R smallest distance between dual tires



## Measurements

	Link measurements			Ring measurements		Mesh opening (x)				Clearance required for TPC		
	L	W	H	d	D	square	hexa	quad cross	compact cross	M	F	R
 tycoon ultimate	108	57	72	21	70	81	163	-	-	120	80	110
<b>12</b>												
granite	63	22	38	12	45	53	103	103	174	70	50	70
spike	60	16	40	12	45	50	96	99	169	70	50	70
<b>14</b>												
tycoon	79	39	47	14	50	61	122	-	-	80	60	80
granite	79	27	46	14	50	63	122	122	204	80	60	80
tyro	76	26	46	14	50	63	122	122	204	80	60	80
spike	71	19	47	14	50	57	112	112	194	80	60	80
<b>14/16</b>												
tycoon	79	39	47	16	54	64	122	-	-	80	60	80
<b>16</b>												
tycoon	88	48	59	16	54	60	130	-	-	90	70	90
granite	90	34	53	16	54	67	130	130	222	90	70	90
spike	86	22	54	16	54	67	130	130	222	90	70	90
tyro	88	30	54	16	54	67	130	130	222	90	70	90
ringstar	-	21	69	14x17	54(*45)	44	96	-	-	115	70	90
<b>16/18 S</b>												
tycoon	88	48	59	18	54	60	126	-	-	90	70	90
<b>18</b>												
granite	100	38	65	18	64	81	156	156	258	100	70	100
spike	88	24	60	18	64	70	138	140	241	100	70	100
tyro	97	34	62	18	64	81	156	156	258	100	70	100
<b>18/20 S</b>												
granite	100	38	65	19.5	64	78	153	-	-	100	70	100
<b>20</b>												
tycoon	97	54	67.5	19.5	64	74	153	-	-	100	70	100
<b>21</b>												
compact	108	46	72	21	70	83	163	-	-	120	80	110
spike	108	30	72	21	70	83	163	164	275	120	80	110
<b>23</b>												
tycoon	112	60	76	23	72	84	170	-	-	120	80	110





# Spare parts and accessories

## Overview

### Content

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## Spare parts

Mounting and repair parts



**No. 24 End shackle**  
to fix the loose end  
of the tension chain



**No. 31 Connecting-/Repair ring**  
to connect the tire protection  
chain and to repair broken rings



**No. 37 Pin lock**  
to connect the inside and outside chain  
and to repair broken links

## Accessories

Special tools for easier TPC handling



**No. 49 Lever hoist**



**No. 50 Assembly pliers**



**No. 61 Allen key**



**No. 58 Drawing-out hook**



**No. 59 Mounting spike**



**No. 60 Tension aid**  
(10 mm, 13 mm, 16 mm)



Original spare parts from pewag ensure safe installation and maintenance of the tire protection chain.

## Chain installation and maintenance made easy.





# Data of vehicle for pewag tire protection chains

**e-mail: saleinfo@pewag.com**

**Fax: +43 (0) 50 50 11-100**

**Company** \_\_\_\_\_ **Date** \_\_\_\_\_

**Sender** \_\_\_\_\_

**Telephone** \_\_\_\_\_ **Telefax** \_\_\_\_\_

**E-mail** \_\_\_\_\_

**1. Machine**

Brand \_\_\_\_\_ Type \_\_\_\_\_

**2. Tire**

Dimension \_\_\_\_\_

Brand \_\_\_\_\_ Type \_\_\_\_\_

Tire tread (L2-L5) \_\_\_\_\_ Tread new ☐ semi worn ☐ worn off ☐

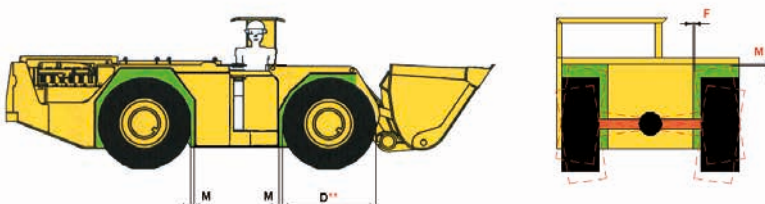
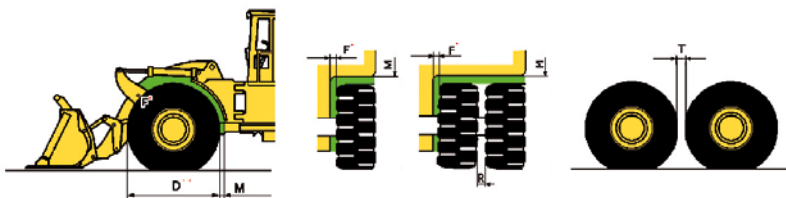
Dimensions d [mm] \_\_\_\_\_ B [mm] \_\_\_\_\_

**3. Minimum distance**

(F + M = minimum distance between tire and machine components)

Front wheels F [mm] \_\_\_\_\_ M [mm] \_\_\_\_\_

Rear wheels F [mm] \_\_\_\_\_ M [mm] \_\_\_\_\_ R [mm] \_\_\_\_\_ T [mm] \_\_\_\_\_



\*„F“ measured at lowered shovel  
\*\*„D“ measured horizontally  
Attention: „F“ & „M“ measured at fully oscillated axle

# Data of operating conditions for pewag tire protection chains

**e-mail: [saleinfo@pewag.com](mailto:saleinfo@pewag.com)**

**Fax: +43 (0) 50 50 11-100**

## 4. Rock

Type of rock \_\_\_\_\_ Inclusions in the rock \_\_\_\_\_

Compressive strength (hardness) Mohs \_\_\_\_\_ Percentage of quartz (%) \_\_\_\_\_

Rock sample (in the size of a fist) available\* yes ☐ no ☐

## 5. Working distance

Length per haul \_\_\_\_\_ Steep gradient (%) \_\_\_\_\_

Soil condition\* \_\_\_\_\_ dry ☐ occasionally wet ☐ always wet ☐

## 6. Type of operation

Tire protection chains so far used (brand/type) \_\_\_\_\_

Average life of tire protection chains (working hours) \_\_\_\_\_

Operating hours/day \_\_\_\_\_

Average life (working hours) protected ☐ not protected\*\* ☐

Any other unusual working conditions (such as long idle machine time, long driving distances, great heat, etc.)

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\* Please check whatever applies

\*\* Consider premature breakdown as a result of damaged tires

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature



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