

## TEUFELBERGER STRAPPING





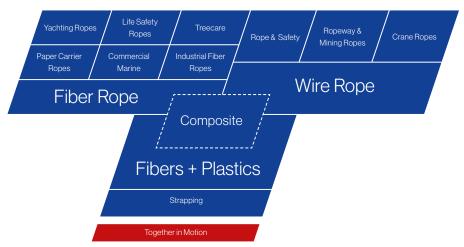
## TEUFELBERGER **EXPERTISE FROM 225 YEARS OF EXPERIENCE**



What started back in 1790 with simple hemp ropes has since evolved into a globally successful group of enterprises specializing in the development and production of fiber and steel wire ropes, strapping, and composites.

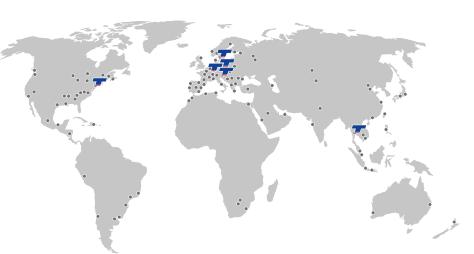
#### Vast diversity

Its products are designed for a wide variety of applications ranging from cranes and marine applications to packaging and through to the automotive sector. It is the continuity and stability of a family business that makes us the reliable partner who supports you, competently and effectively, in coping with your daily challenges.



#### Global presence ensures customer proximity

Manufacturing operations in various countries allow us to meet local quality and certification standards as well as customer requirements without difficulty. From our sites in Austria, the Czech Republic, the U.S., Sweden, and Thailand, and backed by a close-knit global network of distribution partners, we continue to satisfy the expectations of our customers.



#### Innovative solutions through synergies

TEUFELBERGER is a leading specialist for fiber and steel wire ropes, strapping, and fiber composite components. The spectrum of technologies in TEUFELBERGER's portfolio generates various synergies between the extrusion of thermoplastics, braiding of high performance fibers, and processing of wires into ropes, strapping, and lightweight composite components. Especially fiber and steel wire products brought about valuable synergies with regard to both application and manufacturing technologies, which have benefited our customers tremendously. This makes TEUFELBERGER your ideal partner right from the project planning phase. 5 % of TEUFELBERGER's employees are active in research and development and make sure that our customers have access to the latest, innovative rope technologies. 10% of the entire investment volume are committed to development and quality assurance.



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#### **▲** ATTENTION!

Using these products may be dangerous. Only use our products for the purposes they are intended for. Customers must ensure that the persons using these products are familiar with their correct use and the necessary safety precautions. Please bear in mind that any of these products may cause damage or harm when used improperly or subjected to excessive loads.

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**TEUFELBERGER** 

## YOUR GLOBAL STRAPPING PARTNER

**TEUFELBERGER is the biggest system-independent** manufacturer of strapping. Our TEWE® PP and TYCOON® PET strapping are developed specifically for your needs and for use on all commercially available strapping machines. The products have been optimized and tested for all required types of strapping, their respective industries, and machines. Customers around the world can count on that.

#### BENEFITS OF CHOOSING TEUFELBERGER STRAPPING

#### Partner Oriented

Our motto "Together in Motion" stands for the support and solution-oriented cooperation we have with our partners. Besides our globally active sales force, our internal customer service department cares for your individual needs. Our international orientation makes us a competent partner for deliveries to faraway markets and is strengthened further by the high degree of availability of our finished products. Together with our team, we will find the best solutions to suit your needs perfectly.

#### Reliable

Since almost a half century TEUFELBERGER strappings run on all machines without problems. Due to our state-of-the-art manufacturing facilities, we ensure consistent high quality and punctual delivery. The use of only the highest-quality raw materials and additives is the basis of our success. Our quality is externally certified by ISO 9001 and all strappings are 100% recyclable.

#### **Experienced and Innovative**

TEUFELBERGER has been setting the benchmarks in the extrusion of polypropylene and polyester straps and twines for more than 45 years. Through our perpetual quest for perfection, paired with an innovative spirit and a dynamic drive, we have set new standards in the extrusion of packing straps.

#### **Corporate Social Responsibility**

We contribute to the conservation of resources including air quality improvement with the help of our biomass power plant. Based on post-consumer PET beverage bottles we created our own series of PET strappings called TYCOON<sup>®</sup> GreenPerformance which reduces 4.5 kg of CO<sub>2</sub> per coil compared to conventional TYCOON<sup>®</sup> strapping. TEUFELBERGER cares about their employees and prohibits child labor in all production facilities.

#### LONGLASTING EXPERIENCE



The cave man bundled together his wood sticks for the fire.



Already in 1790, TEUFELBERGER ropery produces twisted hemp ropes for agriculture and salt shipping.



TEUFELBERGER is still in the bundling/ packaging business and offers strapping solutions to pack products by bundling, combining, holding, reinforce or fastening them together.

## CONTINUOUS DEVELOPMENT

**1997** Production of first TYCOON® PET strapping

**1965** Production of first TEWE<sup>®</sup> PP strapping

Mee LCK

**2003** Production of first TYCOON® XB strapping

The Leading Strap for Expanding Bales **2004** Production of first TYCOON<sup>®</sup> Sigma strapping

2006

Introduction of the 1-2 Strap Technology Fast and Easy Coil Changes

#### 2010

Introduction of Duplex Pallets Good for Your Health and Safety

TEWESUV

#### 2007

Production of first TYCOON® Speed strapping Improved Strap Tension and Higher Stability

#### 2011

TEWE®P

Production of first TYCOON<sup>®</sup> GreenPerformance strapping 4.5 kg less CO<sub>2</sub> per Coil with innovative PET Technology

#### 2012

Production of first TEWE<sup>®</sup> OCEAN strapping Waterproof – Made to be used in the Seafood Industry

#### 2014

Production of first HQ Digital strapping A cutting edge technology that gives you totally new possibilities





Polypropylen Strapping



**Products made of different materials** and in varying sizes and shapes need to be packaged and transported securely. TEWE® PP strapping is the ideal packaging solution for a wide spectrum of application strapping for: printed matter, newspapers, corrugated board, construction materials, logistical applications, can and bottle industry and for furniture.



#### PARTNER ORIENTATION

Through our globally active sales team, we provide support and service to our partners locally. Our partners have the possibility to choose the right product for your individual needs from our extensive product range.

#### TECHNOLOGICAL LEADERSHIP

With TEWE® PP, you benefit from our technological leadership in the extrusion of strapping. Our own R&D department develops customtailored solutions for the safety of your goods while in storage and transport.

#### QUALITY & HIGH AVAILABILITY

#### The quality of TEWE<sup>®</sup> PP

is characterized by small tolerances, optimized strap stiffness and continuous quality controls. Moreover, our strap runs troublefree on all fully automatic machines. For more than 45 years TEUFELBERGER is known as a premium quality supplier with a highly available type range.

#### TROUBLEFREE USAGE

The excellent stiffness and perfect running characteristics of TEWE® PP allow highest speeds and optimized cycle times on all machines. Special embossing techniques make TEWE® PP virtually dust-free to keep your machines running.

TEWE® PP strap is used by the largest publishing companies worldwide.

#### YOUR BENEFITS

- Consistent high quality
- Troublefree operation
- Even with more than 100 strapping cycles per minute TEWE<sup>®</sup> PP runs troublefree
- Large product portfolio and customized solutions
- Wide TEWE® PP product range
- Suited for all applications
- Optimized strap stiffness
- Tested quality for use on automatic strapping machines
- More than 45 years of experience for your profits
- Training courses for partners



TEWE<sup>®</sup> PP



	Product	Name	Description
	TEWE <sup>®</sup> SA		High quality strap for <b>semi automatic</b> machines and standard applications
Standard	TEWE® S		High quality strap from <b>4-6 mm</b> width for fully automatic machines fulfilling the high speed and quality requirements of the newspaper industry
	TEWE <sup>®</sup> A		High quality strap from <b>7-19 mm</b> width for fully automatic machines
	TEWE <sup>®</sup> Ocean	Ocean	High quality strap for fully automatic machines with waterproof and foldable core
	TEWE® HE	HighElastic	High quality strap with <b>high elongation</b> for applications with shrinking packaging volume and sharp edges for fully automatic machines
Special	TEWE <sup>®</sup> SHE	SuperHigh Elastic	High quality strap with <b>very high elongation</b> for smallest packaging units or applications requiring highest elongation for fully automatic machines
	TEWE <sup>®</sup> LCE	LowCreep Elongation	High quality strap with <b>low elongation</b> for compressed packaging goods requiring low elongation for fully automatic machines
	TEWE® UV	UV	High quality strap <b>UV stabilized</b> for outdoor usage and fully automatic machines
Extra	TEWE® HQ Mono	Printed	High quality strap <b>one color printed</b> for fully automatic machines
	TEWE <sup>®</sup> HQ Digital	Printed	High quality strap printed with <b>all colors</b> for fully automatic machines           Image: strap printed with all colors         Tewe® & tycoon®         Image: strap printed with all colors           Image: strap printed with all colors         Tewe® & tycoon®         Image: strap printed with all colors         Image: strap printed with all colors



#### TEWE<sup>®</sup> S

#### TEUFELBERGER is one of the world biggest producers of

narrow straps. Our broad portfolio ranges from 4-6 mm width. The constant high quality of TEWE® S perfectly fulfils the requirements of full automatic applications in the printing, corrugated board and logistics industries.



#### **TEWE®** A

**This strap is made for any kind** of standard strapping machines. TEWE® A strap is outstanding due to its huge range of straps, availability of various colors, packaging variants and its excellent quality.



#### **TEWE® OCEAN**

**With TEWE® Ocean** we have a product line that is made to be used in the seafood processing industry, where the influence of humidity and water is present. TEWE® Ocean strapping runs perfectly on all common bundling machines.

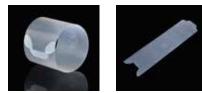
#### YOUR BENEFITS

#### **Plastic Core**

- Low volume of the empty core (foldable core), no influence of water to the coil. Coil fits also on the machine if it is wet. No risk of storage in wet environment.
- Less weight per pallet, 100 % recyclable

#### Quality

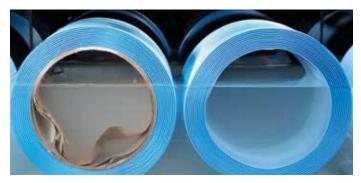
- Highest levels of reliability for smooth production sequences
- ISO 9001 certification to ensure your requirements on quality
- Lowest abrasion in comparative tests with competitors





Experience TEWE<sup>®</sup> Ocean!





#### HQ PRINTING SOLUTIONS

Wherever high packaging standards are called for, TEUFELBERGER fulfills them in an unique and innovative way. TEUFELBERGER is able to customize your product's packaging via our high quality printing technologies. The printed straps are suited for both, fully automatic strapping machines as well as hand tools. Working together with you, the TEUFELBERGER team will determine the best strapping and printing solution for your company and your purpose including a layouting service.

#### HQ MONO

HQ Mono enables us to print our high quality strap individually by using an **one color** print technology. With our printed strap you can also display a promotional message in addition to protecting your goods.

#### Features

Text

Logos



#### HQ DIGITAL

HQ Digital offers you unique differentiation possibilities from your competition by printing photorealistic pictures in all colors on a strap. Together with you, we will create the best strapping layout for your purpose.

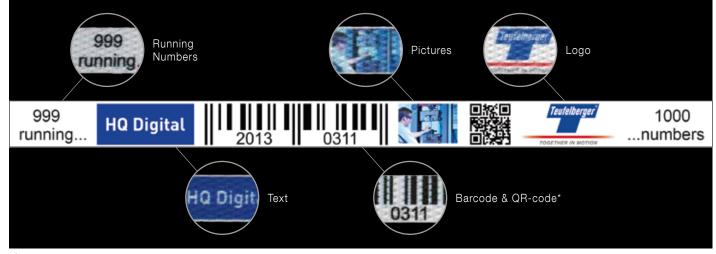
#### Features

- Photorealistic pictures
- Logos
- Text
- Running numbers
- Barcode and QR-code\*

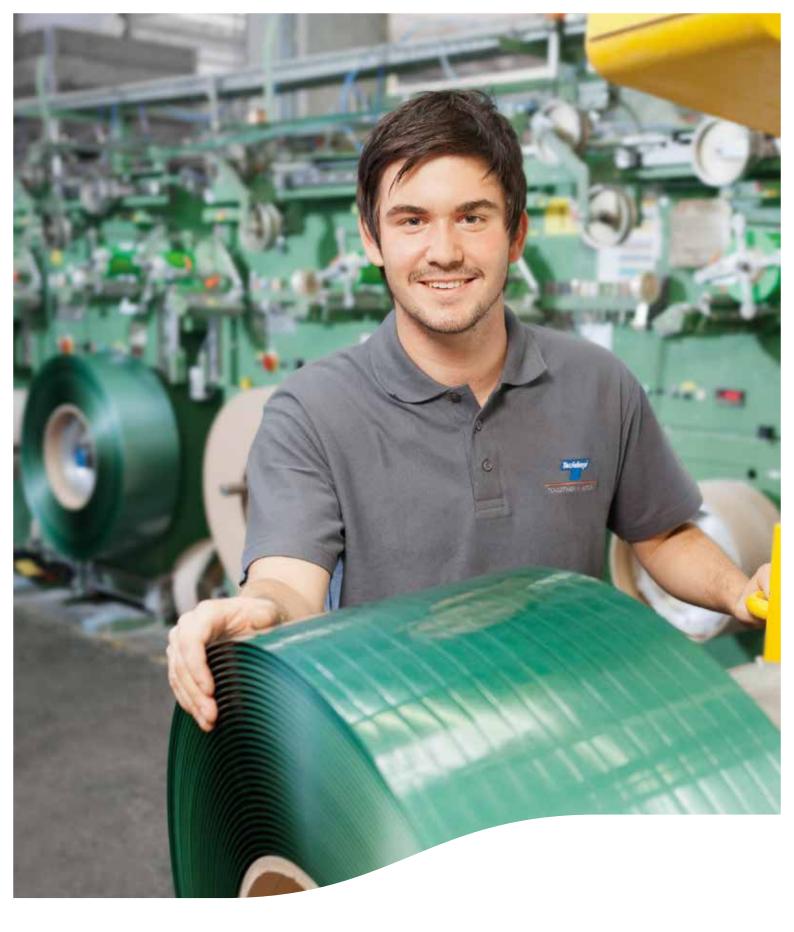


Design your own strap layout!





\* The barcode functionality depends strongly on the type of strap you choose (color, surface) and the application you are running and thus needs to be checked case by case.



# TYCOON<sup>®</sup> PET

Polyester Strapping



When the highest standards are called for, customers throughout the world rely on TEUFELBERGER strapping. Storage and transport impact your goods in various ways. Influences such as rocking motions, temperature differences, and exposure to sunlight may result in adverse effects on packaging integrity. To counteract these interfering factors, TEUFELBERGER developed TYCOON® PET, a comprehensive range of polyester strapping products.



#### PARTNER ORIENTATION

Through our globally active sales team, we provide support and service to our partners locally. As our partner you have the possibility to choose the right product for your individual needs from our extensive product range.

#### TECHNOLOGICAL SUPPORT

#### As strapping specialists,

we provide full support to help you to solve complex situations and technical issues in your strapping application, whether to provide support in the implementation of projects, or to prepare solutions for machine-related problems.

#### CUSTOMIZED SOLUTIONS

**Together with you,** we identify and tap together potentials in the market and tailor solutions for your individual needs. Customized solutions are developed by our own R&D to ensure the safety of your goods while in storage and transport.

#### EXPERIENCE AND INNOVATION

#### For more than 45 years,

TEUFELBERGER is the biggest system-independent manufacturer and global active partner who ensures the superior quality of TYCOON<sup>®</sup> strapping which keeps your machine running, reliably and safely, at all times. As the innovation leader we steadily develop new products based on customer desires.

#### YOUR BENEFITS

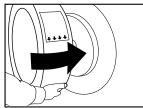
- TYCOON<sup>®</sup> PET has advantages over steel strapping
- No damage to packaged goods
- Innovative 1-2 strap packaging: fast and safe opening helps to save time and money
- Solutions custom-tailored to your application
- TYCOON<sup>®</sup> PET: for all machines and applications
- Highly specialized
- High-quality strapping for use on automatic strapping machines
- Expertise for users
- Training courses for partners
- Duplex pallets available

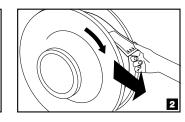




**Customers around the globe** rely on TEUFELBERGER strapping when meeting the highest packaging standards is what it takes.

#### 1-2 STRAP - YOUR ADVANTAGE





Procedure of 1-2 Strap:

- 1. Mounting the coil
- 2. Removing the protective packaging and inserting the end of the strapping in a single step.

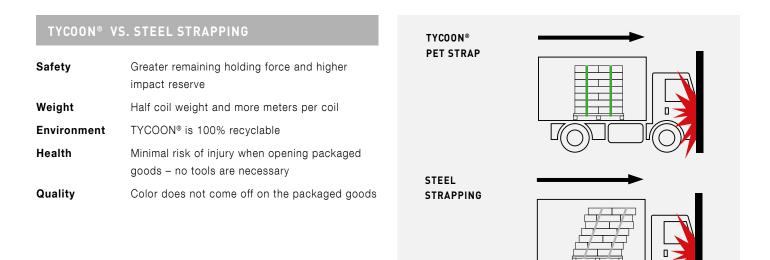
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#### DUPLEX PALLET MAKE UP

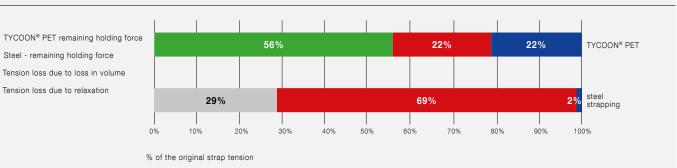


The Duplex pallet make up consist of two stretched small pallets with max. 110 cm height each.

This make up is good for the health and safety of the employees.



#### REMAINING HOLDING FORCE



Using TYCOON® PET strapping can give you double the previously achieved remaining holding force! Strap tension over time – Directly after the strap is applied: 100% strap tension; 1-3 hrs after the application: decrease in strap tension due to relaxation; After storage and transport: reduction in volume by shrinkage of the packaged goods or other packaging means (due to moisture, weight), by the straps cutting into the packaged items, or by the packaged items being bumped and bounced together

### **TYCOON® PET**



	Product	Name	Description
Standard	TYCOON® GP	Green Performance	Environmental friendly, high quality strap for standard applications and fully automatic machines
	TYCOON® T	Tension	High quality strapping with <b>high edge strength</b> for fully automatic machines
ced	TYCOON® HT	HighTension	High quality strapping for applications requiring <b>high tension</b> and with increased risk of <b>shock splitting</b> - designed for fully automatic machines
Advanced	TYCOON <sup>®</sup> HD	HeavyDuty	High quality strapping for heavy duty applications with highest demands on <b>tension</b> , <b>breaking strength</b> and <b>weldability</b> for fully automatic machines
specific	TYCOON® C	Can	High quality strapping for the specific requirements of <b>best relaxation</b> in the can industry for fully automatic machines
Industry s	TYCOON® XB	ExpandingBales	High quality strapping for the specific requirements of best weldability, combined with low elongation in the baling industry for fully automatic machines
ial	TYCOON <sup>®</sup> Sigma	Sigma	High quality PET strapping for <b>machines of company Signode®</b> for fully automatic machines
Special	TYCOON <sup>®</sup> Speed	Speed	High quality PET strapping for bundling applications; Cost effective <b>alternative to PP</b> <b>applications</b> where high tension and availability is required for fully automatic machines

#### TYCOON<sup>®</sup> GREENPERFORMANCE

**TYCOON® GreenPerformance** helps to make a contribution to environmental protection. Compared to conventional TYCOON® strapping, TYCOON® GreenPerformance allows a reduction of 4.5 kg of CO<sub>2</sub> per coil.



#### YOUR BENEFITS

#### **TYCOON®-Quality**

- A new production technology (HSS-process), significantly reduces the weight of the strapping by 10-15%, while leaving its dimensions and maximum tensile strength unchanged.
- Proven TYCOON<sup>®</sup> quality made in Austria

Strength (N/mm<sup>2</sup>)

600

500

400

300

200

100

0

#### Environmental friendly

- Generates substantially less waste
  - lower weight of strapping > lower coil weight
  - lighter sleeves
  - less packaging material
- Made of recycled raw materials
- and 100% recyclable
- Greater transport efficiency (less CO<sub>2</sub>) > more meters/coils and pallets
- Environmental friendly energy production in the in-house biomass power plant

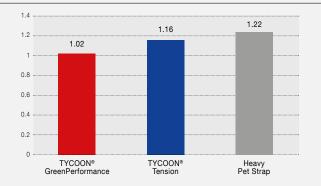
#### Cost efficient

- Attractive price per meter of strapping
- Less waste and thus lower disposal charges
- Better utilization of cargo and storage space due to optimized strap length per coil.

#### Easy handling

- Lower coil weight (about 20 kg)
- 1-2 strap technology make strap changes safe and easy

#### Strapping weight (g/cm³)



TYCOON<sup>®</sup> GreenPerformance has a markedly reduced strapping weight, while strapping dimensions and tension remain unchanged. Consequently, packaging weight can be reduced.

With our HSS process technology we are able to achieve enhanced tension strength through HSS technology.

TYCOON® GreenPerformance

TYCOON<sup>®</sup> GreenPerformance is available for the most common dimensions.

TYCOON<sup>®</sup> Tension

#### **TYCOON® PET**

#### TYCOON® SIGMA

With TYCOON<sup>®</sup> Sigma TEUFELBERGER has developed a premium strapping product for all standard strapping machines and hand tools of company Signode<sup>®</sup> – without requiring any modifications of the machine. TYCOON<sup>®</sup> Sigma can be used for high-quality strapping of bales, building materials, cans, corrugated board and wood. This product is suited for both fully automatic strapping machines and hand tools.

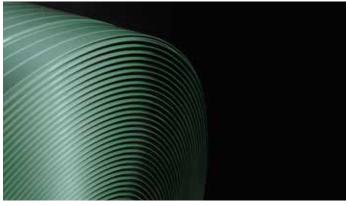
#### TYCOON® SIGMA 9-25 MM

- Specifically developed for baling, wood and timber, construction material, corrugated board, cans and metal industries
- Jumbo coils help you save costs by reducing the frequency of required coil changes
- Achieves perfect results in heavy-duty applications

#### TYCOON® SIGMA AAR

Our TYCOON<sup>®</sup> Sigma AAR strapping has been approved by the AAR (Association of American Railroads) for open top rail transport (Open Top Loading Rules), more specifically, for friction-welded joints and hot sealed joints.





#### **TYCOON® SPEED**

**Improved strap tension** and higher stability as compared to conventional PP strapping characterise our innovative product TYCOON<sup>®</sup> Speed. These advantages accelerate the process of strapping goods and result in greater packaging stability, higher cost effectiveness, and better quality.

#### YOUR BENEFITS

#### Speed

- Developed for high-speed strapping machines
- Up to 40% more meters per coil (compared to standard PP strap) – fewer coil changes
- 1-2 strap technology

#### Quality

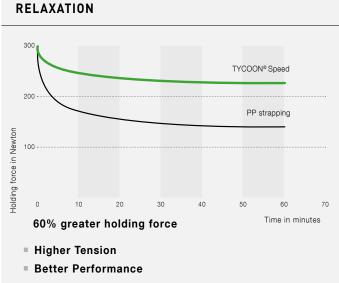
- Narrower tolerances in width, less edgebow and curvature
- High feeding stiffness, also in hot climatic conditions
- Stable surface > less abrasion

#### Stable packaging

- 60% higher
- remaining holding force Greater safety compared
- to standard PP strap
- UV stability
- Higher temperature resistance (e.g. during subsequent shrink film use)

#### Cost efficient

- Less downtime > lower packaging costs
- Higher tension > enhanced stability of the palletised packaged goods
- Lower price per meter



Less Problems



#### **TYCOON® HIGHTENSION**

**TYCOON® HighTension** is the ideal solution for applications requiring high tension and with increased risk of shock splitting. This type for automatic machines ensures troublefree operations even for products with sharp edges and is available in duplex pallets and jumbo coils. It is the perfect product for applications in the metal, building and wood industry.

#### YOUR BENEFITS

- Strap tension
- High strap elongation to achieve the ideal degree of retained strap tension
- Holding force
- Constant high holding force to keep the strapped product compact
- High feeding stiffness





#### **TYCOON® HEAVYDUTY**

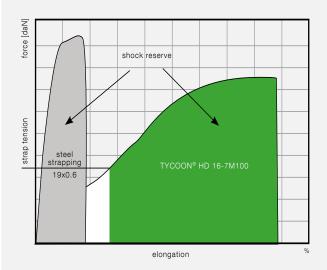
#### TYCOON® HeavyDuty ensures maximum weldability for

maximum breaking strength. Whenever highest performance is needed TYCOON® HD fits perfectly. This type runs troublefree on automatic machines and is also used with hand tools. In order to increase the efficiency TYCOON® HeavyDuty can also be obtained in jumbo coils or duplex pallets. High quality strapping for heavy duty applications, for instance in the baling, metal, building, wood and timber industry.

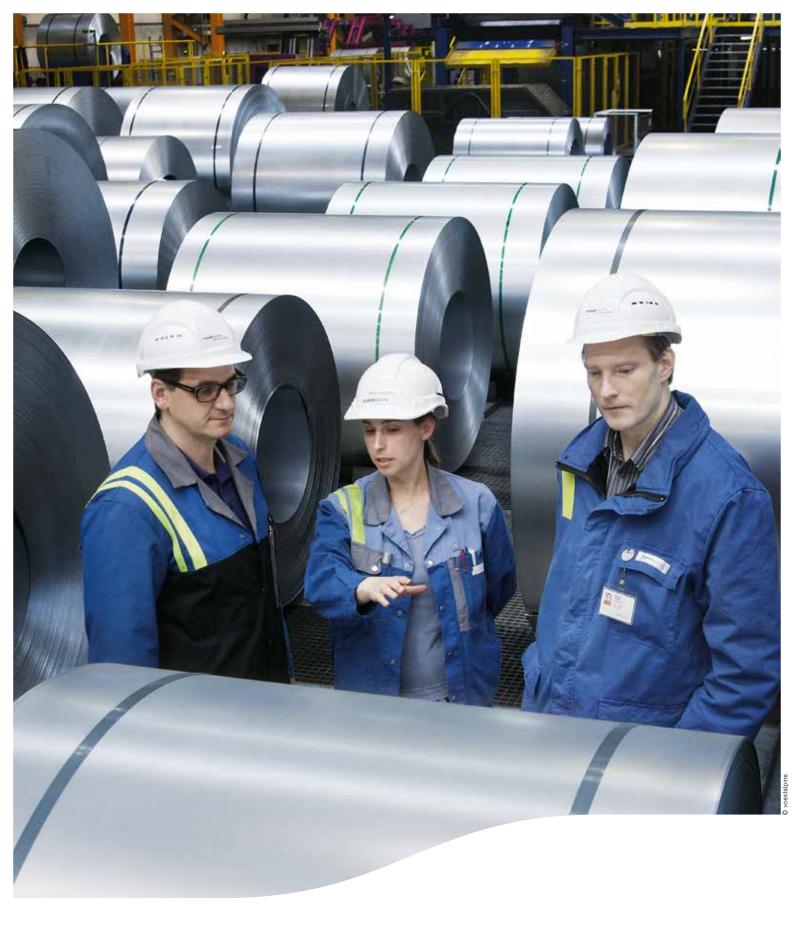
#### YOUR BENEFITS

- For highest strap tension
- Highest shock reserve
- Highest constant welding strength
- Sharp edge resistance

#### SHOCK RESERVE



Shock Reserve is a combination of elongation and breaking strength.



Building - Baling - Wood & Timber - Printing - Corrugated Board -Metal - Logistics - Can & Bottle Industry

## BUILDING INDUSTRY



When it comes to construction materials, strap tension and holding force are key factors. TEWE® PP and TYCOON® PET are your ideal solution for strapping roofing tiles, bricks, concrete blocks, and paving stones. The TYCOON® PET and TEWE® PP strapping product range covers all applications, machines, and special types of use and also includes special strapping for demanding tasks.

#### YOUR BENEFITS

Quality	Consistent high quality ensures a troublefree production process. Custom-tailored product development to your specific needs.	Safety	In cases of strongly shrinking packaged goods due to climatic influences, stability of the strapped pallet is ensured. TEWE® PP ensures
Strap tension	High strap elongation – to achieve the ideal degree of retained strap tension.		this even with very small packages using short strapping lengths.
Holding force	Constant high holding force keeps the strapped package compact.	Impact reserve	Excellent impact reserve for dynamic loads.

Туре	Dimension	Use	Suited for machines of the following manufacturers
TEWE® PP HE	12 – 16 mm	horizontal & vertical	CMR, Cyklop, Delonca, Itipack, Messersi, Mosca, OMS, Reisopack, Sander, SMB, Titan, and many others
TEWE® PP SHE	9 – 12 mm	small units	Endra, SMB, Strapex (Endsealer)
TYCOON <sup>®</sup> Speed	8 – 12 mm	small packages	CMR, Cyklop, Delonca, Itipack, Messersi, Mosca, OMS, Reisopack, Sander, SMB, Titan, and many others
TYCOON® T or GP	9 – 16 mm	horizontal & vertical	CMR, Cyklop, Delonca, Itipack, Messersi, Mosca, OMS, Reisopack, Sander, SMB, Titan, and many others
ТҮСООN® НТ	12 – 19 mm	horizontal & vertical strapping of pallets at high strap tension	CMR, Columbia, Cyklop, Delonca, Fromm, Itatools, Itipack, Messersi, OMS, Orgapack, Sander, Strapex, Titan, and many others.
TYCOON® HD	13 – 19 mm	vertical strapping without pallet under highest loads	CMR, Columbia, Cyklop, Delonca, Fromm, Itatools, Itipack, Messersi, OMS, Orgapack, Sander, Strapex, Titan, and many others.
TYCOON <sup>®</sup> Sigma	9 – 19 mm	all applications	Signode®



## **BALING** INDUSTRY



**The critical aspect** when strapping bales is the holding force. TYCOON<sup>®</sup> strapping impresses with its extremely high remaining holding force on bales. Even after extended periods in storage and transport, there will only be minimal expansion, and an increase in volume can be prevented. For the transport of bales, this permits the ideal utilization of the available cargo space and ensures utmost safety. The excellent weld strength and impact reserve keep your bales stable, even when exposed to dynamic movements.

**TEUFELBERGER TYCOON®** is the strapping with the lowest dropout rate in the market. Let us solve your problem of bursting welds. Use our strapping to work productively and smoothly in this technically demanding field.

**Their exceptional quality** manifests itself in a weld strength of 85%, minimal deposits on the heating tongues, smooth feeding, and perfect coiling.

For even more productive packaging - ask for our jumbo coils!

#### YOUR BENEFITS

Quality Innovation	Consistent high quality in all technical aspects ensures a troublefree production process. Continued development and upgrading of strapping to be exposed to highest loads.	Impact reserve Weld strength Productivity	Excellent impact reserve for dynamic movements. Highest constant weld strength. Lowest dropout rates, enormous weld strength, dimensional stability, and jumbo coils.
Elongation	Minimal expansion of bales due to accurately specified elongation.	Cost effectiveness	Due to troublefree processing, less abrasion and no splitting when opening the strapping – no
Holding force	High compactness of the strapped package thanks to the constant high holding force – even during long periods in storage or transport.	Safety	contamination of the fiber. Protects your staff actively from serious injuries that may occur when using steel strapping.

Туре	Dimension	Use	Suited for machines of the following manufacturers
TYCOON® HT	16 x 0.89 - 1.02 mm 19 x 1.00 mm	cellulose fibers, recycling, PO	Columbia, Cyklop, Fromm, Itipack, Itatools, OMS, Orgapack, Signode <sup>®</sup> , Titan, and many others
TYCOON® XB HD	19 x 1.00 - 1.27 mm	acrylic, cotton, cellulose, recycling, PA, PET, PO, sheep wool	Itipack, OMS, Titan and many others
TYCOON® HT Sigma	19 x 1.00 - 1.27 mm	acrylic, cotton, cellulose, recycling, PA, PET, PO	Columbia, Fromm, Itipack, Itatools, OMS, Orgapack, Signode®, Titan, and many others
TYCOON® HD Sigma	19 x 0.90 - 1.40 mm	acrylic, cotton, cellulose, recycling, PA, PET, PO, sheep wool	Columbia, Fromm, Itatools, Orgapack, Samuel, Signode <sup>®</sup> , and many others
TYCOON <sup>®</sup> 25-11M500 HT Sigma	25 x 1.00 mm	cotton, sheep wool	Columbia, Fromm, Signode®, Titan and many others
TYCOON <sup>®</sup> 25-13M500 HD Sigma	25 x 1.27 mm	cotton, sheep wool	Columbia, Fromm, Signode®, Titan, and many others

## WOOD AND TIMBER INDUSTRY



In the wood and timber industry, a great diversity of products such as particle boards and MDF-boards, sawn timber, laminates, and natural wood parquetry panels need to be strapped into packages in various and different ways. Vertical strapping requires highperformance products in order to hold the package together. With TYCOON® Speed and TEWE® SHE, TEUFELBERGER has also responded to the trend toward smaller-sized packages of battens or slats. The necessary strap tension is achieved even for very small packaging units.

#### YOUR BENEFITS

Quality	Consistent high quality and feeding stiffness, also for large frames.
Service	Reliable product developments for your specific applications.
Holding Force	High compactness of the strapped package thanks to the constant high holding force – even during long periods in storage.

Impact Reserve	Excellent impact reserve for dynamic loads.
Safety	Extremely high safety and a stable pallet pattern, even after exposure to thermal influences.
Cost effectiveness	Due to high remaining strap tension and minimal edge deformation.

Туре	Dimension	Use	Suited for machines of the following manufacturers
TEWE® A	8 – 16 mm	small bundles	all standard machines
TYCOON <sup>®</sup> Speed	8 – 12 mm	small bundles	CMR, Delonca, Itipack, Messersi, OMS, SMB, Titan, and many others
TYCOON® T or GP	12 – 19 mm	normal load	CMR, Columbia, Cyklop, Delonca, Fromm, Itatools, Itipack, Messersi, OMS, Orgapack, Titan, and many others
	12 – 19 mm	high load	CMR, Columbia, Cyklop, Delonca, Fromm, Itatools, Itipack, Messersi, OMS, Orgapack, Titan, and many others
TYCOON <sup>®</sup> Sigma	13 – 19 mm	all applications	Signode®
	16 – 19 mm	very high load	CMR, Columbia, Cyklop, Delonca, Fromm, Itatools, Itipack, Messersi, OMS, Orgapack, Titan, and many others

## PRINTING INDUSTRY



When bundling newspapers and magazines, speed is of the essence. In no other business cycle times are so high and deadlines so tight as in the printing industry. The on-time delivery of print media, their distribution by mobile vendors – everything is timed to perfection to keep customers satisfied.

**TEUFELBERGER strapping,** with its compellingly high quality, plays an important role in ensuring a smooth production process. Minimal abrasion and custom-tailored product developments make our strap the number one choice for single, parallel, and cross strapping machines. With this high quality product, cycle times way above 100 cycles per minute are now feasible. In addition, maintenance and cleaning periods as well as wear are reduced.

#### YOUR BENEFITS

Product Range	TEWE <sup>®</sup> PP and TYCOON <sup>®</sup> PET narrow strapping for all standard strapping machines.	Technology	Lowest abrasion in testing, compared to competitor products.
Quality			Custom-tailored product development to your specific needs.

Туре	Dimension	Use	Suited for machines of the following manufacturers
<b>TEWE® 5040 / 200</b>	5 x 0.40 mm	newspapers, supplements, catalogs, brochures	Mosca, Transpak and many others
<b>TEWE®</b> 5040 / 150	5 x 0.40 mm	newspapers, supplements, catalogs, brochures	Signode <sup>®</sup> and many others
<b>TEWE® 5045 / 200</b>	5 x 0.45 mm	newspapers, supplements, catalogs, brochures	Cyklop, Mosca, SMB, SOB, Strapex, Strapack, Transpak and many others
<b>TEWE® 5047 / 200</b>	5 x 0.47 mm	newspapers, supplements, catalogs, brochures	Cyklop, Mosca, SMB, SOB, Strapex, Strapack, Transpak and many others
<b>TEWE® 5050 / 150</b>	5 x 0.50 mm	newspapers, supplements, catalogs, brochures	Signode <sup>®</sup> and many others
	9 – 16 mm	log stacker	Delonca, Mosca, SMB, Strapex and many others
TYCOON <sup>®</sup> Speed	8 – 12 mm	log stacker	Delonca, Mosca, SMB, Strapex and many others
TYCOON® Sigma	9 – 11 mm	log stacker	Signode®

## ECORRUGATED BOARD INDUSTRY



In the corrugated board sector, strapping must be of the highest quality to ensure smooth, trouble-free production processes. Smaller packages can be bundled fast and securely using TEWE® PP. Strapping of larger packaging units with TYCOON® PET provides high strap tension without deforming the corrugated board. With these two, TEUFELBERGER offers you a perfectly complementing pair of strapping lines that cover all your palletizing needs.

#### YOUR BENEFITS

Pallets	TYCOON <sup>®</sup> polyester strapping for all standard pallet strapping tasks.	Strap tension	Constant high strap tension without deforming the corrugated board. TEWE® 8030 and 12040
Small packages	TEWE <sup>®</sup> PP narrow strapping used to bundle small packages.		are particularly well suited, as they will cut only minimally into the board during the bundling process.
Quality	Consistent high quality ensures a troublefree production process.	Initial tension	Perfectly strapped up pallet units ensured by high initial tension and minimal relaxation.
Productivity	High number of cycles with TEWE® PP, lowest possible edge deformation, gentle strapping for corrugated board products, even during longer periods in storage.	Service	Custom-tailored product development to your specific needs.

Туре	Dimension	Use	Suited for machines of the following manufacturers
TEWE® S	5 mm	bundling of small packages	CMR, Cyklop, Mosca, Signode®, Strapex, Strapack, Transpak and many others
<b>TEWE® 8033</b>	8 x 0.33 mm	bundling of small packages	Mosca, SMB
<b>TEWE® 12040</b>	12 x 0.40 mm	bundling of small packages	Mosca, SMB
	12.7 mm	vertical strapping	CMR, Cyklop, Itipack, Messersi, Mosca, Sander, Strapex, and many others
TYCOON <sup>®</sup> T or GP	9 – 13 mm	vertical strapping	CMR, Cyklop, Itipack, Messersi, Mosca, Sander, Strapex, and many others
TYCOON <sup>®</sup> 9-2M200 Sigma	9.2 x 0.52 mm	vertical strapping	Signode®
TYCOON <sup>®</sup> 11-2M200 Sigma	11 x 0.5 mm	vertical strapping	Signode®
TYCOON <sup>®</sup> 11-2M500 Sigma	11.1 x 0.52 mm	vertical strapping	Signode®
TYCOON <sup>®</sup> 11-3M200 Sigma	11.1 x 0.6 mm	vertical strapping	Signode®



## **METAL** INDUSTRY



In the metal industry, a large variety of usually very heavy products needs to be strapped to form a package. Vertical strapping calls for products that satisfy a number of tough requirements in order to hold the package together. TEUFELBERGER strapping meets all of these requirements. They easily apply to the packaged goods and impress us with their well balanced, optimized technical specifications.

#### YOUR BENEFITS

Quality	Consistent high quality and feeding stiffness,	Impact reserve	Excellent impact reserve for dynamic loads.
Service	even for large frames.		High compactness of the strapped package thanks to the constant high holding force – even during long periods in storage.
Safety	Extremely high safety and a stable pallet pattern, even after exposure to climatic influences; minimal risk of injury when opening the straps.	Cost effectiveness	Ensured by the high retained strap tension and minimal surface damage.

Туре	Dimension	Use	Suited for machines of the following manufacturers
TEWE® A	8 – 16 mm	small bundles	all standard machines
TYCOON <sup>®</sup> Speed	8 – 12 mm	small bundles	CMR, Delonca, Itipack, Messersi, OMS, SMB, Titan, and many others
TYCOON® HT or HD	16 x 0,89 - 1,02 mm 19 x 1,00 mm	slabs, profiles, tubes, plates	Columbia, Cyklop, Fromm, Itipack, Itatools, OMS, Orgapack, Signode®, Titan, and many others
TYCOON <sup>®</sup> 19-8M100 HD Sigma	19 x 0,90 mm	slabs, coils, wires, profiles, tubes, plates	Columbia, Fromm, Itatools, Orgapack, Signode®, and many others
■ TYCOON <sup>®</sup> 19-9M900 HT Sigma	19 x 1,27 mm	slabs, coils, wires, profiles, tubes, plates	Columbia, Fromm, Itipack, Itatools, OMS, Orgapack, Signode®, Titan, and many others
■ TYCOON <sup>®</sup> 19-9M900 HD Sigma	19 x 1,27 mm	slabs, coils, wires, profiles, tubes, plates	Columbia, Fromm, Itatools, Orgapack, Signode®, and many others
■ TYCOON <sup>®</sup> 19-12M100 HD Sigma	19 x 1,40 mm	slabs, coils, wires, profiles, tubes, plates	Columbia, Fromm, Itatools, Orgapack, Signode®, and many others
TYCOON <sup>®</sup> 25-11M500 HT Sigma	25 x 1,00 mm	slabs, coils, wires, profiles, tubes, plates	Columbia, Fromm, Signode®, Titan, and many others
■ TYCOON <sup>®</sup> 25-13M500 HD Sigma	25 x 1,27 mm	coils, wires, profiles, tubes, plates	Columbia, Fromm, Signode®, Titan, and many others
■ TYCOON <sup>®</sup> 32-14M100 HD Sigma	32 x 1,00 mm	coils, wires, profiles, tubes, plates	Columbia, Fromm, Signode®, Titan, and many others





## LOGISTICS

**In logistics,** on-time delivery and reliability are key to ensuring customer satisfaction. TEUFELBERGER offers a wide portfolio of strapping products for a variety of logistics applications. Whether you want to close up cartons, bundle small-sized items, or strap pallets: at TEUFELBERGER, you will find the right strapping for your needs.

**In our comprehensive product portfolio** ranging from PP to PET strapping, we have the right solution for every strapping machine. Due to its high quality, TEUFELBERGER strapping facilitates your work and ensures smooth, troublefree production processes.

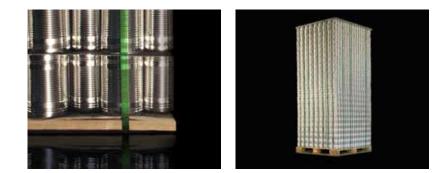
Through its global distribution network, TEUFELBERGER provides individual, local support and helps you to find the right strapping for your needs.

#### YOUR BENEFITS

Product range	Wide product range, attuned to your application.	Service	Custom-tailored product development to your	
Quality	Consistent high quality ensures a troublefree		specific needs.	
	production process.	Support	Worldwide support by reliable partners.	

Туре	Dimension	Use	Suited for machines of the following manufacturers
TEWE® S	4 – 6 mm	strapping for cartons used to ship electronic equipment, clothing, foodstuffs, furniture, pharmaceuticals and accessories	all standard machines
■ TEWE® A	8 – 16 mm	strapping for pallets and cartons used to ship electronic equipment, clothing, foodstuffs, furniture, pharmaceuticals and accessories	all standard machines
TEWE <sup>®</sup> HQ Mono / HQ Digital	9 / 12 / 15 mm	strapping for cartons used to ship electronic equipment, clothing, foodstuffs, furniture, pharmaceuticals, and accessories	all standard machines
TYCOON <sup>®</sup> Speed	8 – 12 mm	strapping for pallets and cartons used to ship electronic equipment, clothing, foodstuffs, furniture, pharmaceuticals, and accessories	CMR, Delonca, Itipack, Messersi, Mosca, OMS, SMB, Strapack, Titan, Transpak, and many others
TYCOON® T or GP	9 – 16 mm	strapping for pallets	all standard machines

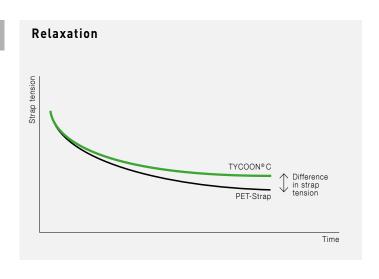
# CAN AND BOTTLE INDUSTRY



**Very large packaging units** are characteristic of the can and bottle industry. The stability of the pallet without causing deformation of the cans must be ensured for in-house transport as well as for transport to the filling plant. Crosswise vertical strapping is used to achieve the required stability in palletization. TYCOON® strapping stands for a constantly high strap tension that ensures the cohesion of packing layers even after exposure to vibratory movements.

#### YOUR BENEFITS

Quality	Consistent high quality ensures a troublefree production process.
Product range	TYCOON <sup>®</sup> C and TYCOON <sup>®</sup> Sigma product range, specifically attuned to your field of use. Our strap runs on all standard strapping machines and hand tools.
Service	Custom-tailored product development to your specific needs.
Strap tension	Constant high strap tension without causing deformation of the cans; minimal tension loss during the shrinking process for glass bottle pallets.
Initial tension	Perfectly stable palletized package thanks to high initial tension and low relaxation.
Cost effectiveness	Cost effective and safe > reduction of foil thickness is possible.



Туре	Dimension	Use	Suited for machines of the following manufacturers
TEWE® A	9 – 16 mm	horizontal strapping for glass bottles	CMR, Cyklop, Delonca, Itipack, Mosca, Strapex, Titan, and many others
TYCOON® C	9 – 12 mm	vertical strapping with lowest tension loss	CMR, Cyklop, Delonca, Itipack, Mosca, Strapex, Titan, and many others
TYCOON® T or GP	9 – 12 mm	vertical strapping	CMR, Cyklop, Delonca, Itipack, Mosca, Strapex, Titan, and many others
TYCOON <sup>®</sup> Sigma	9 – 11 mm	vertical strapping	Signode®

**At TEUFELBERGER,** the customer counts. Thus, we provide our customers various additional services to guarantee customer satisfaction and troublefree strapping operation.

#### PRE-PURCHASING SERVICES

- Globally active sales team
- Huge product range
- Customized solution/Strapping consultancy
- Customer visits
- Analyses of reference products
- Samples
- Single-point-of-contact

#### PURCHASING

- Simple order processing = easy business
- Sales support in your mother tongue
- Possibility to deliver to end-customer
- Customized products
- Reliable on time delivery

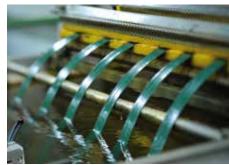


- Reliable and constant quality for more than 45 years
- Regular customer visits
- Reduced machine downtime, due to low dust and simple handling
- Worldwide technical support, in case of urgent need
- After-sales service for first delivery
- Continous improvement of product portfolio (R&D)
- 100% recycleable strap
- Certified quality by ISO 9001

## ADDITIONAL SUPPORT

- Technical consultancy
- Trainings
- Key Account Management
- New customer leads
- Joint visits at end-customers
- Common acquisition
- Long-term customer orientation









#### **TYCOON® PET**

- Highest remaining holding force
- Perfect shock elasticity
- Splice-free

- 1-2 strap technology for fast and easy coil changes
- Perfect winding minimal edgebow and curvature

Width	Thickness	Core	Breaking strength	Elongation
8 - 32 mm	0.3 - 1.40 mm	406 x 150 mm + Jumbo	85 - 1.400 kg	10 - 16%

#### **TEWE® PP**

- Smallest tolerances and highest quality
- For optimum running characteristics
- Highest stiffness for perfect feeding
- Nearly dustfree for high speed bundling
- Customized solutions for your application

Width	Thickness	Core	Breaking strength	Elongation
4 - 16 mm	0.3 - 1.2 mm	150/184/200/230/280/406 + Jumbo	44 - 527 kg	up to 50%





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