




TWINES

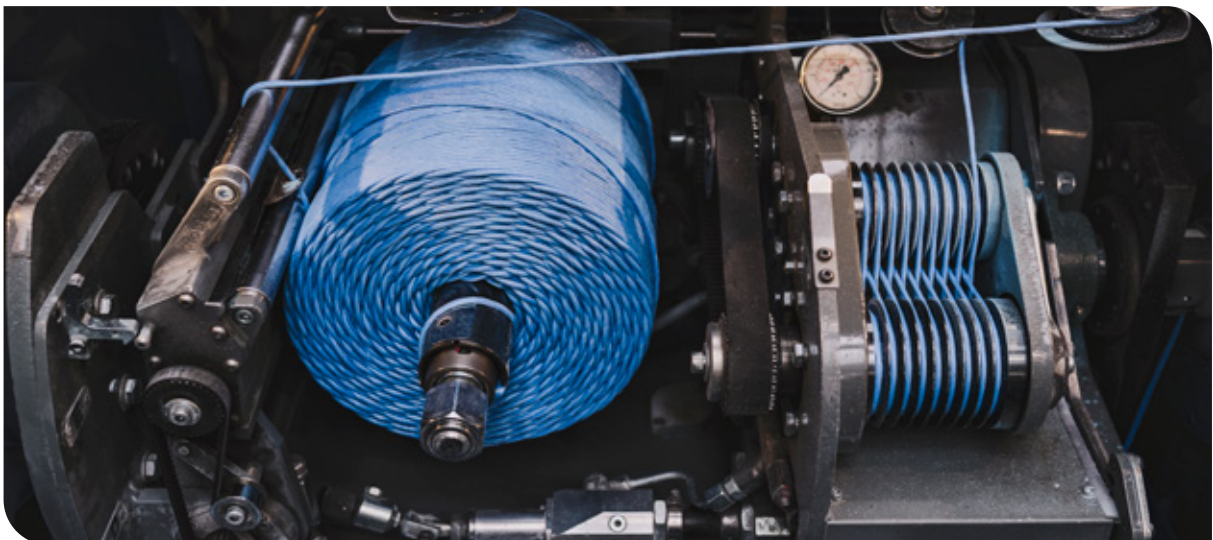
 **AGRICULTURE**
 **GARDENING**
 **TECHNICAL**





Are you looking for the right solution for the harvest of your valuable crops? Perhaps you need a way to store them efficiently and safely? You've come to a company that will offer you exactly the products you need to be able to focus solely on your job.

Defalin Group is a leading European company that has been making cordage since 1911. The knowledge and experience and continuously developing technology enable us to make twines for agricultural machinery whose value is appreciated by a wide range of farmers in Poland and abroad. The DEFALIN brand is a synonym for high-quality polypropylene twines.





The high quality of the products made by DEFALIN is the result of using advanced technologies and special know-how in production as well as the quality of select polypropylene from reputable suppliers.

Before being launched on the market, every new product is tested and undergoes quality control procedures to make sure it complies with the most stringent production specifications and ISO standards. This way, we can guarantee that the selected product will function without fail in your machinery.



DEFALIN GROUP S.A.

DEFALIN products are manufactured in a modern, fully automated facility.

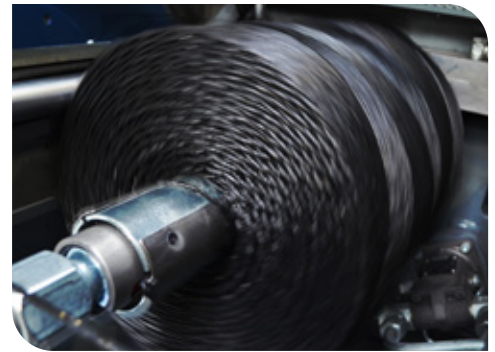




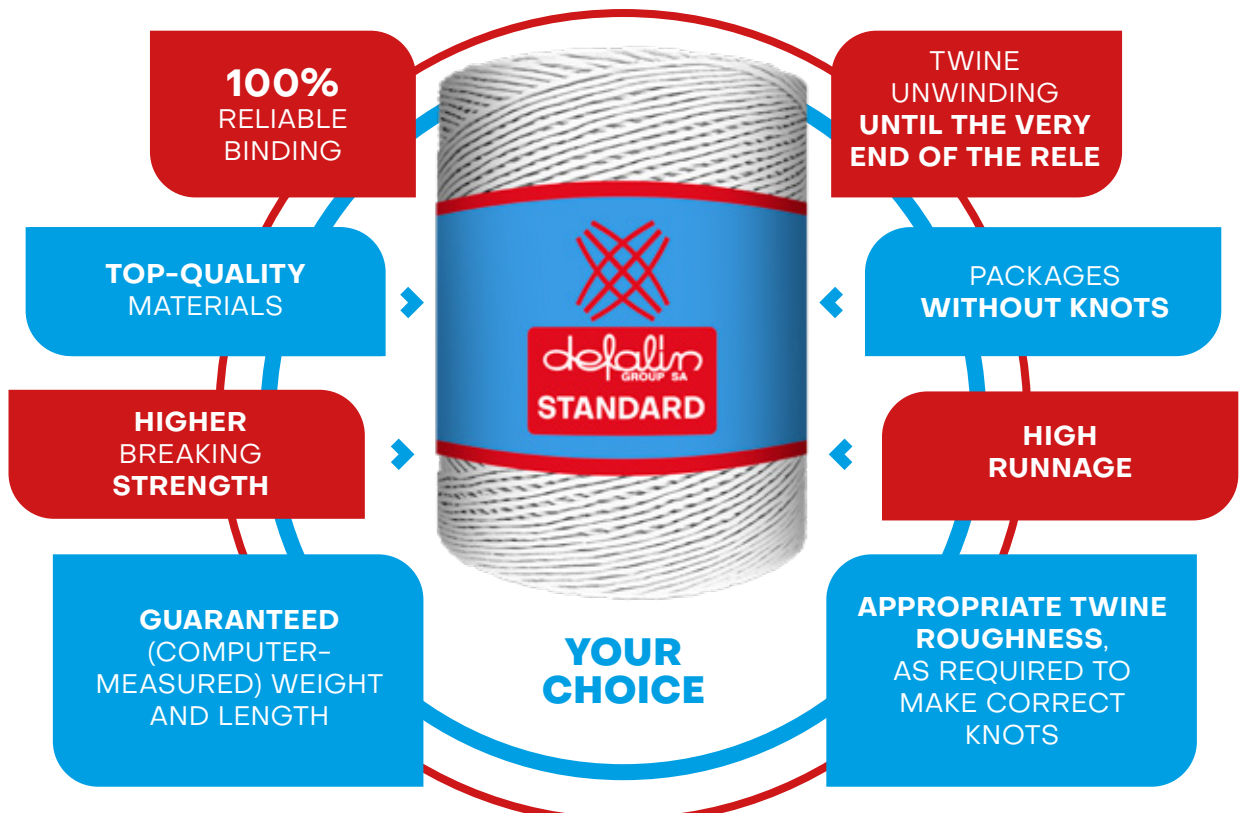
TWINE AND ITS MANY BENEFITS

Defalin has been collecting the experiences of farmers who harvested crops. We used this knowledge as well as our modern technology to make products* that, in practical application, improved and facilitated the baling process.

* in the form of a polypropylene twine used for the harvest of straw, hay and grass.



Standard functional tests prove that, in comparison with other products, our twine is characterised by the following features:



TWINE PROPERTIES

What twine to pick to fully utilise its excellent baling properties without suffering from downtime caused by twine breakage or knots slipping out of the knotter during crop baling?

Every twine has a specific runnage (e.g., 500 m/kg), which defines the actual twine length per kilogram. The thinner the twine, the higher the m/kg ratio

Additionally, Defalin introduced specific names for easier twine identification. They characterise products with specific technical parameters, intended use and suitability for a specific machine.



WHAT TO LOOK FOR

Important twine parameters include breaking strength. This parameter defines the force that causes the twine to break. Breaking strength is given in kgf. The higher the number, the higher the strength. Defalin products conform to all standards and certificates in this regard.

MACHINE TYPE

Round and square balers

TWINE SYMBOL

500

TWINE NAME

TYTAN

THE RIGHT BALL OF TWINE FOR YOUR PRESS



REMEMBER !

The strength of the twine knot is always **approx. 40% smaller than direct strength.**



A SAFE CHOICE FOR **YOUR VALUABLE CROPS**

The standard twine we make has properties that enable excellent and effective use in all types of balers, regardless of crop type and weather conditions.



DIVISION TWINES

<p>PREMIUM Twines</p>	<p>AMAZING, AMAZING+</p>		<p>Big square balers with a high compression ratio</p>
<p>STANDARD PLUS Twines</p>	<p>GIGANT Power in Knot</p>		
<p>STANDARD Twines</p>	<p>GIGANT, GIGANT JUMBO</p>		<p>Big square balers</p>
<p>STANDARD Twines</p>	<p>ATLAS</p>		<p>Small square balers</p>
<p>STANDARD Twines</p>	<p>TYTAN</p>		<p>Square and round balers</p>
	<p>TUR</p>		
<p>STANDARD Twines</p>	<p>GOLIAT</p>		
	<p>ROLLER</p>		
	<p>GOLIAT LIGHT</p>		
	<p>HEROS JUMBO</p>		
	<p>HEROS</p>		



PREMIUM TWINES

Guaranteeing a high crop baling quality using big balers with a high compression ratio is a very important part of the strategy of Defalin. Thanks to our long experience and proprietary technologies, we can provide high-performance twines. Their properties enable reliable and efficient work throughout the harvest period.



AMAZING NEW GENERATION OF TWINES

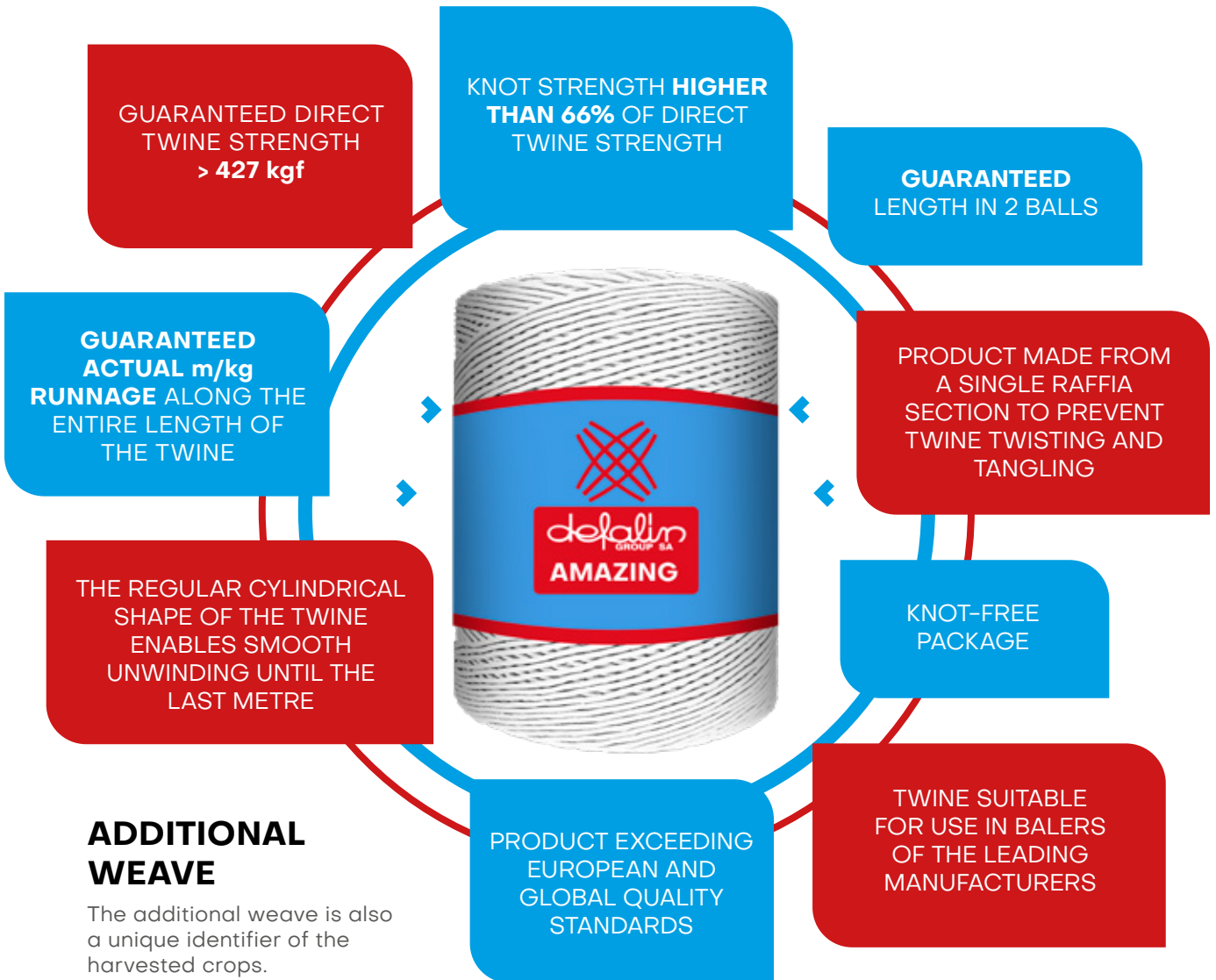
They are the latest generation of agricultural twines offered by DEFALIN, a leader in the sector of packing products for the agricultural business. It is a range of twines intended for balers where due to the high compression ratio during the harvest of straw, hay and grass in high-density balers there is a need for twine that exceeds the requirements of international standards. These are the products made from a selectively picked material to be suitable for baling with a very high density thanks to our unique technology. The special unique feature of **AMAZING** twines is their exceptional knot strength, reaching over 66% of their direct strength. Such exceptional strength has no equals among the products available on the market, and it has a vital impact on harvesting efficiency.



PACKAGES WITH GREATER LENGTH ENABLE EFFICIENT AND RELIABLE WORK.

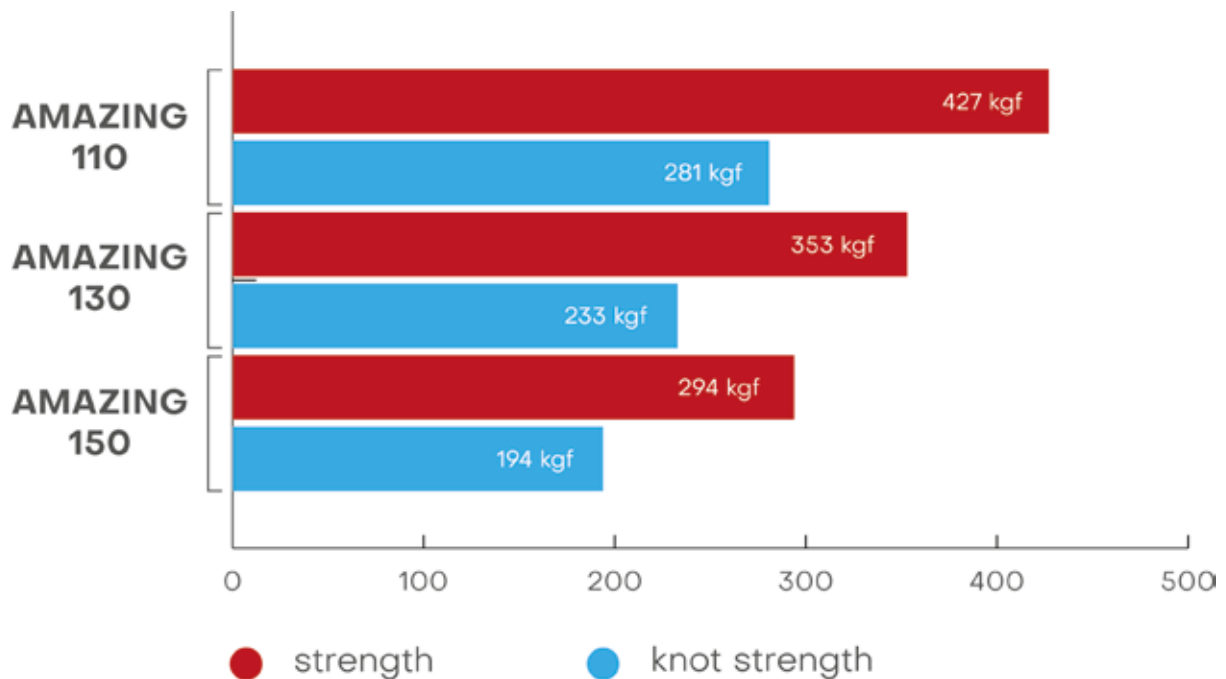
Choosing the right twine is significant in the case of large fields. The increased length of 14" **AMAZING+ twine** packages equals 20% higher runnage, reducing machine downtime. The baler fully utilises such properties during straw harvest with high-density balers under any weather conditions.

AMAZING twines have unique properties:



ADDITIONAL WEAVE

The additional weave is also a unique identifier of the harvested crops.





GIGANT POWER IN KNOT



POWER AT YOUR FINGERTIPS

Power in knot is an accurate description of this superior twine. The high strength > 400 kgf and special twine structure ensure reliable binding of heavy, high-density bales.

The users will certainly appreciate this because binding reproducibility and high knot strength (approx. 56% of direct knot strength) are critical to having a calm and productive harvest.

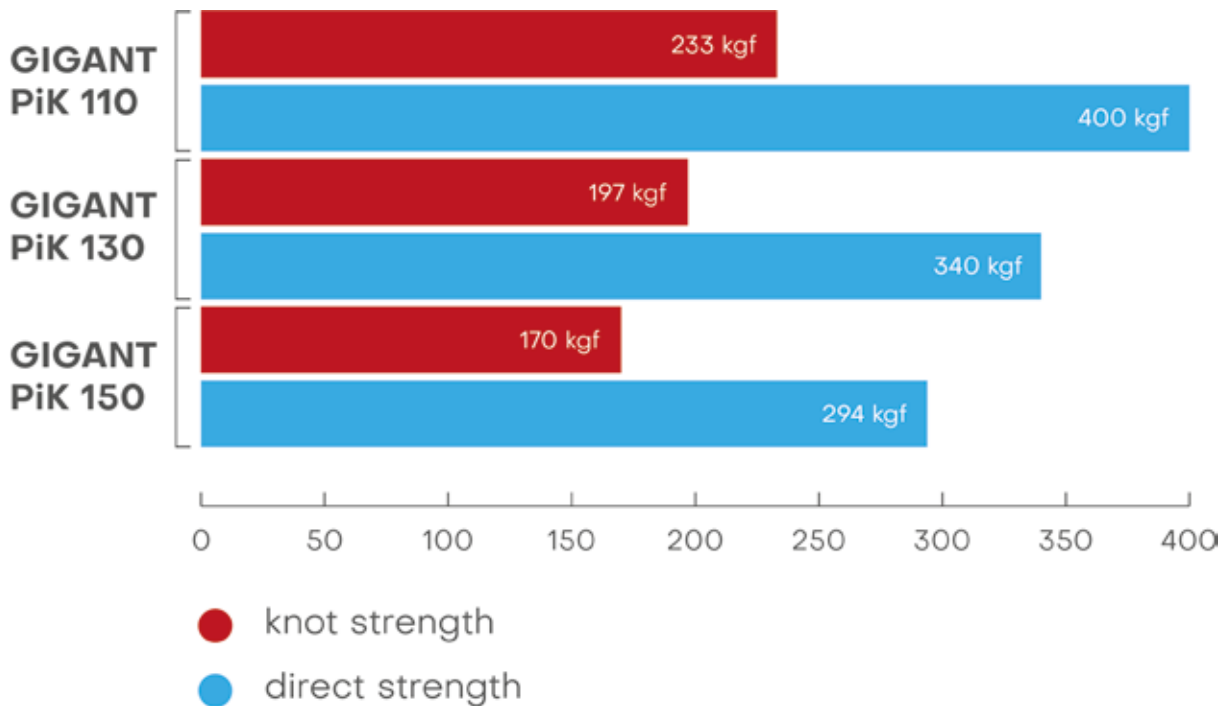
The twine is made in several variants with different thickness and knot-free length. Choosing the correct twine thickness enables correct application depending on the type of the baling machine and the type of crop. This is an excellent way of reducing costs thanks to the optimal twine use efficiency and preventing unnecessary downtime caused by faulty binding.



GIGANT PiK 110 is a twine intended for balers that produce bales with very high weight and density. The exceptional knot power ensures that the bales do not spill during repeated handling.

GIGANT PiK 130 is a twine intended for high-density baling, where high efficiency and reliable binding are a must.

GIGANT PiK 150 is offered for use on farms that use high-density balers and where high efficiency and ease of operation are of top importance.



Gigant Power in Knot (PiK) twines offer an attractive actual price considering their excellent properties.

Benefits of twines in large balers with a high compression ratio:

- ▶ 20% higher bale compaction in comparison with conventional balers.
- ▶ higher efficiency during swath harvest by eliminating the cyclical downtime required to wrap bales in the machine and unload them from the baler chamber.
- ▶ optimum storage of square bales in comparison with round bales made by round balers



GIGANT

Twines are a universal product that offers excellent performance. They are available with three runnage values: 110, 130 and 150 m/kg, to enable optimum use of the twine in big balers of any kind.



Twine features:

- ▶ high breaking strength,
- ▶ reliable binding,
- ▶ guaranteed length.



GIGANT JUMBO

Twine sold in increased 14" packages, enabling longer operation and 22% higher runnage per ball.



COMPARISON OF HARVEST COSTS – TWINE VS NET WRAP:

20% smaller costs of binding with twine than net wrap per every bound ton.



TWINE USE (BALE / PACKAGE) IN BALERS

Bale size (m)	bale 1,5x0,7	bale 2,5x0,9	bale 1,5x0,7	bale 2,5x0,9
Twine symbol	AMAZING / GIGANT GIGANT Power in Knot (bale /package)		GIGANT Jumbo / AMAZING+ (bale /package)	
110	75,0	48,0	91,0	59,0
130	88,0	57,0	108,0	70,0
150	102,0	66,0	125,0	81,0



The standard twines of our company are the perfect choice for conventional round and square balers.

STANDARD TWINES

HEROS

Excellent for binders and balers with a low compression ratio. It can also be used with round balers for straw or hay. The compression ratio and density of the finished product enable the use of the thinnest twine, with the lowest breaking strength.

The **HEROS** twine is also available in the larger version – **JUMBO**. This solution doubles the length of the twine and reduces the amount of twine you have to purchase by half. It shortens the time required for ball change for effective and economical use of the baler.



GOLIAT

Excellent twine for round balers with a low compression ratio, e.g., for the harvest of hay and green forage and to prepare hay-silage. Since polypropylene twines do not enter into chemical reactions with ensiled material, they are excellent for fermentation technologies, while still preserving bale compaction.

GOLIAT LIGHT

Twine with properties that ensure fault-free operation of round balers.

GOLIAT ROLLER

Roller has special properties for enhanced baling efficiency. The perfect form of the twine ensures excellent operation in the machine, resulting in efficient and productive harvesting of hay or straw crops in balers with a low compression ratio. The benefits and properties of the **GOLIAT ROLLER** twine include the high efficiency, smooth unwinding of the twine from the ball, perfect bale size, lower wear of baler parts, lower cost of twine use in the baler and high twine strength



* Product marked with the UV symbol, i.e., enhanced with a UV stabiliser (an agent for protection against ultraviolet radiation), commonly used in gardening, e.g., for tying up tomatoes, cucumbers, shrubs and at hops plantations.

TUR

The TUR twine has properties similar to those of the **TYTAN** Standard twine. It has a guaranteed, electronically measured length of 2011 m and is made of a single twice piece, for improved unwinding and binding in balers. Knot strength > 71 kgf and > 40 kgf will enable the successful use of the twine in square balers or round balers during the harvest of silage, hay or straw.



TYTAN

Intended for heavy round balers and small square balers, for straw pressing with a high compression ratio.



ATLAS

Commonly used for hay harvest in balers with a high compression ratio, small square balers and balers with moderate wear.

TWINE USE IN THE MACHINE DEPENDING ON TWINE TYPE AND TYPE OF HARVESTED SWATH

Type of baler	Size of bale (cm)	Number of wraps	Amount of twines (in meters) per one bale	Type of twines	Type of harvest
Binding machine	height depends/70/70	1	~1	Heros, Goliat	Straw, hay
Round balers	120/120 120/150	12	45,0 - 56,0	Goliat, Roller, Tur, Tytan	Silage, hay, straw
Square balers	130/46/30	2	6,6	Tur, Tytan, Atlas	Silage, hay, straw

JUBILAT TWINES

This is a jubilee group of twines produced on the occasion of the 100th anniversary of the company. Excellent functional properties and great interest of farmers ensured them a place among the products that have been permanently included in the offer of DEFALIN. The range of **JUBILAT** twines includes: **HEROS, GOLIAT, ATLAS, TYTAN**.



LIGHT TWINES

The LIGHT twine series is characterised by a well-balanced price-to-runnage ratio. The solutions used in the production process have enabled the creation of products that meet the requirements of the farmers regarding reliable crop harvest. The most important properties of **LIGHT** twines include appropriate strength and length of the twine in the ball, which enable utilising the full potential of the twine in round or square balers. Easy unwinding prevents the twine from tangling in the baler and ensures a high working efficiency. Twines made in the **LIGHT** version include **TYTAN** and **ATLAS**.



TWINE PROTECTION

The twine is made from plastic with the chemical name: polypropylene (abbreviated as PP). Although it is not readily biodegradable and is neutral to the environment, it quickly deteriorates when exposed to the sun (UV ultraviolet radiation). In Polish conditions, twines are made from pure polypropylene. The sunlight resistance is sufficient for the product to be stored in outdoor conditions for one year.

To increase its resistance to ultraviolet radiation, a UV stabiliser is added in the production process (accordingly to the UV radiation band). Alternately, it can also be dyed with a selected dye (blue, ginger, red, green, yellow, black), which also protects against harmful radiation.

RECOMMENDATIONS

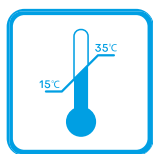
Incorrect transport and storage of twine balls may cause them to deform and tangle, potentially reducing their efficiency in the baler. That is why it is necessary to use it carefully and comply with the recommendations on the label.



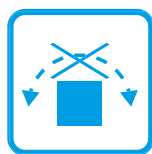
keep away from sunlight



protect against excess moisture



keep at temperatures not lower than 15°C and not higher than 35°C



do not throw or crush the ball.



REMEMBER!

Do not leave twine residues in the hay, fodder or in the field because it will be dangerous to the animals if it is eaten together with the fodder and may cause them to die. Also, leftover twine may cause failures of agricultural equipment during fieldwork.

Additionally, if it is not accordingly managed, it can turn into a waste nuisance. It can be recycled if it is carefully picked and cleaned from impurities. This contributes to environmental protection.

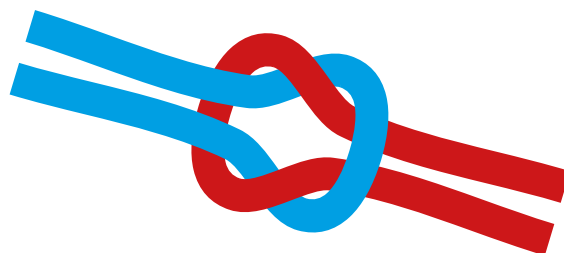
PROBLEMS WITH USE

The most common reason for issues during twine use include incorrect twine type, transport method and the duration and place of storage.

The most frequent problems include:

- ▶ twine tangling and tearing if the beginning section of the twine (place marked on the label as the Beginning or Start) is pulled out in an incorrect manner
- ▶ poor binding quality due to the incorrect adjustment of the binding device (knotter)
- ▶ fraying of twine ends due to blunt twine cutters
- ▶ unsuitable twine thickness for the specific machine type and crops
- ▶ insufficient twine strength relative to the stresses (compression ratio) in the machine

You can prevent most of these problems yourself by following our recommendations. If the twine does not fulfil its function despite complying with our recommendations, please promptly refer the problem to the place where the product was purchased.



In the case of twines binding or its break should always use a square knot



GARDENING TWINES

Made of the highest quality raw materials, they guarantee splendid physical properties. Through application of the appropriate production technology, they fully satisfy expectations of the users in gardening, fruit farming, greenhouse and foil-wrapped cultivation, as well as on hop and tobacco plantations.

OGRODNIK



This agriculture twine is also recommended for use in gardening. Its physical properties allow for use in difficult conditions in greenhouses. Effect of the sun radiation gets eliminated through adding right amount of UV stabilizer to the PP raw material. This twine is soft to the touch which makes it plant-friendly (reduced risk of breaking sprouts led along the twine) and makes easier the task of tying up plants. Balls of „OGRODNIK” twine are wound up without knots which allows for smooth unwinding the balls.

Number of meters per kg (m/kg)	1000
Breaking strength (kgf)	37
Spool weight (kg)	4,0
Number of meters per spool (m)	4000
Number of meters in a package (2 pcs)	8000

LUPULINA



Is an agriculture twine enriched with additional weave. During the process of growth stems of hop creep up the hanging down twines and this additional weave gives them additional support and makes that creeping easier. Also, such additional weave is for the creeper a perfect hook-point and protects the plant against sudden slipping down. In every full package, each one of the twine's threads is made without knots. These threads twisted together guarantee high break resistance. In order to reduce effect of the sun radiation, the LUPOLINA twine contains proper amount of the UV stabilizer additive.

Number of meters per kg (m/kg)	700
Breaking strength (kgf)	56
Spool weight (kg)	4,8
Number of meters per spool (m)	3360
Number of meters in a package (2 pcs)	6720



TWINES AND ROPES

TECHNICAL

PP TWINES 3-4 mm

Made of polypropylene, they are used in the leather, furniture and even food industries. The appropriate conditioning allows for easy and convenient use of these strings in household.

PP TWINES 5-8 mm

Those twines are used to fasten and pack various goods. The use of cones made possible the application of twines in baling machines (waste, waste-paper).

PP ROPES 10-16 mm

3-strand twisted ropes fulfil many functions in agriculture and gardening, in building industry and in transportation. Confectioning applied to these products allows for their effective use in household environment.



PP ROPE FOR WOOD PACKING

One of the methods used for packing firewood is binding it with the **PP ROPE**. 12-strand rope is especially designed for this purpose. Its loose soft weave made of homogeneous material guarantees sure and effective binding as well as high break tenacity.

ELECTRIC FENCE CORD

Electric fence

is a polypropylene 3-strand twisted rope. Each strand contains copper tinned wire of adequate diameter which guarantees perfect conductivity. Properly chosen colouring of the cord helps animals to easily catch sight of the fence.

ADVANTAGES OF THE PRODUCT:

- ▶ proper elongation capability which allows for avoiding breakages even in case of considerably strong tension of the cord
- ▶ polypropylene ropes are substantially durable since they undergo very limited degradation caused by the environment factors

NOTICE:

Right choice of energizer and accessories is the condition of proper performance of the electric fence.

PREMIUM TWINES

PREMIUM	AMAZING			AMAZING +		
NUMBER m/kg	110	130	150	110	130	150
NUMBER m/spool	990	1170	1350	1210	1430	1650
STRENGTH kgf	427	353	294	427	353	294
KNOT STRENGTH kgf	281	233	194	281	233	194
NUMBER OF SPOOLS PER PALLET pcs	120	120	120	80	80	80
APPLICATION	big square balers with the highest baling density in any weather conditions	big balers with a higher swath quality and reliable binding	big square balers with smaller bale expansion and higher knot quality and reproducibility	big square balers with the highest baling density in any weather conditions	big balers with a higher swath quality and reliable binding	big square balers with smaller bale expansion and higher knot quality and reproducibility
TYPE OF HARVEST	Straw, silage					

STANDARD PLUS TWINES GIGANT POWER IN KNOT

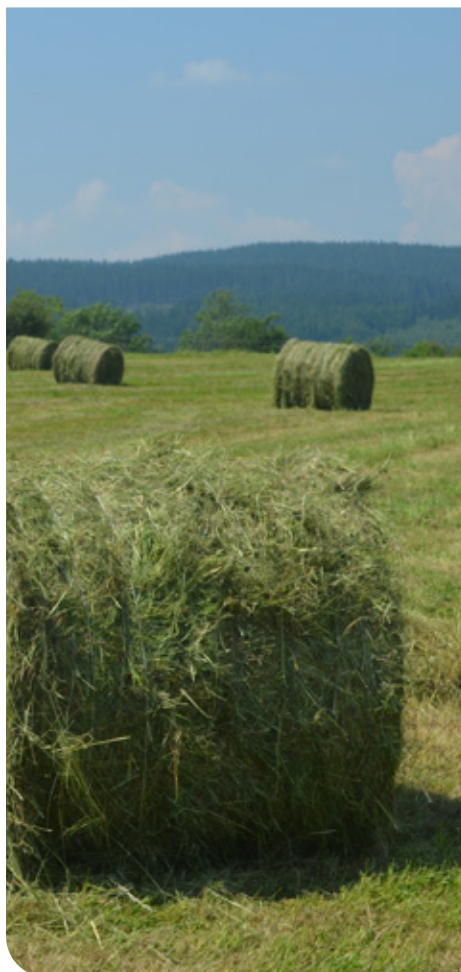
STANDARD PLUS	GIGANT POWER IN KNOT		
NUMBER m/kg	110	130	150
NUMBER m/spool	990	1170	1350
STRENGTH kgf	400	340	294
KNOT STRENGTH kgf	233	197	170
NUMBER OF SPOOLS PER PALLET pcs	120	120	120
APPLICATION	big square balers with a high compression ratio that produce bales with very high weight and density	big high-density square balers where high efficiency and reliable binding are a must	big square balers on farms that use lower-density balers and where high efficiency and ease of operation are of top importance
TYPE OF HARVEST	Straw, silage		

STANDARD TWINES GIGANT / GIGANT JUMBO

STANDARD	GIGANT			GIGANT JUMBO		
NUMBER m/kg	110	130	150	110	130	150
NUMBER m/spool	990	1170	1350	1210	1430	1650
STRENGTH kgf	359	304	262	359	304	262
KNOT STRENGTH kgf	198	167	145	198	167	145
NUMBER OF SPOOLS PER PALLET pcs	120	120	120	80	80	80
APPLICATION	big square baler					
TYPE OF HARVEST	Straw, silage					

STANDARD TWINES

STANDARD	HEROS	HEROS JUMBO	GOLIAT LIGHT	ROLLER	GOLIAT	TUR	TYTAN	ATLAS
NUMBER m/kg	1000	1000	770	750	700	570	500	400
NUMBER m/spool	2000	4000	3080	3600	3360	2011	2000	1600
STRENGTH kgf	40	40	51	56	56	71	79	99
KNOT STRENGTH kgf	22	22	29	31	31	40	43	54
NUMBER OF SPOOLS PER PALLET pcs	504	240	240	240	240	240	240	240
APPLICATION	reaper-binder, round balers		round balers			round balers, small square balers		small square baler
TYPE OF HARVEST	hay, straw		silage, straw			silage, straw, hay		



	SIZE OF STRAND pc.	NUMBER OF METERS PER COIL m	UNIT MASS g/m	COIL WEIGHT kg	BREAKING kgf	COIL SIZE [Øxh] mm	TUBE SIZE [Øxh] mm
PP TWINES 3-4MM	3	300	5,0	1,50	169	200x145	50x145
	3	500	5,0	2,50	169	200x145	50x145
	3,5	300	6,5	1,94	218	220x145	50x145
	4	270	8,0	2,16	270	225x145	50x145
	4	600	8,0	4,80	270	300x195	50x145
PP TWINES 6-8MM	5	550	11,0	6,05	406	320x220	-
	6	220	17,0	3,74	575	260x210	-
	8	220	25,0	5,50	846	300x225	-
	8	220	30,0	6,60	1015	300x225	-
	8	500	30,0	15,00	1015	360x325	-
PP ROPES 10-16MM	10	220	45,0	9,90	1523	350x270	-
	12	220	65,0	14,30	2200	395x280	-
	14	220	90,0	19,80	3045	420x320	-
	14	500	90,0	45,00	3045	580x400	-
	16	110	115,0	12,65	3892	370x300	-
	16	220	115,0	25,30	3892	440x350	-
	16	500	115,0	57,50	3892	560x440	-
ELECTRIC FENCE ROPE							
PP ROPES	5	300	15,0	4,50	507	-	270x190
	SIZE OF STRAND pc.	NUMBER OF METERS PER COIL m	UNIT MASS g/m	COIL WEIGHT kg	BREAKING kgf	COIL SIZE [Øxh] mm	
PP PACKAGING ROPE	12	110	36,0	3,96	1250	235x270	





P.P.H.U. „**DEFALIN**” GROUP S.A.

ul. Strefowa 5
58-160 Świebodzice, Poland

tel.: +48 74 854 99 00
www.defalin.com.pl
e-mail: dh@defalin.com.pl

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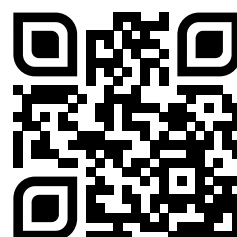
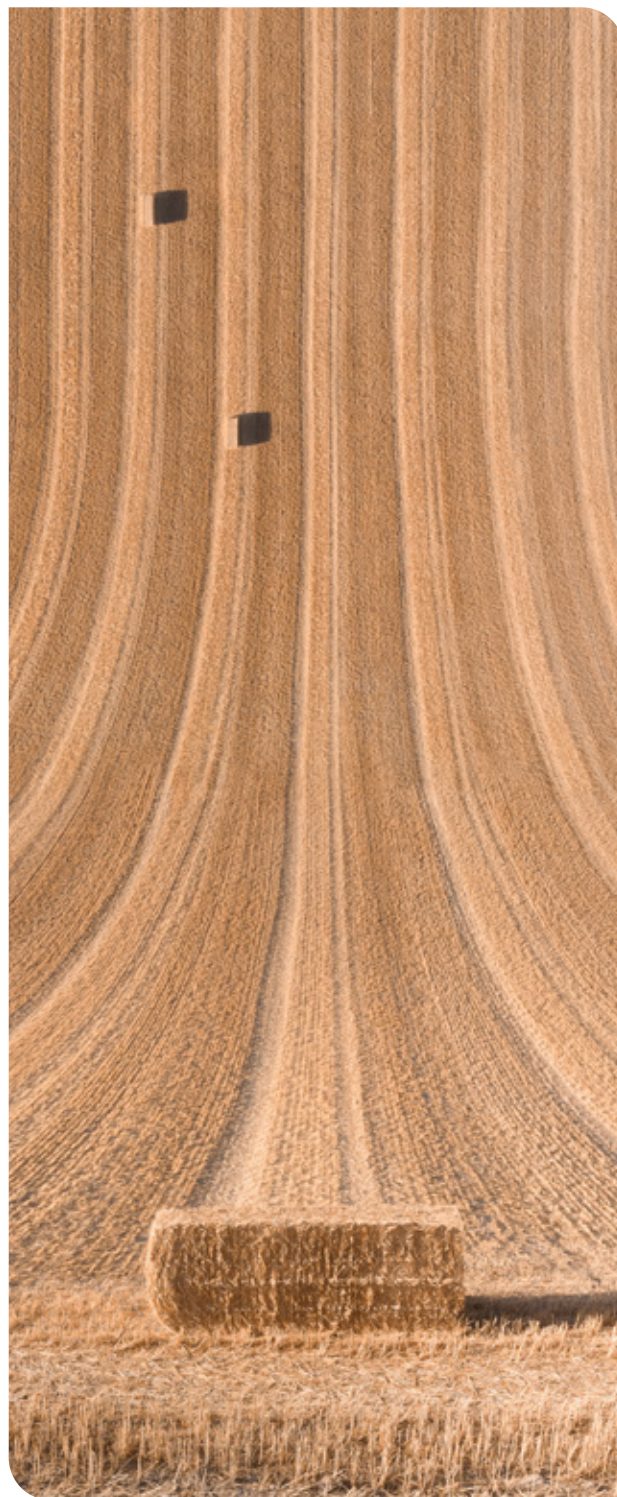


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