



GEFA GENERAL CATALOG

Special products for gardening and landscaping



GEFA INSIDE



Greenery fulfills a variety of special functions in urban spaces. In addition to creating space, trees & co. create a certain microclimate or form biotopes. In contrast to the fast-moving city, greenery is a haven of peace in the hectic pace of everyday urban life.

We would like to shape this haven of peace together with you in the future - modern, sustainable and digital

If you are looking for support and solutions on topics such as

Tree or old tree stabilization | Soil improvement | Irrigation | Green design in urban rum | root management then you will surely find what you are looking for in this catalog.

Our Specialties:

Crown protection | tree anchoring | irrigation systems | root management systems | soil additives | tree protection | tree bonding | root protection.

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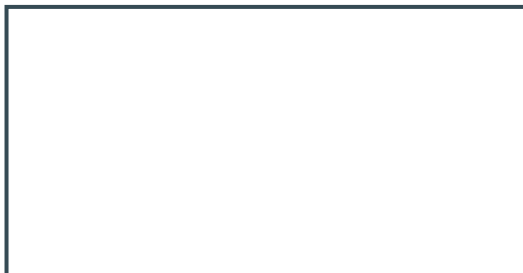
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TABLE OF CONTENTS

GEFA ARTICLE

FABROTON® growing media	5
GEFA irrigation guide	7
GEFA hollow ropes 2.0	9

FOR THE OPTIMAL TREE PLANTING

GEFA TREELOCK® Bio	13
GEFA TREELOCK®	15
GEFA TREELOCK® roof top	17
GEFA pile binding	19
GEFA tree anchorages	21
GEFA LUWA® system	23
GEFA pouring edge	27

GEFA TREE TOP STABILIZATION SYSTEMS

GEFA tree top stabilization systems	28
GEFA tree top stabilization sets	29
GEFA strap bands	30
GEFA hollow ropes	31
GEFA belts with loops	32
Working & throwing ropes	33

PROTECTION SYSTEMS

GEFA transport harnesses	34
BITEprotect & coconut discs	35
GEFA PLANTASAFE®	36
GEFA ARBOTAPE®	37

IRRIGATION BAGS

GREENDROP® Treegator® Watercoat® III	38
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SOIL ADDITIVES

STOCKOSORB®	40
FABROTON® GRASS	42
FABROTON® ROADSIDE	43
FABROTON® TREE	44
FABROTON® UNIVERSAL	45
Alginure	46
GEFA root protection	47
GEFA mycorrhiza	48

Attachments

General conditions of sale	51
Order formular	53
Mycorrhiza table & impressum	54

FABROTON® GROWING MEDIA

Specific support for green areas

Proven help in an improved mixture, that is what GEFA Fabritz GmbH offers with its range of new growing media. With four special mixtures „Fabroton“ provides moisture and nutrients for trees, green spaces, roadside greenery, parks and gardens.

To ensure that the greenery falls on fertile ground, a little extra help may be needed: With its portfolio of Soil auxiliaries GEFA Produkte Fabritz GmbH is an established partner to the landscaping industry. Whether water reservoirs, permanent humus concentrates or special seeds:

With its innovative products, the Krefeld-based family business is always close to the needs. The proven Fabroton mixture now offers even more specially tailored soil health. Whether for green spaces, flowering plants, trees or roadside greenery, four special mixtures cover the usual range of green care.

Basis: water storage

Dipl.-Ing. Marius Wiede advises Gefa customers in the field of soil additives and explains the application-specific upgrade: „Dry summers have become more common in Germany over the past ten years, resulting in a significant decrease of soil moisture. Therefore we took Stockosorb as the common basis of all Fabroton special mixtures.“

The potassium-based, water-retaining copolymer is a superabsorber that can reduce watering by up to 60 percent. Mixed with lava grain with its positive air and structural properties, Stockosorb promotes the overall balance of the soil and loosens it, which benefits root development.

With Universal to vitality

„With Fabroton Universal, we have developed a soil conditioner for a wide range of applications in land-



diately nutrients and a balanced long-term supply, plantations become future-proof. With healthy foliage and vigorous growth, shrubs and outdoor crops are grateful for the extra dose of potash. Even with high nitrate levels in the water, Fabroton Universal shows its advantages. One application covers two growing seasons.

Urban trees need care

Fabroton Tree provides arborists with a special product for the care of urban trees. „The urban trees are a particular focus of the GEFA range. With Fabroton Tree, we have paid a lot of attention to the optimal balance of the ingredients,“ says Wiede. „The needs of municipalities and trees coincide here: The soil additive should be efficient, show little leaching and be readily available to plants.“ In field trial, small oaks were allowed to test the mixture: biostimulants stimulated root formation.

A plus of potash in an autumn fertilization makes the trees fit for the upcoming winter and vegetation phase.

FABROTON® TREE



FABROTON® UNIVERSAL





Mixture suitable for roads

For the often heavily stressed roadside greenery, adequate sufficient water supply is of utmost importance. In the heavily compacted, overbuilt soil roots would otherwise quickly run dry. Therefore Fabroton Roadside contains a finely granulated MultiMatrix wetting agent with innovative 3D technology, specially developed for subsequent application.

„Fabroton Roadside binds moisture evenly in the soil,“ confirms Marius Wiede. „For shrubs and plantings on grass verges and traffic islands, this results in significantly improved water management.

The plants suffer less stress and are consequently less susceptible to disease, saving municipal staff many watering rounds.“ The long-term effect is up to six months.

Lawn as the supreme discipline

Green spaces are the be-all and end-all of park and garden design. As a diversely used recreational area lawns are under constant stress. The effect of Fabroton Grass is therefore aimed at optimizing the soil moisture content and balanced nutrient supply. With recycled phosphate, the growing medium provides a sustainable fertilizer that is highly available to plants.

Unlike primary phosphorus, the recycled fertilizer does not contain any pollutants and promotes root formation. „On sports fields, public green spaces, but also in your own garden, one application ensures the supply for an entire growing season,“ Wiede knows.

FABROTON® ROADSIDE



FABROTON® GRASS



GEFA IRRIGATION GUIDE

A quick watering in the evening? That was once upon a time. Watering green spaces and gardens takes a lot of time today. Fortunately, GEFA Fabritz has practical helpers that save man-hours and water.

The „Drought Monitor Germany“ from the Helmholtz Center for Environmental Research speaks a clear language: Dark red areas, indicating extreme drought, cover large parts of Germany. The topsoil is particularly dry, so the little precipitation there tends to roll off rather than seep away. Manual watering becomes a mammoth task. This is a task that is increasingly overburdening municipalities, janitor but also private individuals.

In order to keep green spaces, plantations and urban trees attractive and healthy, GEFA Produkte Fabritz GmbH has developed a comprehensive range of watering aids. Graduate engineer André Carstens advises customers on the right system for their needs. He no longer differentiates between the public and private sectors: landscaping companies now also install professional irrigation systems in many home gardens.

Automatic on the field

„For gardens, sports fields, parks and other lawns, the best way to go is with automatic irrigation,“ Carstens explains. With retractable sprinklers or underground drip hoses, even larger areas can be well supplied and still remain protected from vandalism. Customers have the choice between digital control - smart and app functions are also available - and a timer. In a CAD plan, Carstens works with his customers to determine where the underground irrigation system delivers the water precisely to the roots.



This prevents seepage losses and also prevents the soil from silting up. The drip hoses of the RainBird brand are made of a specially developed material that allows for quick installation with just a few angle pieces. With a drip distance of 30 cm, 2.3 liters per hour per dripper reach the soil.

Thanks to the patent-pending RainBird Copper Shield technology, the drip hoses are protected against root ingrowth. The manufacturer also provides a seven-year warranty against stress cracking.



Trees need special care

Increasingly, urban trees are the focus of irrigation efforts: Drought damage is now visible even to laymen. And - trees in drought stress represent a source of danger. Branches can break off abruptly and damage cars, houses or even passers-by.

„There has been a change in thinking among the population,“ Carstens confirms. In the past, people would call the city and said, „The tree is broken, it has to be removed. Today they call and say: Do something to save it!“

There's actually a lot you can do within GEFA's product catalog: Watering bags are a very pragmatic help for thirsty trees, new plantings or particularly stressed sites. Quickly and easily installed, they release about 60 liters of water, depending on the trunk diameter.

For high-traffic locations with a high risk of vandalism, Gefa has developed the Watercoat III with anti-theft protection. Due to high demand, Gefa has launched its own series under the name Greendrop.



„For new plantings in roadside greenery, the watering edge is now established standard,“ says Carstens. The big advantage: „In the growing phase, you ensure that the tree receives enough water, because the filling volume is predefined accordingly.“ The watering rim is supplied on a roll - for precise cutting on site.

A filter prevents leaves or trash from clogging the line. A T-adapter is used to place an irrigation ring around the bale. The irrigation connector is compatible with all DN 80 adapters.

„For new tree planting in urban areas, Luwa is the best option,“ assures Carstens.



A little more preparation is required for tree planting along traffic routes and in public places. These are usually executed as tree discs: In most cases, this does not provide enough soil surface to direct enough water to the roots.

This is why the Gefa Luwa System is integrated. Developed together with leading tree experts, Luwa stands for aeration and irrigation in one individual solution. One filler neck supplies the two completely separate lines.

GEFA hollow ropes 2.0

The development of new, more flexible and even stronger systems for securing treetops proceeded in recent years at an extremely rapid pace. We at GEFA Products® Fabritz GmbH were also involved in that development with our hollow ropes, belts and loop straps.

We constantly strive to develop even more innovative products. To provide you the latest techniques is not only a concern, but our daily task. We think that this task can only be solved if, even in individual cases, our systems can be used, taking into account the diverse theories of almost all experts.

GEFA hollow ropes are all plaited synthetic ropes, which, in contrast to conventional double-plaited ropes, (sheath-core or core-sheath), the rope core has been omitted. In this way, the rope is almost like a hose. That facilitates the splicing process by which the compound is produced a lot and makes the ropes also lighter. The material is the basis for the later properties of the ropes.

In the course of our constant development process, in 2015, we revised and improved our entire hollow rope product range made of polyamide (PA) and polyester (PES) up to 10 t breaking force.

Due to a change in the number of fibres and the type of braiding, there is now an even higher initial breaking force of the GEFA hollow parts. At the same time, there are benefits in improved splicing. Thus, there are both better handling and also even greater safety margins.

PRESERVING QUALITY

You still receive the most extensive range of tree top stabilizations from us. From ultra-modern hollow ropes made of polyester (PES) and polyamide (PA) to high-strength hollow ropes made of the high-tech fibre Dyneema with 14 t and 20 t breaking force.



ZTV tree care

During the redesign it was necessary to ensure that the recommendations of the current ZTV Baumpflege Edition 2006 are respected. It is recommended, i.e., a guarantee of a system for securing the crown for 8 years.

As there is no long-term experience in practice regarding new developments, we decided to do a weathering test in the laboratory with our new hollow parts and to check the ropes thoroughly. We did that to make sure that the requirements and recommendations of the ZTV tree care are respected and that our customers can use a safe quality product.

For this demanding test, we have commissioned two renowned institutions in the sector. The weathering test of the new hollow parts was carried out by TÜV Rheinland according to DIN EN ISO 4892-3, test report 5451005 / 1K from 15.05.2015. This corresponds to an outdoor exposure with sprinkling of min. 8 years

The breaking load tests before and after the weathering test were performed by Germanischer Lloyd.

Geschäftsbereich Produkte
Business Stream Products
Kunststoffprüfung / Polymer testing

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Prüfbericht
Nr.: 5451005/1K
SAP-Nr.: 3134205
PM-Nr.: A000087860-001

Auftraggeber: wie Adressat

Auftrag vom: 20. Februar 2015

Inhalt des Auftrages: Bewitterung von 25 Hohlseilen über 112 Tage gemäß DIN EN ISO 4892-3

Eingang der Proben: 19. Januar 2015

Untersuchungszeitraum: 19. Januar bis 11. Mai 2015

Anzahl der Anlagen: Geprüfte Seile

Prüfbericht ist eine abschließende Bescheinigung / Lastbescheinigung über die Einhaltung der in diesem Prüfbericht nur im qualifizierten Organisationsbereich und in Organisationsbereich anerkannter und verwendeter Normen. Das Coachen-Bereich enthält das Ergebnis einer Einzelprüfung und stellt kein abgrenzbares Urteil über die Eigenschaften oder Merkmale des der Bewertung der Seile der unter dem Prüfbericht einer Auswertung dienliche, so ist der detaillierte Test mitgeliefert. Es liegt allen anderen gegenüber dem TÜV Rheinland LGA Products GmbH die nur gegen eine Prüfgebühr und nicht in unentgeltlich erhaltene Prüfungsaufträge sind. Die Prüfberichte werden den Kunden auf dem Wege der Kopie übermittelt und sind nur für den internen Gebrauch bestimmt. Jede Weitergabe an Dritte ist untersagt. Die Prüfberichte sind Eigentum der Prüfstelle. Bei der Weitergabe der Prüfberichte an Dritte ist dies dem Auftraggeber zu melden.

Prüfbericht/GDPSP/206/2015/Bericht: 5451005_1K_GEFA Fabritz.docx Seite 1 von 4

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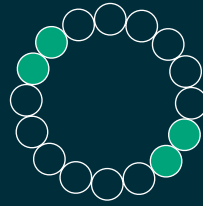
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Geschäftsführer: Dr.-Ing. Jörg Müller
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Stamm-Nr.: 2160575/1213 Ust-Id-Nr.: DE 81933680

Extract from the TÜV test report 5451005 / 1K according to DIN EN ISO 4892-3.

The result is clear!

The breaking load decrease in polyester ropes was a maximum of 28.2%, in the polyamide ropes at a maximum 26.5%. Thus, the tested hollow ropes GEFA Products® Fabritz meet the recommendations of the current ZTV Baumpflege 2006!

NEW in the program - GEFA 8 t hollow rope



In response to requests by many of our customers, we added a further tonnage to our existing hollow rope product range. While we had hollow ropes with 2 t, 4 t, 7 t and 10 t breaking force, we now have a 8 t polyester (PES) version also.

   **MADE IN GERMANY**

ADVANTAGES OF GEFA HOLLOW ROPES 2.0

- made in Germany
- even better initial breaking forces
- new braiding
- better handling
- better splice ability
- various expansion options
- innovative identification thread for early detection
- special protective hose GEFAprotect®
- hollow ropes from 2 t to 20 t breaking strength

Hollow ropes „elastic“ polyamide (PA)

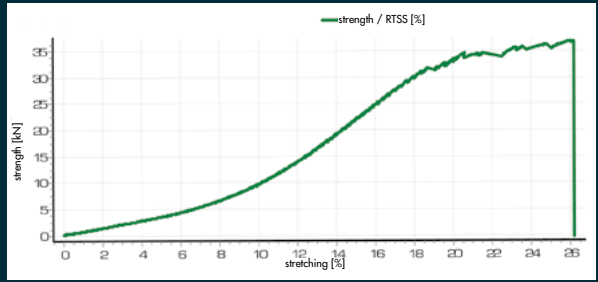
Breaking strength	Diameter	Netting	Length	Price / metre
2 tons	12 mm	16x	100 m	1,40 €
4 tons	18 mm	12x	100 m	2,40 €
7 tons	24 mm	12x	100 m	3,40 €
10 tons	30 mm	20x	50 m	4,40 €

Hollow ropes „classic“ polyester (PES)

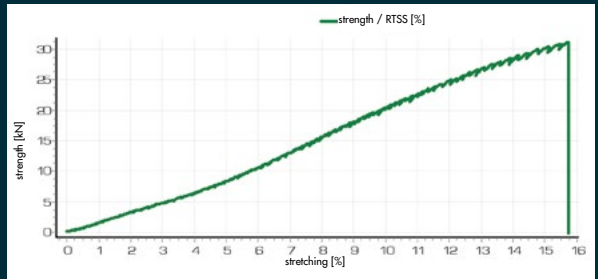
Breaking strength	Diameter	Netting	Length	Price / metre
2 tons	12 mm	16x	100 m	1,40 €
4 tons	16 mm	12x	100 m	2,40 €
7 tons	22 mm	12x	100 m	3,40 €
8 tons	26 mm	16x	50 m	4,00 €
10 tons	30 mm	20x	50 m	4,40 €

Test breaking strength: before weathering

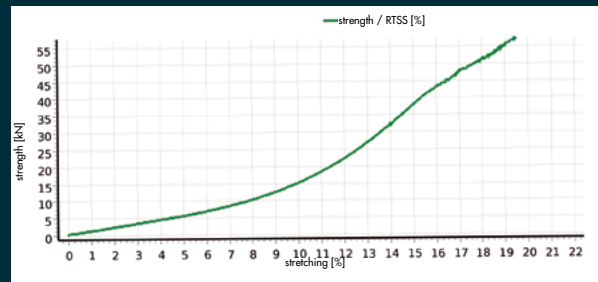
2 t hollow rope (PA)
initial breaking force of 36,89 kN*



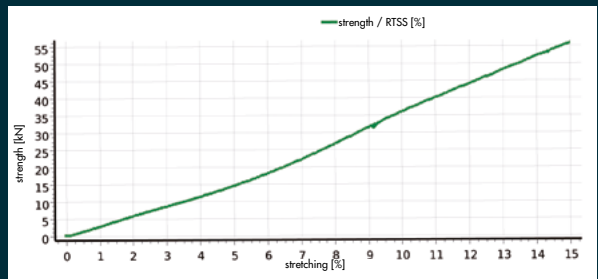
2 t hollow rope (PES)
initial breaking force of 31,20 kN*



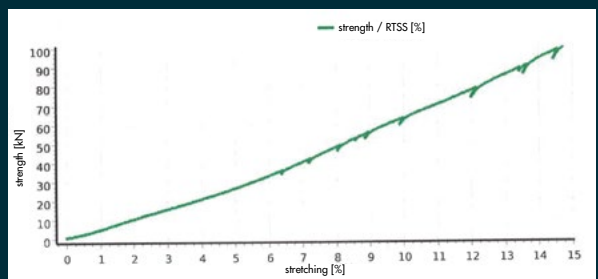
4 t hollow rope (PA)
initial breaking force of 66,15 kN*



4 t hollow rope (PES)
initial breaking force of 66,21 kN*

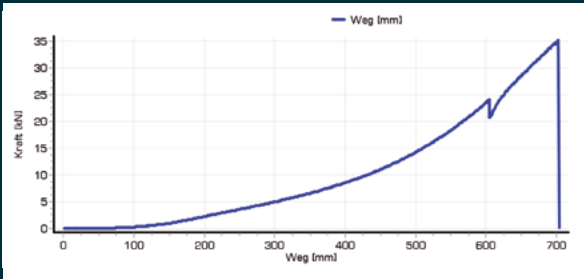


8 t hollow rope (PES)
initial breaking force of 118,98 kN*

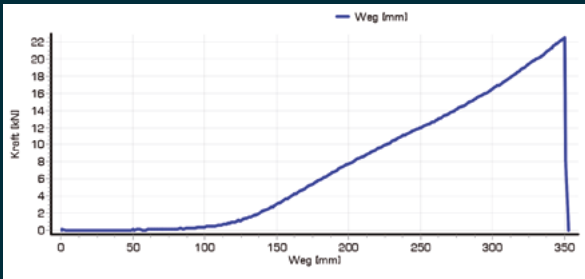


*Given initial breaking strength according to measurements by Germanischer Lloyd. All certificates are available on our website. changes, errors and omissions excepted.

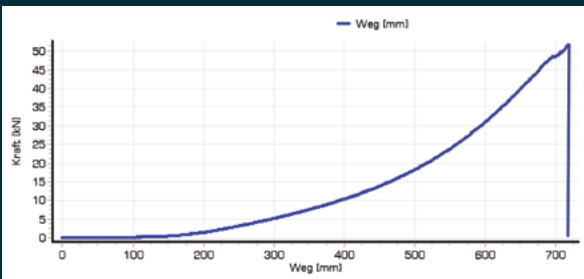
Test breaking strength: after weathering



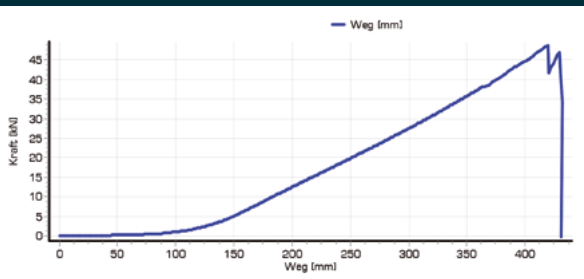
2 t hollow rope (PA)
Breaking strength of 35,30 kN*



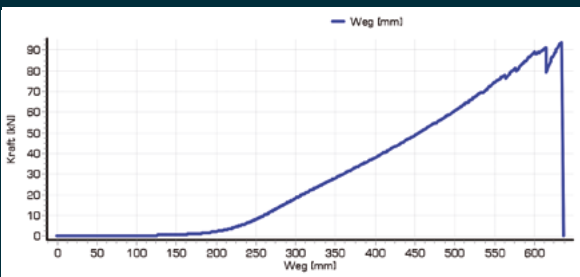
2 t hollow rope (PES)
Breaking strength of 22,50 kN*



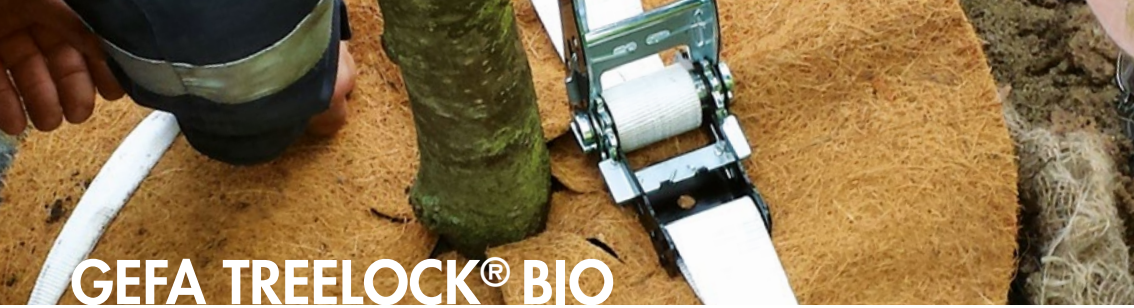
4 t hollow rope (PA)
Breaking strength of 51,77 kN*



4 t hollow rope (PES)
Breaking strength of 48,76 kN*



8 t hollow rope (PES)
Breaking strength of 93,69 kN*



GEFA TREELOCK® BIO

BIO BELTS FOR HIGH SECURITY

The long-term study „Comparison of six different underfloor anchoring systems“, Dr.Schneidewind from the center for horticulture and technology in Quedlinburg has shown that new plan-ted trees with a tripod anchor require a minimum period of 3 years to sufficiently anchor in the groundon their own. Trees with an underfloor anchoring need less time.



The reason for this is the stimulation by movements at the roots, which is more intense with this anchoring type. If we assume the „worst case“ by taking a period of at least 3 years, a biologically degradable underfloor anchoring should remain in the soil without losing its function, to ensure the straight growth of the trees.

Extensive test provides proof of durability and decomposition

For own further internal development, GEFA asked the Federal Institute for Materials Research and Testing (BAM) to examine the chosen materials regarding their durability. The testing was prepared in accordance with DIN EN 12225 (test method for determining the microbiological resistance by means of a soil burial test). The laboratory test simulates a real time period of approximately 4 years.

Bio-belts replace textile systems

By a specially modified formulation of the material, we succeeded in developing a belt that demonstrably shows the required durability in the soil while its material corresponds to the biodegradability stated in the DIN EN 13432. The strap is made of biopolymers based on renewable raw materials, which were spe-

cially designed for the special use in the soil. Thestraps rot demonstrably and also the iron components dissolve slowly by corrosion. We did not use any dyesto colour the belts in favour of the biological decomposability. The GEFA organic strap is thus delivered inpure white.

New belt material is biodegradable

Thanks to the composition of the strap material, specially modified to our needs, we can offer you a strapbelt which securely fixes the tree during the three years that are required. Furthermore, the strap material meets the prerequisite for the „germ-seal“ of the European Bioplastics eV. This is an EU-wide certificate awarded by the authorized certification organizations DIN CERTCO and Vincotte according to standardized procedures. Only those products can obtain this seal which, according to the European Standard DIN EN 13432 or DIN EN 14995 have proven to be biodegradable. It was a long way to find the optimized composition of the new GEFA TREELOCK® 35 BIO. With this new version of our TREELOCK® systems, GEFA now offers another innovative product for the sustainable, ecological landscaping.

GEFA TREELOCK® 35 BIO OBJECT

The biodegradable underfloor anchoring system for backfilled planting pits. The object variant is used whenever ground anchors cannot be used. cannot be used. These are mostly situations where a loose planting substrate has been freshly backfilled or the existing planting base is coarsely stony.

Of course, this system is also suitable for green roofs, but with the clear indication, that the BIO material of the belt will gradually decomposes and after this time the tree must hold itself by its own strength.



GEFA TREELOCK® BIO

Due to the proven decomposability the belt strap material corresponds to the DIN EN 13432

The TREELOCK® BIO 35 meets additional standards:

- DIN EN 12225 : „evidence of the microbiological resistance by a soil burial test„
- DIN 18916 „Vegetation technology in landscaping - plants and planting„
- Rule Compliant : „FLL - recommendations for tree plantings Part 1 „
- Rule Compliant : „FLL - ZTV replanting large trees



UNIVERSAL LEVER

The detachable lever serves as a tool and is not included in the sets of anchors. Please remember to order a ratchet lever if you do not already have this tool. Without the lever the anchorage system cannot be installed.



The „Keimling“ is an EU-wide trademark of the European Bioplastics e.V.
*regarding webbing material



TREELOCK® universal lever
removable lever for the ratchets of the GEFA TREELOCK® and tree anchorages

01.2.47.000.000.0

up to 25 cm Ø



TREELOCK® 25 BIO
Force per anchor 277 kg (lighter, grown soil, driving depth 40 cm) *1, in a set with mulching-disc Ø 40 cm, BIO - strap 2,50 m, 3 closed BIO anchor loops 0,70 m

01.2.02.025.000.0

up to 35 cm Ø



TREELOCK® 35 BIO
Force per anchor 335 kg (lighter, grown soil, driving depth 40 cm) *1, in a set with mulching-disc Ø 60 cm, BIO - strap 2,50 m, 3 closed BIO anchor loops 1,10 m

01.2.02.035.000.0

up to 35 cm Ø



TREELOCK® 35 BIO root top
in a set with mulchingdisc Ø 60 cm, BIO - strap 2,50 m, 3 closed BIO loops 0,60 m

01.2.05.050.001.0

*1 Greater impact depths increase the tensile force of the anchor. Use only in natural soil.

GEFA TREELOCK®

SAFELY BELTED

Different local conditions, extreme climate conditions and requirements for planning demand individual solutions when fixing trees. The GEFA root ball anchoring TREELOCK® was specifically designed for such conditions.

The further development of GEFA root ball anchoring has had repercussions in the professional world. In the past, many customers were persuaded by the advantages of the underground GEFA TREELOCK® - by the extremely low installation height, the removable ratchet lever and the quick installation!

An innovative ratchet system is used to connect ground anchors with each other and for fixing to the root balls. The kicker: the lever for lashing can be separated from the ratchet base.

The broad belt straps that are fixed with flat steel anchors to the floor, secure in the TREELOCK® - anchoring the position of the tree. Furthermore, a coco disc protects the root ball.

One single person can install the anchor in a few minutes time. For TREELOCK® you do not need any additional aids such as wooden crosses etc. A hammer and a rod are enough. Instead of a hammer you can also use RAMLOCK®, the special ram for the GEFA steering rod. Advantages: Less strain and therefore a longer lifetime of the impact rod by an even pressure, reduces the risk of accidents, better guiding of the rod, less effort, faster installation and the all-purpose application for all GEFA tree and root ball anchors.

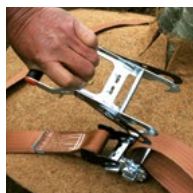


EASY INSTALLATION

The installation of the root ball anchoring GEFA TREELOCK® differs only in the lashing with the new ratchet system from the old version.



First, dig the hole as usual and put the tree into the pit. Then, drive the anchor with integrated loops into the soil by using the rod and fasten it by pulling it upright. Place the root ball protection disc on the root ball, pull the ratchet belt through the anchor loops and run it into the ratchet.



Pull the included locking handle - the eyelets will drive apart. Lead the eyelets to the ratchet base and by releasing the latching, let the lever lock in place.



Subsequently, fix ratchets as usual. Finally, pull the locking handle - the eyelets will drive apart - loosen the lever - done!

UNIVERSAL LEVER

The detachable lever serves as a tool and is not included in the sets of anchors. Please remember to order a ratchet lever if you do not already have this tool. do not have this tool. Without the lever the anchorage system cannot be installed.



TREELOCK® universal lever

removable lever for the ratchets of the GEFA TREELOCK® and tree anchorages

01.2.47.000.000.0

- universal ratchet lever
- theft protection
- even lower installation height
- less biogenic material in soil
- short installation time
- prevents the root ball from damage
- dismantling not necessary

- no installation of additional components
- aligning without problems
- tailored tree anchor solutions
- use even for trees with more than 90 cm Ø
- visually appealing because invisible
- usable virtually anywhere
- physiologically beneficial for root system

TREELOCK® SYSTEM SIZES

Conversion table for trees, bushes, avenue trees and solitary trees*

Trunk circumference in 1 m	Diameter in 1 m height	Weight	Bale size	Bale high	Plant height	Recommended System
18 - 20 cm	5,73 - 6,37 cm	130 - 200 kg	60 - 70 cm	40 - 50 cm	300 - 500 cm	TREELOCK® 25 TREELOCK® 25 BIO
20 - 25 cm	6,37 - 7,96 cm	200 - 300 kg	70 - 80 cm	40 - 50 cm	400 - 500 cm	
25 - 30 cm	7,96 - 9,55 cm	300 - 400 kg	80 - 90 cm	50 - 60 cm	400 - 500 cm	TREELOCK® 35 BIO
30 - 35 cm	9,55 - 11,15 cm	400 - 550 kg	90 - 100 cm	60 - 70 cm	500 - 700 cm	
35 - 40 cm	11,15 - 12,74 cm	550 - 850 kg	100 - 110 cm	60 - 70 cm	500 - 700 cm	TREELOCK® 50
40 - 45 cm	12,74 - 14,33 cm	850 - 1100 kg	120 - 130 cm	60 - 70 cm	500 - 700 cm	
45 - 50 cm	14,33 - 15,92 cm	1100 - 1600 kg	130 - 140 cm	60 - 70 cm	700 - 900 cm	
50 - 60 cm	15,92 - 19,11 cm	1600 - 2200 kg	140 - 160 cm	60 - 70 cm	700 - 900 cm	TREELOCK® 90
60 - 70 cm	19,11 - 22,29 cm	2200 - 3000 kg	160 - 180 cm	60 - 70 cm	700 - 900 cm	
70 - 80 cm	22,29 - 25,48 cm	3300 - 4800 kg	180 - 200 cm	70 - 80 cm	900 - 1100 cm	
80 - 90 cm	25,48 - 28,66 cm	4800 - 6500 kg	200 - 220 cm	70 - 80 cm	900 - 1100 cm	
über 90 cm	ab 29 cm	ab 6500 kg	ab 220 cm	80 - 90 cm	1100 cm	TREELOCK® XXL

*These are only guidelines, they are based on the data from several tree nurseries

up to 25 cm Ø



TREELOCK® 25

force per anchor 277 kg (light, grown soil, driving depth 40 cm)*, in set with mulch disc Ø 60 cm, strap 2.50 m, 3 closed anchor loops 0.70 m

01.2.02.025.000.0

up to 50 cm Ø



TREELOCK® 50

force per anchor 335 kg (light, grown soil, driving depth 50 cm)*, in set with mulch disc Ø 80 cm, strap 4.50 m, 3 closed anchor loops 1.10 m

01.2.03.050.000.0

up to 90 cm Ø



TREELOCK® 90

always as a length-adjustable version. Traction per anchor : 948 kg (light, grown soil, driving depth 60 cm)*, in a set with mulch disc 1.00 m², strap 7.20 m, 3 adjustable anchor straps up to max. 1.50 m

01.2.04.060.000.0

over 90 cm Ø



TREELOCK® XXL

always as a length-adjustable version. With deep anchors and ratchet straps, traction per anchor: 1,300 kg*, a set with mulch disc 4.00 m², 1 strap 7.20 m, 3 ground anchors with ratchet up to 3.20 m

01.2.09.070.000.0

Impact rod

for driving the ground anchors into the natural soil - universal for all sizes. Suitable for Treelock XXL

01.2.09.000.000.0

01.2.09.150.020.0



RAMLOCK®

Impact rammer for TREELOCK® for driving the ground anchors into the natural soil, weight 9.8 kg, total length 105 cm, 65 cm guide tube

01.2.09.011.010.0



SDS HEX adapter for motor hammers

Adapter for the GEFA impact rods. Suitable for all motor driven pile drivers with SDS HEX connection.

01.2.09.111.010.0



Steering rod puller

for easy pulling out of a jammed impact rod

01.2.09.000.100.0



*1 Greater impact depths increase the tensile force of the anchor. Use only in natural soil.



GEFA TREELOCK® ROOF TOP

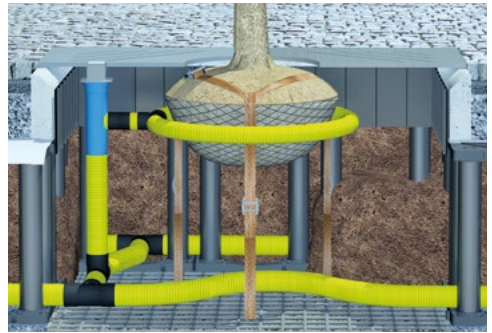
FOR ROOFS AND TUBS WITHOUT ANCHOR

With the increasing sealing of the soil, the greening up of buildings becomes increasingly important. Underground parking lots, roofs and covered surfaces look like small landscaped gardens, they are sometimes even reflections of entire landscapes.

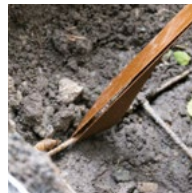
In order to use larger trees, a secure anchor system is necessary. For such cases, or in the vicinity of pipes or in unfavourable soil conditions there is TREELOCK® as a special root ball anchor for greening up buildings.

The function of the anchor point is taken by oversized steel rod mats. The weight of the root ball and the substrate serves as a counterbalance. As an alternative you can also use grass paving blocks, curbs or loops fastened to concrete elements. In extreme situations, the heavy or extra-heavy ball anchorage for object greening (TREELOCK® object 90flex or Object XXL) can be used in connection with specially developed grid constructions made by GEFA. They can be screwed in and have special recesses for the anchor loops.

Generally, we recommend the use of the adjustable length version with a buckle. It is easy to work with, they are flexible and you can use them everywhere.



INSTALLATION



Put the loops in three places around the anchor points - place the coco disc on the root ball - pull the lashing belt through the loops -



insert ratchet lever - tie it - remove lever - done!

Mounting options



Construction steel mat



Hooks / eyelets



Counterweight (e.g. concrete)

Since the ball anchorage is for planting young trees, you should accurately check the substrate and the installation height. For the anchoring we recommend a standard Q335 steel reinforcement mat, which is available at the builders merchant.

By using the GEFA ball anchorage for greening up buildings, also large trees can be planted and anchored everywhere - even where it is normally not possible:

- in tubs, for example for mobile plants
- on roofs or on garages
- in backfill soils / substrates
- in the vicinity of pipes and ducts

GEFA TREELOCK® OBJEKT

CHECK THE CONDITIONS

For the dimensions of the root ball anchor and the necessary anchor points it is important that: when using a steel mat, the weight of the substrate and root ball can be used as a counterbalance. For pourable substrates, we recommend covering the steel reinforcement mat with a separating mat of fibres.

If you would like to, we can make the appropriate calculation by a structural engineer. Thus, we can determine whether the substrate, the weight and depth of cover together with the corresponding anchors is sufficient to hold the tree during its growth phase.

Should this not be the case, we can offer you alternative ways of anchoring. Even if the selected tree protection meets all the necessary criteria, further parameters should be taken into account:

- is there enough substrate and weight in order to hold the tree without anchoring once it has grown?
- is the tree able to root sufficiently?

Project „Bosco Verticale“

As part of the EXPO 2015, a model town was built in the north of Milan. One of the buildings that resulted from that is the pilot project often mentioned in the press as „Bosco Verticale“ (vertical forest).



In this project, more than 20,000 plants and more than 800 trees were integrated on the balconies and special buckets were used at the outside of the building. Thus, the trees retained their stability regardless of wind and weather conditions, due to the underground anchoring systems GEFA TREELOCK® Objekt that were chosen.

More information on this project can be found on the website of the architect Stefano Boeri:

www.stefanoboeriarchitetti.net

UNIVERSAL LEVER

The detachable lever serves as a tool and is not included in the sets of anchors. Please remember to order a ratchet lever if you do not already have this tool. do not have this tool. Without the lever the anchorage system cannot be installed.



TREELOCK® universal lever
removable lever for the ratchets of the GEFA TREELOCK® and tree anchorages

01.2.47.000.000.0

up to 50 cm Ø

TREELOCK® Objekt

1 mulch disc Ø 80 cm, 1 tensioning strap 2.50 m, 3 closed loops 0.70 m

01.2.05.050.000.0

up to 50 cm Ø

TREELOCK® Objekt flex

1 mulch disc Ø 80 cm, 1 tensioning strap 4.50 m, 3 flexible loops (up to 1.20 m) with buckle

01.2.06.050.000.0

up to 90 cm Ø

TREELOCK® Objekt 90 flex, adjustable

1 mulch disc 1m², 1 tensioning strap 7.20 m, 3 closed loops (up to 1.30 m) with buckle

01.2.07.060.000.0

over 90 cm Ø

TREELOCK® Objekt XXL

adjustable with ratchet straps, 1 mulch disc 4m², 1 tensioning strap 7.20 m, 3 tensioning straps 7.20 m

01.2.10.070.000.0



GEFA PILE BINDING

THE PILE BINDING

The easy installation method and the familiar appearance alongside the streets are good arguments for using the traditional pile binding when planting trees. Therefore, GEFA offers you premium textile belts. Good tree bindings should especially be gentle to the tree and low in the price of purchasing and installation. The first aspect mentioned for the GEFA tree binding straps has been demonstrated in various tests at the National Research Institute Quedlinburg.

The advantages of the GEFA tree binding straps are:

- they are faster to install than coco ropes
- there is no re-tightening needed
- they are resistant against wear and tear, UV-resistant, weather-proof
- they are gentle to the bark and the cambium
- they can be completely recycled
- they are more extendable than traditional textile bindings

In order to prevent friction on the trunk, it is advisable to apply a protective hose. This allows to protect the highly sensitive bark of young trees in spring. There should be regular checks whether ingrowths or constrictions have occurred to the tree. The risk associated with the GEFA tree binding strap is very low, as the tests have shown in Quedlinburg.



The premium strap has all the advantages of the proven polyester fabric and is fast, easy and cost-effective regarding its installation. The modified texture, an optimized colour change and the material contained in the „growth adding“ (elasticity) distinguish this innovative tree binding product above our competitors.

THE LOW MOUNTED TREE BINDING

Today, the low tree binding is established standard tree fastenings in the UK, in Scandinavia and in the Netherlands. This type of tree binding is lower in its installation than the known and widespread pile binding by tripod. Only 1/3 of the usual mounting height is necessary.

A tree binding should support the tree in its growth phase (usually 3 years) and hold it in position. If the root ball changes its position during the growth phase, newly formed roots are torn off, as they are not strong enough, it's at transplant stage.



The benefits of a low tree binding: plants grow according to their requirements, this is known as Thigmomorphogenesis (in greenhouses, the air flow of the fans is also used to bring the young plants in motion so they get thicker stems they need to withstand the strains outside). Despite that, the tree can move freely and is able to grow according to the site requirements.

Since the leverage of the low tree binding is higher than that of the conventional version, the new GEFA tree binding Premium+ is by nearly 40% wider than the normal version. Thus, the higher shear force is distributed over a larger area. In addition, there are savings regarding the price of the wood-poles. These are only half the length, thus protecting not only your wallet but also valuable resources.

The GEFA tree binding Premium+ for the low connection has the same high quality as the already known premium tree binding.



GEFA PREMIUM PILE BINDING



GEFA strap band binding

polyester, brown, on 100 m coil each

Standard, 30 mm* width
01.1.01.033.100.2

PREMIUM, 48 mm* width
01.1.02.050.100.2

GEFA strap band binding Premium+

Polyester, brown, 50 m coil

PREMIUM+, 66 mm* width
(For the low tree binding)
01.1.02.066.050.2

*depending on the production, the width can vary slightly.



Beginners set Premium strap tree securing

50 m strap band (48 mm width) 12.5 m hose (60 mm width), 50 sets mounting parts

01.1.20.050.050.2

ACCESSORIES

For fixing and cutting we provide special accessories:

GEFA hammer tacker
staple size 4-6 mm



01.1.35.000.000.0

GEFA staples
6 mm, 5.000 pcs. in package



01.1.36.000.500.0

GEFA special titanium coated scissors



01.1.38.000.000.1

GEFA PROTECTIVE HOSE

Prevents friction on the bark in all weathers.



GEFA protective hose

Polyester, brown, each on 50 m coil

38 mm width for the 30 belt
01.1.10.038.050.2

60 mm width for the 48 belt
01.1.11.060.050.2

80 mm wide for the 66 belt (on 25 m coil)
02.1.50.080.025.2

MOUNTING

Set for fixing the GEFA tree binding made of a small 2-fold perforated stainless steel plate and 2 ribbed nails.

Advantages: corrosion-free, broad edition, perfect resistance against pulling out.

GEFA fastening material
in package at 100 sets (1 set per binding)



01.1.30.000.100.0



GEFA special tool bag

water-resistant, made for using it for tree bindings, incl. 1 hammer tacker, 1 package of staples, 1 pair of special scissors, 1 hammer

01.1.34.000.000.4

GEFA TREE ANCHORAGES

WITH STEEL CORD OR EXTENDABLE

The GEFA tree anchoring was developed as a particularly strong, aboveground protection. Different versions allow an individual usage. The installation is very simple and fast. In addition to standard tools, only an impact rod is required. Extendable textile ropes or steel cords that are attached to ground anchors ensure a secure support.

MAXIMUM SECURITY

With GEFA tree anchors, new possibilities arise for aesthetically pleasing and extremely secure attachments, for example for large tree re-planting, loose root balls, especially windy locations, and alignment after storms etc.

THE COMPONENTS

GEFA tree anchors (except object greening) consist of 3 flat steel anchors and loop straps that are placed in the crown of the tree. The bracing is done with steel or textile cords.

STABILITY THROUGH STEEL CORDS

There are 3 versions available for trunk circumferences up to 25 cm, up to 50 cm and for more than 50 cm. In the standard version, the systems are provided with rotary turn-buckles and carabiners.

For even bigger trees (with more than 90 cm circumference) there is an extra heavy tree anchor, in a set with 3 ground anchors, 3 turn-buckles with eye hooks, 3 loop straps, without ropes.



EXTENDABLE

To allow the young tree a slight movement aboveground, we designed the stretchable tree anchoring with signal red textile cables. The roots can thus grow adequately and safely. This version is pre-configured for trees up to 25 cm or 50 cm circumference.

FOR OBJECT GREENING

Versions without ground anchors allow the use of GEFA tree anchoring over wires, on rooftops, garages or in tubs. Eyelets or underlaid steel mats then serve as attachment points.



GEFA tree anchors are:

- safe and gentle to the tree
- easy to assemble
- cost-efficient
- safe against unauthorized intervention

The versions of the GEFA tree anchors generally contain no metal wire and no steel cable clamps. There are steel cable coils of 100 m to avoid waste of material.

For the tree anchors „light“ and „medium“ you need 12 steel wire clamps each, for the type „heavy“ you need 9 clamps per set (double length of rope is necessary). For the GEFA tree anchoring „extra heavy“, there is an 8 mm steel cable with the matching steel cable clamps.



GEFA TREE ANCHORAGES

GEFA tree anchoring Standard

Set with 3 ground anchors, 3 turn-buckles with carabiners, 3 loop straps, without ropes.



„Light“ up to 25 cm circumference

01.3.01.025.000.0

„Medium“ up to 50 cm circumference

01.3.02.050.000.0

„Heavy“ over 50 cm in circumference

01.3.03.060.000.0

„Extra heavy“ over 90 cm in circumference

01.3.12.090.000.0



GEFA tree anchoring for objects

without ground anchors, without ropes, in a set with 3 turn-buckles with snap hooks, 3 loop straps.



„Light“ up to 25 cm circumference

01.3.04.025.000.0

„Medium“ up to 50 cm circumference

01.3.05.050.000.0

„Heavy“ up to 90 cm circumference

01.3.08.050.500.0

„Extra heavy“ over 90 cm circumference

01.3.13.090.000.0

Zubehör

GEFA steel cable, 4 mm, on 100 m coil

01.3.40.004.100.0



GEFA steel cable clamps for 4 mm rope

01.3.41.000.000.0



GEFA steel cable, 8 mm, on 50 m coil

01.3.55.008.050.0



Steel cable clamps for 6-8 mm rope

01.3.55.000.000.0



GEFA tree anchoring extendable

in a set with 3 ground anchors, each set with 3 m (light) or 4 m (medium) rope per anchor, 3 turn-buckles with hook, 3 loop straps.



„Light“ up to 25 cm circumference

01.3.06.025.300.0

„Medium“ up to 50 cm circumference

01.3.07.050.400.0

Accessories

GEFA textile rope, 5 mm, on 100 m coil

01.3.51.005.100.5

GEFA thermal clamps for textile rope

01.3.52.000.000.1



RAMLOCK®

Impact hammer for driving the ground anchor in the natural soil, weight 9.8 kg, Total length 105 cm, 65 cm guide tube

01.2.09.011.010.0



Impact rod

for driving the ground anchors into the natural soil - universal for all sizes

01.2.09.000.000.0



GEFA LUWA®-SYSTEM

REVOLUTION IN THE IRRIGATION AND AERATION OF NEWLY PLANTED TREES IN URBAN AREAS

Efficient ventilation and irrigation is critical, especially for trees in urban areas, especially when planting according to FLL planting pits 2. The problems in urban areas are well known: Constrained site conditions, overbuilt root zone, disturbed soil conditions, massive compaction and lack of gas exchange.

After planting, the irrigation should first be carried out by means of a watering trough or a watering rim on the root ball. Later, however, watering from above would encourage the roots to grow close to the surface.

In the case of deeper planting pit irrigation by means of drainage pipes, the following points must be taken into account:

- The chimney effect of these pipes must be largely prevented.
- The filler pipe must not be too large, as large quantities of water in a short time increase the risk of silting.

Under paved surfaces, the rootable space cannot be irrigated and aerated from above without special devices. With known systems, there is a risk that irrigation will take place over the aeration devices. This was the starting point for the development of the GEFA LUWA® system.

With the LUWA® system, GEFA is making its contribution to the optimal care of our trees. Developed with leading tree experts, the system guarantees perfect growing conditions.

The innovative, well thought-out technology can be used at different locations without any problems. Achieve the greatest possible ecological and economic benefits at your next tree planting.

The LUWA® system allows aeration and irrigation to be carried out via just one filler neck, without water getting into the aeration pipes. In the soil, water and air are individually directed to the desired areas. The chimney effect as well as possible silting are avoided as far as possible.

One filler neck - two completely separate lines:

- The installation of separate systems becomes superfluous.
- This results in greatly reduced installation and material costs.

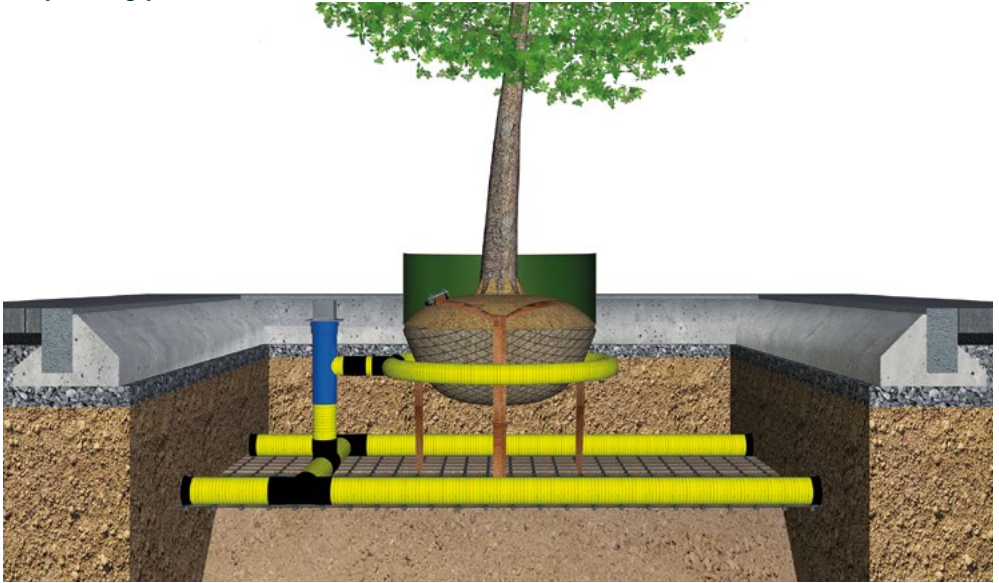
The use of the LUWA® system under paved surfaces minimizes the number of filler necks. Accidental watering into the aeration line is therefore ruled out. The irrigation and aeration lines can be laid to suit the local conditions - horizontally as well as vertically. A chimney effect is avoided as far as possible, and even completely by installing the LUWA® system including siphon.

A throttled water flow prevents silting or fine-grain displacements. Installation is possible under sealed or unsealed surfaces.



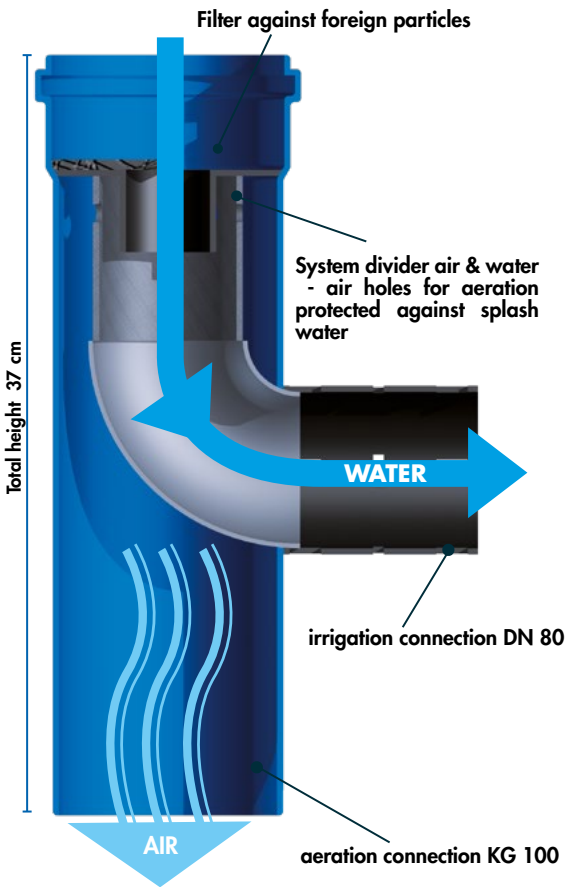
GEFA LUWA®-SYSTEM

Cut planting pit 12 m³



Functionality of the LUWA®-Systems

LUWA® with GEFA end cap



GEFA LUWA®-SYSTEM

ADAPTER FOR AUTOMATIC IRRIGATION

To irrigate planting pits equipped with the LUWA® System with the LUWA® system, it was previously necessary to water by means of a hose through the GEFA LUWA® covering cap.

With several locations, this is not only very costly but also time-consuming. The new adapter for the GEFA LUWA® system enables connection to an automatic irrigation watering system. A nozzle specially adapted to the system with an integrated flow rate regulator (12 l / min.) prevents water from splashing to the outside and ensures uniform filling with water.

The adapter is available in two different lengths; The small version measures 118 mm in height and the large version 500 mm. The large version can be shortened if necessary.

An automatic irrigation system can be connected to a PE line by means of SBE and a flexible hose.



Advantages LUWA® Adapter

- Connection for automatic irrigation
- Two versions for different installation depths
- Interchangeable flow controller
- GEFA LUWA® covering cap fits on the system
- Large version can be shortened
- Huge time saving

LUWA® adapter small

Small adapter (118 mm) DN 100 for the GEFA LUWA® system with connection for an automatic irrigation system

28.1.80.100.080.2



LUWA® adapter large

Large adapter (500 mm) DN 100 for the GEFA LUWA® system with connection for an automatic irrigation system.

28.1.80.100.080.3



Color may differ from picture.

GEFA LUWA®-SYSTEM

GEFA LUWA®-system

for irrigation and aeration of roadside trees, incl. extension piece and filter

28.1.80.100.080.0



GEFA LUWA®-system + siphon

aeration / irrigation system incl. pre-assembled siphon for drainage pipe DN 80, extension piece and filters

28.1.80.100.080.1



Drainage pipes DN 80 / DN 100

flexible, yellow, slotted on 50 m roll for LUWA® irrigation and aeration

28.1.80.080.000.0

28.1.80.100.000.0



Drainage pipes DN 80 / DN 100 Kokofil

flexible, yellow, slotted on 50 m roll for LUWA® irrigation & aeration, coco coated.

28.1.80.080.000.1

28.1.80.100.000.1



GEFA LUWA® covering cap

covering cap made of plastic PP, 150 x 150 mm, 155 mm high, black, with dirt trap

28.1.80.050.000.0



powered by



GEFA LUWA® covering cap

corrosion-free aluminum alloy with V2A-cover cap for sliding aside. Height: 85 mm

28.1.80.030.000.0

AirMax/AquaMax

covering cap made of plastic, black, angular, 100 mm x 100 mm x 100 mm, Type: AME100KC

28.1.80.030.000.1

14,95/Stk.



T-piece DN 80 / DN 100

28.1.80.080.080.0

28.1.80.100.100.0



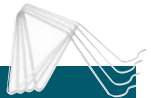
AirMax/AquaMax, BIO drainage snake

compostable, Ø 80 mm, white, slotted, 50 m roll, type CNBS 80

99.1.01.080.080.4



powered by



Ground anchor LUWA® cap

for fixing the covering cap to the LUWA

28.1.80.030.000.2

T-piece, BIO compostable,

white, Ø 80 mm x Ø 80 mm x Ø 80 mm

28.1.80.080.081.0



AirMax/AquaMax, BIO

click-covering-cap compostable, round, white, Ø 80 mm, with opening slots and screwing cover, type CNES 80

99.1.00.001.085.1



POURING EDGE

LET THE WATER FLOW!

The long-life variant of the usual pouring edge without up to 140 litres filling capacity (at Ø 95 cm), „that grows“. The pouring edge formed by excavation is one of the absolute basics in landscaping. This method is now optimized by the GEFA pouring edge.

A 30 cm high - made of 3 mm special plastic (LDPE)-slot ensures a large filling capacity and protects at the same time from unwanted road salt entries during the winter months.

The pouring edge is inserted into the ground (10 cm) and the remaining 20 cm above ground are fixed, for example, with the special adhesive tape against one another. We recommend to do the over-lapping with an additional part. So the pouring edge can be adjusted to further root growth in the future. For an even easier fixation, there is now the new pouring edge clip: it easily connects the two ends and it is no longer necessary to use the GEFA special tape for glueing them together.



The GEFA pouring edge is UV-resistant, 100% recyclable and can, as well as the new clip, be used again.

Advantages

- high filling capacity (Ø 95 cm = 140 litres)
- adjustment to root growth possible
- easy to fill and therefore cost-effective
- protects against direct entry of road salt
- reusable



GEFA pouring edge made of LDPE

for stable, optimal irrigation of the root system of trees in urban environments. 20 m roll of LDPE pouring edge, 3 mm thick, 30 cm high, dark green.

28.7.01.025.030.3

GEFA pouring edge connection clip

for easy connection of the ends, without gluing, for 3 mm pouring edge.

28.7.01.025.000.1



GEFA pouring edge made of HDPE

for optimal watering of the root of trees. 25 m roll, 30 cm height, 1,5 mm, recycled HDPE, UV-resistant, not color-fast, anthracite.

28.7.01.025.030.5

Pouring edge cutting board

for straight edges of the pouring edge. Made of stainless steel, 10 cm wide, 36.5 cm long.

28.7.01.025.000.2

GEFA Pouring rim connection clip, small

for easy connection of the ends, without gluing, for 1-2 mm pouring edge

28.7.01.025.000.6



GEFA TREE TOP STABILIZATION SYSTEMS

AVOIDING DAMAGE

Tree top protection should either prevent the breaking of branches or the stem or avoid that branches of the tree fall down and cause damage on property or even personal injury. At GEFA, you can choose from an extensive range of products:

BELT-BUCKLE SYSTEMS

Belt-buckle systems are a simple, cheap and effective way of securing the tree top. GEFA use broad straps and high-quality, galvanized steel buckles. At GEFA, you do not only get the standard buckle systems with little elasticity that can be charged with 2 t, 4 t, 7 t, 8 t and 10 t, but also more flexible versions with 4 t and 7 t breaking load.



HOLLOW ROPES

There are GEFA hollow ropes with 10 t breaking load (measured linearly) with different grades of elasticity and an identification thread. The GEFA hollow ropes made of Dyneema meet even higher requirements with 14 t and 20 t breaking load.



STRAP BELTS AND FABRIC TUBES

Pressure distribution and protection against friction play an important role both for the durability of the safety components and the trees. Therefore, we have a great variety of protective loops, anti-friction devices and loop straps.



NOTE: When using the tree top protection, the relevant installation instructions, safety regulations, controls and disclaimers for property / legal defect of GEFA products Fabritz GmbH have to be complied with. These regulations can be obtained together with the latest GEFA special catalogue „tree top protection“.

IDENTIFICATION OF DATE ON COIL

To order to facilitate controlling the installation of tree top protections with respect to the date of installation, there are now year identifiers on coil in the commonly used colours.

green	yellow	red	blue	brown	violett	orange	grey
2017	2018	2019	2020	2021	2022	2023	2024



The hose which has been cut down to 10 cm can be pulled over straps as well as over hollow ropes and is therefore very versatile. The hose is available on coil, with 5m length.

The arborist can cut the required pieces on site. This has the advantage that, depending on the distance to the ground, the optimal length can be determined for a quick visual check. Secondly, the arborist decides on the length of the pieces and thus controls the costs.

SAFETY

The majority of our hollow rope and belt systems are equipped with breaking indicators. The threads tear at about **80 % of the maximum tensile strength**. An additional plus at visual inspections and when assessing the condition of the ropes.

Moreover, all loop straps are GS tested. A reliable seal and an important, strong argument for climbing park operators and constructors.



INTEGRATED SYSTEM DYNAMICS

GEFA tree top protections have many benefits. For instance, the elasticity is achieved through the material.

(Note: Foreign material introduced into the hollow ropes or coiling can cause weak spots and reduces the tensile strength)

GEFA TREE TOP STABILIZATION SETS

STRAP BAND WITH BUCKLE

2 t system breaking strength

The 2 t systems are only available in a set, in two versions. The buckles are made of one piece and are galvanized. The straps are made of polyester. The thread raw material gives a high dimensional stability to the system, abrasion resistance, low moisture absorption and high UV resistance. Individual components on request.



Strap band light version A

with 50 m strap band (35 mm width), breaking strength 2 t, 16 buckles with 2 t tensile strength, 12,50 m hose (60 mm width), years tracer 1 m

02.1.01.000.000.0

Strap band light version B

100 m webbing (35 mm wide), breaking force 2 t, 30 buckles with 2 t breaking strength, 25 m Hose (60 mm wide), years tracer 1 m

02.1.02.000.000.0

The budget best seller for entry into the security range with 4 t.



Strap band classic 4 t set

25 m webbing (50 mm), 8 buckles (System breaking strength 4 t), 6 m hose (60 mm), years tracer 1 m

02.1.03.000.000.0

Strap band extendable 4 t set

25 m stretchable strap band (50 mm), 8 Buckles (System breaking strength 4t), 6 m hose (60 mm), years tracer 1 m

02.1.04.000.000.5

STARTER SETS HOLLOW ROPES

Hollow ropes 2 t in the backpack

- starter set for the low-load range with ready-made loops.



GEFA hollow rope Starter Kit green (polyester)
25 m hollow cable size 1 Classic (loose in backpack, easy to work with), 1 splicing bodkin, 1 coil special adhesive tape, 2 loop straps 0.50 m, 4 loop straps 0,75 m, 2 loop straps 1 m, years tracer 1 m

28.2.47.000.000.3

GEFA hollow rope starter kit blue (polyamide)
Ingredients see above, hollow rope more extendable

28.2.48.000.000.4

Hollow ropes, 4 t breaking strength with special hose.

Starter sets with pressure distributing protective hose GEFAprotect®.



GEFAprotect® hollow rope starter kit green

25 m hollow cable size 2 Classic, 5 m GEFAprotect®, 2 straps, 1 splicing bodkin, 1 roll special adhesive tape, 1 pair of scissors, years tracer 1 m

02.2.43.000.000.4

GEFAprotect® hollow rope starter kit blue

Ingredients supra, hollow rope more extendable

02.2.42.000.000.3

With loop straps

Starter sets with pre-manufactured loops.



GEFA hollow rope starter kit green

25 m hollow rope size 2 classic, 1 splicing bodkin, 1 coil special adhesive tape, 4 lashings, 2 loop straps 0,75 m, 4 loop straps 1.00 m, 2 loop straps 1,25 m, year tracer 1 m

02.2.41.016.000.4

GEFA hollow rope starter kit blue

Ingredients see above, hollow rope extendable

02.2.40.016.000.3

Hollow ropes, 7 t breaking strength in practical backpack.

Complete set for heavier load ranges with pressure distributing protective hose GEFAprotect®.



GEFAprotect® hollow rope backpack kit green
25 m hollow rope size 3 classic (loose in a backpack, easy to work with) 5 m GEFAprotect®, 2 straps, 1 splicing bodkin, 1 roll special adhesive tape, 1 pair of scissors, years tracer 1 m

02.2.44.000.000.4

GEFAprotect® hollow rope backpack kit blue
Ingredients see above, hollow rope extendable

02.2.45.000.000.3

GEFA STRAP BANDS

GEFA strap bands

with cut-to-length markings and black break tracers

2 t strap band classic on 50 m coil

50 mm wide, brown, polyester

02.1.15.035.050.2

2 t strap band classic, on 100 m coil

50 mm wide, brown, polyester

02.1.16.035.100.2

4 t strap band classic on 50 m coil

50 mm wide, brown, polyester

02.1.10.050.050.2

4 t strap band classic, on 100 m coil

50 mm wide, brown, polyester

02.1.11.050.100.2

4 t strap band expandable on 50 m coil

50 mm wide, brown, polyamide

02.1.12.050.050.5

4 t strap band expandable on 100 m coil

50 mm wide, brown, polyamide

02.1.13.050.100.5

7 t strap band classic on 50 m coil

75 mm wide, brown, polyester

02.1.14.075.050.2

7 t strap band expandable on 50 m coil

75 mm wide, brown, polyamide

02.1.14.075.050.5

8 t strap band classic on 50 m coil

75 mm wide, brown, polyester

02.1.18.075.050.2

Fabric hoses

as protection against friction for trees and strap bands.



Fabric hose for 50 mm straps

60 mm wide, on 50 coil

01.1.11.060.050.2

Fabric hose for 75 mm straps

80 mm wide, on 25 m coil

02.1.50.080.025.2

Special case GEFA strap XL

10 t system breaking strength (use with 2 pieces 7 t buckles per each termination).

Strap band XL 10 t, on 50 m coil

75 mm wide, brown, polyester

02.1.20.075.050.2



Year tracer on coil, 5 m

02.2.67.086.005.0

green	yellow	red	blue	brown	violet	orange	grey
2017	2018	2019	2020	2021	2022	2023	2024

GEFA buckles

made of galvanized steel. The 7 t buckles are also used for the 10 t system. (Note: the 10 t system there are 2 pieces / connecting end).

Special buckles for 4 t systems

02.1.41.000.000.0



Special buckles for 7 t or 10 t systems

02.1.42.000.000.0



GEFA HOLLOW ROPES

GEFA hollow ropes

Up to 10 t, GEFA hollow ropes are equipped with a white break indicator thread



GEFA hollow rope 2 t - classic

12 mm, green indicator, on 100 m coil

02.2.02.012.100.4



GEFA hollow rope 2 t – more expandable

12 mm, blue indicator, on 100 m coil

02.2.01.012.100.3



GEFA hollow rope 4 t - classic

12 mm, green indicator, on 100 m coil

02.2.04.016.100.4



GEFA hollow rope 4 t – more expandable

18 mm, blue indicator, on 100 m coil

02.2.03.016.100.3



GEFA hollow rope 7 t - classic

22 mm, green indicator, on 50 m coil

02.2.06.022.050.4



GEFA hollow rope 7 t – more expandable

24 mm, blue indicator, on 50 m coil

02.2.05.022.050.3



GEFA hollow rope 8 t - classic

26 mm, green indicator, on 50 m coil

02.2.12.026.050.4



GEFA hollow rope 8 t – more expandable

26 mm, blue indicator, on 50 m coil

02.2.12.026.050.3



GEFA hollow rope 10 t - classic

30 mm, green indicator, on 50 m coil

02.2.08.026.050.4

GEFA hollow rope 10 t – more expandable

30 mm, blue indicator, on 50 m coil

02.2.07.026.050.3

GEFA Dyneema hollow rope 12 t

16 mm, anthracite, on 50 m coil

02.2.09.016.050.1

GEFA Dyneema hollow rope 20 t

20 mm, silver, on 25 m coil

02.2.20.020.025.1

rope sold on the meter, cut to length

02.2.21.020.000.1

GEFAprotect®

Pressure-distributing protection against friction, protects bark, cambium and the hollow fibres inside rope from damage. 25 cm - graduations facilitate cutting.

GEFAprotect® – for 2 t / 4 t hollow ropes

50 mm width, on 20 m coil

02.2.64.050.020.2



GEFAprotect® – 7 t / 8 t hollow ropes

75 mm wide, on 20 m coil

02.2.65.075.020.2

GEFAprotect® – for 10 t hollow ropes

100 mm width, on 15 m coil

02.2.66.100.015.2

Year tracer on coil, 5 m

02.2.67.086.005.0



GEFA special scissors, titanium coated

01.1.38.000.000.1



Tesa adhesive tape, 50 m coil

02.2.60.000.050.1

GEFA splice bodkin made of solid aluminium

Hollow rope splice bodkin S for 2 t

02.2.61.016.000.0

Hollow rope splice bodkin M for 4 t & 12 t

02.2.64.018.000.0

Hollow rope splice bodkin L for 7 t, 8 t & 20 t

02.2.62.022.000.0

Hollow rope splice bodkin XL for 10 t

02.2.65.024.000.0





GEFA BELTS WITH LOOPS

GEFA belts with loops | 2 t

Width 60 mm, 2 t breaking strength



0.50m length

02.3.01.060.050.1

0.75 m length

02.3.02.060.075.1

1,00 m length

02.3.03.060.100.1

1,25 m length

02.3.04.060.125.1

GEFA belts with loops | 4 t

Width 60 mm, 4 t breaking strength



0,75 m length

02.3.10.060.075.2

1,00 m length

02.3.11.060.100.2

1,25 m length

02.3.12.060.125.2

1,35 m length

02.3.13.060.135.2

1,50 m length

02.3.14.060.150.2

1,75 m length

02.3.15.060.175.2

2,00 m length

02.3.16.060.200.2

GEFA belts with loops | 8 t

Width 80 mm, 8 t breaking strength



1,00 m length

02.3.21.080.100.2

1,50 m length

02.3.23.080.150.2

1,75 m length

02.3.24.080.175.2

2,00 m length

02.3.25.080.200.2

2,50 m length

02.3.27.080.250.2

GEFA belts with loops | 14 t

Width 110 mm, up to 14 t breaking strength



1,50 m length

02.3.31.110.150.2

1,75 m length

02.3.32.110.175.2

2,00 m length

02.3.33.110.200.2

2,50 m length

02.3.34.110.250.2

GEFA belts with loops | 20 t

Width 120 mm, 20 t breaking strength



1,75 m length

02.3.50.120.175.2

2,00 m length

02.3.51.120.200.2

2,25 m length

02.3.52.120.225.2

2,50 m length

02.3.53.120.250.2

GEFA Dyneema Soft Shackles

for producing short connections between loop straps made of high quality and super lightweight Dyneema material



Dyneema shackle for connections up to 4 t

02.2.94.004.100.0

Dyneema shackle for connections up to 7 t

02.2.95.007.100.0

Dyneema shackle for connections up to 10 t

02.2.96.010.100.0

GEFA lashing

with expansion element
- for fixing on smooth trunk



Lashing 2.20 m long

02.3.80.000.200.1

Lashing heavy, 3.00 m long

02.3.81.000.300.1

GEFA WORKING & THROWING ROPES

Rugged and tearproof

Very handy rope in core-sheath construction made of 100% polyester, extremely tear and abrasion resistant, does not harden. Extreme abrasion resistance of the sheath due to the specially developed LIROS coating.

- Very easy to splice
- Very handy, extremely UV-stable
- Extremely tear and abrasion resistant
- Does not harden

WORKING ROPE LIROS RIGGING yellow

Diameter: 14 mm
Material: Polyester
Braid type: twentyfold
Breaking load: 5500 daN
Working elongation: <5 %



WORKING ROPE LIROS RIGGING red

Diameter: 16 mm
Material: Polyester
Braid type: twentyfold
Breaking load: 6700 daN
Working elongation: <5 %

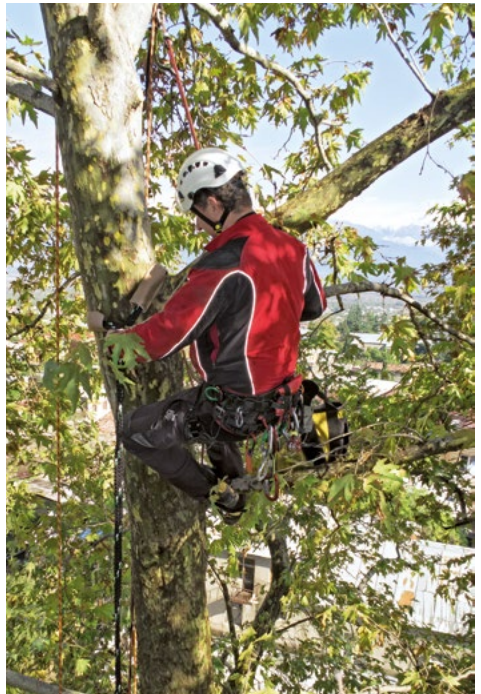


GEFA working rope yellow - 5500 daN
Available by the meter

40.1.10.014.055.0

GEFA working rope red - 6700 daN
Available by the meter

40.1.10.016.067.0



CRANE-FREE THROWING

LIROS D-Pro guarantees optimized breaking loads and values due to the LIROS heat-stretch system. Best abrasion resistance and low weight make this line irreplaceable for the most varied applications in tree care.

- Resistant to kinking
- abrasion resistant
- crane-free

THREAD LINE LIROS D-Pro

Diameter: 2 mm
Material: Dyneema
Breaking load: 410 daN



GEFA throwing line - LIROS D-Pro red
on a 50 m roll

40.1.01.410.050.0

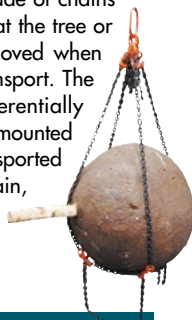
GEFA TRANSPORT HARNESSSES

FOR ROOT BALLS OR BOULDERS

It is a big advantage when a large tree or a heavy boulder do not have to be moved in order to put them into a transport rack.

ADJUSTABLE

The dividable root ball tackle made of chains offers the user the advantage that the tree or boulder does not have to be moved when installing the tackle after the transport. The chains which are circumferentially attached can be removed and mounted according to the size of the transported item. To avoid losing a single chain, they are already mounted on one side.



GEFA divisible chain ball harness

Capacity 2 t, chain length 1.20 m
Weight: 24 kg

04.1.01.100.120.0

GEFA divisible chain ball harness

Capacity 6 t, chain length 2.00 m,
Weight: 45 kg

04.1.02.150.120.0

GEFA divisible chain ball harness

Capacity 10 t, chain length 3.00 m,
Weight: 105 kg

04.1.03.200.300.0

ESPECIALLY FOR BOULDERS

The chains running through three eyelets must only be placed on the boulder. When lifting the stone, they would fit automatically around it.



GEFA boulder harness

Capacity 2 t, working length 1.80 m,
Weight: 8,4 kg

04.1.08.000.180.0

GEFA boulder harness

Capacity 6 t, working length 2.30 m,
Weight: 26 kg

04.1.09.000.230.0

SERVICE

On request, we will provide you test reports or certificates on the chain harnesses. The harnesses comply with DIN grade 8 and are CE compliant.

TEXTILE SECURITY - GRID HARNESSSES

Transport systems for large trees with root balls (or boulders) must help to prevent damages to the bark or bruises and they must be flexible and cost-saving. The GEFA grid ball harnesses meet all three requirements. They are supplied as a standard production with a 2t capacity (specially customized versions with any capacity are possible). If you would like to have an even longer durability of that lightweight all-rounders, you can resort to a version with improved wear protection - where the harness is strained the most.



GEFA Grid harnesses

classic versions, 2 t breaking strength, 4 m circular length, 40 cm width

04.2.01.040.400.4

4 m circular length, 80 cm width

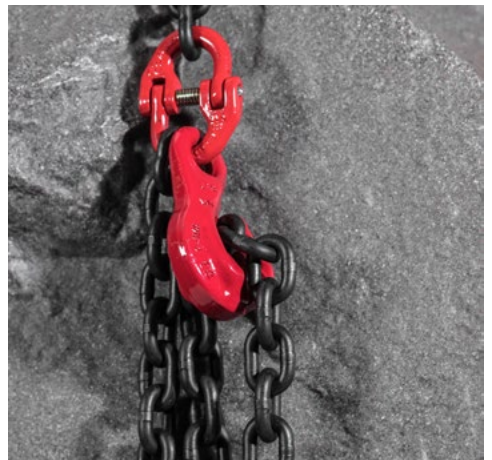
04.2.02.080.400.4

6 m circular length, 40 cm width

04.2.03.040.600.4

6 m circular length, 80 cm width

04.2.04.080.600.4





BITE PROTECT & COCONUT DISCS

PROTECTS THE TRUNK

Bite damage caused by big and small game often results in lasting vegetative damage to young trees. During the growing phase, trees are very vulnerable and therefore require special protection.

BiteProtect offers an effective protection to shield trees from bite damage. The trunk protection is applied in a circle around the trunk and can be easily closed with cable ties or Tyraps connectors. BiteProtect is supplied on coils and can therefore be flexibly used on site.

In addition, the innovative trunk protection is also designed to protect the bark by the impact of golf balls.



Advantages of BiteProtect

- flexible
- UV-resistant
- very easy to mount
- optimal ventilation openings
- suitable for all trunk circumferences
- also as protection against impact of golf balls
- material: polypropylene (PP), 100 % recyclable
- available on 50 m coil with 1 meter height



GEFA BiteProtect

Bite protection against big & small game or as a golf ball protection, material PP, 100% recyclable, black

31.1.05.050.050.5

COCO DISCS INSTEAD OF BARK MULCH

In gardening and landscaping construction, as well as in the nursery, mulch discs are known as an optimal weed suppressor.

The coco discs of GEFA Products® Fabritz GmbH rot only after 2-3 years. They are made of pressed pure coconut fibre cross-linked with a binder based on natural material.

Advantages:

- low maintenance
- avoids undesirable weed growth
- reduces evaporation
- permeable to air, water and fertilizer
- improves the soil structure
- no washing off or scratching away of the mulch
- almost every size available



Coco disc Ø 25 cm diameter, 50 pieces
03.1.15.025.000.0

Coco disc Ø 30 cm diameter, 50 pieces
03.1.18.030.000.0

Coco disc Ø 37 cm diameter, 50 pieces
03.1.20.037.000.0

Coco disc Ø 45 cm diameter, 50 pieces
03.1.22.045.000.0

Coco disc Ø 60 cm diameter, 50 pieces
03.1.23.060.000.0

Coco disc Ø 80 cm diameter, 50 pieces
03.1.24.080.000.0

(There are not all sizes on stock. Prices for larger quantities on request. Minimum order quantity 50 pieces up to 45 cm diameter. Prices are subject to change.)

GEFA PLANTASAFE®

THE PROTECTIVE SLEEVE

Trees are often damaged at the trunk when mowed by brush cutters, for example.

PLANTASAFE® offers effective protection against mowing damage. The sleeves are supplied as panels and closed by means of plug-in connections.

A single board already protects small trees a trunk circumference of 35 cm. For larger trees, two or more plates are connected with each other.

Product features

- Inconspicuous coloring
- Preformed for use on the trunk
- Round ventilation holes
- Polyethylene (PE), 100% recyclable
- High quality FDA certified plastic

Advantages

- Effective protection
- Easy to apply
- Unobtrusive and UV-resistant
- XL versions can be extended as required
- Does not hinder the growth of the tree trunk



EASILY EXPANDABLE



For larger trees, two or more panels are simply connected together. For permanent protection, PLANTASAFE® XL can be adapted to the growing trunk circumference (see above).



PLANTASAFE® Standard

preformed mowing protection up to 20 cm trunk circumference in 1 m height, 24 cm x 25 cm, in a 50-piece-package

31.1.01.050.000.0

powered by
GREENMAX

PLANTASAFE® XL

Mowing guard (21 x 36 cm), brown, pluggable, in a 50-piece-package

31.1.02.050.000.0





GEFA ARBOTAPE®

Wound closure after collision damage

Avenues and single trees on streets dominate the modern landscape and at the same time show a sustainable co-existence of nature and infrastructure. However, they are increasingly threatened in their existence by collision damages in traffic accidents - in addition to the exposure to pollutants and the entries of de-icing salts. However, when the collision damage is treated immediately using the appropriate measures, the damage can be limited.

Numerous studies have shown that the immediate treatment of collision damages with light- and water-impermeable films has a positive effect for the tree. There are nearly always still dividing cells in fresh wounds. If these wounds are wrapped within a few days with a light- and water-impermeable organic film, these cells are protected and allow further cell division (**callus**).

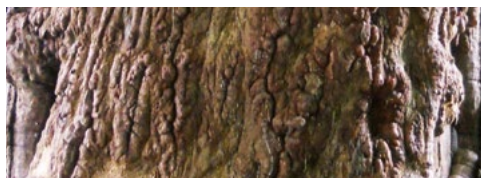
Like that, not only at the edge of the wound but also on the entire wound area a new cellular tissue, the so-called area callus can grow. The wood beneath remains alive and closes the open wound.



Inflicted wound at the beginning of the test



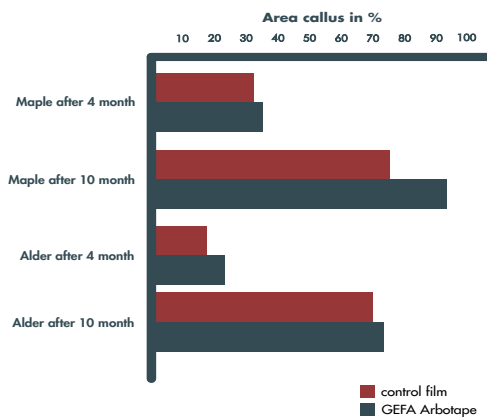
16 weeks after that first visible callus is formed



After 10 months there is a distinct callus

Research shows that with a wound protector, a crucial step is done for optimal wound care. Thus, the requirements from the ZTV - Tree care in part 3.4.2 „**Treatment of fresh and flat bark peeling (for example, accident damage)**“ are fully met.

The following table from the experimental set-up by the Institute for Tree Care in Hamburg shows clearly that the GEFA Arbotape® wound protector has better results than the conventional non-decomposable plastic film. The test showed numerous tree species like maple and alder, where after 4 and 10 months, a control was carried out.



„Quote Dr. Stobbe“: „From a biological perspective the tested tree wrapping foils for the treatment of fresh collision damage to roadside trees or generally flat bark peeling to promote area calluses and thus optimal wound healing can therefore be recommended.“

According to the recommendations, wound protectors should be removed after a maximum of one year, so that there is no mold and no pests nestle under it. **Thanks to its biodegradability, this step is not necessary when using GEFA Arbotape®. After about a year, depending on weather and location, the film starts to decompose.**



GEFA ARBOTAPE®
 biodegradable wound protector for collision damages. 50 m x 50 cm x 80 µm
36.1.01.050.050.1

BIO FIX TAPE
 biodegradable adhesive tape for fixing of GEFA ARBOTAPE wound protector, 66 m.
36.1.01.050.066.1



IRRIGATION BAGS

WATER TO THE ROOTS

In the case of mobile irrigation for new plantings or for the maintenance of existing trees during drought, robust irrigation bags are suitable.

Depending on the product variant, the irrigation bags can hold 50 - 60 liters of water. The filling quantity varies depending on the circumference of the trunk. The water is fed through a small opening at the bottom directly to the root area. The dripping time is, depending on the manufacturer, approx. 5 - 8 hours per filling.

EASY INSTALLATION

The installation of an irrigation bag is very simple. The bag is placed around the tree, fixed with a zipper and then, with the help of a hose filled with water.



1. put watering bag around the tree.
2. Pull the zipper to the top.
3. lift the bag with the help of the loops to allow easy filling of the bag.
4. on the back side you find the generously dimensioned filler neck.
5. fill with water using a hose until the irrigation bag is full.

INCREASE VOLUME

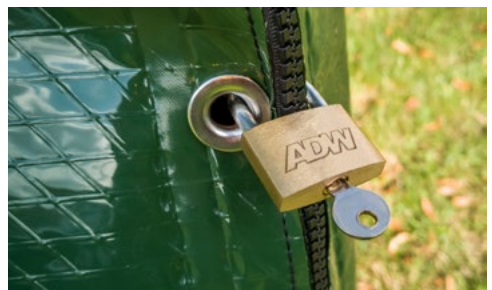
A single irrigation bag is suitable for Trees with a trunk circumference of 8 cm - 30 cm.

In order to also irrigate existing trees with more than 30 cm circumference during dry periods, it is possible to connect two or more bags by means of a zipper. This increases the water capacity to 100 - 120 liters or more.



PROTECTION AGAINST THEFT

Since in the past there have been repeated reports of theft of irrigation bags in public areas, we have introduced a version of the Watercoat III with theft protection. Two eyelets on the front of the zipper, make it possible to „lock“ the bag by means of a padlock.



This makes it impossible for thieves to remove the bag without damaging it.



IRRIGATION BAGS



	Tregator®	Watercoat® III	Greendrop®
Max. filling quantity (one bag):	60 Liter	60 Liter	60 Liter
Dripping time	5 - 8 hours	5 - 6 hours	5 - 6 hours
Material	PE	fabric-reinforced PE	fabric-reinforced PE
UV resistance	✓	✓	✓
Anti-theft protection	×	✓	×

ADVANTAGE WITH WETTING AGENT

Soils are often heavily compacted, which complicates the dripping of the irrigation bags. We recommend the use of the wetting agent AquaSmart from ICL. The wetting agent is able to wettability of the root zone over a longer period of time. The water can not only penetrate the surface or felt layer, but can also deeply soak.

COCONUT DISC AGAINST WEEDS

Increased watering in dry months naturally also stimulates weeds to grow. A mulch / coconut disc directly under the watering bag prevents unwanted sprouting and thus also provides for a neater appearance in urban areas.

Another advantage of a combination of irrigation bag and mulch disc is the more even and extensive dripping. The mulch disc soaks up the water and then releases it evenly to the soil.

ADVANTAGES IRRIGATION BAGS

- Assembly without tools
- Reusable
- One filling is enough for 2 - 3 days
- For new plantings and existing trees
- Made of sturdy polyethylene and tear-resistant loops
- Irrigates the root area in a targeted manner

Greendrop® irrigation bag, for easy watering of trees. Filling quantity max. 60 l

28.8.01.800.050.4

Tregator® irrigation bag, for easy watering of trees. Filling quantity max. 60 l

28.8.01.800.050.5

Watercoat® III + mulching coconut disc, 80 cm for easy watering of trees incl. 1x mulch coconut disc. Filling quantity max. 60 l

28.8.01.800.100.1

Watercoat® III Irrigation Bag Secure, for easy watering of trees, with safety eyelets. Filling quantity max. 60l

28.8.01.800.050.1

Watercoat® III Irrigation Bag, for easy watering of trees. Filling quantity max. 60l

28.8.01.800.050.0



STOCKOSORB®

IMPROVE LOCATIONS

Tree and plant locations are often not ideal - substrate must be modified, and shrubs need to be renewed - simultaneously, a growth guarantee is required more frequently.

Cost savings for the local public greens

More and more cities and communities use STOCKOSORB® or GEFA FABROTON® for container plants in the summer because the maintenance costs are considerably reduced.

More than just less watering

Optimizing locations

Ensuring the long-term survival of plants under conditions of drought and adverse ground conditions, the main task of soil aggregates - regardless of whether this is for trees, shrubs, grasses, bushes or ornamental plants.



GEFA is constantly developing established product solutions and continuously revises the existing product range. This is currently reflected, among other things in the development of FABROTON®.

Advantages of the established STOCKOSORB® are particularly the water absorption capacities. Under practical conditions, a 50% increase in water holding capacity was achieved under soil conditions. In addition, the innovative water storage granules have a higher cycle stability and thus a longer life period. Designers and users can thus save water more effectively and bridge droughts.

In the practical application, there are other benefits when mixed into substrates. The established STOCKOSORB® has a lower sensitivity to moisture, so the risk of clogging is greatly minimized.

Higher efficiency factor:



- increases the water holding capacity of soils and substrates
- reduces watering frequency
- ensures the growth of plants
- enables plant growth in dry locations
- has long lasting effects
- is environmentally friendly
- activates plant growth sustainably

Fields of Application

Landscaping

To meet the increased expectations towards quality and to reduce the risk of drought damage to a minimum, more and more green-experts back on STOCKOSORB®. They want to play it safe in particular regarding light soils and dry sites for tree plantings, seeding, etc. in public and private space.

Extreme locations

Plantations in urban and street areas are subject to special strains. Extreme climate conditions and the unnatural position very quickly cause damages. Especially for the roadside vegetation, STOCKOSORB® proves as the product that clients, architects and contractors alike will appreciate because of its effectiveness.

Special application for lance systems

Besides the traditional application in planting, STOCKOSORB® can also be used for subsequent lawn, soil and tree restoration. The compact pneumatic soil restoration machines can bring STOCKOSORB® in gelled condition also into greater depths or into the fine root area of trees. Here, especially product combinations with Perlhumus and the subsequent introduction of mycorrhizae are extremely effective. Attention: special quantities on request.



STOCKOSORB®

FAQ: Important questions and answers

In connection with the result and usage of STOCKOSORB® and related soil aggregates some questions come up very often and we are going to answer them briefly here:

What is STOCKOSORB®?

STOCKOSORB® - EG fertilizer NK fertilizer (13 + 5) - is a granulate. It stores up to 300 times its own volume of water and makes it available to the plants; for over 20 years now, in use in landscaping and agriculture. Chemical properties: cross-linked copolymer based on potassium.

In how far does STOCKOSORB® differ from other absorbers?

In general, by the chemical composition. Often hydrogels are only made to store water and not to set it free again (as in a diaper). There are also absorbers, based on sodium, which make the soil too salty, and are effective only for a very limited time.

Where does it make sense to use STOCKOSORB®?

Basically, in all plantations, where the water holding capacity of soils and substrates needs to be increased, to bridge dry periods and to increase plant growth.

Does STOCKOSORB® save costs?

Yes, scientific studies and the experience of our customers have shown:

- up to 60% reduction of watering procedures
- prevents losses when planting
- reduces the use of fertilizers

How long is STOCKOSORB® effective?

With full performance approx 5 years. Thereafter, the granules decompose naturally in the soil.

APPLICATION

- mix STOCKOSORB® granules thoroughly with the substrate
- pour STOCKOSORB® always into the root zone
- after planting water the treated surfaces up to saturation
- always ad here to the application rates
- do not leave any product remainders on the surface



STOCKOSORB®, 25 kg

06.1.01.000.025.0



STOCKOSORB®, 10 kg

06.1.01.000.010.0

Application rates for STOCKOSORB®

Depending on the location and soil conditions you need:

- | | | |
|------------------------------------|----------------------|--|
| • Lawn seeding | 80 g/m ² | incorporate 15 cm deep into soil |
| • Other sowings | 50 g/m ² | incorporate 10 cm deep into soil |
| • Plantings (ground cover, shrubs) | 200 g/m ² | incorporate 20 cm deep into soil |
| • Planting pits | 2 kg/m ³ | mix thoroughly with excavated material |

FABROTON® GRASS

As a diversely used recreational area, turf is under constant stress. FABROTON® GRASS was specially developed to improve the soil quality for turf, sown seed and sod. The physically active all-in-one growing medium is the ideal solution for sports fields, golf courses, public green spaces, but also in private gardens with just one application for an entire vegetation period.

With STOCKOSORB® the growing medium uses a potassium-based copolymer that retains water, which can reduce watering by up to 60 percent. For a balanced nutrient supply, recycled phosphate is used.

FABROTON® GRASS thus represents a sustainable and highly plant-available fertilizer that, unlike primary phosphorus, does not contain any pollutants. The processed fertilizer promotes significantly stronger root formation and more efficient nutrient utilization.



The lava grain contained in the granules additionally improves the soil structure and helps to improve aeration and performance. This benefits the root development of the plant and favors the plant growth itself.

Advantages:

- Better seed germination
- Healthier & deeper root development
- Saves 50% irrigation water
- Improved CEC value
- Less nutrient loss

Areas of Application:

- Golf courses
- Lawns of any kind
- Turf relaid
- Sports turf and soccer fields

Main ingredients:

Fertilizer: Sierrablen Plus 17-5-5+2 CaO+5MgO.
Humic substance: Powhumus
Natural rock: Lava
Water storage: STOCKOSORB® 660

By-products:

Nitrogen (N): 3,600 mg/l (CaCl₂)
Phosphate (P₂O₅): 7,670 mg/l (CAL)
Potassium oxide (K₂O): 119,000 mg/l (CAL)
Magnesium (Mg): 374 mg/l (CaCl₂)
Sulfur (S): 17,017 mg/l
Basic active ingredients (as CaO): 7.8



FABROTON® GRASS | 20 kg

37.2.01.000.020.3

APPLICATION RATES FOR FABROTON® GRASS

Spread evenly and work thoroughly into the root zone.
Water intensively after planting. Do not leave any residue on the surface.

- Seeding of lawn: 50 - 200 g/m²
- Substrate admixtures: 1 - 2 kg/m³
- Slope seeding: 100 - 300 g/m²

FABROTON® ROADSIDE

For the often heavily stressed roadside greenery, an adequate water supply is of paramount importance. Therefore, FABROTON® ROADSIDE contains a finely granulated multi-matrix wetting agent with innovative 3D technology. Support comes from the water-retaining copolymer STOCKOSORB®. Nutrient losses resulting from seepage, evaporation and surface runoff are minimized with this combination and more water is effectively available to the plant.

For plantings of all kinds on traffic islands and green strips, this results in significantly improved water management.

Mixed with lava grain with its positive air and structural properties, STOCKOSORB® promotes the overall balance of the soil and loosens it up, which benefits root development. This results in significantly better chances of survival for new plantings along freeway routes, embankments and roadside greenery.



The mixture is enriched with biostimulants: Bacteria colonize the roots and stimulate the production of roots. Phosphorus fixed in the soil becomes available again. Yeast fungi improve the processes of mineralization and humification of organic matter.

Advantages:

- Saves 60% irrigation water
- Less drought stress
- Saves water resources
- Environmentally friendly
- Root development is promoted

Fields of application:

- Exposed sites
- Slopes
- Roadside greenery

Main ingredients:

Wetting agent: H2Gro granules

Fertilizer: Sierrablen Plus 17-5-5+2 CaO+5MgO

Humic substance: Powhumus

Natural rock: Lava

Water reservoir: STOCKOSORB® 660

By-products:

Nitrogen (N): 1,700 mg/l (CaCl₂)

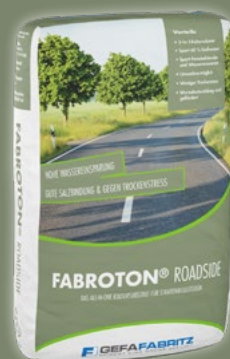
Phosphate (P₂O₅): 3,960 mg/l (CAL)

Potassium oxide (K₂O): 110,000 mg/l (CAL)

Magnesium (Mg): 194 mg/l (CaCl₂)

Sulfur (S): 14,574 mg/l

Alkaline active ingredients (as CaO): 9.8 %



FABROTON® ROADSIDE | 20 kg

37.2.01.000.020.4

APPLICATION RATES FOR FABROTON® ROADSIDE

Spread evenly and work thoroughly into the root zone.
Water intensively after planting. Do not leave any residue on the surface.

- Slope seeding: 100 - 300 g/m²
- Plantings: 400 - 600 g/m² (Bodendecker, Stauden)
- Substrate admixtures: 1 - 2 kg/m³

FABROTON® TREE

In order to bring young trees and shrubs through their first years, a high level of care is sometimes necessary. This is where FABROTON® TREE comes in: the growing medium is a water reservoir, fertilizer and growth promoter all in one. Incorporated directly at the time of planting, the granules activate growth, supply the plants with nutrients and, at the same time, protect them from drought with their integrated water reservoir.

In the composition, emphasis was placed on application close to the roots in the planting hole, so that the fertilizer can already be introduced as part of the fall planting.

The basis of FABROTON® TREE is the water reservoir STOCKOSORB®. The potassium-based copolymer is a superabsorber, whose positive effect on the water balance and soil loosening have been scientifically proven. Lava grain with its positive air and structural properties also contributes to better root penetration.



Humic acids bind pollutants and facilitate the absorption of nutrients.

With a differentiated interplay of fast fertilizer and coated slow-release components, FABROTON® components, FABROTON® TREE is extremely efficient in its application: One application supplies plants with nutrients over a period of 1.5 - 2 years.

Advantages:

- Saves 60% irrigation water
- Effective over two growing seasons
- Root development is promoted
- High efficiency due to low leaching

Areas of application:

- Tree & shrub plantings, tree discs & planting holes
- Substrate mixtures

Main ingredients:

Fertilizer 1: Osmocote PrePlant 17-8-10+2MgO+TE
Fertilizer 2: Osmocote Exact DCT High K 12-7-19+FE
Humic substance: Powhumus
Natural rock: Lava
Water storage: STOCKOSORB® 660

By-products:

Nitrogen (N): 3.3%
Magnesium (Mg): 1.4%
Potassium (K₂O): 14.1



FABROTON® TREE | 20 kg

37.2.01.000.020.2

APPLICATION RATES FOR FABROTON® TREE

Spread evenly and work thoroughly into the root zone.
Water intensively after planting. Do not leave any residue on the surface.

- Tree plantings: 1 - 2 kg/m³
- Tree slices: 100 g/m²
- Shrub plantings: 1 - 2 kg/m³
- Substrate admixtures: 1 - 2 kg/m³

FABROTON® UNIVERSAL

FABROTON® UNIVERSAL is the growing medium for a wide range of applications. It is equally suitable for green, flowering and useful plants. High-quality ornamental shrubs also benefit. Just 100 grams of FABROTON® UNIVERSAL have been proven to store about 8 liters of moisture. At the same time, a minimum of 95% of the water is available to plants.

The combined effect of water storage, long-term fertilizer mixture and biostimulants provides plants with optimum care: even in permeable soils and exposed locations, the failure rate is minimized. The all-in-one growing medium also shows its advantages in the case of high nitrate contents in the irrigation water.

FABROTON® UNIVERSAL is enriched with soluble, slowly releasing synthetic nitrogen fertilizers. The lava grain, which is also contained in the granules, additionally promotes the structure. In addition, FABROTON® UNIVERSAL contains root growth activators that act in the form of bio-stimulants.



The NPK fertilizer mixture also contains water-soluble, fast-release and coated mineral fertilizers with long-term effect. Thanks to this combination, two vegetation periods are already covered with only one application.

Advantages:

- Saves 60% irrigation water
- Less plant failures
- Environmentally friendly
- Effective over two growing seasons
- Root development is promoted

Fields of application:

- Tree & shrub plantings, flower & shrub beds, graves, roof gardens, lawns, etc., perennial beds, graves, roof gardens, lawns, etc.
- Gardening & landscaping
- Agricultural crops

Main ingredients:

Fertilizer 1: Osmocote PrePlant 17-8-10+2MgO+TE.
Fertilizer 2: Osmocote Pro 19-9-10+2MgO+TE
Humic substance: Powhumus
Natural rock: Lava
Water reservoir: STOCKOSORB® 660

By-products:

Nitrogen (N): 22,000 mg/l (CaCl₂)
Phosphate (P₂O₅): 347 mg/l (CAL)
Potassium oxide (K₂O): 99,750 mg/l (CAL)
Sulfur (S): 8,250 mg/l
Basic active ingredients (as CaO): 8%.



FABROTON® UNIVERSAL | 20 kg

37.2.01.000.020.1

APPLICATION RATES FOR FABROTON® UNIVERSAL

Spread evenly and work thoroughly into the root zone.
Water intensively after planting. Do not leave any residue on the surface.

- Slope seeding: 100 - 300 g/m²
- Plantings: 400 - 600 g/m² (ground cover, perennials)
- Substrate admixtures: 1 - 2 kg/m³



ALGINURE

WITH THE POWER OF SEAWEED

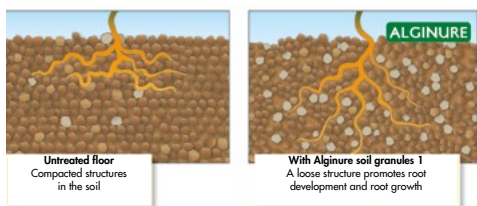
Vigorous plant growth and a colorful world of flowers require a vital soil life. Even slight disturbances to the sensitive structure of the soil impair plant growth and increase the amount of maintenance effort. Frequent causes are waterlogging, lack of soil connection, drought or soil compaction.

The basis of our Alginure products is the brown alga *Ascophyllum nodosum*. This brown alga, native to the North Atlantic, is characterized by its rich ingredients such as alginates, trace elements and secondary plant components (auxins). The algae is harvested sustainably and completely processed in the Tilco digestion plant. Due to the gentle process, the plant components are particularly protected and are released in a plant-available form.

The result is Alginure products that act biologically, physically and biochemically. Soil life is activated and the plant is vitalized. Alginates promote the formation of clay-humus complexes which improves the crumb structure. The secondary plant components stimulate root and plant growth. The intensive sorption properties improve the utilization of irrigation and precipitation water.

Alginure Soil Granules 1 optimizes the soil structure and activates soil life.

The polyuronic acid/alumina contained in Alginure Soil Granules 1 combine with the soil particles to form clay-humus complexes. This increases the nutrient availability and storage capacity as well as the water and air capacity of the soil. The resulting crumbly structure optimizes the formation of the root ball and plant growth.



Increased storage capacity through addition of Alginure soil granules 1

The figure shows the influence of Alginure Soil Granules 1 on the water storage capacity of a common topsoil. Without Alginure granules 1, water flows off directly (left) without being available to the plant in the root zone. Alginure Soil Granules 1 increases the storage capacity by through a pronounced gel formation. This means that water and nutrients are available to the plant.



Organic-mineral K fertilizer (0+0+4) with MG and S (low chloride) based on brown algae.



Alginure soil granules 1 is an organic-mineral potassium fertilizer based on brown algae with magnesium and sulfur.

- Improves soil fertility
- Activates soil life
- Promotes root development
- Suitable for organic farming *

*Listed in the farm input list for organic farming in Germany (FiBL)



Alginure, 25 kg
06.3.01.000.025.0

APPLICATION RATES FOR ALGINURE SOIL GRANULATE 1

Alginure Soil Granulate 1 can be applied at any stage of plant growth and at any time of the year on open/non-frozen soils.

- | | | |
|-----------------------------|-----------------------------|----------------------|
| • Substrate admixture | 1,5 - 2,0 kg/m ³ | mix in homogeneously |
| • Planting | 150 - 200 g/m ² | work in 20 cm deep |
| • New seedlings (new lawns) | 150 g/m ² | work in 20 cm deep |

GEFA ROOT PROTECTION

STICK THE WATER TO THE ROOTS

Nothing is more sensitive than the exposed fine roots of shrubs or plants - within a few minutes the sun and wind make them dry out. Then drought-related tree diseases occur. Poor growth results and high planting losses are a consequence of that. To prevent it, various products are available: GEFA root protection gel, the pure, effective water storage - GEFA alginate 200, the concentrated liquid algae - GEFA root safe with sodium alginate and humic substances.

GEFA root protection gel

- protects exposed roots during transport and storage against dehydration
- ensures intensive root growth after planting due to optimized water supply
- improved growth rates at tree plantings



What is a root protection gel?

The GEFA root protection gel is a fine-grained powder. The water-storing gel particles surround the entire root system and provide sufficient moisture to prevent dry plants. Besides, the water supply is already improved once you plant. The rapid and reliable formation of fine fibre roots ensures significantly better growth results. The cost of planting due to plant losses is reduced.

Where is it used?

GEFA root protection gel is ideal for the storage and transport of plants and for direct use on site. It gives the plants a good start and safe growth.



GEFA root protection gel can be superbly combined with mycorrhizae or other products. The substances get directly to the root and can act even more effectively.

How much do you need?

Only 1 kg root protection gel produces at least 100 l dipping brine for roots.

This is sufficient for approximately:

- 2,000 forest plants, 1 x moved, material costs / plant thus about 0.3 cents.
- 800 ornamental shrubs, light feather, 2 x moved, material costs / plant thus about 0.8 cents.



GEFA Wurzelenschutzgel, 10 kg

06.1.06.000.010.0

GEFA Wurzelenschutzgel, 25 kg

06.1.06.000.025.0

Application of the root protection gel

The dipping process is normal for young trees:

- stir 50-100 g GEFA root protection gel in 10 litres of water (soft water = better swelling)
- let swell for 30 minutes - As a result, the dipping must be similar to glue - The gel remains adhered to the roots
- put woody roots into the dipping

Dusting is especially suitable for large trees:

- thoroughly moisten roots of woody plants
- dust the roots with GEFA root protection gel
- let powder swell for a few minutes
- watering again with a fine nozzle

GEFA MYCORRHIZA

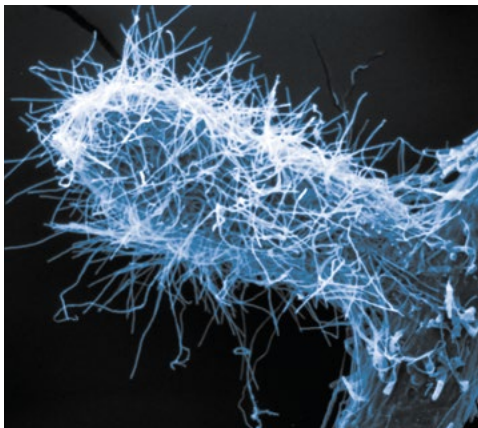
IN THE INTEREST OF NATURE

The knowledge about mycorrhiza is already more than 140 years old. At that time, the Berlin botanist Prof. Frank was commissioned by the King of Prussia to grow to cultivate truffles. During this work, the forestry specialist noticed that the mushroom fruiting body of the truffles is always in contact with the fine roots of certain tree species. And always these Roots had a certain appearance. They were shape, were more branched, and had a different color than the „normal“ root.

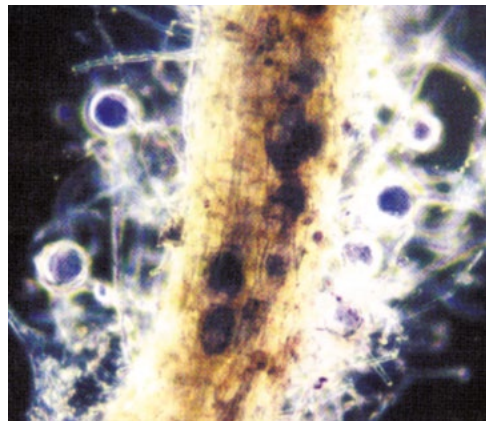
Because these truffle roots were not normal roots, he called them „mycorrhizae“, composed of the Greek „mykes“ = fungus and „rhiza“ = root.



But not only tasty mushrooms are tree partners; there are many other fungi that can enter into such a symbiosis, some of which are inedible (the bald cremling), but some are also poisonous (fly agaric). All these mushroom species form a so-called ectomycorrhiza („ektos“ = outside). They are visible to the naked eye and form mostly „real“ fungal fruiting bodies.



In contrast, the changes at the fine root in the endomycorrhiza (endon = inside) are not externally visible and the fungi do not form any fruiting bodies. The spores of these fungi are so tiny, that you have to look for them with a magnifying glass.



WATER ABSORPTION

Mushrooms, with their cotton-fine mycelial webs, are particularly good at absorbing water. This is made possible by widely radiating hyphae (fungal filaments), which increase the absorptive surface by a factor of 100 to 1,000.

In addition, fungal hyphae with only 2-3 micrometer thickness are able to penetrate into the central pores of soils. There they can extract water which would not be usable for plants without fungal partners. Compared with root hairs, which are single-celled fine roots, the fungal hyphae extend much further into the surrounding soil and are also much thinner.

The In still held in textbooks is that the fungal via the root hairs the water and nutrient uptake also takes place in woody plants is wrong! As soon as a mycorrhiza has been formed on young plants, there are (almost) no more root hairs on the fine roots. An efficient mycorrhiza provides for a significantly improved water supply to the plants. This can be decisive for the success or failure of new planting and can also contribute to the vitalization of old trees.

GEFA MYCORRHIZA



NUTRIENT UPTAKE

In addition to the significantly improved water absorption, all the nutrients dissolved in it are also transported to the plant to a much higher level. This often takes place via special „transport ducts“ similar in structure to root rhizomorphs, These can reach a length of more than one meter.

In addition, mycorrhizal fungi have the ability to excrete enzymes and organic acids, with which phosphate, nitrogen, potassium, calcium, magnesium, iron, and other micronutrients can be and are dissolved out of organic and mineral compounds. A large proportion of these nutrients are released directly to the partner plant, while another is stored and can be used in situations of deficiency.



This significant improvement in nutrient supply, especially of nitrogen and even more importantly phosphate, woody plants can exist even at sites where without fungus support life would not be possible. (pine on rock, birch on castle ruins, oaks on poor sandy sites ...). sandy sites ...).

PROTECTION FROM HARMFUL ORGANISMS

Many mycorrhizal fungi are able to fight off harmful organisms with antibiotics. As with known molds (Penicillium, Trichoderma) are also produced around mycorrhizal fine roots, inhibitory or even killing substances are secreted around the mycorrhizal or fungal pathogens from the root.

Another effect is that due to the „penetration“ of the mycorrhizal fungi into the roots causes reactions in the plants, making it more difficult for pests to infect or infections or denature the grub. This protective variant is also referred to as preimmunization.

SUPPLY OF THE GROUP

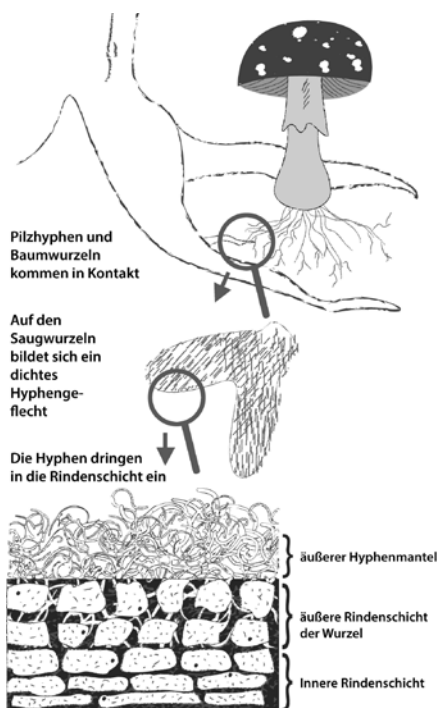
Not only the water and nutrient supply of an individual woody plant is decisively improved by mycorrhizal fungi, it has even been proven that via mycorrhizal connecting lines there is also an exchange of nutrients between neighboring woody plants (even of different species).

In particular, the supply of young plants in the shade of old woody plants (via mycorrhizal fungi) enables in many cases their survival and growth.

ADVANTAGES OF SYMBIOSIS FOR THE FUNGUS

By means of photosynthesis, plants can - with the energy from sunlight - from water and energy-rich carbohydrates (sugars) and oxygen. Fungi are not able to do this because they do not possess chlorophyll.

About 20% (sometimes even up to 30%) of these sugar substances the fungus receives/extracts for its „services“.





When planting seedlings and heisters:

Seedlings as container plants or bare-root plants can be supplied with Mycorrhiza inoculant directly at planting. The amount per plant depends on the size of the plant and the development of the root system. For very small seedlings are sufficient approx. 2 ml, medium sized receive 5 ml and large seedlings 10 - 20 ml of inoculant.

For dry sites or when watering cannot be carried out safely at the site it is recommended to add root protection gel (STOCKOSORB®) to the inoculant. The bundles of bare-root seedlings or even the container plants can be dipped with their roots into the paste-like gel with inoculant. This gives an optimal evaporation protection until the planting and helps against drying out during the growing period.

When planting high trunks, avenue trees, trunk bushes and specimen trees:

The rule is to apply 2/3 of the amount of inoculant to the sides of the rootball and 1/3 under the rootball. It is important to spread the fungal partner as close as possible to the fine roots of the tree. The bale cloth does not need to be removed for this purpose. For the fine fungal threads, the coarse tissue does not represent a barrier.

Recommendation for tree planting:

Per 7 cm trunk circumference 100 ml, e. g.:

- StU 16-18 cm = 300 ml inoculant
- StU 20-25 cm = 400 ml inoculant
- StU 35-40 cm = 600 ml vaccine

Recommendation for tree renovations:

Per 10 cm trunk diameter 375 ml (three inoculation points with 125 ml each), e.g.:

- StD 40 cm = 1,500 ml vaccine
- StD 60 cm = 2,250 ml vaccine
- StD 80 cm = 3,000 ml vaccine
- StD 100 cm = 3,750 ml vaccine.

Hedges:

When planting hedges approx. 30 - 40 % vaccine can be saved, compared to planting of single plants. Due to the fact that the root system of neighboring plants almost touch each other and freshly „sprouted“ fine roots very quickly open up the common root space, the fungal infection can be very effective here. 1/3 of the inoculant should be injected into the plan-

ting hole („planting trench“) under the roots and 2/3 to the root balls. This can again be done by scattering or rolling in the inoculant. Also for hedge plantings, the application of root protection gel in all locations that are not wet.

Recommendation for hedge plantings:

150 ml of inoculant per linear meter.

Part No.	Ekto-Mycorrhiza	Endo-Mycorrhiza
06.4.01.000.000.0	Special birch	
06.4.02.000.000.0	Special beech	
06.4.03.000.000.0	Special oak	
06.4.04.000.000.0	Special pine	
06.4.05.000.000.0	Leafs	
06.4.06.000.000.0	Needle	
06.4.50.000.000.0		Leafs
06.4.51.000.000.0		Needle

Always apply ecto- or endomycorrhiza inoculant to separate inoculation sites - do not mix!

Important: GEFA mycorrhizae are freshly harvested and can be stored for 120 days (ecto) or 365 days (endo).



Small quantities – under 2 l

Part.-no. see table

Total quantity – from 2 l on

Part.-no. see table

Total quantity – from 10 l on

Part.-no. see table

Total quantity – from 50 l on

Part.-no. see table

You can order the quantity needed – in 100 ml steps.

The complete list of our specific mycorrhizae can be found in the appendix on page 54.

OUR GENERAL CONDITIONS OF SALE - GEFA PRODUKTE FABRITZ GmbH

§ 1 General Terms - Area of Application

(1) The conditions of sale and delivery detailed in the following apply exclusively; we do not accept orderer's conditions, which are contrary to, or deviate from our conditions of sale, except when we have expressly agreed to their validity in writing. Our conditions of sale and delivery also apply when we make unreserved delivery to the orderer although we are in knowledge of orderer's conditions, which are contrary to, or deviate from our conditions of sale.

(2) All agreements which are made between us and the supplier, resp. the orderer for the execution of this agreement must be laid down in writing in this contract.

(3) Our conditions of sale apply only for entrepreneurs according to § 310 subs. 1 BGB (German Civil Code).

§ 2 Quotation - Quotation Documents

(1) If the order qualifies as a quotation pursuant to § 145 BGB, we can accept it within 2 weeks.

(2) Die gesetzliche Mehrwertsteuer ist nicht in unseren Preisen eingeschlossen; sie wird in gesetzlicher Höhe am Tag der Rechnungstellung in der Rechnung gesondert ausgewiesen.

§ 3 Prices - Payment conditions

(1) Where not specified otherwise in the order confirmation, our prices are „ex works Krefeld“, excluding packaging; this is invoiced separately.

(2) Value added tax is not included in our prices; it will be shown separately on the invoice on the day of invoicing, in the legally valid amount.

(3) The deduction of a discount requires special written agreement.

(4) Where nothing other is stated in the order confirmation, the purchase price is payable net (without deduction) within 30 days from invoice date. The statutory regulations apply concerning the consequences of late payment.

(5) The orderer is only entitled to offset rights, when his counterclaims have been determined as legally valid, are undisputed or recognised by us. In addition, he is only entitled to exercise a right of retention as far as his counterclaim is based on the same contractual relations.

§ 4 Change of prices

We retain the right to change our prices appropriately when costs reduce or costs increase, in particular due to collective bargaining agreements or material price changes, occur after signing of the contract. We will prove these to the customer on request.

§ 5 Delivery Time

(1) The start of the delivery period pre-requisites the clarification of all technical questions.

(2) Compliance with our delivery obligation requires the timely and proper fulfillment of the obligation of the customer. The exception of the unfulfilled contract remains reserved.

(3) If the orderer comes into default of acceptance or violates other co-operation obligations, we are entitled to demand replacement of the damages incurred by us through this, including any additional expenditures. We retain the right to make further going claims.

(4) Provided that the conditions of subs. (3) are present, the danger of accidental loss or accidental deterioration of the purchased goods goes over to the orderer at the point of time in which he has gone into default of acceptance or debtor's delay.

(5) We are liable according to statutory provisions if the underlying purchase contract is a fixed transaction in the sense

of § 286 subs. 2 no. 4 BGB or § 376 HGB. We are also liable under the statutory provisions if, as a consequence of any delivery delay caused by us, the customer is entitled to assert that his interest on the further fulfilment has lapsed into discontinuance.

(6) We are also liable under the statutory provisions if the delay in delivery is caused by a wilful or grossly negligent breach of contract; a default of our representatives or agents is attributable to us. If the delivery delay is not caused by our deliberate infringement, our liability for damages is limited to the foreseeable, typically occurring damage.

(7) We are also liable under the statutory provisions, if the delivery delay is due to the culpable breach of an essential contractual obligation; in this case the liability for damages is limited to the foreseeable, typically occurring damage.

(8) In addition, we are liable in the event of delayed delivery for each full week of delay with a lump sum compensation in the amount of 3 % of the contract value, with a maximum of not more than 15 % of the contract value.

(9) Further legal claims and rights of the customer remain reserved.

§ 6 Delivery - Passing of Risk - Packaging Costs

(1) Where not stated otherwise in the order confirmation, delivery „ex works Krefeld“ is deemed to have been agreed.

(2) The risk of accidental loss and the accidental deterioration of the goods passes over to the orderer with the handing over of the goods and with sales shipments upon delivery of the goods to the forwarding agent, the freight carrier or the person or institution otherwise ordered with the execution of the dispatch.

(3) For the return of packaging separate agreements apply.

(4) Where the orderer so desires, we will cover the deliveries with a transport insurance; the costs are to be borne by the orderer.

§ 7 Warranty for Defects

(1) The customer warranty claims pre-suppose that he has properly fulfilled his obligation under § 377 HGB concerning inspection and complaint.

(2) If the purchased goods are defective, the customer is entitled to choose between subsequent performance in the form of repair or delivery of a new goods free from defects. In the case of repair, we are obliged to bear all costs required for the removal of defects, in particular transport, travel, labor and material costs, provided these are not increased because the goods have been transported to another place than the place of fulfillment.

(3) If the rectification fails, the customer can, on principle, demand at his discretion, lowering of remuneration (reduction) or countermanding the contract (cancellation).

(4) We are liable according to legal regulations, if the customer claims damages based on intent or gross negligence, including intent or gross negligence of our representatives or agents. As far as no deliberate infringement is attributed, liability for damages is limited to the foreseeable, typically occurring damage.

(5) We are liable according to statutory provisions if we culpably violate an essential contractual obligation; in this case the liability for damages is limited to the foreseeable, typically occurring damage.

(6) If the customer is entitled to claim damages instead of performance, our liability under subs. (3) is limited to the predictable, typically occurring damage.

(7) The liability for culpable injury to life, body or health remains unaffected; this also applies to mandatory liability under the Product Liability Act.

(8) Unless stipulated otherwise above, liability is excluded.

(9) The limitation period for warranty claims is 12 months from transfer of perils.

(10) The limitation period in case of a delivery recourse according to §§ 478, 479 BGB shall remain unaffected; it is five years from delivery of the defective item.

§ 8 Joint Liability

(1) A liability for damages which goes beyond that provided in § 7 is - without regard to the legal nature of the claim made - excluded. This applies in particular to damage claims from default at the time of signing the contract, positive violation of the contract, or due to tort claims in accordance with § 823 BGB.

(2) The definition of subs. (1) also applies if the customer claims compensation for inappropriate expenses, instead of a claim for compensation for the actual damage.

(3) In as far as indemnity is excluded or limited against us, this also applies with regard to the personal liability of our employees, workers, staff, representatives and vicarious agents.

§ 9 Retention of Title

(1) We retain the right of ownership of the purchased goods until receipt of all payments from the delivery. Upon actions contrary to the terms of the contract by the orderer, in particular with default of payments, we are entitled to take the purchased goods back. The distraint of the purchased goods by us always constitutes a withdrawal from the contract. After the taking back of the purchased goods we are entitled to utilise them; the profits from the use are to be offset against the liabilities of the orderer - less appropriate utilisation costs.

(2) The orderer is obliged to treat the purchased goods with care; in particular he is obliged, to adequately insure it at his own costs against damage by fire, water and theft at replacement value. Where maintenance and inspection work is required, the orderer must also execute these on time at his cost.

(3) With distraint or other infringements by third parties, the orderer must inform us forthwith in writing, so that we may file an action in accordance with § 771 ZPO (Rules of Civil Practice). In as far as the third party is not able to reimburse us the costs of the judicial and extrajudicial costs for an action in accordance with § 771 ZPO, the orderer is liable for the loss we have incurred.

(4) The orderer is entitled, to sell the purchased goods in the proper conduct of business; he will however, here and now, assign all claims in the final invoice amount (including value added tax) of our claims, which he incurs from the sale against his recipients or third parties, and this independent of the fact whether the purchased goods have been sold without or after further processing (extended title). The orderer is empowered to call in this claim even after assignment. Our authority to call in this claim ourselves remains unaffected by this. We however agree not to call in the claim, as long as the orderer meets his payment obligations from the collected profits, does not come into default of payment, and in particular when no petitions for bankruptcy, reorganization or insolvency proceedings have been filed, or payments have not been stopped. If this is the case however, we may demand that the orderer informs us of the assigned claims and their debtors, makes all statements necessary for the calling in, hands over the corresponding documents and informs the debtors (third parties) of the assignment.

(5) The processing or reforming of the purchased goods by the orderer will always be conducted for us. If the purchase goods are processed with other items, which are not our property, we acquire co-ownership in the new item in the ratio of the value of the purchased goods (invoice end amount inclu-

ding value added tax) to the other processed items at the time of the processing. The same conditions apply for the item, which has been created by processing, as do for the purchase items delivered without processing.

(6) **If the purchased goods are mixed inseparably with items, which are not our property, we acquire the co-ownership in the new item in the ratio of the value of the purchased goods (invoice end amount including value added tax) to the other mixed items at the time of the mixing. If the mixing is carried out in a manner so that the item of the orderer is to be seen as the main item it will be deemed as agreed that the orderer will assign us co-ownership in the corresponding share. The orderer will safekeep the thus created sole ownership or co-ownership for us.**

(7) The orderer will also assign to us the claims to secure our claims against him, which accrue against third parties through the use of the purchase item with a landed property.

(8) We agree to release the securities we are due upon demand by the orderer, in as far as the realizable value of our securities exceed securing claims by more than 20%; the selection of the securities to be released will be at our discretion.

§ 10 Place of Jurisdiction - Place of Fulfilment

(1) If the customer is a businessman, the exclusive place of jurisdiction for all disputes arising from this agreement is our business location; we are however entitled to sue the customer at his place of residence.

(2) The laws of the Federal Republic of Germany apply; the provisions of the UN purchase right do not apply.

(3) Our business location is the place of fulfilment, unless the order confirmation states something different.

Krefeld, March 2012

fax: +49 (0)2151 - 49 47 50

According to the conditions of GEFA Products® Fabritz GmbH known to us we order for:

Invoicing address:

Commune / Company / Authority

Customer no. / Contact

Street, no.

Postal Code, City

Telephone

Telefax

email address

Delivery address (if different):

Name

Street - No.

Postal Code, City



Elbestraße 12 • 47800 Krefeld
Fon: +49 (0) 2151/49 47 49
Fax: +49 (0) 2151/49 47 50
eMail: info@gefafabritz.de
Internet: www.gefafabritz.de

Product Code	Name of Product	Amount & Unit of Order	Unit Price

All prices are quoted ex works, plus legal VAT.

- Our address has changed. Please refer to our current address above!
- We do not need further information. Please take us from your mailing list!

Please send us the following documents:

- Planning folder - for those issuing an invitation to tender
- Catalogue The perfect planting of trees

Date:

Signature:



MYCORRHIZA TABLE & IMPRESSUM

tree species	Ekto-mycorrhiza	Endo-mycorrhiza
Abies	needle	
Acer		leaves
Aesculus		leaves
Ailanthus		leaves
Alnus		
Amelanchier		leaves
Betula	special birch	
Carpinus	leaves	
Castanea	leaves	
Catalpa		leaves
Cedrus	needle	
Celtis		leaves
Chamaecyparis		needle
Corylus	leaves	
Crateagus		leaves
Fagus	special beech	
Fraxinus		leaves
Ginkgo		needle
Gleditsia		leaves
Juglans		leaves
Koelreuteria		leaves
Larix	needle	
Liquidamber		leaves
Liriodendron		leaves
Magnolia		leaves
Malus		leaves
Metasequoia		needle
Ostrya	leaves	
Olea		special olive
Picea	needle	
Pinus	special pine	
Platanus		leaves
Populu	leaves	
Prunus		leaves
Paulownia		leaves
Pseudotsuga	needle	
Pterocarya		leaves
Pyrus		leaves
Quercus	special oak	
Robinia		leaves
Salix	leaves (dry)	leaves (wet)
Sequoiadendron		needle
Sophora		leaves
Sorbus		leaves
Tilia	leaves 50%*	leaves 50%*
Taxus		needle
Thuja		needle
Tsuga	needle	
Ulmus		leaves
creeper/climbing plant		special creeper
Rhododendron		special rhododendron
Palm tree		special palm tree

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