



TEMANO

TECHNOLOGIES MARINES NOUVELLES

Temano® Expertise and Products



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Introduction to TEMANO

TEMANO is a French company specialized in the design, manufacturing, and installation of innovative maritime solutions with minimal environmental impact. We focus our expertise on eco-designed, durable, and high-performance mooring systems tailored to the needs of modern floating infrastructures.

The company is structured around several divisions that cover all activities, from design to installation. Our engineering and manufacturing division is dedicated to the technical development, design, and production of our equipment: shock absorbers, textile lines, buoys, anchors, and custom accessories. In parallel, our operations division, specialized in marine works, handles the installation, maintenance, and inspection of these systems directly at sea.

Thanks to this dual expertise, TEMANO offers complete, integrated, and customized solutions from the design phase to implementation.



Our products and services are intended for a wide range of sectors, maritime domains and industry actors:

- **Marinas and organized mooring areas:** installation of mooring buoys, lines, and eco-friendly anchors.
- **Boating industry professionals and recreational boaters:** high-performance, reliable mooring solutions.
- **Marine renewable energy:** anchoring systems for floating solar, tidal turbines, measurement devices, or signaling equipment.
- **Aquaculture and shellfish farming:** securing floating equipment and stabilizing culture lines.
- **Scientific and oceanographic research:** deployment of instrumented buoys for environmental or weather monitoring.
- **Local authorities and coastal managers:** signaling of sensitive areas, and securing of protected zones.
- **Specialized operations:** underwater inspection, and site cleaning.

Introduction to TEMANO

We operate throughout France as well as internationally, with projects carried out notably in India, Madagascar, Norway, and other sensitive coastal areas where environmental concerns are significant.

Committed to a genuine sustainable development approach, we pay special attention to the eco-design of our products by prioritizing durable, recyclable, and bio-based materials.

We also strive to reduce the ecological footprint of each installed system by optimizing their impact on marine ecosystems throughout their entire life cycle.

Finally, we are committed to a continuous improvement approach, incorporating feedback from the field and technological advancements to constantly enhance the quality of our services and equipment.



Temano® Installation Map

Available at : <https://temano.fr/>





TEMANO
TECHNOLOGIES MARINES NOUVELLES

Temano[®] products catalog

Temano® Product Catalog



Mooring buoy

Temano® shock absorber

Temano® sandow

Temano® textile shackle

Temano® swivel

Temano® anchor

Temano® Drilled Anchor Machine – AFOMAR

Temano® Robotised Anchoring System – SAR

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Mooring buoy



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Mooring buoy

Temano® modular buoy

The **TEMANO modular buoy** is an innovative solution designed to adapt to a wide variety of applications thanks to its modular and customizable structure.

Robust, lightweight, and easy to maintain, it delivers excellent buoyancy and supports the integration of technical equipment (including electronics, navigation aids, anchoring systems, and more) adapted to the specific requirements of each project.

Technical Description

Material	High-quality flexible HDPE
Volumes	25 - 50 - 75 - 100 L
Weight	2,2 kg : upper module 3,2 kg : other module
Dimensions (1 module)	15 x 50 cm
Chimney diameter	Ø45 mm



Customization

Standard colors available:



Product	Reference	Price excluding tax
Upper Buoy Module	BO-MOD-SUP-[color]	75€
Intermediate and Lower Buoy Modules	BO-MOD-IN-[color]	75€
Color	JA = yellow BE = blue VE = green RO = red BA = white	-



Mooring buoy

Temano® buoy 150L

Designed to meet the demands of challenging marine environments, the Temano® 150L buoy combines high buoyancy, mechanical strength, and advanced customization. It is suitable for a wide range of applications: mooring, oceanography, or signaling while ensuring superior durability and minimal environmental impact.

Technical description

Material	High-quality flexible HDPE
Volumes	150 L
Weight	9 kg
Dimensions	70 x 50 cm
Chimney diameter	Ø 50 mm



Price Excluding Tax

150L buoy 	From 160€
150L buoy    	From 170€

+ Possible Customization Options

Customization

Standard Colors Available:



+ Buoyancy reserve

+ Light inside

+ GPS system

Product reference

BO-150-[OPTIONS]-[COULEUR]

Options reference

Basic (without option)	B
Buoyancy reserve + Number of Liters	R00 (80L max)
Light	L
Transparent Facets	F
Color	BA (white) / JO (yellow) / VE (green) / RO (red) / BE (blue)

Reference exemple :

white buoy with an 80L buoyancy reserve,
light, and 3 transparent facets

→ **Reference number** : BO-150-B-R80-L-F-BA

Mooring buoy

Customized Options for the 150L Buoy

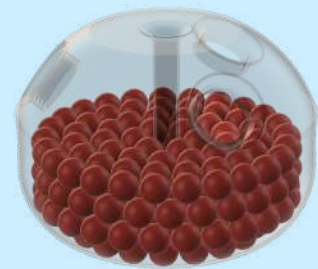
Buoyancy reserve

Intégrée à l'intérieur de la bouée Temano®, la réserve de flottabilité assure sa stabilité même en cas de choc ou d'endommagement.

Sans mousse ni billes de polystyrène, elle élimine tout risque de microplastiques dans l'océan et peut être ajustée selon les besoins du site.

Price Excluding Tax

Buoyancy reserve	1€/L
------------------	------



Light

An autonomous light can be integrated inside the Temano® 150L buoy, providing effective nighttime signaling for mooring, marking, or navigation areas.

This option offers a maintenance-free autonomy of up to 2 years.

For optimal visibility, especially in rough seas or at night, it is highly recommended to combine this option with transparent facets, which allow the light to diffuse effectively through the buoy's structure.



Price excluding tax

Light	200€
Transparent facets	5€ / facet



GPS positioning system

The Temano® 150L buoy can be equipped with a GPS positioning system, providing **real-time tracking of its position at sea**.

This option is especially useful for **organized mooring areas**. Associated features are detailed in the following section dedicated to connected buoys.

Mooring buoy

Temano® connected buoy

Temano® connected buoys are versions of our existing buoys (modular model or 150L) equipped with an integrated electronic housing.

They keep all the technical characteristics and advantages of our buoys (buoyancy, stability, durability, low environmental impact), while offering new smart features for both users and operators.

Technical Description

Real-time presence detection

GPS positioning

Water area occupancy optimization

Reservation management

Weather alerts

1 to 10 years autonomy

International payment system

International payment system



Boat owner

Advance booking via app or on-site using QR code

Push notification

Online payment

Positioning on an interactive map



User

Integration with the port management system

Reservation management

Notification system

Real-time area occupancy

References

Modular connected buoy	BOT-COT-MOD
150L connected buoy	BOT-COT-150

Mooring buoy

Additional buoy components

Temano® Textile Rod

The Temano® textile rod is a through-strop fully made of Dyneema®, a high-strength synthetic fiber. The rod is always equipped with 2 HDPE ring and is designed to replace traditional metal strops in mooring systems.

The textile rod is used to connect the boat to the mooring line by passing through the buoy.

Technical Description - textil rod

Dimensions	50 cm to 2 m
Diameter	40 mm
Material	Polyester
Breaking Load	120 kN = 12T



Technical Description - ring

	Upper ring	Lower ring
Inner diameter	60 mm	35 mm
Outer diameter	120 mm	60 mm
Thickness	50 mm	40 mm
Material	PEHD	PEHD



Technical Advantages

Lightweight
Flexibility and safety
Easy installation & handling

Environmental Advantages

Reduced environmental impact
Durable
No plastic pollution in the ocean

Type of textile rod	Length of textile rod	Reference	Price excluding tax
Textile rod for one module modular buoy	50 cm	TI-50	75€
Textile rod for 150L buoy	70 cm	TI-70	90€

Mooring buoy

Additional buoy components

Identification Markings

To facilitate the **identification and organization of mooring zones**, each Temano® buoy is equipped with three laser-engraved numbering faces, arranged to be **visible from multiple angles**.

This configuration ensures good legibility, even from a distance, and allows for **simplified management of mooring spots**, particularly in ports or ZMEL (Zones of Managed Moorings).

Technical description

Diameter	13,5 cm
Thickness	2 mm



Advantages

Stable, durable, and visible signage

Quick replacement

Customization

The background color of the plate can be customized to match the color of the buoy.



Price excluding tax

15 € / unit



Temano® catalog product

Mooring buoy



Temano® shock absorber

Temano® sandow

Temano® textile shackle

Temano® swivel

Temano® anchor

Temano® Drilled Anchor Machine – AFOMAR

Temano® Robotised Anchoring System – SAR

Temano® Anchor Exits

Integration and Applications of Temano® Products

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Temano® shock absorber

Temano® Shock Absorber is an elastomer-based system designed to absorb shocks, reduce line tension, and extend the lifespan of equipment.

Made from high-performance **natural rubber**, it features a Dyneema® textile core that provides passive safety even in the event of partial failure. An optional UV-resistant textile sleeve is available for added protection.

With an elongation capacity of up to 300%, it effectively dissipates energy caused by waves, wind, or currents, while preventing tension peaks.

A simple, robust, and corrosion-resistant design that makes it ideal for challenging marine environments.

Technical description

Lenght	from 50 cm to +10 m
Outer diameter	60 mm
Inner diameter	20 mm
Weight	2,5 kg/m (without inserts)
Elongation	Up to 300% (4× its original length)
Absorbed energy	Up to 20 kJ/m
Hardness	45 shore A / 65 shore A



Reference

Reference example: **100cm** shock absorber with **45 Shore A** hardness, protective **sleeve**, and **4m safety line** (4× shock absorber length).

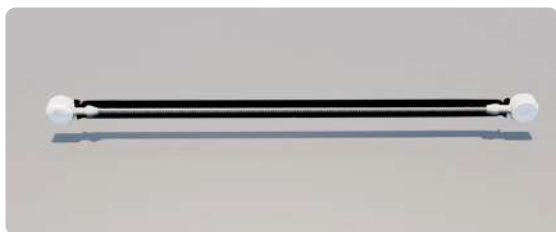
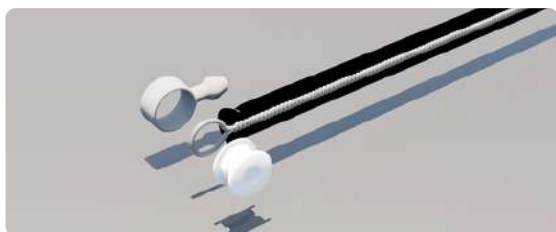
Format

AM-[L]-[D]-[G]-[S]

AM-100-45A-G-S1

Key to reference

Element	Signification	Example
AM	Temano® shock absorber	-
[L]	Lenght (cm)	50, 100, 200...
[D]	Shore A hardness	45 A, 65 A
[G]	Type of protective sleeve	GT = full sleeve GE = end sleeve
[S]	Safety line	S1 = with safety line S0 = without safety line



Temano[®] shock absorber

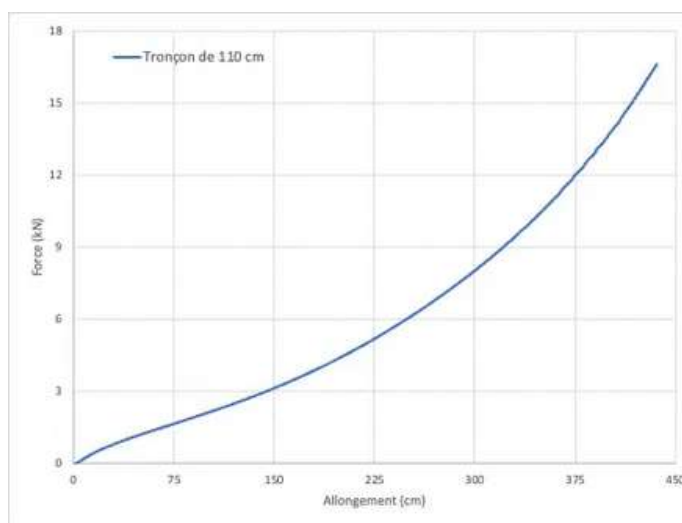
Temano[®] shock absorber components

Natural rubber

At TEMANO, we control various rubber hardness levels to precisely tailor our solutions to each need and the specific constraints of their marine environment.

Different characteristics and resistance capacities depending on the rubber hardness:

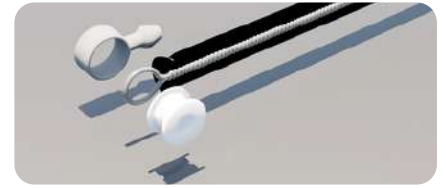
45 shore A Shock absorber	Elongation	Tension (kg)
	Initial lenght	0
	100%	220
	200%	400
	300%	700



65 shore A Shock absorber	Elongation	Tension (kg)
	Initial lenght	0
	100%	350
	200%	850
	300%	2500

Temano® shock absorber

Temano® shock absorber components



Textile insert

Temano® shock absorbers are equipped with two **Dyneema® textile inserts**, which are lighter, more durable, and easier to handle than traditional stainless steel inserts.

Combined with a **HDPE ring** replacing the thimble, they reduce shear zones, enhance compatibility with textile components, and minimize wear and corrosion.

Technical description

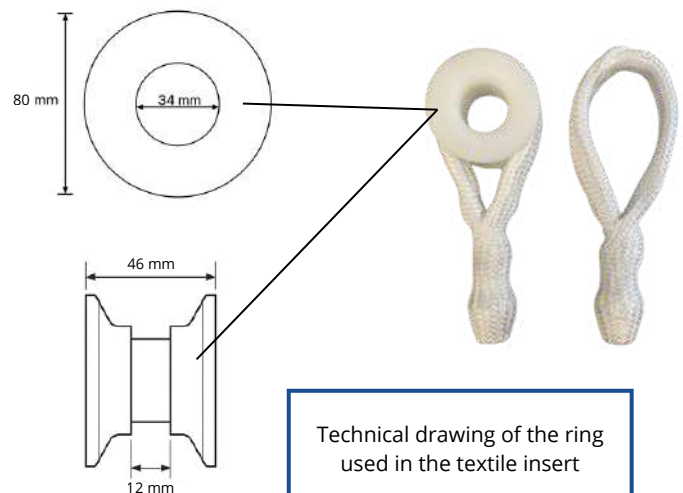
High strength

Lightweight and easy to handle

No corrosion

HDPE ring

The ring size can be customized according to your needs



Technical drawing of the ring used in the textile insert

Safety line

The **Dyneema® safety line** is located inside each Temano® shock absorber, fully protected from the outside.

The safety line is shielded against UV and abrasion and does not interfere during handling. This internal positioning notably prevents any entanglement with the rest of the line, unlike existing solutions.

Dyneema® is known for its exceptional tensile strength, light weight, long lifespan, and resistance to seawater. It is a discreet yet essential component, ensuring the overall reliability of the mooring system.



Technical description

Material	Dyneema®
Lenght	4x shock absorber lenght (ex: 4m of safety line for 1m shock absorber)
Breaking load	5 to 10 T

Temano® shock absorber

Temano® shock absorber components

Protective sleeve

To **improve the durability** of shock absorbers and ensure the protection of sensitive components, TEMANO offers protective sleeves specially designed to withstand the demands of the marine environment

Made from high-strength polyester and treated for **UV protection**, these sleeves extend the service life of the shock absorber.



Temano® shock absorber
without protective sleeve



Temano® shock absorber
with protective sleeve

Temano® shock absorber

Pricing of Temano® shock absorbers

Lenght (cm)	UV protective sleeve	Price excluding tax
50	With	250 €
	Without	280 €
100	With	480 €
	Without	550 €
200	With	750 €
	Without	880 €
300	With	1000 €
	Without	1200 €

For longer elastomer lengths or multi-strand braiding: request a custom quote.



**Braiding of 6 temano® shock absorber
Ø 300 mm, length 3000 mm**

Temano® Catalog Product

Mooring buoy

Temano® shock absorber



Temano® sandow

Temano® textile shackle

Temano® swivel

Temano® anchor

Temano® Drilled Anchor Machine – AFOMAR

Temano® Robotised Anchoring System – SAR

Temano® Anchor Exits

Integration and Applications of Temano® Products

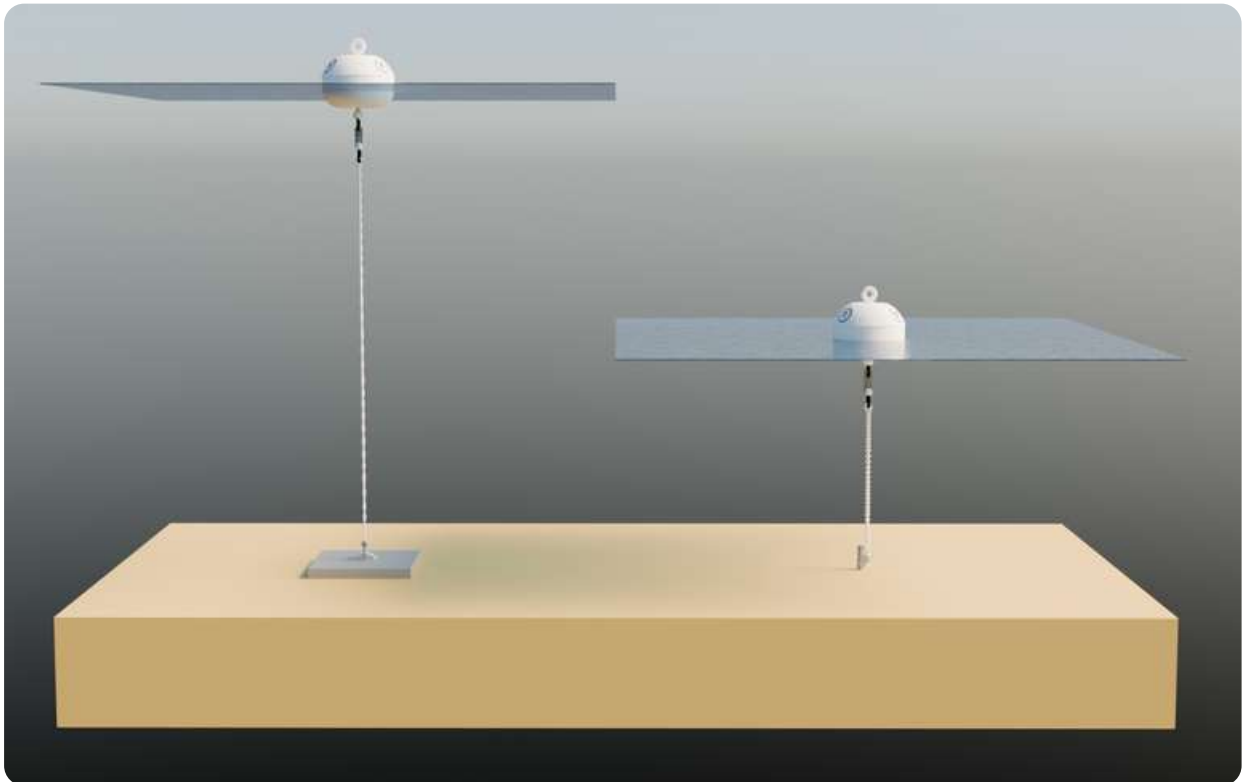
Temano[®] sandow

Temano[®] sandow is made of natural rubber and protected by a sleeve. This sleeve serves a dual purpose: it provides protection against UV and fouling, and also acts as a safety line to limit the elongation of the shock absorber.

Each end of the shock absorber is equipped with an **HDPE ring** that facilitates the attachment of textile or steel shackles.

No chain is necessary in a mooring line composed of shock absorbers, allowing for a 100% textile line.

The mooring line remains **straight regardless of the tide**. It never touches the seabed, eliminating any risk of snagging and damage to underwater habitats.



Temano[®] sandow under the influence of tides

Features & Benefits

Keeps the buoy above its anchor

Reduces the swinging radius

Lightweight and easy to handle

Adaptable to concrete block and Temano[®] anchors

Reduces shocks and tension peaks in the line

Temano® sandow

	Breaking load	Elongation	Weight	Lenght	Rubber hardness	Reference
Temano® sandow polyester sleeve Ø34mm	14T	100% (2× its original length)	1.1 kg/m	from 0.5m to +10 m	45 shore A / 65 shore A	SAN-GP34-[length]-[hardness]
Temano® sandow polyester sleeve Ø18mm	4.5T	150% (2.5x its original length)	0.8 kg/m	from 0.5m to +10 m	45 shore A / 65 shore A	SAN-GP18-[length]-[hardness]
Temano® sandow Dyneema® sleeve	4T	200% (3x its original length)	0.8 kg/m	from 0.5m to +10 m	45 shore A / 65 shore A	SAN-GD-[length]-[hardness]



Temano® sandow polyester sleeve Ø34mm



Temano® sandow polyester sleeve Ø18mm



Temano® sandow Dyneema® sleeve

Pricing of Temano® sandow

Sandow type	Price excluding tax
Sandow polyester sleeve Ø34mm	100€ + 50€/m
Sandow polyester sleeve Ø18mm	60€ + 40€/m
Sandow Dyneema® sleeve	80€ + 45€/m

Temano® Catalog Product

Mooring buoy

Temano® shock absorber

Temano® sandow



Temano® textile shackle

Temano® swivel

Temano® anchor

Temano® Drilled Anchor Machine – AFOMAR

Temano® Robotised Anchoring System – SAR

Temano® Anchor Exits

Integration and Applications of Temano® Products

Temano® textile shackle

Textile shackle, designed and developed by Temano®, is a solution combining lightness, cost-effectiveness, and environmental friendliness.

Fully made of textile, it offers a high-performance alternative to traditional steel shackles, providing a lighter and easier-to-handle solution underwater during hyperbaric operations.

Description & Customization

Dyneema® sleeve

4 layers of Dyneema®

Elastic safety line

Various sizes and strengths according to your needs

Standard colors available:  



Dimensions / References / Pricing

Breaking Load	Flat lenght between ends	Effective lenght (under tension)	Weight	Reference	Price excluding tax
3T	29 cm	9 cm	0.05 kg	MT-3T	40€
12T	35 cm	10 cm	0.11 kg	MT-12T	50€
16T	54 cm	18 cm	0.21 kg	MT-16T	65 €
20T	56 cm	18 cm	0.33 kg	MT-20T	80 €
40T	80 cm	26 cm	0.68 kg	MT-40T	110 €

Note :

We can size shackles up to 100 tons of resistance according to specific requirements.

Textile shackle is a customizable part for each project.



80T Temano® textile shackle

Temano® Product Catalog

Mooring buoy

Temano® shock absorber

Temano® sandow

Temano® textile shackle



Temano® swivel

Temano® anchor

Temano® Drilled Anchor Machine – AFOMAR

Temano® Robotised Anchoring System – SAR

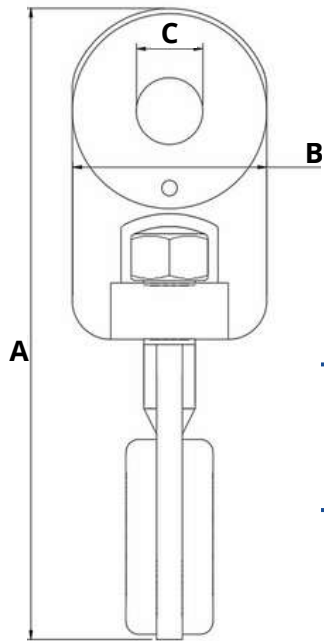
Temano® Anchor Exits

Integration and Applications of Temano® Products

Temano® swivel

Temano® swivel is a robust and innovative component designed to connect mooring elements while ensuring smooth rotation, thus preventing line twisting.

Its design combines a **duplex 2507 stainless steel** body with **HDPE rings**. Duplex stainless steel is known for its high mechanical strength and corrosion resistance. Its properties are nearly twice as superior as those of 316 stainless steel. HDPE rings are placed at the ends to ensure tribological compatibility between materials (steel, textile, etc.).



Breaking load	Material	Weight	A	B	C	Reference	Price excluding tax
20T	Duplex stainless steel/ HDPE	1,5 kg	240 mm	75 mm	26 mm	EM-20T	180 €
44T	Duplex stainless steel/ HDPE	3,4 kg	300 mm	100 mm	33 mm	EM-44T	300 €

Features & Benefits

Reduces twisting

Double rotation capacity

Its weight contributes to stabilization

Strength from 10 to 100 tons and above

HDPE rings sized to fit swivels and protect textile parts

Duplex stainless steel: high durability

Temano® Product Catalog

Mooring buoy

Temano® shock absorber

Temano® sandow

Temano® textile shackle

Temano® textile shackle

Temano® anchor

Temano® Drilled Anchor Machine – AFOMAR

Temano® Robotised Anchoring System – SAR

Temano® Anchor Exits

Integration and Applications of Temano® Products

Temano[®] anchor

Temano[®] Drilled Anchor Machine – AFOMAR

45_{min}

Time required to install an anchor at 10m

4 operators

at the surface with AFOMAR

3 divers

to install an anchor

90_{min}

Time required to install an anchor at 30m

30 m

Max depth

15 °

to install an anchor

AFOMAR machine can install anchors on all types of seabeds: mud, sand, and rock.

- **Structure:** 5m tripod, jointed on a frame to ensure perfect verticality on uneven seabeds.
- **Fast installation:** Modular and transportable; can be operated from a barge with a 30 m² deck.
- **Up to 12 anchors per day** under favorable conditions.

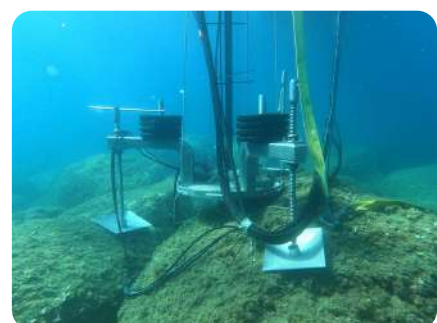


A technology designed with the environment in mind

- **Low footprint:** less than 100 cm²
- Ground pressure **lower than that of a human foot**
- Operates with **propylene glycol** (biodegradable, non-toxic oil)
- **No destruction of seabed or seagrass**
- **Removable system**

Mechanical performance & process

- Anchors made with **stainless steel rods** (galvanized or duplex), coated with epoxy.
- Injection of **PROMPT VICAT natural cement** from the bottom of the borehole, ensuring a highly resistant seal.
- Pull-out resistance up to **54 tons per anchor** for only 100 kg of material.
- **Service life > 50 years.**



Temano[®] anchor

Temano[®] Robotised Anchoring System - SAR

25 min

Time required to install an anchor at 100m

4 operators

at the surface with AFOMAR

0 diver

to install an anchor

54 T

Load capacity per anchor point

100 m

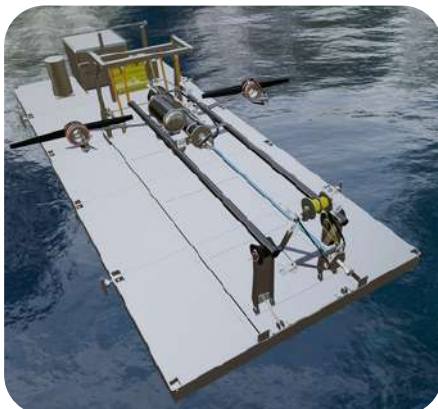
Max depth (extendable)

90 °

to install an anchor

The SAR opens **new opportunities** for more complex or **larger-scale projects**, as well as for greater depths.

- Partial **automation** of the anchoring process
- Optimization of intervention times
- **No diver** required
- Use of **dynamic positioning**
- Capability to **install anchors at any depth**
- Anchor installation on **inclined walls (up to 90°)**



An even lower environmental impact:

- Requires very **little raw material**
- Low footprint: **less than 100 cm²**
- **No ground pressure**
- **No destruction** of seabed or seagrass
- Anchors installed **without prior geotechnical survey**
- **Removable system**

Temano[®] Anchor Exits

Temano[®] rotating bollard: for textile lines

Temano[®] rotating bollard is a component specially developed for textile lines. The rotating bollard is not screwed onto the threaded rod but clamped between two nuts, allowing smooth rotation around the rod, thus preventing line twisting, reducing torsion, and extending its service life.

Features

Suitable for flexible and lightweight **textile lines**

Two-part design allowing the line to rotate around the rod
→ prevents **torsion**

HDPE ring that **protects the textile**



Advantages

Preserves the mechanical integrity of textile lines

Natural rotation of the lines, especially during dynamic use

Reduces stress on seams and splices

Temano[®] diablo: for steel chains

Temano[®] Diabolo is an anchoring component designed for steel chains. It consists of two metal parts that screw together, clamping around a link of the chain.

Features

Suitable for **steel chains**

Compatible with installations where the chain is subjected to linear tension

Easy to dismantle or replace in case of chain wear



Advantages

High strength and mechanical resistance

Chain link rotation around the Diabolo
→ prevents line twisting

Compact system with no moving parts

Temano® Product Catalog

Mooring buoy

Temano® shock absorber

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Temano® Anchor Exits



Integration and Applications of Temano® Products

Assemblies and applications of Temano[®] products

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Assemblies and applications of Temano® products

Each Temano® product can be configured and adapted according to specific requirements.

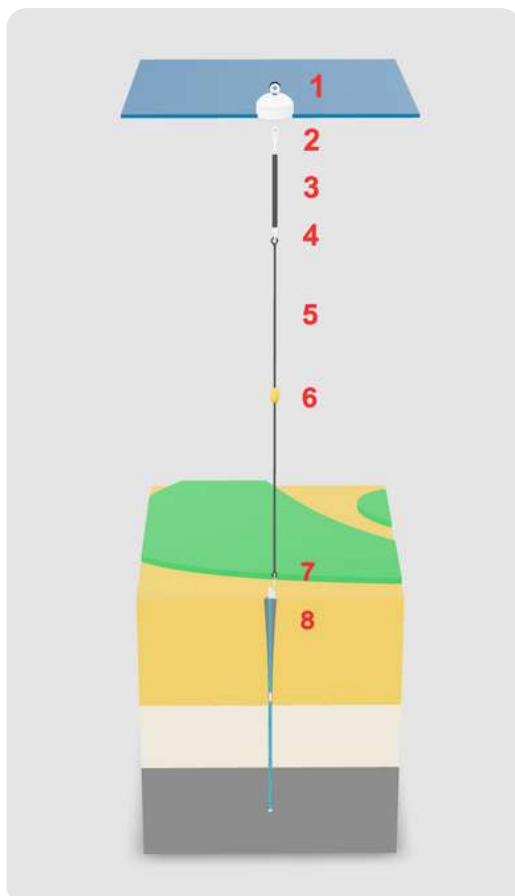
Mooring line

We offer a ready-to-use mooring line, designed for performance, safety, and durability.

Each component has been carefully selected and optimized to provide a reliable, consistent system that meets the client's needs.



Typical structure of a Temano® mooring line, from the anchor point to the buoy:



1. **Temano® buoy** - p.7
2. **Temano® swivel and textile shackle** - p.27
3. **Temano® shock absorber** - p.15
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8. **Temano® anchor: steel rod + natural cement** - p.29

Assemblies and applications of Temano® products

Uses of Temano® Shock Absorber

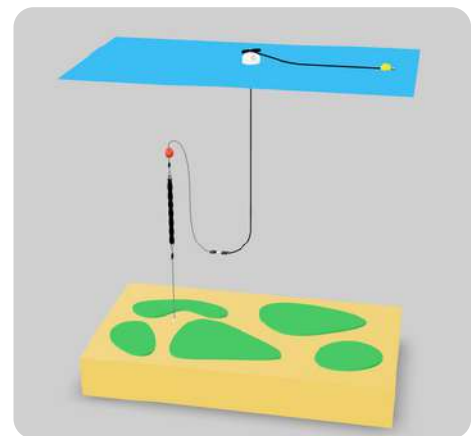
The Temano® shock absorber is versatile and can be used in a wide range of applications:

- Mooring for small boat or yacht
- Mooring of floating structures
- Dock
- Marine renewable energy
- Aquaculture
- Scientific or technical devices

Mooring for small boat and yacht

Shock absorbers can be used for **boat mooring** and help absorb shocks and tension peaks caused by wind and swell, thereby providing greater onboard comfort and effective protection for both the mooring system and the boat.

For yacht, multiple shock absorbers can be installed in parallel to distribute the loads, improve mooring performance, and ensure greater durability of the system.



New technology developed at TEMANO for large pleasure craft : multi-strand braided rubber.



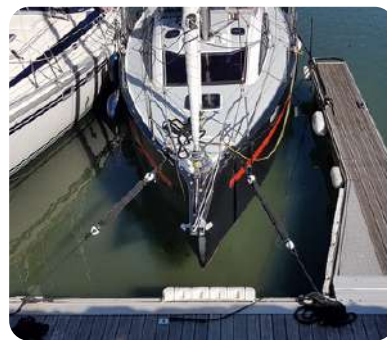
Assemblies and applications of Temano® products

Uses of the Temano® shock absorber

Mooring shock absorber

Dock mooring or chain mooring is one of the possible applications of the Temano® shock absorber.

The shock absorber is protected by a custom-made polyester sheath and specifically designed to protect the rubber, even at maximum elongation (up to 4 times its original length).

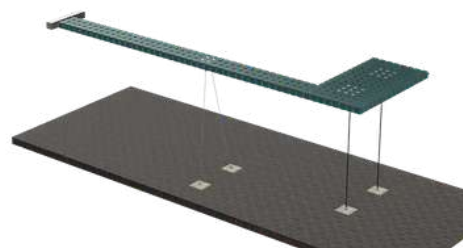


Dock

Temano® shock absorbers are used for **mooring floating docks** to compensate for water level variations, absorb shocks caused by wind and chop, and distribute loads across the structure.



Dock at low-tide



Dock at high-tide

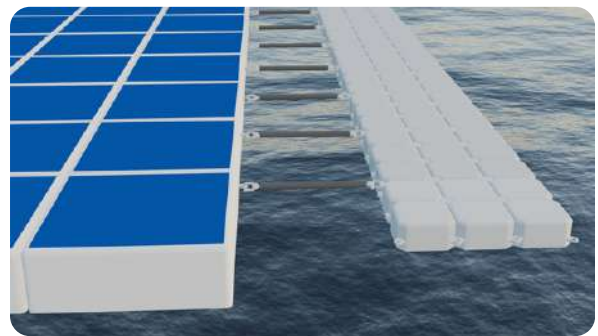
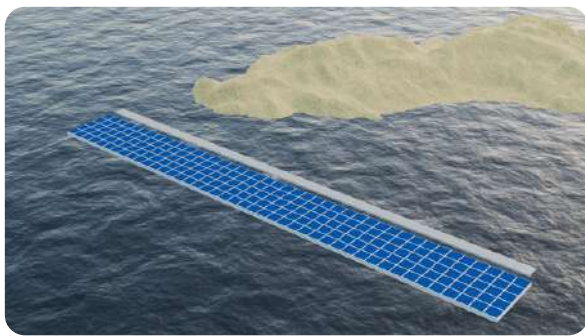
Assemblies and applications of Temano® products

Uses of the Temano® Shock Absorber

Floating solar

Temano® shock absorbers are perfectly suited for **floating solar installations**, where they help compensate for water level variations, absorb shocks caused by wind or currents, and distribute loads across the structure.

Easy to install and maintain, they are also compatible with **offshore conditions** thanks to their high resistance to waves and tension.

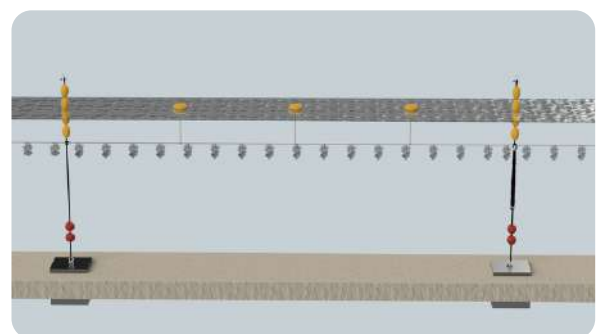
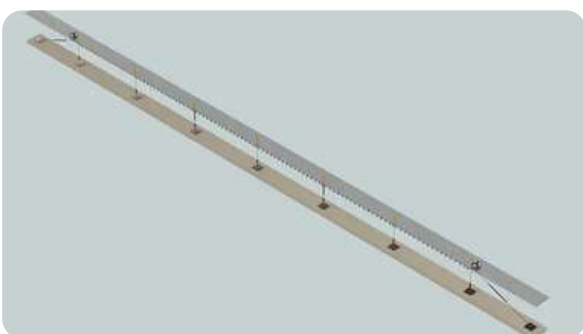


Aquaculture

Temano® systems meet the requirements of **aquaculture installations** by ensuring reliable stability of **floating structures**.

They compensate for water level variations, absorb shocks and stresses, and distribute loads without compromising the integrity of the installation.

Easy to install and maintain, they provide **high resistance** to waves, currents, and demanding marine conditions.



Assemblies and applications of Temano[®] products

Uses of the Temano[®] Shock Absorber

Buoyage

Temano[®] shock absorbers can be integrated into **port or offshore navigation systems**, providing a flexible and durable connection between the buoy and its anchor.

Shock absorbers are sized according to the specific requirements of each buoy, regardless of its size, ensuring **long-term performance** even under harsh conditions.





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Technical and environmental advantages of Temano[®] products

Advantages of Temano® products

Temano® mooring line VS classic mooring line 41

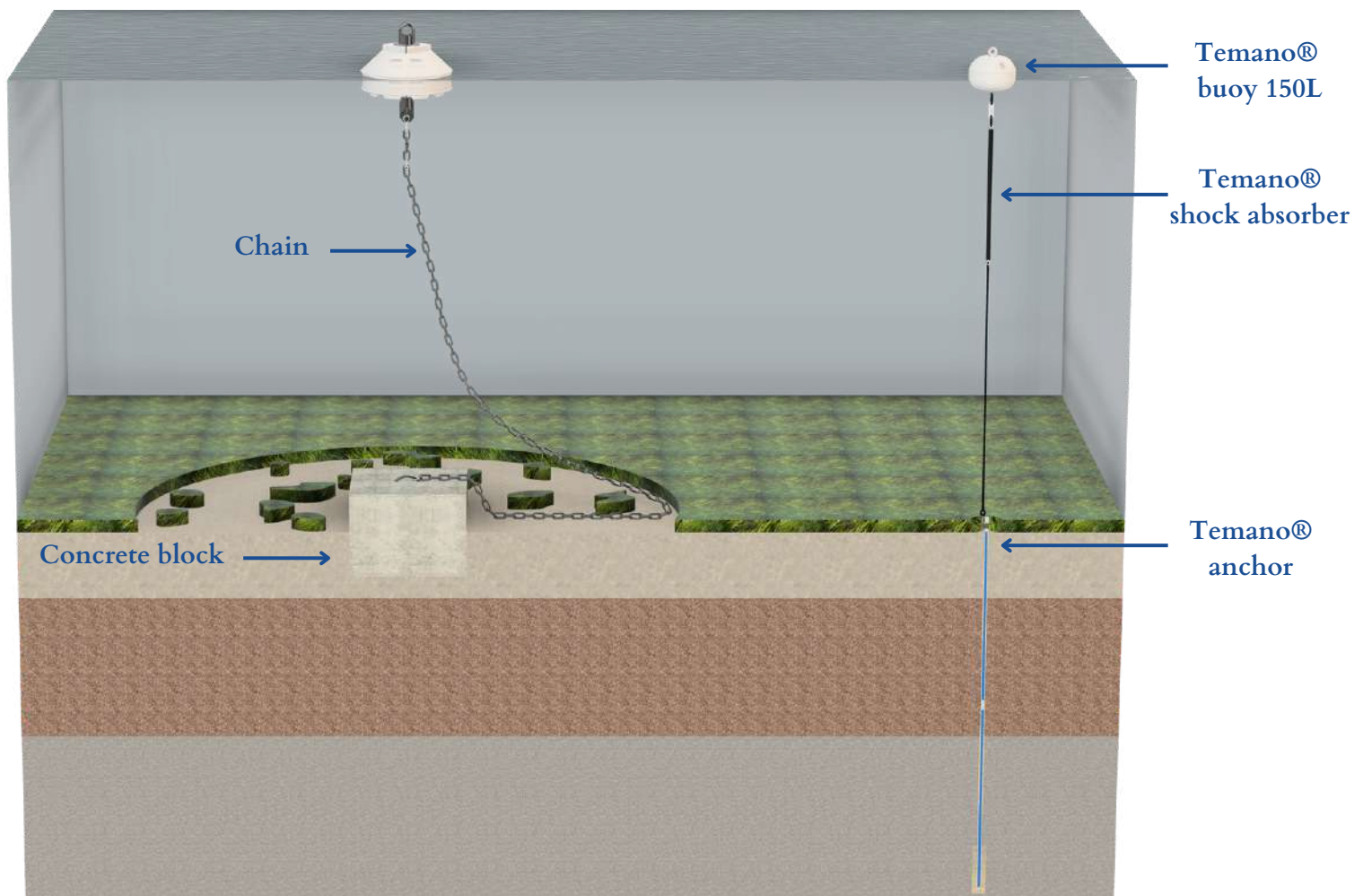
Temano® buoy VS classic buoy 42

Temano® shock absorber VS steel chain 43

Temano® textile shackle VS steel shackle 44

Advantages of Temano® products

VS Classic mooring **TEMANO® Mooring**



Advantages of Temano® products

Temano® buoy VS classic mooring buoy

Product Features	Temano® Mooring Buoy	Classic Mooring Buoy
Material	High-quality flexible HDPE	Basic LLDPE or PVC , low durability
UV Resistance	High → UV 16	Low → rapid degradation
Buoyancy	Not foamed → equipped with PE balls to increase buoyancy	Foamed → foam breaks down in oceans
Environmental Impact	Low → eco-design → local manufacturing → 55% less CO2 emissions → low risk of plastic pollution	High → heavy, non-durable materials → higher CO2 emissions → risk of plastic pollution
Safety & Stability	Optimized design → no chafing on the mooring line → better stability	Risk of premature wear at buoy exit points
Customization	Integrated options → buoyancy reserve → light → GPS	Very limited or absent
Durability	Long service life > 10 years → resistant to marine conditions	Fragile → limited service life



Temano® buoy

Advantages of Temano® products

Temano® shock absorber VS steel chain

Comparison for a similar energy absorption capacity of 20 000 J:

Product Features	Temano® Shock Absorber 1m	Classic Steel Chain (20m, Ø30mm)
Material	Natural rubber	Steel
Absorption capacity	20 000 J	20 000 J
Required length	1m → elongation up to 4m: 300%	20m → no elongation
Weight	2,5kg (without inserts)	About 320 kg
Marine resistance	Haute → courants / houle / UV / corrosion	Rapid corrosion in saline environment
Handling	Lightweight → very easy to handle	Very heavy → difficult to handle
Maintenance	Low → no risk of seizing	High → rust, wear, frequent replacement
Impact on seabed	None → no contact with seabed	High → scraping, destruction of seagrass beds → release of metal particles
Environmental impact	Very low → natural rubber, local assembly	Very high → steel, heavy production
Durability	Long service life, no corrosion	Accelerated wear



Temano® shock absorber

Advantages of Temano® products

Temano® textile shackle VS steel shackle

Product Features	Temano® shackle	Steel shackle
Material	Dyneema®	Steel
Mechanical strength	Very high → equivalent to steel	High but prone to corrosion
Weight	Low	High → up to 40x heavier for equal strength
Underwater handling	Easy to handle	Difficult to handle → requires heavy tools
Corrosion	None → synthetic textile	Progressive corrosion → loss of strength
Durability	Long service life, even in saline environment	Risk of rust → metal particles in water
Textile compatibility	Perfect	Risk of chafing or abrasion
Maintenance	None or very low	Frequent → cleaning / replacement
Environmental impact	Low → optimized materials, local manufacturing	High → steel, transport, processing, degradation in water
Installation	Fast → tool-free, secure	Slower → requires wrench or tool



Temano® shackle



Steel shackle broken by metal corrosion due to the marine environment.



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For any additional information,
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