

The smart alternative

Silicone fouling release system

Revolutionary fouling cleaning

For all types of boats

Low friction

hempelyacht.co.uk






Best in test
BÅD
May 2018

Discover Hempel's latest innovation and technological achievement - Silic One!



Silic One

Available in shades:

-  Red
-  Black
-  Blue

Biocide free product based on silicone and hydrogel, which gives the coating surface water-like properties making it difficult for fouling organisms to attach to the hull and easy for them to be removed when the boat is in motion. Other benefits are simple fouling cleaning and easy reapplication, resulting in long term cost reduction. So, why wouldn't you give your boat a completely new treatment with Hempel's fouling release system?

What is Fouling Release System?

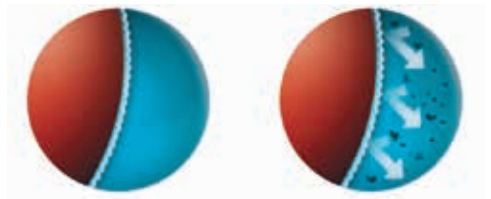
- It is a biocide free paint/method to prevent fouling
- It is a "non-stick paint"
- Copper free

What is hydrogel?

Hydrogel is based on unique, non-reactive polymers that are added to the paint, creating an invisible barrier between the hull surface and the water. Fouling organisms perceive the hull as a liquid and are consequently attaching to a much lower extent.

If the hydrogel is removed can it then build up again?

The polymers responsible for the formation of the hydrogel are evenly distributed in the paint film. If the original hydrogel is removed, a new hydrogel layer instantly builds up when the polymer, responsible for hydrogel formation, comes into contact with water.



Unique, non-reactive polymers form a hydrogel layer between the substrate and water.

Fouling organisms perceive the hull as a liquid and are consequently unable to attach to the hull.

Antifouling vs. Fouling Release

Which fouling control method is right for you?

	Antifouling	Silicone Fouling Release
How it works?	Antifouling works by releasing biocides, in a controlled manner, to prevent fouling organisms from attaching to the boat. Upon exposure to water the top layer of antifouling is dissolved, and the biocides “leach” onto the coating surface, therefore keeping fouling organisms away.	Unlike antifouling, the Fouling Release System doesn't rely on biocides. This product is based on silicone and hydrogel, which gives the coating surface water-like properties, making it difficult for fouling organisms to attach firmly to the hull and easy for them to be removed when the boat is in motion.
Cost difference	In the first year costs for antifouling are lower compared to the silicone fouling release system, but maintenance costs in the second year are higher.	The Fouling Release System has higher costs in the first year, but maintenance costs in the second year will be lower. Silic One reduces the friction, hence increasing speed and saving fuel.
Types of boats	There are different antifouling paints for different types of boats, depending on the substrate and type of water the boat will be sailing.	The Fouling Release System can be used on all types of boats, except wood, and all types of water. The frequency of usage and speed can influence amount of fouling, so the best performance is expected on motor boats.

Silicone Fouling Release System

Silicone fouling release system can be applied on previously coated boats and new boats.

Previously coated boats

CASE 1 – Removal of old antifouling

CASE 2 – Application on top of old antifouling

New boats

CASE 3 – Untreated new surface with epoxy

CASE 4 – Untreated new surface without epoxy

General Application Advice

- Please read and carefully follow all the instructions before painting.
- Remember to check the shelf life before use.
- Painting should be avoided if there is a risk of rain!
- The paint is sensitive to humidity, therefore only open the tin just before use.
- Hempel's Silic One Tiecoat and Silic One can be used up to 1 hour after opening the tin. A tin that has been opened cannot be stored for later use.
- It is strongly advised to apply minimum the recommended film thickness for best performance!
- **For the initial application of Hempel's Silic One, two coats are required, but for subsequent seasons one coat will be sufficient.**
- Pour the paint into a paint tray and replace lid during application.
- The boat can be launched 24h after last coat has been applied. Maximum launch time is 1 month.

Tools



Short haired or felt roller is ideal for the application of the Silic One system.

Application Options

Previously Coated Boats

CASE 1

Removal of old antifouling and application of full system



1. Light Primer

2. Silic One Tiecoat

3. Silic One

Surface preparation

Remove old antifouling down to existing two component primer. Abrade, clean and dry the surface.

Application

Apply layers of the system as indicated below. In case the recoating interval is exceeded, a new coat of Hempel's Light Primer or Silic One Tiecoat must be applied accordingly.

Hempel's	Layers
Light Primer	1 layer
Silic One Tiecoat*	1 layer 20°C: min 2h, max 4h 10°C: min 4h, max 8h
Silic One	1 layer 20°C: min 8h, max 48h 10°C: min 16h, max 48h
Silic One	1 layer 10°C & 20°C: min 16h

System

1 × Silic One	100 micron wet
1 × Silic One	100 micron wet
1 × Silic One Tiecoat	min 100 micron wet
1 × Light Primer (thinned 5%)	120 micron wet

* Hempel's Silic One Tiecoat must be applied to full coverage to ensure adhesion.

CASE 2**Application on top of old antifouling in good condition**

- easy switch to Silic One system



Hempel's Silic Seal is a two component epoxy primer for an easy conversion from antifouling to Silic One Fouling Release System. It can be applied on previously painted antifouling in good condition.

Surface preparation

Identify the condition of antifouling you currently have on your boat. Use a metal scraper to determine whether the aged antifouling adheres sufficiently. In case of bad adhesion, remove all loose/brittle layers. Abrade with wet abrasive paper. Rinse carefully with freshwater and allow the surface to dry.

Application

Mix the two components of Hempel's Silic Seal thoroughly to an even consistency. Be aware that the product has a very low viscosity and any runs and sags should be brushed out immediately. Thinning is NOT recommended.

Pot life at 20°C: 8 hours

Minimum application temperature is 5°C.

In case the overcoating interval is exceeded, a new coat of Hempel's Silic Seal or Silic One Tiecoat must be applied accordingly.

Hempel's	Layers
Silic Seal	1 layer
Silic One Tiecoat	1 layer 20°C: min 2h, max 4h 10°C: min 4h, max 8h
Silic One	1 layer 20°C: min 8h, max 48h 10°C: min 16h, max 48h
Silic One	1 layer 10°C & 20°C: min 16h

System

1 × Silic One	100 micron wet
1 × Silic One	100 micron wet
1 × Silic One Tiecoat	min 100 micron wet
1 × Silic Seal	75 micron wet

New Boats

CASE 3

New boat or bare boat with epoxy



1. Light Primer

2. Silic One Tiecoat

3. Silic One

Surface preparation

Clean with a suitable detergent and sand with dry abrasive paper (P120). Carefully clean with water and allow the surface to dry.

Application

Apply layers of the system as indicated below. In case the recoating interval is exceeded, a new coat of Hempel's Light Primer or Silic One Tiecoat must be applied accordingly.

Hempel's	Layers
Light Primer	1 layer
Silic One Tiecoat	1 layer 20°C: min 2h, max 4h 10°C: min 4h, max 8h
Silic One	1 layer 20°C: min 8h, max 48h 10°C: min 16h, max 48h
Silic One	1 layer 10°C & 20°C: min 16h

System

1 × Silic One	100 micron wet
1 × Silic One	100 micron wet
1 × Silic One Tiecoat	min 100 micron wet
1 × Light Primer (thinned 5%)	120 micron wet

CASE 4

New boat without epoxy



1. Light Primer

2. Silic One Tiecoat

3. Silic One

Surface preparation

Clean with a suitable detergent and sand with dry abrasive paper (P120). Carefully clean with water and allow the surface to dry.

Application

Apply layers of the system as indicated below. In case the recoating interval is exceeded, a new coat of Hempel's Light Primer or Silic One Tiecoat must be applied accordingly.

Hempel's	Layers
Light Primer	4-5 layers total 300µm dft
Silic One Tiecoat	1 layer 20°C: min 2h, max 4h 10°C: min 4h, max 8h
Silic One	1 layer 20°C: min 8h, max 48h 10°C: min 16h, max 48h
Silic One	1 layer 10°C & 20°C: min 16h

System

1 × Silic One	100 micron wet
1 × Silic One	100 micron wet
1 × Silic One Tiecoat	min 100 micron wet
5 × Light Primer	300 micron dry

Cleaning

High speed motor boats (min 20 knots)

Hempel's Silic One is self-cleaning on high speed motor boats.

Slow speed boats – sailboats

The coating can be cleaned as frequently as desired/required, thus maintaining a perfectly clean surface with extremely low friction.

Hempel's Silic One is easy to clean. You can use one of two below options:

Option 1

Use a high pressure, fresh water wash to clean the surface.

Option 2

Use a dense sponge or a cloth and then rinse with a hose. Be careful not to scratch the surface while cleaning.

IMPORTANT

Do not use a hard brush, bristles or similar.

Maintenance

Maintenance of Hempel's Silic One is easy and simple. Maintenance cost is lower compared to traditional antifouling. In order to maintain the system, a new layer of topcoat should be applied every year.

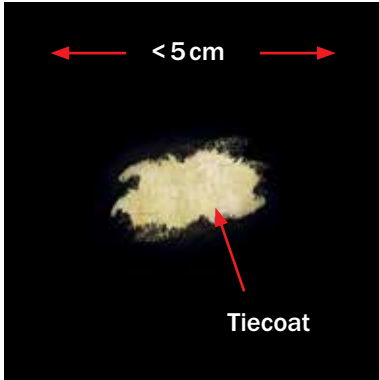
If the boat has been on land for a period of more than 1 month, wash the boat with soap (boat shampoo) and then apply one new coat of Hempel's Silic One prior to launch. If the boat stays in the water all year, a new coat every year may not be necessary, but more frequent cleaning may be required.

Repair of damages

The most important is to distinguish if the damaged area is above or below 5 × 5 cm.

Light damage below 5x5 cm

Damage description



Hempel's Silic One (topcoat) is damaged and Silic One Tiecoat (yellow coat) is visible. Hempel's Silic One Tiecoat may also be slightly damaged, but you cannot see through it.

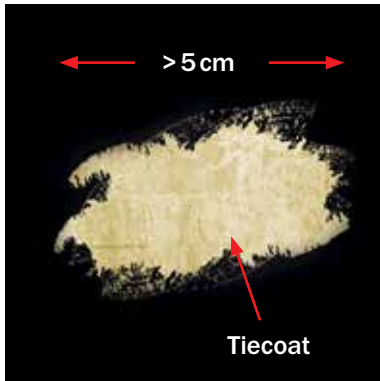
Solution



1. Put 1 layer of Hempel's Silic One (topcoat) on the damage (and complete underwater boat surface when re-painting).

Light damage above 5x5 cm

Damage description



Hempel's Silic One (topcoat) is damaged on a larger area than 5 cm and Silic One Tiecoat (yellow coat) is visible. The tiecoat may also be slightly damaged, but you cannot see through it.

Solution



1. Carefully remove all loose coating.



4. Put on the clean and dry damaged area 1 layer of yellow Hempel's Silic One Tiecoat on a slightly larger area than the damaged area.



2. Clean the damaged area with boat shampoo.



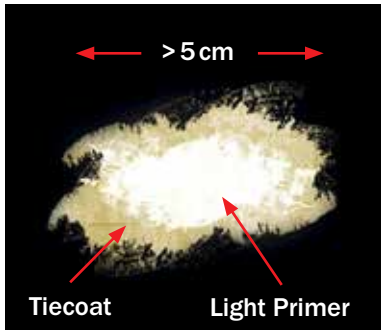
5. Put 1 layer of Hempel's Silic One (topcoat) on the damaged area slightly larger than the area with Hempel's Silic One Tiecoat (complete underwater boat surface when re-painting).



3. Rinse with clean water and let dry.

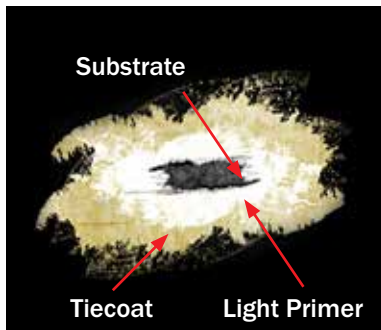
Medium & heavy damage above 5 x 5 cm

Damage description



Medium Damage

Hempel's Silic One (topcoat) is completely gone, the Hempel's Silic One Tiecoat (yellow coat) is damaged and the white epoxy primer (Hempel's Light Primer) is visible. The epoxy primer might also be slightly damaged but you cannot see through it.



Heavy Damage

You can see all the way through the coating system to the substrate underneath.

Solution



1. Carefully remove all loose coating.



5. Apply 1 layer of Hempel's Light Primer* on the damaged area on a slightly larger surface than the damaged area.



2. Clean the damaged area with boat shampoo.



6. After drying, the paint that has been applied next to the repair area and upon needs to be loosened and cut off.



3. Rinse with clean water and let it dry.



7. When the surface is dry, apply 1 layer of Hempel's Silic One Tiecoat (yellow coat) on a slightly larger area than the applied primer area.



4. Sand the damaged area with the sand paper and remove any remaining dust with a cloth.



8. Apply 1 layer of Hempel's Silic One (topcoat) on the damaged area slightly larger than the area with Hempel's Silic One Tiecoat (complete underwater boat surface when re-painting).



Key Advice

- * In case heavy damage above 5×5 cm apply 5 layers of Hempel's Light Primer.

Silic one for propellers



CASE 1 Propeller painted with AF

Surface preparation

- Remove old antifouling
- Clean with Hempel's Pre-Clean (for aluminium propellers make sure that Hempel's Pre-Clean has been thinned 1:20)
- Abrade with 40 grade paper. Wash with freshwater and allow to dry, before applying relevant specification (see below). Apply as fast as possible the primer to avoid oxidation.

Application

Hempel's	Layers
Light Primer	1 layer of 20% thinned 1 layer of 0-5% thinned
Silic One Tiecoat	1 layer 20°C: min 2h, max 4h (after application of LP) 10°C: min 4h, max 8h (after application of LP)
Silic One	1 layer (apply as much paint as possible) 20°C: min 8h, max 48h (after application of Silic One Tiecoat) 10°C: min 16h, max 48h (after application of Silic One Tiecoat)

CASE 2 Propeller not painted previously

Surface preparation

- Clean with Hempel's Pre-Clean (for aluminium propellers make sure that Hempel's Pre-Clean has been thinned 1:20)
- Abrade with 40 grade paper. Wash with freshwater and allow to dry, before applying relevant specification (see below). Apply as fast as possible the primer to avoid oxidation.

Application

Hempel's	Layers
Light Primer	1 layer of 20% thinned 1 layer of 0-5% thinned
Silic One Tiecoat	1 layer 20°C: min 2h, max 4h (after application of LP) 10°C: min 4h, max 8h (after application of LP)
Silic One	1 layer (apply as much paint as possible) 20°C: min 8h, max 48h (after application of Silic One Tiecoat) 10°C: min 16h, max 48h (after application of Silic One Tiecoat)

FAQ

Will I save fuel with Silic One?

Yes, due to easy cleaning of the surface, coating can be free from fouling and the hull will have less friction in the water.

Can I go faster with Silic One?

Yes, the reduced friction of a clean coating will increase speed.

Can Silic One be applied at low temperatures?

Silic One can be applied down to 10°C.

How sensitive is Silic One to moisture?

Silic One requires a dry surface prior to application. Do not apply Silic One tiecoat or Silic One when rain is expected or on a wet substrate.

How soon can I launch the boat after applying Silic One?

The boat can be launched from 24 hours to maximum 1 month after applying Silic One.

Can Silic One be applied on top of old antifouling?

Yes! With Silic seal you can apply on top of antifouling in good condition (good condition means = if you would normally apply another layer of antifouling – it is OK to apply Silic One system with Silic Seal primer as well).

Is it possible to overcoat Silic One with traditional antifouling?

Silic One will have to be removed if you want to convert to traditional antifouling. Only fouling release coatings will stick to Silic One.

At what speed will the self cleaning take effect?

At faster speeds the self cleaning will be most effective. Even at lower speed self cleaning is possible with constant use.

Silic One is soft. Does it encounter a lot of mechanical damage?

When scratching with a nail, the silicone may feel mechanically weak, but when the force is applied on a larger area, for instance with a fender, the silicone has a good abrasive resistance. This is primarily because the coating is soft and absorbs the energy.

What do I do if my Silic One gets a scratch?

It is easy to repair; simply re-build the paint system in the damaged area.

Will it be a problem if the applied surface is not completely smooth?

No, you will have the same performance even though the paint surface is not complete smooth.

Can Silic One for propeller be applied on all types of propeller materials?

Silic One for propeller can be applied on all types of metals and alloys. Epoxy and fiberglass based composites is also possible. Remember to use primer before applying the Silic One System.

How carefully should the pretreatment of the propeller be done?

You should do a proper cleaning and pretreatment (see application instruction). You should not paint on grease and oil.

How do I know if I get enough paint on the propeller?

You should apply as much paint as possible, but without sagging.

Can I polish the propeller during the season?

No, you should not polish the propeller during the season, you can clean it with a soft sponge instead.

Can Silic One be removed?

Yes. You can use Hempel's Silicone Remover 99450 available in 5l cans. Contact your local shop for ordering the product.

Hempel's Silic One

Silicone fouling release system
Fouling? Dont fight it. Release it.

Since 1915 Hempel has been producing protective coatings that help customers to safeguard their assets whilst keeping them looking their best. Today we are a world-leading supplier of trusted solutions in the Protective, Marine, Container, Decorative and Yacht markets. Employing over 6,000 people, across 80 countries worldwide, with 27 factories and more than 150 stock points globally. This includes many recognised brands like Crown Paints, Blome International Inc, Schaeppman and Jones-Blair.

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