



# Technical Data Sheet

## NM Böldspärr FS 023

Utg: 2015-10-28

Ers: 2016-01-29

Rev: 2018-02-27

Page 1 of 4

### General Description

**NM Böldspärr FS 023** is a solvent-free pigmented epoxy that is developed to protect the polyester hull against the so-called "osmosis" and as an alternative treatment under the water line in freshwater.

### Application areas

Treatment of polyester hulls with "osmosis" and the treatment of new boats for prevention.

### Processing Instructions

Before treatment with **NM Böldspärr FS 023** should laminates and any core material to be dried to equilibrium. This means that the drying process to be followed with moisture-indicating instruments such as Tramex Skipper.

Note; this process can take a long time. Since one of the conditions for blistering (osmosis) is water in the laminate, so we should not treat a non desiccated hull.

At epoxy treatment, the temperature must be above 10°C on the surface. There must not be a risk that the dew falls on treated surfaces during the curing process. Work outdoors should be avoided if possible.

#### Case "osmosis"

All antifouling paint has to be removed. Then blast the hull so carefully that all the blisters open. Alternatively, remove all the gelcoat. Start by pressure washing the hull. Then it should be hand washed with a sponge and clean water at least at three occasions.

#### Preventing

New hulls have traces of mold release agent on the surface that must be removed. Washing with acetone is usually sufficient, but changing cloths frequently is necessary because the wax gets stuck here. The gel coat should then be ground so that the surface is completely flat. Wet sanding is usually appropriate method.

Wash the sanded surface with acetone and clean rags to remove sanding residue.

### Planning

During a treatment it is important to make a plan. The launching will take place later, so do not put your boat in the first line.

In the fall you open the hull by blasting or grinding. After that, the rest of autumn and early winter is devoted to washing and dehydration.

### Mixing instructions

1. To handle **NM Böldspärr FS 023** you must have access to a scale, a mixing vessel with straight sides and a flat bottom and a rectangular mixing stick with straight edges about 1/5th part of the mixing vessel diameter.
2. Set the first vessel 1 on the scale. Tare (Zero the scale with vessel 1).
3. Pour the appropriate amount of **NM Böldspärr FS 023** in the vessel 1. Read the weight.
4. The weight **NM Böldspärr FS 023** is multiplied by 0.6 to determine how much NM Härdare 007 Tix to be added. This gives the mixture ratio of 100 – 60 by weight.
5. Pour the calculated weight of NM Härdare 007 Tix in vessel 1. Mix well.
6. Take a second vessel. Scrape out the contents of the vessel 1 to vessel 2 and mix further in vessel 2 (this is done to avoid unmixed material from the bottom and sides of the vessel 1 to be applied).
7. Apply the mixed material by brush alternatively roller. If a roller is used, be sure to check the applied amount. Smooth the area with a brush. Remember the pot life; do not mix quantities greater than that which can be put on before the material begins to cure.

**NOTE!** Wear eye protection and avoid skin contact by suitable protective clothing. Please also read our *Recommendations for those who deal with epoxy resins and hardeners.*

## NILS MALMGREN AB

P.O.Box 2039  
S-442 02 YTTERBY

Phone: 0303-936 10  
Fax: 0303-928 55

Quality certified since 1990

E-mail: info@nilsmalmgren.se  
Home site: www.nilsmalmgren.se



## Processing Instructions

The temperature is an important factor. This instruction is always related to + 20°C. Is there + 15°C at the surface, it will take about 50% longer, ie one day will be 36-40 hours.

Is gel coat removed, the surface should be primed with **NM Laminering 275**, (see data sheet for proper mixing ratio), possibly colored, 1 - 2% NM White pasta. Use the same technique as described under **Mixing Instructions**. Consumption is estimated to be approximately 100g/m<sup>2</sup>. When the primer has cured, it should be sanded to a matt finish.

Remove all sanding dust residues, and if the surface is uneven as putty hull with **NM Spackel 206 Lätt** (see data sheet). Sand the filled surfaces. No rough surfaces may occur.

If the surface smoothness is satisfactory, the hull is ready for the treatment with **NM Böldspärr FS 023**, if not, repeat filling with subsequent grinding.

**NM Böldspärr FS 023** should be applied in at least two layers, each about 150 g/m<sup>2</sup>. Shall more than two layers be applied, even each of these should be 150 gram/m<sup>2</sup>. To get the barrier to be fully functional, it is important that the right amount is applied. The density of the barrier is directly proportional to the layer thickness.

## Consumption of material

The approximate surface area can be calculated as follows:

Fin keel:  $Lvl \times depth \times 1.3 = m^2$  bottom area

Long keel:  $Lvl \times depth \times 1.5 = m^2$  bottom area

Motorboat:  $Lvl \times width \times 1.3 = m^2$  bottom area

Lvl = The length at the waterline

## To read a dew point table

If the air temperature eg is +20°C and relative humidity of 60%, so we can read that the dew point is +12°C. This means that if the temperature drops from +20°C to +12°C, dew forms.

To be sure that dew does not fall out, the surface should be coated at a temperature of + 3°C above dew point.

## Dew Point Table

Temp. °C	Dew point in °C at a relative humidity of					
	50 %	60 %	65 %	70 %	80 %	90 %
10	0.1	2.6	3.7	4.7	6.7	8.4
11	1.0	3.5	4.6	5.6	7.6	9.4
12	1.9	4.5	5.6	6.6	8.6	10.4
13	2.8	5.4	6.6	7.6	9.6	11.4
14	3.7	6.4	7.5	8.6	10.6	12.4
15	4.7	7.4	8.5	9.5	11.5	13.4
16	5.6	8.3	9.5	10.5	12.5	14.4
17	6.5	9.2	10.4	11.5	13.5	15.3
18	7.4	10.2	11.4	12.4	14.5	16.3
19	8.3	11.1	12.3	13.4	15.5	17.3
20	9.3	12.0	13.3	14.4	16.4	18.3
21	10.2	12.9	14.2	15.3	17.4	19.3
22	11.1	13.8	15.2	16.3	18.4	20.3
23	12.0	14.8	16.1	17.2	19.4	21.3
24	12.9	15.7	17.0	18.2	20.3	22.3
25	13.8	16.7	17.9	19.1	21.3	23.2
26	14.8	17.6	18.8	20.1	22.3	24.2
27	15.7	18.6	19.8	21.1	23.2	25.2
28	16.6	19.5	20.8	22.0	24.2	26.2

*This is a simplified table. See NM Båtepxi for a complete table.*

## Colors

To meet most of the colors that are used on boats, we have the following:



Standard is black. The blue is RAL 5002, the red RAL 3004 and the white is a slightly yellowish white.

## NILS MALMGREN AB

P.O Box 2039  
S-442 02 YTTERBY

Phone: 0303-936 10  
Fax: 0303-928 55

*Quality certified since 1990*

E-mail: info@nilsmalmgren.se  
Home site: www.nilsmalmgren.se

## To apply the osmosis barrier

First select an area of 1 m<sup>2</sup> on the hull.

Read the mixing instructions!

Then weigh 100 grams **NM Böldspärr FS 023** and add 60 grams **NM Härdare 007 Tix**. Mix according to the instructions

Distribute the mixed amount with a brush on the marked area. The right amount is now applied for one layer. Continue to treat the rest of the hull so it looks the same as the first area.

When the first layer is cured (about one day), it should be wet sanded by hand to a matt surface, **no blank spots**. A sanding sponge is a good tool. Appropriate grading is 180-240. Rinse with clean water and dry with a clean rag and acetone. Let dry for about two hours and apply the next layer in the same way.

Should more coats be applied, the wet sanding is repeated between each layer.

After curing one week, the surface is wet sanded in the same way as before if an antifouling paint is to be applied.

The antifouling paint is applied in accordance with manufacturer's instructions.

The boat should not be launched until the last layer of epoxy has cured for **at least seven days at +20°C**, which corresponds to 14 days at +10°C.

Is it only minor injuries treated these surfaces locally according to *Case "osmosis"*.

**NOTE!** Major damages are laminated with fabric and **NM Laminering 275** before treatment.

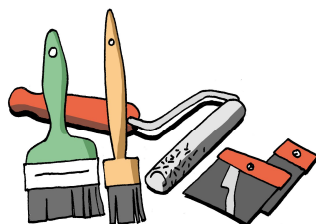
## Tools

Applying with a brush and a mohair roller 18.

Smoothing with a brush.

Sanding with wet sandpaper - not machine.

Sanding with wet abrasive sponge or sand paper.



## Typical Properties

**Resin** NM Böldspärr FS 023  
**Hardener** NM Härdare 007 Tix

### Mixing ratio

Resin – Hardener 100 – 60 by weight

*Density 20°C:* 1094 kg/m<sup>3</sup>

*Viscosity 25°C:* Slight thixotropic

*Potlife 100g 20°C:* 40 min

*Dry content:* 100%

*Lowest temperature of application:* +10°C

*Colour:* Black

*Consumption (minimum):* 2 x 0.150 kg/m<sup>2</sup>

*Normal packing:* 8.0 kg  
2.670 kg

*Cleaning solvent:* Acetone.

## Note

### Quality assurance:

In order to assure the quality of application, we have a form where important information is documented. The form is available from Nils Malmgren AB, telephone +46 303 936 10

## Disclaimer

This product's technical specifications are developed by experience in field and laboratory by us.

Fully cured will take place at seven days at +23°C and 50 % RF.

We reserve the right to change products as well as data. Current data sheets are available at our website and with us. We cannot assume responsibility for use in areas that we do not know. The user shall always evaluate products for their intended use and we guarantee only the material properties. For every product we offer reference objects separately.

## NILS MALMGREN AB

P.O Box 2039  
S-442 02 YTTERBY

Phone: 0303-936 10  
Fax: 0303-928 55

Quality certified since 1990

E-mail: info@nilsmalmgren.se  
Home site: www.nilsmalmgren.se

# Quality assurance for applying NM Böldspärr FS 023

Date: .....

## Layer 2

Area to be coated: .....m<sup>2</sup>

Is the hull sanded matt?

Yes  No

Is the hull dehydrated to equilibrium?

Yes  No

Is the hull washed?

Yes  No

Controlled with: .....

If yes, has it been at least 2 hours since wash?

Yes  No

Measured moisture content:.....

Temperature in the air:.....°C

When was the antifouling paint removed?  
.....

Temperature of the hull:.....°C

Is the hull blasted?

Yes  No

**Check dew point table!**

If yes, sand or carbon dioxide?

Sand  Carbon dioxide

Time when you began to paint:.....

Is the hull washed?

Yes  No

The total consumption of **NM Böldspärr FS023/NM Härdare 007 Tix** used for the hull:

.....kg

If yes, has it been at least 2 hours since wash?

Yes  No

Time when you stopped painting: .....

Is the gelcoat removed?

Yes  No

## The final calculations

Total consumption in kg of **NM Böldspärr FS 023/NM Härdare 007 Tix** will be the total area in m<sup>2</sup> x 0.3. Add the two lines of consumption and check that the figure seems reasonable.

## Layer 1

Temperature in the air:.....°C

In case of doubt, contact your nearest dealer or Nils Malmgren AB.

Temperature of the hull:.....°C

**Check dew point table!**

Time when you began to paint:.....

The total consumption of **NM Böldspärr FS023/NM Härdare 007 Tix** used for the hull:

.....kg

Time when you stopped painting: .....

## NILS MALMGREN AB

P.O Box 2039  
S-442 02 YTTERBY

Phone: 0303-936 10  
Fax: 0303-928 55

*Quality certified since 1990*

E-mail: info@nilsmalmgren.se  
Home site: www.nilsmalmgren.se