

# PHOENIX

## INTERNATIONAL A/S

Prefabricated Waterproofing Membrane Products



PHOENIX  
international A/S



**Engineered Materials  
For A Modern World**









#### **Varziran Company (Public Stock)**

Varziran Company produces a variety of products based on modified bitumen technology that are used in different industries such as road and building construction, water transfer canals and the coating of steel pipes. The company was established in 1981 and it has been supplying its products under the license and in partnership with Phoenix International A/S of Denmark.

The products for road making and building construction include emulsions, different types of oxidized and performance grade bitumen, different types of polymeric mastic, heat resistant and non-toxic asphalt, interior and exterior acrylic paints, emulsion and alkyd paints, epoxy flooring and different types of waterproofing materials.

#### **History of prefabricated waterproofing products:**

Protecting buildings against moisture and water has been a concern for mankind since ancient times and bitumen is undoubtedly one of the most important discoveries.

In the past 50 years, prefabricated waterproofing membranes have become the product of choice for much of the world.

## **Classification of prefabricated waterproofing membranes:**

Prefabricated waterproofing membranes are classified based on the following:

- 1-The type/grade of bitumen used in the membrane
- 2-The type of polymer used in the membrane
- 3-The type/grade of reinforcing tissue used in the membrane
- 4-The type of top coat used in the membrane
- 5-The target climate conditions for the membrane

### **1-Type of bitumen**

Membranes are typically made using either penetration grade bitumen or performance grade bitumen.

### **2-Type of polymer used**

The type of polymer used in bitumen modification further classifies products into elastic polymer membranes modified with SBS (Styrene-Butadiene-Styrene), elastic polymer modified with APP (Atactic Polypropylene) and also hybrid variations using both types of polymers.

### **3-Type of tissue used**

Different types and grades of tissue are used in either single layer or two layer variations:

- Single Layer Membranes: In these products non-woven, thick spunbond or thermal bond polyester is utilized to strengthen the membrane
- Two Layer Membranes: In these products a fiberglass layer is utilized to strengthen another thin polyester fiber layer. These products have less resistance and strength compared to single layer membranes.

### **4- Type of top-surface used**

Depending on the application, waterproofing membranes use one the following top surfaces:

- Aggregate sand top surface
- Sand top surface
- PE film top surface
- Aluminium Foil top surface

### **5- Climate conditions of the intended membrane**

**-Membranes produced for very cold regions:** These products should be flexible up to a minimum temperature of -15 degrees Celsius.

**-Membranes produced for moderate temperature regions:** These products must be flexible up to a minimum temperature of -5 degrees Celsius.

**- Membranes produced for moderate temperature regions:** These products must be flexible up to 0 degrees Celsius.

**- Membranes produced for tropical regions:** These products must be flexible up to a minimum temperature of +5 degrees Celsius.

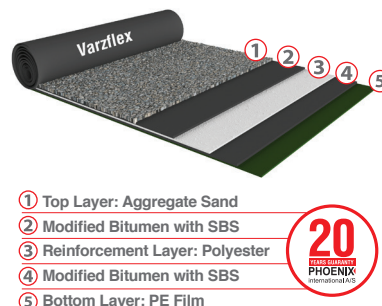
### Varzflex® 4A/F

Varzflex® 4A/F is a prefabricated waterproofing membrane with a polyester reinforcement layer and bitumen modified with SBS polymer covered with aggregate sand.

Varzflex® 4A/F is suitable as the final layer for waterproofing of sloping roofs in cold areas.

The thickness of this product is 4 mm and the temperature range is from -25 degrees to +110 degrees Celsius.

Bitumen Type	Modified with SBS
Thickness	4± 0.2 mm
Reinforcement Layer	Polyester
Cold Bending	< -25 °C
Thermal Stability	+110 °C
Top Surface	Aggregate Sand



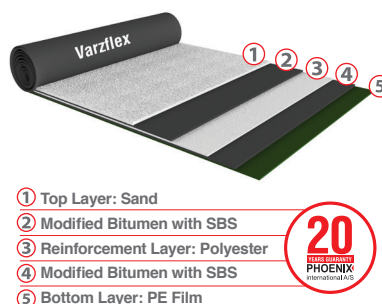
### Varzflex® 5S/F

Varzflex® 5S/F is a prefabricated waterproofing membrane with a polyester reinforcement layer and bitumen modified with SBS polymer covered with sand.

Varzflex® 5S/F is suitable as the final layer for waterproofing of special projects in cold areas.

The thickness of this product is 5 mm and the temperature range is from -25 degrees to +110 degrees Celsius.

Bitumen Type	Modified with SBS
Thickness	5± 0.2 mm
Reinforcement Layer	Polyester
Cold Bending	< -25 °C
Thermal Stability	+110 °C
Top Surface	Sand



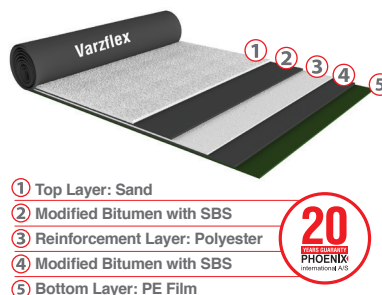
### Varzflex® 4S/F

Varzflex® 4S/F is a prefabricated waterproofing membrane with a polyester reinforcement layer and bitumen modified with SBS polymer covered with sand.

Varzflex® 4S/F is suitable as the final layer for waterproofing roofs in cold areas.

The thickness of this product is 4 mm and the temperature range is from -25 degrees to +110 degrees Celsius.

Bitumen Type	Modified with SBS
Thickness	4± 0.2 mm
Reinforcement Layer	Polyester
Cold Bending	< -25 °C
Thermal Stability	+110 °C
Top Surface	Sand

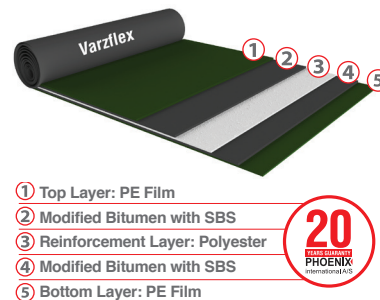


### Varzflex® 4F/F

Varzflex® 4F/F is a prefabricated waterproofing membrane with a polyester reinforcement layer and bitumen modified with SBS polymer covered with PE film.

Varzflex® 4F/F is suitable as the final layer for waterproofing all types of surfaces in cold areas. The thickness of this product is 4 mm and the temperature range is from -25 degrees to +110 degrees Celsius.

Bitumen Type	Modified with SBS
Thickness	4± 0.2 mm
Reinforcement Layer	Polyester
Cold Bending	< -25 °C
Thermal Stability	+110 °C
Top Surface	PE Film

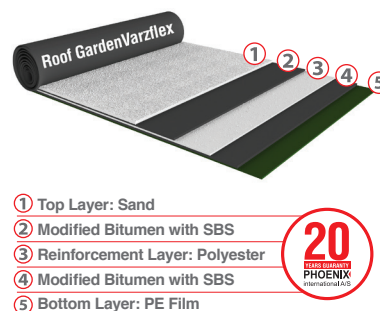


### Roof Garden Varzflex® 4S/F

Varzflex® 4S/F is a prefabricated waterproofing membrane with a polyester reinforcement layer and bitumen modified with SBS polymer covered with sand.

Varzflex® 4S/F is suitable as the final layer for waterproofing roof gardens, flower boxes in cold areas. The thickness of this product is 4 mm and the temperature range is from -25 degrees to +110 degrees Celsius.

Bitumen Type	Modified with SBS
Thickness	4± 0.2 mm
Reinforcement Layer	Polyester
Cold Bending	< -25 °C
Thermal Stability	+110 °C
Top Surface	Sand



### Varzplast® F/F Gold

Varzplast® F/F Gold is a prefabricated waterproofing membrane with a polyester reinforcement layer and modified bitumen based on a hybrid combination of SBS and APP polymers.

Varzplast® F/F Gold is suitable for all types of surface waterproofing applications and possesses excellent adhesion. The product is suitable for all kinds of weather conditions.

The thickness of this product is 4 mm and the temperature range is from -10 degrees to +115 degrees Celsius.

The final layer of this product is PE film.

Bitumen Type	Modified with SBS & APP
Thickness	4± 0.2 mm
Reinforcement Layer	Polyester
Cold Bending	< -10 °C
Thermal Stability	+115 °C
Top Surface	PE Film



## Varzplast® S/F Gold

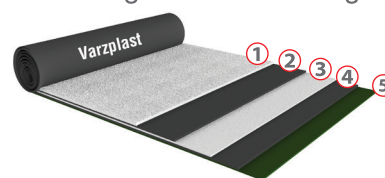
Varzplast® S/F Gold is a prefabricated waterproofing membrane with a polyester reinforcement layer and modified bitumen based on a hybrid combination of SBS and APP polymers.

Varzplast® S/F Gold is suitable for all types of surface waterproofing applications and possesses excellent adhesion. The product is suitable for all kinds of weather conditions.

The thickness of this product is 4 mm and the temperature range is from -10 degrees to +115 degrees Celsius.

The final layer of this product is sand.

Bitumen Type	Modified with SBS & APP
Thickness	4± 0.2 mm
Reinforcement Layer	Polyester
Cold Bending	< -10 °C
Thermal Stability	+115 °C
Top Surface	Sand



- ① Top Layer: Sand
- ② Modified Bitumen with SBS & APP
- ③ Reinforcement Layer: Polyester
- ④ Modified Bitumen with SBS & APP
- ⑤ Bottom Layer: PE Film



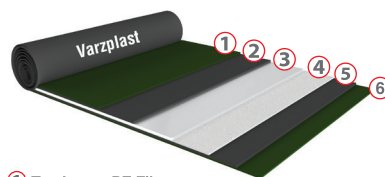
## Varzplast® F/F Silver

Varzplast® F/F Silver is a prefabricated waterproofing membrane with two tissue and polyester reinforcement layers and modified bitumen based on hybrid combination of SBS and APP polymers.

Varzplast® F/F Silver is suitable for waterproofing all types of surfaces. The product is suitable for moderate temperature regions. The thickness of this product is 3.8 mm and the temperature range is from -5 degrees to +115 degrees Celsius.

The final layer of this product is PE film.

Bitumen Type	Modified with SBS & APP
Thickness	3.8 mm
Reinforcement Layers	Fiberglass & Polyester
Cold Bending	< -5 °C
Thermal Stability	+115 °C
Top Surface	PE Film



- ① Top Layer: PE Film
- ② Modified Bitumen with SBS & APP
- ③ Reinforcement Layer: Fiberglass Tissue
- ④ Reinforcement Layer: Polyester
- ⑤ Modified Bitumen with SBS & APP
- ⑥ Bottom Layer: PE Film



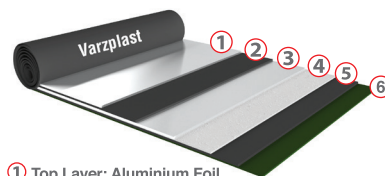
## Varzplast® AL/F Silver

Varzplast® AL/F Silver is a prefabricated waterproofing membrane with two tissue and polyester reinforcement layers and modified bitumen based on polymer modified with a hybrid combination of SBS and APP polymers.

Varzplast® AL/F Silver is suitable for waterproofing roofs in moderate temperature regions. The thickness of this product is 3.8 mm and the temperature range is from -5 degrees to +115 degrees Celsius.

The final layer of this product is aluminum foil.

Bitumen Type	Modified with SBS & APP
Thickness	3.8 mm
Reinforcement Layers	Fiberglass & Polyester
Cold Bending	< -5 °C
Thermal Stability	+115 °C
Top Surface	Aluminium Foil



- ① Top Layer: Aluminium Foil
- ② Modified Bitumen with SBS & APP
- ③ Reinforcement Layer: Fiberglass Tissue
- ④ Reinforcement Layer: Polyester
- ⑤ Modified Bitumen with SBS & APP
- ⑥ Bottom Layer: PE Film



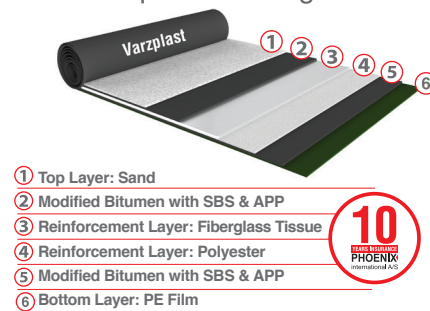
### Varzplast® S/F Silver

Varzplast® S/F Silver is a prefabricated waterproofing membrane with two tissue and polyester reinforcement layers and modified bitumen based on polymer modified with a hybrid combination of SBS and APP polymers.

Varzplast® S/F Silver is suitable for waterproofing all types of surfaces in moderate temperature regions. The thickness of this product is 3.8 mm and the temperature range is from -5 degrees to +115 degrees Celsius.

The final layer of this product is sand.

Bitumen Type	Modified with SBS & APP
Thickness	3.8 mm
Reinforcement Layers	Fiberglass & Polyester
Cold Bending	< -5 °C
Thermal Stability	+115 °C
Top Surface	Sand



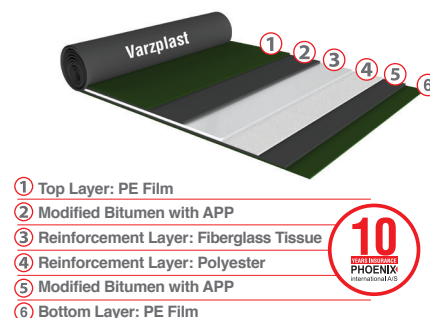
### Varzplast® F/F Bronze

Varzplast® F/F Bronze is a prefabricated waterproofing membrane with two tissue and polyester reinforcement layers and modified bitumen based on polymer modified with APP polymers.

Varzplast® F/F Bronze is suitable for waterproofing all types of surfaces in moderate temperature regions. The thickness of this product is 4 mm and the temperature range is from 0 degree to +120 degrees Celsius.

The final layer of this product is PE film.

Bitumen Type	Modified with APP
Thickness	4 mm
Reinforcement Layers	Fiberglass & Polyester
Cold Bending	0 °C
Thermal Stability	+120 °C
Top Surface	PE Film

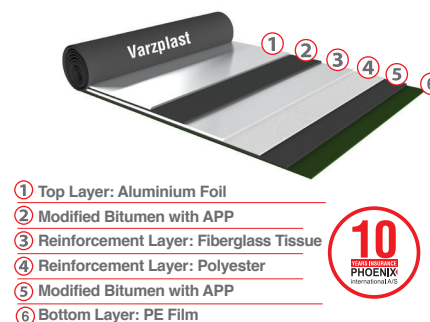


### Varzplast® AL/F Bronze

Varzplast® AL/F Bronze is a prefabricated waterproofing membrane with two tissue and polyester reinforcement layers and modified bitumen based on polymer modified with APP polymers.

Varzplast® AL/F Bronze is suitable for waterproofing roofs in moderate temperature regions. The thickness of this product is 4 mm and the temperature range is from 0 degree to +120 degrees Celsius. The final layer of this product is aluminum foil.

Bitumen Type	Modified with APP
Thickness	4 mm
Reinforcement Layers	Fiberglass & Polyester
Cold Bending	0 °C
Thermal Stability	+120 °C
Top Surface	Aluminium Foil





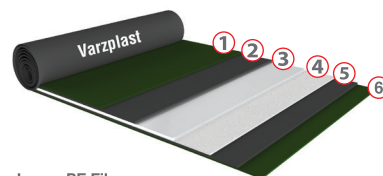
## Varzplast® F/F Blue

Varzplast® F/F Blue is a prefabricated waterproofing membrane with two tissue and polyester reinforcement layers and modified bitumen based on polymer modified with APP polymers.

Varzplast® F/F Blue is suitable for waterproofing all types of surfaces in tropical temperature regions. The thickness of this product is 3.5 mm and the temperature range is from +5 degree to +125 degrees Celsius.

The final layer of this product is PE film.

Bitumen Type	Modified with APP
Thickness	3.5 mm
Reinforcement Layers	Fiberglass & Polyester
Cold Bending	+5 °C
Thermal Stability	+125 °C
Top Surface	PE Film



- ① Top Layer: PE Film
- ② Modified Bitumen with APP
- ③ Reinforcement Layer: Fiberglass Tissue
- ④ Reinforcement Layer: Polyester
- ⑤ Modified Bitumen with APP
- ⑥ Bottom Layer: PE Film



## Varzplast® AL/F Blue

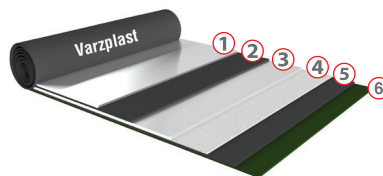
Varzplast® AL/F Blue is a prefabricated waterproofing membrane with two tissue and polyester reinforcement layer and modified bitumen based on polymer modified with APP polymers.

Varzplast® AL/F Blue is suitable for waterproofing roofs in tropical temperature regions.

The thickness of this product is 3.5 mm and the temperature range is from +5 degree to +125 degrees Celsius.

The final layer of this product is aluminum foil.

Bitumen Type	Modified with APP
Thickness	3.5 mm
Reinforcement Layers	Fiberglass & Polyester
Cold Bending	+5 °C
Thermal Stability	+125 °C
Top Surface	Aluminium Foil



- ① Top Layer: Aluminum Foil
- ② Modified Bitumen with APP
- ③ Reinforcement Layer: Fiberglass Tissue
- ④ Reinforcement Layer: Polyester
- ⑤ Modified Bitumen with APP
- ⑥ Bottom Layer: PE Film



## Varzfluid® WA/2

Varzfluid® WA/2 is a water-based bituminous primer used to increase the adhesion of waterproofing membranes to substrates. It can be used on different types of surfaces including concrete surfaces that require protection from moisture.



## Phoenix T/10

The Phoenix T/10<sup>®</sup> bituminous paste is a multi-usage material based on polymer modified bitumen emulsion technology. The product color is black.

The product is water-based, with excellent adhesion to plaster, wood, brick, stone, cement, porcelain and ceramic tiles, excellent resistance to very low and very high temperatures. The product is no oil-based solvents.

The product can be used for waterproofing foundations, walls and concrete columns of buildings, waterproofing and sealing floors and walls of bathrooms and kitchens, sealing and repairing cracks of asphalt and prefabricated waterproofing membrane materials and sealing of construction joints.



**Varziran Waterproofing Membrane Specification Table**

Product Type	Unit	Varzflex <sup>®</sup>	Varzplast <sup>®</sup> Gold	Varzplast <sup>®</sup> Silver	Varzplast <sup>®</sup> Bronze	Varzplast <sup>®</sup> Blue
Modified Bitumen with	-	SBS Polymer	SBS & APP Polymer	SBS & APP Polymer	APP Polymer	APP Polymer
Reinforcement Layer(s)	-	Spunbond Polyester	Spunbond Polyester	Tissue & Polyester Layers	Tissue & Polyester Layers	Tissue & Polyester Layers
Regional Climate Condition	-	Cold Region	Moderate Region	Moderate Region	Tropical & Hot Region	Hot Region
Thickness	mm	4	4	3.8	4	3.5
Length	m	10	10	10	10	10
Width	m	1	1	1	1	1
Tensile Strength	Kg/5cm	80/65	75/60	55/50	45/35	40/30
Elongation	%	45/60	40/50	30/30	30/30	25/25
Tear Strength	kgf	25/25	20/20	15/12	15/12	12/12
Cold Bending	°C	-25	-10	-5	0	+5
Thermal Stability	°C	+110	+115	+115	+120	+125

Top Layer	Type
Aggregate Sand	A/F
Sand	S/F
PE Film	F/F
Aluminium Foil	AL/F





WhatsApp



Website

**PHOENIX**  
INTERNATIONAL A/S

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