



**PRECONSTRAINT®** 1002T2 back PVDF    **PRECONSTRAINT®** 1202T2 back PVDF    **PRECONSTRAINT®** 1002S-1202S-1302S-1502S back PVDF

Two surface treatment options available, depending on application (T2 or formula S). These Preconstraint® composite membranes benefit from exceptional characteristics especially developed for textile architecture.

- High performance light control and translucency
- Long term durability with unrivalled tear resistance
- Exceptional dimensional stability
- Lightweight
- Durable
- 100 % recyclable

**PRECONSTRAINT®**  
1002T2 back PVDF

**PRECONSTRAINT®**  
1202T2 back PVDF

**PRECONSTRAINT®**  
1002S-1202S-1302S-1502S-back

## ■ PVDF treatment - unique know-how

Ferrari® is a leader in PVDF treatments for architectural textile membranes. The technology has been available for over 15 years and is available in a very extensive range to meet many performance requirements.

For PVDF to really come into its own as an anti-ageing agent with anti-pollution adhesion features, a calibrated formulation concentration is required. As Formula S is a weldable formulation, fabrication is easier. It is also available in a wide range of colors.



## ■ Formula S and back PVDF

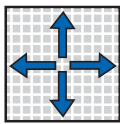


- Maintenance and cleaning are easy because Formula S contains a calibrated surface concentration of PVDF fluoropolymer. Moreover, PVDF treatment on the back provides the excellent anti-ageing qualities of fluoropolymer, without modifying fabrication procedures, and results in a better-looking finished product.
- Welding performance: with simple HF/RF welding, assembled sections stand up to high temperatures while bearing considerable tension.
- Color range: Formula S back PVDF is possible in the Préconstraint® 502 range of color shades (except for aluminium and "metallic"). Other color shades upon request after studying the UV behaviour.

## ■ Technical features



Préconstraint®  
Ferrari®



Dimensional  
stability



Long life



U.V.  
resistant



Flame  
retardant



Easy  
maintenance



100%  
recyclable textile



12 Year  
Warranty

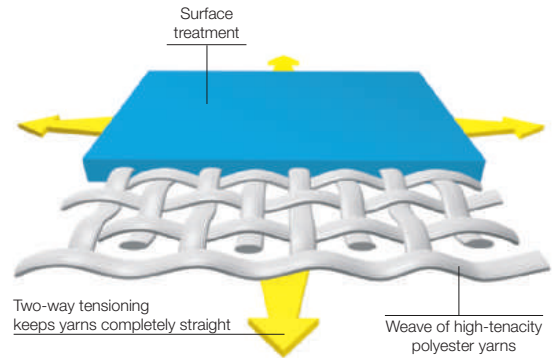


15 Year  
Warranty

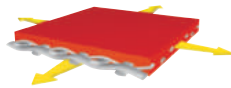
## The exclusive **Précontraint® Ferrari®** technology

Worldwide patented Ferrari® Précontraint® technology consists of pre-stressing the textile base cloth both before and during the coating process. Unlike traditional textiles, Ferrari® Précontraint® membranes are subjected to regular and balanced tension, both warpwise and weftwise which results in similar elongation characteristics in both directions.

This technology results in unrivalled dimensional stability • limited creep over time • longer life • performance homogeneity from batch to batch.



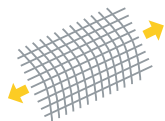
Ferrari® Précontraint® textiles respect the weft yarn direction which stays identical from one batch to the other.



Précontraint® textiles have very low crimp, that is similar in both warp and weft direction.



Précontraint® 702



Conventional coated textiles exhibit serious deformation of the weft yarn which in addition vary greatly from one batch to the other.



Conventional coated textiles present a high level of crimp in the weft direction.

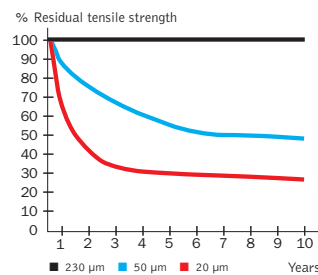


Type I classic coated textile

• **Longevity:** because Ferrari® Précontraint® membranes have thicker coating at the top of the yarns, they keep their qualities of mechanical resistance for a long time — a key factor in the long durability of your installations.

• **Homogeneity:** Major textile architectural projects or those that are targeting a level of standardization for industrial applications, are carried out using modules or panels that are reproduced in several units. It is therefore essential that the compensation calculations and cutting plans made from a set of values are reliable for all the fabric batches used. The Précontraint® technology guarantees this uniformity.

• **Limited creep:** The Précontraint® technology controls the weft direction and significantly reduces the creep phenomenon which appears to be 3 to 4 times higher with conventional fabrics. With Précontraint® textiles, the initial shape of the membranes is therefore controlled and maintained over time.



An independent ENKA study of three textiles (all the same material but with different degrees of coating thickness at the top of the yarns). Exposure to in natural conditions over a period of 10 years in Florida, USA.



**Airbus hangar, 1982**  
Germany — Précontraint® 1302  
Resistance to traction after 22 years:  
Warp 97 % - Weft 84 %



**Exhibition marquee, 1982**  
Port Saint Louis — Précontraint® 1302  
Resistance to traction after 18 years:  
Warp 86 % - Weft 76 %

## PRECONTRAIT® 1002T2 back PVDF

## PRECONTRAIT® 1202T2 back PVDF

Technical specifications	Precontrait® 1002 T2 back PVDF	Precontrait® 1202 T2 back PVDF	Standards
Weight	31 oz/sqyd	31 oz/sqyd	EN ISO 2286-2
Width	70 inches	70 inches	(-1 mm/+1 mm)
Tensile strength (warp/weft)	480/450 Lbs/inch	565/565 Lbs/inch	ASTM D 751-00 P.16 Cut Strip Method
Tear strength (warp/weft)	105/100 Lbs	130/110 Lbs	ASTMD 751-00 P.37 Trapezoid TearMethod
Adhesion	12 daN/ 5 cm	12 daN/ 5 cm	EN ISO 2411
Flame retardancy	<b>Class C</b> /ASTM E108 • ASTM E84 <b>Test 2</b> /NFPA 701 • CSFM T19 • <b>VKF 5.2</b> /SN 198898 <b>M2</b> /NF P92-507 • <b>B1</b> /DIN 4102-1 BS 7837	<b>Test 2</b> /NFPA 701 • CSFM T19 <b>Group 2</b> /AS/NZS 3837 <b>VKF 5.2</b> /SN 198898 • <b>B1</b> /DIN 4102-1 BS 7837	
Surface treatment	Fluotop® T2 (High concentration PVDF)	Fluotop® T2 (High concentration PVDF)	
Back side treatment	Weldable PVDF (for a better resistance to pollution of the back side of the fabric)	Weldable PVDF (for a better resistance to pollution of the back side of the fabric)	
Product application	Static & permanent structures	Static & permanent structures	

PVDF back treatment has the advantage of excellent anti-ageing qualities of fluoropolymer, without modifying fabrication and resulting in better-looking finished product, seen from any angle.

## PRECONTRAIT® 1002S-1202S-1302S-1502S

Technical specifications	Precontrait® 1002 S back PVDF	Precontrait® 1202 S back PVDF	Precontrait® 1302 S back PVDF	Precontrait® 1502 S back PVDF	Standards
Weight	31 oz/sqyd	31 oz/sqyd	40 oz/sqyd	44 oz/sqyd	EN ISO 2286-2
Width	70.87 inches	70.87 inches	70.87 inches	70.87 inches	(-1 mm/+1 mm)
Tensile strength (warp/weft)	480/450 Lbs/inch	565/565 Lbs/inch	880/740 Lbs/inch	1250/950 Lbs/inch	ASTM D 751-00 P.16 Cut Strip Method
Tear strength (warp/weft)	105/100 Lbs	130/110 Lbs	155/130 Lbs	240/200 Lbs	ASTMD 751-00 P.37 Trapezoid TearMethod
Flame retardancy	<b>Test 2</b> /NFPA 701 CSFM T19 • <b>Class A</b> /ASTM E84 <b>Class C</b> /ASTM E108 • <b>M2</b> /UNE 23.727 SITAC/ETA/SIS 650082 <b>VKF 5.2</b> /SN 198898 <b>M2</b> /NF P 92-507 <b>B1</b> /DIN 4102-1 • BS 7837	<b>Test 2</b> /NFPA 701 CSFM T 19 SITAC/SIS 650082 <b>VKF 5.2</b> /SN 198898 <b>B1</b> /DIN 4102-1 BS 7837	<b>Test 2</b> /NFPA 701 CSFM T 19 SITAC/SINTEF/SIS 650082 <b>VKF 5.3</b> /SN 198898 <b>B1</b> /ONORM B 3800-1 <b>B1</b> /DIN 4102-1 BS 7837	<b>Test 2</b> /NFPA 701 • CSFM T 19 SITAC/SINTEF/ETA/SIS 650082 <b>B1</b> /DIN 4102-1 BS 7837	
Surface treatment	Formula S: calibrated PVDF alloy				
Back side treatment	Weldable PVDF (for better resistance to pollution on the reverse side of the fabric).				

PVDF back treatment has the advantage of excellent anti-ageing qualities of fluoropolymer, without modifying fabrication and resulting in better-looking finished product, seen from any angle.

### 100% recyclable

Ferrari® developed the Taxyloop® technology specifically for the recycling of composite PVC membranes and textiles. Through the management of its end-of-life products Ferrari® is committed to sustainable development.  
[www.taxyloop.com](http://www.taxyloop.com)

### Sustainable development

Ferrari® development is based on strict adherence to good safety and environmental practices, that include an understanding of Life Cycle Analysis (LCA), selection of the best materials, and eco-design.  
The Company obtained its first ISO 14001 certification in 2003.

### Specification service

The Ferrari® specification service is available to inform you, advise you and suggest innovative solutions for your specific requirements.

To detail your project, fill in a form under:  
[www.ferrari-architecture.com](http://www.ferrari-architecture.com)

CSI Specifications Available