

MONOLITHIC



MILLENNIUM[®] MONOLITHIC

**THE WORLD'S EXCLUSIVE
SAIL BUILT IN ONE PIECE
MADE ENTIRELY WITH
SPREAD FIBERS
TECHNOLOGY**

THE TECHNOLOGY

**MILLENNIUM[®] MONOLITHIC IS THE LAST
TECHNOLOGY DEVELOPED BY THE MILLENNIUM
TECHNOLOGY CENTER.**

**AFTER TWO YEARS OF RESEARCH
AND DEVELOPMENT AND THREE YEARS OF
SAILS TRIALS, MILLENNIUM[®] MONOLITHIC
IS THE MOST ADVANCED SAILMAKING
TECHNOLOGY ON THE MARKET, COVERED BY
EUROPEAN PATENT [INPAT PENDING].**

**THE SAIL MEMBRANE IS BUILT WITH
UNIDIRECTIONAL SPREAD FIBERS, SPREAD TO
PRODUCE A 100% BALANCED STRUCTURE.**

ADVANTAGES OF MONOLITHIC ON OTHER SPREAD FIBERS SAILS

**- USE OF MOULDS, WHICH ARE PRODUCED WITH
NUMERICAL CONTROL FOR EVERY SAIL**

**- USE OF A BIOCOMPONENT ADHESIVE, THAT
MAKES THE SAIL INDIVISIBLE. OTHER
MATERIALS, FOR EXAMPLE THERMOPLASTIC, DO
NOT GUARANTEE THIS RESULT.**

**- SAIL BUILT IN ONE PIECE WITHOUT JUNCTIONS.
IT AVOIDS DIFFERENCES OF THICKNESSES ON
THE SAIL'S SURFACE, WHICH CAUSE FIBERS
BREAK IN THE OVERLAPPING ZONE**

- THINNER LAYERS



WHAT DO SPREAD FIBERS MEAN?

THE ENTIRE SAIL STRUCTURE IS IN FACT A VERY SMALL BUNDLE OF FILAMENTS, WHICH ARE MINUSCULE AND ULTRA THIN.

THE SPREAD FIBERS TECHNIQUE ALLOWS TO SPREAD OUT THE INDIVIDUAL FILAMENT BUNDLE [YARN] OF CARBON, PBO OR TWARON UNTIL THE FILAMENTS LIES SIDE BY SIDE.

THE FILAMENTS ARE THEN SEAMLESSLY REASSEMBLED IN DIFFERENT LAYERS AND DIRECTIONS TO FORM THE SAIL LAMINATE. THE RESULT IS A WHOLE UNMOUNTED STRUCTURE FOR THE ENTIRE SURFACE, WHICH COMBINES THE RIGIDITY OF THE CARBON WITH THE FLEXIBILITY OF A FLAG. IN OTHER WORDS, MILLENIUM® MONOLITHIC IS AN ULTRA COMPACT SAIL, TOTALLY FREE OF RIFTS. FROM THIS CHARACTERISTIC ORIGINATES THE NAME "MONOLITHIC": THE MEMBRANE IS RESISTANT AND EVERY SINGLE FIBER LIES SIDE BY SIDE LIKE IN A MONOLITH.

ITS THICKNESS IS INERT POLYMER AND/OR LOW MODULUS FREE [AS TAFFETAS, FILM, ETC.]. MOREOVER, THE USE OF MOULDS GUARANTEES A PERFECT AND ACCURATE LAMINATION.

PRODUCTS

MILLENIUM® MONOLITHIC HP [HIGH PERFORMANCE]

SAILS FORMED "SPREAD FIBERS" IN CARBON AND TWARON
NO FILMS
ONE-PIECE SAILS LAMINATED IN A SINGLE MOULD

MILLENIUM® MONOLITHIC GP [GRAN PRIX]

SAILS FORMED OF "SPREAD FIBERS" IN ZYLON® [PBO], CARBON AND TWARON
NO FILMS
ONE-PIECE SAILS LAMINATED IN A SINGLE MOULD

THE EXCLUSIVE FEATURE OF THIS SAIL IS THE EMPLOYMENT OF THE ZYLON® [PBO], WHILE CARBON AND TWARON FIBERS DECREASE IN PERCENTAGE. THE ZYLON® [PBO] HAS A VERY HIGH MODULUS, TWICE THE TWARON ONE. USING THE ZYLON® [PBO] MAKES THE PROFILE MORE RIGID AND MORE CRUSHPROOF, ENSURING THE BEST SHAPE-HOLDING AND FLEXIBILITY. THE ZYLON® [PBO] IS COMPLETELY PROTECTED FROM UV AND SALTINESS, ALLOWING THE FIBER TO KEEP THE ORIGINAL CHARACTERISTICS WITHOUT DETERIORATION.



DESIGN TEAM

DAVIDE INNOCENTI

FOR OVER 38 YEARS AS DESIGNER AND RESEARCHER IN THE WORLD OF SAIL DESIGN, HE WAS SAIL PROGRAM MANAGER AND LOFT MANAGER IN THE 1992 AMERICA'S CUP CAMPAIGN WITH IL MORO DI VENEZIA, WINNING THE IAAC WORLD CHAMPIONSHIP AND THE LOUIS VUITTON'S CUP. AS A SAIL DESIGNER, HE MANAGED THE RESEARCH AND TECHNOLOGY DEVELOPMENT FOR HORIZON, UK SAILMAKERS AND ONESAILS. HE WAS SAIL PROGRAM MANAGER FOR MERIT CUP TEAM AND HEAD OF SAILS RESEARCH FOR MAXI YACHTS.

MARCO SAVELLI

MANAGER OF THE PROJECT WHICH GAVE BIRTH TO MONOLITICH, HE HAS 45 YEARS AND 360° DEGREES' BACK GROUND IN SAILING AND DESIGN. HE SAILED IN THE OLYMPIC GAMES AND WON A WORLD BRONZE IN THE FLYING DUTCHMAN CLASS. HE WAS SAIL PROGRAM MANAGER FOR MASCALZONE LATINO FROM 2002 TO 2007, PARTICIPATING IN TWO AMERICA'S CUPS.



THE MILLENIUM TECHNOLOGY CENTER

THE MILLENIUM TECHNOLOGY CENTER SAILMAKER WAS ESTABLISHED IN FLORENCE IN 1981, WHERE IT IS STILL PRESENT TODAY WITH ITS OWN PRODUCTION SITES. THE MANUFACTURING OF MILLENIUM MONOLITHIC IS EXCLUSIVELY MADE IN ITALY AND TAKES PLACE IN THE FLORENCE FACILITIES, WITH SPECIAL HIGH TECHNOLOGY MACHINERIES. WITH OVER 4,000 SQUARE METERS OF WORKING AREA AND 40,000 SQUARE METERS OF HIGH MODULUS SAILS BUILT EVERY YEAR, THE CENTER IS THE LARGEST FACILITY IN ITALY. WITH FORTY YEARS HERITAGE IN SAILMAKING AND THE PIONEERING IN RESEARCH AND DEVELOPMENT OF ONE PIECE LAMINATION SINCE YEAR 2000, THE CENTER STILL CONTRIBUTES TODAY TO WRITE THE HISTORY OF SAILMAKING.

MILLENIUM TECHNOLOGY CENTER

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