



3Di NORDAC™

– PRESS PACK:

3Di NORDAC™

Go Beyond Boundaries –

The Dacron Sail Reinvented

3Di NORDAC is a breakthrough and innovative polyester sail built with North Sails unique and patented 3Di technology. Marrying traditional materials with modern manufacturing processes, the product is targeted to the mass cruising market, specifically small to medium sized cruising boats.

3Di NORDAC will be available for sale as of June 1, 2017. North Sails believes the new product holds the potential to revolutionize the cruising market and extend the benefits of 3Di technology (better, longer lasting shape and durability) to the wider sailing community at an affordable price.

CONTEXT: THE 4TH REVOLUTION IN SAILMAKING

With a rich heritage of excellence, North Sails strives to innovate and push the boundaries of technology and materials in order to deliver superior performance. The first revolution in sailmaking came in 1955, just before Lowell North founded North Sails, with the introduction of synthetic Dacron sailcloth. Forty years later, North Sails delivered the second revolution when the company mastered 3D sailmaking, ensuring precise and longer lasting sail shapes. 2010 saw the introduction of North Sails 3Di, a composite approach to sailmaking known for advanced resistance to stretch and superior durability with the use of Thermoset glue (vs. Thermoplastic). In 2017 we'll see the fourth revolution as 3Di NORDAC merges 3Di technology with Dacron material.

MANUFACTURING PROCESS: EFFICIENT AND SUSTAINABLE

3Di NORDAC

OVERVIEW

- Modern Process
- Spread Filaments
- Resin Amalgamated
- Vacuum Formed into 3D composite structure

PROCESS

1. Fibers created
2. Fibers transported directly to sail Production facility (eliminating steps 3-10 at left)
3. Fibers converted to resin impregnated filament | spread tapes
4. Filament tapes are robotically assembled into sail sections
5. Sail sections are vacuum molded and cured into amalgamated, unitary sail membrane
6. Sail membrane fitted with ropes, rings and tapes
7. Finished sail is transported to customer

*Less Transport, Fewer Processes, Less Embodied Energy
(Carbon Footprint)*

Traditional Woven Polyester

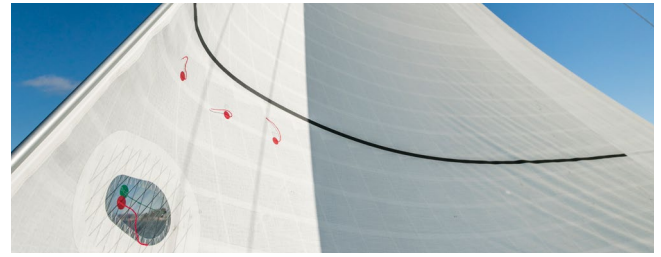
OVERVIEW

- Ancient Process
- Interlaced Fibers
- Resin Impregnated
- Heat Shrunk into rolled cloth
- Cut and sewn into flat panels

PROCESS

1. Fibers created
2. Fibers transported to Weaving Mill
3. Fibers coated with Sizing for weaving process
4. Fibers woven into Greige Goods
5. Greige goods transferred to Finishing Plant
6. Greige goods scoured to remove Sizing
7. Greige goods dried for further processing
8. Greige goods impregnated with resin and heat shrunk
9. Woven cloth calendared with high pressure rolling
10. Finished sail cloth transferred to sail cloth distribution warehouse
11. Finished sail cloth transported to sail production facility
12. Finished sail cloth is cut into panels
13. Panels are assembled and sewn into blank sail
14. Blank sail fitted with ropes, rings and tapes and patches
15. Finished sail is transported to customer

*More Transport, More Processes, More Embodied Energy
(Carbon Footprint)*



The story of 3Di NORDAC: durable, affordable, high quality cruising sails

For thousands of years, sailcloth has been made by the ancient process of weaving fibers into a finished material. For over 60 years, woven polyester (such as Dacron) has proven to be the fiber of choice for cruising sailcloth – providing low cost and structurally durable sails. Today, polyester remains a nearly perfect fiber for cruising sails due to its strength and environmental stability.

The inherent problem with woven Dacron sailcloth, is that it fails to provide true value to cruising sailors. Woven sails lose their shape - far before their structural integrity is compromised. In short, their structural life and performance life are out of balance. Cruising sailors are overpaying for poor performance and they are not achieving the enjoyment of experience possible when their boat sails better through the water. Controlling your sail power with responsive sails is the hallmark of the North Sails cruising experience.

3Di NORDAC sails deliver this experience with less heel, less helm, less leeway and lighter, more easily handled Dacron sails than ever before. The new product does this without sacrificing the durability that is critically important to cruising sailors. In addition, 3D molding provides perfect sail shape and integrated reefs for better reefed sail shape.

SMARTER SAILS: WHY POLYESTER WORKS FOR CRUISING

Many sailmakers might argue that Aramid or Dyneema yarn deliver a "better" sail, and that polyester is too low tech and offers no interesting properties. North Sails believes polyester remains the right material for the cruising market. Here are some of the reasons we decided to work with polyester yarn:

- 1) The early test sails proved that 3Di NORDAC construction makes a smoother sail due to the inherent greater elasticity and the absence of shrinkage
- 2) Many cruising sailors want classic, beautiful white sails
- 3) 3Di NORDAC uses material that the cruising sailor has grown up with and trusts, but we are using it in a revolutionary way
- 4) High durability (UV resistant, flex, abrasion, toughness), soft, lightweight and forgiving handling
- 5) Rugged external rip stop surface and no delamination (3Di has no mylar)

3Di Technology: Innovating and Pushing Boundaries

North Sails 3Di, and the technology behind it, is a key part of the North Sails portfolio offering to clients. Proud of the design and innovation that goes into the development of all the 3Di products, North Sails is unique in its position of offering cutting edge sail technology to a wide range of sailors and boats.

The evolution of 3Di (from 3DL) began with the America's Cup when Alinghi's original "Black Sails" were developed by Swiss engineers in the lead up to the 2007 America's Cup. The sails were not used in the 32nd America's Cup, but the North designers on Team Alinghi recognized the future potential. North Sails resumed development after the Cup and soon North Sails 3Di technology was born. By 2010, five of six Volvo Ocean Race teams chose to use 3Di sails. 3Di was now tested and proven in ocean passages and around-the-world races, it was ready for market.

Today it is the new standard in performance and durability, used across the board in the high-performance racing arena as well as on superyachts and emerging in smaller racing circles. Now the product is set to revolutionize cruising.

North Sails 3Di is a patented technology where Dyneema, carbon and/or aramid filaments are spread flat, preimpregnated with thermoset glue, and laid into featherweight tapes.

These are then thermo-formed on North's 3D adjustable molds as one piece membranes. 3Di is a proprietary technology enabling these molded sails to be made from fiber and adhesive only - without the need for mylar film, one of the weak links of laminated string sails.

Sail distortion of any type - stretch, compression, shear or shrink - has a negative effect on sail performance. Most sails concentrate on resisting loads in the stretch (tension) direction. 3Di sails have properties of a true composite, resisting strain and compressive forces in all directions. A 3Di sail comes closer to matching the performance of a rigid airfoil than any other sail on the market.

Ounce for ounce, 3Di sails have significantly more resistance to stretch than any other sail made in the world today. And 3Di sails have powered a number of high profile boats to famous victories and world records in the last few years.

FOR MORE INFORMATION : www.northsails.com/sailing/3di

“ Ounce for ounce, 3Di sails have *significantly more resistance to stretch* than any other sail made in the world today. ”

Product Testing 3Di NORDAC

After conceptualization, the product development engineers in Minden, Nevada spent several months working through product feasibility from both material and manufacturing standpoints. Many challenges were presented not least of which was how much differently polyester filaments behave in the spreading and impregnating process.

By mid-2016, sails were put into use on various mid-size cruising boats that were either owned or regularly sailed on by North Sails staff such as JB Braun, Pete Colby, Kimo Worthington, James Robb and Phil Williamson. To date over 35 sails have been built, all of which have met or exceeded our expectations.

Winter of 2016 saw our fullest and final round of testing. We now have sails in use in some of the harshest and highest use cruising conditions we could find, including charter boats in the Caribbean. As testing progresses, we will learn more about the sails and how they are received by our target customers in real word conditions.

North Sails Guarantee: Unrivaled Customer Service

For the launch of 3Di NORDAC, North Sails will be offering unparalleled guarantee and value to customers with personal consultations with North Sails cruising experts, professional boat measurement by North Sails technicians and One Year Free Certified Service with every purchase. As ever, cruising customers will be able to tap into the global and regional network of sail lofts.

NORTH SAILS & CRUISING

North Sails currently holds excellent market share in segments such as grand prix racing, offshore and superyachts. We have earned this high market share through superior design and race course support, and because of our strong product differentiation provided through 3DL and now 3Di technology.

North Sails had a significant presence in the cruising market when the business was started 60 years ago, but the sector has become very fragmented with a number of suppliers offering products in different countries and regions. With the introduction of 3Di NORDAC, we are returning to our roots and strive to maximize the product's appeal to wider sailing markets.



2017: 60 Years of Sailmaking

2017 sees North Sails celebrate its unique story as the world leader in sailmaking technology

Back in 1957, decorated American sailor Lowell North founded a small sailmaking company in his San Diego garage. "It was a little dusty and dirty," he recalled, "but big enough to build a star boat mainsail."

Sixty years later, North Sails has grown into the world's leading sailmaker, with seven wholly owned manufacturing sites in six different countries, 1,500 employees worldwide, and tens of thousands of sails hoisted on harbors and oceans around the globe each year. Part of the wide-reaching North Technology Group family of companies, North Sails plays a leading role in materials development and engineering that has produced unrivaled technology in sails, masts, fibers and beyond.

Founded in a decidedly scientific approach to sailmaking, North Sails remains rooted in the core values that led Lowell North to success: in-house analysis and development of quality materials, performance-led design, quality craftsmanship and customer service.

Innovation drives progress in all areas of the business. We could not do this without nurturing the most dedicated and determined people who share our passion. North Sails has an instinctive and audacious spirit, and acting on instinct is part of the sailor's art. We go with our gut, and there has always been a rebellious streak in how we make our choices.

To Go Beyond is to push the limits of nature, sails, and self. Along our journey, North Sails has explored new places, encountered new challenges and mastered new skills.

This is our story.

NORTH SAILS PROFILE: WORLDWIDE LEADER IN SAILMAKING TECHNOLOGY

- Founded in 1957 by Lowell North, North Sails is the largest division of North Technology Group, which comprises three market leading marine brands: North Sails, Southern Spars (world leader in composite spars, rigging and marine components) and EdgeWater Boats (high performance outboard sport boats) alongside a family of complementary companies
- North Sails is the sailmaker of choice on the majority of America's Cup, Grand Prix, ocean race boats and superyachts
- North Sails currently produces world-class racing sails for over 250 One Design classes, sailing in over 40 countries.
- North Technology Group was acquired in 2014 by Oakley Capital, an investment vehicle founded by UK businessman and sailing enthusiast Peter Dubens
- With Oakley's acquisition of Tommasoni Topsail, North Sails launches a collection of apparel that brings the brand's love of design and technology into fashion

By the Numbers

- 30,000 - Sails sold and produced in one year
- 10,000 - One Design sails sold and produced in one year
- 7 wholly-owned, centralized manufacturing centers supported by regional production facilities and 109 service lofts
- Over 150 sales sites worldwide
- 1,500 - Employees at owned locations

QUOTES / TESTIMONIALS

"North Sails France trépigne à l'idée du lancement d'une nouvelle gamme de voiles 3Di™ dédiée à la croisière.

Les voiles 3Di™ ont largement fait leur preuve dans le monde entier, notamment sur des parcours autour du monde.

Des milliers de voiles ont été produites, des centaines de milliers de milles ont été parcourus, et nous sommes aujourd'hui certains que les voiles en 3Di NORDAC™ vont apporter une réelle valeur ajoutée, une fiabilité remarquable et un haut niveau de performance aux plaisanciers, quelle que soit la taille de leur bateau."

– Greg Evrard, Director, North Sails in France

"Swell's new sails are a dream! Their flawless shape easily provides extra speed in lighter winds, and also extra control when it's blowing. The 3Di material is extra tough yet surprisingly manageable when reefing and furling."

– Liz Clark, Cal 30 Swell

"Il mondo della vela si sta confrontando con una rivoluzione tecnologica che ha subito una forte accelerazione negli ultimi 5 anni

North Sails ha pesantemente contribuito a questa rivoluzione ed il 3Di è una delle massime espressioni in tal senso

In italia siamo convinti che il 3Di Nordac sarà il passo avanti più sostanziale per l'utente da crociera dai tempi dell'introduzione delle fibre sintetiche nell'industria della produzione di vele."

– Alessio Razeto Sales Manager North Sails Italia

"3Di NORDAC represents a new breed of Dacron cruising sails that provide a better sailing experience to North Sails clients. The sails are more responsive and hold their shape longer, which allows more control of your sail power and increases the ability to balance the boat. Moving fast and easily through the water is the hallmark of the North Sails cruising experience."

– Bill Fortenberry, North Sails Cruising Segment Manager

"En North Sails estamos entusiasmados por ver el lanzamiento de las velas 3Di en la navegación pura de crucero.

Las velas 3Di han sido probadas en todo el mundo y estamos seguros que 3Di Nordac proveerá un gran valor añadido, gran durabilidad y gran rendimiento a todos los navegantes de crucero.

También estamos convencidos que es la mejor inversión posible al largo plazo cuando consideramos el ratio precio vs. durabilidad/rendimiento."

– Luis Martínez Doreste, North Sails Sales Manager in Spain

"We have had the sails installed on the boat for just a week now, and thus far the shape and overall appearance of the sails is outstanding. On our first day, we raised the full main in 22 knots of true, and were thrilled with the performance. There is no doubt I will recommend these sails to all our sailing community."

– Steve Fredrick, Beneteau First 42 Ocean Angel



NORTH SAILS COLLECTION
SPRING 2017
MASTERS IN SAILMAKING



Nundle Jacket

Impossibly light. Impervious to wind. Indifferent to water. The Nundle jacket's nylon rip-stop fabric and water repellent taped seams can go wherever your next adventure leads.

Brett Jacket

Windproof, breathable and emblazoned with the iconic North Sails logo, this bold bomber's top-deck style puts the wind at your back.

Raymond Jacket

Soft, yet durable, just like our sails. The tailored softshell hooded jacket, features a silver foil double hood construction suitable for whatever weather comes your way.



Lawson

For those chilly spring days and long summer nights out at sea or on land, the three-layer construction and double-hood design keeps wind out and warmth in.

Ivory Jacket

With windproof construction, waterproof zippers, stretchable mesh pockets and a hidden hood tucked into the collar, this is a jacket made to get the job done, and look good doing it.

Gem Jacket

Its asymmetric hip-length silhouette and thoughtful design details catch your eye. It's 3-layer construction keeps the water out, and your warmth in. The best of both worlds.

The North Sails Collection introduces the Spring 2017 Collection. Masters of wind and water. Innovators of technology. Pioneers of design. Our sails make champions. And our apparel is cut from the same cloth.

Weaving together sailmaking expertise, advanced element-conquering technology and bold design, we make clothing for those who seek adventure at sea and on land.

This spring, North Sails Collection unpacks 60 years of sailmaking with every stitch.

Sailing legend and North Sails founder Lowell North's passion for sailing and the mastery of sailmaking sets the course for relentless innovation across land and sea. From building the most technologically advanced, fastest and most winning sails in the world, to designing high-performance jackets, knits and accessories made to embrace the elements, North Sails Collection is for those who seek to chart a new course.