



D4[®] 10th anniversary Interview

Australian Brad Stephens

was one of the principal developers of the D4[®] membrane system. We spoke with him on the subject of D4[®].

■ *It's understandable that you are often the first to hear about the success*

of sails made with D4[®] membranes from DIMENSION-POLYANT. What's the latest news?

I have just returned from the Dubois and Superyacht Cup's held in Palma de Mallorca.

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DIMENSION-POLYANT Hydroptère World Speed Record

47.6 knots: A multihull has never sailed so fast! Alain Thibault, the skipper and owner of Hydroptère, achieved this speed with the help of D4[®] load path technology. In 25 knots of wind, Alain's all-Carbon 18 metre Trimaran, flies across the water on foils. D4[®] membrane sails helped contribute to the high speed achieved and the new record officially accepted by the Sailing Speed Record Council: an average of 44.5 knots over 500 metres and 41.5 knots over one mile – and that with only 25 knots wind speed. It has taken



Thibault nearly 20 years to develop Hydroptère into the record breaker she

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Designing the Future

clear ahead



DP's marketing team at work

The managing directors of DIMENSION-POLYANT, Martina Mintern-Schalley and Uwe Stein, meet with Barbara Grefkes, Marketing (left) and DP sales manager Robert F. Kuehnen (right) to work on marketing strategies. Having established itself as the market leader by providing the highest quality product and service in the sailcloth industry, DIMENSION-POLYANT relies on the direction of the world wide team to promote our innovative sailcloth technology to the sailing market.

Forum 2007

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Tornados at Kiel Week

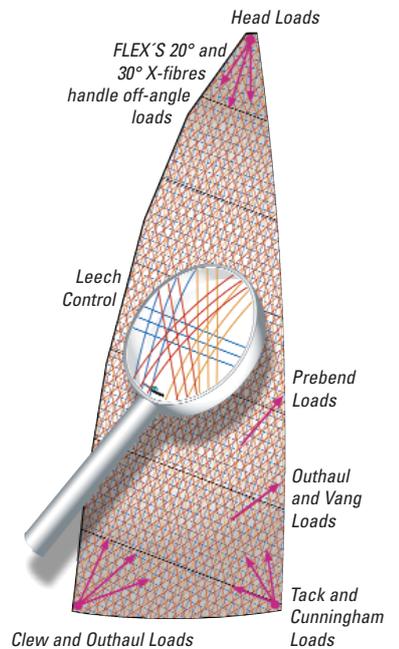
Flex[®]: the material of future world champions



Based on their reputation as high speed machines, Tornados are considered the "Formula 1 of sailing" in the Olympic classes.

Sailcloth for Tornado sails not only needs to be fast but also needs to be robust to handle the high loads. Flex[®] Pen Race sailcloth is in demand for Tornado sails as shown by the top German team "Jojo"

Polgar and Florian Spaltenholz, who won at Kiel Week. The crosscut square-top mainsail, designed by the Italian sail designer Pablo Soldano of Ullman Sails, contributed to Polgar Spaltenholz becoming the top ranking German crew and second in the world rankings. Other Tornado crews using Flex[®] sailcloth have produced podium finishes as well, including 2nd and 3rd in the 2007 World Championships.



Sales-Meeting international

The knowledge base



Group photo of the international sales crew



Once a year, the international sales team of DIMENSION-POLYANT meets to exchange their experiences and discuss the product range for the next season. This year the sales meeting took place in Rhode Island, USA, one of the world's premier sailing locations.



Hydra Net[®]

Technical Award

Nomination for Hydra Net[®] radial

When it comes to durability, Hydra Net[®] radial truly stands alone. This innovative fabric incorporates Dyneema[®] fibres, the most durable and rugged

**Ideal material
for superyacht sails**

fibre available, in the warp direction to attain performance characteristics approaching that of laminated sailcloth. The technology of Hydra Net[®] radial retains the tried and tested characteristics of Dacron sailcloth while

utilising high modulus fibres for minimal stretch. Hydra Net[®] radial is an ideal sail material for the large cruiser to Super Yachts, making it popular with yacht owners and sailmakers alike. It comes as no surprise that Hydra Net[®] radial was nominated for the Technology Prize at this year's World Super

**Nominated at the
World Super Yacht Awards**

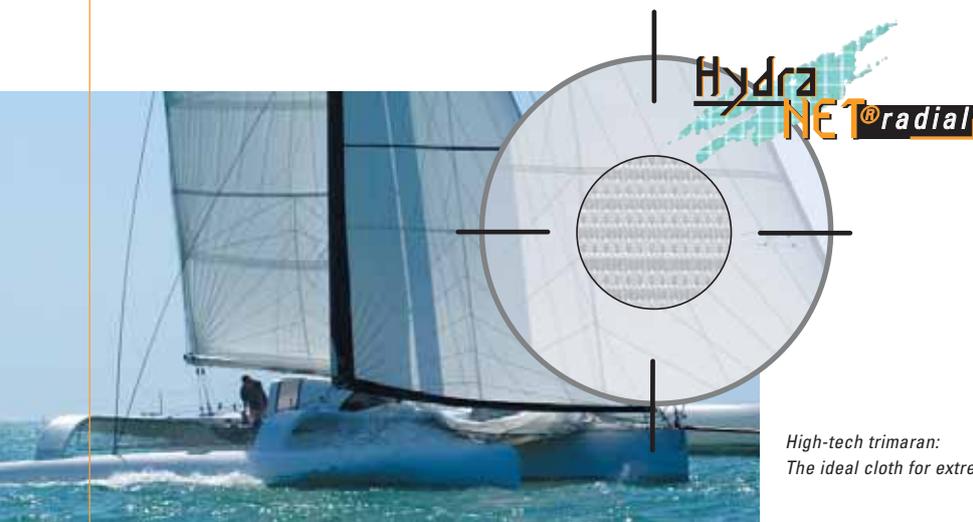
Yacht Awards. It was the first time that any sailcloth style was nominated for



this award presented by the English Boat International Group, which publishes magazines in England, USA, Germany, France and Russia. In a close decision Future Fibres won first place for its' uni-directional spun fibre product, while DP Hydra Net[®] radial was placed second. With multiple weights available, Hydra Net[®] radial continues to succeed in all

Soft hand

applications, from 35' to 100' yachts. The main benefits of Hydra Net[®] radial for sailors and sailmakers is its soft hand, resistance to flex degradation, excellent durability and high resistance to mildew.



High-tech trimaran:
The ideal cloth for extreme sailors



Photo: Richard Langdon

MIDNIGHT, Dubois 37

Success at the Super Yacht Cup

The sight of 52 of the worlds largest sailing yachts captivated both sailors and passers-by alike. Yachts ranging in size

The world's most beautiful sailing yachts

from 27 to 88 metres sailed off the shores of Palma in a regatta for the Super Yacht Cup. Not only was it a sporting event but a social event bringing together the

owners and crews of all nationalities.

This regatta at the Dique Del Oeste in the port of Palma, provided an opportunity for the new Super Yacht group of DIMENSION-POLYANT to evaluate D4[®] and other Super Yacht sailcloth styles. The group headed by Brad Stephens, Moose McClintock and Sven Krause sailed on separate yachts during the regatta.

The discussion between yacht builders,

sail designers and sailmakers was productive. Among other improvements, the



Photo: Richard Langdon

MARIA CATTIVA (Bruce King 130 ft.) racing at SYC

DIMENSION-POLYANT

has a comprehensive range for Super Yachts, these products are:

- Hydra Net[®] radial –
patented Dyneema[®]/Polyester fabric
- DYS[®] – Dyneema[®] Laminate
- VC – Vectran[®] Laminate
- GVTC – Carbon/Vectran[®] Laminate
- GXLD – Carbon/Spectra[®] Laminate
- D4[®] – Custom Load Path Sail Laminate

DP team has developed ideas to optimise the use of D4[®] technology for large furling reef systems. The Dubois 37 metre yacht "Midnight" proved that D4[®] is ideal for regatta victories on the super yacht circuit having sailed to victory with D4[®] Taffeta/Taffeta Carbon/Vectran membranes.

DIMENSION-POLYANT products for Super Yachts



Sailcloth on trial

Quality assurance is an essential role in guaranteeing a consistent, superior product. Heiner Schillings recently joined DIMENSION-POLYANT with many years of experience as both a chemical engineer and quality manager in the textile industry. This background is critical for DP as Heiner will not accept

the word "complaint" in reference to our product, ensuring that the already high standard of quality of DP will be

The man of the practice

exceeded. Heiner will concentrate on production, knowing that quality assurance begins with the raw materials.

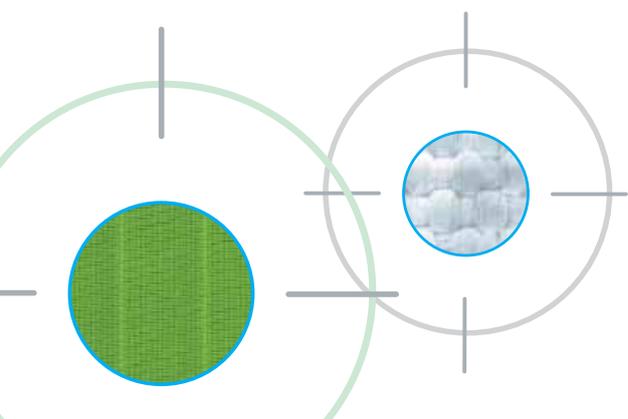


Warehouse and production in the Kempen factory: a spacious environment ensuring higher quality control.



The Green Sail

DP's production facilities have been designed to surpass stringent ecological standards because the protection of the environment is of major importance to DIMENSION-POLYANT, a concern as equally important to the DP team as production safety and reliability. Whether through the use of solvent-free adhesives or by producing sailcloth in a resource-saving manner, the maintenance of our environment and the protection of our natural resources is increasingly important in the decision process at DIMENSION-POLYANT.



Environmental protection is a major issue at DIMENSION-POLYANT.





CNB 117 - Hamilton II - photo: Nicolas Claris

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Interview with Brad Stephens

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Sailing on the Dubois 37m „Midnight“ we had a convincing win in the Dubois Cup using a set of sails manufactured with Taffeta/Taffeta Carbon/Vectran D4[®] membranes.

■ What exactly makes D4[®] fast ?

Above all else I think that the subtle change of yarn directions, both vertically and horizontally is a defining factor in D4[®]. Angle changes between yarns are in the order of a fraction of a degree compared to sails made of conventional rolled goods or membrane products where the yarns are not laid in curves. This is a very

important factor in how a sail loads, how the load is distributed and ultimately how the shape changes in use. And with the D4[®] process we are able to carry those yarns directly into the corner as an integrated structure for superior load carrying.

■ What was the critical sail design step in the development of D4[®]?

Using modern warp orientated laminates it's very important to re-orientate the material to the direction of the loads in the sail. This essentially means that there will be a number of horizontal sail sections within which this warp orientated material is aligned to the local loads. We did studies investigating exactly how many seams were required to provide the final 3 dimensional shape beyond which additional joints presented the possibility of reduced accuracy and additional labour in sail assembly! When it came time to consider the alternative production methods for the D4[®] process we already knew that the required 3 dimensional shape could be achieved with a relatively small number of seams and effectively replaced the orientated conventional laminates in each section with custom load orientated yarns.

■ D4[®] seems a very important product for the racing market but what's happened in the cruising scene ?

Actually, when we developed D4[®] we always considered the cruising market as a very important sector that we believed would be well served by the possibilities of the D4[®] system. Reef yarn arrays that make a reefed D4[®] mainsail essentially a smaller version of the full size sail and double taffeta constructions are two areas that provide superior longevity for cruising sails.

■ How well do sails made with D4[®] membranes last ?

I think that it's well understood by sailors now that a well made sail using the appropriate woven polyester will outlast anything else structurally. But, it will be heavier, change shape faster and ultimately is a poor choice (class rules aside) if you want to win a race. Structurally a well made sail using either DIMENSION-POLYANT's rolled goods laminates or D4[®] membranes should have a similar life expectancy with similar use.

■ How has D4[®] changed the work of a sail designer? Previously they designed



D4[®] 10th anniversary



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D4[®] 10th anniversary

panel layouts and now they have to consider yarn maps.

Well, in many respects it's the same job. Modern paneled sails make use of orientated materials that to be used effectively must be orientated to address the loads in a sail. But that only involves the issue of a relatively limited number of panels in a sail. However, with a D4[®] membrane there are typically kilometers of yarn that can be individually orientated by the mm to address the loads in a sail. This is where the expertise of DIMENSION-POLYANT's design staff come to the fore taking the sail designers panel geometry and applying a unique set of tools and experience to provide a custom yarn layout for every membrane.

■ *You have been working on D4[®] for more than 10 years now. How did this all start?*

In 1994 our sail loft had the sails on all three Australian team members in that year's Kenwood Cup (International Ocean Racing Series) held in Hawaii. The USA team won and for various reasons our team did not perform that well. What stood out at the end of that regatta was that North Sails, with their 3DL sails. The following year at the Admiral's Cup we observed the dominant effect of that

previous observation and it was quite clear that we needed to respond. Whilst some suggested that we "give up" we took this as a challenge and thus started the development process that became D4[®].

■ *DIMENSION-POLYANT, the largest manufacturer of sailcloth purchased the know how of D4. Has this resulted in a faster development of D4[®]?*

Prior to DIMENSION-POLYANT purchasing this know how we had already recognized that the future development of D4[®] needed the resources of a company such as DIMENSION-POLYANT. Since the acquisition to address the increased demand and improve efficiency we have upgraded



Brad Stephens

the production facility in Australia. Furthermore we have set up a second production facility at DIMENSION-POLYANT's headquarters in Germany.

The complete interview can be found on our website www.dimension-polyant.com.

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... World Speed Record

is today, overcoming many structural failures over this time. Multiple sensors monitor this futuristic Trimaran's loads, and sailing her is akin to an instrument flight on an airplane. Is it any wonder Thibault's crew is made up of jet pilots!



47,6 kn



DP Copenhagen

Denmark's sailors recognise
Claus von Bülow

on site

The Tempest, Soling, Folkboat and X-99 are just a few of the classes in which Claus von Bülow

has had great success, including world championships. Visible on the professional sailing scene since 1971 and the DP

representative for Scandinavia since the early '80's, Claus is well known throughout the Scandinavian sailing community as an authority on sailcloth and its' applications. Successful sailors in

Scandinavia need to be at the top of their game as the competition in Northern Europe is at a very high level, and Claus has helped many of these sailors reach the pinnacle of the sport. Over the years Claus has worked with many great sail designers, including Denmark's legend Paul Elvstrøm. Having this experience allows Claus to enjoy sailing success on the 63 ft yacht "Buksesnedkeren".



Claus von Bülow

DIMENSION-POLYANT GmbH, Germany Headquarters

Speefeld 7
D-47906 Kempen
Tel: +49 (2152) 891 0
Fax: +49 (2152) 891 149
info@dimension-polyant.com

DIMENSION-POLYANT ApS, Denmark

Redhavnsvej 9
DK-2100 Kobenhavn
Tel: +45 (39) 293 000
Fax: +45 (39) 293 500
copenhagen@dimension-polyant.com

DIMENSION-POLYANT SAS, France

Rue Newton
Parc Technologique
F-17000 La Rochelle
Tel: +33 (0) 546 282 201
Fax: +33 (0) 546 412 840
larochelle@dimension-polyant.com

DIMENSION-POLYANT SAS, France

Port de la Pointe Rouge
F-13008 Marseille
Tel: +33 (0) 491 736 628
Fax: +33 (0) 491 722 505
marseille@dimension-polyant.com

DIMENSION-POLYANT UK Ltd., United Kingdom

Unit 11, Kingdom Close
Kingdom Business Park
Segensworth East
GB-Fareham Hampshire PO15 5TJ
Tel: +44 (1489) 570 551
Fax: +44 (1489) 570 451
uk@dimension-polyant.com

DIMENSION-POLYANT Inc., USA

78, Highland Drive
USA-Putnam CT 06260
Tel: +1 (860) 928 8300
Fax: +1 (860) 928 8330
info@us.dimension-polyant.com

DIMENSION-POLYANT Sailcloth PTY Ltd., Australia

P.O. Box 825
Unit 7/9 Powells Rd.
AUS-Brookvale N.S.W. 2100
Tel: +61 (2) 9905 9565
Fax: +61 (2) 9905 9569
dp-aus@dimension-polyant.com

imprint

DIMENSION-POLYANT GmbH • Speefeld 7 • D-47906 Kempen
Phone: +49 2152 891 0 • Fax: +49 2152 891 123
E-mail: info@dimension-polyant.com
Managing Director: Uwe Stein, Martina Minten-Schalley
Registered Office: Krefeld • Text: Klaus Bartels
Responsible for editorials: DIMENSION-POLYANT
Design: www.SprinzundSprinz.de

Shows

- **Hanseboot, Hamburg**
October 27-November 04, 2007, hall B6, booth C203
- **Mets, Amsterdam**
November 13-15, 2007, hall 4, booth 04.426
Super Yacht Pavillon European Foyer, booth EF.021
- **Salon Nautiques, Paris**
November 30-December 10, 2007
- **Boot 2008, Düsseldorf**
January 19-27, 2008
- **Sailcloth**
Key West Race Week, Key West, Florida
January 21-25, 2008
- **Industrial Business**
IFAI - Industrial Fabrics Association,
Las Vegas, Nevada: October 3-5, 2007
- **Outdoor Business**
Outdoor Retailer Salt Lake City, Utah:
Summer Show August 8-12, 2007
Winter Show January 23-26, 2008