CHALLENGE SAILCLOTH

2026

CHALLENGE SAILCLOTH

bluesign®

Green-Tec

Sustainable Textiles and Laminates

PFAS/PFAB free

Products in our catalog with this logo contain some or all of the sustainable textile trifecta!

Please enquire with your Challenge sales team for more

Recycled Fabric

Challenge's Marblehead Eco woven Dacron sailcloth is the world's only sailcloth fabric made with 100% recycled fiber. Constructed with rPET fiber which has equal properties to the virgin polyesters used in other sailcloth. In our laminate sailcloth fabrics we also use rPET fiber in the taffeta's, and in the polyester warp inserts. Challenge is the clear leader in this arena, having gone much further than anyone else and incorporating recycled materials across a wide range of products throughout our line. Challenge is using rPET fibers and taffetas in the vast majority of its laminated products.

Non-Toxic Adhesive

Our performance materials are laminated into composite fabrics using our proprietary adhesive, which does not contain toxic solvents or VOC's (Volatile Organic Compounds). Other's laminate with solvent-based adhesives which are typically over 50% solvents by weight, which then need to be evacuated and are released into the atmosphere using energy-intensive drying ovens. Others may claim to be 'carbon neutral' by buying carbon-offsets after polluting; Challenge has taken the progressive step of eliminating harmful chemicals from the start and using recycled materials instead of greenwashing "off-sets".

Recycled Film

The proprietary Challenge RUV™ PET film is 100% recycled and 97% UV resistant. Challenge RUV™. Challenge is using this film in the vast majority its laminated products. In testing RUV™ film is always equal or superior to the virgin PET films others are using.

bluesign®

Understanding bluesign® Certification

PFAS/PFAB free

Products in this catalog with the bluesign® logo are made in a bluesign® certified facility.

In a significant stride towards sustainable excellence, Challenge Sailcloth's Thailand facility proudly announces its bluesign® certification. This esteemed recognition reaffirms the company's unwavering commitment to environmentally responsible practices and the highest standards of sustainability within the sailcloth industry.

bluesign® certification, an internationally recognized standard for sustainable textile production, represents the pinnacle of responsible manufacturing within the textile industry. bluesign® employs stringent criteria and audits to ensure that the entire textile supply chain adheres to the highest standards of sustainability, safety, and resource efficiency.

The bluesign® Criteria

bluesign® certification is rooted in a comprehensive set of criteria that encompass key aspects of sustainable textile production. These criteria are designed to minimize the environmental impact of the textile industry while prioritizing the well-being of workers and consumers. Some core aspects of the bluesign® criteria include:

- **Resource Productivity**

bluesign® places a strong emphasis on resource efficiency, including reduced water usage, energy consumption, and the responsible use of chemicals.

- **Consumer Safety**

Ensuring that textiles are free from harmful substances and comply with stringent safety standards to protect consumers.

- **Worker Health & Safety**

Prioritizing the well-being of workers by assessing and minimizing exposure to hazardous substances and fostering safe working conditions.

- **Environmental Impact**

Addressing the environmental impact of textile production by reducing emissions, waste, and the use of hazardous chemicals.


WOVE

Super Premium Woven Sailcloth

Boat design and rigging have evolved, necessitating new sailcloth constructions. Marblehead Recycled and Newport lines use the same trusted technology as the original Marblehead tightly woven sailcloth known and proven around the world. The key to shape holding and long lasting sailcloth is the number of yarn crossings, or 'Interlockings',™ which resist shape distortion. Challenge's Fiber 104, and now R104 (recycled), designed for maximum fiber interlockings, creates a strong, dense weave without relying on short-term finishes. This Interlock technology is now featured in both the Newport and Marblehead Recycled lines.

Marblehead Recycled

- **Marblehead Recycled:**
  World's first sailcloth made from fully recycled fiber.
- **Innovative Development:**
  Created by Challenge after extensive global material research and testing.
- **Proprietary Recycled Polyester R104:**
  Matches the properties of virgin Fiber 104, a first in the industry.
- **Performance Assurance:**
  Marblehead REC offers exceptional performance, durability, and UV resistance.
- **Sustainability Commitment:**
  Challenge provides these advanced recycled fabrics at the same price as virgin polyester wovens.
- **True Green Solution:**
  Emphasizes the use of recycled materials over purchasing carbon offsets for sustainability.
- **Industry Breakthrough:**
  Represents a significant advancement in woven sailcloth technology.

Fabric ID	Description	Recycled	Yarn Denier		Fabric Width	
		% of Fiber	Warp	Fill	in	cm
D6.47 REC	6.47 Marblehead REC	100%	250	400	60	150
D7.47 REC	7.47 Marblehead REC	100%	300	500	60	150
D8.47 REC	8.47 Marblehead REC	100%	300	720	60	150
D9.47 REC	9.47 Marblehead REC	100%	300	940	60	150
D10.47 REC	10.47 Marblehead REC	100%	500	1300	60	150


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Newport High-End Sailcloth features three distinct construction types: All Purpose, Low Aspect, and Pro Radial. Crafted with precision at our bluesign® certified facility, Newport weaves utilize the finest sailcloth fiber available — Challenge Fiber 104.

This premier product line embodies the cutting-edge research and development advancements that Challenge has gained from producing the renowned Marblehead High and Low Aspect sails. Newport sails are engineered with strong 1% fill numbers and durable denier combinations for All Purpose and Low Aspect applications, alongside exceptional warp performance for Pro Radial designs.

Challenge Fiber 104 stands out by accommodating more fibers per inch compared to competing sailcloth, resulting in tight weaves that deliver excellent shape retention, unmatched durability, and superior UV protection.

For sailors seeking high-quality performance and reliability, the Newport collection offers unparalleled craftsmanship and satisfaction. Choose your ideal Newport sail and experience the perfect blend of trust, quality, and performance on the water.

Newport All Purpose

- Extremely Strong Fill yarns to handle high leach loads on sails.
- Robust constructions ranging from Higher Aspect styles to more well rounded all purpose for all kinds of sails.

Newport Low Aspect

- Low Aspect constructions designed for more traditional boats and rigs with longer “J” and “E” measurements.
- Balanced tight weave for increased bias strength and excellent recovery.

Newport Pro Radial

- Large warp yarns to give low stretch in the warp direction and provide great durability and UV protection.
- Tight weaves, using a balanced construction for good 1% numbers in Warp, bias, and fill.

Newport All Purpose

Fabric ID	Description	Yarn Denier		Fabric Width	
		Warp	Fill	in	cm
D5.45	5.45 Newport All Purpose	200	350	54	137
D5.93	5.93 Newport All Purpose	150	350	60	150
D6.45	6.45 Newport All Purpose	220	440	54	137
D7.45	7.45 Newport All Purpose	275	500	60	150
D7.95	7.95 Newport All Purpose	275	750	60	150
D8.45	8.45 Newport All Purpose	350	840	60	150
D9.45	9.45 Newport All Purpose	350	1000	60	150
D10.95	10.95 Newport All Purpose	440	1300	60	150
D12.95	12.95 Newport All Purpose	500	2000	60	150

Newport Low Aspect

Fabric ID	Description	Yarn Denier		Fabric Width	
		Warp	Fill	in	cm
D4.93	4.93 Newport Low Aspect	150	250	56	142
D5.53	5.53 Newport Low Aspect	250	300	60	150
D6.53	6.53 Newport Low Aspect	250	370	60	150
D7.03	7.03 Newport Low Aspect	250	420	60	150
D8.03	8.03 Newport Low Aspect	300	500	60	150
D9.03	9.03 Newport Low Aspect	300	700	60	150
D10.53	10.53 Newport Low Aspect	350	840	60	150
D11.93	11.93 Newport Low Aspect	500	1300	60	150

Newport Pro Radial

Fabric ID	Description	Yarn Denier		Fabric Width	
		Warp	Fill	in	cm
D5.1	5.1 Newport Pro Radial	150	250	60	150
D6.1	6.1 Newport Pro Radial	250	350	60	150
D7.1	7.1 Newport Pro Radial	350	440	60	150
D8.1	8.1 Newport Pro Radial	440	520	60	150
D9.1	9.1 Newport Pro Radial	500	750	60	150
D10.1	10.1 Newport Pro Radial, *Please mind application chart*	600	840	60	150

Fastnet

Challenge Fastnet is the most durable offshore cruising style available. Fastnet achieves the high level of durability and UV resistance by using massive high tenacity warp fibers. The low aspect constructions and high mass fiber are the most efficient and cost effective way of extending sail life.

- Used in Clipper around the world for over two decades, improvements were made in 2018 resulting in increased shape holding performance.
- Bulletproof durability.
- UV resistance.
- Longevity.

Fabric ID	Description	Yarn Denier		Fabric Width	
		Warp	Fill	in	cm
D6.68	6.68 Fastnet	250	400	60	150
D7.38	7.38 Fastnet	300	500	60	150
D7.88	7.88 Fastnet	500	650	60	150
D8.88	8.88 Fastnet	500	750	60	150
D9.88	9.88 Fastnet	500	840	60	150
D10.88	10.88 Fastnet	500	1000	60	150
D11.88	11.88 Fastnet	500	1300	60	150

Atlantic

Atlantic styles are tightly woven constructions using high tenacity yarns. Challenge sought to develop a new cruising style utilizing a medium firm stabilized finish for durable cruising sails. High production volumes ensure consistency and low cost for a high value product line.

- Made with 100% high tenacity fibers.
- Tight bias numbers after flutter, due to strength from weave not coating.
- Strong fill 1% numbers.
- Medium to firm hand.

Fabric ID	Description	Yarn Denier		Fabric Width	
		Warp	Fill	in	cm
D4.38	4.38 Atlantic	150	250	60	150
D5.38	5.38 Atlantic	250	300	60	150
D6.38	6.38 Atlantic	250	400	60	150
D7.48	7.48 Atlantic	300	500	60	150
D8.38	8.38 Atlantic	300	750	60	150
D9.38	9.38 Atlantic	440	840	60	150
D10.38	10.38 Atlantic	440	1000	60	150

Newport Pro Radial Black

Fabric ID	Description	Yarn Denier		Fabric Width	
		Warp	Fill	in	cm
D6.1BK	6.1 Newport Pro Radial Black	250	350	60	150
D7.1BK	7.1 Newport Pro Radial Black	350	440	60	150
D8.1BK	8.1 Newport Pro Radial Black	440	520	60	150
D9.1BK	9.1 Newport Pro Radial Black	500	750	60	150
D10.1BK	10.1 Newport Pro Radial Black, *Please mind application chart*	600	840	60	150

Black Dacron

Challenge is the world leader of dyed woven sailcloth. We have selected a crosscut line and radial line for customers that prefer black sails. Autoclave dyeing with high pressure and heat produce vibrant and long lasting colors. All of our woven styles can be made in black for custom orders that meet the MOQ.

Fastnet Black

Fabric ID	Description	Yarn Denier		Fabric Width	
		Warp	Fill	in	cm
D6.68BK	6.68 Fastnet Black	250	400	60	150
D7.38BK	7.38 Fastnet Black	300	500	60	150
D7.88BK	7.88 Fastnet Black	500	650	60	150
D8.88BK	8.88 Fastnet Black	500	750	60	150
D9.88BK	9.88 Fastnet Black	500	840	60	150
D10.88BK	10.88 Fastnet Black	500	1000	60	150

New Endeavor Tall Ships line is purpose-built for the world's most demanding tall ship applications. Designed to deliver lasting performance, it maintains its look, feel, and handling season after season — even under relentless exposure to sun, salt, and sea. New textured hand, looks and feels like classic sailcloth while maintaining modern performance and durability.

Endeavor Tall Ships

Designed for demanding large yachts, Endeavor Tall Ships construction is woven with tough 1000d warp fibers and rugged fill fibers. This combination gives excellent tearing strength as well as UV and Abrasion Resistance. The standard finish has a softer hand feel specifically designed for ease of sail handling. Challenge also has a wide variety of custom produced Tall Ships styles that have been made for special projects. Please inquire about custom styles and colors for unique boats.

- Finally a high strength Tall Ships fabric that has the soft foldable hand of old fashioned cotton or spun polyester.
- Fibers have strength of HT polyester, but feel of cotton.
- Other fabric with feel of cotton often sacrifice breaking and tearing strength.

Fabric ID	Description	Yarn Denier		Fabric Width	
		Warp	Fill	in	cm
D12.8	12.8 Newport Tall Ships	1000	1500	54	137
D15.0	15.0 Newport Tall Ships	1000	2000	54	137

D3.8

Purple

Orange

Medium Blue

Gold

Green

FL Yellow

D3.8 & D6.03

Black

Red

Dark Blue

Yellow

Natural

SO, DT/DC

Storm Orange

Tanbark

Cream

Newport Colors

Challenge is the world leader of dyed woven sailcloth. The premium constructions use high tenacity yarns and high mass fiber technologies. Autoclave dyeing with high pressure and heat produce vibrant and long lasting colors. Custom colors can be matched to Pantone shades with 1000 yard MOQs.

Newport Classic

Newport Classic styles are the same great fibers and constructions used across the product line. Designed specifically for classic yachts, the rich Tanbark and Cream colors are achieved using an autoclave dyeing process with high pressure and heat. They are one of the foundations in the yachting industry, and demand a very high standard of quality which few have been able to achieve. As a result of the difficult nature of prod ucing these colors, please inquire about special orders with longer lead times.

Newport Colors

Fabric ID	Description	Yarn Denier		Fabric Width	
		Warp	Fill	in	cm
D3.8	3.8 Newport, Natural	150	250	60	150
D3.8*	3.8 Newport, Colors (*PU, O, MB, CG, G, FY)	150	250	60	150
D6.03	6.03 Newport, Natural	250	400	60	150
D6.03**	6.03 Newport, Colors (**PU, O, MB, CG, G, FY, BK, R, DB, Y)	250	400	60	150
D9.88SO	9.88 Newport, Storm Orange	500	840	60	150
D10.88SO	10.88 Newport, Storm Orange	500	1000	60	150

Newport Classic

Fabric ID	Description	Yarn Denier		Fabric Width	
		Warp	Fill	in	cm
DT / DC3.8	3.8 Newport Classic, Tanbark or Cream	150	250	60	150
DT / DC5.53	5.53 Newport Classic, Tanbark or Cream	250	300	60	150
DT / DC6.68	6.68 Newport Classic, Tanbark or Cream	250	400	60	150
DT / DC7.88	7.88 Newport Classic, Tanbark or Cream	500	650	60	150
DT / DC8.88	8.88 Newport Classic, Tanbark or Cream	500	750	60	150
DT / DC9.88	9.88 Newport Classic, Tanbark or Cream	500	840	60	150

OD-Tec

Challenge is excited to introduce OD-Tec, our latest One Design fabric line. Designed with advanced coating technology, OD-Tec offers a new generation of high-performance, durable sailcloth. It features high tenacity fibers and proprietary coating for low stretch, superior tear strength, and resilience against wear and tear, ensuring long-lasting performance in dinghy racing.

- OD-Tec fabrics are firm bias, low crimp, and low stretch.
- Prominent Double-Beam matrix ripstop pattern for rugged durability.
- New immersion-coating technology.
- Proprietary chemistry for high performance and superior durability.
- No coating white-out, excellent adhesion. Probably the best coating durability available.
- OD-Tec has tear and breaking strength not seen to date in light weight Dacron fabrics.
- High tenacity fibers and woven construction developed for Kitesurf and Wing-Foiling fabric technology.

Fabric ID	Description	Bias	Weight		Width	
			SM oz	gsm	in	cm
OD-Tec 2.5	Very light weight crosscut or radial fabric	Medium	3.11	133	60	150
OD-Tec 2.85	Balanced w/crosscut tilt; High strength/wt. ratio	Firm	3.40	146	60	150
OD-Tec 2.85 REC	Made with 100% Recycled Fibers	Firm	3.40	146	60	150
OD-Tec 3.75	More crosscut oriented than lighter weights	Firm	4.07	174	60	150

Fibermax

Challenge is excited to announce its next generation coated cruising spinnaker fabric. Proven in the Clipper Cup Around the World Race, spinnakers made of FiberMax were used without replacement. All but one person on the many boats are amateurs, so the chutes are used and abused over and over again. No spinnaker cloth but Challenge has been used on the Clipper Cup sails for the last 20 years.

- High tenacity nylon fibers provide excellent breaking and tear strength, and abrasion resistance.
- Very tight weave, dense constructions.
- Durable coating has excellent adhesion, with no crazing or white-out common on lesser fabrics.
- Firm finish provides low stretch and high performance for big boat or dinghy racing.
- Dyed bright white finish offers superior UV resistance to natural.
- Flourecent colors are special order.
- Fabric width is 60" / 150 cm.


Dark Navy


Dark Blue


Ocean Blue


Light Blue

White


Grey


Black


Red


Orange


Gold

Yellow


Green


Purple


F. Raspberry


F. Pink


F. Orange

F. Yellow


F. Green

Fabric ID	Product	Style	Weight		Construction	Colors
			SM oz	gsm		
N-FS44	Fibermax 44	0.75 oz	1.08	46	30 x 40	All
N-FS64	Fibermax 64	1.5 oz	1.63	69	70 x 70	All
N-FS94	Fibermax 94	2.2 oz	2.61	117	140 x 140	W, R, B
N-FS144	Fibermax 144	3.4 oz	3.3	141	210 x 210	W, R, B


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Super Series Nylon

bluesign®

Challenge Super Series Nylon line is a Grand Prix race product designed and manufactured without compromise to produce the best product available in its category. Super Series uses special high tenacity nylon fibers for low stretch, high abrasion resistance, and highest breaking strength in class. Higher breaking strength is critical because it allows for a stiffer coating chemistry to be used while maintaining good tear resistance for the finished product.

- Coated finish for easy cutting on vacuum tables.
- High tenacity nylon fibers provide excellent breaking and tear strength, and abrasion resistance.
- Very tight weave, dense constructions.
- Durable coating has excellent adhesion, with no crazing or white-out common on lesser fabrics.
- Firm finish provides low stretch and high performance for big boat or dinghy racing.
- Dyed bright white finish offers superior UV resistance to natural.
- Flourecent colors are special order.
- Fabric width is 60" / 150 cm.

Fabric ID	Product	Weight		Construction	Colors
		SM oz	gsm		
NEL33	Elite33	0.83	35	30 x 30	White
SS75	Super Series 75	0.93	40	30 x 30	Red, White, Blue, Custom
SS90	Super Series 90	1.1	47	30 x 40	Red, White, Blue, Custom
SS150	Super Series 150	1.65	71	70 x 70	Red, White, Blue, Custom
SS250	Super Series 250	2.96	127	140 x 140	Red, White, Blue, Custom
SS350	Super Series 350	3.5	150	210 x 210	Red, White, Blue, Custom


METRA™

Modulus Extraction Technology

METRA™ is Modulus Extraction Technology. A breakthrough in fiber performance. METRA™ is a new material platform. It's the product of six years of focused R&D, a multimillion-dollar investment in next-generation composite manufacturing, and the strategic assembly of a world-class technical team. METRA™ represents what happens when engineering meets obsession.

Performance

We engineered a platform to preserve modulus through process control, fiber handling, and machine design. Our goal was to extract more performance from each fiber and apply it where it matters — without overbuilding or overpricing. That means:

- Higher performance with less weight.
- Cleaner composite constructions with fewer layers
- Better long-term stability without added bulk and cost

Compatability

METRA™ is compatible with:

- **Carbon Fiber** – for ultimate low stretch performance.
- **Aramid/Kevlar®** – for impact resistance, flex fatigue, and heat tolerance.
- **High-tenacity polyester** – for dimensional stability, UV durability, and affordability.
- **Nylon** – for abrasion resistance, flexibility, and recovery.
- **Superlight scrims and veils** – for layered control and featherweight construction.

Sails made with custom laminate base materials from Challenge.

LAMIN

Palma Carbon

New sophisticated high performance UPE/Carbon cruising laminate combining our Code-Tec technology with our expertise in adhesives and warp insert construction. Two separate warp insert layers using small denier fibers either side of X insert core make this product unique and leading edge, and very tough.

Palma-Tec

Performance cruise laminate with white taffeta and UPE and Polyester fibers in black.

Palma

Introduced in 2022 Palma is an all-white cruising fabric made with polyester and UPE fiber.

Palma Cruise

Our new polyester only version of Palma-Tec. Same fiber content, same DPI steps, same value for money performance. Available for custom orders.

NATES

Super Series GP

Our new line of high-end race laminates designed for the most demanding clients and applications. No compromise, just the best race laminate available today.

XRP Ultra Aramid

Durable race range combining UPE and High Modulus aramid.

XRP Race

This very popular mid-market line continues to of offer the best value for money of any film based warp insert laminate.

Formula Ultra

New sophisticated three-layer laminate designed for very high-performance dingy applications with the OD catamarans in mind. Durable and high modulus.

Palma Carbon

Based on our popular and highly successful Palma cruise laminate line, Challenge announces a new high modulus (low stretch) Palma laminate utilizing Carbon fiber blended with UPE (UHMWPE) fiber for larger modern performance-oriented cruising boats. Specifically designed for modern cruising boats and sailors who are interested in performance and good sail shape while enjoying their leisure time on the water. Cruisers like to go fast as well!

- Five styles with increasing density of warp fiber inserts.
- Blended UPE and carbon fiber warp yarns.
- A great option for boats in the 60' to 75' that don't want/need membrane sails.
- Lowest stretch cruising fabric.
- Reasonable durability.
- Recycled film.
- No solvents or PFAS chemicals.

Palma-Tec

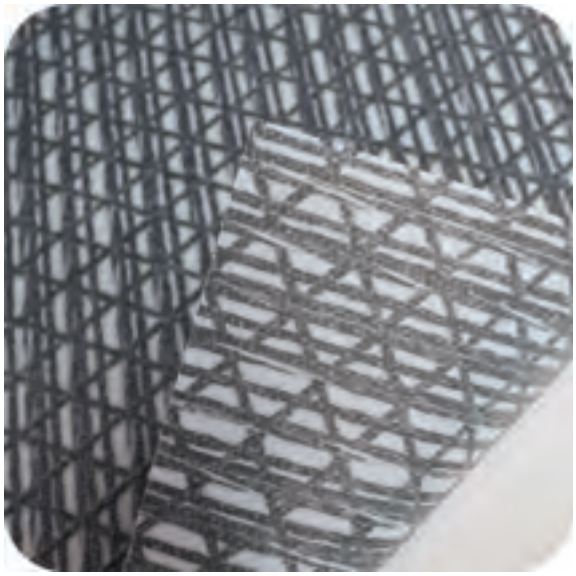
UPE enhanced, these modern cruise laminates use all inlaid fiber without scrims for highest performance and efficiency. Sandwiched between taffetas, they are soft and strong with tremendous lamination adhesion for excellent durability. Using UPE and large and tough black polyester high tenacity fibers in several directions, they both handle off angle loads and are untearable.

- Uses UPE for enhanced performance.
- The combination of black fibers between white taffetas produces a light grey color.
- All styles are available with increasing density of warp fiber inserts.
- Special UV resistant recycled film is used.
- Both sides are bonded with polyester taffetas which increase in density on the heavier styles, for better abrasion and UV resistance.

Palma

Our new Palma Cruise Laminate line are cutting edge, UPE enhanced fabrics specifically designed for modern cruising boats and sailors who are interested in performance and good sail shape while enjoying their leisure time on the water. Cruisers like to go fast as well!

- Uses UPE for enhanced performance.
- Five styles with increasing density of warp fiber inserts.
- Polyester taffetas on both sides, which increase in weight on the heavier styles, for better abrasion and UV resistance.
- Low stretch.
- High durability.
- High percentage of recycled materials.
- No solvents or PFAS chemicals.



Palma Cruise

The new Palma Cruise Laminate line is an update of our original very popular Palma line with 100% polyester fiber. Envisioned primarily for the OEM market, but also appropriate for small and medium sized modern cruising boats up to 45' LOA. Palma Cruise employs medium weight 150d taffetas for good durability and abrasion resistance. High tenacity polyester fiber in a laminate construction provides better performance/stretch resistance than woven Darcon sailcloth.

- Three styles with increasing density of warp fiber inserts.
- Polyester taffetas on both sides for better abrasion and UV resistance.
- Better performance and stretch resistance than woven Dacron.
- Good durability.
- High percentage of recycled materials.
- No solvents or PFAS chemicals.

Palma Carbon

Fabric ID	Insert DPI		Taffeta	Film	Weight		Width	
	Total	X 50°/1.5"			SM oz	gsm	in	cm
Palma Carbon 20	21,200	1,000	250	1.50	12.33	524	60	150
Palma Carbon 27	27,000	1,000	250	1.50	13.10	561	60	150

Palma-Tec

Fabric ID	Insert DPI		Taffeta	Film	Weight		Width	
	Total	X 55°/.75"	White		SM oz	gsm	in	cm
Palma-Tec 6	6,000	1,000	Light	1.00	6.21	266	60	150
Palma-Tec 9	9,000	1,000	Light	1.00	6.51	279	60	150
Palma-Tec 13	12,000	1,000	Medium	1.50	8.17	350	60	150
Palma-Tec 18	18,000	1,000	Medium	1.50	9.39	402	60	150
Palma-Tec 24	24,000	1,000	Medium	1.50	10.09	432	60	150
Palma-Tec 28	28,000	1,000	Heavy	1.50	TBD	TBD	60	150
Palma-Tec 34	34,000	1,000	Heavy	1.50	TBD	TBD	60	150
Palma-Tec 42	42,000	1,000	Heavy	1.50	TBD	TBD	60	150

Palma

Fabric ID	Insert DPI		Taffeta	Film	Weight		Width	
	Total	X 45°/1.5"	White		SM oz	gsm	in	cm
Palma 6	6,000	1,000	Light	1.00	5.86	251	60	150
Palma 9	9,000	1,000	Light	1.00	6.47	277	60	150
Palma 13	12,000	1,000	Medium	1.25	7.94	340	60	150
Palma 18	18,000	1,000	Medium	1.25	9.80	420	60	150
Palma 24	24,000	1,000	Medium	1.50	10.50	450	60	150

Palma Cruise

Fabric ID	Insert DPI		Taffeta	Film	Weight		Width	
	Total	X 45°/1.5"	Cool Grey		SM oz	gsm	in	cm
Palma Cruise 13	13,000	1,000	Medium	1.50	7.86	337	60	150
Palma Cruise 18	18,000	1,000	Medium	2.00	9.23	395	60	150
Palma Cruise 24	24,000	1,000	Medium	2.00	10.52	451	60	150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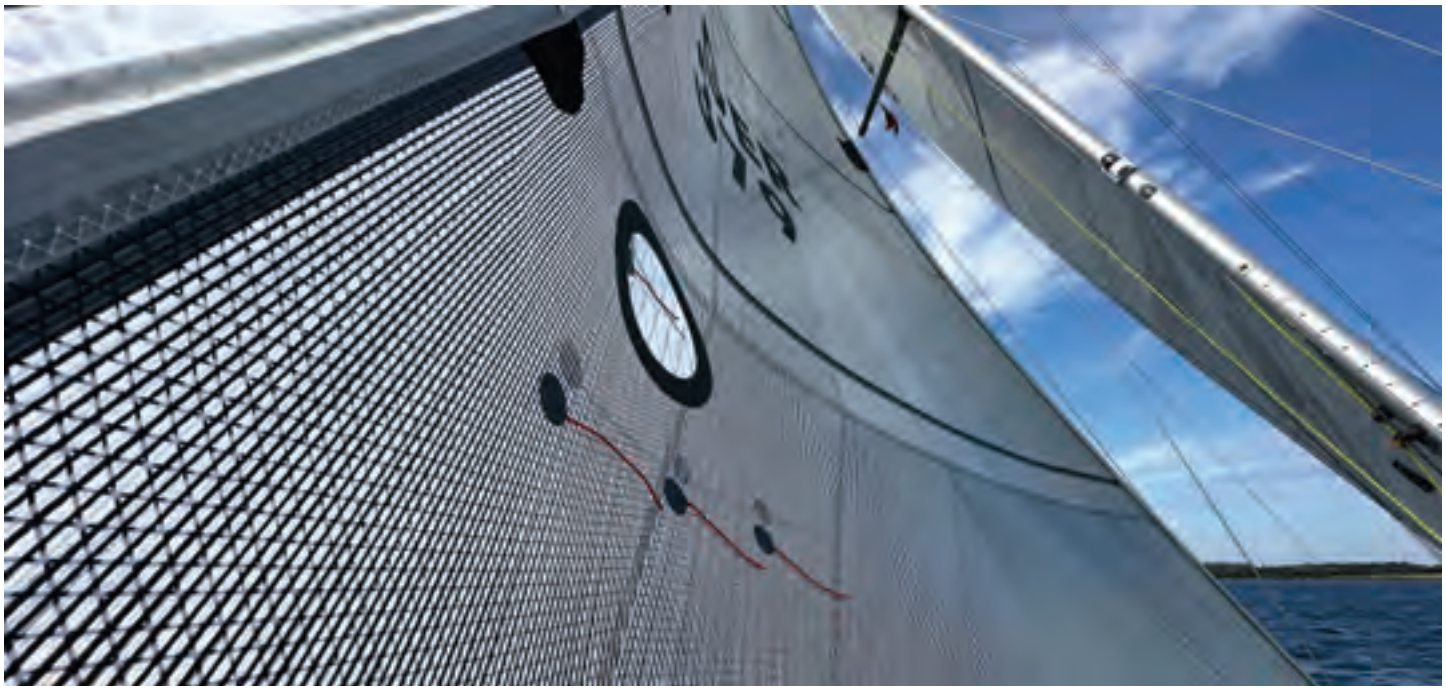
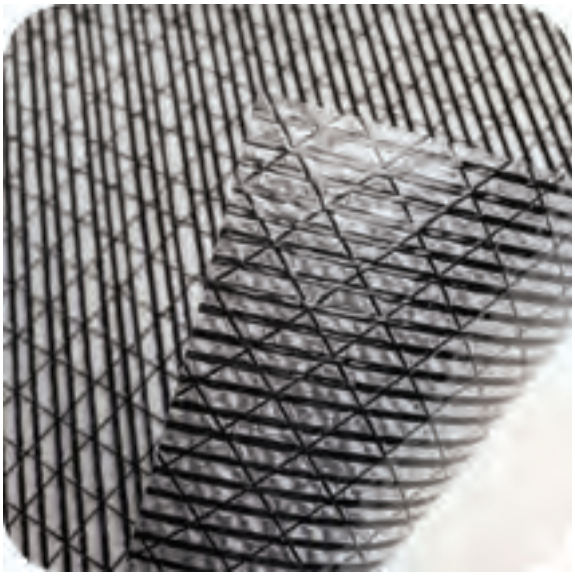
CIC
DOSIM
M2 SPEED TOUR
M2 Surgical Sails
VD 28182

High Performance Race Laminates

Since the advent of the membrane sail era some 15 yrs ago, laminate sails became product that most sailmakers considered low-end, as it was thought that "serious" racers would spend more money on the latest and greatest membrane or string product. Certain sailcloth suppliers even went into the string sail business. At this point development of laminate sailcloth basically stopped. If you look through sailcloth catalogs today, the materials available are the same that were available a decade ago. However, we can all see clearly now the limitations of membrane sails, so there is a clear need for improvement in laminated racing sailcloth. We think we can do better.

We began the design of this range with the intention to make the lightest racing fabrics available today, with the high-performance lake racing boats on Lake Geneva in mind as our starting point. These boats demand super light sails, that have a wide wind rage, and high modulus. Then we expanded the concept up the DPI range, making sure at each stop, we had the lightest material with the highest modulus (best stretch resistance).

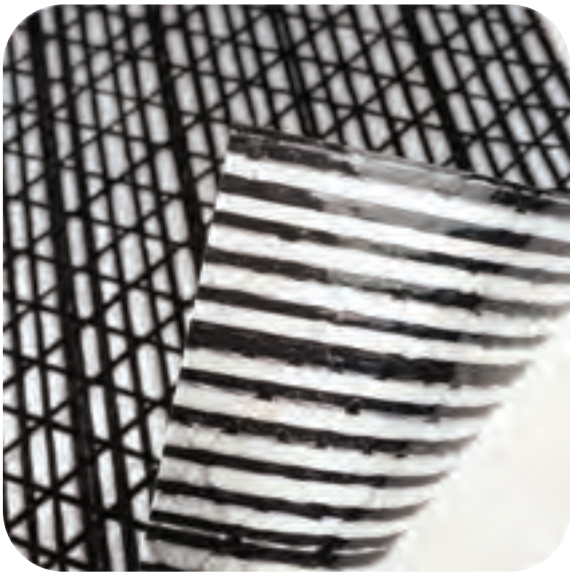




Super Series GP

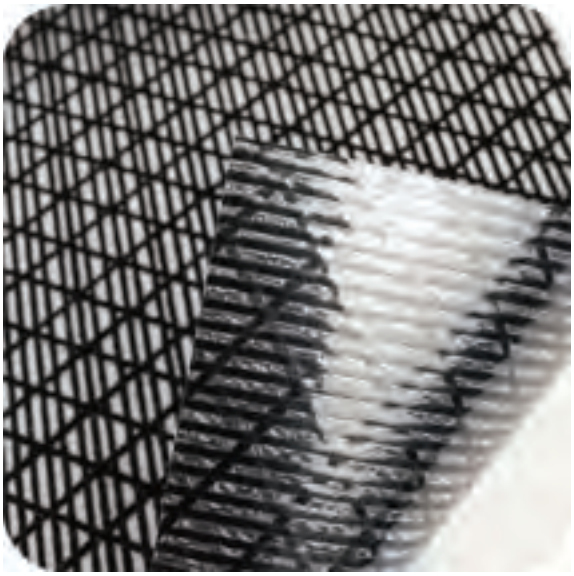
Super Series GP is a new line of Challenge high-end Aramid race fabrics designed for the most demanding clients and applications. The only consideration when designing this line is that it would to be the best material in its category, designed for light, highmodulus Code Sails across a range of boat types and sizes, and additionally for up-wind sails on boats below 50 feet LOA.

- Less film weight, because of our extensive use .25 mil films, and the changing of film gauge at each DPI step.
- Better fiber coverage across the surface of the laminate by extensive use of smaller denier fibers.
- Straighter filaments are a feature of smaller denier fibers, which means more even loading and better stretch resistance.
- More performance at a reduced weight compared to other available materials.
- Most competitive price points, for equal or better performance.



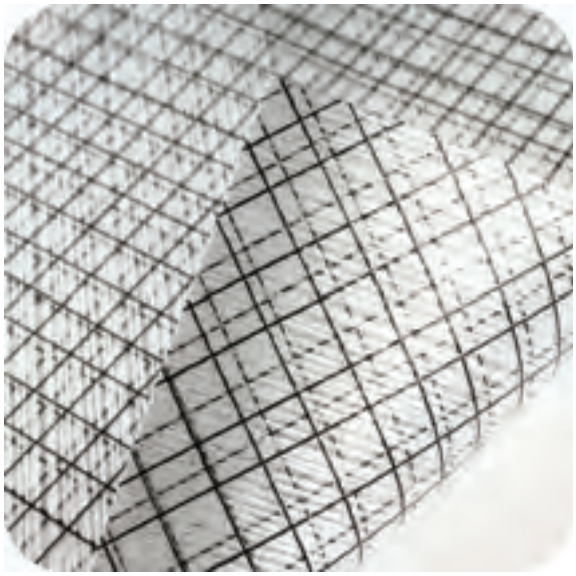
XRP Ultra Aramid

This year we introduce our new high modulus line of XRP for bigger boats and higher load cases that require more sail shape holding ability for your more performance orientated sailors. This line employs 100% high performance warp fibers, both aramid and UPE, for superior stretch resistance which translates to boat speed as the wind and loads increase. The UPE component adds toughness and extra breaking strength over the long haul. All fibers are black across both the polyester and Ultra Aramid lines, hence different materials can be used on the same boat for different sails, or for stepped constructions within individual sails.



XRP Race

These durable and high value sailcloth polyester styles are a great choice for classes that restrict the use of exotic fibers. XRP styles were designed with high strength to weight ratios. They use efficient fiber inlays without square scrims for reduced weight and increased off angle load bearing capacity. XRP uses high tenacity black coated fibers that have good UV and tear resistance. Constructions are black high tenacity polyester warp, substantial bias X inserts, precision laminated. XRP fabrics are perfect for racing and club racing headsails and mainsails, multihull screechers, various reinforcements, and large yacht code zeros.



Formula Ultra

Formula Ultra is Challenge's new multi-hull specific line of laminate fabrics developed from our Super Series GP high-end race fabrics. These styles were designed for the most demanding clients and performance applications, and are both the lightest and the highest modulus (least stretch) materials at any given fabric weight and DPI.

- Less film weight, better fiber coverage across the surface, and straighter filaments like Super Series GP.
- For the Formula Ultra multihull series we use multiple layers of the lightest films and two layers of 200 denier inlaid X UPE fiber on either side of the structural yarns.
- 100% UPE for warp loading bearing yarns.
- UPE (UHMWPE) is one of the highest modulus fibers available, while at the same time being the most durable. The fiber has high resistance to UV and is nearly impossible to break.

Super Series GP

Fabric ID	Insert DPI Aramid	Insert DPI X 45°/.5"	Film	Weight SM oz	Weight gsm	Width in	Width cm
Super Series GP 04	4,800	200	0.50	1.6	70	60	150
Super Series GP 06	7,600	200	0.50	1.8	78	60	150
Super Series GP 09	9,600	200	1.0	2.7	117	60	150
Super Series GP 12	12,000	200	1.25	3.5	151	60	150
Super Series GP 18	18,000	500	1.5	4.5	195	60	150
Super Series GP 24	24,000	500	1.5	5.1	221	60	150

XRP Ultra Aramid

Fabric ID	Insert DPI Total	Insert DPI Aramid	Insert DPI UPE	Insert DPI X 60°/.75"	Film	Weight SM oz	Weight gsm	Width in	Width cm
XRP Ultra Aramid 6	6,000	3,000	3,000	1,000	1.25	3.04	130	60	150
XRP Ultra Aramid 10	10,000	4,000	6,000	1,000	1.50	3.74	160	60	150
XRP Ultra Aramid 15	15,000	5,000	10,000	1,000	1.50	5.02	215	60	150
XRP Ultra Aramid 19	20,000	10,000	10,000	1,000	1.75	5.49	235	60	150
XRP Ultra Aramid 25	24,000	12,000	12,000	1,000	1.75	6.23	267	60	150

XRP

Fabric ID	Insert DPI Total	Insert DPI X 60°/.75"	Film	Weight SM oz	Weight gsm	Width in	Width cm
XRP6	6,000	3,000	1.50	3.04	130	60	150
XRP9	9,000	3,000	1.50	3.74	160	60	150
XRP13	12,000	3,000	1.50	4.44	190	60	150
XRP18	18,000	3,000	1.50	5.14	220	60	150
XRP24	24,000	3,000	2.00	6.14	263	60	150

Formula Ultra

Fabric ID	Insert DPI Total	Insert DPI X 45°/1.5"	Layers	Film	Weight SM oz	Weight gsm	Width in	Width cm
Formula Ultra 06	6,000	200 D x 2	Double UPE x	3.00	3.1	135	60	150
Formula Ultra 09	9,000	200 D x 2	Double UPE x	1.25	3.7	143	60	150


POL
5020

REACH

Baltic UAX

Our Baltic Zero Laminates continue to improve with increased performance and flexibility as well as lower weight in 2026. The original Baltic range was designed with light weight taffeta, high modulus aramid and UPE fiber for high performance on code zero racing applications. This product gets an upgrade and is renamed Baltic UAX to reflect the changes. It will be both higher performance and more durable.

- Warp insert yarns on Baltic UAX 4 and 6 change to Aramid 600d and UPE 500d. This is the same fiber configuration as our high-end Super Series Laminates. The smaller denier fibers provide full surface yarn coverage for better modulus, more even load distribution, and a smoother surface under load.
- X yarn inserts change to 45°@1.5" spacing. This will improve the material's ability to handle bias loads and make the sails furl more cleanly.
- Films changed back to .5 mil film for weight saving and to provide more supple feel.
- 50/50 blend of Aramid and UPE fiber provides the best bend of performance and durability and is unique within this category of sailcloth.
- All fibers are black for a consistent High-Tech aesthetic.

Baltic 4 UAX

Baltic 12 UAX

Fabric ID	Description	Insert DPI		Taffeta	Film	Weight		Width	
		Warp	X 45°/1.5"	Color		SM oz	gsm	in	cm
Baltic 4 UAX	Baltic 4 CZ Aramid	4,400	1,000	Grey	0.5	3.47	149	60	150
Baltic 6 UAX	Baltic 6 CZ Aramid	6,000	1,000	Grey	0.5	3.73	160	60	150
Baltic 8 UAX	Baltic 8 CZ Aramid	8,000	1,000	Grey	0.5	4.26	183	60	150
Baltic 12 UAX	Baltic 12 CZ Aramid	12,000	1,000	Grey	0.5	4.80	206	60	150

Code-Tec

Code-Tec uses high tenacity fibers and proprietary immersion coating chemistry to make a high performance but durable Code sail fabric. It boasts low stretch, high tear strength and the ability to withstand repeated furls on modern roller furling storage systems. Code-Tec has tear and breaking strength not seen to date in polyester spinnaker.

- Breakthrough asymmetric fabric technology.
- Double-beam matrix ripstop pattern for rugged durability.
- Leading edge kitesurf finish, with outstanding adhesion and life performance compared to spinnaker cloth or traditional dacron.
- Sun-Tec UV roller furling available for UV resistance equal to much heavier fabrics.

Black Baltic Grey Cool Grey White

Dark Blue Light Blue Red Pink

Code-Tec 155P Woven

Code x170 Laminate

Fabric ID	Insert DPI Warp	Insert DPI X / 1.5"	Taffeta Color	Film	Weight SM oz	Weight gsm	Width in	Width cm
WOVENS								
CODE55P	– –	– –	see swatches	– –	1.2	51	60	150
CODE95P	– –	– –	see swatches	– –	1.9	81	60	150
CODE135P	– –	– –	see swatches	– –	3.1	132	60	150
CODE155P	– –	– –	see swatches	– –	3.4	146	60	150
LAMINATES								
CODEX55UPE	– –	200 / 45°	White*	0.25	1.9	82	60	150
CODEX95 UPE	– –	200 / 45°	White*	0.25	3.0	127	60	150
CODEX170	– –	1,000 / 45°	White*	0.50	3.9	170	60	150
CODE195UPE	6,000	1,000 / 22°	White*	0.50	4.5	195	60	150
CODE245UPE	12,000	1,000 / 22°	White*	0.50	5.7	245	60	150

* Laminates can be custom ordered in woven colors.

Sun-Tec

Using high tenacity fibers and an innovative UV coating formula, this is the best fabric to cover the leech panels of Code Zeros, downwind sails, and other roller furling sails. At 133 grams per square meter, Sun-Tec is light enough to fly in light air, but rivals much heavier fabrics in UV resistance and abrasion. Challenge designed Sun-Tec with rugged double beam ripstops in both directions of the cloth, with a sailcloth finish inside for increased stability. Sun-Tec is based on the Code-Tec 135 taffeta, so it has the same feel and strength as Code-Tec asymmetrical fabric, meaning your UV cover will stretch the same as the base sail material, making for smoother transitions between UV cover and the body of the sail.

- High tenacity fibers: excellent breaking, tear strength, UV resistance.
- Coated one side only.
- Sun-Tec coating alone greatly increases life of underlying substrate.
- Sun-Tec provides as good UV protection as other commonly used cover fabrics over twice its weight.

Insignia & PSA Fabrics

Acrylic based pressure sensitive adhesive fabrics bond aggressively to woven and laminated sailcloth.

Black INBK	Blue INBU	Red INR	White INW
Grey INGY	Navy Blue INNB**	Green ING**	Aramid INAG**
F. Pink INFP**	F. Orange INFO**	F. Green INFG**	

* Available in USA warehouse only.
** Special order. Please inquire.

Challenge RBC

Challenge RBC is single-ply woven polyester with environmentally friendly C0 DWR (no fluorocarbons) on the outside, and a water-resistant PU coating on the inside. Each yard contains over 10 recycled plastic water bottles, and saves about one pound of carbon emissions compared to nylon bag cloth.

Black Knight*	Mission Grey*	Bright Blue*	Revel Red*

* Stocked in German warehouse, other colors available from USA or by special order.

Sun-Tec

Fabric ID	Description	Weight		Width		Rolls
		SM oz	gsm	in	cm	yd
SUNTEC	Sun-Tec	3.09	133	56	142	50
SUNTECPSA	Sun-Tec PSA	3.30	141	56	142	50

Insignia & PSA Fabrics

Fabric ID	Description	Weight		Width	
		SM oz	gsm	in	cm
IN	Polyester Insignia Fabric	3.3	141	56	142
IUV*	TiO2 Coated Polyester Taffeta with PSA	3.5	150	56	142

Challenge RBC

Fabric ID	Description	Weight		Width	
		SM oz	gsm	in	cm
RBC450RS	Recycled Sail Bag Fabric	5.4	220	58	147

Ultra Patch

Fabric ID	Description	Weight		Width	
		SM oz	gsm	in	cm
UPE100GPSA	Ultra100 PSA Grey (Storm Grey)			60	150
UPE400W	Ultra400 White			60	150
UPE400BK	Ultra400 Black			60	150
UPE800W	Ultra800 White			60	150
UPE800BK	Ultra800 Black			60	150

Ultra Tapes

Fabric ID	Description	Weight		Width	
		SM oz	gsm	in	cm
UPE400 Tapes	Tapes slit to 4" and 5"				
UPE800 Tapes	Tapes slit to 4" and 5"				
Custom Tapes	Tapes in all sizes custom order				

Window

Fabric ID	Description	Weight		Width	
		SM oz	gsm	in	cm
CHWIN	4 mil clear RUV film / UPE Ultra inserts	3.9	167	60	150
MW150B	4 mil clear RUV film / 22° 1000D black poly	4.0	171	60	150

Dacron Applications

Boat	Sail	Marblehead REC	Newport AP	Newport LA
10 – 15	Main			4.93
	LT #1			4.93
	#1			
	#2			
	#3			
15 – 20	Main		5.45, 5.93	4.93, 5.53
	LT #1		5.93	4.93
	#1			
	#2		5.45, 5.93	4.93, 5.53
	#3			
20 – 25	Main	6.47	5.93, 6.45	6.53
	LT #1	6.47	6.45	
	#1			4.93
	#2	6.47	5.45, 5.93, 6.45	5.53
	#3	6.47	5.45, 5.93, 6.45	5.53, 6.53
25 – 30	Main	6.47, 7.47	5.93, 6.45, 7.45	6.53, 7.03
	LT #1			
	#1	6.47	5.45, 5.93, 6.45	4.93, 5.53
	#2	6.47	5.45, 6.45	5.53, 6.53
	#3	7.47	6.45, 7.45	6.53, 7.03
30 – 35	Main	7.47	7.45	7.03, 8.03
	LT #1		5.45	4.93, 5.53
	#1	6.47	6.45	5.53, 6.53
	#2	6.47, 7.47	6.45, 7.45	6.53, 7.03
	#3	7.47	7.45	7.03, 8.03
35 – 40	Main	8.47	7.95, 8.45	8.03, 9.03
	LT #1		5.45, 5.93	5.53
	#1	7.47	5.45, 6.45, 7.45	5.53, 6.53
	#2	7.47, 8.47	7.45, 7.95, 8.45	6.53, 7.03, 8.03
	#3	8.47, 9.47	7.95, 8.45, 9.45	8.03, 9.03
40 – 45	Main	9.47	8.45, 9.45, 10.95	9.03
	LT #1	6.47, 7.47	5.45, 6.45, 7.45	5.53, 6.53
	#1	7.47, 8.47	6.45, 7.45, 7.95	6.53, 7.03
	#2	8.47	7.95, 8.45	7.03, 8.03, 9.03
	#3	9.47	8.45, 9.45, 10.95	9.03, 10.53
45 – 50	Main	9.47	9.45, 10.95	9.03, 10.53
	LT #1	7.47	6.45, 7.45	6.53, 7.03
	#1	7.47, 8.47, 9.47	7.45, 7.95, 8.45, 9.45	7.03, 8.03, 9.03
	#2	9.47	8.45, 9.45, 10.95	7.03, 8.03, 9.03
	#3	9.47	9.45, 10.95	9.03, 10.53
50 – 55	Main	10.47	9.45, 10.95	11.93
	LT #1	7.47	7.45	7.03, 8.03
	#1	7.95, 8.45 /9.45	8.03, 9.03, 10.95	
	#2	9.47	9.45, 10.95	10.53, 11.93
	#3	9.47	9.45, 10.95, 12.95	11.93
55 – 60	Main		12.95	11.93
	LT #1	8.47	7.95, 8.45	8.03
	#1	9.47	8.45, 9.45, 10.95	9.03, 10.53, 11.93
	#2		10.95, 12.95	11.93
	#3		12.95	11.93
60 – 70	Main		12.95	
	LT #1		9.45, 10.95	9.03
	#1		10.95	10.53, 11.93
	#2		10.95, 12.95	11.93
	#3		12.95	

Application charts for monohull only. For multihull applications add 10-15 feet.

Radial Applications

Boat	Sail	Fastnet	Atlantic	Newport PR
10 – 15	Main		3.8, 4.38	5.1
	LT #1			
	#1		3.8, 4.38	
	#2			
	#3			
15 – 20	Main		4.38, 5.38	6.1
	LT #1			5.1
	#1		3.8, 4.38	
	#2		4.38, 5.38	
	#3			
20 – 25	Main	6.68	5.38, 6.38	6.1
	LT #1	6.68		5.1
	#1	6.68	3.8, 4.38, 5.38	5.1
	#2	6.68	5.38, 6.38	5.1
	#3		6.38	6.1
25 – 30	Main	7.38	6.38, 7.48	6.1, 7.1
	LT #1			5.1
	#1	6.68	5.38, 6.38	
	#2	6.68, 7.38	6.38	6.1
	#3	6.68, 7.38	6.38, 7.48	7.1
30 – 35	Main	7.38, 7.8	7.48, 8.38	7.1, 8.1
	LT #1		5.38, 6.38	5.1
	#1	6.68	6.38, 7.48	6.1
	#2	6.68	6.38, 7.48, 8.38	7.1
	#3	7.38, 7.88	7.48, 8.38	8.1
35 – 40	Main	7.88, 8.88, 9.88	8.38, 9.38, 10.38	8.1, 9.1, 10.1
	LT #1	6.68	6.38, 7.48	6.1
	#1	6.68, 7.38	7.48, 8.38	7.1, 8.1
	#2	7.38, 7.88, 8.88	7.48, 8.38, 9.38	8.1, 9.1
	#3	7.88, 8.88	8.38, 9.38, 10.38	9.1, 10.1
40 – 45	Main	9.88, 10.88	8.38, 9.38, 10.38	
	LT #1	6.68	6.38	6.1
	#1	7.38, 7.88, 8.88	6.38, 7.48, 8.38, 9.38	7.1, 8.1, 9.1, 10.1
	#2	7.88, 8.88, 9.88	8.38, 9.38	9.1, 10.1
	#3	8.88, 9.88, 10.88	9.38, 10.38	
45 – 50	Main	10.88, 11.88	10.38	
	LT #1	7.38, 7.88	7.48	6.1, 7.1
	#1	7.88, 8.88, 9.88	8.38, 9.38, 10.38	8.1, 9.1
	#2	8.88, 9.88, 10.88	9.38, 10.38	10.1
	#3	10.88, 11.88	10.38	
50 – 55	Main	11.88	10.38	
	LT #1	7.38, 7.88	7.48, 8.38	
	#1	7.88, 8.88, 9.88	8.38, 9.38, 10.38	
	#2	9.88	10.38	
	#3	11.88	10.38	
55 – 60	Main	11.88, 13.88		
	LT #1	7.88, 8.88	7.48, 8.38	
	#1	8.88, 9.88, 10.88	9.38, 10.38	
	#2	10.88, 11.88		
	#3	11.88, 13.88		
60 – 70	Main	13.88, 15.88		
	LT #1	8.88, 9.88	9.38	
	#1	10.88, 11.88, 13.88	9.38, 10.38	
	#2	11.88, 13.88		
	#3	13.88, 15.88		

Application charts for monohull only. For multihull applications add 10-15 feet.

Race Laminate Applications

Boat	Sail	XRP	XRP UA
20 – 25	Main	6, 9	
	LT #1		
	#1	6	
	#2	6, 9	
	#3	9	
25 – 30	Main	9, 13	10
	LT #1	6	6
	#1	6, 9	6, 10
	#2	9, 13	10
	#3	13	
30 – 35	Main	13, 18	15, 19
	LT #1	6, 9	6, 10
	#1	6, 9	6, 10
	#2	13, 18	15
	#3	18, 24	19
35 – 40	Main	18, 24	19, 25
	LT #1	9	10
	#1	13, 18	15
	#2	18, 24	15, 19
	#3	24	19, 25
40 – 45	Main	24	19, 25
	LT #1	13	
	#1	18	15
	#2	24	19
	#3		25
45 – 50	Main		25
	LT #1		15
	#1		15, 19
	#2		19
	#3		25
50 – 55	Main		
	LT #1		15
	#1		15, 19
	#2		
	#3		
55 – 60	Main		
	LT #1		
	#1		
	#2		
	#3		
60 – 70	Main		
	LT #1		
	#1		
	#2		
	#3		
70 – 80	Main		
	LT #1		
	#1		
	#2		
	#3		

For all boats over 45 feet LOA the choice of cloth must be assessed and approved by the sail designer, taking into account the specific sail loads, unique characteristics of the boat, sail plan, and sailing conditions.

Cruise Laminate Applications

Boat	Sail	2026 Palma Pro	2025 *Palma, Palma-Tec*	*2026 Palma-Tec*	*2025/26 Palma Carbon*
20 – 25	Main	6, 9	6, 9	6, 9	
	LT #1				
	#1	6	6	6	
	#2	6, 9	6, 9	6, 9	
	#3	9	9	9	
25 – 30	Main	9, 13	9, 13	9, 13	
	LT #1	6	6	6	
	#1	6, 9	6, 9	6	
	#2	9, 13	9, 13	9	
	#3	13	13	9, 13	
30 – 35	Main	13, 18	13, 18	13	
	LT #1	6, 9	6, 9	6	
	#1	9, 13	9, 13	9	
	#2	13, 18	13, 18	13	
	#3	18, 24	18, 24	13, 18	
35 – 40	Main	24	18, 24	18	
	LT #1	13	9	6, 9	
	#1	13, 18	13	9, 13	
	#2	18, 24	18	13	
	#3	24	24	18	
40 – 45	Main		24	18	
	LT #1		9	6, 9	
	#1		13, 18	9, 13	
	#2		18, 24	13, 18	
	#3		24	18, 24	
45 – 50	Main		24	18, 24	
	LT #1		9, 13	9	
	#1		18	9, 13	
	#2		18, 24	13, 18	
	#3		24	18, 24	
50 – 55	Main			24	PC20
	LT #1			9, 13	
	#1			13	
	#2			18	
	#3			24	PC20
55 – 60	Main			28	
	LT #1			13, 18	PC20, PC27
	#1			18	
	#2			24	
	#3			28	PC20
60 – 70	Main			34	PC20, PC27
	LT #1			13, 18	
	#1			18, 24	PC27
	#2			24, 28	
	#3			34	PC20
70 – 80	Main			42	PC20, PC27
	LT #1			18	PC27
	#1			24	
	#2			28, 34	
	#3			42	

For all boats over 45 feet LOA the choice of cloth must be assessed and approved by the sail designer, taking into account the specific sail loads, unique characteristics of the boat, sail plan, and sailing conditions.

Reaching Applications

Boat	Code-Tec	Baltic UAX	FiberMax – Down Wind
20 – 25	55P	4	44, 64
25 – 30	55P, 95P	4	44, 64
30 – 35	55P, 95P, 135P, 155P	4, 6	44, 64
35 – 40	95P, 135P, 155P	4, 6	44, 64
40 – 45	95P, 135P, 155P	4, 6, 8	44, 64, 94
45 – 50	135P, 155P	6, 8, 12	64, 94
50 – 55	155P	8, 12	64, 94
55 – 70		12	64, 94

Cloth selection for off-the-wind sails is mostly dependent on wind speed and wind angle, rather than the size of the boat. Think of the above as a broad guide for displacement club race and cruising boats. If you are designing a close reaching sail, choose a heavier fabric.

Application charts for monohull only. For multihull applications add 10-15 feet.

CHALLENGE SAILCLOTH

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CHALLENGE SAILCLOTH

METRA™

MODULUS EXTRACTION TECHNOLOGY

What is METRA?

METRA™ is Modulus Extraction Technology. A breakthrough in fiber performance.

METRA™ is a Challenge proprietary process to **extract the maximum amount of modulus possible out of all fibers** — with a particular focus on **100% UHMWPE fiber** — and apply it into a composite with the **highest efficiency possible**.

It's the product of:

- Six years of focused R&D
- Multi-million-dollar investment in next-generation composite manufacturing
- Strategic assembly of a world-class technical team

METRA™ represents what happens when **engineering meets obsession**.

What It Means in the Real World

- Sails hold their shape longer, trimmers have more control.
- Performance gains without adding weight.
- Enables hybrid builds without compromising modulus or durability.

The Origin Story

Our goal wasn't just to make something new. It was to solve a problem that had stalled the entire high-performance composite industry:

How do you extract the full potential from ultra-high modulus fibers without overbuilding, overpricing, or overengineering the result?

To do that, we needed to build something bigger than a material. We needed a platform. A system. A team.

The METRA™ journey began with a dedicated investment into our laminating and composites operations — a six-year effort culminating in the launch of a brand-new, purpose-built facility.

This new site includes:

- Next-Gen Composite Consolidation Equipment
- Clean Zone Handling of Sensitive Fibers
- Precision Bonding Controls
- Full-Scale Production Capability for Custom Sail, Softgoods, Outdoor and Industrial Applications


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The METRA™ Facility: Built for What's Next

To bring METRA™ to life, we didn't retrofit an old space or adapt existing lines — we built a new facility from the ground up, with a singular goal: to maximize modulus performance through total process control.

New Facility, Technology, Machinery

Our multi-million dollar Modulus Extraction project culminates with our new purpose built 5 floor facility. When complete it will have 3 separate lines. The first line consists of the frame of our original line re-fitted with all new machinery, gearing, and engineering, all designed in house. This line has already proven that the METRA™ concept produces materials up to our expectations. The 2nd line, newly installed, is a pre-composite line that will improve efficiency and throughput, which keeps costs under control. The 3rd line already under construction is completely engineered, designed, and constructed in house by Challenge. It will have new capabilities and original ideas that are unique to us.

Suffice it to say that no other sailcloth company has the in house expertise and engineering horse power to achieve a project of this scale and sophistication.

Welcome to Our Home of METRA™

In August 2025, Challenge opened our METRA™ Facility — located within a special technical campus zone in Huizhou, China. The multimillion dollar project is a purpose built facility that will now have:

- 5,500 sqm over 5 floors
- 3 new state of the art composite bonding production lines
- An entire dedicated floor of fiber preparation
- Rooftop solar + hydroelectric grid power
- Rooftop garden + visitor restaurant
- Custom machinery, clean-zone controls, vertical integration

From the ground floor to the roof, every detail was designed to support world-class manufacturing of high-performance materials with environmental awareness, employee wellbeing, and customer collaboration in mind.

This building is more than just infrastructure. It's the foundation of Challenge's next chapter.

Optimized for Multi-Fiber Platforms

A product made with 100% UHMWPE and no other can seriously lack the qualities that other performance materials bring to the table along side it.

Carbon Fiber

for Ultimate Low Stretch Performance

Nylon 6 & 6.6

for Abrasion Resistance, Flexibility and Recovery

Aramid / Kevlar®

for Impact Resistance, Flex Fatigue, and Heat Tolerance

Superlite Scrims

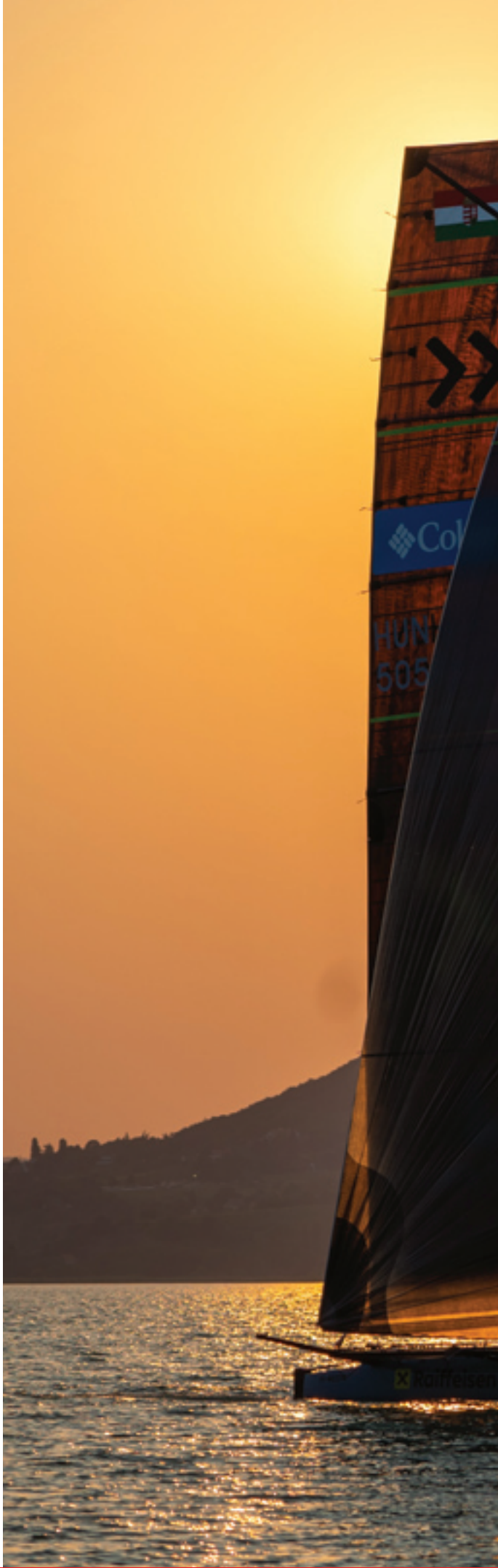
for Layered Control

High Tenacity PET

for Dimensional Stability, UV Durability, and Real-World Optimizations

Adhesive Veils

for Featherweight Construction




Columbia

A Conversation with Bill Pearson, VP of Technical Development

Bill Pearson has been leading Challenge Sailcloth's development for the past 4 years, following his 25 year career in development at North Sails 3DI and 3Di.

What do we mean by Modulus Extraction?

Modulus is the engineering term for what we sailors know as "stretch resistance". When we talk about performance in sailcloth, this is what we are referring to. More modulus allows sails to hold their shape better, and resist stretching over a long period of time. This translates into better pointing and higher boat speeds.

Modulus Extraction is our technology by which the performance properties of the fiber are better translated into the performance of a finished sailcloth laminate. An individual virgin fiber ALWAYS has higher modulus (lower stretch) than a finished sailcloth laminate. This problem is particularly acute with UPE (UHMWPE). METRA™ is our unique process for translating more of that stretch resistance of the raw fiber into the finished sailcloth.

Style	Original	2024/25	METRA
Palma-Tec 9	122.2	135.2	151.8
Palma-Tec 13	142.3	195.0	231.5
Palma-Tec 18	166.6	226.0	266.6
Palma-Tec 24	171.0	236.0	269.5

Palma-Tec + METRA™: Dramatic Performance Gains

Palma-Tec is the first product category to be powered by METRA™ in 2026. The chart below displays the warp load 1% test results of the original Palma-Tec and the 2025 version compared to the new Palma-Tec METRA™. We see dramatic gains in sailcloth modulus with METRA™ using the same materials that were in the original product. The sailcloth does not weigh more, there is no added adhesive. The only thing that has changed is we have developed both the process and the machinery to make sailcloth better. The chart below shows what happens when you treat UHMWPE with the respect it deserves.

Palma-Tec + METRA™: Durability Gains

On top of the performance gains in terms of boat speed, METRA™ also significantly increases a laminates bond strength. Better interlaminar bonding and consolidation translates into increased durability and sail longevity. Your less stretch sails are also going to last longer.

Why do you need Modulus Extraction technology?

The difficulty in using high-performance fibers is that some degrade through handling during the process. Polyester and the various types of aramid fiber are very stable, but carbon fiber and especially UPE are a less so. UPE (UHMWPE) in particular, is easily degraded at the microscopic level in the manufacturing process. The proof of this is seen in the test results of UPE sailcloth, compared to that of the raw fiber. The modulus of UPE fiber is roughly 1250 gpd (grams per denier), based on finished sailcloth testing the fiber is performing at about 60% of its original value, or around 700 gpd. METRA™ was developed to improve on that ratio and get more of the original modulus of all fibers into finished sailcloth.

Rolls goods sailcloth hasn't changed that much since the 1980's in terms of performance and lamination quality. In the last few decades in our industry all the money, effort, and energy went into string sail and membrane technologies. With the limits of some of those technologies having been reached, there has been a renewed interest in sailcloth. Challenge is leading that charge. No one else has invested so heavy into making a step change in sailcloth performance.

METRA™ set out to change that situation.

METRA™ is not one thing, but a modulus extraction platform, an engineering solution to make for better fiber utilization in sailcloth. It is not a single silver bullet to extract fiber modulus, as the 3DL and 3Di technologies were. However, Bill Pearson has brought to Challenge many of the lessons he learned developing those technologies for North Sails and vast experience in how to render fiber modulus into the finished product.

METRA™ is incremental and cumulative. By improving each stage of the manufacturing process through better control, bonding technology, fiber handling, and machine design… we have invested in, and improved, the machinery and hardware in each part of the process. Designing the components by ourselves, a process that started years ago with the development of our proprietary adhesive system.

What all this means in the real world.

- Higher Modulus = Less Stretch: Sails hold their shape longer, trimmers have more control.
- Better Bond Strength: METRA™ increases the interlaminar bond strengths as much as it does the modulus.
- More Modulus per Gram: Performance gains without adding weight.
- Reliable Layering: METRA™ enables hybrid builds without compromising modulus or durability
- No superfluous extra layers, knits or scrims.

Palma-Tec 13

Palma-Tec 18

Palma-Tec 24

METRA™ Benefits

This unlocks significant advantages for sail designers:

- Tighter Shape Control
- Longer Shape Retention
- Reduced Stretch-Induced Drag
- Better Pointing and VMG
- Longer Racing Lifespan
- Bond Strength Improvements – Increased Durability

Not only stronger and lighter — but more durable and scalable for brand partners who rely on long-term performance in the harshest conditions.

The METRA™ Difference

While others market fiber content and layering, we optimize fiber performance. The chart on page 9 shows what happens when you treat UHMWPE with the respect it deserves — minimizing damage, maximizing yield.

The Product Line

The Palma-Tec line expands for 2026. As a result of our new machinery and METRA™ performance gains we are adding three heavier weight styles to the line. Palma-Tec 28, 34, and 42 will allow Palma-Tec products to move up into larger boats

Fabric ID	Insert DPI		Taffeta	Film	Weight		Width	
	Total	X 55°/.75"	White		SM oz	gsm	in	cm
Palma-Tec 6	6,000	1,000	Light	1.00	6.21	266	60	150
Palma-Tec 9	9,000	1,000	Light	1.00	7.19	308	60	150
Palma-Tec 13	12,000	1,000	Medium	1.50	8.80	377	60	150
Palma-Tec 18	18,000	1,000	Medium	1.50	10.79	462	60	150
Palma-Tec 24	24,000	1,000	Medium	1.50	11.44	490	60	150
Palma-Tec 28	28,000	1,000	Heavy	1.50	TBD	TBD	60	150
Palma-Tec 34	34,000	1,000	Heavy	1.50	TBD	TBD	60	150
Palma-Tec 42	42,000	1,000	Heavy	1.50	TBD	TBD	60	150

Applications

Boat	Sail	*2026 Palma-Tec*
20 – 25	Main	6, 9
	LT #1	
	#1	6
	#2	6, 9
	#3	9
25 – 30	Main	9, 13
	LT #1	6
	#1	6
	#2	9
	#3	9, 13
30 – 35	Main	13
	LT #1	6
	#1	9
	#2	13
	#3	13, 18
35 – 40	Main	18
	LT #1	6, 9
	#1	9, 13
	#2	13
	#3	18
40 – 45	Main	18
	LT #1	6, 9
	#1	9, 13
	#2	13, 18
	#3	18, 24
45 – 50	Main	18, 24
	LT #1	9
	#1	9, 13
	#2	13, 18
	#3	18, 24
50 – 55	Main	24
	LT #1	9, 13
	#1	13
	#2	18
	#3	24
55 – 60	Main	28
	LT #1	13, 18
	#1	18
	#2	24
	#3	28
60 – 70	Main	36
	LT #1	13, 18
	#1	18, 24
	#2	24, 28
	#3	36
70 – 80	Main	42
	LT #1	18
	#1	24
	#2	28, 32
	#3	42

For all boats over 45 feet LOA the choice of cloth must be assessed and approved by the sail designer, taking into account the specific sail loads, unique characteristics of the boat, sail plan, and sailing conditions.

Performance Comparison

At Challenge, we believe performance should be measured — not claimed. That's why we test every evolution of our materials, and why METRA™ isn't just a new platform — it's a proven one.

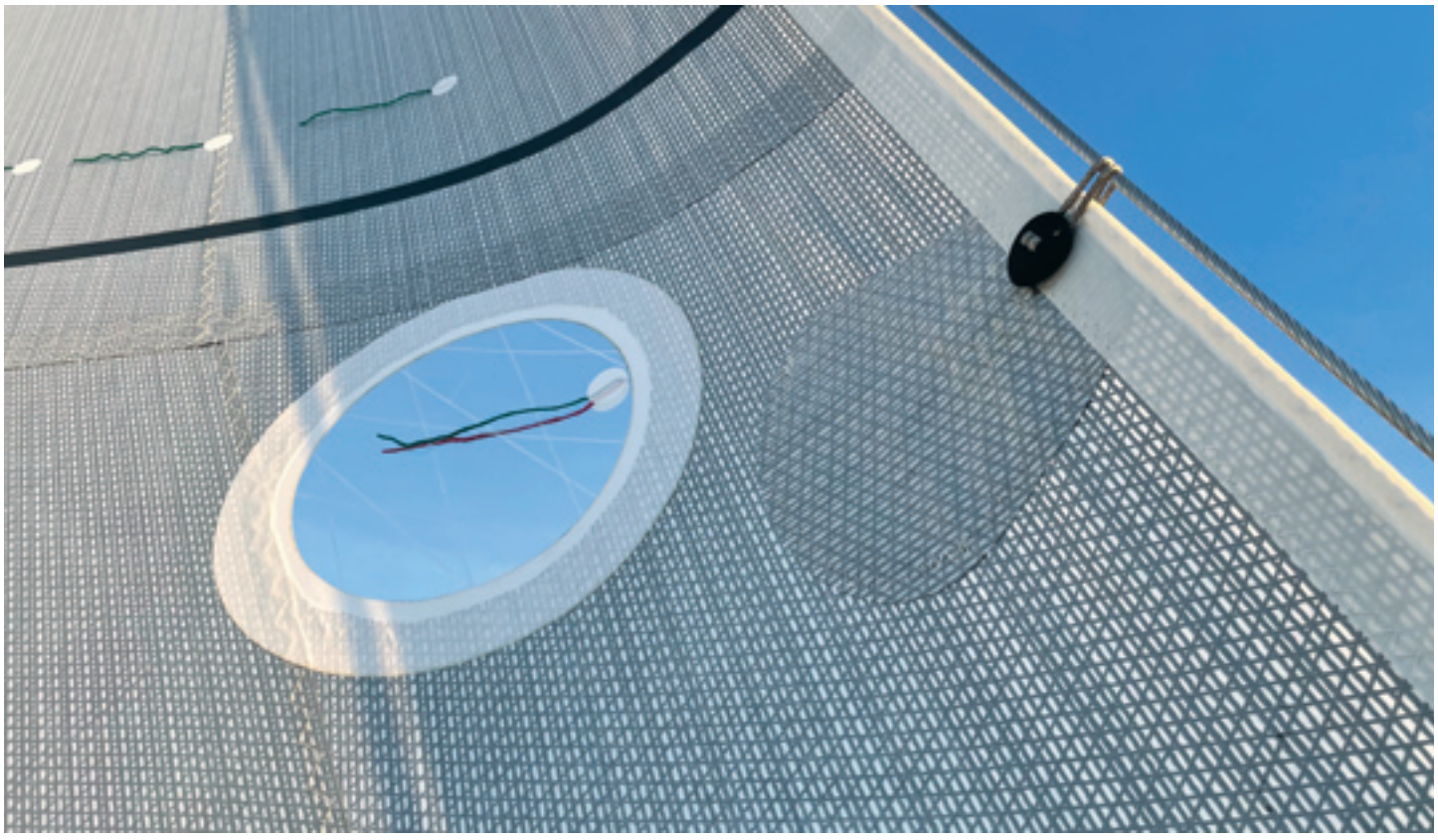
Warp Load @ 1% Elongation: The gold standard of performance in technical fabrics.

Our team has systematically deployed METRA™ in Palma-Tec and Code Series styles using process refinements. The results speak for themselves.

Dramatic Performance Gains

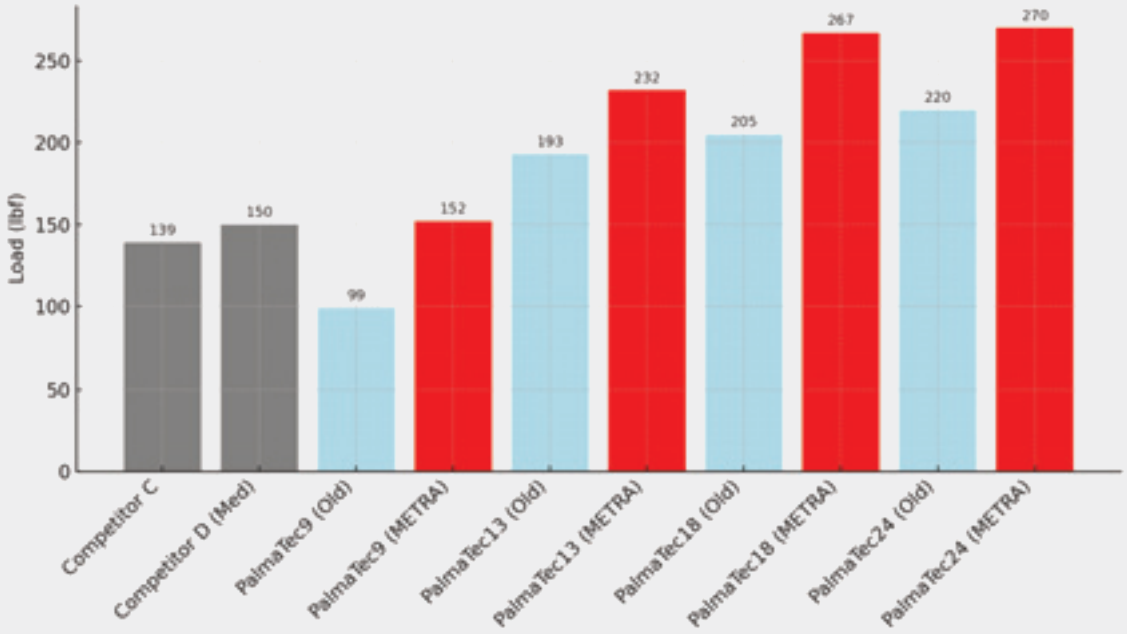
Using the same UHMWPE base fiber, our Palma-Tec line saw double-digit performance increases with no added weight. Compare those to traditional cruising laminate competitors — see Warp Load @ 1% Elongation chart on top of the next page.

Style	Version	GSM	Warp Load @ 1% (lbf)
Palma-Tec 9	Old	308	99
	METRA	308	152
Palma-Tec 13	Old	377	193
	METRA	377	232
Palma-Tec 18	Old	462	205
	METRA	462	267
Palma-Tec 24	Old	490	220
	METRA	490	270



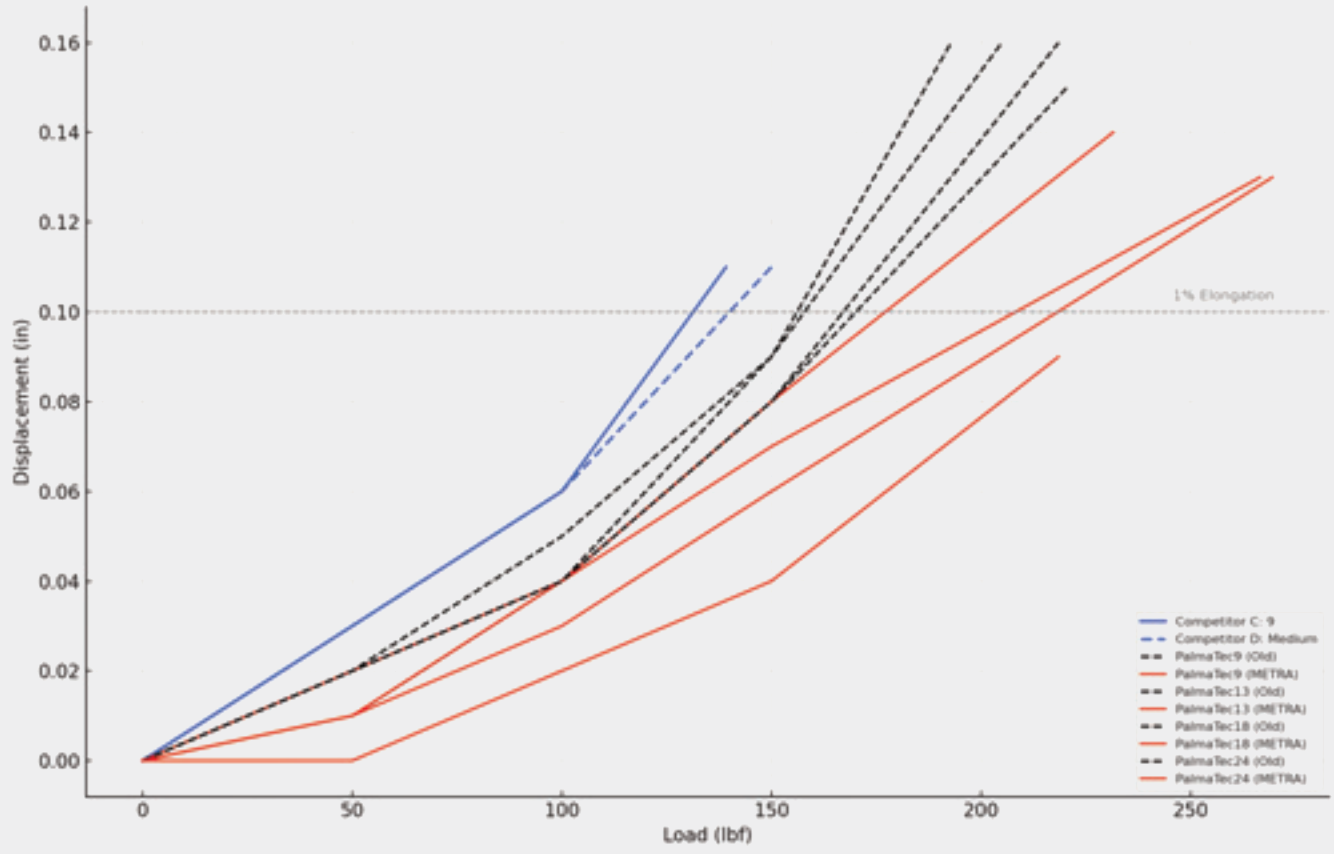
Warp Load @ 1% Elongation

Competitors vs Palm-Tec (old vs METRA)



Warp Performance Overlay

METRA vs Competitors



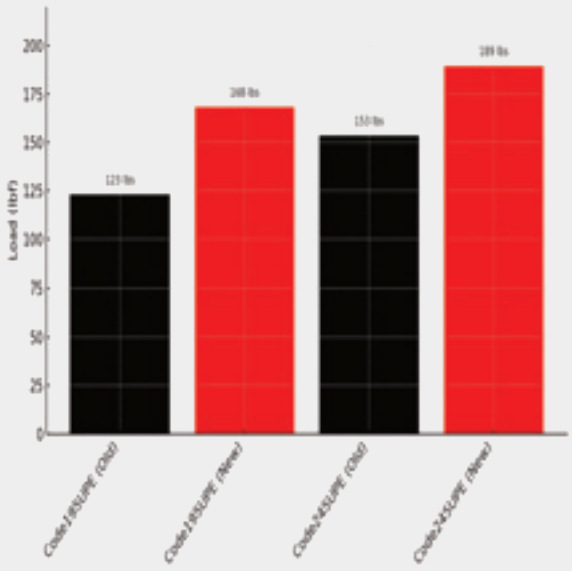
Code Series:
Strength + Scalability

METRA™ is also driving material gains in lighter composite structures like Code195UPE and Code245UPE. These fabrics are critical for designers balancing weight, durability, and stiffness.

Style	Version	GSM	Warp Load @ 1% (lbf)
Code195UPE	Old	220	123
	METRA	217	168
Code245UPE	Old	278	153
	METRA	280	189

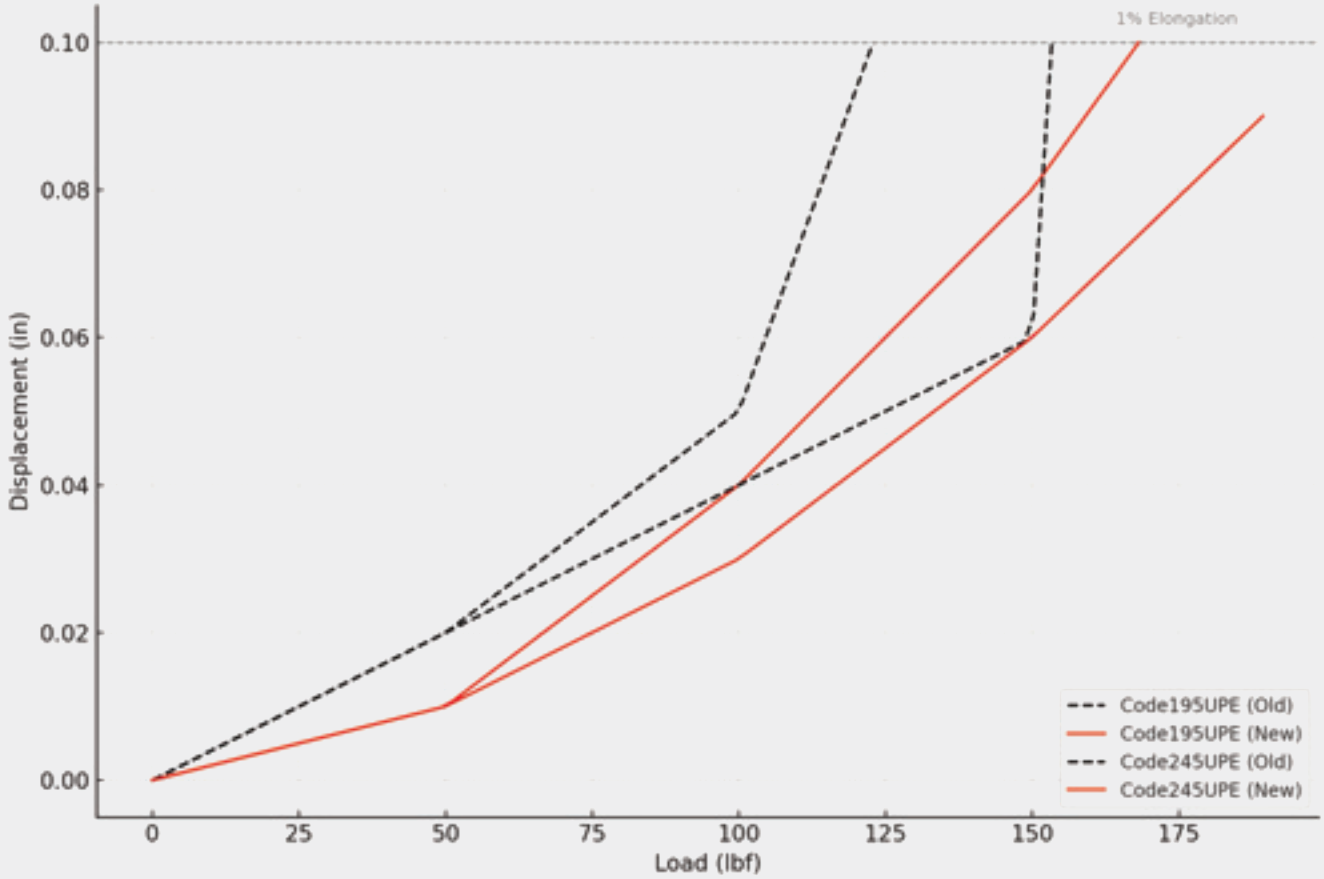
Warp Load @ 1% Elongation

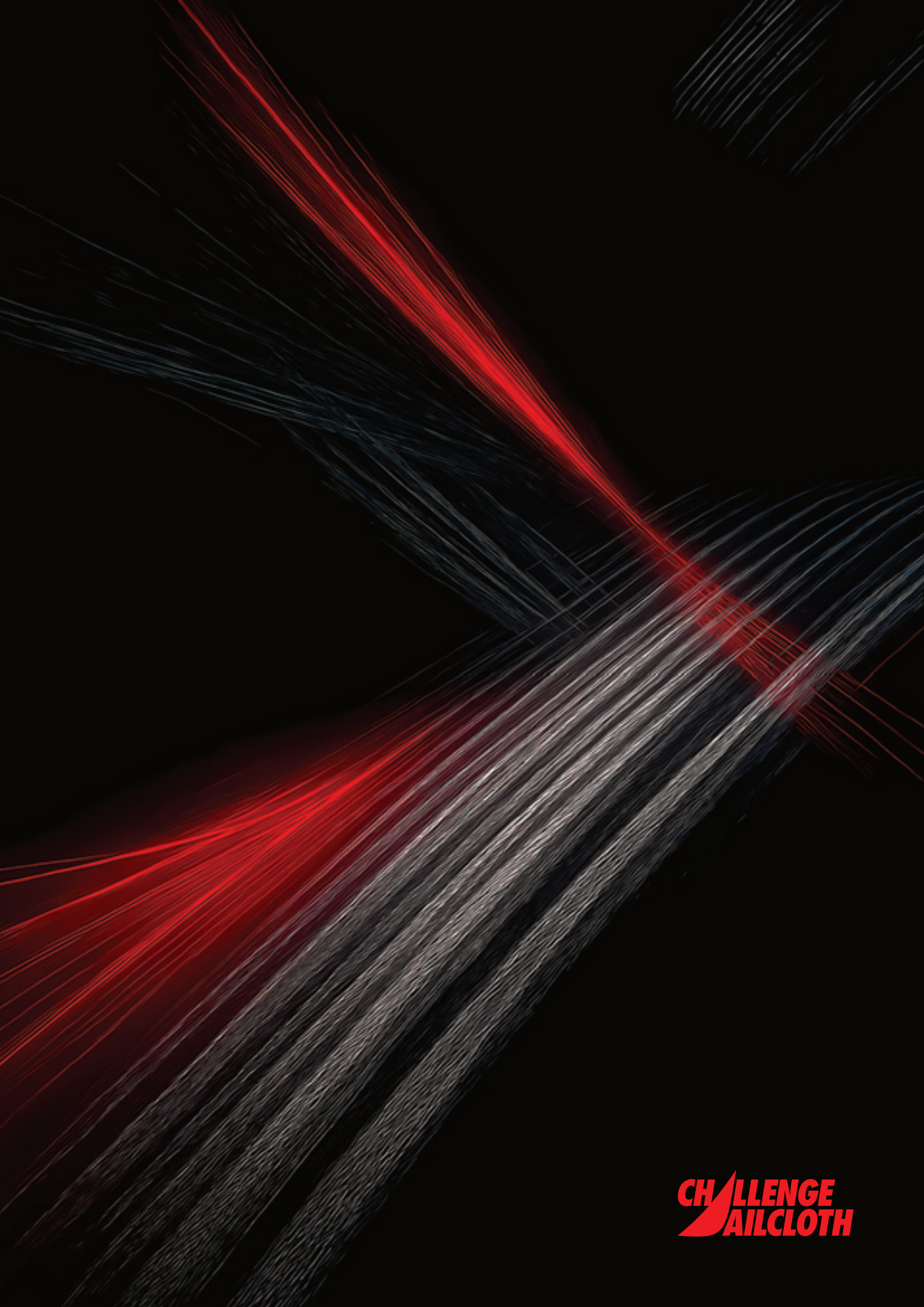
Code195UPE and Code245UPE



Warp Performance Overlay

Code195UPE and Code245UPE

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