

**CHALLENGE**  
**AILCLOTH**





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## For Modern Performance

Challenge Research & Development has leveraged advanced technology to produce a full range of product lines for our customers. Our innovations meet every force that a sail will face. Our R&D engineering team has produced the highest quality constructions for both racing and cruising woven applications. Our fabrics have more interlockings than those of our competitors, leading to the Challenge mechanical advantage.

*Fiber 104 is the highest shrinking polyester yarn used in sailcloth. The high shrinkage makes the tightest woven fabrics. It is much more expensive than the other leading fibers and is the most exclusive polyester yarn in the industry, proprietary to Challenge Sailcloth.*

*Strong sailcloth contains fibers that are highly shrunk during the manufacturing process, before it is sewn into a sail. This creates a fabric that is already in its equilibrium state before it is put to use. Challenge Power-Shrinkage technology allows yarns and fabric to achieve maximum shrinkage. It improves the performance of sailcloth in the warp, fill and bias direction. Challenge Fiber 104 has the highest power shrinkage properties of any fiber used in the industry.*

*Interlock is a unique Challenge process which quantifies the tightness of the weave. The number of yarn crossings in sailcloth is what matters most for performance. In woven fabrics, yarns pass over the first fiber and curve under the next, "locking" them into each other. These yarn crossings, or interlockings, are what create the mechanical advantage in woven sailcloth and resist bias loading. The higher the quantity of interlockings, the higher the performance of the sailcloth. Challenge Fiber 104 has the highest power shrinkage properties, which creates the greatest quantity of interlockings. Our fabrics have more interlockings than those of our competitors. Other fabrics rely more on resin for stability. Resin breaks down over time and these fabrics are prone to bias stretch.*

**Fiber 104™****Power  
~~Shrinkage~~****Interlock™**

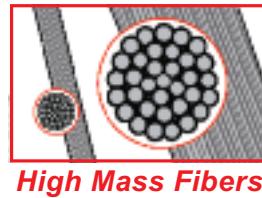
Sailing technology has reached new milestones of performance. In order to meet the requirements, Challenge Sailcloth has raised the bar. Challenge Fiber 104 is Super Tenacity, achieving previously unattainable levels of performance in the sailing industry.



Every line of Challenge Sailcloth woven fabric contains high tenacity yarn. Our fabrics perform under load and abrasion. High Tenacity fibers match the load. Challenge engineers have invested time and resources to find the highest quality high tenacity yarn for our customers.



Challenge aligns higher mass fibers on the surface area of the sailcloth, to protect against UV degradation, tearing, breaking and abrasion. Our woven dacron has been proven to offer excellent durability in sails. The most important factors are fiber diameter (denier) and fiber type. The more massive the fiber, the longer the fabric will last in the sun.



Challenge UVR Technology is the most efficient, cost effective way of extending sail life. Our sailcloth is designed to endure the elements and maintain performance under extended use in the sun.

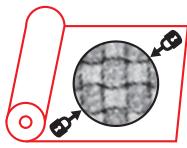


Challenge Warp-Drive fabrics use patented weaving technology that aligns the strength of zero crimp warp fibers to match the load of the sail. It is the most important woven sailcloth innovation in decades. Radial sails load fabrics in the warp direction. In order to align the mechanical strength of the sailcloth with that load, Challenge weaves Warp-Drive with zero crimp warp fibers. The straight warp yarns do not stretch under load and allow radial sails to hold their shape. As seen on Sir Robert Knox Johnston's Open 60 Grey Power, the fabric maintains its shape under heavy use. For the first time ever, Challenge woven sailcloth can be used on large tri-radial sails and sailors can have the strength of a laminate with the durability of a woven, and it does not mildew.



Challenge Warp-Drive fabrics are inherently mildew resistant due to their woven constructions. This allows the fabric to breathe and resist the mildew. Challenge taffeta laminates are Ultra-Fresh™ treated to prevent mildew from growing on the taffeta surface.



*Super Premium Low Aspect Race***Fiber 104™****Power  
~~Shrinkage~~****Interlock™**

Marblehead Weaves are made with the very best super tenacity polyester sailcloth yarn, Fiber 104, in both warp and fill directions.

Marblehead Weaves are woven with Power Shrinkage technology. The yarns achieve maximum shrinkage during processing, even when restricted by very tight weaves.

Marblehead Weaves have the most interlockings of any dacron fabrics. The result is excellent bias stretch resistance, stability and durability.

| Fabric ID  | Yarn Denier |      | Fabric Weight |     | Fabric Width |     |
|------------|-------------|------|---------------|-----|--------------|-----|
|            | Warp        | Fill | SM oz         | gsm | in           | cm  |
| D4.77 / 36 | 150         | 220  | 5.1           | 218 | 36           | 92  |
| D4.77      | 150         | 220  | 5.1           | 218 | 54           | 137 |
| D5.77 / 36 | 220         | 220  | 6.2           | 266 | 36           | 92  |
| D5.77      | 220         | 220  | 6.2           | 266 | 54           | 137 |
| D6.77      | 220         | 350  | 7.1           | 304 | 54           | 137 |
| D7.77      | 300         | 440  | 8.2           | 351 | 54           | 137 |
| D8.77      | 350         | 570  | 8.4           | 360 | 54           | 137 |
| D9.77      | 350         | 700  | 9.1           | 390 | 54           | 137 |
| D10.77     | 440         | 840  | 10.3          | 441 | 54           | 137 |
| D11.77     | 500         | 1000 | 11.3          | 484 | 54           | 137 |
| D14.77     | 750         | 1500 | 13.5          | 578 | 54           | 137 |

## Low Aspect Marblehead Weaves Application Chart

| Boat Size (ft, m) | Sail Type   | 4.77     | 5.77 | 6.77 | 7.77 | 8.77 | 9.77 | 10.77 | 11.77 | 14.77 |
|-------------------|-------------|----------|------|------|------|------|------|-------|-------|-------|
| 10 – 15           | 3.0 – 4.5   | Main     | ●    |      |      |      |      |       |       |       |
|                   |             | Jib      | ●    |      |      |      |      |       |       |       |
| 15 – 20           | 4.5 – 6.0   | Main     | ●    | ●    |      |      |      |       |       |       |
|                   |             | AP #1    | ●    |      |      |      |      |       |       |       |
|                   |             | #2       | ●    | ●    |      |      |      |       |       |       |
| 20 – 25           | 6.0 – 7.5   | Main     |      | ●    | ●    |      |      |       |       |       |
|                   |             | AP #1    | ●    |      |      |      |      |       |       |       |
|                   |             | #2       | ●    | ●    |      |      |      |       |       |       |
|                   |             | #3       |      | ●    | ●    |      |      |       |       |       |
| 25 – 30           | 7.5 – 9.0   | Main     |      | ●    | ●    |      |      |       |       |       |
|                   |             | AP #1    | ●    | ●    |      |      |      |       |       |       |
|                   |             | #2       |      | ●    | ●    |      |      |       |       |       |
|                   |             | #3       |      | ●    | ●    | ●    |      |       |       |       |
| 30 – 35           | 9.0 – 10.5  | Main     |      | ●    | ●    |      |      |       |       |       |
|                   |             | Light #1 | ●    | ●    |      |      |      |       |       |       |
|                   |             | Med #1   |      | ●    | ●    |      |      |       |       |       |
|                   |             | Med #2   |      |      | ●    | ●    |      |       |       |       |
|                   |             | Med #3   |      |      | ●    | ●    |      |       |       |       |
| 35 – 40           | 10.5 – 12.0 | Main     |      |      | ●    | ●    |      |       |       |       |
|                   |             | Light #1 |      | ●    | ●    |      |      |       |       |       |
|                   |             | Med #1   |      |      | ●    | ●    |      |       |       |       |
|                   |             | Heavy #1 |      |      | ●    | ●    | ●    |       |       |       |
|                   |             | Heavy #2 |      |      |      | ●    | ●    |       |       |       |
|                   |             | Heavy #3 |      |      |      | ●    | ●    | ●     |       |       |
| 40 – 45           | 12.0 – 13.5 | Main     |      |      |      | ●    | ●    | ●     |       |       |
|                   |             | Light #1 |      | ●    | ●    | ●    |      |       |       |       |
|                   |             | Med #1   |      |      | ●    | ●    | ●    |       |       |       |
|                   |             | Heavy #1 |      |      | ●    | ●    | ●    | ●     |       |       |
|                   |             | Heavy #2 |      |      |      | ●    | ●    | ●     |       |       |
|                   |             | Heavy #3 |      |      |      |      | ●    | ●     | ●     |       |
| 45 – 50           | 13.5 – 15.0 | Main     |      |      |      | ●    | ●    | ●     |       |       |
|                   |             | Light #1 |      |      |      | ●    | ●    |       |       |       |
|                   |             | Med #1   |      |      |      | ●    | ●    |       |       |       |
|                   |             | Heavy #1 |      |      |      |      | ●    | ●     |       |       |
|                   |             | Heavy #2 |      |      |      |      | ●    | ●     | ●     |       |
|                   |             | Heavy #3 |      |      |      |      |      | ●     | ●     |       |
| 50 – 55           | 15.0 – 16.5 | Main     |      |      |      |      | ●    | ●     | ●     |       |
|                   |             | Light #1 |      |      |      |      | ●    |       |       |       |
|                   |             | Med #1   |      |      |      |      |      | ●     |       |       |
|                   |             | Heavy #1 |      |      |      |      |      | ●     | ●     |       |
|                   |             | Heavy #2 |      |      |      |      |      |       | ●     | ●     |
|                   |             | Heavy #3 |      |      |      |      |      |       | ●     | ●     |
| 55 – 60           | 16.5 – 18.0 | Main     |      |      |      |      |      | ●     | ●     | ●     |
|                   |             | Light #1 |      |      |      |      |      | ●     | ●     |       |
|                   |             | Med #1   |      |      |      |      |      |       | ●     | ●     |
|                   |             | Heavy #1 |      |      |      |      |      |       | ●     | ●     |
|                   |             | Heavy #2 |      |      |      |      |      |       |       | ●     |
|                   |             | Heavy #3 |      |      |      |      |      |       |       | ●     |
| 60 – 70           | 18.0 – 21.5 | Main     |      |      |      |      |      |       | ●     |       |
|                   |             | Light #1 |      |      |      |      |      |       | ●     |       |
|                   |             | Med #1   |      |      |      |      |      |       |       | ●     |
|                   |             | Heavy #1 |      |      |      |      |      |       |       | ●     |
|                   |             | Heavy #2 |      |      |      |      |      |       |       | ●     |
|                   |             | Heavy #3 |      |      |      |      |      |       |       | ●     |

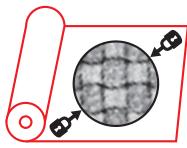
Application charts for monohull only. For multihull applications add 10 feet.

# HA Marblehead Weaves

## *Super Premium High Aspect Race*

**Fiber 104™**

**Power  
~~Shrinkage~~**



**Interlock™**



Marblehead Weaves are made with the very best super tenacity polyester sailcloth yarn, Fiber 104, in both warp and fill directions.

Marblehead Weaves are woven with Power Shrinkage technology. The yarns achieve maximum shrinkage during processing, even when restricted by very tight weaves.

Marblehead Weaves have the most interlockings of any dacron fabrics. The result is excellent bias stretch resistance, stability and durability.

| Fabric ID | Yarn Denier |      | Fabric Weight |     | Fabric Width |     |
|-----------|-------------|------|---------------|-----|--------------|-----|
|           | Warp        | Fill | SM oz         | gsm | in           | cm  |
| D4.6 / 36 | 150         | 220  | 5.1           | 218 | 36           | 92  |
| D4.6      | 150         | 220  | 5.1           | 218 | 54           | 137 |
| D5.6 / 36 | 150         | 350  | 5.6           | 240 | 36           | 92  |
| D5.6      | 150         | 350  | 5.6           | 240 | 54           | 137 |
| D6.42     | 150         | 420  | 6.0           | 257 | 54           | 137 |
| D6.62     | 150         | 440  | 6.8           | 291 | 54           | 137 |
| D7.62     | 220         | 570  | 7.9           | 338 | 54           | 137 |
| D8.62     | 220         | 700  | 8.7           | 373 | 54           | 137 |
| D9.62     | 220         | 880  | 9.4           | 403 | 54           | 137 |
| D10.62    | 350         | 1000 | 9.9           | 424 | 54           | 137 |
| D11.62    | 350         | 1300 | 10.8          | 463 | 54           | 137 |
| D12.62    | 440         | 1430 | 11.9          | 510 | 54           | 137 |
| D14.2     | 500         | 2000 | 14.0          | 600 | 54           | 137 |

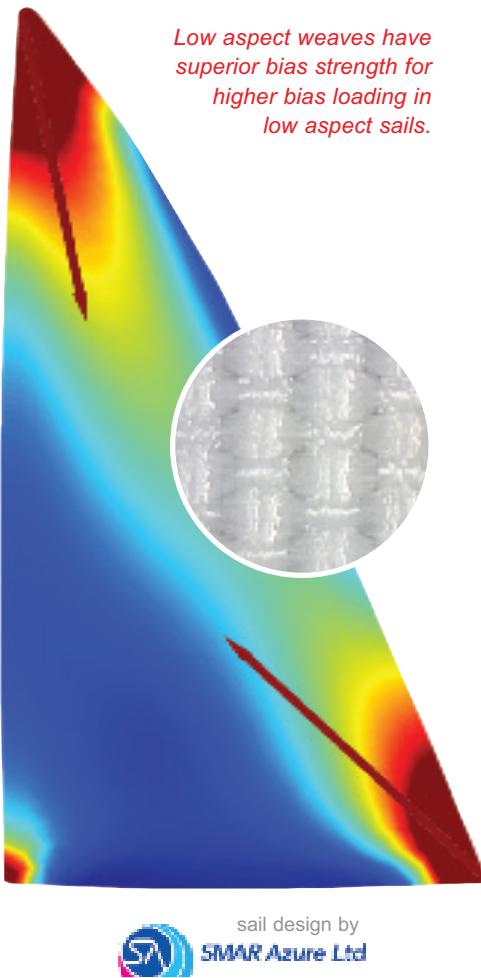
## High Aspect Marblehead Weaves Application Chart

| Boat Size (ft, m) | Sail Type   | 4.6      | 5.6 | 6.42 | 6.62 | 7.62 | 8.62 | 9.62 | 10.62 | 11.62 | 12.62 | 14.2 |
|-------------------|-------------|----------|-----|------|------|------|------|------|-------|-------|-------|------|
| 10 – 15           | 3.0 – 4.5   | Main     | ●   |      |      |      |      |      |       |       |       |      |
|                   |             | Jib      | ●   |      |      |      |      |      |       |       |       |      |
| 15 – 20           | 4.5 – 6.0   | Main     | ●   |      |      |      |      |      |       |       |       |      |
|                   |             | AP #1    | ●   | ●    |      |      |      |      |       |       |       |      |
|                   |             | #2       | ●   | ●    |      |      |      |      |       |       |       |      |
| 20 – 25           | 6.0 – 7.5   | Main     |     | ●    | ●    |      |      |      |       |       |       |      |
|                   |             | AP #1    | ●   | ●    |      |      |      |      |       |       |       |      |
|                   |             | #2       |     | ●    | ●    |      |      |      |       |       |       |      |
|                   |             | #3       |     | ●    | ●    |      |      |      |       |       |       |      |
| 25 – 30           | 7.5 – 9.0   | Main     |     |      | ●    | ●    |      |      |       |       |       |      |
|                   |             | AP #1    | ●   | ●    |      |      |      |      |       |       |       |      |
|                   |             | #2       |     | ●    | ●    |      |      |      |       |       |       |      |
|                   |             | #3       |     | ●    | ●    |      |      |      |       |       |       |      |
| 30 – 35           | 9.0 – 10.5  | Main     |     |      |      | ●    | ●    |      |       |       |       |      |
|                   |             | Light #1 | ●   | ●    |      |      |      |      |       |       |       |      |
|                   |             | Med #1   |     | ●    | ●    | ●    | ●    |      |       |       |       |      |
|                   |             | Med #2   |     |      | ●    | ●    | ●    |      |       |       |       |      |
|                   |             | Med #3   |     |      | ●    | ●    | ●    |      |       |       |       |      |
| 35 – 40           | 10.5 – 12.0 | Main     |     |      |      |      | ●    | ●    |       |       |       |      |
|                   |             | Light #1 |     | ●    | ●    |      |      |      |       |       |       |      |
|                   |             | Med #1   |     |      | ●    | ●    | ●    |      |       |       |       |      |
|                   |             | Heavy #1 |     |      | ●    | ●    | ●    |      |       |       |       |      |
|                   |             | Heavy #2 |     |      |      | ●    | ●    | ●    |       |       |       |      |
|                   |             | Heavy #3 |     |      |      | ●    | ●    | ●    |       |       |       |      |
| 40 – 45           | 12.0 – 13.5 | Main     |     |      |      |      |      | ●    |       |       |       |      |
|                   |             | Light #1 |     |      | ●    | ●    |      |      |       |       |       |      |
|                   |             | Med #1   |     |      |      | ●    | ●    | ●    |       |       |       |      |
|                   |             | Heavy #1 |     |      |      |      | ●    | ●    | ●     |       |       |      |
|                   |             | Heavy #2 |     |      |      |      | ●    | ●    | ●     |       |       |      |
|                   |             | Heavy #3 |     |      |      |      | ●    | ●    | ●     | ●     |       |      |
| 45 – 50           | 13.5 – 15.0 | Main     |     |      |      |      |      | ●    | ●     |       |       |      |
|                   |             | Light #1 |     |      | ●    | ●    |      |      |       |       |       |      |
|                   |             | Med #1   |     |      |      | ●    | ●    | ●    |       |       |       |      |
|                   |             | Heavy #1 |     |      |      |      | ●    | ●    | ●     |       |       |      |
|                   |             | Heavy #2 |     |      |      |      | ●    | ●    | ●     | ●     |       |      |
|                   |             | Heavy #3 |     |      |      |      | ●    | ●    | ●     | ●     | ●     |      |
| 50 – 55           | 15.0 – 16.5 | Main     |     |      |      |      |      |      | ●     | ●     |       |      |
|                   |             | Light #1 |     |      | ●    | ●    |      |      |       |       |       |      |
|                   |             | Med #1   |     |      |      | ●    | ●    | ●    |       |       |       |      |
|                   |             | Heavy #1 |     |      |      |      | ●    | ●    | ●     |       |       |      |
|                   |             | Heavy #2 |     |      |      |      | ●    | ●    | ●     | ●     |       |      |
|                   |             | Heavy #3 |     |      |      |      | ●    | ●    | ●     | ●     | ●     |      |
| 55 – 60           | 16.5 – 18.0 | Main     |     |      |      |      |      |      | ●     | ●     |       |      |
|                   |             | Light #1 |     |      | ●    | ●    |      |      |       |       |       |      |
|                   |             | Med #1   |     |      |      | ●    | ●    | ●    |       |       |       |      |
|                   |             | Heavy #1 |     |      |      |      | ●    | ●    | ●     |       |       |      |
|                   |             | Heavy #2 |     |      |      |      | ●    | ●    | ●     | ●     |       |      |
|                   |             | Heavy #3 |     |      |      |      | ●    | ●    | ●     | ●     | ●     |      |
| 60 – 70           | 18.0 – 21.5 | Main     |     |      |      |      |      |      |       | ●     | ●     |      |
|                   |             | Light #1 |     |      |      | ●    | ●    |      |       |       |       |      |
|                   |             | Med #1   |     |      |      |      | ●    | ●    | ●     |       |       |      |
|                   |             | Heavy #1 |     |      |      |      | ●    | ●    | ●     | ●     |       |      |
|                   |             | Heavy #2 |     |      |      |      | ●    | ●    | ●     | ●     | ●     |      |
|                   |             | Heavy #3 |     |      |      |      | ●    | ●    | ●     | ●     | ●     |      |

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

# LA High Modulus Dacron

## Premium Low Aspect Race



High Modulus Dacron is made with the very best super tenacity polyester sailcloth yarn, Fiber 104, in load bearing directions.

Low Aspect HM Dacrons use balanced constructions for increased bias strength and excellent recovery.

High Modulus Dacron has the most interlockings of the Premium Race polyester fabrics. The result is excellent bias stretch resistance, stability and durability.

**Fiber 104™**



**Interlock™**

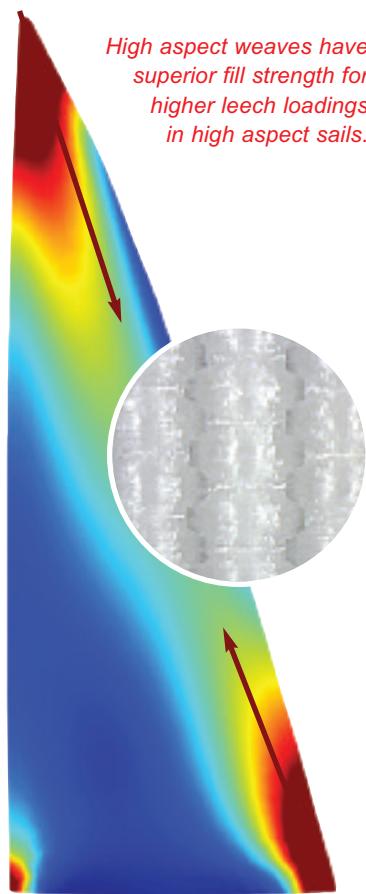
| Fabric ID  | Yarn Denier |      | Fabric Weight |     | Fabric Width |     |
|------------|-------------|------|---------------|-----|--------------|-----|
|            | Warp        | Fill | SM oz         | gsm | in           | cm  |
| D4.93 / 36 | 150         | 250  | 4.6           | 197 | 36           | 92  |
| D4.93      | 150         | 250  | 4.6           | 197 | 54           | 137 |
| D5.53 / 36 | 250         | 300  | 6.0           | 257 | 36           | 92  |
| D5.53      | 250         | 300  | 6.0           | 257 | 54           | 137 |
| D6.53      | 250         | 350  | 7.1           | 304 | 54           | 137 |
| D7.03      | 250         | 420  | 6.7           | 287 | 54           | 137 |
| D8.03      | 300         | 500  | 8.2           | 351 | 54           | 137 |
| D9.03      | 300         | 700  | 9.0           | 385 | 54           | 137 |
| D10.53     | 350         | 840  | 10.3          | 441 | 54           | 137 |
| D11.93     | 500         | 1300 | 11.4          | 488 | 54           | 137 |

## Low Aspect High Modulus Dacron Application Chart

| Boat Size (ft, m) | Sail Type   | 4.93     | 5.53 | 6.53 | 7.03 | 8.03 | 9.03 | 10.53 | 11.93 |
|-------------------|-------------|----------|------|------|------|------|------|-------|-------|
| 10 – 15           | 3.0 – 4.5   | Main     | ●    |      |      |      |      |       |       |
|                   |             | Jib      | ●    |      |      |      |      |       |       |
| 15 – 20           | 4.5 – 6.0   | Main     | ●    | ●    |      |      |      |       |       |
|                   |             | AP #1    | ●    |      |      |      |      |       |       |
|                   |             | #2       | ●    | ●    |      |      |      |       |       |
| 20 – 25           | 6.0 – 7.5   | Main     |      |      | ●    |      |      |       |       |
|                   |             | AP #1    | ●    |      |      |      |      |       |       |
|                   |             | #2       |      | ●    |      |      |      |       |       |
|                   |             | #3       |      | ●    | ●    |      |      |       |       |
| 25 – 30           | 7.5 – 9.0   | Main     |      |      | ●    | ●    | ●    |       |       |
|                   |             | AP #1    | ●    | ●    |      |      |      |       |       |
|                   |             | #2       |      | ●    | ●    |      |      |       |       |
|                   |             | #3       |      | ●    |      | ●    |      |       |       |
| 30 – 35           | 9.0 – 10.5  | Main     |      |      |      | ●    | ●    |       |       |
|                   |             | Light #1 | ●    | ●    |      |      |      |       |       |
|                   |             | Med #1   |      | ●    | ●    |      |      |       |       |
|                   |             | Med #2   |      | ●    |      | ●    |      |       |       |
|                   |             | Med #3   |      |      | ●    |      | ●    |       |       |
| 35 – 40           | 10.5 – 12.0 | Main     |      |      |      |      | ●    | ●     |       |
|                   |             | Light #1 |      | ●    |      |      |      |       |       |
|                   |             | Med #1   | ●    |      | ●    |      |      |       |       |
|                   |             | Heavy #1 |      | ●    |      | ●    |      |       |       |
|                   |             | Heavy #2 |      |      | ●    |      | ●    |       |       |
|                   |             | Heavy #3 |      |      |      | ●    |      | ●     |       |
| 40 – 45           | 12.0 – 13.5 | Main     |      |      |      |      |      | ●     |       |
|                   |             | Light #1 | ●    |      | ●    |      |      |       |       |
|                   |             | Med #1   |      | ●    |      | ●    |      |       |       |
|                   |             | Heavy #1 |      |      | ●    |      | ●    |       |       |
|                   |             | Heavy #2 |      |      |      | ●    |      | ●     |       |
|                   |             | Heavy #3 |      |      |      |      | ●    | ●     |       |
| 45 – 50           | 13.5 – 15.0 | Main     |      |      |      |      | ●    | ●     |       |
|                   |             | Light #1 |      | ●    |      | ●    |      |       |       |
|                   |             | Med #1   |      |      | ●    |      | ●    |       |       |
|                   |             | Heavy #1 |      |      |      | ●    |      | ●     |       |
|                   |             | Heavy #2 |      |      |      | ●    |      | ●     |       |
|                   |             | Heavy #3 |      |      |      |      | ●    | ●     |       |
| 50 – 55           | 15.0 – 16.5 | Main     |      |      |      |      |      | ●     | ●     |
|                   |             | Light #1 |      |      | ●    |      | ●    |       |       |
|                   |             | Med #1   |      |      |      | ●    |      | ●     |       |
|                   |             | Heavy #1 |      |      |      |      | ●    | ●     |       |
|                   |             | Heavy #2 |      |      |      |      |      | ●     |       |
|                   |             | Heavy #3 |      |      |      |      |      | ●     | ●     |
| 55 – 60           | 16.5 – 18.0 | Main     |      |      |      |      |      |       | ●     |
|                   |             | Light #1 |      |      |      | ●    |      |       |       |
|                   |             | Med #1   |      |      |      |      | ●    |       | ●     |
|                   |             | Heavy #1 |      |      |      |      |      | ●     | ●     |
|                   |             | Heavy #2 |      |      |      |      |      |       | ●     |
|                   |             | Heavy #3 |      |      |      |      |      |       | ●     |
| 60 – 70           | 18.0 – 21.5 | Main     |      |      |      |      |      |       | ●     |
|                   |             | Light #1 |      |      |      |      | ●    |       |       |
|                   |             | Med #1   |      |      |      |      |      | ●     | ●     |
|                   |             | Heavy #1 |      |      |      |      |      |       | ●     |
|                   |             | Heavy #2 |      |      |      |      |      |       | ●     |
|                   |             | Heavy #3 |      |      |      |      |      |       | ●     |

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

# HA High Modulus Dacron



sail design by  
SMAR Azure Ltd

## Premium High Aspect Race

High Modulus Dacron is made with the very best super tenacity polyester sailcloth yarn, Fiber 104, in load bearing directions.

High Aspect HM Dacrons use extremely strong fill yarns to handle the high leech loads on HA sails.

High Modulus Dacron has the most interlockings of any Premium Race polyester fabrics. The result is excellent bias stretch resistance, stability and durability.

**Fiber 104™**



**Interlock™**

| Fabric ID  | Yarn Denier |      | Fabric Weight |     | Fabric Width |     |
|------------|-------------|------|---------------|-----|--------------|-----|
|            | Warp        | Fill | SM oz         | gsm | in           | cm  |
| D5.93 / 36 | 150         | 350  | 5.6           | 240 | 36           | 92  |
| D5.93      | 150         | 350  | 5.6           | 240 | 54           | 137 |
| D6.63 / 36 | 150         | 500  | 6.9           | 296 | 36           | 92  |
| D6.63      | 150         | 500  | 6.9           | 296 | 54           | 137 |
| D7.3       | 250         | 500  | 7.4           | 317 | 54           | 137 |
| D8.63      | 250         | 750  | 8.2           | 351 | 54           | 137 |
| D8.3       | 250         | 840  | 8.3           | 355 | 54           | 137 |
| D9.3       | 250         | 1000 | 8.9           | 381 | 54           | 137 |
| D10.3      | 370         | 1300 | 9.8           | 420 | 54           | 137 |
| D13.93     | 500         | 1800 | 13.0          | 557 | 54           | 137 |

## High Aspect High Modulus Dacron Application Chart

| Boat Size (ft, m) | Sail Type   | 5.93     | 6.63 | 7.3 | 8.3 | 8.63 | 9.3 | 10.3 | 13.93 |
|-------------------|-------------|----------|------|-----|-----|------|-----|------|-------|
| 10 – 15           | 3.0 – 4.5   | Main     |      |     |     |      |     |      |       |
|                   |             | Jib      |      |     |     |      |     |      |       |
| 15 – 20           | 4.5 – 6.0   | Main     | ●    |     |     |      |     |      |       |
|                   |             | AP #1    | ●    |     |     |      |     |      |       |
|                   |             | #2       | ●    |     |     |      |     |      |       |
| 20 – 25           | 6.0 – 7.5   | Main     | ●    | ●   |     |      |     |      |       |
|                   |             | AP #1    |      |     |     |      |     |      |       |
|                   |             | #2       | ●    | ●   |     |      |     |      |       |
|                   |             | #3       | ●    | ●   |     |      |     |      |       |
| 25 – 30           | 7.5 – 9.0   | Main     | ●    | ●   | ●   |      |     |      |       |
|                   |             | AP #1    | ●    | ●   |     |      |     |      |       |
|                   |             | #2       |      | ●   |     |      |     |      |       |
|                   |             | #3       |      | ●   | ●   |      |     |      |       |
| 30 – 35           | 9.0 – 10.5  | Main     |      |     | ●   |      |     |      |       |
|                   |             | Light #1 |      |     |     |      |     |      |       |
|                   |             | Med #1   | ●    | ●   |     |      |     |      |       |
|                   |             | Med #2   |      | ●   | ●   |      |     |      |       |
|                   |             | Med #3   |      |     | ●   |      |     |      |       |
| 35 – 40           | 10.5 – 12.0 | Main     |      |     | ●   | ●    | ●   | ●    |       |
|                   |             | Light #1 | ●    |     |     |      |     |      |       |
|                   |             | Med #1   |      | ●   | ●   |      |     |      |       |
|                   |             | Heavy #1 |      | ●   | ●   | ●    | ●   |      |       |
|                   |             | Heavy #2 |      | ●   | ●   | ●    | ●   |      |       |
|                   |             | Heavy #3 |      |     | ●   | ●    | ●   |      |       |
| 40 – 45           | 12.0 – 13.5 | Main     |      |     |     |      | ●   | ●    |       |
|                   |             | Light #1 | ●    | ●   |     |      |     |      |       |
|                   |             | Med #1   |      | ●   | ●   |      |     |      |       |
|                   |             | Heavy #1 |      |     | ●   | ●    |     |      |       |
|                   |             | Heavy #2 |      |     | ●   | ●    |     |      |       |
|                   |             | Heavy #3 |      |     |     | ●    | ●   |      |       |
| 45 – 50           | 13.5 – 15.0 | Main     |      |     |     |      | ●   | ●    |       |
|                   |             | Light #1 | ●    | ●   |     |      |     |      |       |
|                   |             | Med #1   |      | ●   | ●   |      |     |      |       |
|                   |             | Heavy #1 |      |     | ●   | ●    | ●   |      |       |
|                   |             | Heavy #2 |      |     | ●   | ●    | ●   |      |       |
|                   |             | Heavy #3 |      |     |     | ●    | ●   |      |       |
| 50 – 55           | 15.0 – 16.5 | Main     |      |     |     |      | ●   | ●    |       |
|                   |             | Light #1 |      | ●   | ●   |      |     |      |       |
|                   |             | Med #1   |      |     | ●   | ●    |     |      |       |
|                   |             | Heavy #1 |      |     | ●   | ●    | ●   |      |       |
|                   |             | Heavy #2 |      |     |     | ●    | ●   |      |       |
|                   |             | Heavy #3 |      |     |     |      | ●   | ●    |       |
| 55 – 60           | 16.5 – 18.0 | Main     |      |     |     |      |     | ●    |       |
|                   |             | Light #1 |      |     | ●   | ●    |     |      |       |
|                   |             | Med #1   |      |     |     | ●    | ●   | ●    |       |
|                   |             | Heavy #1 |      |     |     | ●    | ●   | ●    |       |
|                   |             | Heavy #2 |      |     |     |      | ●   | ●    |       |
|                   |             | Heavy #3 |      |     |     |      |     | ●    |       |
| 60 – 70           | 18.0 – 21.5 | Main     |      |     |     |      |     | ●    |       |
|                   |             | Light #1 |      |     |     | ●    | ●   |      |       |
|                   |             | Med #1   |      |     |     |      | ●   |      |       |
|                   |             | Heavy #1 |      |     |     |      | ●   |      |       |
|                   |             | Heavy #2 |      |     |     |      |     | ●    |       |
|                   |             | Heavy #3 |      |     |     |      |     | ●    |       |

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

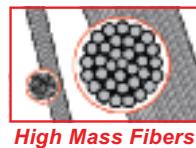
# High Mass Fiber Weaves

## Premium Offshore Cruise



High Mass Fiber Weaves are the most durable offshore cruising dacrons. The massive warp fibers in these fabrics last longer in the sun and are the most efficient and cost effective way to extend sail life.

The Clipper Around the World Race has used Challenge Sailcloth exclusively for the past four editions of the race. These boats use the same sails for 50,000 miles! Challenge High Mass Fiber Weaves were a result of R&D for this race. High Mass Fiber Weaves are low aspect constructions.



| Fabric ID | Yarn Denier |      | Fabric Weight |     | Fabric Width |     |
|-----------|-------------|------|---------------|-----|--------------|-----|
|           | Warp        | Fill | SM oz         | gsm | in           | cm  |
| D6.68     | 250         | 400  | 6.2           | 266 | 54           | 137 |
| D7.38     | 300         | 500  | 7.2           | 308 | 54           | 137 |
| D7.88     | 500         | 650  | 8.3           | 355 | 54           | 137 |
| D8.88     | 500         | 750  | 9.1           | 390 | 54           | 137 |
| D9.88     | 500         | 840  | 9.5           | 407 | 54           | 137 |
| D10.88    | 500         | 1000 | 10.3          | 441 | 54           | 137 |
| D11.88    | 500         | 1300 | 11.8          | 505 | 54           | 137 |
| D13.88    | 750         | 1500 | 13.0          | 557 | 54           | 137 |
| D15.88    | 750         | 2000 | 14.7          | 630 | 54           | 137 |

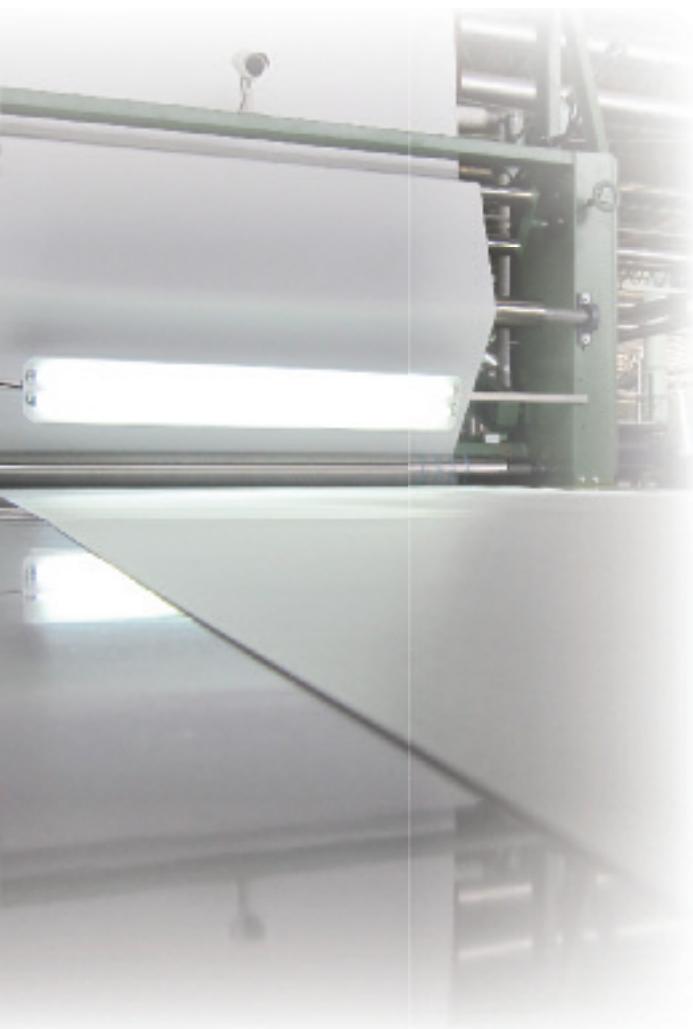
## High Mass Fiber Weaves – Low Aspect – Application Chart

| Boat Size (ft, m) | Sail Type   | 6.68     | 7.38 | 7.88 | 8.88 | 9.88 | 10.88 | 11.88 | 13.88 | 15.88 |
|-------------------|-------------|----------|------|------|------|------|-------|-------|-------|-------|
| 10 – 15           | 3.0 – 4.5   | Main     |      |      |      |      |       |       |       |       |
|                   |             | Jib      |      |      |      |      |       |       |       |       |
| 15 – 20           | 4.5 – 6.0   | Main     |      |      |      |      |       |       |       |       |
|                   |             | AP #1    |      |      |      |      |       |       |       |       |
|                   |             | #2       |      |      |      |      |       |       |       |       |
| 20 – 25           | 6.0 – 7.5   | Main     | ●    |      |      |      |       |       |       |       |
|                   |             | AP #1    | ●    |      |      |      |       |       |       |       |
|                   |             | #2       | ●    |      |      |      |       |       |       |       |
|                   |             | #3       | ●    |      |      |      |       |       |       |       |
| 25 – 30           | 7.5 – 9.0   | Main     |      | ●    |      |      |       |       |       |       |
|                   |             | AP #1    |      | ●    |      |      |       |       |       |       |
|                   |             | #2       |      | ●    |      |      |       |       |       |       |
|                   |             | #3       |      | ●    |      |      |       |       |       |       |
| 30 – 35           | 9.0 – 10.5  | Main     |      | ●    | ●    |      |       |       |       |       |
|                   |             | Light #1 |      |      |      |      |       |       |       |       |
|                   |             | Med #1   | ●    |      |      |      |       |       |       |       |
|                   |             | Med #2   | ●    | ●    |      |      |       |       |       |       |
|                   |             | Med #3   |      | ●    | ●    |      |       |       |       |       |
| 35 – 40           | 10.5 – 12.0 | Main     |      |      | ●    | ●    | ●     | ●     |       |       |
|                   |             | Light #1 | ●    |      |      |      |       |       |       |       |
|                   |             | Med #1   | ●    | ●    |      |      |       |       |       |       |
|                   |             | Heavy #1 |      | ●    | ●    |      |       |       |       |       |
|                   |             | Heavy #2 |      |      | ●    | ●    |       |       |       |       |
|                   |             | Heavy #3 |      |      | ●    | ●    | ●     |       |       |       |
| 40 – 45           | 12.0 – 13.5 | Main     |      |      |      | ●    | ●     | ●     |       |       |
|                   |             | Light #1 | ●    |      |      |      |       |       |       |       |
|                   |             | Med #1   |      | ●    | ●    |      |       |       |       |       |
|                   |             | Heavy #1 |      |      | ●    | ●    |       |       |       |       |
|                   |             | Heavy #2 |      |      |      | ●    | ●     |       |       |       |
|                   |             | Heavy #3 |      |      |      |      | ●     | ●     |       |       |
| 45 – 50           | 13.5 – 15.0 | Main     |      |      |      |      | ●     | ●     |       |       |
|                   |             | Light #1 |      | ●    | ●    |      |       |       |       |       |
|                   |             | Med #1   |      |      | ●    | ●    |       |       |       |       |
|                   |             | Heavy #1 |      |      |      | ●    | ●     |       |       |       |
|                   |             | Heavy #2 |      |      |      |      | ●     | ●     |       |       |
|                   |             | Heavy #3 |      |      |      |      |       | ●     | ●     |       |
| 50 – 55           | 15.0 – 16.5 | Main     |      |      |      |      |       | ●     |       |       |
|                   |             | Light #1 |      | ●    | ●    |      |       |       |       |       |
|                   |             | Med #1   |      |      | ●    | ●    |       |       |       |       |
|                   |             | Heavy #1 |      |      |      | ●    | ●     |       |       |       |
|                   |             | Heavy #2 |      |      |      |      | ●     | ●     |       |       |
|                   |             | Heavy #3 |      |      |      |      |       | ●     |       |       |
| 55 – 60           | 16.5 – 18.0 | Main     |      |      |      |      |       | ●     | ●     |       |
|                   |             | Light #1 |      | ●    | ●    |      |       |       |       |       |
|                   |             | Med #1   |      |      | ●    | ●    |       |       |       |       |
|                   |             | Heavy #1 |      |      |      | ●    | ●     |       |       |       |
|                   |             | Heavy #2 |      |      |      |      | ●     | ●     |       |       |
|                   |             | Heavy #3 |      |      |      |      |       | ●     | ●     |       |
| 60 – 70           | 18.0 – 21.5 | Main     |      |      |      |      |       | ●     | ●     |       |
|                   |             | Light #1 |      |      | ●    | ●    |       |       |       |       |
|                   |             | Med #1   |      |      |      | ●    | ●     | ●     |       |       |
|                   |             | Heavy #1 |      |      |      |      | ●     | ●     | ●     |       |
|                   |             | Heavy #2 |      |      |      |      |       | ●     | ●     |       |
|                   |             | Heavy #3 |      |      |      |      |       |       | ●     | ●     |

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

# Performance Cruise

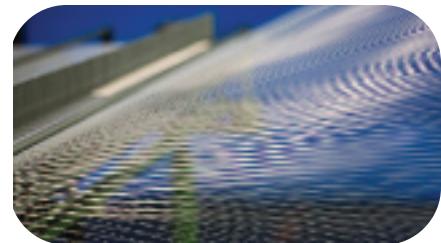
## Premium Cruising Fabric



Tightly woven constructions woven in the USA by Glen Raven Mills using high tenacity fibers. Manufactured with the same quality and consistency as Sunbrella, the premier Marine fabric.

Medium-Firm stabilized finish with purpose driven constructions engineered for durable cruising sails.

High production volumes ensures consistency and lowers cost for a high value product line.



| Fabric ID | Yarn Denier |      | Fabric Weight |     | Fabric Width |     |
|-----------|-------------|------|---------------|-----|--------------|-----|
|           | Warp        | Fill | SM oz         | gsm | in           | cm  |
| D3.8 / 36 | 150         | 250  | 3.8           | 163 | 36           | 92  |
| D3.8      | 150         | 250  | 3.8           | 163 | 54           | 137 |
| D4.18     | 150         | 250  | 4.3           | 184 | 54           | 137 |
| D5.18     | 150         | 250  | 4.6           | 197 | 54           | 137 |
| D6.18     | 150         | 450  | 5.8           | 248 | 54           | 137 |
| D7.18     | 250         | 500  | 7.2           | 308 | 54           | 137 |
| D8.18     | 300         | 750  | 8.2           | 351 | 54           | 137 |
| D9.18     | 300         | 840  | 8.4           | 360 | 54           | 137 |
| D10.18    | 300         | 1300 | 9.0           | 385 | 54           | 137 |

## Performance Cruise Application Chart

| Boat Size (ft, m) | Sail Type   | 3.8      | 4.18 | 5.18 | 6.18 | 7.18 | 8.18 | 9.18 | 10.18 |
|-------------------|-------------|----------|------|------|------|------|------|------|-------|
| 10 – 15           | 3.0 – 4.5   | Main     | ●    | ●    |      |      |      |      |       |
|                   |             | Jib      | ●    | ●    |      |      |      |      |       |
| 15 – 20           | 4.5 – 6.0   | Main     |      | ●    |      |      |      |      |       |
|                   |             | AP #1    | ●    | ●    |      |      |      |      |       |
|                   |             | #2       |      | ●    | ●    |      |      |      |       |
| 20 – 25           | 6.0 – 7.5   | Main     |      |      | ●    | ●    |      |      |       |
|                   |             | AP #1    | ●    | ●    | ●    |      |      |      |       |
|                   |             | #2       |      | ●    | ●    |      |      |      |       |
| 25 – 30           | 7.5 – 9.0   | Main     |      |      |      | ●    | ●    |      |       |
|                   |             | AP #1    |      | ●    | ●    |      |      |      |       |
|                   |             | #2       |      | ●    | ●    |      |      |      |       |
| 30 – 35           | 9.0 – 10.5  | Main     |      |      |      |      | ●    | ●    |       |
|                   |             | Light #1 |      | ●    | ●    |      |      |      |       |
|                   |             | Med #1   |      |      | ●    | ●    |      |      |       |
| 35 – 40           | 10.5 – 12.0 | Main     |      |      |      |      | ●    | ●    |       |
|                   |             | Light #1 |      |      | ●    | ●    |      |      |       |
|                   |             | Med #1   |      |      |      | ●    | ●    |      |       |
| 40 – 45           | 12.0 – 13.5 | Main     |      |      |      |      | ●    | ●    |       |
|                   |             | Light #1 |      |      | ●    |      |      |      |       |
|                   |             | Med #1   |      |      | ●    | ●    |      |      |       |
| 45 – 50           | 13.5 – 15.0 | Main     |      |      |      | ●    | ●    | ●    |       |
|                   |             | Light #1 |      |      |      | ●    | ●    |      |       |
|                   |             | Med #1   |      |      |      |      | ●    | ●    |       |
| 50 – 55           | 15.0 – 16.5 | Main     |      |      |      |      | ●    | ●    |       |
|                   |             | Light #1 |      |      |      | ●    | ●    |      |       |
|                   |             | Med #1   |      |      |      |      | ●    | ●    |       |
| 55 – 60           | 16.5 – 18.0 | Main     |      |      |      |      | ●    | ●    |       |
|                   |             | Light #1 |      |      |      | ●    | ●    |      |       |
|                   |             | Med #1   |      |      |      |      | ●    | ●    |       |
| 60 – 70           | 18.0 – 21.5 | Main     |      |      |      |      | ●    | ●    |       |
|                   |             | Light #1 |      |      |      |      | ●    | ●    |       |
|                   |             | Med #1   |      |      |      |      | ●    | ●    |       |

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

# Warp-Drive Race



*"Warp-Drive is fast and powerful. My sails held their shape, and had smooth, clean leeches even in highest wind conditions. After 20 days on the brutal Route de Rhum the WD fabric looked as good as new."*

– Sir Robert Knox-Johnston  
Open 60 Grey Power

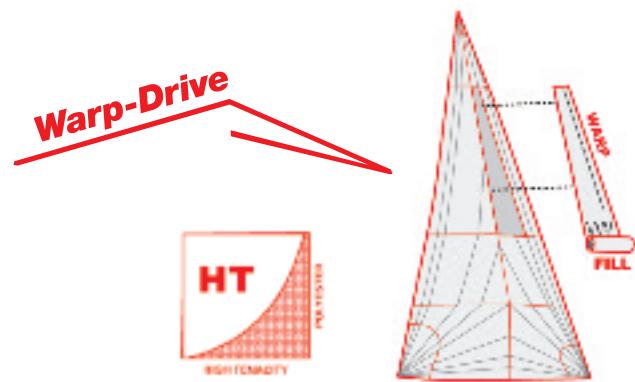
## Super Premium Radial Race

Made using Challenge's patented process for weaving straight warp yarns in heavy fabrics.

Fill yarns take crimp during weaving and encapsulate the warp yarns.

Warp-Drive fabrics have zero-crimp warp yarns, which gives the performance of a laminate and the durability of a traditional woven. These fabrics will not mildew.

Warp-Drive dacrons are the best warp oriented wovens ever made.



| Fabric ID     | Warp DPI | Fabric Weight<br>SM oz   gsm | Fabric Width<br>in   cm |
|---------------|----------|------------------------------|-------------------------|
| D4.11WD Race  | 19,000   | 4.5   192                    | 54   137                |
| D5.11WD Race  | 22,400   | 5.3   225                    | 54   137                |
| D6.11WD Race  | 27,000   | 6.0   257                    | 54   137                |
| D8.11WD Race  | 33,600   | 8.5   364                    | 54   137                |
| D10.11WD Race | 51,000   | 10.0   428                   | 54   137                |
| D12.11WD Race | 62,400   | 12.5   535                   | 54   137                |

# Warp-Drive Cruise

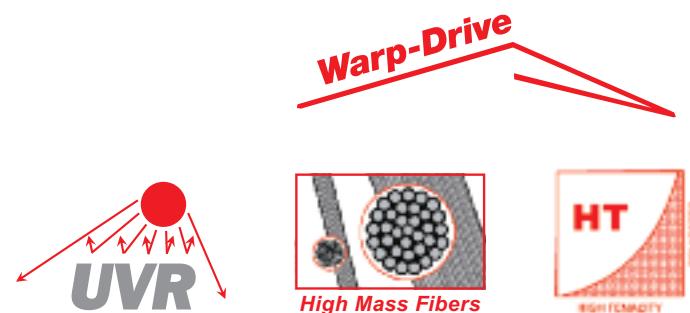


## *Super Premium Radial Cruise*

Woven using the same process as Warp-Drive Race, but with larger fill yarns on the surface to increase durability and UV resistance.

Warp-Drive Cruise fabrics have low-crimp warp yarns, which gives the performance of a laminate and the durability of a traditional woven. These fabrics will not mildew.

Warp-Drive dacrons are the best warp oriented wovens ever made.



| Fabric ID       | Warp DPI | Fabric Weight<br>SM oz   gsm |     | Fabric Width<br>in   cm |     |
|-----------------|----------|------------------------------|-----|-------------------------|-----|
| D7.11WD Cruise  | 27,000   | 6.8                          | 291 | 54                      | 137 |
| D9.11WD Cruise  | 33,600   | 9.1                          | 390 | 54                      | 137 |
| D11.11WD Cruise | 51,000   | 10.4                         | 445 | 54                      | 137 |
| D13.11WD Cruise | 62,400   | 13.5                         | 578 | 54                      | 137 |
|                 |          |                              |     |                         |     |
|                 |          |                              |     |                         |     |

## Warp-Drive Application Chart

| Boat Size (ft, m) | Sail Type   | 4.11     | 5.11 | 6.11 | 8.11 | 10.11 | 12.11 | 7.11 | 9.11 | 11.11 | 13.11 |
|-------------------|-------------|----------|------|------|------|-------|-------|------|------|-------|-------|
| 10 – 15           | 3.0 – 4.5   | Main     | ●    |      |      |       |       |      |      |       |       |
|                   |             | Jib      | ●    |      |      |       |       |      |      |       |       |
| 15 – 20           | 4.5 – 6.0   | Main     |      | ●    |      |       |       |      |      |       |       |
|                   |             | AP #1    | ●    |      |      |       |       |      |      |       |       |
|                   |             | #2       |      | ●    |      |       |       |      |      |       |       |
| 20 – 25           | 6.0 – 7.5   | Main     |      |      | ●    |       |       |      |      |       |       |
|                   |             | AP #1    |      | ●    |      |       |       |      |      |       |       |
|                   |             | #2       |      |      | ●    |       |       |      |      |       |       |
|                   |             | #3       |      |      | ●    |       |       |      |      |       |       |
| 25 – 30           | 7.5 – 9.0   | Main     |      |      | ●    | ●     |       |      | ●    |       |       |
|                   |             | AP #1    |      | ●    |      |       |       |      |      |       |       |
|                   |             | #2       |      |      | ●    |       |       |      | ●    |       |       |
|                   |             | #3       |      |      | ●    | ●     |       |      | ●    | ●     |       |
| 30 – 35           | 9.0 – 10.5  | Main     |      |      | ●    |       |       |      |      | ●     |       |
|                   |             | Light #1 |      | ●    |      |       |       |      |      |       |       |
|                   |             | Med #1   |      |      | ●    |       |       |      | ●    |       |       |
|                   |             | Med #2   |      | ●    | ●    |       |       |      | ●    |       |       |
|                   |             | Med #3   |      |      | ●    |       |       |      |      | ●     |       |
|                   | 35 – 40     | Main     |      |      | ●    |       |       |      |      | ●     |       |
|                   |             | Light #1 |      | ●    |      |       |       |      | ●    |       |       |
|                   |             | Med #1   |      | ●    |      |       |       |      | ●    |       |       |
|                   |             | Heavy #1 |      |      | ●    |       |       |      | ●    |       |       |
|                   |             | Heavy #2 |      |      | ●    |       |       |      | ●    |       |       |
|                   |             | Heavy #3 |      |      | ●    |       |       |      | ●    |       |       |
| 40 – 45           | 12.0 – 13.5 | Main     |      |      | ●    | ●     |       |      | ●    |       | ●     |
|                   |             | Light #1 |      | ●    |      |       |       |      | ●    |       |       |
|                   |             | Med #1   |      |      | ●    |       |       |      | ●    |       |       |
|                   |             | Heavy #1 |      |      | ●    |       |       |      | ●    |       |       |
|                   |             | Heavy #2 |      |      | ●    |       |       |      | ●    |       |       |
|                   |             | Heavy #3 |      |      | ●    | ●     |       |      |      | ●     |       |
|                   |             |          |      |      |      |       |       |      |      |       |       |
| 45 – 50           | 13.5 – 15.0 | Main     |      |      | ●    | ●     |       |      |      | ●     |       |
|                   |             | Light #1 |      | ●    |      |       |       |      | ●    |       |       |
|                   |             | Med #1   |      |      | ●    |       |       |      | ●    |       |       |
|                   |             | Heavy #1 |      |      | ●    | ●     |       |      | ●    |       |       |
|                   |             | Heavy #2 |      |      |      | ●     |       |      | ●    |       |       |
|                   |             | Heavy #3 |      |      |      | ●     |       |      | ●    |       |       |
|                   |             |          |      |      |      |       |       |      |      |       |       |
| 50 – 55           | 15.0 – 16.5 | Main     |      |      |      | ●     | ●     |      |      |       | ●     |
|                   |             | Light #1 |      | ●    | ●    |       |       |      | ●    |       |       |
|                   |             | Med #1   |      |      | ●    |       |       |      | ●    |       |       |
|                   |             | Heavy #1 |      |      |      | ●     |       |      | ●    |       |       |
|                   |             | Heavy #2 |      |      |      | ●     |       |      | ●    |       |       |
|                   |             | Heavy #3 |      |      |      | ●     | ●     |      |      |       | ●     |
|                   |             |          |      |      |      |       |       |      |      |       |       |
| 55 – 60           | 16.5 – 18.0 | Main     |      |      |      |       | ●     |      | ●    |       | ●     |
|                   |             | Light #1 |      | ●    | ●    |       |       |      |      |       |       |
|                   |             | Med #1   |      |      | ●    |       |       |      | ●    |       |       |
|                   |             | Heavy #1 |      |      | ●    |       |       |      | ●    |       |       |
|                   |             | Heavy #2 |      |      |      | ●     |       |      | ●    |       |       |
|                   |             | Heavy #3 |      |      |      | ●     |       |      | ●    |       | ●     |
|                   |             |          |      |      |      |       |       |      |      |       |       |
| 60 – 70           | 18.0 – 21.5 | Main     |      |      |      |       |       |      |      |       | ●     |
|                   |             | Light #1 |      |      |      | ●     |       |      |      | ●     |       |
|                   |             | Med #1   |      |      |      | ●     | ●     |      |      | ●     |       |
|                   |             | Heavy #1 |      |      |      | ●     |       |      | ●    |       | ●     |
|                   |             | Heavy #2 |      |      |      | ●     | ●     |      | ●    |       | ●     |
|                   |             | Heavy #3 |      |      |      |       | ●     |      |      | ●     |       |
|                   |             |          |      |      |      |       |       |      |      |       |       |

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



# Coated Dacron



| Fabric ID | Yarn Denier |               | Fabric Weight |     | Fabric Width |     |
|-----------|-------------|---------------|---------------|-----|--------------|-----|
|           | Warp        | Fill          | SM oz         | gsm | in           | cm  |
| DS4.4     | 150         | 250           | 5.0           | 214 | 54           | 137 |
| DS5.24    | 150         | 220           | 5.6           | 240 | 54           | 137 |
| DS5.84    | 150         | 350           | 5.7           | 244 | 54           | 137 |
| DS6.54    | 250         | 420           | 7.2           | 308 | 54           | 137 |
| DS6.64    | 250         | 420           | 7.3           | 313 | 54           | 137 |
| DS3.82    | 150         | 250 PEN       | 3.9           | 167 | 54           | 137 |
| DS5.52    | 150         | 150 / 500 PEN | 5.6           | 240 | 54           | 137 |

# Fiber 104 One Design



| Fabric ID | Yarn Denier |      | Ripstop   | Fabric Weight |     | Fabric Width |     |
|-----------|-------------|------|-----------|---------------|-----|--------------|-----|
|           | Warp        | Fill |           | SM oz         | gsm | in           | cm  |
| D3.7OD    | 150         | 250  | --        | 3.8           | 163 | 56           | 142 |
| D3.7ODRS  | 150         | 250  | Warp Only | 3.8           | 163 | 56           | 142 |

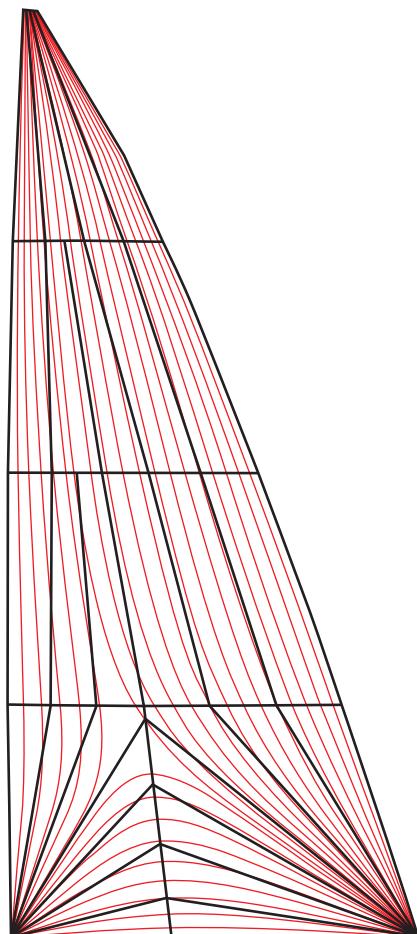
# Matrix Weaves



Available May 2015

| Fabric ID | Yarn Denier |      | Ripstop | Fabric Weight |     | Fabric Width |     |
|-----------|-------------|------|---------|---------------|-----|--------------|-----|
|           | Warp        | Fill |         | SM oz         | gsm | in           | cm  |
| D4.2M     | 150         | 150  | 500     | 4.2           | 180 | 54           | 137 |
| D4.9M     | 150         | 250  | 500     | 4.8           | 205 | 54           | 137 |
| D5.7M     | 150         | 150  | 1000    | 5.7           | 245 | 54           | 137 |
| D6.2M     | 150         | 220  | 1000    | 6.2           | 265 | 54           | 137 |
| D7.2M     | 250         | 250  | 1000    | 7.2           | 310 | 54           | 137 |
| D7.8M     | 250         | 350  | 1000    | 7.8           | 335 | 54           | 137 |
| D8.0M     | 250         | 440  | 1000    | 7.9           | 340 | 54           | 137 |
| D9.0M     | 300         | 500  | 1000    | 8.9           | 380 | 54           | 137 |

# Radial Weaves



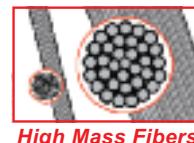
sail design by  
**SMAR Azure Ltd**

## Premium Radial Cruise

Tight weaves, using balanced constructions and large warp yarns to give low stretch in the warp direction.

High Mass Fiber technology constructions to provide excellent UV resistance and durability.

Specifically finished for low bias stretch and good recovery.



| Fabric ID | Yarn Denier |      | Fabric Weight |     | Fabric Width |     |
|-----------|-------------|------|---------------|-----|--------------|-----|
|           | Warp        | Fill | SM oz         | gsm | in           | cm  |
| D4.1      | 150         | 250  | 4.3           | 184 | 54           | 137 |
| D5.1      | 150         | 250  | 4.6           | 197 | 54           | 137 |
| D5.51     | 250         | 250  | 6.0           | 257 | 54           | 137 |
| D6.51     | 250         | 400  | 6.2           | 266 | 54           | 137 |
| D7.1      | 300         | 500  | 7.2           | 308 | 54           | 137 |
| D8.1      | 500         | 500  | 8.3           | 355 | 54           | 137 |
| D9.1      | 500         | 750  | 9.1           | 390 | 54           | 137 |
| D12.1     | 1000        | 1000 | 11.9          | 510 | 54           | 137 |

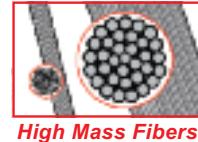
## Radial Weaves Application Chart

| Boat Size (ft, m) | Sail Type   | 4.1      | 5.1 | 5.51 | 6.51 | 7.1 | 8.1 | 9.1 | 12.1 |
|-------------------|-------------|----------|-----|------|------|-----|-----|-----|------|
| 10 – 15           | 3.0 – 4.5   | Main     | ●   |      |      |     |     |     |      |
|                   |             | Jib      | ●   |      |      |     |     |     |      |
| 15 – 20           | 4.5 – 6.0   | Main     | ●   | ●    |      |     |     |     |      |
|                   |             | AP #1    | ●   |      |      |     |     |     |      |
|                   |             | #2       | ●   | ●    |      |     |     |     |      |
| 20 – 25           | 6.0 – 7.5   | Main     |     |      | ●    | ●   |     |     |      |
|                   |             | AP #1    | ●   | ●    |      |     |     |     |      |
|                   |             | #2       | ●   | ●    | ●    |     |     |     |      |
| 25 – 30           | 7.5 – 9.0   | Main     |     |      | ●    |     | ●   |     |      |
|                   |             | AP #1    | ●   | ●    |      |     |     |     |      |
|                   |             | #2       |     |      | ●    |     |     |     |      |
| 30 – 35           | 9.0 – 10.5  | Main     |     |      |      | ●   |     | ●   |      |
|                   |             | Light #1 |     | ●    | ●    |     |     |     |      |
|                   |             | Med #1   |     |      | ●    | ●   |     |     |      |
| 35 – 40           | 10.5 – 12.0 | Main     |     |      |      |     | ●   |     | ●    |
|                   |             | Light #1 |     |      | ●    | ●   |     |     |      |
|                   |             | Med #1   |     |      | ●    |     | ●   |     |      |
| 40 – 45           | 12.0 – 13.5 | Main     |     |      |      |     |     |     |      |
|                   |             | Light #1 |     |      | ●    |     |     |     |      |
|                   |             | Med #1   |     |      | ●    | ●   |     |     |      |
| 45 – 50           | 13.5 – 15.0 | Main     |     |      |      | ●   |     |     |      |
|                   |             | Light #1 |     |      |      | ●   |     |     |      |
|                   |             | Med #1   |     |      | ●    |     | ●   |     |      |
| 50 – 55           | 15.0 – 16.5 | Main     |     |      |      | ●   |     |     |      |
|                   |             | Light #1 |     |      |      | ●   |     |     |      |
|                   |             | Med #1   |     |      |      | ●   | ●   |     |      |
| 55 – 60           | 16.5 – 18.0 | Main     |     |      |      |     | ●   |     |      |
|                   |             | Light #1 |     |      |      |     | ●   |     |      |
|                   |             | Med #1   |     |      |      |     | ●   | ●   |      |
| 60 – 70           | 18.0 – 21.5 | Main     |     |      |      |     |     |     |      |
|                   |             | Light #1 |     |      |      |     | ●   |     |      |
|                   |             | Med #1   |     |      |      |     | ●   | ●   |      |
|                   |             | Heavy #1 |     |      |      |     |     | ●   |      |
|                   |             | Heavy #2 |     |      |      |     |     |     | ●    |
|                   |             | Heavy #3 |     |      |      |     |     |     | ●    |

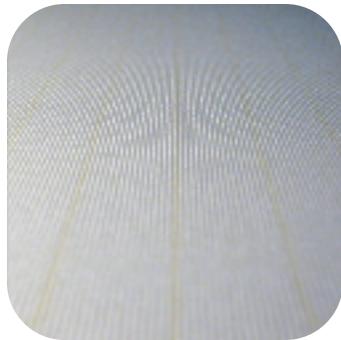
Application charts for monohull only. For multihull applications add 10 feet.

# Tall Ships Dacron

Woven with tough 1000d warp and large denier fill fibers. This combination gives excellent tearing strength as well as UV and abrasion resistance. Tall Ships specific soft finish for easy sail handling.



| Fabric ID | Yarn Denier |      | Fabric Weight |     | Fabric Width |     |
|-----------|-------------|------|---------------|-----|--------------|-----|
|           | Warp        | Fill | SM oz         | gsm | in           | cm  |
| D9.8      | 500         | 840  | 9.5           | 407 | 54           | 137 |
| D10.8     | 500         | 1000 | 10.3          | 441 | 54           | 137 |
| D11.8     | 1000        | 1000 | 11.9          | 510 | 54           | 137 |
| D12.8     | 1000        | 1300 | 12.7          | 544 | 54           | 137 |
| D17.0     | 1200        | 2000 | 14.1          | 604 | 54           | 137 |



Vektron Sailcloth is a mixture of the highest tenacity Fiber 104 polyester and Vectran yarn in the load bearing fill direction. The addition of Vectran yarn increases durability and yields a sailcloth that is slightly lower stretch than standard dacrons.  
Developed in conjunction with Hood Sailmakers



| Fabric ID | Challenge                 | Hood           | Fabric Weight |     | Fabric Width |     |
|-----------|---------------------------|----------------|---------------|-----|--------------|-----|
|           |                           |                | SM oz         | gsm | in           | cm  |
| DV6.0     | HA Mains/Genoas, 27-31 ft | 30-40 ft boats | 7.2           | 308 | 60           | 152 |
| DV7.7     | HA Mains/Genoas, 32-40 ft | 40-50 ft boats | 8.7           | 373 | 60           | 152 |
| DV9.4     | HA Mains/Genoas, 37-48 ft | 45-50 ft boats | 9.6           | 424 | 60           | 152 |
| DV12.5    | HA Mains/Genoas, 50-62 ft | 50-62 ft boats | 11.1          | 472 | 60           | 152 |

# Colored Dacron

## Premium Dyed Dacron



*Dark Blue  
D3.8DB  
D6.03DB*



*Red  
D3.8R  
D6.03R*



*Yellow  
D3.8Y  
D6.03Y*



*Black  
D3.8BK  
D6.03BK*

Premium constructions using high tenacity yarns and High Mass Fiber technologies.



*Med Blue  
D3.8MB*



*Orange  
D3.8O*



*Fl Yellow  
D3.8FY*

Autoclave dyed using high pressure and heat to produce vibrant and long lasting colors.



*Purple  
D3.8PU*



*Green  
D3.8G*



*Gold  
D3.8CG*

Custom colors can be matched to Pantone shades, with 1000 yard MOQ's.



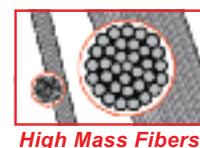
*Tanbark*



*Storm  
Orange*



*Cream*



| Fabric ID       | Color           | Denier |      | Weight |     | Width |     |
|-----------------|-----------------|--------|------|--------|-----|-------|-----|
|                 |                 | Warp   | Fill | SM oz  | gsm | in    | cm  |
| D3.8 / 36       | Natural         | 150    | 250  | 3.8    | 162 | 36    | 92  |
| D3.8            | Natural         | 150    | 250  | 3.8    | 162 | 56    | 142 |
| D3.8            | Colors          | 150    | 250  | 3.8    | 162 | 56    | 142 |
| D6.03           | Natural         | 250    | 400  | 6.0    | 257 | 56    | 142 |
| D6.03           | Colors          | 250    | 400  | 6.0    | 257 | 56    | 142 |
| DT5.53 / DC5.53 | Tanbark / Cream | 250    | 300  | 6.0    | 257 | 54    | 137 |
| DT6.68 / DC6.68 | Tanbark / Cream | 250    | 400  | 7.1    | 304 | 54    | 137 |
| DT7.88 / DC7.88 | Tanbark / Cream | 500    | 650  | 8.3    | 355 | 54    | 137 |
| DT8.88 / DC8.88 | Tanbark / Cream | 500    | 750  | 9.1    | 390 | 54    | 137 |
| DT9.88 / DC9.88 | Tanbark / Cream | 500    | 840  | 9.4    | 403 | 54    | 137 |
| D9.88SO         | Storm Orange    | 500    | 840  | 9.4    | 403 | 54    | 137 |
| D10.88SO        | Storm Orange    | 500    | 1000 | 10.3   | 441 | 54    | 137 |

## *TiO<sub>2</sub> Coated Premium Dacron*

Premium dacron constructions, coated with flexible and abrasion resistant UV blocking TiO<sub>2</sub>. TiO<sub>2</sub> coating creates a physical barrier between the polyester fibers and UV rays, virtually eliminating direct UV exposure. This is the same technology used in aircraft body paint.



| Fabric ID | Description                      | Fabric Weight<br>SM oz   gsm |     | Fabric Width<br>in   cm |     |
|-----------|----------------------------------|------------------------------|-----|-------------------------|-----|
| DUV4.25   | 4.0 oz Dacron, Coated on 1 Side  | 4.7                          | 201 | 54                      | 137 |
| DUV4.5    | 4.0 oz Dacron, Coated on 2 Sides | 5.0                          | 214 | 54                      | 137 |
| DUV5.25   | 5.0 oz Dacron, Coated on 1 Side  | 5.1                          | 218 | 54                      | 137 |
| DUV5.5    | 5.0 oz Dacron, Coated on 2 Sides | 5.6                          | 240 | 54                      | 137 |

## Patch Dacron

| Fabric ID | Yarn Denier<br>Warp   Fill |      | Fabric Weight<br>SM oz   gsm |     | Fabric Width<br>in   cm |     |
|-----------|----------------------------|------|------------------------------|-----|-------------------------|-----|
| DMP       | 500                        | 650  | 8.3                          | 355 | 54                      | 137 |
| DHP       | 500                        | 1000 | 10.3                         | 441 | 54                      | 137 |



# Fibermax

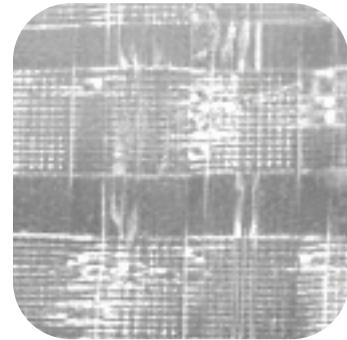
High density woven and resin impregnated spinnaker styles that offer maximum durability for performance in cruising and club race applications. Balanced constructions make stable fabrics that are durable due to tight weave without the need for a coating system.



| Fabric ID | Color            | Denier |      | Weight |     | Width |     |
|-----------|------------------|--------|------|--------|-----|-------|-----|
|           |                  | Warp   | Fill | SM oz  | gsm | in    | cm  |
| NFS44     | Natural / Colors | 30     | 40   | 1.1    | 47  | 60    | 152 |
| NFS44     | Fluorescents     | 30     | 40   | 1.1    | 47  | 60    | 152 |
| NFS64     | Natural / Colors | 70     | 70   | 1.6    | 69  | 60    | 152 |
| NFS64     | Fluorescents     | 70     | 70   | 1.6    | 69  | 60    | 152 |
| NFS94     | Natural / Colors | 140    | 140  | 2.6    | 111 | 60    | 152 |
| NFS144    | Natural / Colors | 210    | 210  | 3.3    | 141 | 60    | 152 |
| NFS184    | Natural          | 420    | 420  | 4.4    | 188 | 60    | 152 |

# Elite

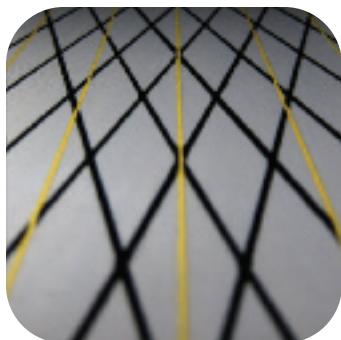
Coated with a highly durable and air-tight PU coating system to give excellent stability and strength-to-weight ratios. Specifically formulated coating system that will remain firm and stable even after extended use. Zero porosity coated finish makes cutting on vacuum tables more efficient.



| Fabric ID | Color            | Denier |      | Weight |     | Width |     |
|-----------|------------------|--------|------|--------|-----|-------|-----|
|           |                  | Warp   | Fill | SM oz  | gsm | in    | cm  |
| NEL33     | Natural / Colors | 30     | 30   | 0.83   | 35  | 60    | 152 |
| NEL36     | Natural / Colors | 30     | 30   | 0.88   | 38  | 60    | 152 |
| NEL40     | Natural / Colors | 30     | 30   | 0.92   | 39  | 60    | 152 |
| NEL43     | Natural / Colors | 30     | 30   | 1.00   | 43  | 60    | 152 |
| NEL46     | Natural / Colors | 30     | 40   | 1.10   | 47  | 60    | 152 |
| NEL54     | Natural / Colors | 70     | 45   | 1.50   | 64  | 60    | 152 |
| NEL68     | Natural / Colors | 70     | 70   | 1.70   | 70  | 60    | 152 |

Tightly woven polyester constructions give extremely low stretch warp-oriented spinnaker fabrics. Coated with a highly durable and air-tight PU coating system to give excellent stability and strength-to-weight ratios. Formulated with advanced ripstop constructions and specific finish additives to improve tearing strength and durability

| Fabric ID | Color   | Denier |      | Weight |     | Width |     |
|-----------|---------|--------|------|--------|-----|-------|-----|
|           |         | Warp   | Fill | SM oz  | gsm | in    | cm  |
| DPL52     | Natural | 50     | 50   | 1.20   | 51  | 60    | 152 |
| DPL62     | Natural | 50     | 50   | 1.50   | 64  | 60    | 152 |
| DPL82     | Natural | 75     | 75   | 2.10   | 90  | 60    | 152 |
| DPL112    | Natural | 150    | 150  | 3.10   | 133 | 60    | 152 |
| DPL122    | Natural | 250    | 150  | 3.50   | 150 | 60    | 152 |



## Code Zero Laminates

Precision laminated light weight taffeta-film fabrics with aramid warp inserts and Black Twaron. Ultra-Fresh™ anti-mildew treated high tenacity 50x50 polyester taffetas.

| Fabric ID | Warp<br>Twaron | Cross Yarn<br>Black Twaron | Taffeta | Film<br>mil | Weight |     | Width |     |
|-----------|----------------|----------------------------|---------|-------------|--------|-----|-------|-----|
|           |                |                            |         |             | SM oz  | gsm | in    | cm  |
| MPK00A    | —              | —                          | 50x50   | 0.50        | 1.5    | 64  | 60    | 152 |
| MPK00D    | —              | —                          | 50x50   | 0.75        | 1.8    | 77  | 60    | 152 |
| MPK2T     | 1000 DPI       | 22° 1000d                  | 50x50   | 0.50        | 2.1    | 90  | 60    | 152 |
| MPK4T     | 2000 DPI       | 22° 1000d                  | 50x50   | 0.50        | 2.3    | 99  | 60    | 152 |
| MPK6T     | 4000 DPI       | 22° 1000d                  | 50x50   | 0.50        | 2.6    | 111 | 60    | 152 |

# Spinnaker Colors

|              | Natural | Red | Dark Blue | Dark Navy | Yellow | Green | Light Blue | Black | Orange | Ocean Blue | Gold | Purple | Grey | FL Pink | FL Raspberry | FL Yellow | FL Orange | FL Green |
|--------------|---------|-----|-----------|-----------|--------|-------|------------|-------|--------|------------|------|--------|------|---------|--------------|-----------|-----------|----------|
| Elite 33     | ●       | ●   | ●         |           |        | ●     |            |       |        |            |      |        |      |         |              |           |           |          |
| Elite 36     | ●       | ●   | ●         |           |        |       |            |       |        |            |      |        |      |         |              |           |           |          |
| Elite 40     | ●       | ●   | ●         |           |        |       | ●          | ●     |        |            |      |        |      |         |              |           |           |          |
| Elite 43     | ●       | ●   | ●         |           | ●      | ●     | ●          | ●     | ●      |            |      |        |      |         |              |           |           |          |
| Elite 46     | ●       | ●   | ●         |           |        |       |            |       |        |            |      |        |      |         |              |           |           |          |
| Elite 54     | ●       |     |           |           |        |       |            |       |        |            |      |        |      |         |              |           |           |          |
| Elite 68     | ●       |     |           |           |        |       |            |       |        |            |      |        |      |         |              |           |           |          |
| Fibermax 44  | ●       | ●   | ●         | ●         | ●      | ●     | ●          | ●     | ●      | ●          | ●    | ●      | ●    | ●       | ●            | ●         | ●         | ●        |
| Fibermax 64  | ●       | ●   | ●         | ●         | ●      | ●     | ●          | ●     | ●      | ●          | ●    | ●      | ●    | ●       | ●            | ●         | ●         | ●        |
| Fibermax 94  | ●       | ●   | ●         |           |        |       |            |       |        |            |      |        |      |         |              |           |           |          |
| Fibermax 144 | ●       | ●   | ●         |           |        |       |            |       |        |            |      |        |      |         |              |           |           |          |
| Fibermax 184 | ●       |     |           |           |        |       |            |       |        |            |      |        |      |         |              |           |           |          |
| Polymax 52   | ●       |     |           |           |        |       |            |       |        |            |      |        |      |         |              |           |           |          |
| Polymax 62   | ●       |     |           |           |        |       |            |       |        |            |      |        |      |         |              |           |           |          |
| Polymax 82   | ●       |     |           |           |        |       |            |       |        |            |      |        |      |         |              |           |           |          |
| Polymax 112  | ●       |     |           |           |        |       |            |       |        |            |      |        |      |         |              |           |           |          |
| Polymax 122  | ●       |     |           |           |        |       |            |       |        |            |      |        |      |         |              |           |           |          |

### Downwind Sail Application Chart

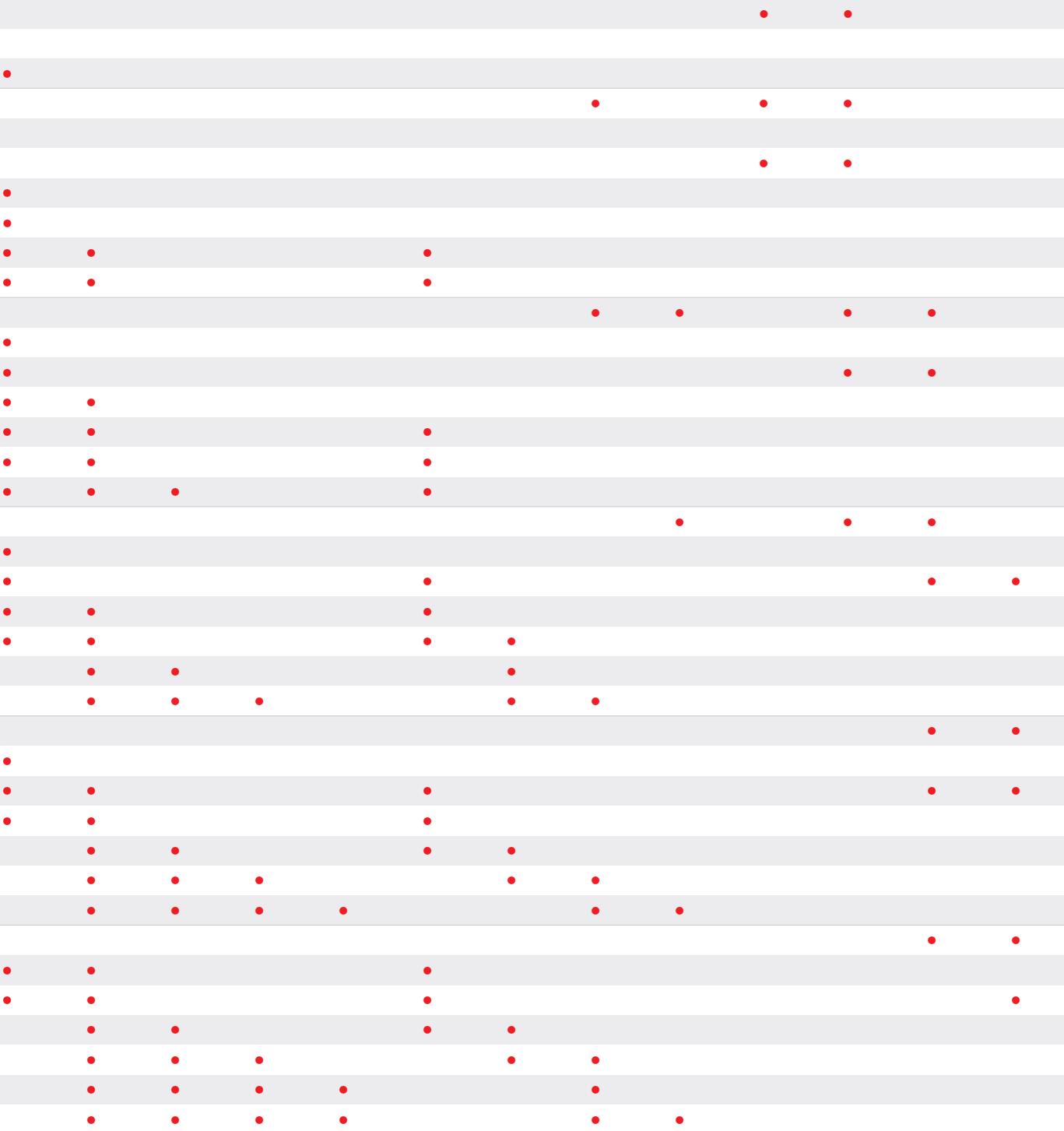
| Boat Size (ft, m)   | Sail Type      | NFS44 | NFS64 | NFS94 | NFS144 | NFS184 | NEL33 | NEL36 |
|---------------------|----------------|-------|-------|-------|--------|--------|-------|-------|
| < 20 < 6.0          | Light Runner   |       |       |       |        |        | ●     | ●     |
|                     | Light Reacher  |       |       |       |        |        | ●     | ●     |
|                     | Medium Runner  | ●     |       |       |        |        | ●     | ●     |
|                     | Medium Reacher | ●     |       |       |        |        | ●     | ●     |
|                     | Code Zero      |       |       |       |        |        |       |       |
|                     | Light Runner   | ●     |       |       |        |        | ●     | ●     |
| 20 – 30 6.0 – 9.0   | Light Reacher  | ●     |       |       |        |        | ●     | ●     |
|                     | Medium Runner  | ●     |       |       |        |        | ●     | ●     |
|                     | Medium Reacher | ●     | ●     |       |        |        |       |       |
|                     | Heavy Runner   |       | ●     |       |        |        |       | ●     |
|                     | Heavy Reacher  |       | ●     |       |        |        |       |       |
|                     | Code Zero      |       |       |       |        |        |       |       |
| 30 – 40 9.0 – 12.0  | Light Runner   | ●     |       |       |        |        | ●     | ●     |
|                     | Light Reacher  | ●     |       |       |        |        |       | ●     |
|                     | Medium Runner  | ●     | ●     |       |        |        |       |       |
|                     | Medium Reacher | ●     | ●     |       |        |        |       |       |
|                     | Heavy Runner   |       | ●     |       |        |        |       |       |
|                     | Heavy Reacher  |       | ●     |       |        |        |       |       |
| 40 – 50 12.0 – 15.0 | Code Zero      |       |       |       |        |        |       |       |
|                     | Light Runner   | ●     |       |       |        |        |       | ●     |
|                     | Light Reacher  | ●     | ●     |       |        |        |       | ●     |
|                     | Medium Runner  |       | ●     |       |        |        |       |       |
|                     | Medium Reacher |       | ●     |       |        |        |       |       |
|                     | Heavy Runner   |       | ●     |       |        |        |       |       |
| 50 – 60 15.0 – 18.0 | Heavy Reacher  |       | ●     | ●     |        |        |       |       |
|                     | Code Zero      |       |       |       |        |        |       |       |
|                     | Light Runner   | ●     | ●     |       |        |        |       | ●     |
|                     | Light Reacher  | ●     | ●     |       |        |        |       | ●     |
|                     | Medium Runner  |       | ●     |       |        |        |       |       |
|                     | Medium Reacher |       | ●     | ●     |        |        |       |       |
| 60 – 70 18.0 – 21.5 | Heavy Runner   |       | ●     | ●     |        |        |       |       |
|                     | Heavy Reacher  |       | ●     | ●     |        |        |       |       |
|                     | Code Zero      |       |       |       |        |        |       |       |
|                     | Light Runner   | ●     |       |       |        |        |       | ●     |
|                     | Light Reacher  | ●     |       |       |        |        |       |       |
|                     | Medium Runner  | ●     | ●     | ●     |        |        |       |       |

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

# Downwind Sail Fabrics

Downwind Sail Application Chart

NEL40 NEL43 NEL45 NEL54 NEL68 DPL52 DPL62 DPL82 DPL112 MPK00 MPK2T MPK4T MPK6T



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

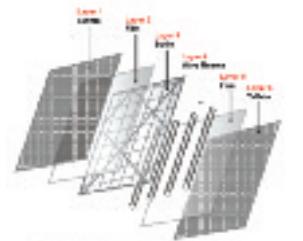
# MPC & MPCX Laminates

## Premium Taffeta Cruising Laminates

Warp Beam Insert constructions give the new MPC and MPCX cruising laminates unmatched radial performance.

Ultra-Fresh™ anti-mildew treated taffetas and industry leading UV blockers keep the fabric looking new and extend sail life.

MPCX styles have added inserts to give off-axis support to enhance shape holding ability. These will be offered only in grey color for 2015.



**Warp Beam Inserts**



**Anti Mildew**

| ID     | Warp<br>DPI | Fill<br>DPI | Cross Yarn | Taffeta | Film<br>mil | Weight |     | Width |     |
|--------|-------------|-------------|------------|---------|-------------|--------|-----|-------|-----|
|        |             |             |            |         |             | SM oz  | gsm | in    | cm  |
| MPC50  | 6,500       | 2,500       | –          | 50x50   | 1.0         | 5.9    | 253 | 60    | 152 |
| MPC60  | 6,500       | 2,500       | –          | 50x50   | 1.5         | 6.8    | 291 | 60    | 152 |
| MPC65  | 8,500       | 2,500       | –          | 150x150 | 1.5         | 7.5    | 321 | 60    | 152 |
| MPC75  | 14,500      | 2,500       | –          | 150x150 | 1.5         | 8.9    | 381 | 60    | 152 |
| MPC90  | 20,500      | 2,500       | –          | 150x150 | 1.5         | 9.7    | 415 | 60    | 152 |
| MPC110 | 26,500      | 2,500       | –          | 150x150 | 1.5         | 10.5   | 450 | 60    | 152 |
|        |             |             |            |         |             |        |     |       |     |
| MPCX1  | 6,500       | 2,500       | 22° 1000d  | 50x50   | 1.0         | 7.0    | 300 | 60    | 152 |
| MPCX2  | 8,500       | 2,500       | 22° 1000d  | 50x50   | 1.5         | 8.4    | 361 | 60    | 152 |
| MPCX3  | 14,500      | 2,500       | 22° 1000d  | 50x50   | 1.5         | 9.2    | 394 | 60    | 152 |
| MPCX4  | 20,500      | 2,500       | 22° 1000d  | 50x50   | 1.5         | 10.4   | 445 | 60    | 152 |
| MPCX5  | 26,500      | 2,500       | 22° 1000d  | 150x150 | 1.5         | 11.5   | 492 | 60    | 152 |

## MPC & MPCX Laminates Application Chart

| Boat Size (ft, m) | Sail Type   | 50       | 60 | 65 | 75 | 90 | 110 | X1 | X2 | X3 | X4 | X5 |
|-------------------|-------------|----------|----|----|----|----|-----|----|----|----|----|----|
| 10 – 15           | 3.0 – 4.5   | Main     |    |    |    |    |     |    |    |    |    |    |
|                   |             | Jib      |    |    |    |    |     |    |    |    |    |    |
| 15 – 20           | 4.5 – 6.0   | Main     |    |    |    |    |     |    |    |    |    |    |
|                   |             | AP #1    |    |    |    |    |     |    |    |    |    |    |
| 20 – 25           | 6.0 – 7.5   | Main     | ●  |    |    |    |     | ●  |    |    |    |    |
|                   |             | AP #1    | ●  |    |    |    |     | ●  |    |    |    |    |
|                   |             | #2       | ●  |    |    |    |     | ●  |    |    |    |    |
|                   |             | #3       | ●  |    |    |    |     | ●  |    |    |    |    |
| 25 – 30           | 7.5 – 9.0   | Main     | ●  | ●  |    |    |     | ●  |    |    |    |    |
|                   |             | AP #1    | ●  |    |    |    |     | ●  |    |    |    |    |
|                   |             | #2       | ●  | ●  |    |    |     | ●  |    |    |    |    |
|                   |             | #3       | ●  | ●  | ●  |    |     | ●  | ●  |    |    |    |
| 30 – 35           | 9.0 – 10.5  | Main     |    | ●  | ●  |    |     | ●  | ●  |    |    |    |
|                   |             | Light #1 | ●  |    |    |    |     | ●  |    |    |    |    |
|                   |             | Med #1   | ●  | ●  |    |    |     | ●  |    |    |    |    |
|                   |             | Med #2   |    | ●  | ●  |    |     | ●  | ●  |    |    |    |
|                   |             | Med #3   |    | ●  |    |    |     |    | ●  |    |    |    |
|                   |             | Main     |    | ●  | ●  | ●  |     | ●  | ●  |    |    |    |
| 35 – 40           | 10.5 – 12.0 | Main     |    | ●  | ●  | ●  |     | ●  | ●  |    |    |    |
|                   |             | Light #1 | ●  | ●  |    |    |     | ●  | ●  |    |    |    |
|                   |             | Med #1   | ●  | ●  |    |    |     | ●  | ●  |    |    |    |
|                   |             | Heavy #1 |    | ●  | ●  |    |     | ●  | ●  |    |    |    |
|                   |             | Heavy #2 |    | ●  |    |    |     |    | ●  |    |    |    |
|                   |             | Heavy #3 |    | ●  | ●  |    |     | ●  | ●  |    |    |    |
| 40 – 45           | 12.0 – 13.5 | Main     |    |    | ●  |    |     | ●  | ●  | ●  |    |    |
|                   |             | Light #1 |    | ●  |    |    |     | ●  |    |    |    |    |
|                   |             | Med #1   | ●  | ●  |    |    |     | ●  | ●  |    |    |    |
|                   |             | Heavy #1 | ●  | ●  |    |    |     | ●  | ●  |    |    |    |
|                   |             | Heavy #2 |    | ●  | ●  |    |     |    | ●  | ●  |    |    |
|                   |             | Heavy #3 |    | ●  | ●  | ●  |     |    | ●  | ●  | ●  |    |
| 45 – 50           | 13.5 – 15.0 | Main     |    |    |    | ●  | ●   |    |    | ●  | ●  | ●  |
|                   |             | Light #1 |    | ●  | ●  |    |     | ●  | ●  |    |    |    |
|                   |             | Med #1   | ●  | ●  | ●  |    |     | ●  | ●  |    |    |    |
|                   |             | Heavy #1 |    | ●  | ●  | ●  |     |    | ●  | ●  |    |    |
|                   |             | Heavy #2 |    | ●  | ●  | ●  |     |    |    | ●  | ●  |    |
|                   |             | Heavy #3 |    | ●  | ●  | ●  |     |    |    | ●  | ●  | ●  |
| 50 – 55           | 15.0 – 16.5 | Main     |    |    |    |    | ●   |    |    |    |    | ●  |
|                   |             | Light #1 |    | ●  | ●  |    |     |    | ●  | ●  |    |    |
|                   |             | Med #1   |    | ●  | ●  | ●  |     |    | ●  | ●  |    |    |
|                   |             | Heavy #1 |    | ●  | ●  | ●  |     |    | ●  | ●  |    |    |
|                   |             | Heavy #2 |    |    | ●  | ●  |     |    |    | ●  |    | ●  |
|                   |             | Heavy #3 |    |    | ●  | ●  |     |    |    | ●  |    | ●  |
| 55 – 60           | 16.5 – 18.0 | Main     |    |    |    |    | ●   |    |    |    |    | ●  |
|                   |             | Light #1 |    | ●  | ●  |    |     |    | ●  | ●  |    |    |
|                   |             | Med #1   |    | ●  | ●  | ●  |     |    | ●  | ●  |    |    |
|                   |             | Heavy #1 |    | ●  | ●  | ●  |     |    |    | ●  |    | ●  |
|                   |             | Heavy #2 |    |    | ●  | ●  |     |    |    | ●  |    | ●  |
|                   |             | Heavy #3 |    |    | ●  | ●  |     |    |    |    | ●  | ●  |
| 60 – 70           | 18.0 – 21.5 | Main     |    |    |    |    |     | ●  |    |    |    | ●  |
|                   |             | Light #1 |    |    | ●  | ●  |     |    |    | ●  | ●  |    |
|                   |             | Med #1   |    |    | ●  | ●  |     |    |    | ●  | ●  |    |
|                   |             | Heavy #1 |    |    | ●  | ●  |     |    |    |    | ●  |    |
|                   |             | Heavy #2 |    |    |    | ●  |     |    |    |    |    | ●  |
|                   |             | Heavy #3 |    |    |    | ●  |     |    |    |    |    | ●  |

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



IUV



MKV22

Black  
INBKGrey  
INGYBlue  
INBURed  
INRFl Pink\*  
INFPFl Orange  
INFOGreen  
INGFl Green\*  
INFGAramid Gold  
INAGWhite  
INW

\* Special order.  
Please inquire.

Polyester Insignia Fabric adhesives are specifically formulated to peel away from the sail without leaving residue.

Challenge PSA fabrics use an acrylic based pressure sensitive adhesive that bonds aggressively to woven and laminated sailcloth.

| Fabric ID | Description  | Fabric Weight<br>SM oz   gsm | Fabric Width<br>in   cm |
|-----------|--|------------------------------|-------------------------|
| IUV54     | TiO2 Coated Polyester Taffeta with PSA             | 3.5 150                      | 54 137                  |
| IUV26     | TiO2 Coated Polyester Taffeta w/PSA, 26" full roll | 3.5 150                      | 26 66                   |
| IUV17     | TiO2 Coated Polyester Taffeta w/PSA, 17" full roll | 3.5 150                      | 17 43                   |
| YTE60     | Tedlar® UV Blocking Film with PSA                  | 1.9 81                       | 60 152                  |
| MKV22PSA  | 600d Ballistic Kevlar Woven with PSA               | 6.9 296                      | 54 137                  |
| MNX3PSA   | 3.0mil Laminate with PSA                           | 4.4 188                      | 60 152                  |
| IN*       | Polyester Insignia Fabric, 0 – 49 yds              | 3.3 141                      | 56.75 144               |
| IN*       | Polyester Insignia Fabric, 50 – 299 yds            | 3.3 141                      | 56.75 144               |
| IN*       | Polyester Insignia Fabric, 300+ yds                | 3.3 141                      | 56.75 144               |

# Window Mylar & Monofilm



YMW styles are pure extruded clear PET films for use as a classic window material.

MW150 styles offer the ultimate in clarity for laminated window materials. Off-axis inserts offer lower stretch and improved tearing strength. Break throughs in lamination processing have allowed us to create a nearly optically clear multi-layer laminate for unimpeded visibility in any window application. Multi-layer lamination gives increase forgiveness and enhanced durability.

MNX3 is a lightweight 3.0mil clear laminate, reinforced with a closely spaced 45 degree polyester. This creates a very stable sailcloth with excellent bias support that can be used in many different applications.

| Fabric ID | Cross Yarn           | Taffeta         | Film mil | Weight |     | Width |     |
|-----------|----------------------|-----------------|----------|--------|-----|-------|-----|
|           |                      |                 |          | SM oz  | gsm | in    | cm  |
| YMW4      | –                    | Clear           | 4.0      | 3.3    | 141 | 54    | 137 |
| YMW5      | –                    | Clear           | 5.0      | 4.0    | 171 | 54    | 137 |
| YMW7      | –                    | Clear           | 7.0      | 6.3    | 270 | 54    | 137 |
| <hr/>     |                      |                 |          |        |     |       |     |
| MNX3      | 45° 1000d B&W Poly   | Clear           | 3.0      | 3.7    | 158 | 60    | 152 |
| <hr/>     |                      |                 |          |        |     |       |     |
| MW150B    | 22° 1000d Black Poly | Optically Clear | 4.0      | 4.0    | 171 | 60    | 152 |
| MW150W    | 22° 1000d White Poly | Optically Clear | 4.0      | 4.0    | 171 | 60    | 152 |

*Custom Laminates for  
OEM Production*

Challenge is a leading supplier of laminates for surf sails. We have brand new laminating equipment and unique production capabilities.

Please contact us if you have any custom or large volume laminate needs.



# Canvas, Cover & Industrial Products



Challenge Sailcloth is committed to serving the sourcing needs of our customers. We carry a complete line of cover and industrial fabrics, and hardware, shown in two separate catalogs. Our team at us@challengesailcloth.com would be happy to help answer any questions you may have.



*Little Parts. Big Difference.®*





# Notes





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