Starboard Co LTD
Plastic Disclosure Project

If you can't measure it, you can't manage it

Starboard advocates for all things wind and water. We create some of the world's best windsurf and stand up paddle boards, and this dedication to quality and innovation has led us to become leaders in the watersports industry. However, in our quest to help our customers best enjoy earth's waters, we have also polluted those waters with plastics and thermoplastics of every variety. In the past couple of years, we have chosen to work towards being part of the solution instead of part of the problem. That's why we have joined Ocean Recovery Alliance in the Plastic Disclosure Project. By calculating, reporting, and disclosing our plastic usage, we will increase our transparency regarding our production, use and handling of plastic and plastic waste. We calculated the use of plastics of every variety in our boards, accessories, apparel, packaging, and operations for both 2017 and 2018 in an effort to quantify the plastic diversion associated with the changes we made in our lines, and identify areas for improvement in the future.

Special challenges are presented by the unique nature of our plastic usage. We create boards that must be not only durable, but also lightweight, high performance, and resistant to breakage that would allow water to enter the board. Regardless, we continue to strive for increased sustainability and decreased plastics usage in all of our operations. The numbers used below reflect 2017 production and 2018 planned production.

Unless otherwise indicated, the comparisons between 2017 and 2018 plastic usage are created based on the same quantity of boards in each year.

For more information about Starboard's eco-initiatives, including our full carbon footprint, go to star-board.blue or email us at plastic@star-board.com.

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1
Boards

· Moulding Expanded Polystyrene (EPS) – light, rigid, and tough closed cell foam made of pre-expanded polystyrene beads. Thermoplastic polymer that comprises the inside of the board. Starboard's EPS blanks are precision molded to avoid waste.

· Bioresin – bio-based alternative to traditional petroleum-based polymer epoxy resin. 35% of Starboard's low/zero VOC resin's molecular structure originates from plants. Resin is applied as a liquid to the layup and hardens to give the board its rigidity. The shift from traditional epoxy resin to bioresin took place in 2018.

· Ethylene-Vinyl Acetate (EVA) – thermoplastic copolymer that is soft, flexible, tough, and waterproof. It is used as traction on boards. Starboard uses inverted EVA decks to avoid waste (every second board has a reverse color combination). The shift from 100% virgin EVA to recycled EVA took place in 2018.

· Acrylonitrile Butadiene Styrene (ABS) – Thermoplastic polymer used for injection mold purposes. Strong, shiny, and impervious, it is used for board insets such as fin boxes and handles. The shift from virgin ABS to recycled ABS took place in 2018.

· Nylon 6 – Semi Crystalline polyamide used for injection molded board components such as fin boxes. It is tough, with a high tensile strength and high resistance to abrasion. The shift from Nylon 6 to Akulon took place in 2018.

· Akulon – Polyamide 6 compound with 30% glass reinforcement that contains recycled polyamide 6 at a maximum of 70% of the composition. The source of recycled material is postindustrial material derived from industrial yarn and post-consumer material derived from used fishnets. The shift from Nylon 6 to Akulon took place in 2018.

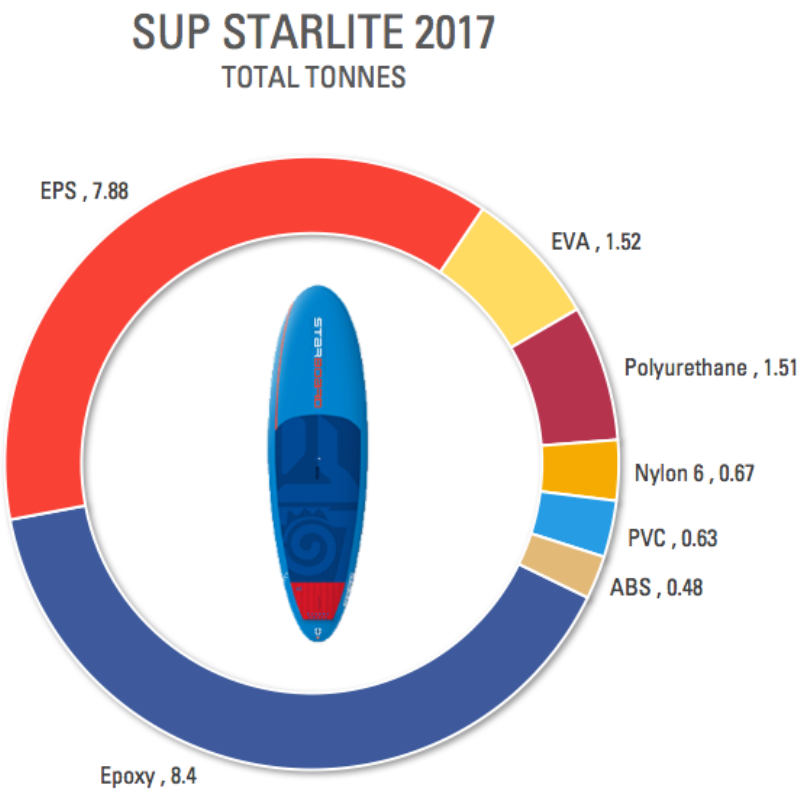
· Polyurethane (PU) – polymer composed of organic units joined by urethane links. Used to create a high resilience foam that provides reinforcement for insets. Also used to create a paint that acts like liquid plastic. Estimated 10% waste.

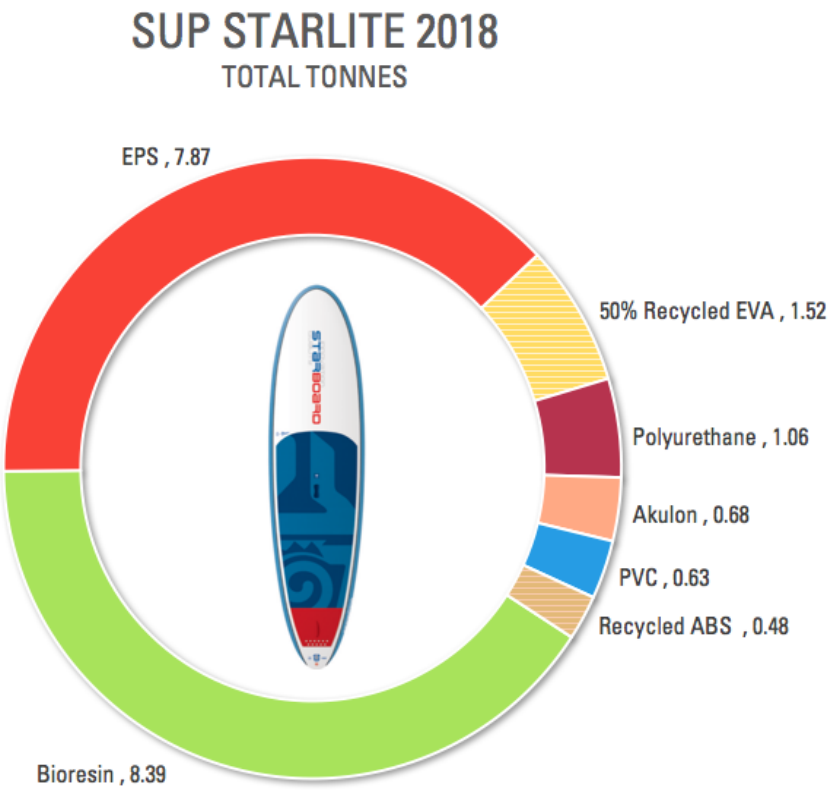
· Polyvinyl Chloride (PVC) – synthetic plastic polymer that is used in its rigid form to reinforce rails and insets, and in its flexible form to create inflatable boards.

· Polyester – Synthetic polymer spun into an industrial fiber. Two pieces of woven support fabric are joined by thousands of fine polyester thread lengths (using drop-stitch sewing machines) to give inflatable boards strength, rigidity, and durability.

· Neoprene – Synthetic rubber that is flexible, stable, and an excellent insulator, us for a variety of purposes, including inflatable board handles.

1.1 Stand Up Paddle Composite





SUP STARLITE 2017

	TOTAL (Tonnes)
Epoxy Exterior	8.4
EPS Board Core	7.88
EVA Deckpad	1.52
Polyurethane Spray	1.36
Nylon 6 Fin Box	0.61
ABS Handle	0.48
PVC Fin Box Reinforcement	0.39
PVC Stickers	0.24
Polyurethane Box	0.15
Nylon 6 Tie Down Plugs	0.04
Nylon 6 Leash Plug	0.01
Nylon 6 Air Valve	0.01
Combined Total	**21.09**

SUP STARLITE 2018

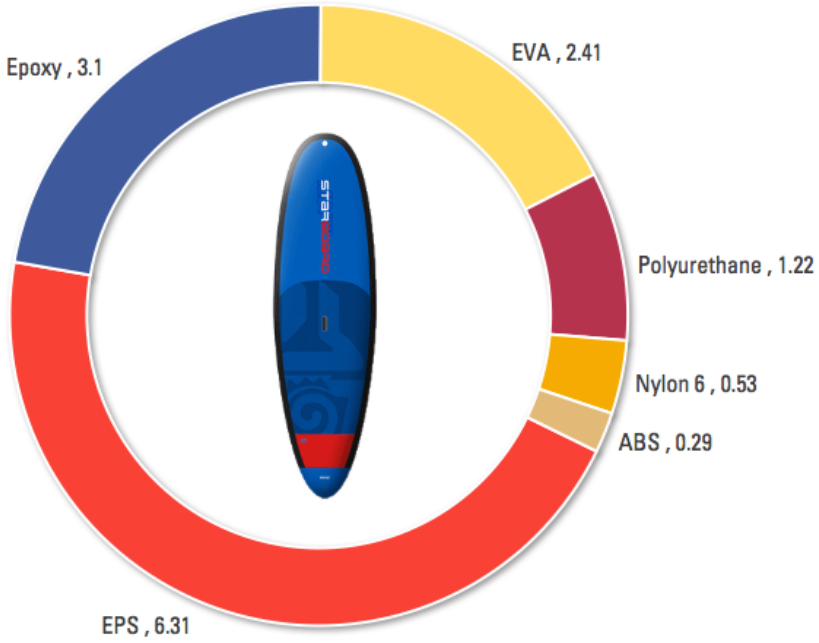
	TOTAL (Tonnes)
Bioresin Exterior	8.39
EPS Board Core	7.87
50% Recycled EVA Deckpad	1.52
Polyurethane Spray (33% less)	0.91
Akulon Fin Box	0.62
ABS Recycled Handle	0.48
PVC Fin Box Reinforcement	0.39
PVC Stickers	0.24
Polyurethane Box	0.15
Akulon Tie Down Plugs	0.04
Akulon Leash Plug	0.01
Akulon Air Valve	0.01
Combined Total	**20.63**

CHANGES:

- 8.4 tonnes of epoxy replaced with bioresin
- 0.45 tonnes of Polyurethane Spray are eliminated
- 0.68 tonnes of Nylon 6 replaced with Akulon
- 0.48 tonnes of ABS replaced with recycled ABS
- 0.76 tonnes of EVA replaced with recycled EVA

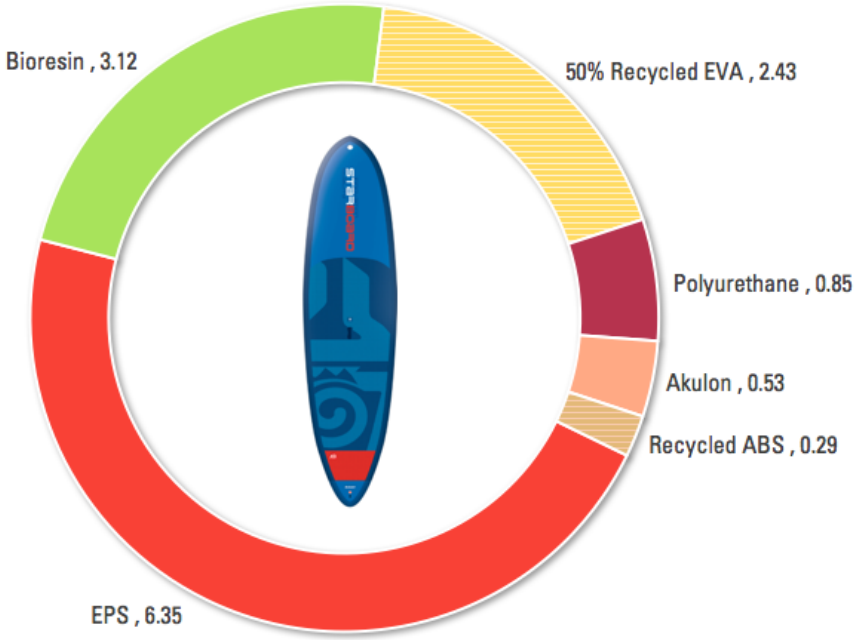
SUP ASAP 2017

TOTAL TONNES



SUP ASAP 2018

TOTAL TONNES



SUP ASAP 2017

	TOTAL (Tonnes)
EPS Board Core	6.31
Epoxy Exterior	3.1
EVA Exterior	2.41
Polyurethane Spray	1.14
Nylon 6 Fin Box	0.49
ABS Handle	0.29
Polyurethane Box	0.08
Nylon 6 Tie Down Plugs	0.02
Nylon 6 Leash Plug	0.01
Nylon 6 Air Valve	0.01
Combined Total	**13.36**

SUP ASAP 2018

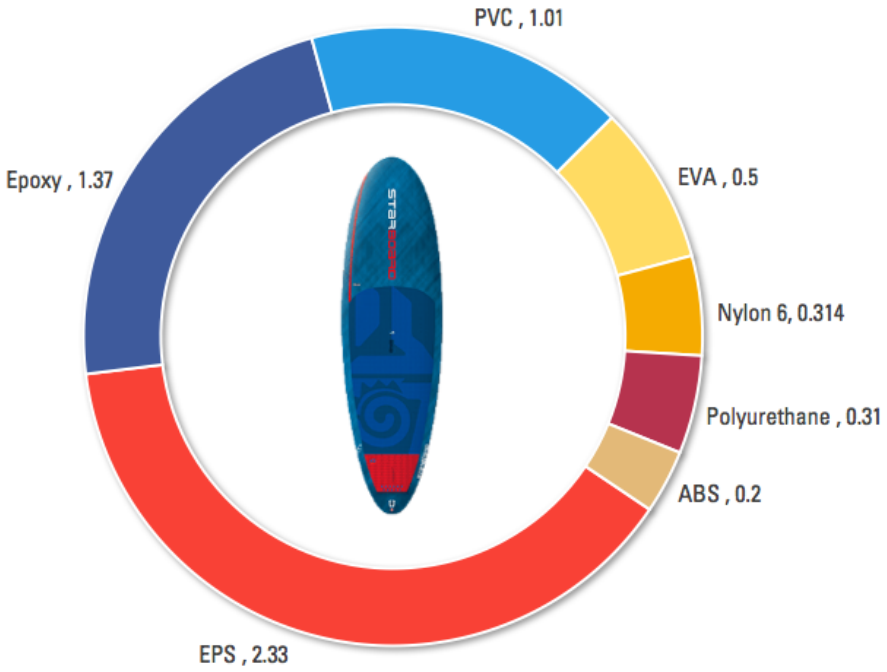
	TOTAL (Tonnes)
EPS Board Core	6.35
Bioresin Exterior	3.12
50% Recycled EVA Deckpad	2.43
Polyurethane Spray	0.77
Akulon Fin Box	0.49
ABS Recycled Handle	0.29
Polyurethane Box	0.08
Akulon Tie Down Plugs	0.02
Akulon Leash Plug	0.01
Akulon Air Valve	0.01
Combined Total	**13.57**

CHANGES:

- 3.1 tonnes of epoxy replaced with bioresin
- 0.37 tonnes of Polyurethane Spray are eliminated
- 0.53 tonnes of Nylon 6 replaced with Akulon
- 0.29 tonnes of ABS replaced with recycled ABS
- 1.22 tonnes of EVA replaced with recycled EVA

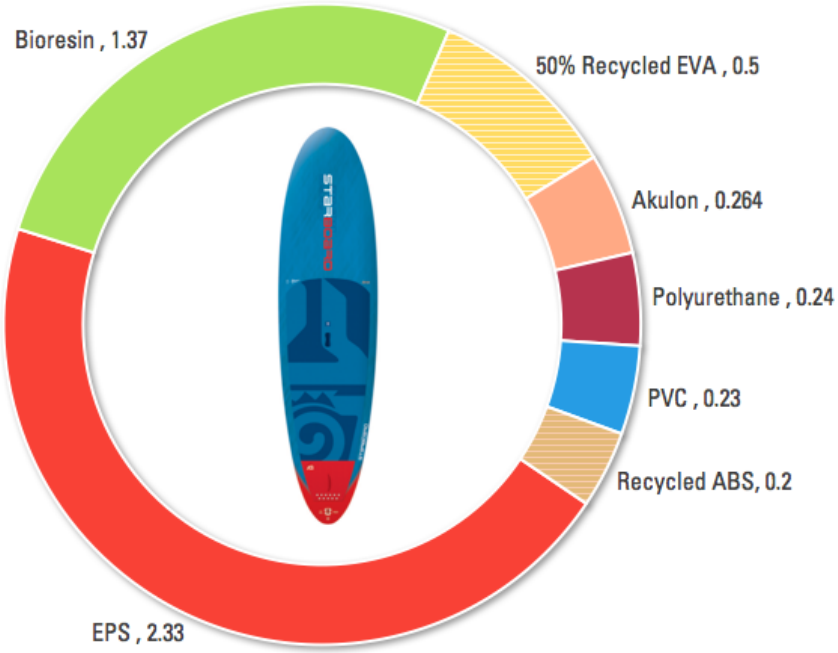
SUP BLUE CARBON 2017

TOTAL TONNES



SUP CARBON BALSA 2018

TOTAL TONNES



SUP BLUE CARBON 2017

	TOTAL (Tonnes)
EPS Board Core	2.33
Epoxy Exterior	1.37
PVC Rails	0.88
EVA Deckpad	0.5
Nylon 6 Fin Box	0.29
Polyurethane Spray	0.22
ABS Handle	0.2
PVC Fin Box Reinforcement	0.16
Polyurethane Box	0.09
PVC Stickers	0.07
Nylon 6 Tie Down Plugs	0.01
Nylon 6 Leash Plug	0.01
Nylon 6 Air Valve	0.004
Combined Total	**6.134**

SUP CARBON BALSA 2018

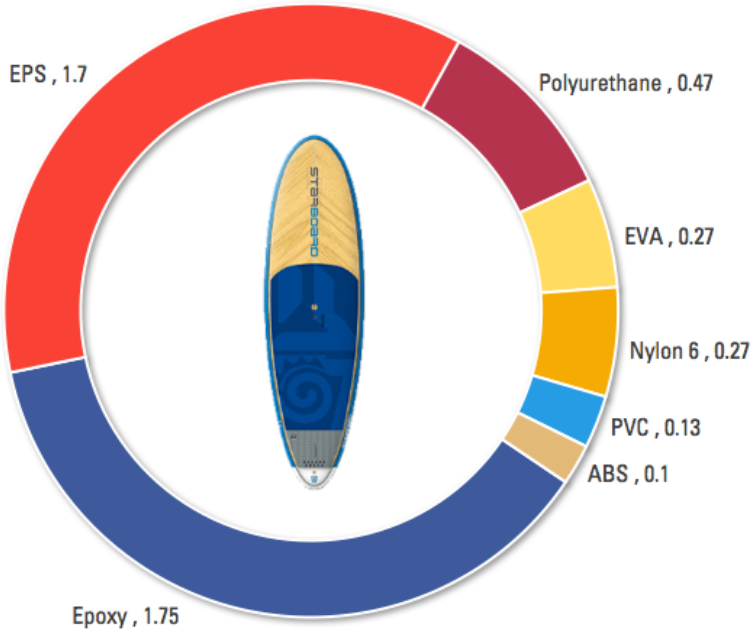
	TOTAL (Tonnes)
EPS Board Core	2.33
Bioresin Exterior	1.37
50% Recycled EVA Deckpad	0.5
Akulon Fin Box	0.24
ABS Recycled Handle	0.2
PVC Fin Box Reinforcement	0.16
Polyurethane Spray	0.15
Polyurethane Box	0.09
PVC Stickers	0.07
Akulon Tie Down Plugs	0.01
Akulon Leash Plug	0.01
Akulon Air Valve	0.004
Combined Total	**5.134**

CHANGES:

- 1.37 tonne sof epoxy replaced with bioresin
- 0.07 tonnes of Polyurethane Spray are eliminated
- 0.31 tonnes of Nylon 6 replaced with Akulon
- 0.2 tonnes of ABS replaced with recycled ABS
- 0.25 tonnes of EVA replaced with recycled EVA
- 0.88 tonnes of PVC replaced with Balsa wood

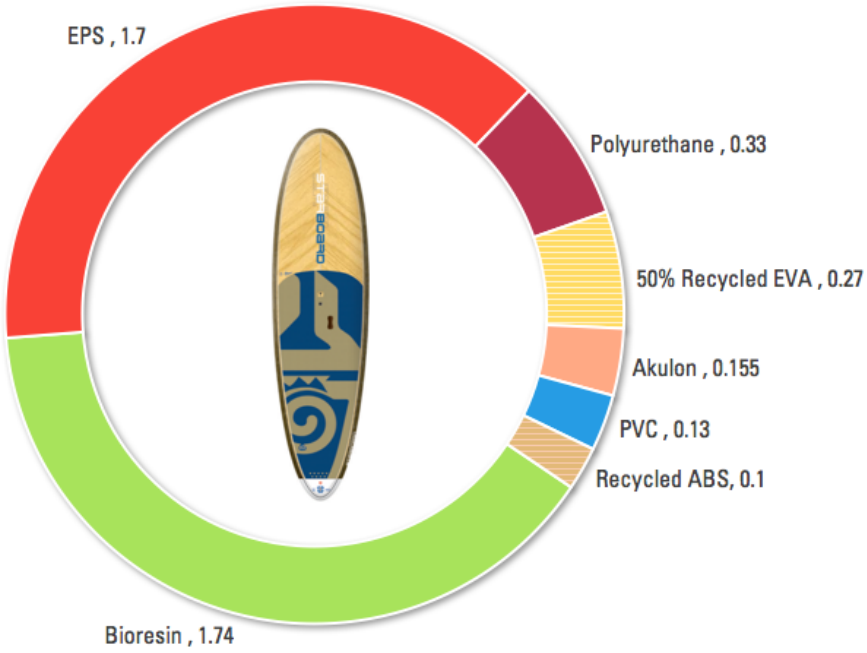
SUP PINE TEK 2017

TOTAL TONNES



SUP PINE TEK 2018

TOTAL TONNES



SUP PINE TEK 2017

	TOTAL (Tonnes)
Epoxy Exterior	1.75
EPS Board Core	1.7
Polyurethane Spray	0.44
EVA Deckpad	0.27
Nylon 6 Fin Box	0.12
ABS Handle	0.1
PVC Fin Box Reinforcement	0.08
PVC Stickers	0.05
Polyurethane Box	0.03
Nylon 6 Tie Down Plugs	0.01
Nylon 6 Leash Plug	0.003
Nylon 6 Air Valve	0.002
Combined Total	**4.555**

SUP PINE TEK 2018

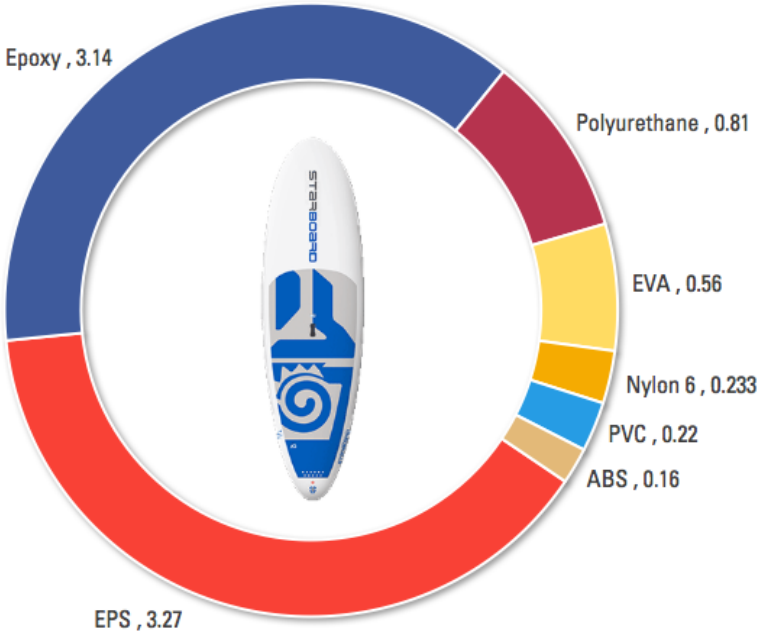
	TOTAL (Tonnes)
Bioresin Exterior	1.74
EPS Board Core	1.7
Polyurethane Spray	0.3
50% Recycled EVA Deckpad	0.27
Akulon Fin Box	0.14
ABS Recycled Handle	0.1
PVC Fin Box Reinforcement	0.08
PVC Stickers	0.05
Polyurethane Box	0.03
Akulon Tie Down Plugs	0.01
Akulon Leash Plug	0.003
Akulon Air Valve	0.002
Combined Total	**4.425**

CHANGES:

- 1.75 tonnes of epoxy replaced with bioresin
- 0.14 tonnes of Polyurethane Spray are eliminated
- 0.16 tonnes of Nylon 6 replaced with Akulon
- 0.14 tonnes of EVA replaced with recycled EVA
- 0.12 tonnes of ABS replaced with recycled ABS

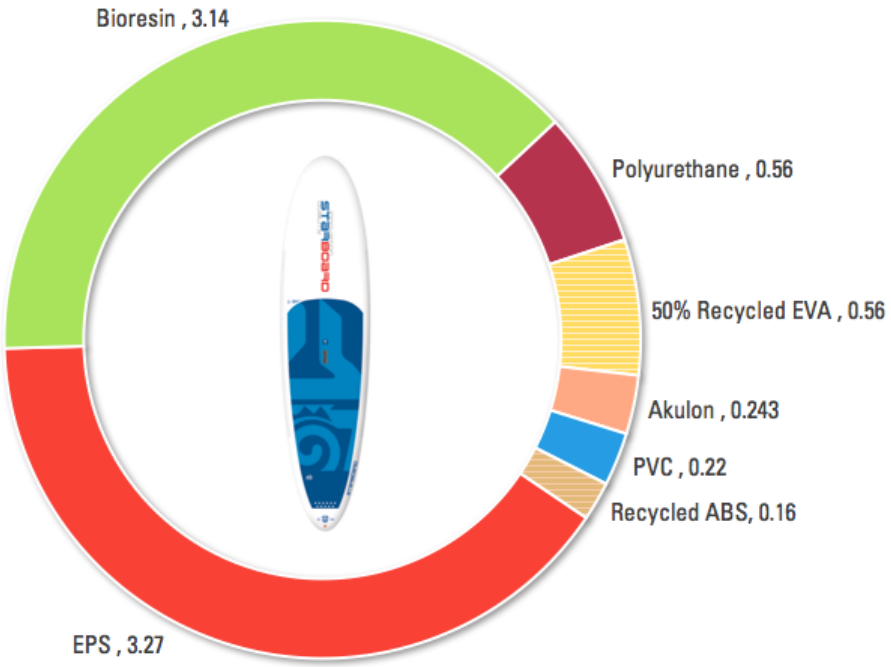
SUP STARSHOT 2017

TOTAL TONNES



SUP STARSHOT 2018

TOTAL TONNES



SUP STARSHOT 2017

	TOTAL (Tonnes)
EPS Board Core	3.27
Epoxy Exterior	3.14
Polyurethane Spray	0.76
EVA Deckpad	0.56
Nylon 6 Fin Box	0.22
ABS Handle	0.16
PVC Fin Box Reinforcement	0.13
PVC Stickers	0.09
Polyurethane Box	0.05
Nylon 6 Tie Down Plugs	0.01
Nylon 6 Leash Plug	0.01
Nylon 6 Air Valve	0.003
Combined Total	**8.403**

SUP STARSHOT 2018

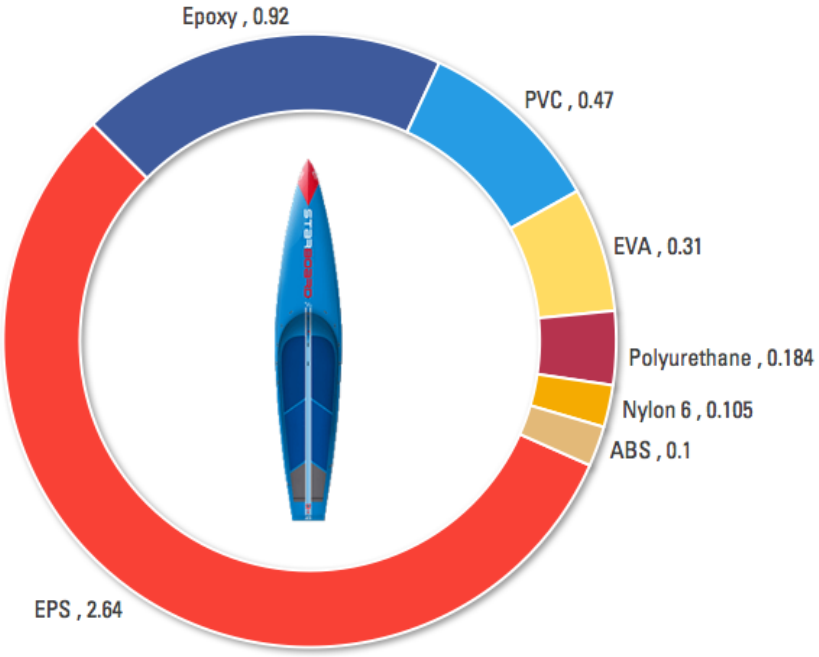
	TOTAL (Tonnes)
EPS Board Core	3.27
Bioresin Exterior	3.14
50% Recycled EVA Deckpad	0.56
Polyurethane Spray	0.51
Akulon Fin Box	0.22
ABS Recycled Handle	0.16
PVC Fin Box Reinforcement	0.13
PVC Stickers	0.09
Polyurethane Box	0.05
Akulon Tie Down Plugs	0.01
Akulon Leash Plug	0.01
Akulon Air Valve	0.003
Combined Total	**8.152**

CHANGES:

- 3.27 tonnes of epoxy replaced with bioresin
- 0.20 tonnes of Polyurethane Spray are eliminated
- 0.24 tonnes of Nylon 6 replaced with Akulon
- 0.28 tonnes of EVA replaced with recycled EVA
- 0.16 tonnes of ABS replaced with recycled ABS

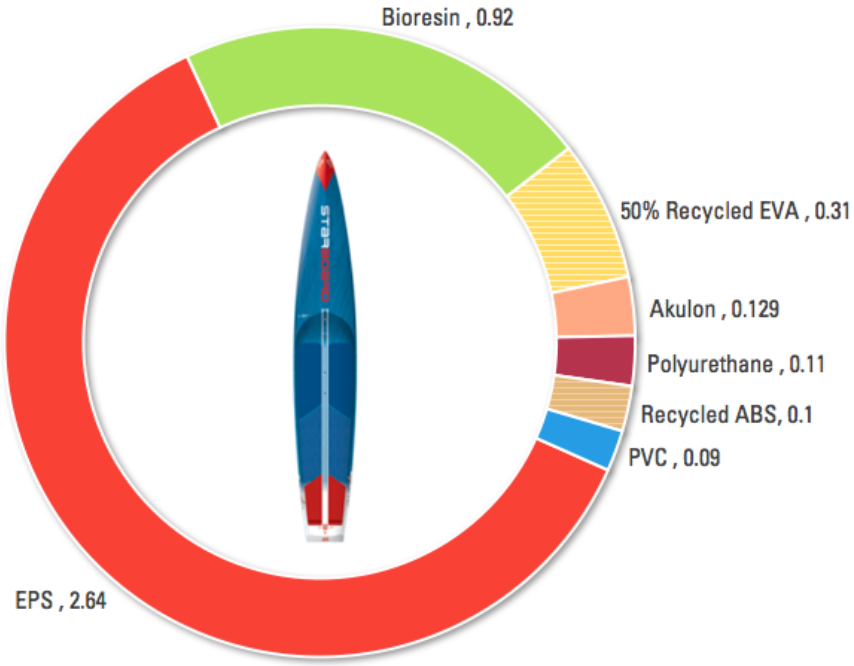
SUP RACE HYBRID CARBON 2017

TOTAL TONNES



SUP RACE HYBRID CARBON 2018

TOTAL TONNES



SUP RACE HYBRID CARBON 2017

	TOTAL (Tonnes)
EPS Board Core	2.64
Epoxy Exterior	0.92
PVC Rails	0.38
EVA Deckpad	0.31
Polyurethane Spray	0.18
Nylon 6 Fin Box	0.1
ABS Handle	0.1
PVC Fin Box Reinforcement	0.08
PVC Stickers	0.01
Polyurethane Box	0.004
Nylon 6 Leash Plug	0.003
Nylon 6 Air Valve	0.002
Combined Total	**4.729**

SUP RACE HYBRID CARBON 2018

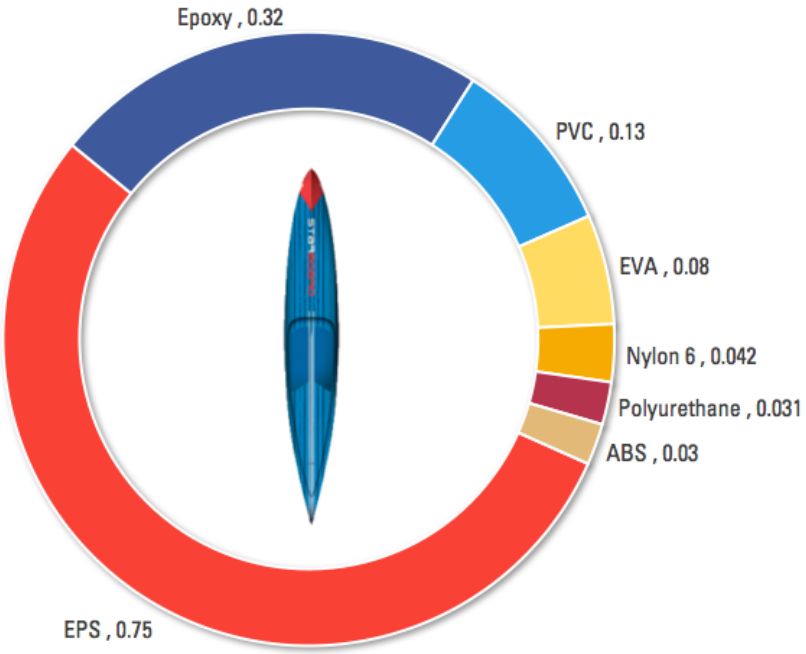
	TOTAL (Tonnes)
EPS Board Core	2.64
Bioresin Exterior	0.92
50% Recycled EVA Deckpad	0.31
Akulon Fin Box	0.12
Polyurethane Spray	0.11
ABS Recycled Handle	0.1
PVC Fin Box Reinforcement	0.08
PVC Stickers	0.01
Polyurethane Box	0.004
Akulon Leash Plug	0.003
Akulon Air Valve	0.002
Combined Total	**4.299**

CHANGES:

- 0.92 tonnes of epoxy replaced with bioresin
- 0.07 tonnes of Polyurethane Spray are eliminated
- 0.13 tonnes of Nylon 6 are Akulon
- 0.16 tonnes of EVA replaced with recycled EVA
- 0.10 tonnes of ABS replaced with recycled ABS
- 0.38 tonnes of PVC replaced with balsa

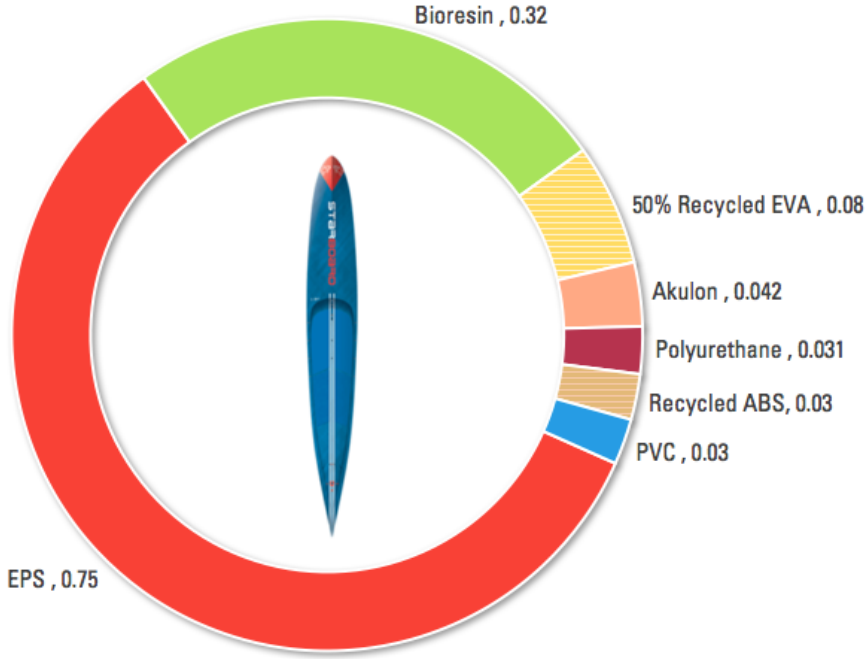
SUP RACE CARBON 2017

TOTAL TONNES



SUP RACE CARBON 2018

TOTAL TONNES



SUP RACE CARBON 2017

	TOTAL (Tonnes)
EPS Board Core	0.75
Epoxy Exterior	0.32
PVC Rails	0.1
EVA Deckpad	0.08
Polyurethane Spray	0.04
Nylon 6 Fin Box	0.03
ABS Handle	0.03
PVC Fin Box Reinforcement	0.02
PVC Stickers	0.01
Polyurethane Box	0.001
Nylon 6 Leash Plug	0.001
Nylon 6 Air Valve	0.0005
Combined Total	**1.383**

SUP RACE CARBON 2018

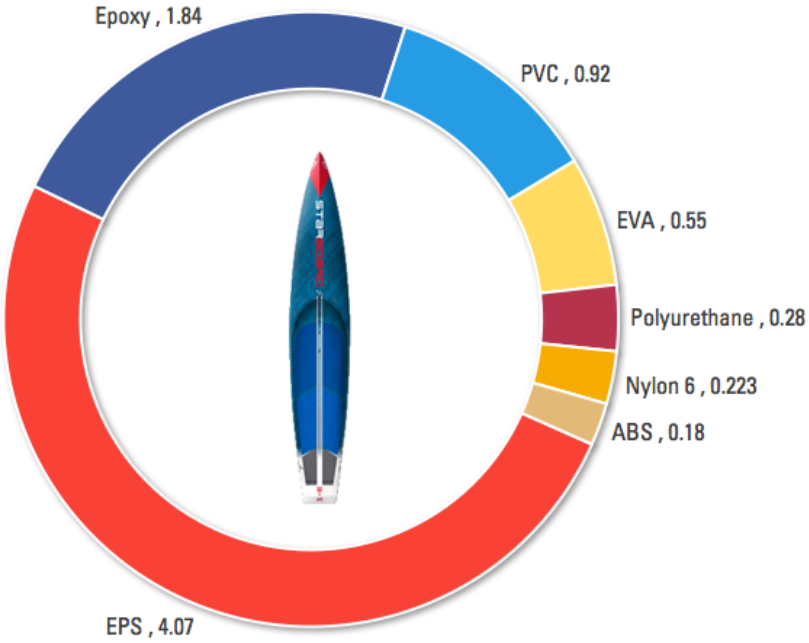
	TOTAL (Tonnes)
EPS Board Core	0.75
Bioresin Exterior	0.32
50% Recycled EVA Deckpad	0.08
Akulon Fin Box	0.04
Polyurethane Spray	0.03
ABS Recycled Handle	0.03
PVC Fin Box Reinforcement	0.02
PVC Stickers	0.01
Polyurethane Box	0.001
Akulon Leash Plug	0.001
Akulon Air Valve	0.0005
Combined Total	**1.283**

CHANGES:

- 0.32 tonnes of epoxy replaced with bioresin
- 0.01 tonnes of Polyurethane Spray are eliminated
- 0.04 tonnes of Nylon 6 replaced with Akulon
- 0.04 tonnes of EVA replaced with recycled EVA
- 0.03 tonnes of ABS replaced with recycled ABS
- 0.1 tonnes of PVC replaced with balsa

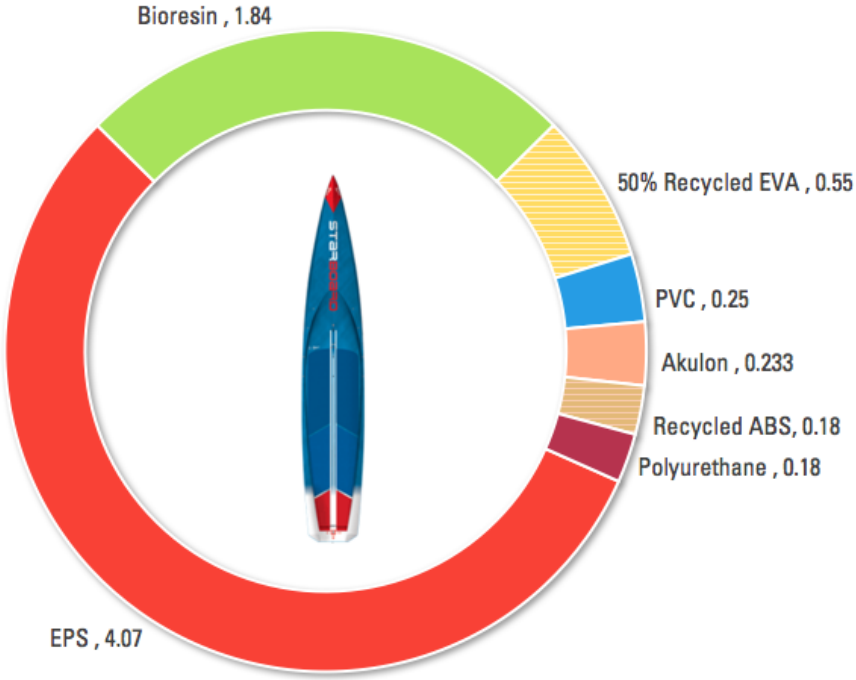
SUP RACE CARBON SANDWICH 2017

TOTAL TONNES



SUP RACE CARBON SANDWICH 2018

TOTAL TONNES



SUP RACE CARBON SANDWICH RACE 2017

	TOTAL (Tonnes)
EPS Board Core	4.07
Epoxy Exterior	1.84
PVC Rails	0.67
EVA Deckpad	0.55
Polyurethane Spray	0.27
Nylon 6 Fin Box	0.21
ABS Handle	0.18
PVC Fin Box Reinforcement	0.15
PVC Stickers	0.1
Polyurethane Box	0.01
Nylon 6 Leash Plug	0.01
Nylon 6 Air Valve	0.003
Combined Total	**8.063**

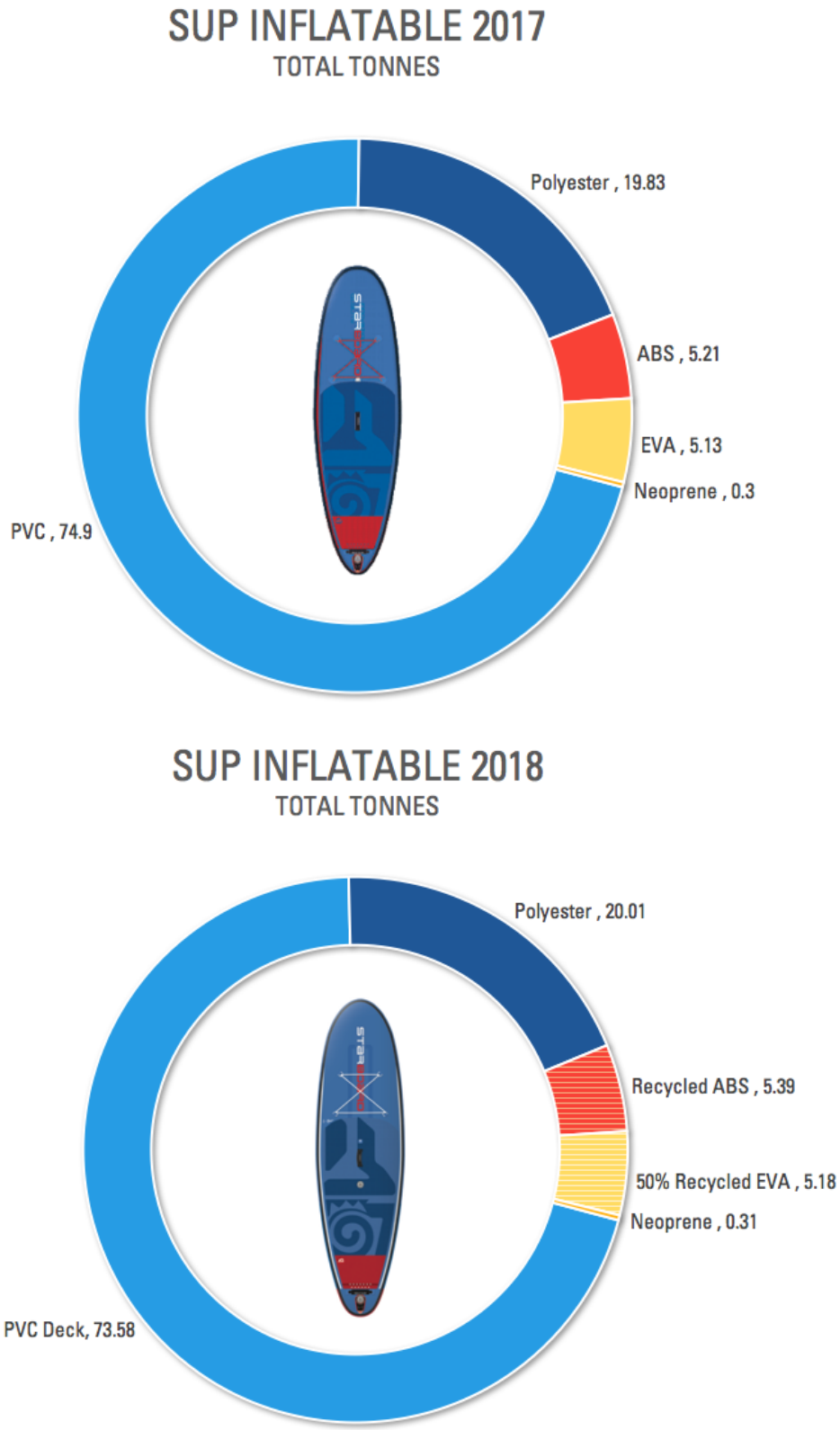
SUP RACE CARBON SANDWICH RACE 2018

	TOTAL (Tonnes)
EPS Board Core	4.07
Bioresin Exterior	1.84
50% Recycled EVA Deckpad	0.55
Akulon Fin Box	0.21
Polyurethane Spray	0.18
ABS Recycled Handle	0.18
PVC Fin Box Reinforcement	0.15
PVC Stickers	0.1
Polyurethane Box	0.01
Akulon Leash Plug	0.01
Akulon Air Valve	0.003
Combined Total	**7.303**

CHANGES:

- 1.84 tonnes of epoxy replace with bioresin
- 0.09 tonnes of Polyurethane Spray are eliminated
- 0.23 tonnes of Nylon 6 replaced with Akulon
- 0.28 tonnes of EVA replaced with recycled EVA
- 0.18 tonnes of ABS replaced with recycled ABS
- 0.67 tonnes of PVC replaced with Balsa

1.2 Stand Up Paddle Inflatable



SUP INFLATABLE - TONNES PLASTIC 2017

	TOTAL (Tonnes)
PVC Deck Strip	22.83
PVC Deck Strip	22.83
Polyester Dropstitch	19.83
PVC Rail 2	10.21
PVC Rail 1	9.22
ABS Fins	5.21
PVC Center Deck Stripe	5.27
EVA Deckpad	5.13
PVC Inner Rail Stringers	2.88
PVC Stripe Line	0.84
PVC Pin Lines	0.82
Neoprene Handle	0.3
Combined Total	**105.37**

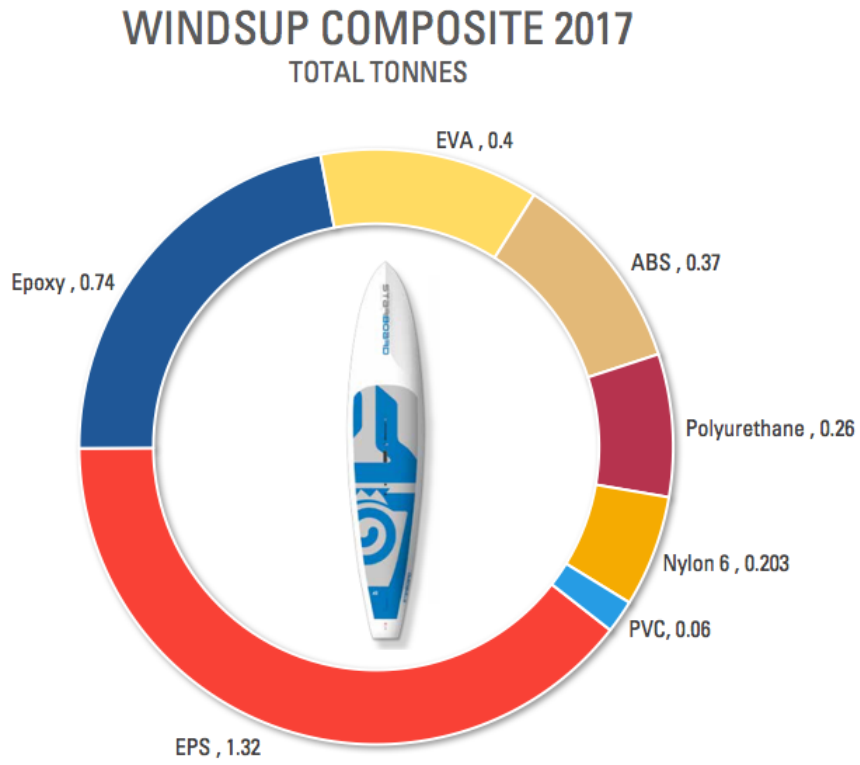
SUP INFLATABLE - TONNES PLASTIC 2018

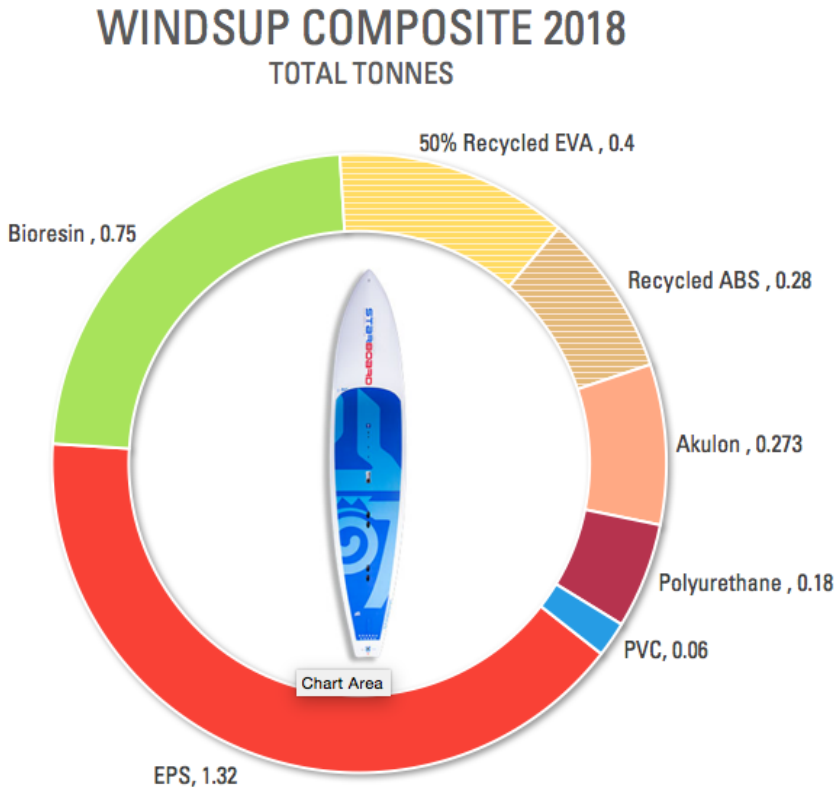
	TOTAL (Tonnes)
PVC Deck Strip	23.04
PVC Bottom Strip	23.04
Polyester Dropstitch	20.01
PVC Rail 2	10.3
PVC Rail 1	9.3
Recycled ABS Fins	5.39
50% Recycled EVA Deckpad	5.18
PVC Center Stripe Deck	3.32
PVC Inner Rail Stringers	2.9
PVC Interior Line	0.85
PVC Interior Line	0.83
Neoprene Handle	0.31
Combined Total	**104.47**

CHANGES:

- 5.39 tonnes of ABS replaced with recycled ABS
- 2.59 tonnes of EVA replaced with recycled EVA
- Slight decrease in overall PVC usage (1.32 tonnes) due to decreased weight of 2018 boards

1.3 WindSUP Composite





WINDSUP COMPOSITE 2017

	TOTAL (Tonnes)
EPS Board Core	1.32
Epoxy Exterior	0.74
EVA Deck Pads/EVA Exterior	0.4
Polyurethane Spray	0.24
ABS Tuttle Box	0.17
Nylon 6 Mast Box	0.2
ABS Fin Boxes	0.08
ABS Handle	0.06
ABS Plug K9	0.06
PVC Inset Reinforcements	0.05
Polyurethane Box	0.02
PVC Stickers	0.01
Nylon 6 Leash Plug	0.002
Nylon 6 Air Valve	0.001
Combined Total	**3.353**

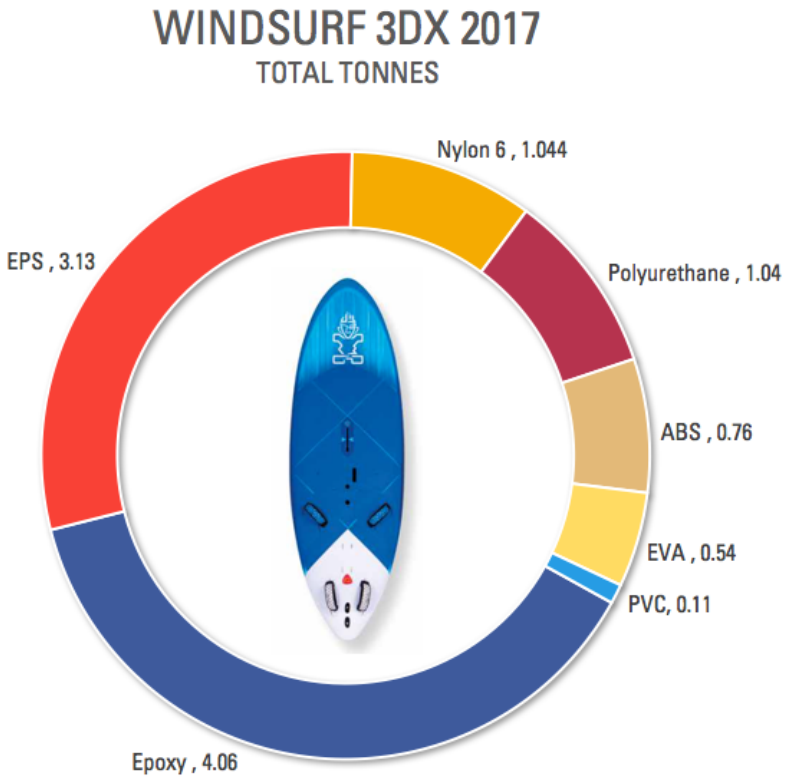
WINDSUP COMPOSITE 2018

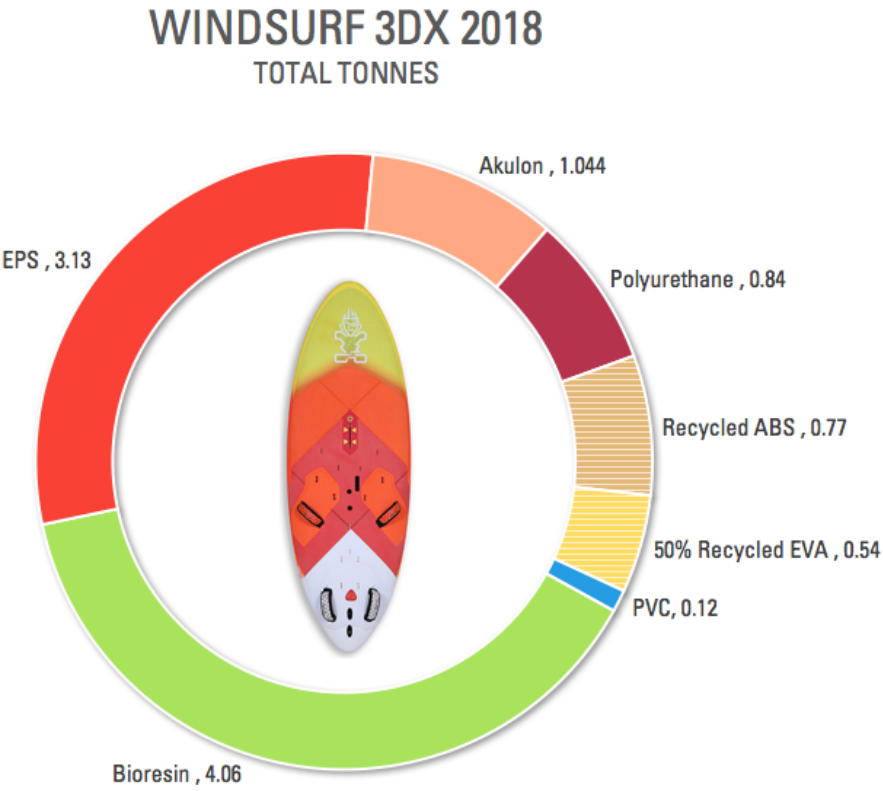
	TOTAL (Tonnes
EPS Board Core	1.32
Bioresin Exterior	0.75
50% Recycled EVA Deckpads/EVA Exterior	0.4
Akulon Mast Box	0.19
Recycled ABS Tuttle Box	0.17
Polyurethane Spray (33% less)	0.16
Akulon Fin Box	0.08
Recycled ABS Handle	0.06
Recycled ABS Plug K9	0.05
PVC Fin Box Reinforcement	0.05
Polyurethane Box	0.02
PVC Stickers	0.01
Akulon Leash Plug	0.002
Akulon Air Valve	0.001
Combined Total	**3.263**

CHANGES:

- 0.75 tonnes of epoxy replaced with bioresin
- 0.08 tonnes of Polyurethane Spray are eliminated
- 0.28 tonnes of Nylon 6 replaced with Akulon
- 0.2 tonnes of EVA replaced with recycled EVA
- 0.29 tonnes of ABS replaced with recycled ABS

1.4 Windsurf Composite





WINDSURF 3DX 2017

	TOTAL (Tonnes)
Foaming Epoxy Exterior	4.06
EPS Board Core	3.13
Polyurethane Paint	1.23
Nylon 6 Mast Box	0.71
EVA Deck Pad	0.54
ABS Tuttle Box	0.54
Nylon 6 Fin Box	0.33
ABS Plug K9	0.22
PVC Stickers	0.11
Polyurethane Box	0.02
Nylon 6 Air Valve	0.004
Combined Total	**10.894**

WINDSURF 3DX 2018

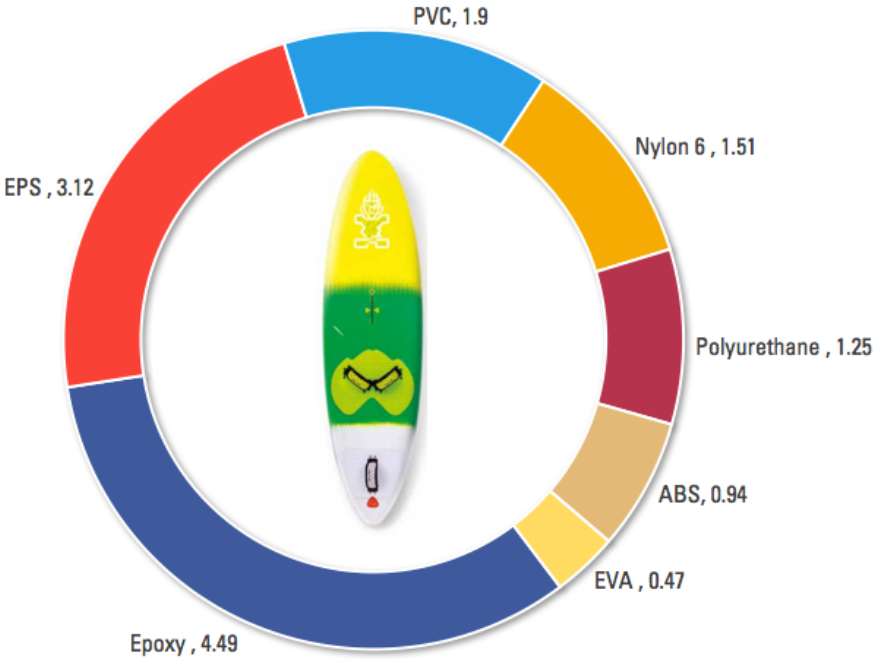
	TOTAL (Tonnes)
Bioresin Exterior	4.06
EPS Board Core	3.13
Polyurethane Paint	0.82
Akulon Mast Box	0.71
50% Recycled EVA Deckpad	0.54
Recycled ABS Tuttle Box	0.54
Akulon Fin Box	0.33
Recycled ABS Plug K9	0.23
PVC Stickers	0.12
Polyurethane Box	0.02
Akulon Air Valve	0.004
Combined Total	**10.504**

CHANGES:

- 3.13 tonnes of epoxy replaced with bioresin
- 0.41 tonnes of Polyurethane Spray are eliminated
- 1.04 tonnes of Nylon 6 replaced with Akulon
- 0.27 tonnes of EVA replaced with recycled EVA
- 0.76 tonnes of ABS replaced with recycled ABS

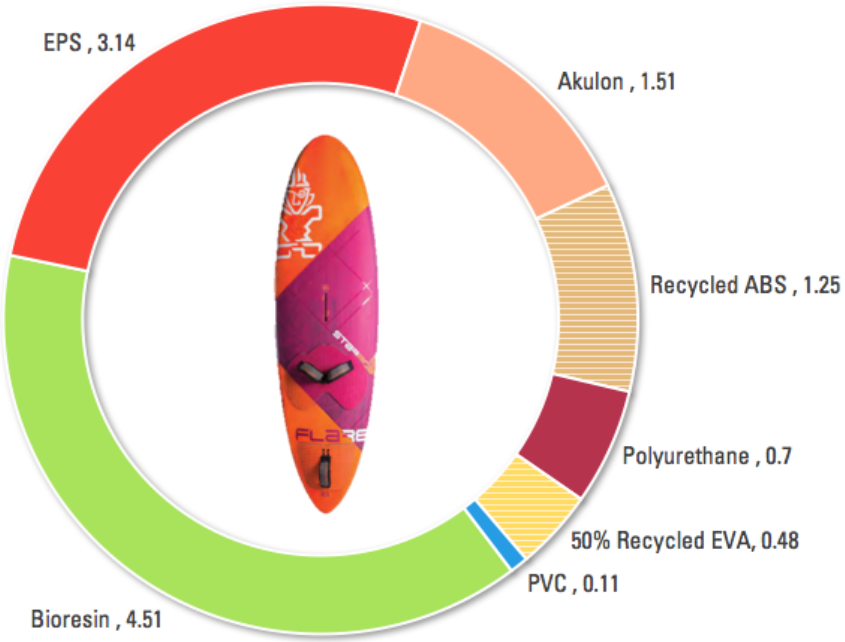
WINDSURF ULTRACORE HYBRID CARBON 2017

TOTAL TONNES



WINDSURF CARBON L.C.F 2018

TOTAL TONNES



WINDSURF ULTRACORE HYBRID CARBON 2017

	TOTAL (Tonnes)
Epoxy Exterior	4.49
EPS Board Core	3.12
Nylon 6 Mast Box	1.05
Polyurethane Paint	1.02
ABS Tuttle Box	0.94
PVC Deck	0.87
PVC Bottom	0.87
EVA Deck Pad	0.47
Nylon 6 Fin Box	0.45
ABS Plug K9	0.31
PVC Stickers	0.1
PVC Inset Reinforcement	0.06
Polyurethane Box	0.02
Nylon 6 Air Valve	0.01
Combined Total	**13.78**

WINDSURF CARBON L.C.F (LEAST CARBON FOOTPRINT) 2018

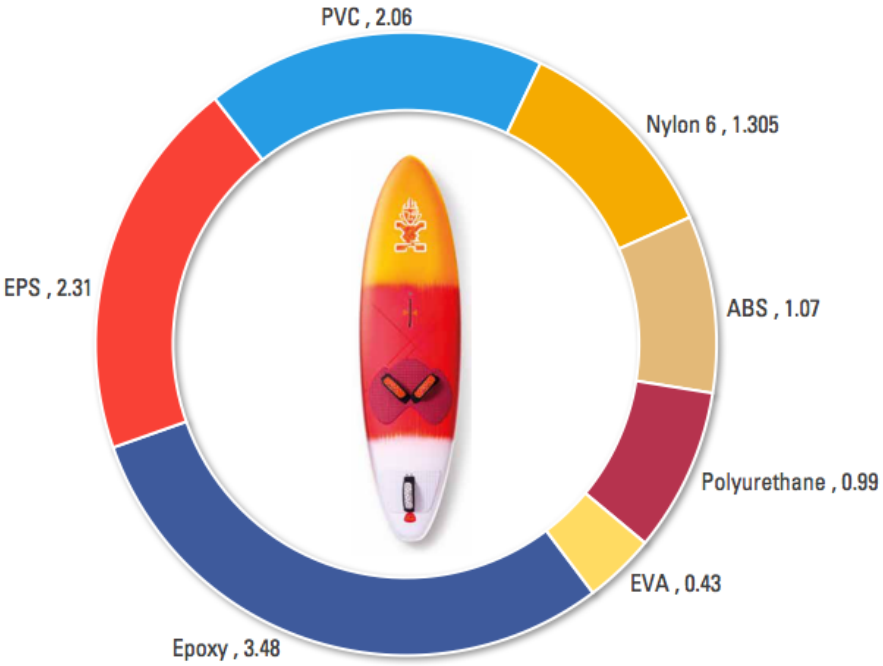
	TOTAL (Tonnes)
Bioresin Exterior	4.51
EPS Board Core	3.14
Akulon Mast Box	1.05
Recycled ABS Tuttle Box	0.94
Polyurethane Paint	0.68
50% Recycled EVA Deckpad	0.48
Akulon Fin Box	0.45
Recycled ABS Plug K9	0.31
PVC Stickers	0.11
Polyurethane Box	0.02
Akulon Air Valve	0.01
Combined Total	**11.7**

CHANGES:

- 4.51 tonnes of epoxy replaced with bioresin
- 0.34 tonnes of Polyurethane Spray are eliminated
- 1.8 tonnes of PVC are eliminated
- 1.51 tonnes of Nylon 6 replaced with Akulon
- 0.24 tonnes of EVA replaced with recycled EVA
- 1.25 tonnes of ABS replaced with recycled ABS

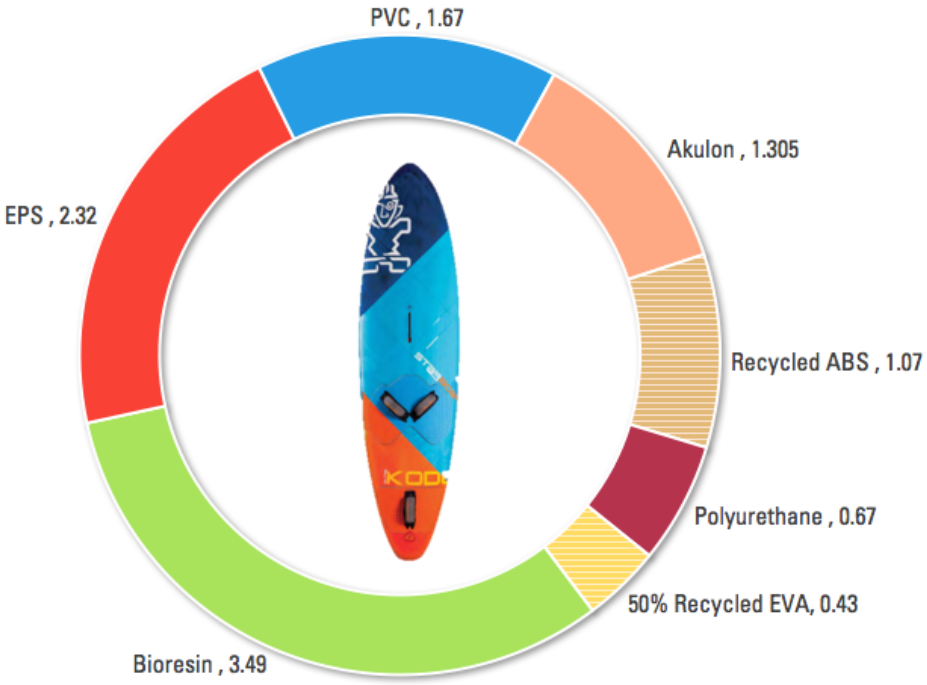
WINDSURF ULTRACORE REFLEX CARBON 2017

TOTAL TONNES



WINDSURF CARBON REFLEX 2018

TOTAL TONNES



WINDSURF ULTRACORE REFLEX CARBON 2017

	TOTAL (Tonnes)
Epoxy Exterior	3.48
EPS Board Core	2.31
Polyurethane Paint	0.97
Nylon 6 Mast Box	0.91
ABS Tuttle Box	0.81
PVC Deck	0.79
PVC Bottom	0.79
EVA Deck Pad	0.43
Nylon 6 Fin Box	0.39
PVC Rails	0.39
ABS Plug K9	0.26
PVC Sticker	0.09
Polyurethane Box	0.02
Nylon 6 Air Valve	0.005
Combined Total	**11.645**

WINDSURF CARBON REFLEX 2018

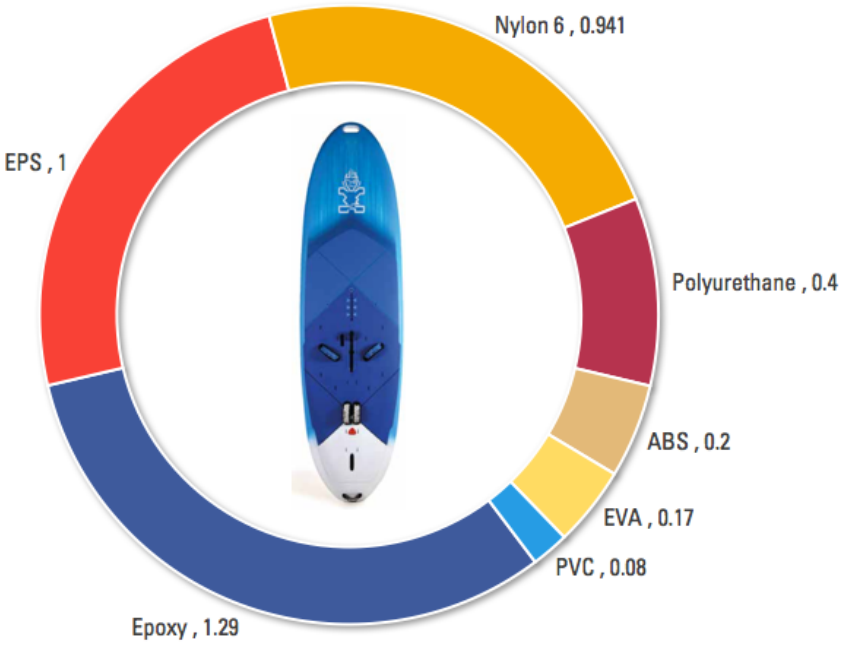
	TOTAL
Bioresin Exterior	3.49
EPS Board Core	2.32
Akulon Mast Box	0.91
Recycled ABS Tuttle Box	0.81
PVC Deck	0.79
PVC Bottom	0.79
Polyurethane Paint	0.65
50% Recycled EVA Deckpad	0.43
Akulon Fin Box	0.39
Recycled ABS Plug K9	0.26
PVC Stickers	0.09
Polyurethane Box	0.02
Akulon Air Valve	0.005
Combined Total	**10.955**

CHANGES:

- 3.49 tonnes of epoxy replaced with bioresin
- 0.32 tonnes of Polyurethane Spray are eliminated
- 1.31 tonnes of Nylon 6 replaced with Akulon
- 0.22 tonnes of EVA replaced with recycled EVA
- 1.07 tonnes of ABS replaced with recycled ABS

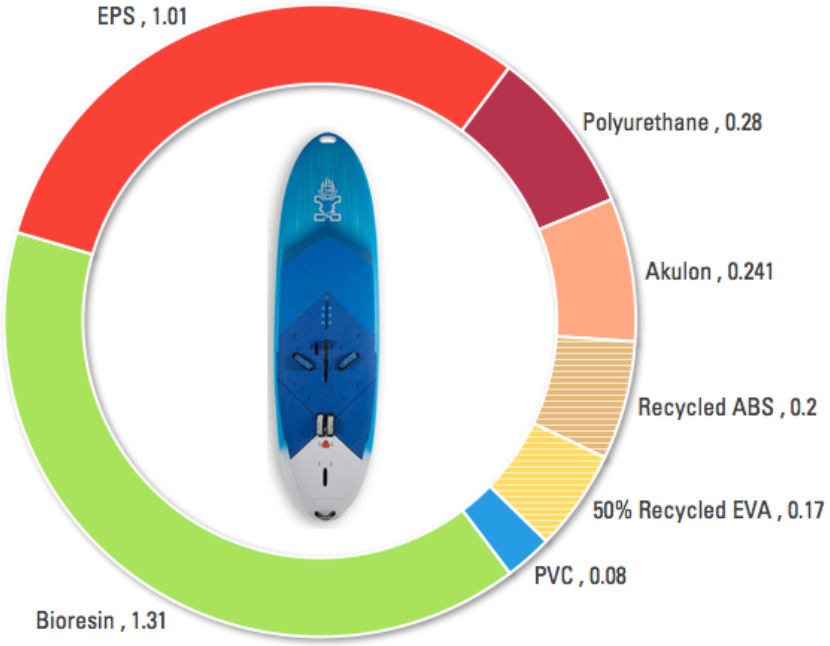
WINDSURF ARMORTECH 2017

TOTAL TONNES



WINDSURF ARMORTECH 2018

TOTAL TONNES



WINDSURF ARMORTECH 2017

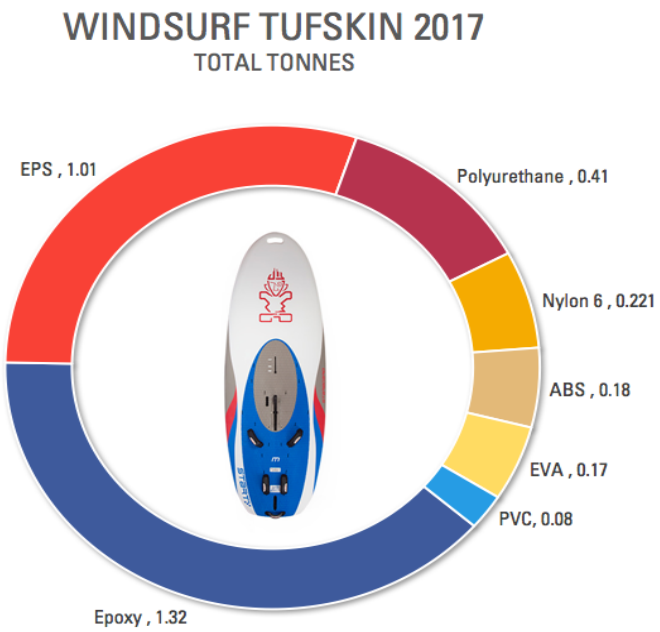
	TOTAL (Tonnes)
Epoxy Exterior	1.29
EPS Board Core	1
Polyurethane Paint	0.39
EVA Deck Pad	0.17
Nylon 6 Mast Box	0.17
ABS Tuttle Box	0.15
Nylon 6 Fin Box	0.7
ABS Plug K9	0.05
PVC Inset Reinforcements	0.04
PVC Stickers	0.04
Polyurethane Box	0.01
Nylon 6 Air Valve	0.001
Combined Total	**4.011**

WINDSURF ARMORTECH 2018

	TOTAL (Tonnes)
Bioresin Exterior	1.31
EPS Board Core	1.01
Polyurethane Paint	0.27
50% Recycled EVA Deck Pad	0.17
Akulon Mast Box	0.17
Recycled ABS Tuttle Box	0.15
Akulon Fin Box	0.07
Recycled ABS Plug K9	0.05
PVC Inset Reinforcement	0.04
PVC Stickers	0.04
Polyurethane Box	0.01
Akulon Air Valve	0.001
Combined Total	**3.291**

CHANGES:

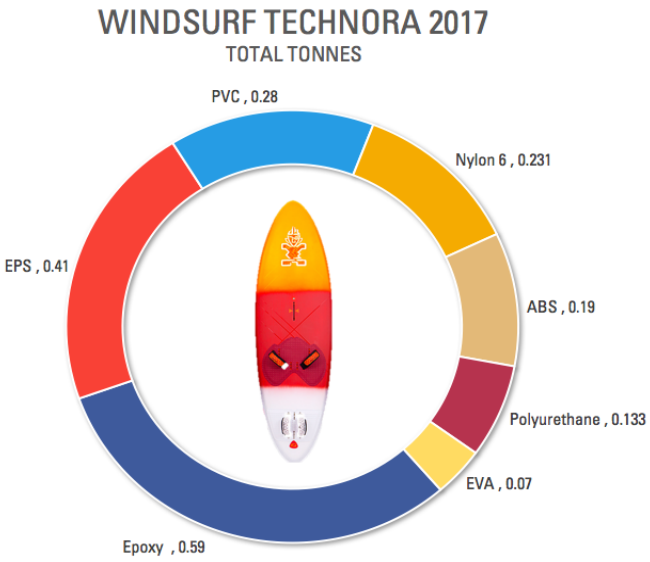
- 1.31 tonnes of epoxy replaced with bioresin
- 0.13 tonnes of Polyurethane Spray are eliminated
- 0.24 tonnes of Nylon 6 replaced with Akulon
- 0.08 tonnes of EVA replaced with recycled EVA
- 0.2 tonnes of ABS replaced with recycled ABS



WINDSURF TUFSKIN 2017

	TOTAL (Tonnes)
Epoxy Exterior	1.32
EPS Board Core	1.01
Polyurethane Paint	0.4
EVA Deck Pad	0.17
Nylon 6 Mast Box	0.15
ABS Tuttle Box	0.14
Nylon 6 Fin Box	0.07
ABS Plug K9	0.04
PVS Inset Reinforcement	0.04
PVC Stickers	0.04
Polyurethane Box	0.01
Nylon 6 Air Valve	0.001
Combined Total	**3.391**

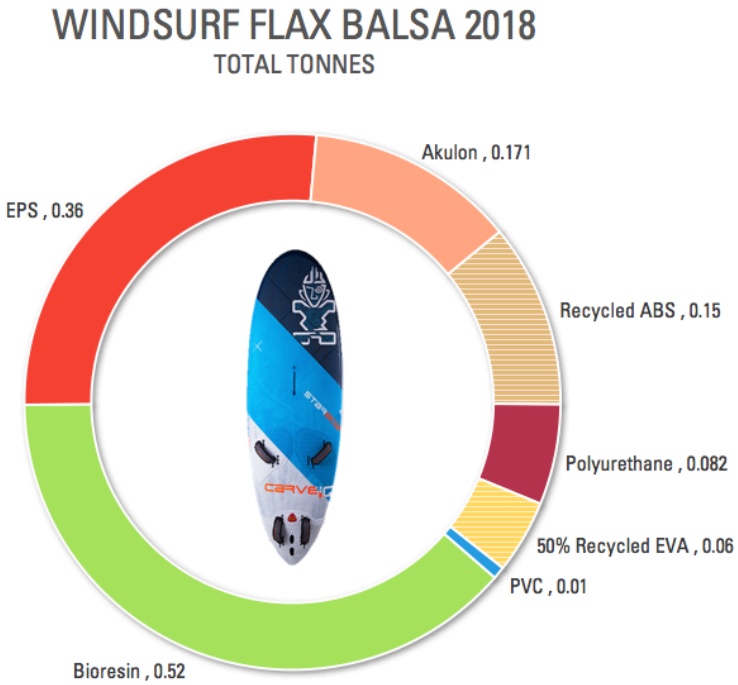
The Tufskin construction no longer exists in 2018.



WINDSURF TECHNORA 2017

	TOTAL (Tonnes)
Epoxy Exterior	0.59
EPS Board Core	0.41
Nylon 6 Mast Box	0.16
ABS Tuttle Box	0.14
PVC Deck	0.13
PVC Bottom	0.13
Polyurethane Paint	0.13
Nylon 6 Fin Box	0.7
EVA Deck Pad	0.07
ABS Plug K9	0.05
PVC Inset Reinforcements	0.01
PVC Stickers	0.01
Polyurethane Box	0.003
Nylon 6 Air Valve	0.001
Combined Total	**2.534**

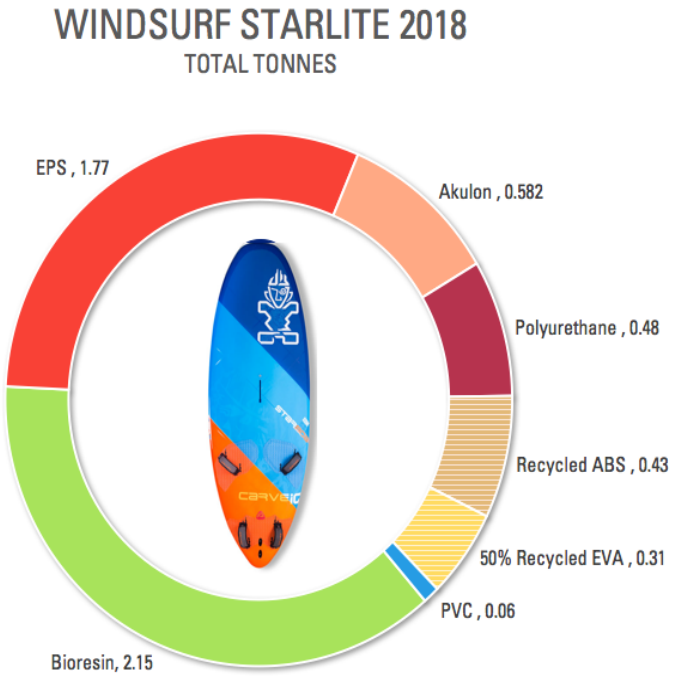
The Technora construction no longer exists in 2018.



WINDSURF FLAX BALSA 2018

	TOTAL (Tonnes)
Bioresin Exterior	0.52
EPS Board Core	0.36
Akulon Mast Box	0.12
Recycled ABS Tuttle Box	0.11
Polyurethane Paint	0.08
50% Recycled EVA Deck Pad	0.06
Akulon Fin Box	0.05
Recycled ABS Plug K9	0.04
PVC Stickers	0.01
Polyurethane Box	0.002
Akulon Air Valve	0.001
Combined Total	**1.353**

The Flax Balsa construction did not exist in 2017.

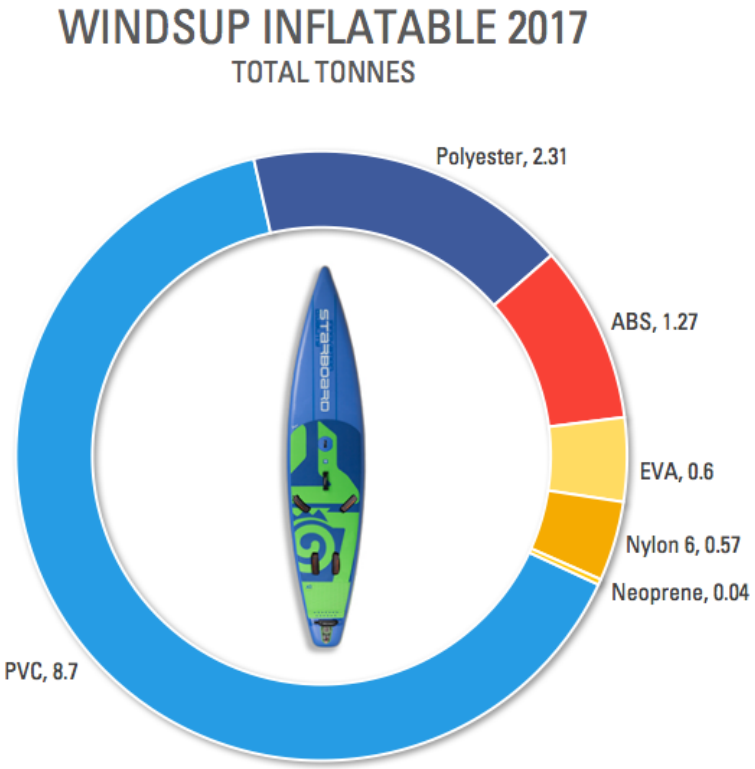


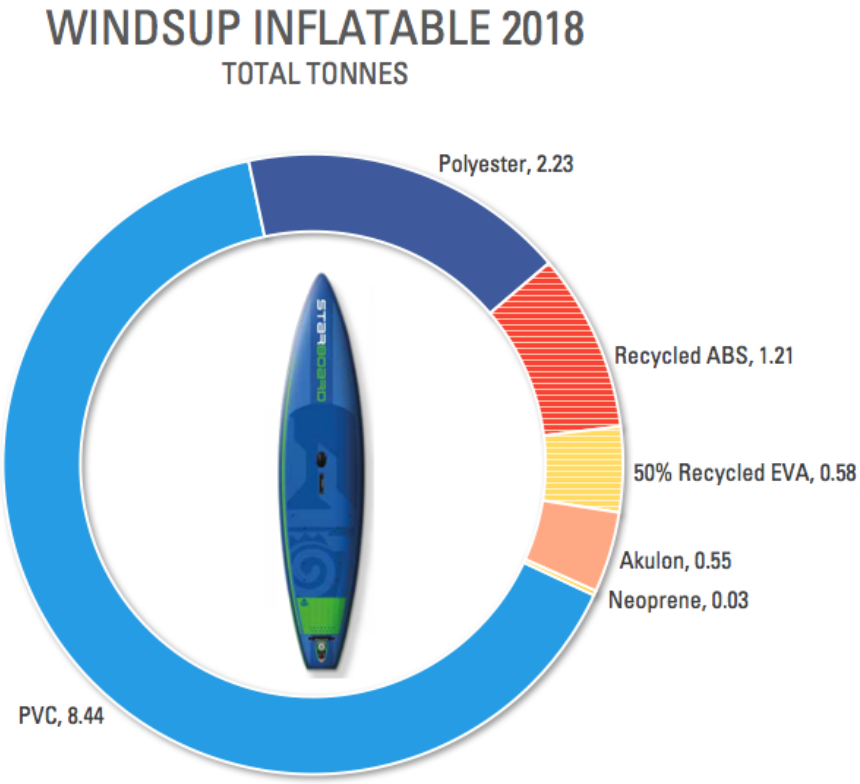
WINDSURF STARLITE 2018

	TOTAL (Tonnes)
Bioresin Exterior	2.15
EPS Board Core	1.77
Polyurethane Paint	0.47
Akulon Mast Box	0.39
50% Recycled EVA Deckpad	0.31
Recycled ABS Tuttle Box	0.3
Akulon Fin Box	0.19
Recycled ABS Plug K9	0.13
PVC Stickers	0.06
Polyurethane Box	0.01
Akulon Air Valve	0.002
Combined Total	**5.782**

The Starlite construction did not exist in 2017 for Windsurf.

1.5 WindSup Inflatable





WINDSUP INFLATABLE 2017

	TOTAL (Tonnes)
PVC Deck Strip	2.66
PVC Deck Strip	2.66
Polyester Dropstitch	2.31
PVC Rail 2	1.19
PVC Rail 1	1.07
PVC Center Deck Stripe	0.61
EVA Deckpad	0.6
ABS Fins	0.59
Nylon 6 Mast Box	0.57
ABS Tuttle Box	0.51
PVC Inner Rail Stringers	0.33
ABS Plug K9	0.17
PVC Stripe Line	0.09
PVC Pin Line	0.09
Neoprene Handle	0.04
Combined Total	**13.49**

WINDSUP INFLATABLE 2018

	TOTAL (Tonnes)
PVC Deck Strip	2.57
PVC Bottom Strip	2.57
Polyester Dropstitch	2.23
PVC Rail 2	1.15
PVC Rail 1	1.04
PVC Center Stripe Deck	0.59
50% Recycled EVA Deckpad	0.58
Recycled ABS Fins	0.56
Akulon Mast Box	0.55
Recycled ABS Tuttle Box	0.49
PVC Inner Rail Stringers	0.32
Recycled ABS Plug K9	0.16
PVC Interior Line	0.1
PVC Interior Line	0.1
Neoprene Handle	0.03
Combined Total	**13.04**

CHANGES:

- 0.29 tonnes of EVA replaced with recycled EVA
- 0.55 tonnes of Nylon 6 replaced with Akulon
- 1.21 tonnes of ABS replaced with recycled ABS
- Slight decrease in all PVC usage (0.26 tons) due to decreased weight of 2018 boards

2
Accessories

· Bioresin – bio-based alternative to traditional petroleum-based polymer epoxy resin. 35% of Starboard's low/zero VOC resin's molecular structure originates from plants. Resin is applied as a liquid to paddles and hardens to give them their rigidity. The shift from traditional epoxy resin to bioresin took place in 2018.

· Acrylonitrile Butadiene Styrene (ABS) – Thermoplastic polymer used for injection mold purposes. Strong, shiny, and impervious, it is used for various plastic pieces including blades, handles, etc. The shift from virgin ABS to recycled ABS took place in 2018.

· High-Density Polyethylene (HDPE) – Polyethylene thermoplastic make from petroleum, known for its large strength-to-density ratio and used in injection molding to make items such as paddle handles. The shift from HDPE to recycled HDPE took place in 2018.

· Nylon 6 – Semi Crystalline polyamide used for injection molded board components such as paddle shafts. It is tough, with a high tensile strength and high resistance to abrasion. The shift from Nylon 6 to Akulon took place in 2018.

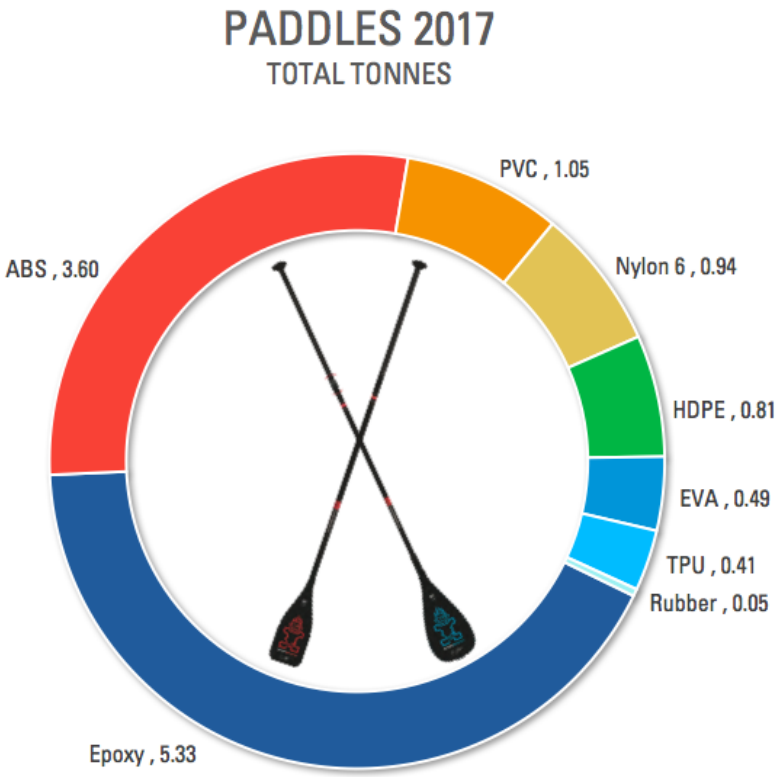
· Polyvinyl Chloride (PVC) – synthetic plastic polymer that is used in its rigid form to reinforce blades and insets.

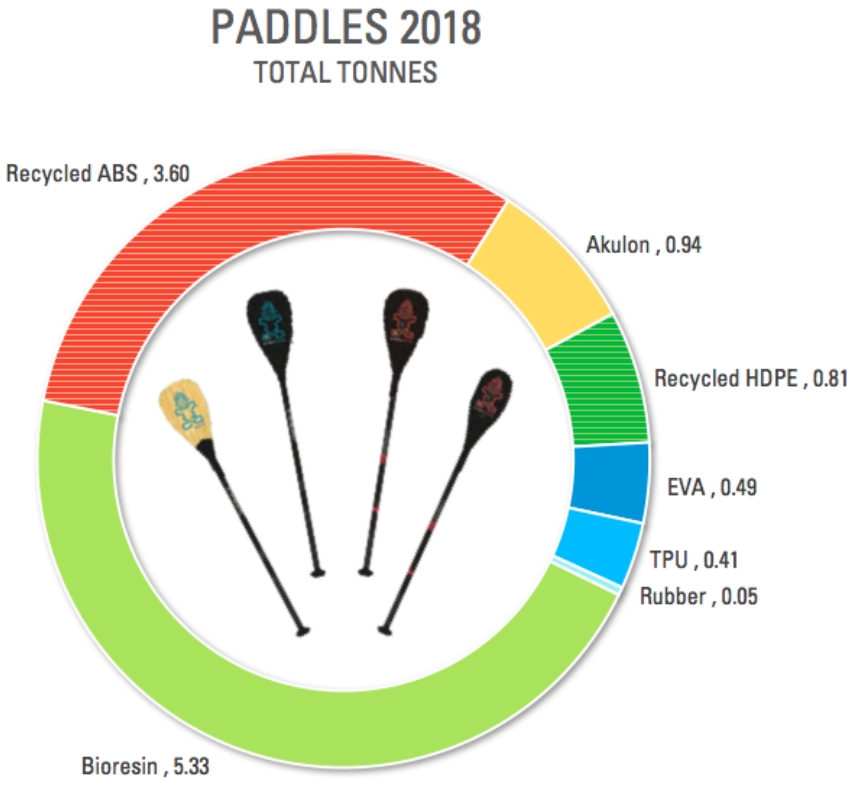
· Akulon – Polyamide 6 compound with 30% glass reinforcement that contains recycled polyamide 6 at a maximum of 70% of the composition. The source of recycled material is postindustrial material derived from industrial yarn and post-consumer material derived from used fishnets. The shift from Nylon 6 to Akulon took place in 2018.

· Rubber – Polymer of organic compound isoprene, with a large stretch ratio, high resilience, and waterproof properties. Used as a plug in Starboard paddles.

· RPET – Recycled polyethylene terephthalate from bottles. The PET is recycled from plastic bottles, and an average of 14 bottles is used in one typical board bag.

2.1 Paddles


PADDLES 2017
TOTAL TONNES
PVC , 1.05
Nylon 6 , 0.94
HDPE , 0.81
EVA , 0.49
TPU , 0.41
Rubber , 0.05
Epoxy , 5.33
ABS , 3.60


PADDLES 2018
TOTAL TONNES
Recycled ABS , 3.60
Akulon , 0.94
Recycled HDPE , 0.81
EVA , 0.49
TPU , 0.41
Rubber , 0.05
Bioresin , 5.33

PADDLES 2017

	TOTAL (Tonnes)
Epoxy Shaft	3.72
ABS Blade	3.60
PVC Blade	1.05
HDPE Handle	0.81
Epoxy Blade	0.75
Nylon 6 Shaft	0.73
Resin Plug	0.70
EVA Plug	0.49
TPU Blade	0.41
Nylon 6 Plug	0.21
Epoxy Handle	0.16
Rubber Seal Cap	0.05
Combined Total	**12.68**

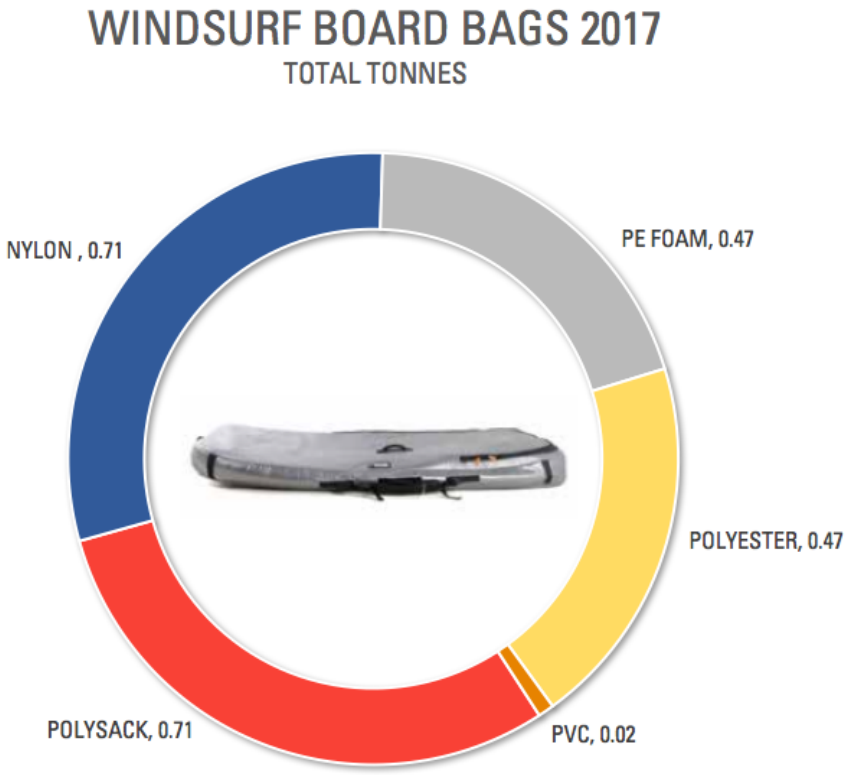
PADDLES 2018

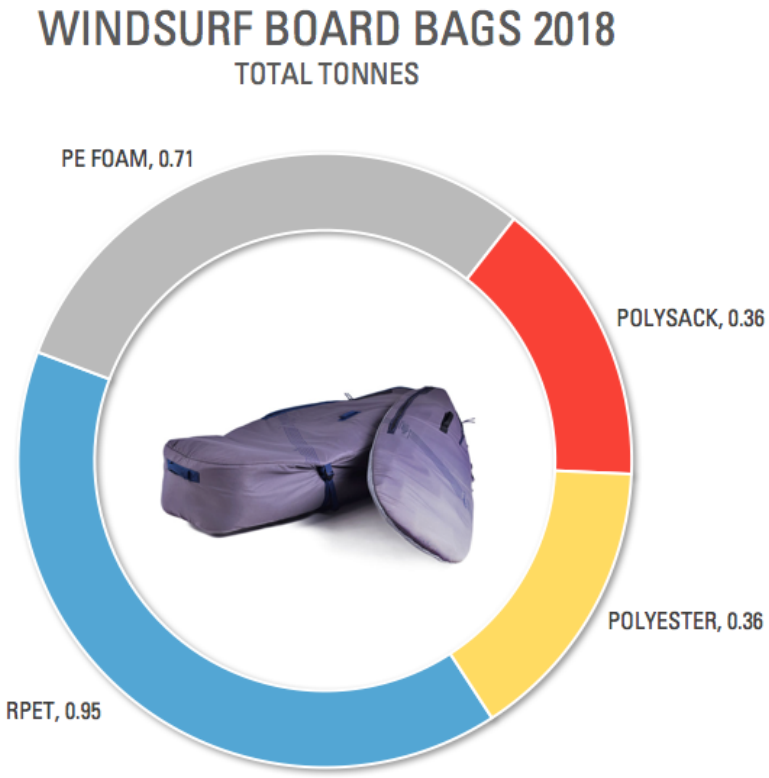
	TOTAL (Tonnes)
Bioresin Shaft	3.72
Recycled ABS Blade	3.60
Recycled HDPE Handle	0.81
Bioresin Blade	0.75
Akulon Shaft	0.73
Bioresin Plug	0.70
EVA Plug	0.49
TPU Blade	0.41
Akulon Plug	0.21
Bioresin Handle	0.16
Rubber Seal Cap	0.05
Combined Total	**11.63**

CHANGES:

- 4.58 tonnes of epoxy replaced with bioresin
- 3.60 tonnes of ABS replaced with recycled ABS
- 0.81 tonees of HDPE replaced with recycled HDPE
- 0.94 tonnes of Nylon 6 replaced with Akulon

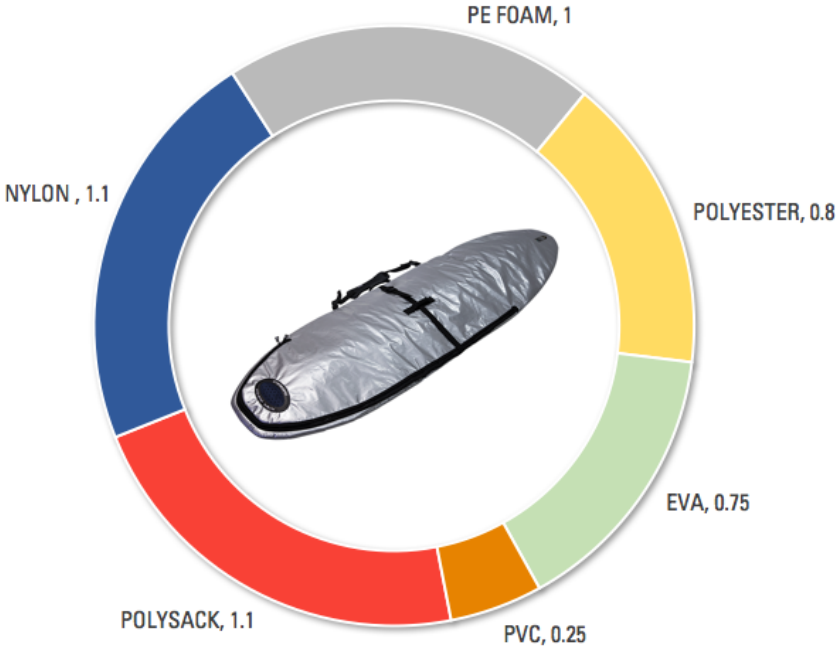
2.2 Board Bags





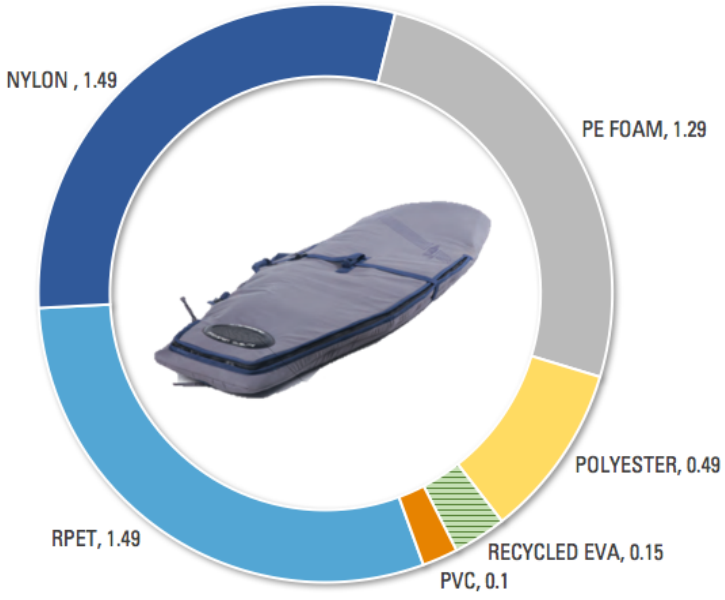
SUP COMPOSITE BAGS 2017

TOTAL TONNES



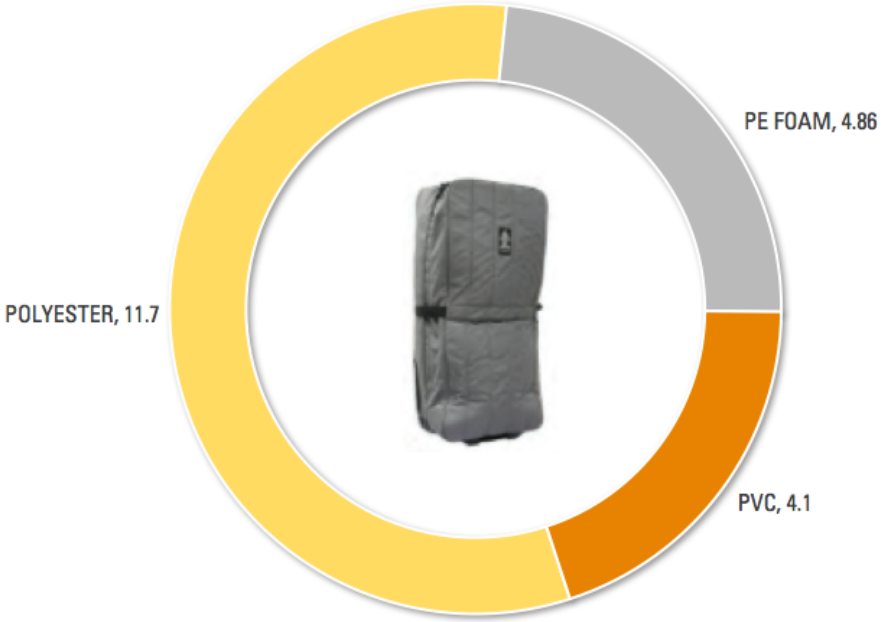
SUP COMPOSITE BAGS 2018

TOTAL TONNES



INFLATABLE BAGS 2017

TOTAL TONNES



INFLATABLE BAGS 2018

TOTAL TONNES

OTHER BAGS 2017

TOTAL TONNES

OTHER BAGS 2018

TOTAL TONNES

BAGS - TONNES OF PLASTIC 2017

	POLYESTER	PE FOAM	PVC	NYLON	POLYSACK	EVA
WINDSURF BOARD BAGS	0.47	0.47	0.02	0.71	0.71	
SUP COMPOSITE BAGS	0.8	1	0.25	1.1	1.1	0.75
INFLATABLE BAGS	11.7	4.86	4.1			
OTHER BAGS	0.4		0.34	0.19		
TOTAL	**13.37**	**6.33**	**4.71**	**2**	**1.81**	**0.75**

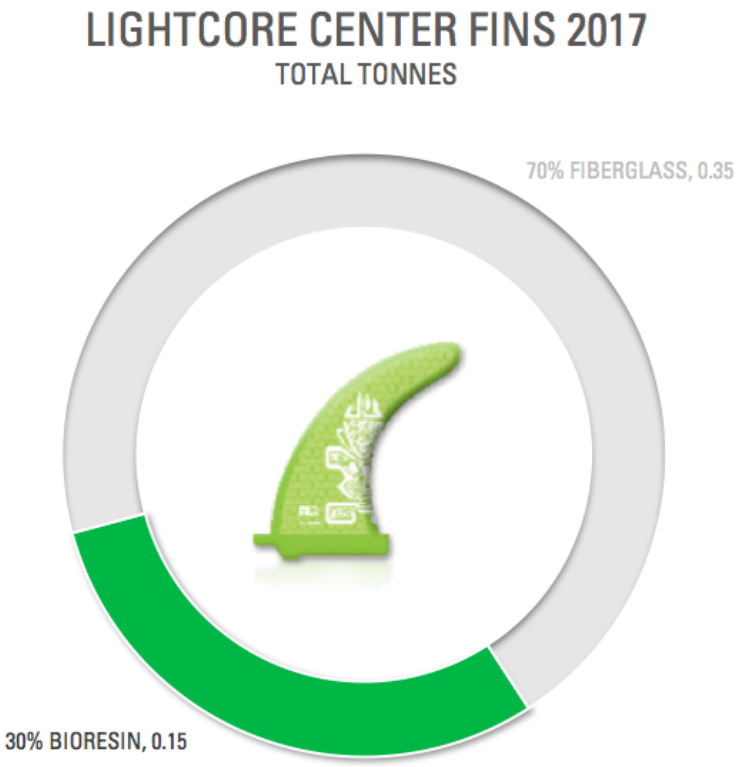
BAGS - TONNES OF PLASTIC 2018

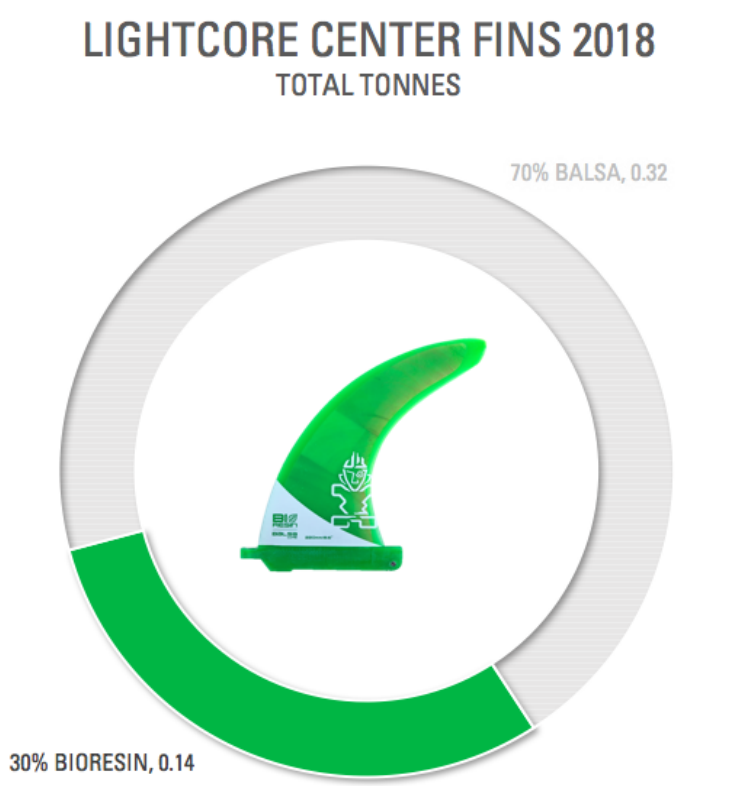
	RPET	PE FOAM	POLYESTER	PVC	NYLON	POLYSACK	RECYCLED EVA
WINDSURF BOARD BAGS	0.95	0.71	0.36			0.36	
SUP COMPOSITE BAGS	1.49	1.29	0.49	0.1	1.49		0.15
INFLATABLE BAGS	10.9	4.86	2.89	2.1			
OTHER BAGS	0.37		0.13	0.35	0.02		0.01
TOTAL	**13.71**	**6.86**	**3.87**	**2.55**	**1.51**	**0.36**	**0.16**

CHANGES:

- 11.66 tonnes polyester replaced with RPET.
- 0.49 tonnes nylon replaced with RPET.
- 1.45 tonnes polysack replaced with RPET.
- 2.16 tonnes PVC replaced with polyester.
- EVA replaced with recycled EVA and reduced by 0.59 tonnes.

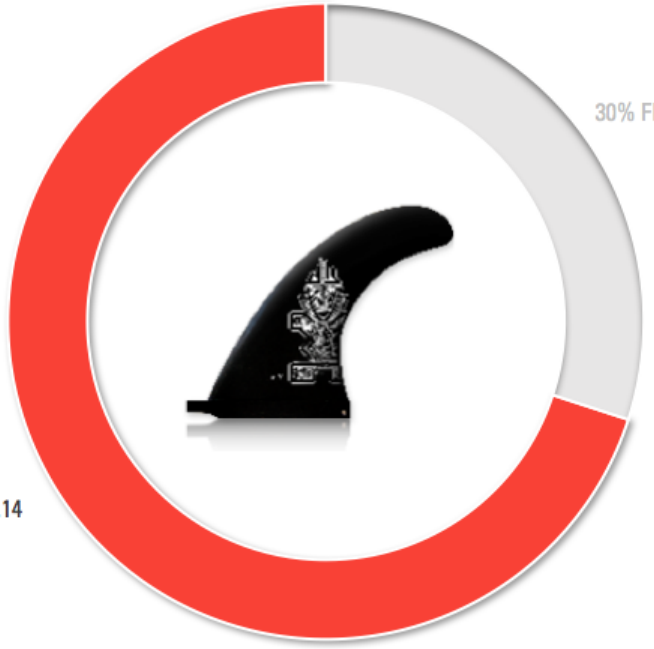
2.3 Fins


LIGHTCORE CENTER FINS 2017
TOTAL TONNES
70% FIBERGLASS, 0.35
30% BIORESIN, 0.15


LIGHTCORE CENTER FINS 2018
TOTAL TONNES
70% BALSA, 0.32
30% BIORESIN, 0.14

SUP INJECTION MOLDED CENTER FINS 2017

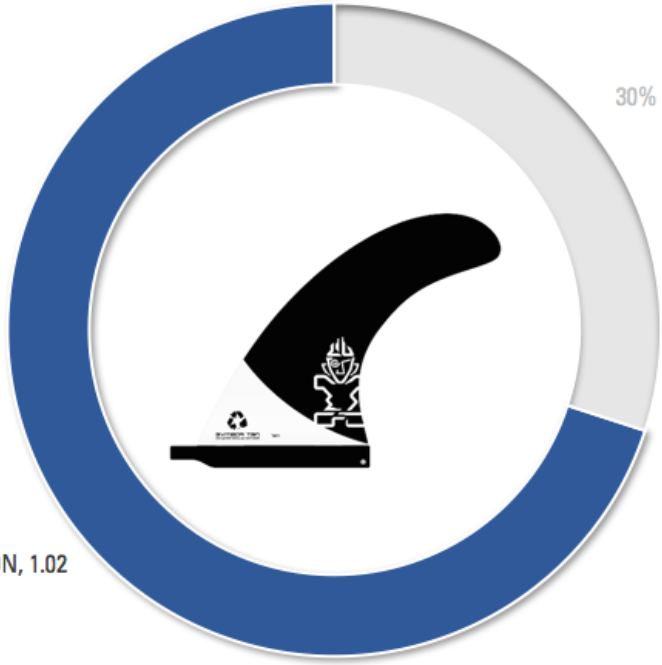
TOTAL TONNES



SUP INJECTION MOLDED CENTER FINS 2018

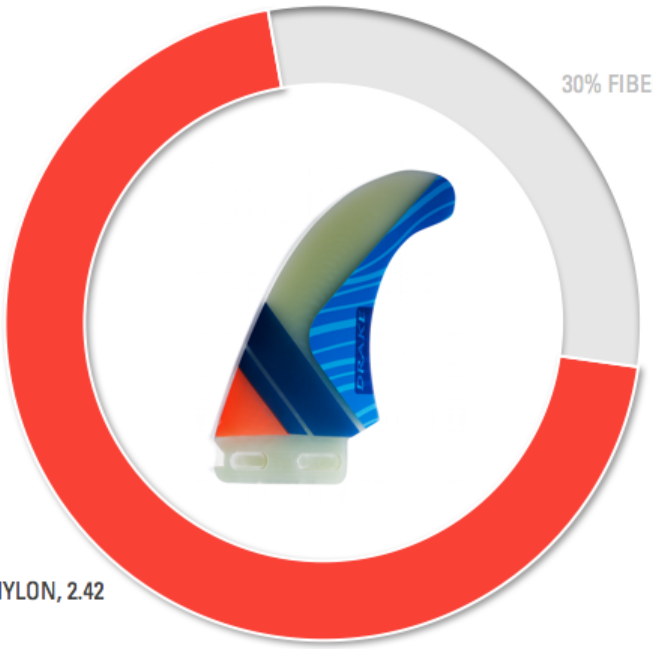
NET POSITIVE

TOTAL TONNES



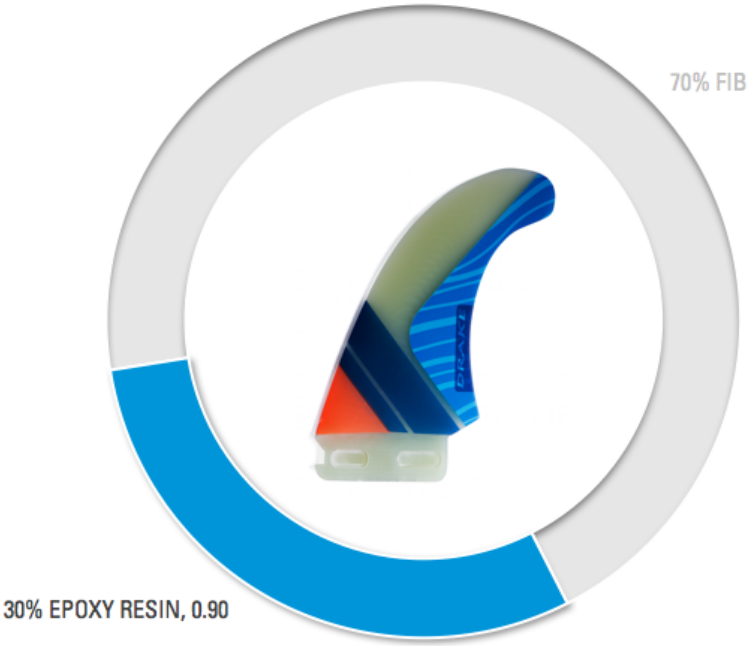
WINDSURF FINS 2017

TOTAL TONNES



WINDSURF FINS 2018

TOTAL TONNES



FINS - TONNES OF PLASTIC 2017

	BIORESIN	NYLON
LIGHTCORE CENTER FINS	0.15	
LIGHTCORE SIDE FINS	0.06	
INJECTION MOLDED CENTER FINS		1.14
INJECTION MOLDED SIDE FINS		0.67
FCS		0.4
DAGGERBOARD FINS		0.22
WINDSURF FINS		2.42
TOTAL	**0.21**	**4.85**

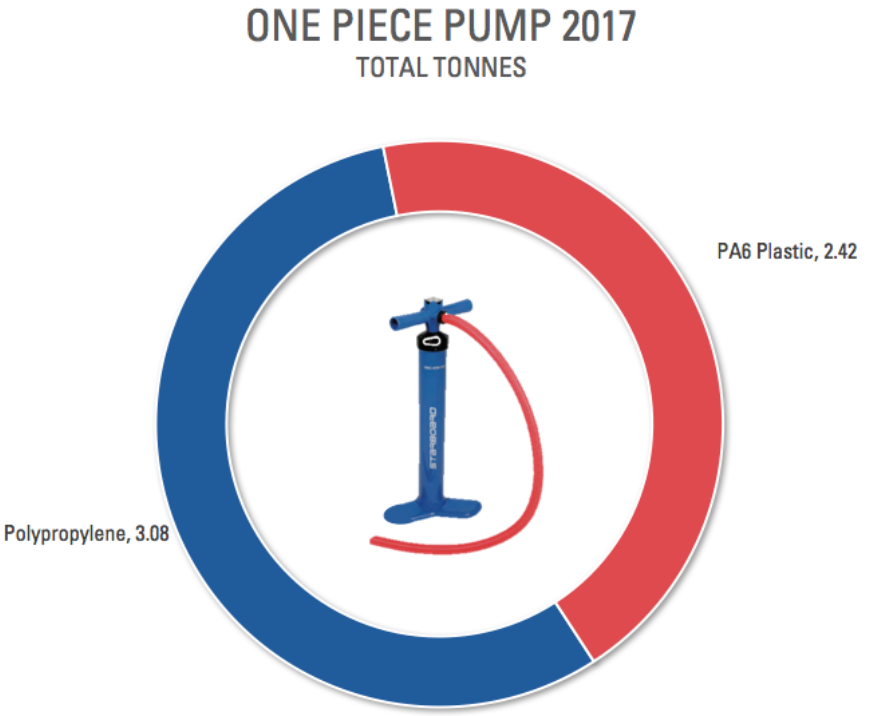
FINS - TONNES OF PLASTIC 2018

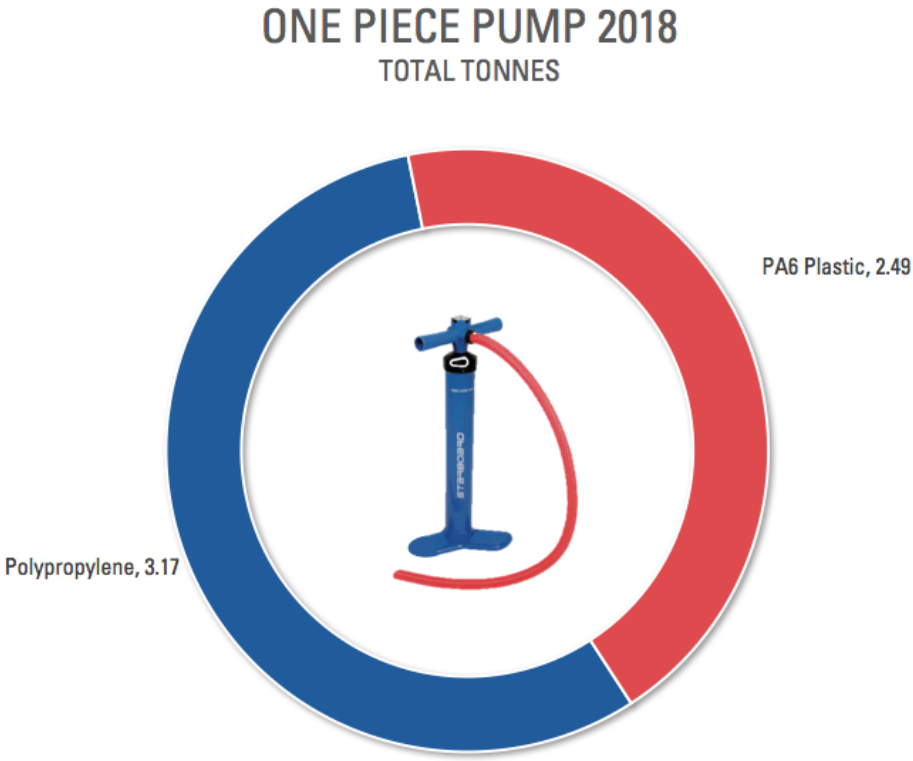
	BIORESIN	AKULON	EPOXY RESIN
LIGHTCORE CENTER FINS	0.14		
LIGHTCORE SIDE FINS	0.07		
INJECTION MOLDED CENTER FINS		1.02	
INJECTION MOLDED SIDE FINS		0.81	
FCS		0.64	
DAGGERBOARD FINS			0.09
WINDSURF FINS			0.9
TOTAL	**0.21**	**2.47**	**0.99**

CHANGES:

- 2.21 ton of nylon was replaced with Akulon.
- 2.64 ton of nylon was replaced with fiberglass.
- 0.99 tonnes epoxy resin replaced fiberglass.

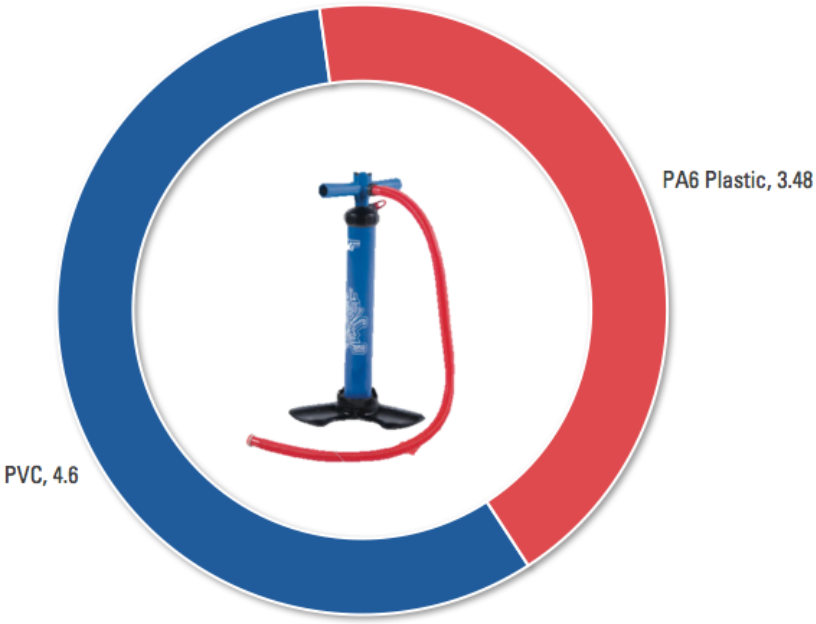
2.4 Pumps


ONE PIECE PUMP 2017
TOTAL TONNES
PA6 Plastic, 2.42
Polypropylene, 3.08


ONE PIECE PUMP 2018
TOTAL TONNES
PA6 Plastic, 2.49
Polypropylene, 3.17

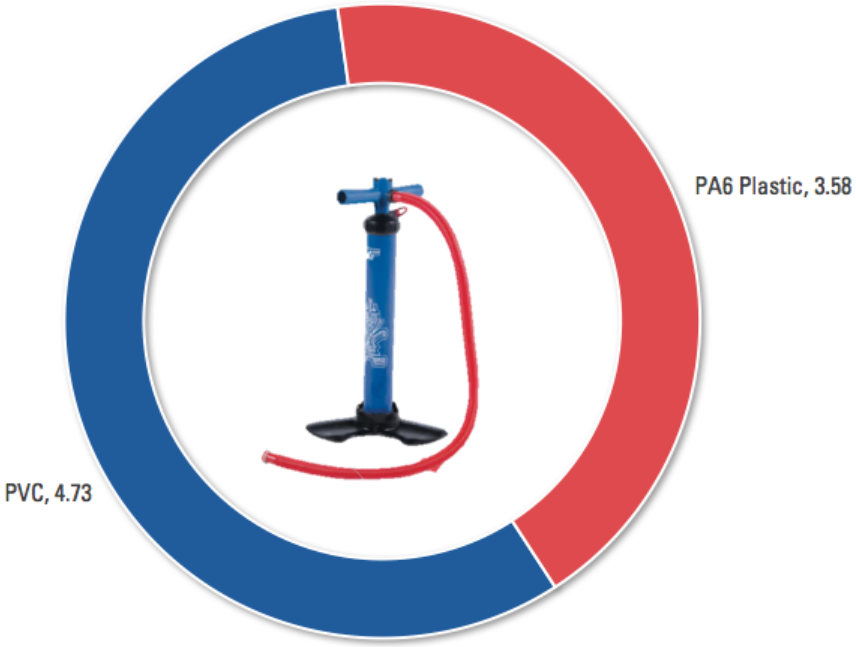
DELUXE PUMP 2017

TOTAL TONNES



DELUXE PUMP 2018

TOTAL TONNES



PUMPS - TONNES OF PLASTIC 2017

	Polypropylene	PVC	PA6
One Piece Pump	3.08		2.42
Deluxe Pump		4.60	3.48
TOTAL	**3.08**	**4.60**	**5.90**

PUMPS - TONNES OF PLASTIC 2018

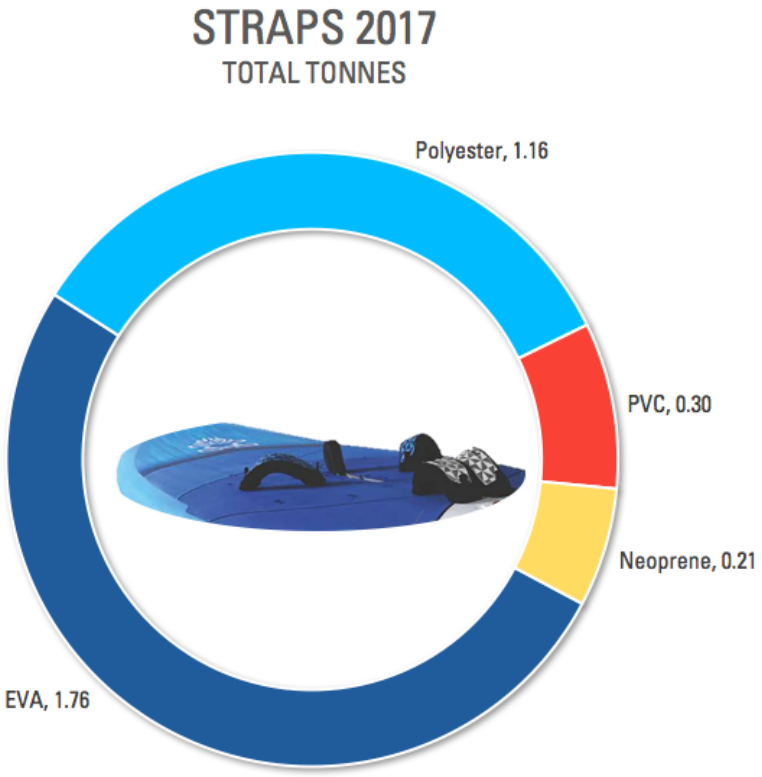
	Polypropylene	PVC	PA6
One Piece Pump	3.17		2.49
Deluxe Pump		4.73	3.58
TOTAL	**3.17**	**4.73**	**6.07**

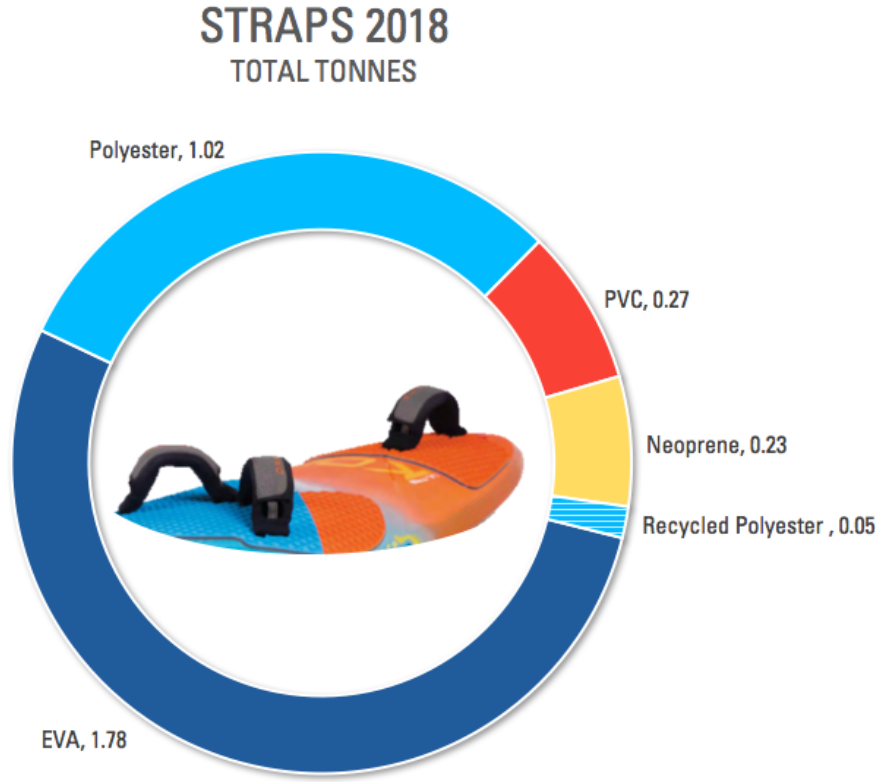
CHANGES:

- No changes between 2017 and 2018.
- Starboard is working on a pump made from upcycled material.

RUNNING CHANGES

2.5 Straps


STRAPS 2017
TOTAL TONNES
Polyester, 1.16
PVC, 0.30
Neoprene, 0.21
EVA, 1.76


STRAPS 2018
TOTAL TONNES
Polyester, 1.02
PVC, 0.27
Neoprene, 0.23
Recycled Polyester , 0.05
EVA, 1.78

STRAPS 2017

	TOTAL (Tonnes)
EVA	1.76
Polyester	1.16
PVC	0.30
Neoprene	0.21
Combined Total	**3.43**

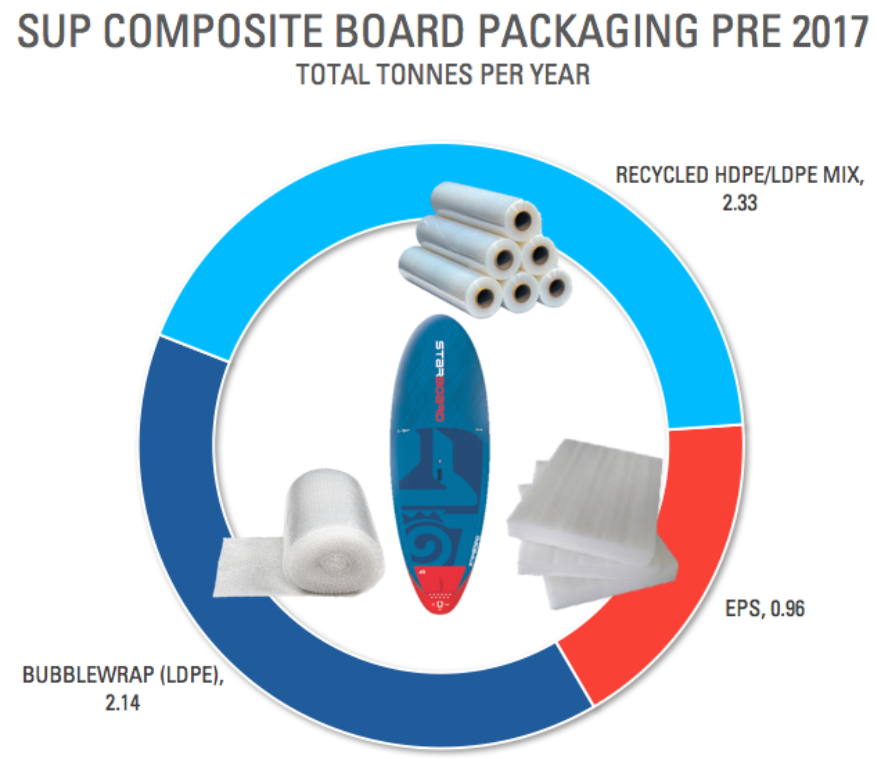
STRAPS 2018

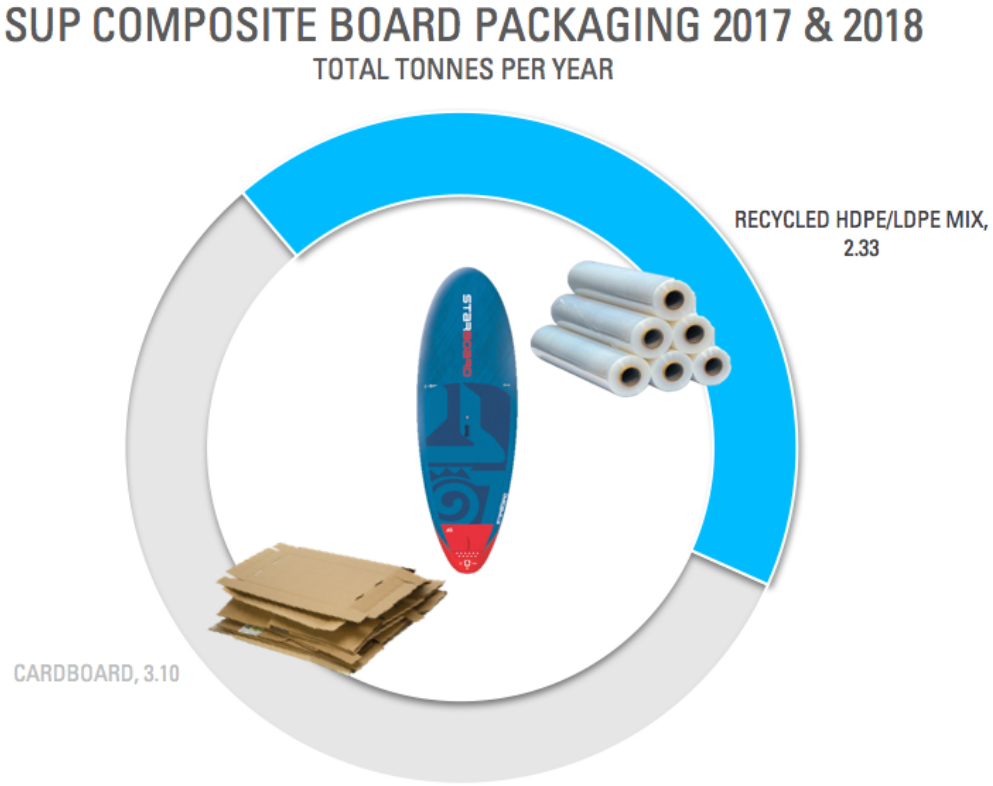
	TOTAL (Tonnes)
EVA	1.78
Polyester	1.02
PVC	0.27
Neoprene	0.23
Recycled Polyester	0.05
Combined Total	**3.35**

CHANGES:

- 0.246 tonnes PVC was replaced with recycled polyester.

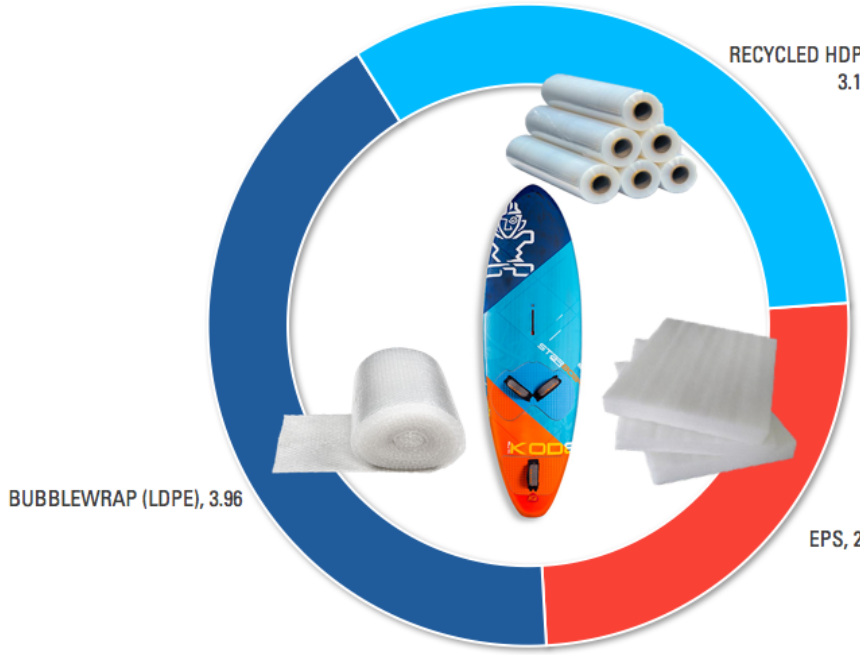
2.6 Packaging





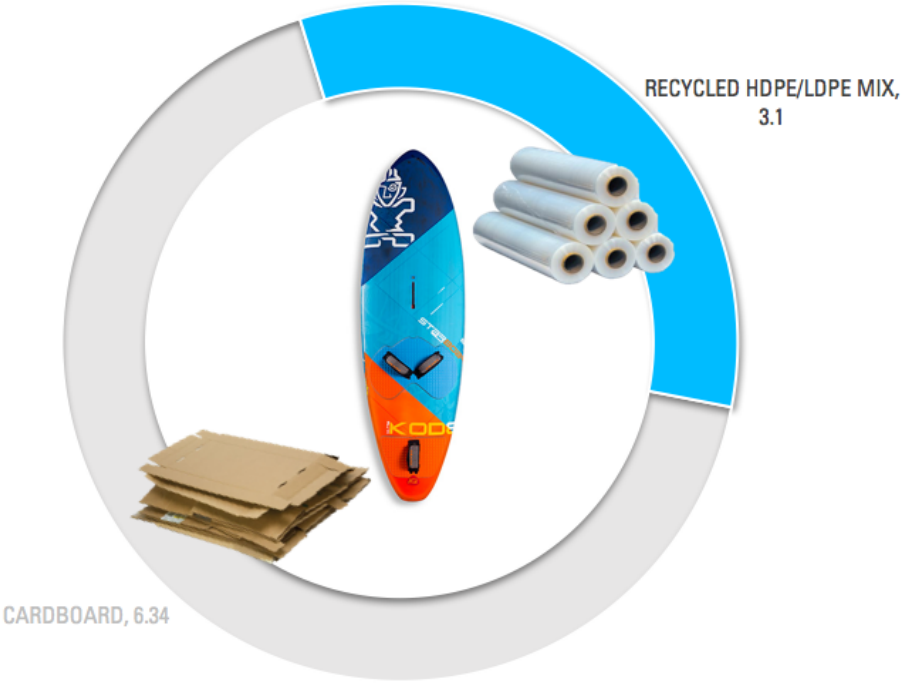
WINDSURF BOARD PACKAGING PRE 2017

TOTAL TONNES PER YEAR

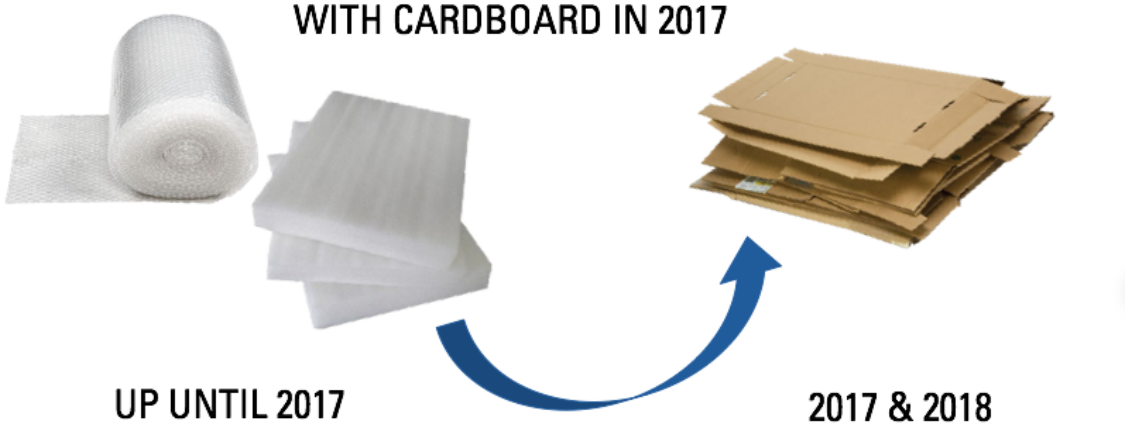


WINDSURF BOARD PACKAGING 2017 & 2018

TOTAL TONNES PER YEAR



EPS AND BUBBLE WRAP BOARD PACKAGING WAS REPLACED WITH CARDBOARD IN 2017



TONNES OF PLASTIC 2016

	EPS	BUBBLE WRAP (LDPE)	RECYCLED HDPE/LDPE MIX
SUP COMPOSITE	0.96	2.14	2.33
WINDSURF	2.38	3.96	3.1
TOTAL	**3.34**	**6.1**	**5.43**

TONNES OF PLASTIC 2017

	EPS	BUBBLE WRAP (LDPE)	RECYCLED HDPE/LDPE MIX
SUP COMPOSITE			2.33
WINDSURF			3.1
TOTAL			**5.43**

TONNES OF PLASTIC 2018

	EPS	BUBBLE WRAP (LDPE)	RECYCLED HDPE/LDPE MIX
SUP COMPOSITE			2.33
WINDSURF			3.1
TOTAL			**5.43**

CHANGES:

- No changes between 2017 and 2018, but significant changes took place between 2016 and 2017.
- 3.34 tonnes EPS and 6.1 tonnes bubble wrap (LDPE) was replaced with cardboard.
- 0.1 tonnes LDPE were replaced with paper.

3
Apparel

· Polyester – synthetic polymer spun into fiber that is used extensively in apparel. It can also be spun together with natural fibers to produce cloth with blended properties.

· Recycled Polyester – fiber spun from recycled PET bottles. It possesses the same qualities as virgin polyester, but is more eco-friendly as it is recycled from used plastic material.

· Nylon – thermoplastic silky material that can be melt-processed into fibers. It is often used for athletic clothing.

· Spandex (also known as Lycra) – synthetic fiber with exceptional elasticity. Strong, durable, stretchy, and often used in athletic clothing.

· Neoprene – synthetic rubber that is flexible, stable, and an excellent insulator, us for a variety of purposes, including wetsuit material apparel items.

· Polyamide – artificially made macromolecule used in textiles for their high durability and strength.

· Rayon – Manufactured regenerated cellulose fiber made primarily from wood pulp chemically converted into a soluble compound. A semi-synthetic fiber.

MEN'S LYCRA LONG SLEEVE 2017

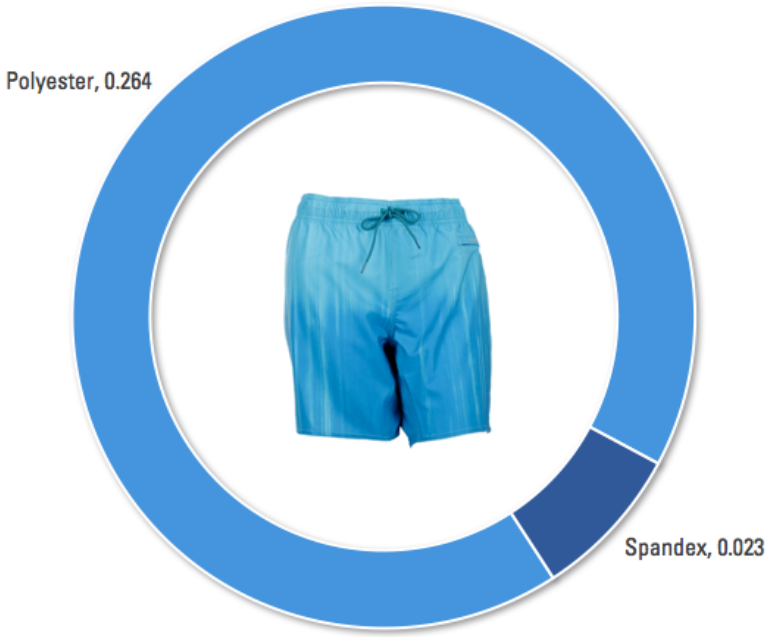
TOTAL TONNES

MEN'S LYCRA LONG SLEEVE 2018

TOTAL TONNES

MEN'S ORIGINAL BOARDSHORTS 2017

TOTAL TONNES



MEN'S ORIGINAL BOARDSHORTS 2018

TOTAL TONNES

APPAREL - TONNES OF PLASTIC 2017

	Polyester	Nylon	Spandex	Polyurethane	Neoprene
Men's Watershirt Long Sleeve	0.016				
Men's Watershirt Short Sleeve	0.04				
Men's Watershirt No Sleeve	0.023				
Men's Lycra Long Sleeve		0.2	0.044		
Men's Lycra Short Sleeve		0.075	0.017		
Women's Lycra Long Sleeve		0.056	0.012		
Kid's Lycra Long Sleeve		0.05	0.011		
Men's Original Boardshorts	0.264		0.023		
Women's Boardshorts	0.046		0.004		
Kid's Boardshorts	0.039		0.003		
Women's Superstar Boardshorts	0.046		0.004		
Kid's Superstar Boardshorts	0.013		0.001		
Men's Hybrid Boardwalks	0.141		0.012		
Men's Zip Hoodie			0.015		
Women's Zip Hoodie			0.005		
Welded and Visor Cap	0.079				
Men's Cap	0.13				
Women's Cap	0.071				
Women's Long John		0.007	0.002		0.07
Women's Paddle Jacket		0.005	0.001		0.05
ALL STAR SUP SUIT	0.107	0.094	0.016	0.107	
TOTAL:	**1.015**	**0.487**	**0.17**	**0.107**	**0.12**

APPAREL - TONNES OF PLASTIC 2018

	Polyester	Recycled Polyester	Spandex	Rayon
Men's Watershirt Long Sleeve	0.053			
Men's Watershirt Short Sleeve	0.04			
Men's Watershirt No Sleeve	0.053			
Women's Watershirt No Sleeve	0.016			
Men's Lycra Long Sleeve	0.197		0.044	
Men's Lycra Short Sleeve	0.075		0.016	
Women's Lycra Long Sleeve	0.056		0.012	
Kid's Lycra Long Sleeve	0.051		0.011	
Men's Original Boardshorts		0.255	0.032	
Women's Boardshorts		0.045	0.006	
Kid's Boardshorts		0.038	0.005	
Women's Superstar Boardshorts		0.045	0.006	
Kid's Superstar Boardshorts		0.013	0.002	
Men's Hybrid Boardwalks	0.141		0.012	
Men's Walkshorts	0.058		0.003	0.031
Women's Race Tights	0.061		0.012	
Men's T-Shirt		0.653		
Women's T-shirt		0.075		
Kid's T-shirt		0.059		
Men's Zip Hoodie		0.116		
Women's Zip Hoodie		0.037		
Men's Cap	0.106			
Men's Cap Recycled Polyester		0.106		
Women's Cap	0.071			
TOTAL:	**0.978**	**1.442**	**0.161**	**0.031**

CHANGES:

- 0.381 tonnes nylon replaced with polyester.
- 0.106 tonnes nylon eliminated along with all neoprene and polyurethane.
- 0.408 tonnes of the polyester replaced with recycled polyester.
- 0.94 tonnes recycled polyester replaced cotton.

Final Material Totals

	2017 Total (Tonnes)	2018 Total (Tonnes)	Difference (Tonnes)	Difference (%)
PVC	107.69	85.71	21.98	-20%
Epoxy Resin	42.35	0.99	41.36	-98%
EPS	41.25	42.03	-0.78	2%
Polyester	40.79	28.11	12.68	-31%
EVA	19.52	2.43	17.09	-88%
ABS	15.64		15.64	-100%
Nylon 6	15.6		15.6	-100%
Polyurethane	9.36	6.6	2.76	-29%
Nylon	7.34	1.51	5.83	-79%
PE Foam	6.33	6.86	-0.53	8%
Recycled HDPE/LDPE Mix	5.43	5.43	0	0%
Polypropylene	3.08	3.17	-0.09	3%
Polysack	1.81	0.36	1.45	-80%
HDPE	0.81		0.81	-100%
TPU	0.41	0.41	0	0%
Neoprene	0.33	0.26	0.07	-21%
Spandex	0.17	0.16	0.01	-5%
Rubber	0.05	0.05	0	0%
Bioresin		43.17	-43.17	-100%
Akulon		17.4	-17.4	-100%
ABS (recycled)		15.89	-15.89	-100%
EVA (50% Recycled)		14.37	-14.37	-100%
RPET		13.71	-13.71	-100%
PVC		7.55	-7.55	-100%
Recycled Polyester		1.49	-1.49	-100%
Recycled HDPE		0.81	-0.81	-100%
Rayon		0.03	-0.03	-100%

Conclusion

Starboard's plastic usage totals as 317.96 tonnes in 2017 and 298.5 tonnes in 2018 of thermoplastics and thermoset plastics. Throughout this process, we came to terms with just how much we rely on plastic for our products. Our plastic usage goes beyond the obvious and notorious plastics such as of HDPE wrapping and plastic board insets. We recognize PVC, EPS, EVA, and other vital components of our products as plastic - and this has been a wakeup call for us. It has given us renewed drive and commitment to addressing plastics in the circular economy in the future. We have already highlighted the impact made between 2017 and 2018 as we work towards increasingly sustainable materials. Areas of improvement in which we will concentrate future efforts include:

- Inflatables
    - In 2018, our inflatables used over 75 ton of virgin PVC. Polyester dropstitch also constitutes a signicant proportion of the materials used in our inflatable boards. We are currently researching and developing methods replace or properly recycle virgin PVC materials. One major area of improvement for Starboard is in replacing virgin PVC and polyester with recycled alternatives, and working on recycling the boards that have already been created. These projects are in the works at Starboard but not yet feasible on a level to scale with our production.
- EPS
    - Our EPS blanks are precision molded to eliminate waste, but still use EPS that never biodegrades, even after the lifetime of the board has lapsed. We are currently testing and working on incorporating more recycled EPS into our boards, and investigating promising biological breakdown options.

- Recycling Used Boards
    - Starboards are made to last to maximize value for customers and for the environment. However, because of the nature of sporting equipment and the conditions thrill-seeking Starboard riders chase, there is a risk that the boards can be compromised. An important task not only for Starboard, but for the entire surf industry and its customers, is to properly recycle the boards. Many are repurposed as decorations, fencing, and other DIY projects. However, recycling the individual components of each board is not currently attainable on a level to scale with prodution and consumption. There is some current evidence that acetic acid can separate resin from components such as fiberglass and carbon fiber, and there are some species of mealworm that can consume and process EPS. However none of these current solutions are feasible at a scale that matches Starboard's production, let alone the entirety of the SUP industry. Here at Starboard we plan to continue to research how to recycle the components of our boards in order to address the circular economy.
- Education Outreach
    - Because of the outdoor nature of the watersports industry, Starboard has a captive audience of customers invested in environmentalism. We want to utilize that platform to the maximum extent possible to educate and mobilize watersports enthusiasts worldwide (see the Plastic Regulation Matrix and Starboard World Cleanup).
- Recycling
    - The recycling of wastes and everyday items used at HQ is an ongoing battle that roots in recycling capabilities of Thai waste management. Every day at headquarters we are working on minimizing the materials we use and recycling them properly - including coming up with innovative ways to recycle less common materials that are not recycled at typical facilites.