

# Selection of Equipment - Evaluation Panel Report

## 2024 Mixed Kite Event

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## 1 Introduction

Following the slate of Events approved by Council at the Annual Conference in November 2018, World Sailing invited Class Associations and manufacturers to tender for equipment to be selected for the **Mixed Kite event**, starting at the 2024 Olympic Sailing Competition.

The process for the selection is guided by World Sailing regulations. An Evaluation Panel formed with members of the relevant Committees evaluated the tenders against World Sailing Policies and the approved Equipment Criteria.

This report seeks to serve as guidance for the Equipment Committee in its task to make a recommendation to Council for the selection of equipment under regulation 23 for the Mixed Kite event.

## 2 Executive Summary

The evaluation followed the procedure stated in the Invitation to Tender. Three tenders applied to the process: the IKA-Formula Kite Class, Fly 4 all (Taroa) and Ozone Kites.

- The IKA represents five World Sailing Classes; Twin Tip Freestyle, Twin Tip Racing, Open, Kitefoil and Formula Kite. The Tender is only related to the IKA-Formula Kite Class and its Series Production Equipment scheme that can see any manufacturer that complies with measurements, quality and production requirements licensed.
- Ozone Kitesurf Ltd. is a kitesurf equipment brand mainly focussing on kites. *'Ozone submits its tender only for a RAM-Air foil kite as the kite is compatible with all foil boards in the market from other suppliers'* and is referring to the Formula Kite Class rules to cover other aspects of equipment. The company producing Ozone's kites is Parapex Co. Ltd. in Vietnam.
- Fly 4 All SA and its brand Taroa are producing hydrofoil systems and decided to withdraw their tender during the evaluation process.

### **Recommendation:**

Following the evaluation of the tender documents and having inspected the equipment at their 2019 World Championship, the Evaluation Panel considers that the IKA - Formula Kite tender is fully compliant with all the criteria requirements and recommends the selection of their equipment for the 2024 Mixed Kite event.

### 3 Evaluation

#### 3.1 Evaluation panel

The Evaluation Panel was appointed by the Equipment Committee and brought together different backgrounds including members from the Equipment Committee, the Events Committee, World Sailing's Technical and Offshore team and Board members:

Dina Kowalyshyn	Equipment Committee Chair, and Evaluation Chairman.
Torben Grael	Board Member, World Sailing Vice President
Cathy Mac Aleavey	Equipment Committee
Barry Johnson	Equipment Committee
Sofía Tedin	Events Committee
Jaime Navarro	WS - Head of Technical and Offshore
Hendrik Plate	WS - Technical Specialist

#### 3.2 Criteria

The tenders have been evaluated against World Sailing Policies and the approved Equipment Criteria around the following areas: Equipment criteria, Technical considerations, Event considerations, Cost, Durability, Sustainability and Market considerations. The Invitation to Tender document containing all related criteria can be found here:

[http://www.sailing.org/tools/documents/MixedKiteTenderinvite-\[24770\].pdf](http://www.sailing.org/tools/documents/MixedKiteTenderinvite-[24770].pdf)

#### 3.3 Procedure

The invitation to tender, published on the 12<sup>th</sup> February 2019 at the World Sailing website divided the evaluation process in two phases:

##### *'Phase 1*

*Document based evaluation of tenders against Equipment criteria and technical considerations, Event considerations, Cost, durability and sustainability considerations and Market considerations as described in part 3 of the document' (Invitation to Tender). 'The Evaluation Panel will shortlist the candidates to continue with Phase 2.'*

##### *'Phase 2*

*Shortlisted tenders will be requested to provide any additional information required to evaluate the tender. If the Evaluation Panel considers it a requirement, World Sailing Technical and Offshore Department Staff will visit production and/or assembly sites or proposed events for shortlisted tenderers.'*

The submitted documents were evaluated and following the withdraw of Fly 4 all, the Evaluation Panel concluded that:



- The tender of Ozone Kites considers the selection of the kites only. The regulation of other parts of the equipment is not included in the tender. Consequently, equipment criteria concerning Hydrofoils and Boards are not considered.
- The tender of Ozone Kites considers themselves as the sole supplier of Kites. Not aligned therefore with the equipment criteria approved in Submission 097-18 which seeks to allow racing with equipment from multiple manufacturers.
- IKA-Formula Kite Class tenders with their Series Production Equipment scheme that can see any manufacturer that complies with measurements, quality and production requirements licensed, including kites from Ozone Kites and hydrofoils systems from Taaroa.

Following Phase 1, the Evaluation Panel concluded that the tender from IKA – Formula Kite was the best option, well suited for the event and aligned with the Equipment Criteria. The Panel decided to shortlist IKA – Formula Kite into Phase 2 to clarify some areas of the tender and to visit one event to take further information into account for this report.

## 4 IKA – Formula Kite Equipment

In order to explain the registration scheme, it is necessary to differentiate the parts of the kite equipment. The following describes each part of the equipment and the class rule limitations.

### 4.1 Board (Hull)

Since the Equipment is mainly supported by dynamically forces generated by the hydrofoil most boards have barely any displacement. Consequently, the boards main purpose is to provide a platform to connect the athlete and the hydrofoil. The IKA – Formula Kite class rules limit the length to 1550mm, the width to 500mm and the weight to 2000g without restrictions regarding the building material. The board is limited to one per sailor at event but is not controlled through their Series Production Equipment scheme.

### 4.2 Kite (Sail)

Two different types of kites can be registered by manufacturers for the Formula Kite Class, Leading edge inflatable (LEI) Kites and Ram Air Kites. Due to the higher aspect ratios and consequently better aerodynamics Ram Air Kites are preferably chosen by the top athletes. Sailors are allowed to register up to four different sized kites at an event. The size ranges are as below:

Large:	Nominal Size of 15m or bigger
Medium:	Nominal Size of 11m to 15m
Small:	Nominal Size 11m or smaller
X-Small:	Nominal Size 9m and smaller

Sailors are free to pick their preferred kite during an event based on physique and wind conditions. Kites used in the IKA-Formula Kite Class must be registered equipment in the Series Production Equipment scheme.

### 4.3 Bar, Lines, Bridle (Running Rigging)

The bar is the handle a sailor uses to control the kite's movement and its angle of attack (power). Lines are split up in front lines, controlling the leading edge of the kite and back lines, controlling the trailing edge of the kite. Front and back lines are split to control the left and right half of the kite. The lines are connected to bridles which distribute the load to different points of each half of the kite and hold it in shape. The Formula Kite Class restricts the line length to 45m 'measured from the lowermost point of the rigging to any part of the kite'. Moreover, the line diameters are restricted to a minimum of 1.2 mm for front lines and 0.8mm for back lines. A trapeze quick release system is mandatory.

### 4.4 Hydrofoil system (Appendages)

The hydrofoil system is in addition to the Kite the main performance influencing component of the equipment. The system is limited to four parts; the Mast, which is the vertical fin connected to the board at the upper end and to the fuselage at the lower end, the vertical fuselage connects the Mast with the 'Frontwing' and the 'Rearwing'. Depending on the manufacturer, Fuselage, Front and 'Rearwing' are sometimes one part, called Glider. The Foil shape measurements are checked at events against the measurements of the model registered in the Series Production Registered scheme.

## 5 IKA - Series Production Equipment Scheme

The Formula Kite class rules define 'Series Production Equipment' as: *'Equipment of one manufacturer which is mass produced in a production run of at least 100 pieces per model/size and continuously made available for purchase worldwide without restriction until the end of the current Olympic Cycle with monthly production capacities of not less than 50 pieces. Each piece of equipment shall be produced using the same manufacturing specification and materials, be identical within production tolerances in all performance related aspects and comply with the measurements provided by the manufacturer.'*

The scheme is applicable to Kites and Hydrofoil systems. Other parts of the equipment are open to any manufacturer and controlled by other limitations in the class rules (Boards, Running Rigging).

Manufacturers have to pay a one-time administration fee of 500 EUR to the IKA to enter the application procedure.

Every Olympic cycle is split into 3 periods (dates are examples for the 2024 Olympic cycle and are updated after each period closing date):

- i. Application period: Closing date 1<sup>st</sup> May 2020
- ii. Evaluation period: Day after 2020 Olympic Event until December 2021
- iii. Licensed period: December 2021 until the Day after the 2024 Olympic Event

### 5.1 Application Period

*'During the application period, builders apply for licensing. This can happen at any time before the period closing date. Every applying builder is required to submit extended documentation, including a number of measurements which are made publicly available in order to allow sailors to control if their equipment complies with the building specifications and class rules.'*

*'Builders must include the following documentation with their application:*

- *A description of quality control methods at production including measurement protocols and procedures for each piece of equipment*
- *Quality management certifications, if applicable*
- *An overview of the distribution network*
- *A description of the workflow from order to delivery*
- *A description of the warranty for each piece of equipment*
- *A description of the workflow for warranty claims*
- *An electronic version of the equipment brochure including picture of the equipment as sold in retail*
- *Detailed information on materials used for every piece of equipment (type of glass, carbon, and other materials, resin) including lay-up as well as detailed plans / construction drawings*
- *A description of any sustainability programs'*

## 5.2 Evaluation Period

*'The evaluation period regularly starts the day after the previous Olympic Games. During the following 1.5 years until the period closing date, data is collected by the event equipment inspectors with regard to equipment reliability, breakage/equipment replacement during events, and measurements / tolerances / compliance with class rules. Annual factory visits (more often if necessary, and potentially replaced by the WS quality management system as per Olympic Classes contract) are conducted to ensure ongoing compliance with building specifications and materials used. The class also establishes information and statistics about equipment availability, warranty handling, and price development.'*

## 5.3 Licensed Period

*'In principle, all manufacturers that have successfully completed the registration process are offered a license to build the equipment. The granting of a license is only withheld if the manufacturer does not comply with the terms of the registration agreement, especially in terms of building specifications and tolerances, but also if continued worldwide availability is not guaranteed or the prices are increased above the agreed amounts. Builder would be required at this stage to sign the Commercial Undertakings. Builders furthermore are also required to consign a sample of the registered equipment as a reference. The policies to grant the license to the builder can be found in Annex 3' [\[see appendix A\]](#) ', and the decision to withhold a license is based on the data and experience collected during the Evaluation period.'*

## 5.4 Equipment Identification

To identify registered equipment (Kites and Hydrofoil Systems), registered manufacturers add "Registered Series Production Equipment" plaques (print on logo) to the equipment.

In addition, Hulls, Kites and Hydrofoil System masts require a class association sticker to be eligible to race. At event equipment registration, Kites, Hulls and Hydrofoil Systems are marked with event limitation marks when required.

## 6 IKA - Current Market Situation

*'Currently a total of 20 builders are licensed to build kites and 15 builders are licensed to build hydrofoil systems.*

*In the most recent registration cycle (with an application period closing date of 1 January 2017), the number of new or updated registrations was 6 builders for kites and 10 builders for hydrofoil systems.*

*The list of licensed builders and their equipment is available on the class website, [www.formulakite.com](http://www.formulakite.com)*

- *List of registered kites:*

*<http://formulakite.com/images/documents/registered%20kites.pdf>*

- *List of registered hydrofoil systems:*

*<http://formulakite.com/images/documents/registered%20hydrofoils.pdf>*

*<http://formulakite.com/images/documents/registered%20hydrofoils%20parts.pdf>*

## 7 IKA - Olympic equipment consideration

### 7.1 COMPLIANCE WITH EQUIPMENT CRITERIA

*'The proposed equipment complies with the requirements of submission 097-18 and consists of*

- *Number of hulls to support a "foiling kiteboard": 1*
- *Suitable for Men weight range men between 65kg to 85kg*
- *Suitable for Women weight range women: 50kg to 70kg*
- *RAM-Air (foil-kite system) with kite size for Men: 7-21 m<sup>2</sup> and kite size for Women: 7-21 m<sup>2</sup>*
- *Number of permitted kites per athlete at an event: 4 high performance, high aspect ratio kites.*
- *Number of permitted hydrofoil systems per athlete at an event: 1 high performance, high aspect ratio hydrofoil system.*
- *Same hydrofoil system, board and kites scheme for men and women.*
- *Suitable for competition at wind ranges between 5 to 40 knots.*
- *"Registered Series Production" Licensed Builder System'*

### 7.2 SUITABILITY TO OLYMPIC EQUIPMENT CONSIDERATIONS

*'The philosophy of the discipline of kiteboard racing is that sailors use their own equipment, provided by various brands. Other than a possible (and currently not existing) One Design option, Formula Kite registered series production equipment represents the pinnacle for this discipline of sailing.*

*Formula Kite equipment complies with the WS Olympic Equipment Considerations, specifically:*

- a) Kiteboarding in general and foiling kiteboarding in particular are currently the most diverse skills required in relation to the rest of the Olympic Sailing Programme. There is no overlap to other events currently on the Olympic Sailing Programme.*
- b) All equipment of one model is identical within tight production tolerances, and available to sailors worldwide. Different equipment models cater for a wide range of body physiques without affecting the overall performance around the course. The athlete skill wins the race, not the equipment.*
- c) Formula Kite equipment requires a high athlete skill as all power of the sail is transmitted directly through the athlete to the hull without support of masts, booms and standing rigging. Sailing one-point-foiling equipment requires highest skills and very fast reaction times. Sailing skills and tactical understanding are similar to other fast boat events. Having "built in" evolution between Olympic cycles ensures that equipment remains rewarding and challenging to sail.*
- d) The athletic requirements and reaction times to sail a hydrofoiling kiteboard result in an overall very young fleet. The average age of the top 10 in the men's Formula Kite world ranking is 22 years (Range: YOB 1995-2000) with a weight range of 69 to 85 kg (average 80 kg) and a size range of 168 to 198cm (average 184cm). For the women's top 10 the values are average age 20 years (Range: YOB 1992-2004), weight range 49-69 kg (average 59kg) and a size range of 158-180cm (average 171cm). Apart from the traditional pathway classes*





*like Optimist (several of the top Formula Kite sailors come through this pathway and have been top Optimist sailors, 29er World Champions, up to Match Racing World Champion Torvar Mirsky) sailors come into the Formula Kite class through a kiteboard equipment specific pathway, the TwinTip:Racing class which has been the equipment for the 2018 Youth Olympic Games, and is comparable to the Techno 293 class for windsurfing.*

- e) The world's best kiteboard racers compete in the Formula Kite class and see the Formula Kite class as the pinnacle of Hydrofoil Kiteboard Racing. Participation numbers are constantly growing, after the decision from November 2018 especially in the women's participation. Kiteboard racing shows the diversity of equipment used in the Olympic Sailing Programme*
- f) The Formula Kite class has a healthy circuit of racing between Olympic Games, from world and continental championships to regional tours and national level events, as well as the inclusion in the Sailing World Cup, Regional Games and other multi-sport events. Formula Kite class major events have a high level of media production and promotion and gain high interest from the media in general. Selecting Formula Kite registered series production equipment for the Olympic Games, consistency between the Olympic pathway and the professional pathway is ensured.*
- g) The mixed kiteboarding event ensures equal number of events/medals and sailors.*
- h) Equipment costs are comparably low for state of the art high- performance equipment, there are no development costs as all equipment is "off the shelf" and cannot be altered after having left the factory (except as permitted in the class rules), measurement costs are limited as generally the "day zero" concept is used at class events and equipment is controlled and certified at factory, coaching costs are limited as the same equipment is sailed by men and women, race organisation is affordable as events can be held "off the beach" and do not require a marina. Race official costs are similar to other events (no rule 42, judges do usually not go afloat, reducing the event costs), television and other media costs are comparable to other events, however all race areas are close to shore and livestreaming and filming can be done partially with land-based cameras.*
- i) Formula Kite equipment may evolve between Olympic cycles through the addition of new licensed builders and models within the limitation of the class rules. Equipment is "frozen" for the whole 4-year Olympic cycle to ensure planning safety and protection of MNA and sailor investment, and there is a big second-hand market to ensure continuity of investment. Formula Kite registered series production equipment is available already now "off the shelf" while a possible one design class would need to be developed including all the problems seen in recent evaluations.*
- j) Formula Kite equipment is already used in Regional Games and other major multi-sport events*
- k) Equipment is easy to transport as checked in luggage in airplanes and does not require shipping.*
- l) FRAND terms for any interested builder worldwide potentially minimizes environmental impact through reduced shipping etc.'*

### 7.3 Suitability to Event Considerations

*‘Formula Kite equipment is suitable for the mixed kiteboarding event as the equipment is already widely used in individual competitions around the world and only format adjustments are needed. The Formula Kite class has conducted successful tests for the mixed kite relay format on national championship level and will continue testing and developing format details throughout the 2019 major events of the class. The class is also developing the required changes to the RRS for the relay format for consideration by the Racing Rules Committee.’*

#### 7.3.1 Fleet size development:

Year	Fleet Size	MNAs	Continents
2016	114	34	6
2017	103	31	5
2018	163	41	5

*The class is only tracking the rankings based on World and Continental Championships, therefore the above numbers say only little about the true fleet size. National level events often have between 20 and 50 competitors’*

#### 7.3.2 Membership and National Class Associations

*‘In 2018 there were a total of 59 active national class associations, of which 47 were paid up members*

*(AND, ANT, ARG, AUS, BEL, BRA, BUL, CAY, CRO, CHN, DEN, EGY, EST, ESP, FIN, FRA, GBR, GER, GRE, HKG, HUN, IRI, ITA, ISR, JPN, LTU, MEX, MAR, MON, MYA, NED, NZL, PHI, POL, POR, PUR, RUS, RSA, SLO, SUI, SWE, THA, TUN, TUR, UAE, UKR, USA) and another 12 being affiliated members with limited membership rights. See:*

*<http://internationalkiteboarding.org/membership/national-class-associations/list-of-members>*

#### 7.3.3 Availability and Accessibility

*‘Formula Kite equipment is widely sold via online orders directly from the manufacturers. Most such manufacturers guarantee delivery anywhere in the world via UPS within 14 days. Manufacturers with distribution networks are spread worldwide.’*

#### 7.3.4 Pathway Classes

*‘Besides traditional sailing classes pathways, the IKA TwinTip:Racing class (the equipment used in the 2018 Youth Olympic Games) serves as kiteboarding specific pathway.’*

#### 7.3.5 Charter Equipment

*‘Charter equipment is in principle possible through above distribution and dealer networks, however chartering is not part of the philosophy of the class as all equipment is “bring your own” which is cost sensitive for event organizers and because equipment is taken onto a plane as checked luggage. A part of the success of the Formula Kite class is that different equipment models cater for different body physiques, and chartering does not cater for this concept.’*

## 8 IKA - Cost

The main items of equipment required to compete in a Formula Kite event and retail prices excluding tax are:

- Board with foot straps (850-1100 EUR)
- Hydrofoil (2000-2500 EUR)
  - Mast
  - Glider ('Frontwing', 'Rearwing', Fuselage)
- Set of 4 Kites (2000-2200 EUR/Kite, 8000-8800 EUR/Set)
  - X-Small
  - Small
  - Medium
  - Large
- Control Bar and Lines (200-300 EUR)

The price for a complete set of Equipment is consequently about 11000-12700 EUR. Retail prices stated in the tender document were general higher than retail prices found online. Moreover, the tender document states several reduced prices for MNAs or full equipment sets which have to be confirmed.

*'Note: a complete set of Formula Kite equipment includes 4 kites (sails), and every sail only gets used 25% of the time.'*

*'Costs for transportation and storage of equipment are very low. A board bag capable of carrying all equipment (hull, hydrofoil system, 4 kites, control bar, accessories) as checked in luggage (23kg standard bag) on an airplane costs in average less than 200 EUR.'*

*'Equipment is generally long lasting, and a strong second-hand market exists. While top sailors are sponsored and therefore replace equipment (especially kites) more frequently, even in the middle of the fleet sailors are using their kites for a full year or longer.'*

*Equipment in moderate condition is sold 20 – 30 % off the retail price, resulting in MNAs being able to replace used equipment at very moderate costs (it is very common that sailors sell their equipment for the same price to the second-hand market to which they are able to re-buy new equipment at their discount rate).*

*Equipment damage is as documented by technical committee equipment change logs from all major events. Common damage is broken hydrofoil parts as result of running aground when coming ashore, and broken kite bridles after tangles.'*

## IKA – Appendix A - Licensed Builders Policy

Extract from the tender:

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### *2020-2024 Licensed Builders Policy*

#### **Introduction**

*This class policy sets out the criteria under which the Formula Kite class will recommend to World Sailing which builders should be granted a license to build equipment eligible for racing in the Formula Kite Class. The IKA Formula Kite Class rules regulate the equipment used in kiteboarding course racing (“Formula Kite”) events.*

*The aim of the rules is to enable competitors of different weight and size to compete on affordable and universal sailing crafts that are regarded as “Formula Kite” on an equal playing field.*

#### **Background – from the Formula Kite Class Rules**

##### B.1.1.b) (Terminology)

*Series Production Equipment: Equipment of one manufacturer which is mass produced in a production run of at least 100 pieces per model/size and continuously made available for purchase worldwide without restriction until the end of the current Olympic Cycle, with monthly production capacities of not less than 50 pieces. Each piece of equipment shall be produced using the same manufacturing specification and materials, be identical within production tolerances in all performance related comply with the measurements provided by the manufacturer.*

##### B.1.3 Timelines affecting Equipment Eligibility

###### *a) Application period*

- *Period closing date\*\*: 1st May 2020\**

###### *b) Evaluation period*

- *Period starting date: Day after the 2020 Olympics\**
- *Period closing date: ‘Equipment selection date’ in December 2021\**

###### *c) Licensed period:*

- *Starting date: ‘Equipment selection date’ in December 2021\**
- *Closing date: Day after the 2024 Olympics\**

*\* these timeframes will be updated accordingly to adapt to every Olympic cycle.*

*\*\* For the avoidance of a doubt, an equipment registration application is only complete when complying with the requirements of the application process, including but not limited to world wide availability.*

#### B.1.4 Equipment Eligibility

- a. Only registered series production foil systems and kites listed on the relevant registered series production list as eligible to race, with an eligibility date defined as per the provisions of rules B.1.4.(b)-(e), are eligible for racing. The registered series production list is available at the class website, [www.formulakite.com](http://www.formulakite.com).
- b. Any equipment registration completed after the “Application period” closing date defined in Rule 1.3(a), shall only be eligible for racing after the licensed period closing date as defined in Rule B.1.3(c).
- c. Prior to the “Evaluation period” defined in Rule B.1.3(b), only equipment listed with an eligibility date prior to the “Evaluation period starting date” defined in Rule B.1.3(b), shall be eligible for racing.
- d. Until the end of the “Evaluation period” defined in Rule B.1.3 (b), only equipment registered prior to the “Application closing date” defined in Rule B.1.3(a), shall be eligible for racing.
- e. During the “Licensed period” defined in Rule B.1.3 (c), only equipment models selected and licensed by the closing date defined in Rule B.1.3 (b) as per the class equipment licensing policy document, shall be eligible for racing.
- f. Separate equipment control procedures and agreements may apply as agreed between World Sailing, the manufacturer and the class.

#### **Application for registration of equipment**

The application process initial application, documentation, factory inspection and verification of world wide availability.

Furthermore:

- Full set of measurements in compliance with class rules
- Full declaration of building materials and building process / lay-up
- Retail price / MNA price
- Average world wide delivery times
- Guarantees for building capacities and world wide availability
- Quality management processes and certifications
- Warranty conditions and warranty claim workflow
- Distribution network

The application process must be completed before the application period closing date. Builders are reminded to make arrangements for the required factory inspection with class measurers in time, and that equipment must be available for purchase and delivery within the timeframes guaranteed by the manufacturer by the application period closing date.

The class recommends to builders to submit all documentation at least one month before the application period closing date to ensure processing and availability of a class measurer for factory inspections.

#### **Licensing**

The purpose of the evaluation period in Class Rules B.1.3(b) and B.1.4(d) is to ensure that all builders that have registered equipment for use in the Formula Kite class comply with the requirements of CR B.1.1.b), especially with regard to production tolerances, quality management and world wide availability. Keeping the equipment affordable is one of the key aims of the class to ensure universality and growth, especially in emerging and developing regions.

Compliance with Fair Reasonable And Non-Discriminatory (FRAND) terms is ensured by accepting all professionally qualified builders (see application process) that comply with the requirements for building Olympic equipment. This also ensures that the class has a wide range of builders in all parts of the world, further reducing costs while ensuring high manufacturing standards through competition between builders.



Criteria leading to the decision not to recommend a builder for licensing include:

- *Equipment is not available to purchase world wide within the timeframes guaranteed by the builder.*
- *Non-compliance with building specifications recorded by class measurers during major Formula Kite events.*
- *Proven history of breakages / equipment replacement above acceptable standards recorded by class measurers during major Formula Kite events.*
- *Retail price in excess of the average retail prize +50% of all equipment of the same type registered during the applicable application period.*

*Licensed builders agree to an annual factory inspection by a class measurer, to provide a sample piece of equipment against which reference data can be taken at a later point in time, and additional requirements (including licensing and quality management payments) as outlined by World Sailing.*

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