



## **Minutes of Meeting**

# **FINA Swimwear Approval Committee Meeting with the Manufacturers**

**November 22, 2019**

**Lausanne, Switzerland**

Meeting SAC and Manufacturers meeting 2019  
Date 22.10.2019  
Time 10:00 – 16:00  
Location The Olympic Museum, Lausanne, Switzerland

## Meeting Notes

FINA Swimwear Approval Committee was represented by:

Prof. Jan Anders Mansson, FINA SAC Chairman  
Mr. Jean-Pierre Morand, FINA Legal Counsel

The meeting was led by Prof. Jan-Anders Mansson, SAC Chairman.  
Meeting Notes by Magali Louis , Head of Research and Education, AISTS

## Participants

Jan-Anders Manson – SAC Chairman	Pavel Medvedev - FINA office
Jean-Pierre Morand – FINA	Magali Louis – AISTS
Dan Meinholtz – A3 Performance	Anna Giesler - Purdue (invited)
Domenico Fioravanti - AKRON	Henar Alonso-Pimentel - AGOSWIM
Roberta Ceruti – AQUARAPID	Luca Armillotta – AQUALUNG
Greg Steyger – ARENA	Michele Olmo – AQUALUNG
Carmen Reitzner – FASHY	Stefano Geminiani - AQUARAPID
Martin Fahnemann – FINIS	Mirella Becucci – C.I.A. Srl
Maxim Gilde – Mad Wave	Peter Uetzmann – FASHY
Hiroyuki Tanaka – MIZUNO	Jessica Harrison – Mako
Maren Ferraro – sailfish	Kenji Otake - MIZUNO
Frank Horter – TYR	Rob Blenkinsopp – SPEEDO

**Guest:** Emma Watson – WFSGI

## Agenda

### **10:00 – 12:30 Meeting Part 1**

- I. Welcome and introduction
- II. Information and discussion on issues from the submissions 2019
  - General
  - Specifics
- III. SAC report on scientific Research, testing of fabrics
- IV. Follow up from the last meeting

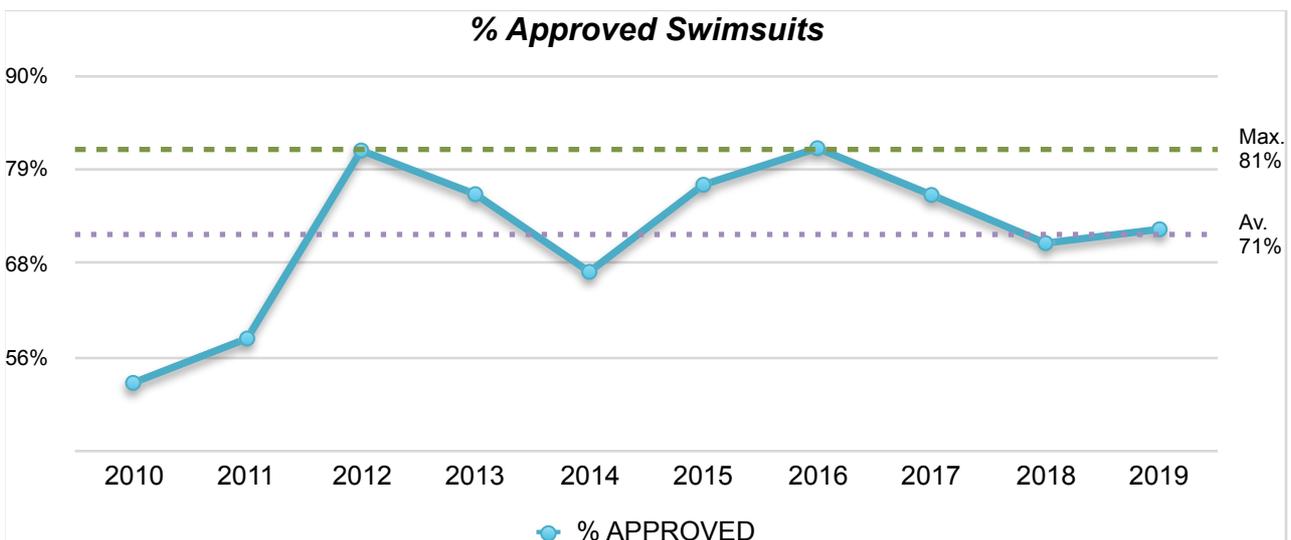
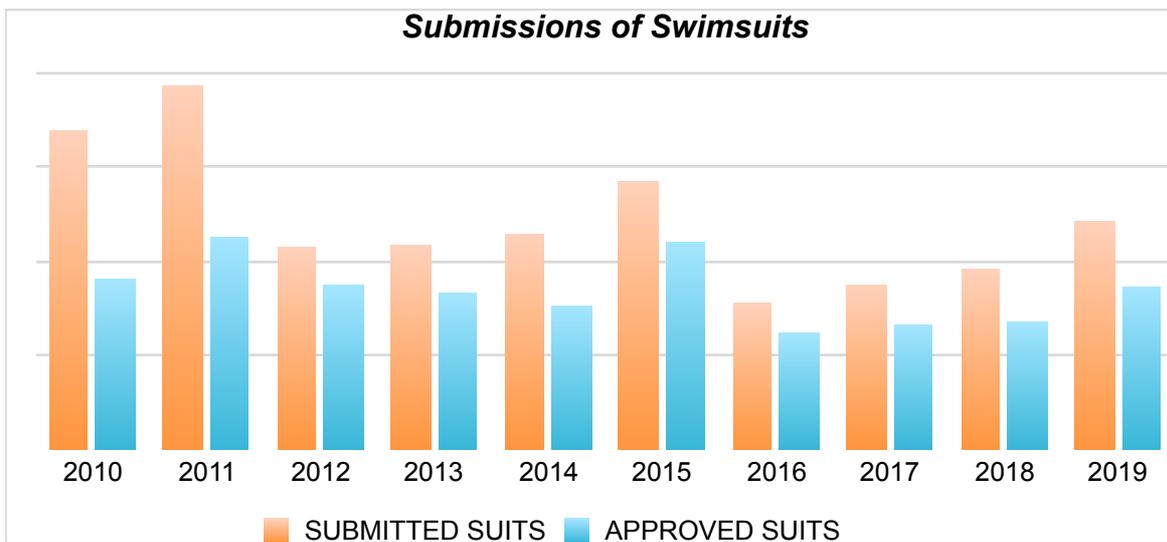
### **13:30 – 17:00 Meeting Part 2**

- V. Open discussion on approval procedure and rules
- VI. Submission procedure during 2020 (poolsuits and wetsuits) & Pre-avis service
- VII. Q&A
- VIII. Closing

## I. WELCOME AND INTRODUCTION

## II. INFORMATION AND DISCUSSION ON ISSUES FROM THE SUBMISSIONS 2019

### 1. Swimsuits (poolsuits)

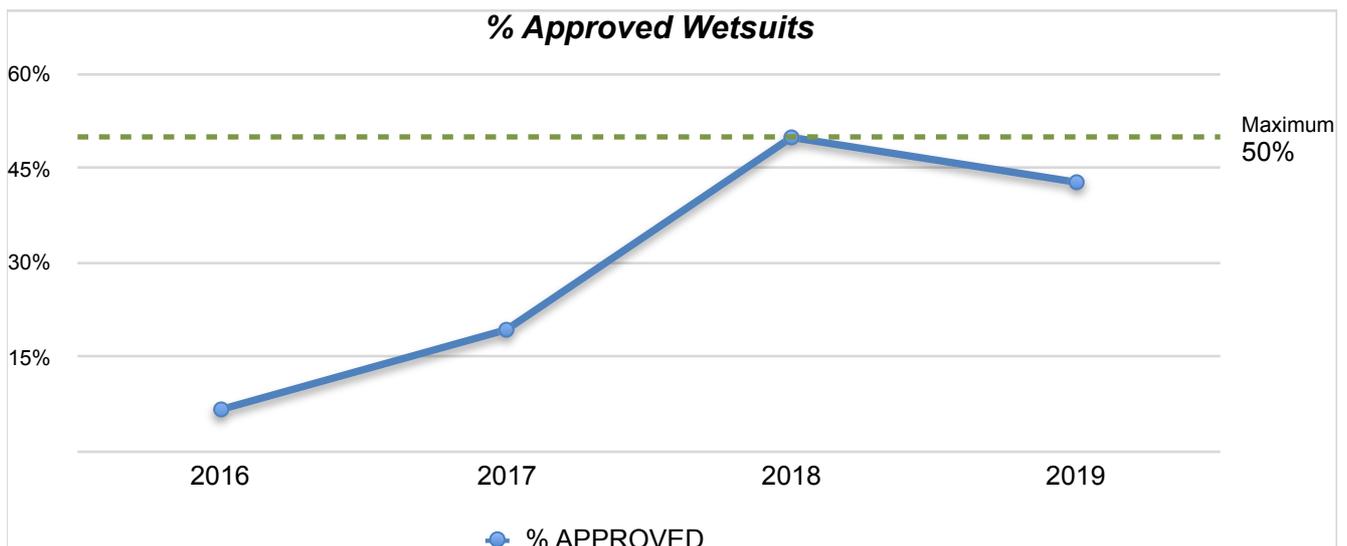
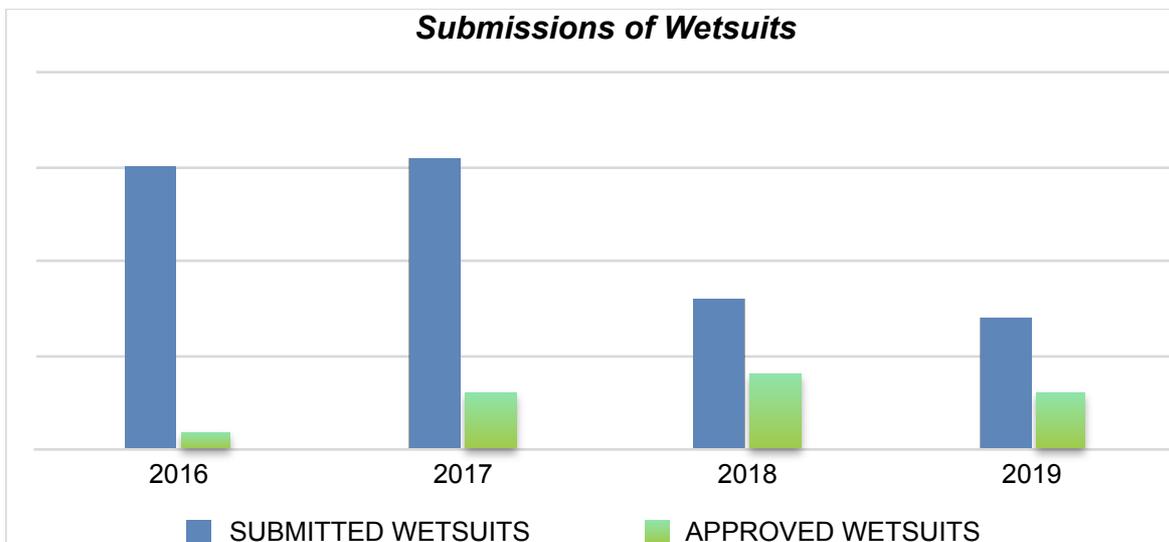


Percentage of successful approvals for the swimsuits is in average above 71%, and shows a tend to be about 80 %. This level demonstrate that established rules and requirements for approval are well followed and respected by the manufacturers.

During 2019, the following main issues were observed by the SAC in submissions of swimsuits:

- Excessive number of seams
- Non-functional seams/reinforcement tapes
- Parallel seams with not sufficient distance in-between
- Permeability
- Fabric consistency: permeability non-stretched - fabric versus suit

## 2. Wetsuits



Vast majority of wetsuits are failing because of thickness of materials (not the design)

During 2019, the following main issues were observed by the SAC in submissions of wetsuits:

- Thickness of material above / below the limit permitted in the area
- Technical drawings submitted do not correspond to actual product sample

Furthermore the manufacturers were reminded on important issues:

- Flatness of material not respected (e.g. ruffles on the forearms)
- Coverage not respected (shoulders not covered)

Concerning technical drawings, it is reminded that the exact wetsuit design needs to be illustrated on a drawing/sketch, with a clear indication of location and thickness for each panel /pattern used in construction of wetsuit.

It was clarified that the thickness measurements are done on finished garments. Therefore, it is not required to provide material samples.

### 3. Reminder of the rules and approval procedure

#### Explanation of the FRSA and clarifications

It was mentioned that the first version of the FRSA was released in 2009, since then SAC has issued several necessary clarifications and additional interpretations to the rules. In principle no existing criteria for approval are planned to be changed or affected, and procedure for approval will remain the same as described in the current edition of the FRSA.

The manufacturers were reminded that the original tests / controls/ checks of the samples submitted for approval are done at the laboratory (currently laboratory at the AISTS), then the results are presented to the SAC members for final discussion and decision. Every suit is reviewed by all the members of the SAC, sometimes examination of samples and results of tests can lead to 30min discussion., before final decision on approval status is mutually agreed by the SAC Members.

#### Thickness and permeability

##### > Pool Suits

Maximum/minimum thickness/permeability values for approval are as stated in the FRSA and remain unchanged:

- Thickness should be below **0.80 mm** (non-stretched)
- Permeability should be above **80 l/m<sup>2</sup>/s** (25% stretched)

Tolerance post-approval & post-production:

- Thickness within 0.76 - 0.80 mm range
- Permeability within 80 – 86 l/m<sup>2</sup>/s range

##### > Wetsuits

Vast majority of wetsuits are failing because of thickness of materials (not the design).

Maximum/minimum values for approval remain unchanged:

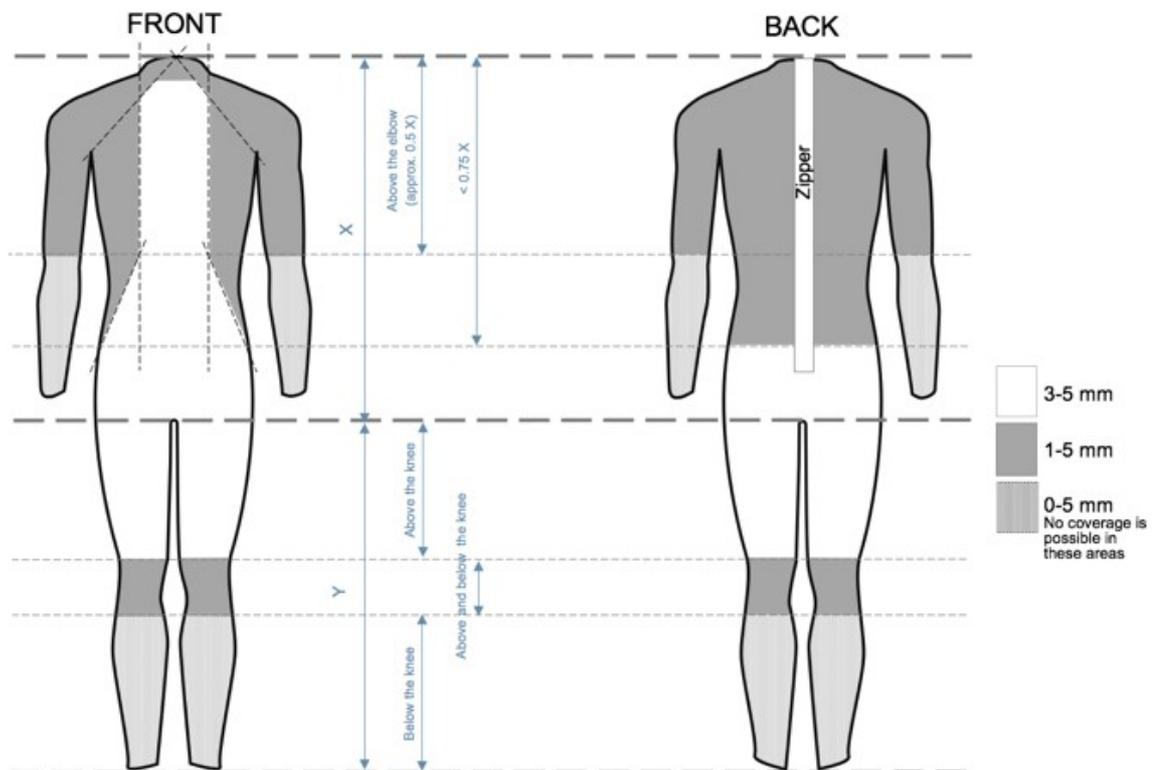
- **5.0mm** Max Thickness OK
- **3.0mm** Min Thickness OK
- **1.2mm** Min Thickness OK

The table below gives a guideline to the manufacturers with regards to material (total thickness) ensuring that the final thickness on finished garments is compliant:

#### Wetsuits - Thickness and tolerances

Chosen Nominal Material thickness (mm)	Fabrication tolerances (+/-%) 10	Upper / Lower bound (mm)	Measurement tolerances (+/-mm) 0.2	Upper-Upper / Lower-Lower bound (mm)	Rounded limit values (mm)	Reached limits
<b>For max 5.0mm</b>						
	Upper bound	4.40	Upper/Upper bound	4.60	5.0	Max thickness OK
			Upper/Lower bound	4.20		
<b>4.00</b>						
	Lower bound	3.60	Lower/Upper bound	3.80		
			Lower/Lower bound	3.40		
<b>For min 3.0mm</b>						
	Upper bound	3.85	Upper/Upper bound	4.05		
			Upper/Lower bound	3.65		
<b>3.50</b>						
	Lower bound	3.15	Lower/Upper bound	3.35		
			Lower/Lower bound	2.95	3.0	Min thickness OK
<b>For min 1.0mm</b>						
	Upper bound	1.65	Upper/Upper bound	1.85		
			Upper/Lower bound	1.45		
<b>1.50</b>						
	Lower bound	1.35	Lower/Upper bound	1.55		
			Lower/Lower bound	1.15	1.2	Min thickness OK

The following guidelines for coverage and measures were reminded to the manufacturers:



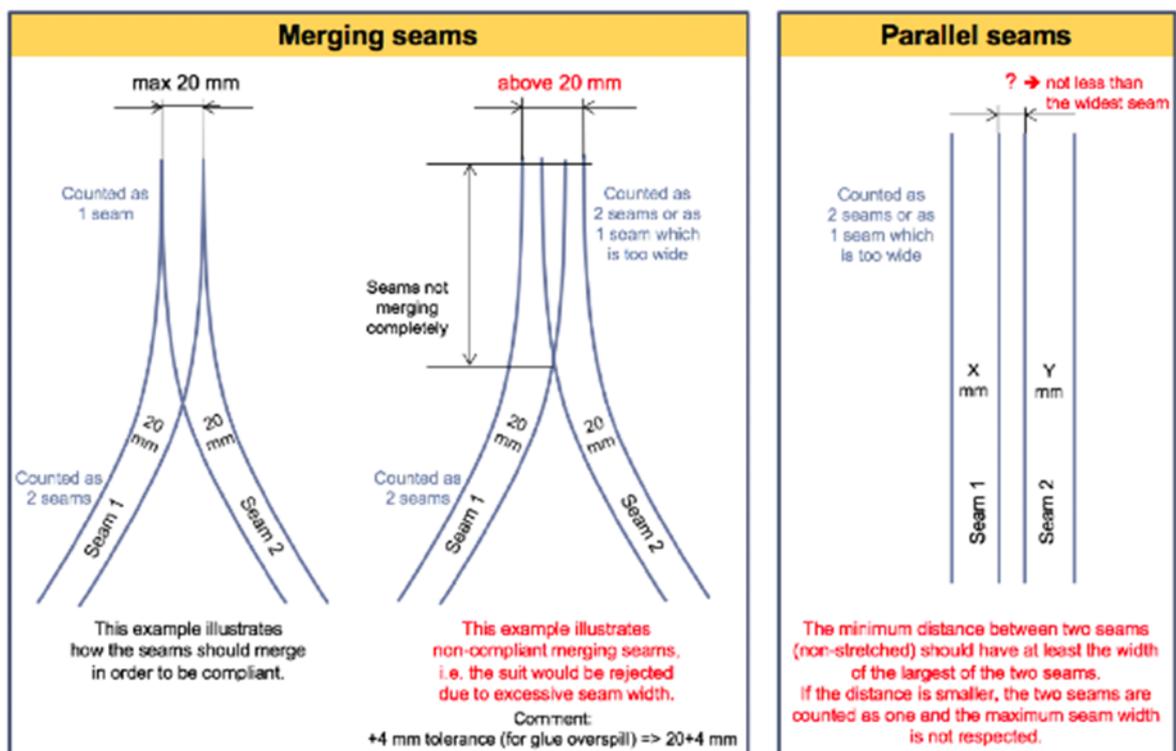
Material used for wetsuits must have thermal insulation properties (for example foam of polychloroprene (Neoprene) or of polyurethane or other material with similar insulating properties. The material can be multilayered, with non-water permeable layers. The material cannot contain injected gas. The total “overall thickness” of material(s) is measured. The “overall thickness” includes all the different layers used in creation of the “material”, not only the layer of “rubber”.

It was explained that the measurements are done in accordance to procedure described in the FRSA, specifications according to ASTM D3767 – 03 (2014) disk diameter: 11.3mm +/- 0.05mm pressure: 10 +/- 2 kPa. The maximum/minimum values used in the approval process of wetsuits remain unchanged.

**Width of seams and parallel seams**

A seam is considered functional when it combines two different suit parts and/or two fabrics. The definition is taken into account, to prevent a seam running across the same fabric simply to reinforce this material. The strip of glue attaching the lining to the shell fabric is considered as an element of the seam, therefore its width is counted in the overall seam count.

**Width of seams and Parallel seams**



**Seam count**

The guidelines regarding seam count was first shown at the manufacturers meeting on 11th November 2015. The seam count approach was presented again to the manufacturers. Everyone is clear on this matter. Edge seams are not counted in the overall count of seams, however should follow edge seams rules (max. width). This includes the seams at the edge of women’s open back suits.

### III. SAC REPORT ON SCIENTIFIC RESEARCH, TESTING OF FABRICS

***“Device design and measurement of permeability on competition swimsuits under FINA Rules”, by Anna Giesler, Materials Science and Engineering at Purdue University, Advisors: Dr. Jan-Anders Mansson and Dr. Joshua Dustin.***

Anna Giesler made presentation of the results from the Research including conclusions and plans for future work considered based on outcome from the study.

- Manufacturers agreed the results of the study to be published. It is important that in any text of publication none of the manufacturers, brands or product names should be mentioned or given reference to.
- To validate the Model of stretching device it will need to be validated.
- The study will continue to be carried at Purdue University and the manufacturers will receive future updates at next upcoming meetings.

A copy of presentation is distributed directly to the attendees of the meeting.

### IV. FOLLOW UP FROM THE LAST MEETING:

- Consistency alignment between approval testing and manufactured suits
- Need for an adaptation of testing rules
- Swimsuits recycling – study still to be developed – pending
- Wetsuit issues related to earlier presentation by the Medical Committee.
  - *Shoulder injuries*
  - *Overheating*
  - *Neck injuries*
  - *Heat loss*
  - *Water temperature* – all these points have been discussed by the FINA medical commission

Awaiting recommendations from Medical Committee for potential next step and action.

### V. OPEN DISCUSSION ON APPROVAL PROCEDURE AND RULES

#### ◆ **Rules (modifications and adjustments):**

- Stretched vs non-stretched - SAC plan to present results from respective study at the next manufacturers meeting, as long as such research will be completed.
- New equipment – FX 3340 MinAir and Stretching device to be acquired / developed) The testing procedure described in the FRSA will be amended accordingly.
- Marking of caps and goggles. Artwork can be different than the one for suits. FINA will propose design for the “FINA Approved Label” for the caps. Marking of goggles is still under discussion, considering difficulties in placing any mark (due to limited surface that can be available for placing the mark).

#### ◆ **Rules (overall)**

- Wetsuit (low temperature) – waiting for results from the scientific study on low temperature initiated by FINA.
- Wetsuit thicknesses and location

◆ **Testing procedure** (measuring equipment)

- Next generation Permeability Tester - have been developed and released by supplier (Textest AG). The previous model is no longer available for purchase. New Min Air machine is now used by the laboratory, with intensive verification tests against the “old”. Until now the “Min Air machine” measures the same, consistent results compare with the “old” machine. ...
- To increase occurrence of the measurements, there is intention of increasing pressure of air flow ( higher that 20 Pascal). Potential small metal mesh to be added to eliminate stretching by the forced air during measurement.

◆ **Submission and schedules**

- Tracking of submission state – online submission tool. Track submission as they go through. The manufacturers want to know where their submission is at (similar to DHL tracking system online tool). What the status is whether it is, in the lab or still at FINA etc. FINA office would be happy to receive any input.
- Proposal by the WFSGI on the dates for official Submission and Publication of the Approved List:

	<b>Year 1</b>	
<b>Submission 1</b>	-	September 1 <sup>st</sup>
Results to Manufacturers	-	November 1 <sup>st</sup>
	<b>Year 2</b>	
<b>Submission 2</b> (and resubmission)	-	February 1 <sup>st</sup>
Results to Manufacturers	-	April 1 <sup>st</sup>
<b>Resubmission</b>	-	May 1 <sup>st</sup>
Results to Manufacturers	-	July 1 <sup>st</sup>
 <b>Publication date</b>	 -	 September 1 <sup>st</sup>

- The manufacturers were reminded that any potential change of the rules should respect general principle for product availability of the market, to be available at least 6months before the competitions start.
- Any rules change should be approved by the FINA Congress. The next FINA General Congress will be held in July 2021.
- 2021 submission 1st February and publication of 2020 as usual with Approval April 1st
- 2021 submission 1 September 1st and Publication September 1st of February 1st
- Wetsuits will be aligned with Swimsuits.

◆ **Wetsuits:**

Issues raised by manufacturer:

- Measurement technique and tolerance value was discussed with respect to the metrology equipment used and the specifics of the wetsuit material
- Difference with measurement duration and temperature
- Possible tolerance value approach was discussed and referred to earlier meeting notes (see above).
- To be considered is an alignment of measurement technique between FINA and the wetsuit manufacturers

## **VI. SUBMISSION PROCEDURE DURING 2020 (POOLSUITS AND WETSUITS) & PRE-AVIS SERVICE**

### **Application process online**

The process is being developed. The manufacturers were reminded that the “Submission Date” is the last day when applications have to be completed (samples to be received by the FINA office, contribution as per FRSA to be duly paid). After the deadline, on-line application tool will be closed, and no new applications will be accepted.

Samples of fabric – to be provided as per FRSA. The fabric samples should be of the same material (the same colour) as used in construction of swimsuits. The laboratory also performs additional tests ( microscope ), to check if the fabrics are identical.

### **Invoice**

Official invoice for payment of contribution can be issued only after the applications and samples are received and registered for the submission. Therefore can be delayed for one week after the deadline of submission. Proforma invoice is used for payment advise, and can be provided to manufacture any time upon request.

### **Sketches**

The technical drawings / sketches are mandatory required as part of each application, therefore such drawings should be uploaded through on-line platform at the time of application. The drawings should include necessary details as indication of material(s), seams, pattens.

### **Marketing / Advertising rules**

The FRSA do not regulate directly issues on markings (team, emblems, manufacturer markings, sponsor markings). Such are subject to the application of BL 7 and the permitted markings may vary depending on the events. However, the FRSA address markings (including also technical markings) in connection with their potential relevance from the point of view of the approval criteria (notably thickness and permeability). Branding has to respect the rules for marketing and advertising applicable at the competition. FINA courage the manufacturers to respect applicable rules and help the athletes not to face any difficulties while attending and competing at the events.

### **IOC rule 50**

The IOC rule 50, regulations on use of commercial identification and marking on sport wear and equipment, for OG in TOKYO 2020, is in line with the FINA rule BL7 and the same as in Rio 2016. The final document will be available for the NFs and NOCs. The document will be also available from the FINA website:

### **Distribution list**

More than 114 brands with 1600 products are on the list. During the year 2020 FINA will prepare and distribute respective lists of products to each Manufacturer for verification of products and commercial names.

### **Modifications**

Recently FINA received several requests for modifications of previously approved products. Most of requests are declared as required modification for improvement of quality, production optimisation etc..

FINA will continue to accept such applications, but only during official submission/resubmission dates. Approval of modification, if it was confirmed by SAC as minor

amendments, will remain free of any payment, however FINA will only accept modification on garments approved within the last 2 calendar years. For all other cases the product will be considered as a new and will require to be submitted according to standard procedure as stated in the FRSA.

**Applicant:**

It was reminded that according to the clause 3.2.1 of the FRSA - the Applicant shall be the company which actually markets the corresponding swimwear to its end-users through customary sales channels (wholesalers/retailers/direct sales), respectively sells and/or supplies the same to competitors and teams.

Manufacturers acting as subcontractors for one or more other companies cannot apply for approval of the swimwear supplied to other companies. If a specific model is manufactured and supplied to different companies which then market or supply it, an approval shall be applied for by each of these different companies irrespective of the fact that the models marketed or supplied by these companies may have the same manufacturing sources.

If the same company or companies belonging to a unique group of companies market or supply the same swimwear model under different trademarks, a single application can be submitted on behalf of the company and/or on behalf of the group.

**Pre-Avis Tests:**

Following the practice of pre-avis tests, during 2020 all the manufacturers will receive opportunity for pre-avis tests of the fabrics and fabric combinations. The FINA Swimwear Approval Committee (SAC) envisages conducting two pre-avis testing sessions during 2020.

- The first pre-avis session, April, 2020 (the dates and all additional information will be sent in due time)
- The second pre-avis session: November 2020 (the dates and all additional information will be sent in due time)

The testing requests will be subject in each case to adequate advanced notice and can be limited to a reasonable number of testing requests per manufacturer.

**General Communication :**

During mass e-mail distribution, sending official communication to the Manufacturers, many e-mails bounce back as the person has left the company or e-mail address have been changed. FINA asks the Manufacturers to find a way to maintain correct distribution list. WFSGI will come back with some proposal.

The Manufacturers were reminded that all official documents and information regarding the FINA Swimwear Approval can be found on the official FINA website, under direct link as: <https://www.fina.org/content/fina-approved-swimwear>

***The next SAC meeting with the manufacturers is planned for December 2020. The exact date and place of the meeting will be communicated in due time.***

The meeting ended at: **16:00**

Lausanne, le 23.10.2019