

INTRODUCTION

Most table tennis equipment is provided by club or competition organisers, and over the years it has remained fundamentally unchanged. Although the racket is the player's choice, it too remained unchanged during the ITTF's first decades. However it then appeared that a modification to the characteristics of the racket could mean the difference between victory and defeat. The subsequent decades have accordingly seen continual development.

A system of ITTF authorisation of racket coverings has been introduced in order to ensure that any future changes are to the benefit and not the detriment of the sport. Hence important changes have been made to the Laws of Table Tennis and the Regulations for International Competitions.

This leaflet sets out the current Laws and Regulations, defines some of the terms used and lists some additional criteria for ITTF authorisation of racket coverings and thereafter entering the List of Authorised Racket Coverings (**LARC**).

LAWS

The racket must comply with paragraphs 2.4 and 3.2.1.3 in *The Laws of Table Tennis* and the *Regulations for International Competitions*, respectively.

DEFINITIONS

"4.0 mm" maximum thickness of sandwich **rubber** ([Law 2.4.3](#)), and

"2.0 mm" maximum thickness of pimpled **rubber** ([Laws 2.4.3](#) and [2.4.3.2](#)) will be interpreted statistically to mean 4.0 and 2.0 mm respectively; implying that these limits are absolute values, and on no part of the playing surface on a racket covering should these limits be extended. These thicknesses refer to the total of the racket covering including any reinforcement in the rubber (for instance textile) and any adhesive used to attach it to the blade.

"Supplier" and **"Brand"** ([Regulation 3.2.1.3](#)) refers to the supplier name and brand name, respectively, as they appear in the rubber mould and the LARC.

"Bright red" ([Law 2.4.6](#)) is defined on the Munsell system by three co-ordinates:

Hue:	4.0 - 6.5 R
Value:	min. 3.1
Chroma:	min. 7.5

Colours for red top sheets are measured on a white background, as complete racket coverings, i.e. with all colours of sponges the racket covering will be sold with. Red top sheets alone will be measured only upon the supplier's request; ref. Konica no.1864-721 (CM-A101W).

"Cellular rubber" ([Law 2.4.3.2](#)) is also known as sponge.

"Continuity" ([Law 2.4.5](#)) implies that each layer shall be continuous; for instance, a blade consisting of one type of plywood in the centre and another type at the edge would not be considered to be continuous. It is accepted that the veneers of plywood are normally made by edge-gluing pieces together to make a continuous sheet; the resulting joints may appear in the blade, but joints in more than one direction are not permitted, and neither are joints that extend from one face through to the other.

"ITTF logo" ([Regulation 3.2.1.3](#)) is to be used on all authorised racket coverings, and within a frame for new and changed racket coverings. Ref. C. and D.4. below.

"ITTF number" ([Regulation 3.2.1.3](#)) is the unique identification for new racket coverings.

"List" ([Regulation 3.2.1.3](#)) is the List of Authorised Racket Coverings (**LARC**). It has a validity period specified in the header.

"Matt" ([Law 2.4.6](#)) implies that the rubber will be considered to be unacceptable if the gloss of "pimples-in" rubber or of either the base of "pimples-out" rubber or the tops of the pimples are so high as to permit the contours of a light-source to be distinguished in its reflection. See B.1.4.

"Natural wood" ([Law 2.4.2](#)) implies **continuity** throughout the blade; this permits plywood but not, for example, particle-board, flake-board and other composites.

"Ordinary pimped rubber" ([Law 2.4.3.1](#)) and **"Sandwich rubber"** ([Law 2.4.3.2](#)) can both be referred to as **"Racket coverings"**; the rubber, with or without a sponge underneath, used to strike a ball. The sheet of pimped rubber when used over a sheet of sponge is referred to as a **"Top sheet"**.

"Rigid" ([Law 2.4.1](#)) is intended to apply to the blade and the handle taken as a whole. Flexibility is not permitted in a racket except in the racket covering.

"Rubber" ([Laws 2.4.3.1](#) and [2.4.3.2](#)) implies any material that can be stretched at room temperature to twice its original length, and that, after being held in the stretched state for one minute, retracts within one further minute to less than 1.5 times its original length.

A. QUALITATIVE CRITERIA

1. General Appearance

The racket consists of blade, adhesive, and racket covering(s) with or without sponge.

2. Blade

A very thin layer of lacquer is permitted on the blade, only for the purpose of anchoring wood fibres, thereby facilitating replacement of the racket covering. Anything more than this will be deemed to constitute a layer of plastic, and will not be permitted. This layer may be no more than 0.1 mm thick, and should not hide the wood from sight or touch. It is considered to be part of the blade, rather than part of the thickness of the racket covering.

A thin layer of paint or plastic laminate is permitted on an uncovered non-striking side of the blade, for the purpose of having a proper red or black side.

3. Adhesive

The use of a thick layer of adhesive is NOT permitted either within the blade ([Law 2.4.2](#)), or between the blade and the racket covering.

The manufacturers should be aware that the practice of "re-gluing", i.e. removing the racket covering, adding adhesive and re-applying the racket covering immediately before a match, might cause rubber / sponge to expand. When the resulting thickness is measured by an umpire it may be found to be illegal.

3.1. Solvents

Manufacturers should expose rackets or sandwich rubber combinations to air before packing them to remove volatile solvents which they utilise during their processes. Players should similarly air their rackets - for up to 72 hours - in order to remove the solvents left over from the production process or their own gluing. Refer to our Technical Leaflet T9 for Racket Control, to be applied at ITTF events.

3.2. PSA (Pressure-Sensitive Adhesive sheets)

Apart from adhesives, a PSA may be used for fixing the rubber to the blade. Some of these are water-based systems.

PSA may not be more than 0.1 mm thick and may not be cellular. It may consist of two layers of adhesive supported on the two sides of a plastic film or a cellulosic paper, or may be one solid layer of film. The packaging should carry the trade name and instructions for use.

4. Sponge

The use of sponge (i.e. cellular rubber) is governed by [Law 2.4.3](#).

5. The racket covering

The rubber surface of the racket coverings should be uniform and without coating.

The appearance of the racket covering on the blade must be uniform in colour; it is not permitted for markings on the sponge or the blade to show through.

In addition to the requirements of [Law 2.4.3.1](#):

5.1. Pimples

All pimples should be equal. Each pimple must have a circular symmetry, with its axis perpendicular to the plane of the base layer. At any height above the base it shall be no wider than at any point closer to the base. This permits cylinders, cones (but not inverted cones) and combinations thereof.

Pimples must be evenly spaced along three sets of parallel lines at 60 degrees to each other.

The surface of the pimple top must be parallel to the base of the sheet, but may be smooth or roughened (see quantitative criteria below), though not to an extent that would constitute hollowness in the pimple. Hollow pimples are not acceptable.

For pimples-in racket coverings some deviation from an ideal shape is acceptable, like irregularities on the side of the pimple, or a "hat shape" on the pimple tops – when this is not a general trend, but is found on individual pimples. For the pimples-out racket coverings, deviation from an ideal shape is not acceptable.

5.2. Ordinary pimpled rubber

"Ordinary pimpled rubber" may carry pimples on one side only; the other side must be smooth, although it may be bonded to a thin layer of fabric, which should not be visible on the playing side and should not add to the total thickness.

5.3. Sandwich rubber

More than one layer of cellular rubber (sponge) is not permitted, even if the layers are of the same composition.

B. QUANTITATIVE CRITERIA

1. The racket covering

It should be noted in particular that:

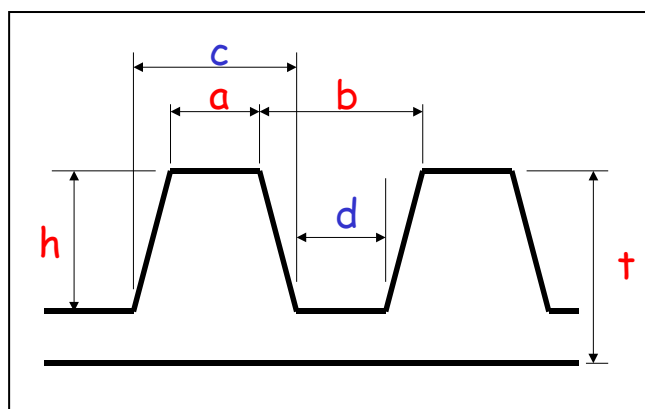
Authorisation is given to the top sheet plus the top sheet / sponge combination. Red and black top sheets with the same ITTF number or supplier and brand name must have the same geometry, properties, and branding area (wording and numbering). The surface colours must be uniform. Red and black top sheets of the same brand do not require separate authorisation fees.

2. Pimple dimensions

In LARC the racket coverings are categorised in four types:

- In = pimples-in (branding area on the smooth side),
- Anti = pimples-in (this term may be applied on supplier demand),
- Out = pimples-out (branding area on the pimpled side),
- Long = pimples-out (when the aspect ratio – see below - is > 0.89).

Covering type	Pimple diameter on top = a	Distance between pimple tops = b	Pimple height = h
In and Anti	min. 1.0 mm	min. 0.5 mm	min. 0.5 mm
Out and Long	1.0 – 2.2 mm	1.0 - 2.0 mm	min. 1.0 mm



3. Rubber thickness

The Laws specify a maximum rubber thickness (dimension "t") of 2.0mm. For authorisation purposes, a maximum of 2.00mm will be permitted.

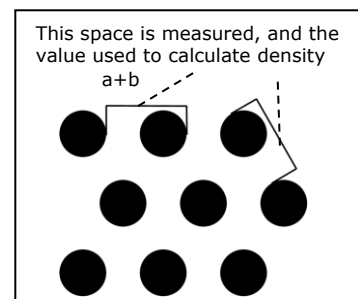
4. Aspect ratio

Aspect ratio, i.e. pimple height (h) / pimple diameter (a), shall not be > 1.10.

5. Pimple density

The minimum and maximum pimple densities per cm² are 10 and 30 respectively, as specified in [Law 2.4.3](#). These are regarded as statistical measures of density, not counts of discrete pimples within a specific area.

Because pimples must be evenly spaced and the pimple layout is symmetric, the density is found by measuring the linear pimple spacing (dimensions "a" + "b") and calculating the resulting pimple density as: $[1 / (\text{spacing} * \text{spacing} * \cos 30)]$.



6. Gloss (shininess)

An acceptable surface is one whose measurement of 60° specular gloss using ASTM procedure D523 does not exceed 24% gloss units.

7. Smoothness/Roughness

"Roughness" refers to unevenness in the plane of a surface, occurring across the entire surface but measured at localized areas. "Smoothness" is the opposite of roughness, and both terms are used to describe the same property. Roughness is measured by peak-to-valley height in millimetres.



The maximum peak-to-valley roughness of individual pimples is 0.10mm.

Except for the moulded branding area, the smooth side of pimples-in rubber shall appear smooth and flat to the naked eye.

8. Friction for pimples-out

The coefficient of kinetic friction between the rubber and a table tennis ball must be at least 0.50. In the test laboratory, a normal force of 50mN is applied.

9. VOC (Volatile Organic Compounds)

All racket coverings must meet the latest VOC limits given by the ITTF Executive Committee, at the time of authorisation, as well as during any subsequent inspection of retail samples.

10. Player's responsibilities


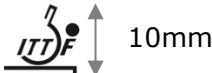




It is the player's responsibility to use racket coverings that comply with the rules. For example, a red racket covering may become too dark when affixed to a dark sponge or blade. A thick glue layer may cause the racket covering to exceed the maximum thickness regulation of 4.0mm including top sheet, sponge, and adhesive; or 2.0mm for rubber and adhesive without sponge. Players are advised to air a brand-new rubber before use, even though the manufacturer is expected to aerate the rubber before packaging. Use of post-factory treatments is not permitted and may cause the racket covering to exceed the permitted thickness, friction, pimple density, etc.

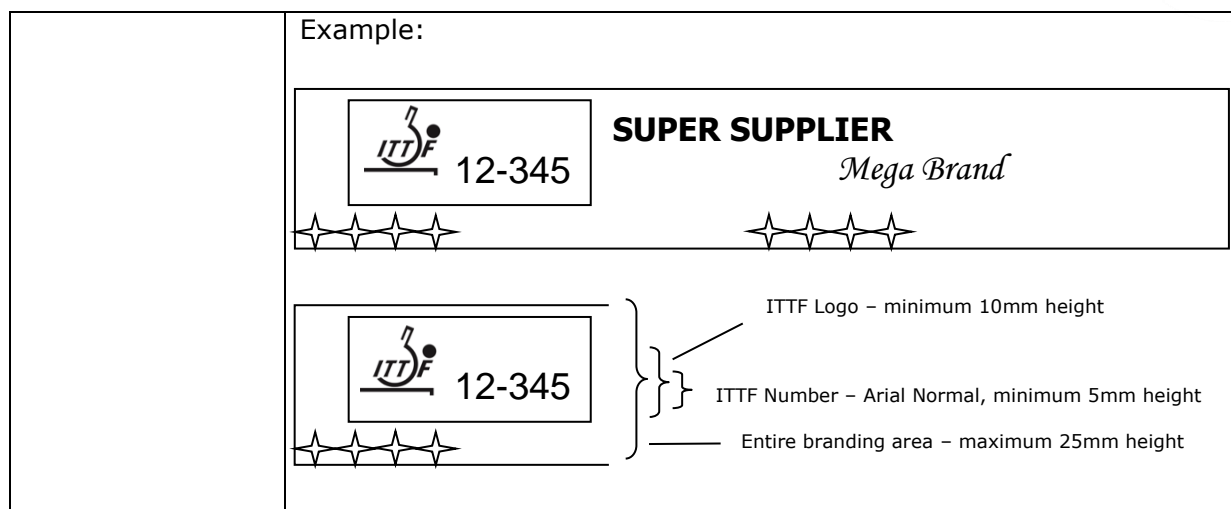
C. RUBBER IDENTIFICATION

The ITTF number or the combination of supplier name / brand name is the identification of the racket covering. Hence it must be unique and should not create confusion in relation with other racket coverings. It will found in the rubber mould as well as in the LARC.

The ITTF will make its best effort to ensure that the trademark or brand name does not infringe on the already existing racket coverings brands. The ITTF is not responsible for any illegal use of registered trademarks. Verifying the correct and legal use of trademarks is not part of the ITTF authorisation procedure.

New racket coverings submitted for authorisation, and existing rubbers that undergo changes in text design, must have the ITTF logo, an ITTF number, a supplier and a brand name (in Roman/ Latin letters) within a 25mm branding area in the rubber mould, in accordance with the guidelines shown below:

RUBBER	
<p>Recommended: LOGO 4 (Line Art Version: Black On White Background)</p> 	<p>The ITTF logo on rubbers shall:</p> <ul style="list-style-type: none"> • have a minimum of 10 mm height • be the same colour as the rubber • not have text or shapes overlapping it, although the safety area is not mandatory for embossing on rubbers <div style="text-align: center;">  </div> <p>The ITTF number, consisting of 5 or 6 digits:</p> <ol style="list-style-type: none"> The 2 or 3 first digits are the supplier number - to be supplied by ITTF - followed by a dash. The next 3 digits are a brand number, unique for each authorised brand of racket covering from this supplier, preferably in regular succession. <p>The ITTF number shall:</p> <ul style="list-style-type: none"> • be in font Arial Normal • have a minimum of 5mm height • be placed at least 0.2 mm above the rubber base • be adjacent to the ITTF logo, (over, under, or on one side) • not overlap the ITTF Logo. <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 20px;"> <div style="text-align: center;">  12-345 </div> <div style="text-align: center;">  12-345 </div> <div style="text-align: center;"> 12-345  </div> <div style="text-align: center;"> 12-345  </div> </div> <p>The ITTF logo and ITTF number shall be enclosed by a single frame of any shape, with nothing else inside.</p> <p>All letters, logos, ornaments, etc. must be placed in the branding area which may have a maximum height of 25mm.</p>



It is possible to equip the covering with two branding areas, positioned at 90 degrees to each other, but when mounted on the blade, only the one close to the handle is accepted.

It is possible to have two pictures of the branding area at any time for one brand on ITTF.com.

The Equipment Committee will give advice on the layout of any branding area when submitted. The supplier and brand names and the frame - with the ITTF logo and ITTF number (when applied) - must be visible on the racket covering when it is mounted on the blade ([Regulation 3.2.1.3](#)).

When an ITTF number is withdrawn, it cannot be used again for 10 years.

D. RUBBER PACKAGING

1. Country of origin statement

The racket covering’s retail packaging must state its country or countries of origin. The simple unqualified statement “**Made in <Country>**” is preferred; however a more complex statement is also permitted if the preferred option is not applicable. The statement must be in English and visible from the outside of the packaging.

Some examples of country of origin statements:

- **Made in <Country>** - this is preferred
- **Topsheet Made in <Country 1>, Sponge Made in <Country 2>**
- **Assembled in <Country 1> using materials from <Country 2>**


The country of origin statement for each authorised racket covering will be stored by the ITTF and may be displayed on ITTF.com. Substantive changes to a racket covering’s country of origin are not permitted. For example, the country of origin statement may not change from “Made in Canada” to “Made in USA”. However minor changes to wording are permitted, after the change has been recorded in the ITTF database. A change which only reflects a change in sponge is also permitted.

For racket coverings which are sold with multiple versions of sponge, a different country of origin statement may be used for each version, in order to specify sponges from different countries.

The ITTF does not require assembled rackets to have country of origin statement, however the country of origin for the racket coverings on those rackets must still be provided to the ITTF as part of the authorisation process. Please note that many countries’ trade rules require a country of origin statement.

2. Use of the ITTF logo


The ITTF logo may be used on the packaging of authorised rubber.

RUBBER PACKAGING	
<p>Recommended: LOGO 1 (3D Logo: Green On White Background)</p> 	<p>The ITTF Logo can be printed on the packaging, but should adhere to the guidelines stated in the "External Branding Guidelines" document</p>

For more information, please refer to the ITTF Branding Guidelines.

3. The use of the ITTF logo on assembled rackets.

This logo is the property of the ITTF. Hence, the suppliers may use the ITTF logo only on equipment that is properly authorised, i.e. here only the racket covering itself. It is considered illegal to use the main ITTF logo in connection with an assembled product like an assembled racket etc.

ASSEMBLED RACKET PACKAGING	
<p>Recommended: (Authorised Racket Covering Logo)</p> 	<p>When an authorised racket covering is used on an assembled racket, the logo on the left may be used on the packaging.</p>

E. ADMINISTRATIVE PROCEDURE

1. Submitting racket coverings for testing

Prospective new suppliers of racket coverings should first contact the ITTF Equipment Coordinator in charge of racket coverings, at the address given on ITTF.com.

A new supplier will be provided with an ITTF number and, if required, be given step by step procedures to follow to secure a racket covering authorisation and be included in the LARC.

The supplier should - in summary (more details below):

1. Submit the Supplier Info form.
2. Submit Form R-A together with an image file of the branding area with dimensions.
3. Submit racket covering samples for testing.
4. Pay the appropriate testing fee to ITTF.

The results will be given to the supplier as soon as the results from the laboratories are available, subject to the testing fees having been received.

The received samples will be stored for future reference.

The use of another table tennis supplier name as part of a brand name requires a written statement from the supplier in question to be submitted to ITTF when applying for authorisation.

Any supplier / manufacturer wishing to have racket coverings measured may send them to the contact person given above, with the testing fee to be paid when invoiced.

2. The detailed procedure of obtaining authorisation

A racket covering which is listed in the LARC is authorised for the period given in the header.

2.1. General

The time the entire procedure may take is uncertain. A laboratory test normally takes about 6 – 8 weeks. In addition the time for transport, Customs and administration is normally a further 2 weeks. However, under special circumstances it may take longer. In general, the procedure runs smoothly, but the ITTF declines all responsibility if there are delays and other unforeseen complications.

Under the Normal procedure, racket coverings that have been tested and found acceptable 2 weeks before publication of the LARC will be included in the LARC.

The samples that are submitted to the ITTF for testing are taken to be representative of the normal production, and our decisions are based on that.

2.2. Normal procedure (Recommended)

1. A new supplier (or an existing supplier using a new supplier name) should submit the Supplier Information form, found on the second tab of Form R-A on ITTF.com. The ITTF will then issue a supplier number to the new supplier.
2. The supplier should submit Form R-A for each racket covering. An image with dimensions (in JPG format) of the branding area of the new racket covering should accompany each Form R-A, for ITTF verification prior to mould fabrication. A black and white version is recommended. Please follow the guidelines in section C above.
3. The supplier should submit the following to the address given under "Contact Person" on ITTF.com:

- One top sheet sample of each colour – without sponge.
- One red racket covering for each available sponge colour, with the thickest available sponge, in plastic retail packaging.
- One black racket covering with the thickest available sponge in any colour, in plastic retail packaging.
- For pimples-out, one additional sample without sponge in red. Pimples-out racket coverings are subject to a friction test which may take additional time and will be invoiced additionally. This extra sample is intended to save time.
- If a special version will be sold without sponge and equipped with a textile or other reinforcement, a sample of this should also be submitted.

These will be our reference samples for all tests. Please ensure that all charges are paid before shipment.

4. Ship the samples, free of any charge and declared as "sample for inspection, no commercial value". If a value must be stated, do not set it to more than \$20, or less than \$1 on the paperwork which follows. If any additional costs must be paid, which is rare, the supplier will be charged.
5. After the samples have been received, unless agreed otherwise, they will be sent to a laboratory for testing. The supplier will be informed and given a reference number.
6. A testing fee invoice carrying the reference number will be sent from the ITTF to the supplier. Each new required test will generate a new fee invoice.
7. The supplier will be informed about the result when the test results are available, provided the test fee has been paid.
8. After the racket covering has passed all tests and the testing fees are paid, the racket covering will be included in the next issue of the LARC. A fee per year will be invoiced from the ITTF.
9. When submitting racket coverings for repeated tests or the ten year re-test, paragraphs 1 and 2 above are not required.

2.3. Expedited procedure

This procedure may help when time is short. However, it can only be used with prior approval from the ITTF. Suppliers which have been on the LARC for less than three years must use the normal procedure above.

1. Submit according to paragraph 2 in the Normal procedure to the address given under "Contact Person" on ITTF.com.
2. Attach a message with a promise not to do any sale or distribution of this brand before the ITTF has notified the supplier that the racket covering has passed all necessary tests.
3. The brand will be included in the next LARC, and the fee will be invoiced.
4. A complete sample set equipped with text in the rubber mould should be submitted by the supplier as soon as possible. If not, the brand will be omitted from the following LARC at the discretion of the ITTF Equipment Committee.
5. Paragraphs 5 – 7 in the Normal procedure to be followed.
6. Once the ITTF has provided notification that the racket covering has passed all tests, it will be officially authorised and the supplier will be notified that they may proceed with the sale and distribution of the racket covering.

3. The List of Authorised Racket Coverings (LARC)

LARC is published only twice per year. The publication dates are normally April 1st and October 1st. New racket coverings in LARC – marked as **bold** - are authorised from that day. The other racket coverings are authorised half a year from July 1st and January 1st, respectively.

The authorised racket coverings at any time are those in the current version of the LARC, for the period specified in the header. The Internet version may be corrected for errors during the season. Information will be given on the ITTF.com. It is not permitted to use racket covering outside the valid periods given in the LARC.

It is recommended that new samples for testing should be submitted at least two months ahead of the publication date in order to be included in the coming season's LARC. The ITTF will not be held responsible for any delays occurring at customs, during transport or in the laboratory.

New racket coverings should not be sold or distributed to any customers before all tests have been passed, the authorisation has been completed and the racket covering appears on the published LARC. If a racket covering is sold before it has passed all tests and appears on LARC, the authorisation will be void immediately. However, marketing activities such as promotion, advertisement etc. are allowed provided that the exact validity date is clearly indicated.

4. Fees

There is a **testing** fee, which must be paid before the results of any actual tests are published. The testing fees are subject to changes year by year. The ITTF Equipment Coordinator may be contacted for information about testing fees. This is also the case for any extra tests made for suppliers and for the retesting of racket coverings after a period of ten years. If more frequent testing is considered necessary by the Equipment Committee, the supplier will have to pay the fee. The fees will be invoiced from the ITTF.

An **authorisation** fee is paid for being included in the LARC (on the paper version and on Internet, including the image files). Lack of payment will mean withdrawal from the next LARC. The authorisation fees are paid for LARC, which are published in April. In October only new racket coverings entering LARC for the first time are subject to the additional fee / racket covering.

When a new supplier is entering LARC in October for the first time, it is subject to the authorisation fee, half the amount for the first racket covering and full amount for each additional racket covering, according to the list of fees, and will be invoiced again in April next year.

If a racket covering is removed from the LARC for technical or financial reasons, there will be no refund. If it is desired to re-authorise a known racket covering that has been removed from the LARC for whatever reason, it will be treated as a new brand with new test and authorisation fees.

5. Changes in racket coverings

The ITTF authorisation applies to a racket covering as originally submitted and tested; its subsequent alteration, by a supplier, a player or anyone else, is not permitted ([Law 2.4.7](#)).

Changes from the original design will normally not be permitted. However, changes to the branding area only may be allowed, and must be confirmed with samples and image files submitted.

6. Supplier's responsibilities

It is the responsibility of the suppliers to keep their brands on the LARC by paying the fees and maintaining the original properties of the racket covering as authorised, without alterations.

Suppliers that produce, market, sell, or are otherwise associated with illegal substances and treatments may not apply for authorisation of any racket covering. Their equipment will not be permitted to appear on the LARC, and may not use the ITTF logo.

7. Withdrawal of authorisation of racket coverings

It should be noted:

1. that the Equipment Committee has been instructed to deny authorisation to any racket covering that it deems detrimental to the sport,
2. that the Executive Committee can suspend the authorisation at any time and the authorisation may subsequently be withdrawn by the Board of Directors (BoD)-([Regulation 3.2.1.1](#)),
3. that not paying the yearly fee or requested test fees will result in a deletion from the LARC and a notice on ITTF.com if required.

Only red and black racket coverings are permitted in ITTF events and have the right to carry the ITTF logo. All other racket coverings of any other colour are illegal.

8. Re-testing of racket coverings

Racket coverings will be re-tested approximately every ten years after having been included on the LARC. The suppliers will be notified to submit samples, and there is no additional information required. The test fee will be invoiced from the ITTF.

When comparing two rubbers of the same brand at different times – for instance when making the 10-year test - the rubbers must be recognizably similar: for example in translucency, thickness, and pimple shape, spacing and dimensions. Rubbers which do not match will not be authorized as the same brand.

In addition, retail samples of racket coverings may be inspected at any time to verify continued compliance with these specifications.

End of T4