

# INTERNATIONAL SKATING UNION

## Communication No. 2128

### SHORT TRACK SPEED SKATING PADDING MEASURES TO INCREASE SAFETY FOR SKATERS

(This Communication will replace ISU Communication No. 1726, as of June 1, 2018)

Taking into account the experience gained since the implementation of ISU Communication No. 1726, the ISU Council has decided to update and extend the specifications and guidelines relating to Rule 280, paragraph 5 in the ISU Special Regulations for Short Track Speed Skating on Rink Board Padding systems (hereafter called "Padding"). The purpose of this update is to establish further requirements and guidelines, taking advantage of the best available technologies and solutions for the Padding, in order to increase the safety of Skaters.

In order to allow for a transition phase, this Communication will enter into force only on June 1, 2018. On the same date (June 1, 2018) Communication No. 1726 will become obsolete.

#### **A. DEFINITION OF RISK ZONES IN SHORT TRACK SPEED SKATING TRACKS**

The Padding shall provide the best possible safety for Skaters by reducing the risk of injuries when Skaters fall and hit the protective Padding. The quality aspects and the installation of the Padding should take into account that different safety measures may be required for different zones of the track. For this purpose a "**crash zone**" is defined as an area where the fall of Skaters can cause a significant impact with the Padding. The track can then be divided into three zones:

1. Main crash zone
2. Secondary crash zone
3. Low-risk zone ("Safe zone")

##### **A.1 Main crash zone**

The main crash zone in Short Track Speed Skating is generally considered to be the exit of the curves on both sides of the track. This area usually extends from the middle of the short side of the ice rink (the apex) up to about 10 meters ahead of the starting or finishing line at the centre of the track.

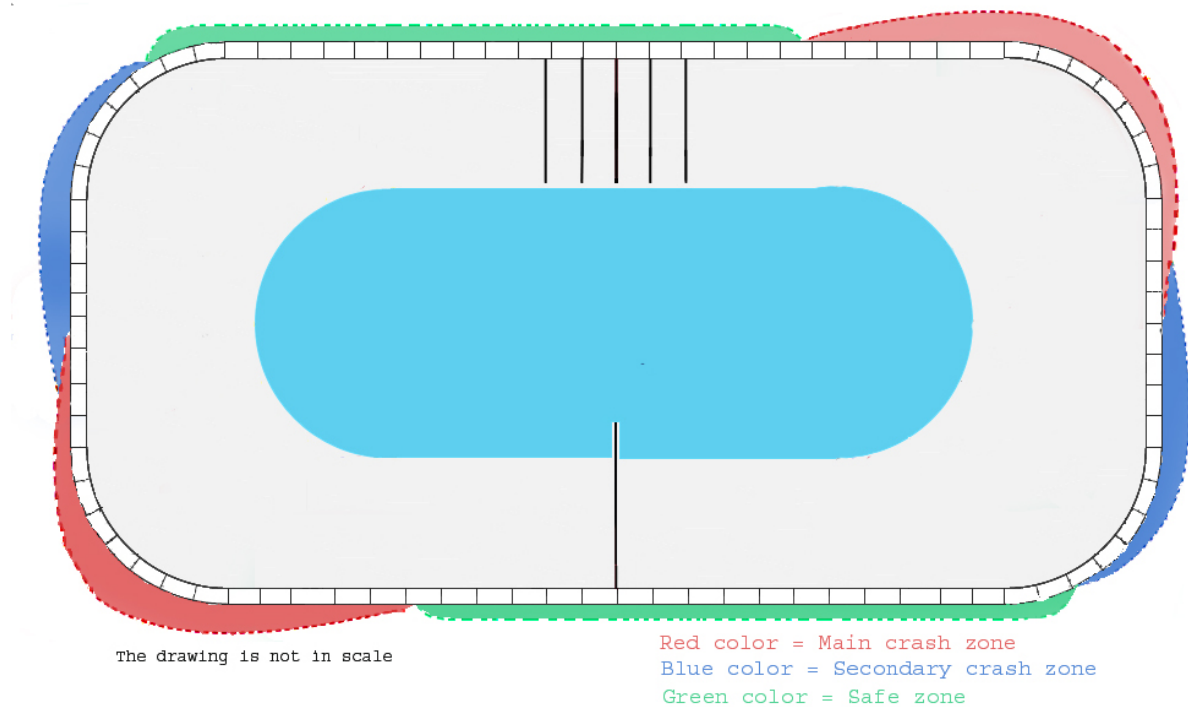
##### **A.2 Secondary crash zone**

The secondary crash zone in Short Track Speed Skating is generally considered to be the entry of the curves on both sides of the track. This area extends to the middle of the respective short side of the ice rink (the apex).

##### **A.3 Low-risk zone ("Safe zone")**

This zone covers all remaining areas of the perimeter, mainly on the straight parts of the track.

The following diagram illustrates the location of the different zones:



## B. CLASSIFICATION OF PADDING

Padding can be classified into the following main categories:

1. Moveable Padding
2. Hybrid Padding
3. Traditional rink board Padding
4. Basic Padding

### B.1 Moveable Padding

A *Moveable Padding* is a self-standing installation consisting of single pads of a minimum width of 90 cm which are connected to each other through velcro strips on the front part, as well as by 2-3 safety belts on the back side of the pads. No rigid ice hockey boards are in place on the entire perimeter of the ice surface. Posts are fixed to the ground in defined places, depending on the entry and exit doors to access the ice surface. The purpose of the posts and belts is to keep the Padding stable. Upon impact the pads can move up to one (1) meter towards the outside of the ice surface. It is mandatory to have a smooth surface under the pads to prevent Skaters getting injured.

A Moveable Padding must fulfil the following minimum technical specifications and requirements:

- a) **Size of the pads:** Height 120 cm; Length 200 cm; Width 90 cm up to 110 cm.
- b) **Inside structure of the pads:** Composed of layers of different foam densities and two rows of alternating “open cell spaces” (also described as vacant, internal, air-spaces running from the bottom to the top of the Padding) or similar solutions. “Open cell spaces” shall not exceed half of the width of the pad. The front layer of foam shall have a soft structure in order to absorb the first impact force.

- c) **Padding cover:** Composed of a soft (even at cold temperatures), anti-abrasive and water resistant synthetic material with a vented top-edge that, upon impact, can permit immediate release of the air contained in the open cell spaces within the Padding.
- d) **Banner attachment strips:** For easy attachment of commercial banners, soft velcro strips of 3 cm width shall be placed length-wise at 10 cm from the top and 10 cm from the bottom of the Padding.
- e) **Material to cover the joint where two pieces of the Padding come together:** An overlapping velcro strip of at least 10 cm shall cover the connection between pads to present a smooth exterior surface. This velcro strip must overlap in the direction of skating.
- f) **Placement of the Padding:** A minimum of 20 cm and a maximum of 50 cm of the pads shall rest on a smooth ice surface with no obstacles or sharp edges underneath the Padding.
- g) **Size of the ice rink inside the Moveable Padding:** To conform to the ISU Rules by proper positioning of the Moveable Padding.
- h) **Movement on impact:** On impact, the Padding can move up to 100 cm towards the outside of the ice rink. However, the Padding shall be fixed so as to inhibit a fallen Skater from passing underneath the Padding on impact. The use of posts for entry and exit doors, as well as for the purpose of fixing the Moveable Padding, should be reduced to a minimum. If possible posts should not be located in the main crash zones.
- i) **Padding control tension:** 2-3 belts shall be positioned at different heights at the back side of the Padding. The belts, the purpose of which is to control the movement of the Padding, shall be checked continuously.
- j) **Repositioning of the Padding:** Dedicated personnel must be available for re-positioning the Padding to its initial position after movement due to impact. A coloured external demarcation line shall exactly define the correct position of the Padding.

## **B.2 Hybrid Padding**

A *Hybrid Padding* is a system combining a Moveable Padding for the main crash zones with Traditional rink board Padding for the remaining part of the track. The system consists of two different sets of pads, with a minimum width of 90 cm for the pads to be used for the moveable part (in the main crash zones) and with a minimum width of 50 cm for the pads to be used in all other areas around the perimeter of the ice surface.

Rigid rink boards (ice hockey boards) may stay in place except for the main crash zones where the rink boards are to be removed and replaced by moveable pads to cover those areas. The moveable pads shall be connected to the pads covering the remaining rink boards with 2-3 belts on the back side of the Padding. The moveable pads must be placed on the ice in such a way that an even inner line of the complete Padding is achieved. The pads covering the areas where rink boards remain, shall be installed with the weight of the pads resting on the surface of the ice, and the pads shall be firmly attached to the rink boards. All pads must be connected to each other with velcro strips in order to provide a stable and even inner line for the complete Padding.

For the moveable part of the system, all the requirements and technical specifications for a Moveable Padding as per B.1 above, must be fulfilled. For the remaining part of the system all the requirements and technical specifications for a *Traditional rink board Padding* as per B.3 below, must be fulfilled.

## **B.3 Traditional rink board Padding (without moveable parts)**

A *Traditional rink board Padding* consists of pads which are placed directly on the ice surface on the inside of the rink boards. There are no moveable parts in this kind of Padding. The following requirements and technical specifications must be fulfilled:

- a) **Size of the pads:** Height 120 cm; Length 200 cm; Width at least 40 cm for the straights and at least 60 cm for the crash zones.
- b) **Inside structure of the pads:** Composed of layers of different foam densities and two rows of alternating “open cell spaces” (also described as vacant, internal, air-spaces running from the bottom to the top of the Padding) or similar solutions. “Open cell spaces” shall not exceed half of the width of the pad. The front layer of foam shall have a soft structure in order to absorb the first impact force.
- c) **Padding cover:** The same as for the Moveable Padding.
- d) **Banner attachment strips:** The same as for the Moveable Padding.
- e) **Material to cover the joint where two pieces of the Padding come together:** The same as for the Moveable Padding.
- f) **Placement of the Padding:** The Padding must cover all rink board surfaces completely. The weight of the pads shall rest on the surface of the ice, and they shall be firmly attached to the rink boards. In order to reach the required 60 cm width in the crash zones a double layer of pads may be used.

#### **B.4 Basic Padding**

To provide adequate safety for races at a lower level (with limited speed) the following recommendations for a *Basic Padding*, based on the same principles as the Traditional rink board Padding, should be observed:

- a) **Size of the pads:**
  - Height: Equal to the height of the rink boards
  - Length: At least 200 cm
  - Width: At least 20 cm and at least 40 cm, or double pads, for the crash zones.
  - Form: The pads shall not have a sloped or angled outer surface.
- b) **Inside structure of the pads:** Composed of layers of different foam densities. The softer foam shall be applied in the front layer of the pad.
- c) **Padding cover:** Smooth texture, low coefficient of friction, and excellent tear resistance.
- f) **Placement of the Padding:** The Padding must completely cover all rink board surfaces, with the pads attached to each other. The weight of the pads shall rest on the surface of the ice and they shall be placed perpendicular to and be firmly attached to the rink boards. In order to reach the minimum width of 40 cm in the crash zones a double layer of pads may be used in these areas. The pads must be placed so that the part of the pads with the softer foam is facing the track, and the less soft part of the pads is facing the rink board side.

### **C. RULES AND GUIDELINES FOR DIFFERENT TYPES OF EVENTS AND COMPETITIONS**

The above classification of Paddings specifies different levels of protective measures, taking into account that the protection requirements depend on the performance level of the participating Skaters and the competitive standard of the Competition. The classification reflects that System B.1 is considered to provide enhanced safety features as compared to System B.2, etc.

Rules and guidelines for the selection of the type of Padding to be used for different categories of International Competitions are given below. ISU Members should establish similar guidelines for Competitions organized at national level, considering the competitive level in comparison with the categories of International Competitions listed below.

### **C.1 OLYMPIC WINTER GAMES**

According to the ISU Special Regulations for Short Track Speed Skating, Rule 280, paragraph 5.a), Moveable Padding is mandatory for the Olympic Winter Games. The Padding must comply with the specifications in Section B.1 above. Only well-known and experienced Padding manufacturers may be taken into consideration as suppliers of the Padding. The selection of the Padding must also take into account the requirements for the final setup and logistical change-over issues, considering that Short Track Speed Skating and Figure Skating will be sharing the same venue.

### **C.2 ISU CHAMPIONSHIPS, ISU WORLD CUP COMPETITIONS, WINTER YOUTH OLYMPIC GAMES**

For the above-mentioned Events either a Moveable Padding or a solution with a Hybrid Padding, as per the specifications in Section B.2 above, shall be used. For all such Events a feasibility plan must be developed, including all the technical specifications and solutions necessary to guarantee the correct setup of the Moveable pads. All technical details must be communicated to the ISU Sports Director and ISU Short Track Speed Skating Technical Committee in due time for the plan to be evaluated and for necessary adjustments to be made.

### **C.3 OTHER INTERNATIONAL COMPETITIONS FOR SENIORS AND FOR THE JUNIOR AGE CATEGORIES A AND B**

For the above-mentioned Competitions a Traditional rink board Padding, as per the specifications in Section B.3 above, may be used.

### **C.4 INTERNATIONAL COMPETITIONS FOR THE JUNIOR AGE CATEGORIES C AND D**

A Basic Padding as per the specifications in Section B.4 above may be used for this category of Competitions.

Summary of minimum protective levels:

<b>EVENT TYPE</b>	<b>TYPE OF PADDING SYSTEM</b>			
	<b>Moveable Padding</b>	<b>Hybrid Padding</b>	<b>Traditional Padding</b>	<b>Basic Padding</b>
Olympic Winter Games	✓	Not applicable	Not applicable	Not applicable
ISU Championships	✓	✓	Not applicable	Not applicable
ISU World Cup Competitions	✓	✓	Not applicable	Not applicable
Winter Youth Olympic Games	✓	✓	Not applicable	Not applicable
International Competitions (Seniors and Junior A+B)	Not mandatory	✓	✓	Not applicable
International Competitions (Junior C and D)	Not applicable	Not applicable	✓	✓

## **D. Implementation/Compliance of Padding to be used for the Olympic Winter Games, Winter Youth Olympic Games, ISU Championships, ISU World Cup Competitions and other ISU Events**

### **D.1 Event Application and Event allotment process.**

In order to control and ensure compliance with Section C above, the ISU has established the following procedures during the phases of Event application and Event allotment:

- i) ISU Members applying for ISU Events, or which are involved in an application for the Olympic Winter Games or the Winter Youth Olympic Games, must provide upon application specific information on the Padding which it is planned to install. This information must include detailed specifications for the Padding itself and indications of the technical setup and installation of the Moveable or Hybrid Padding. The respective ISU Members must also confirm in writing that in case of being allotted the Event, they will install Padding complying with the definitions and specifications (as given in Section B above) of the relevant type of Padding for the Event. This information will be a key factor for the ISU in the Event allotment process.
- ii) The ISU reserves the right to proceed with inspection visits of organizers which provide inadequate or insufficient information relating to the Padding which it is intended to use.

### **D.2 Actions in cases of non-compliance**

In the case of non-compliance and/or unresolved issues the ISU reserves the right to take the following steps:

- i) If the organizing ISU Member of an ISU Event or of the Short Track Speed Skating events at the Olympic Winter Games or the Winter Youth Olympic Games does not provide the information as indicated in paragraph D.1 above, and/or the ISU has reasonable doubts that the minimum specifications will be met, the ISU may:
  - a) Require the replacement of the planned Padding by a Padding complying with the applicable requirements;
  - b) For ISU Events: transfer an already allotted ISU Event to another ISU Member or to another venue where the requirements will be fulfilled.
- ii) If, despite previous assurances and controls, it is observed shortly before the beginning of an ISU Event, the Olympic Winter Games or the Winter Youth Olympic Games that a Padding which is not in compliance with the above-mentioned requirements has been installed, the ISU Representative (at ISU Events) or the ISU Technical Delegates (at the Olympic Winter Games/Winter Youth Olympic Games) in consultation with the Chief Referee(s) of the Event may:
  - a) Demand, if still possible, that the Padding be replaced immediately by a Padding in compliance with the relevant requirements. If such replacement is possible, training sessions shall not commence or resume until the new Padding is in place. All costs for the replacement of the Padding shall be borne by the Organizer;
  - b) Depending on the Padding in place, and for borderline cases only, demand after careful evaluation that the organizing ISU Member provide a written and duly signed statement confirming its full and direct responsibility that the installed Padding ensures adequate protection at the same level as a Padding complying with the relevant requirements. This information must then be forwarded immediately to all participating teams;
  - c) Cancel the ISU Event if the Padding which is deemed insufficient cannot be replaced in due time and a statement as per sub-paragraph (ii) b) cannot be obtained and/or accepted. The organizing ISU Member of the cancelled ISU Event will then be responsible for reimbursing all travel and accommodation expenses for all participants

as well as all ISU Officials in attendance. This reimbursement obligation includes the ISU contribution payments already made to the organizing ISU Member and the loss of income (TV and/or sponsorship) or any other costs in relation to the cancelled ISU Event. In such case the organizing ISU Member is bound to reimburse to the ISU the total amount within 1 (one) year.

### **D.3 Safety precautions**

All organizing ISU Members/organizers shall take all appropriate safety precautions and, in addition, procure sufficient liability insurance covering the competitions. The ISU assumes no responsibility for, or liability with respect to, bodily or personal injury or property damage incurred in connection with sanctioned competitions (see ISU Regulations, Rule 119, paragraph 2 and the responsibility of the Organizers for medical services according to Rule 140, paragraphs 1-4).

## **E. PADDING QUALITY TESTING**

### **E.1 TESTING PROCEDURES**

The following testing procedure will allow universally uniform data on the impact-absorption qualities of a proposed Padding.

a) The test shall consist of:

- i) A mechanical drop test performed on a test Pad of 40 cm width with a cylindrical drop mass of 32 kg. (20 cm diameter, 14,5 cm height);
- ii) Several trials at each drop height of 1, 2, 3 and 4 meters are to be performed;
- iii) An accelerometer attached to the drop mass will measure the acceleration of the mass upon impact with the Padding;
- iv) The peak values of each of the accelerations and the impact forces will be recorded with the average of such values as the final result.

b) One test Pad of 40 cm width (or two test pads with the same total width), consisting of four different foam layers, with the following specifications will set the “zero” basis of the testing equipment and software:

- i) 12 cm of  $22,40 \text{ kg/m}^3$  density open cell foam (front layer);
- ii) 8 cm of  $32,04 \text{ kg/m}^3$  density closed cell foam;
- iii) 12 cm of  $22,40 \text{ kg/m}^3$  density open cell foam;
- iv) 8 cm of  $32,04 \text{ kg/m}^3$  density closed cell foam.

c) In the design and construction of any new Padding it is recommended that the goal of at least a 30 % improvement compared to the benchmark defined by the “zero” basis indicated above is adopted for the development of the pads.

d) For the design of the Padding it is essential not only that the reduction of the bounce back effect is taken into consideration, but also that a soft impact and a consequent reduction of the impact force are guaranteed.

## **E.2 REQUIRED TESTING**

- a) In the case of new suppliers or newly manufactured pads, or at the specific request of the ISU, Padding manufacturers may be obliged to send a test pad, which has the exact same size and identical characteristics as the product to be offered, for testing at an ISU designated testing center. All technical details, information on the composition of the pads, cover sheet specifications and the documentation of any additional tests performed, must also be submitted to the testing center with a copy to the ISU.
- b) The manufacturer must cover all related costs for the testing procedure, including costs for shipment, etc. None of these costs will be refunded by the ISU, whether the test is successful or unsuccessful.
- c) The testing center will perform the scientific tests and release the testing data, including a certificate for the test results with reference to the benchmark indicated in paragraph E.1 above and other relevant specifications, and notify the manufacturer and the ISU of the results. The ISU, however, accepts no responsibility for this certificate nor any liability for any personal or material damage connected to the subsequent use of the respective Padding.
- d) In the case that the test shows that the ISU requirements have not been reached, the ISU will forward this information to the organizers which intended to use the Padding. In such cases the ISU reserves the right to take actions as indicated in section D. above.

Tubbergen,  
November 16, 2017  
Lausanne,

**Jan Dijkema**, President

**Fredi Schmid**, Director General