BS ISO 19202-2:2017

BSI Standards Publication

Summer toboggan runs

Part 2: Safety requirements for operation

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National foreword

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Part 2: Safety requirements for operation

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 83, *Sports and other recreational facilities and equipment*.

A list of all parts in the ISO 19202 series can be found on the ISO website.

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Summer toboggan runs —

Part 2:
Safety requirements for operation

1 Scope

This document specifies operational requirements, signage, maintenance, repair and modifications for summer toboggan runs and their components according to ISO 19202-1.

This document is applicable to summer toboggan runs and major modification to summer toboggan runs and toboggans manufactured after the effective date of publication.

National rules on occupational safety and health first apply and they can be completed by this document.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 3864-1, *Graphical symbols — Safety colours and safety signs — Part 1: Design principles for safety signs and safety markings*

ISO 3864-3, *Graphical symbols — Safety colours and safety signs — Part 3: Design principles for graphical symbols for use in safety signs*

ISO 7010, *Graphical symbols — Safety colours and safety signs — Registered safety signs*

ISO 19202-1:2017, *Summer toboggan runs — Part 1: Safety requirements and test methods*

ISO/IEC Guide 51, *Safety aspects — Guidelines for their inclusion in standards*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 19202-1 and ISO/IEC Guide 51 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— IEC Electropedia: available at http://www.electropedia.org/

— ISO Online browsing platform: available at http://www.iso.org/obp

3.1
operator
natural or legal person/organization who is responsible for operation of the summer toboggan run

3.2
person responsible for operation
suitable person who is appointed by the *operator* (3.1) and who is responsible for operational procedures

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3.3
operating personnel
suitable person(s), who is (are) responsible for the operation, maintenance and repair of the technical equipment as well as ensuring proper ride service

Note 1 to entry: The operating personnel can also be the *person responsible for operation* (3.2).

3.4
commissioning
commencement of the daily ride service

Note 1 to entry: Commissioning also includes putting the technical equipment into operation.

Note 2 to entry: The term "commissioning" is also included in ISO 19202-1, but it has a different meaning.

3.5
user
driver (3.5.1) or *passenger* (3.5.2)

3.5.1
driver
user who actively operates the toboggan and who is responsible for compliance with the operating regulations

3.5.2
passenger
user who does not operate the toboggan, but who is jointly responsible for compliance with the operating regulations

3.6
operating logbook
documentation with daily reports concerning the operation, maintenance, repair, modification and route upkeep of the summer toboggan run

4 Requirements for the operator

4.1 Obligations of the operator

The operator is responsible for the safe operation of the facility in regard to users and third parties.

Hazards to the operating personnel resulting from operation, control and maintenance shall be evaluated according to national regulations under applicable health and safety laws.

The operator shall perform the operation of the facility according to this document and other applicable statutory regulations, as well as manufacturer's instructions.

4.2 Implementation of a risk assessment for safe operation

To assess the risks associated with the safe operation of a summer toboggan run, the operator shall identify and evaluate the following hazards supplementary to the risk assessment (see ISO 19202-1):

— hazards from interfaces between the facility and the surroundings;

— hazards for users and third parties;

— hazards from foreseeable improper use of the facility.

Operating instructions shall be compiled from the complete risk assessment. The risk assessment shall be updated continuously. This shall be checked and concretized in all cases after more extensive technical modifications and after incidents.

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To continuously improve safety, it is recommended that the manufacturer be informed about technical problems with discernible hazards.

Risks shall be prevented by

a) introduction of technical measures that prevent the hazards (e.g. safety relevant retrofitting), and

b) introduction of other measures (e.g. instructions and information to the users by the operating personnel, if risks are unavoidable).

NOTE See Annex B for an example of a risk analysis.

4.3 Operating instructions

Operating instructions shall be compiled by the operator as a result of the operation and use risk analysis. These instructions shall contain regulations for at least the following situations/operational procedures:

— for incidents, accidents and near accidents and damage;

— for first aid, rescue and recovery;

— for fire and storms.

The instructions shall be compiled in observance of applicable national regulations.

Names and functions of the responsible persons, as well as their areas of responsibility, shall also be provided.

Operating instructions shall be updated continuously. These shall be checked and adapted after technical modifications, after accidents or increased frequency of incidents.

4.4 Requirements for the operating personnel to ensure the safety of the user

The operator shall make sure that the operating personnel is trained in respect to the mode of functioning for operation, inspection and maintenance. The training shall be documented.

The training shall be conducted for the first time before commencing the activity. It shall be conducted regularly and repeated at least once a year.

The training of the operating personnel who ensure proper ride service shall also include:

— instructions of the users before travel;

— procedures for dealing with users whose conduct is incorrect;

— conduct in the event of disruptions (error messages, power failure, fire, etc.);

— conduct in the event of emergencies (rescue, recovery, evacuation, etc.), as well as exercises for these emergencies;

— requirements for special operating states:

  — conduct in adverse weather conditions;

  — conduct during night operation (if applicable).

The operator shall employ suitable operating personnel who are physically and mentally capable of ensuring safe operation. This includes compliance with and implementation of the operational regulations and instructions corresponding to the area of responsibility. The operating personnel shall have appropriate maturity and authority to instil confidence in users and issue instructions.

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4.5 Documents

The following documents shall be made available to the summer toboggan run:

a) technical documentation of the manufacturer;

b) associated test reports of the manufacturer;

c) operating instructions of the manufacturer;

d) documentation for inspection and maintenance;

e) operational logbook for the daily operating documentation (see Annex C);

f) safety and emergency plan;

g) risk assessment operation and use (see 4.2).

5 Requirements for operation

5.1 Operational commencement

All information in the operating instructions (see ISO 19202-1) shall be complied with.

The following equipment in or on the facility shall be inspected for functional reliability before commencing operation (if provided):

— communication and monitoring equipment (video, intercom, radio telephony, etc.);

— safety equipment (emergency off, photoelectric barriers, etc.);

— complete course and the safety equipment installed there by slow driving;

— rail/tub shall be free of snow and ice so that hazard-free, proper operation is possible;

— rail/tub shall be free of any obstacles;

— signs;

— surroundings of the run;

— braking and conveying devices.

The toboggans shall be serviced corresponding to the maintenance and operating instructions. At least the following visual inspections shall be conducted before putting into operation. Inspection for:

— wear, cracks, deformation, etc.;

— external condition of the toboggan (e.g. chassis, buffer condition, connecting elements to the cable);

— condition of the operating equipment (e.g. brake lever, handles);

— condition of the running wheels and skids;

— condition of the brakes;

— condition of the restraint systems (e.g. back rests, safety belts).

The manufacturer's data shall be observed during all-wear inspections.

All unusual characteristics and incidents shall be entered in the operational logbook and documented comprehensibly.

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5.2 Requirements during operation

The operation of a summer toboggan run without operating personnel, e.g. automatically controlled, is not permitted.

A person responsible for operation shall be present during operation.

Sufficient operating personnel shall be present in relation to the number of riders, design of the installation, weather conditions, etc. in order to ensure safe operation.

The operating personnel shall monitor the proper rider service personally and actively and supervise the users. User suitability shall be estimated by the operating personnel (see 5.5.1).

The proper method of control and operation shall be explained to every user before travel (see also Clause 6). The start intervals shall be selected so that the user is able to comply with a minimum distance of 25 m between the toboggans during the downhill run. In the event of special operating conditions (e.g. wet, night operation), the start interval shall be selected so that the user is able to comply with a minimum distance of 50 m.

The clutch disengagement range on the hill shall, as a minimum, be monitored optically and connected by voice communication with the operating personnel or the range shall be occupied by personnel.

Measures shall be taken so that no hazard can result in the event of congestion at the clutch disengagement point of the uphill transport system and so that the facility is protected against damage.

The clutch engagement range in the valley and the requisite run end braking system shall be monitored optically and connected by voice communication with the operating personnel or the range shall be occupied by personnel.

5.3 Requirements for special operating states

The operation shall be stopped in the event of a storm, thunder and lightning or other weather conditions posing a danger.

In the event of wet or wintry weather conditions, the visibility of the track and braking routes shall be observed in accordance with ISO 19202-1.

If operation is permissible in wet or wintry weather conditions, the operating personnel shall observe the following:

a) speeds shall be adapted;

b) an extended braking path shall be taken into consideration;

c) restricted toboggan loading shall be taken into consideration;

d) increased lateral swing in case of tub-guided summer toboggan runs shall be observed.

The users shall be instructed about concrete actions to be taken for the special travel conditions.

If operation at night is permitted, the operating personnel shall inspect the lighting equipment for functional reliability before putting the summer toboggan run into operation. The complete lighting shall be put into operation before releasing the track.

Operation shall be stopped as soon as the visibilities of the track according to ISO 19202-1 are not fulfilled (e.g. fog).

The permissible operating states can be found in the test report that shall be provided in accordance with ISO 19202-1.

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5.4 Daily end of operation

At the end of daily operation, the person responsible for operation shall ensure that no more occupied toboggans remain in the course (e.g. final test run, video monitoring, complete departure).

All toboggans shall be secured so that no uncontrolled or unauthorized departure is possible (e.g. garaging in closed building, locking toboggan).

The facility shall be put completely out of operation.

Entries in the operational logbook shall be finalized.

5.5 Conveyance conditions

5.5.1 Preconditions for conveyance

The following data represents the fundamental prerequisites for conveyance and shall be indicated in a suitable manner at a location visible to the user.

a) Children under the age of 3 years may not generally use the run.

b) Children under the age of 8 years may only travel on two-seater toboggans if accompanied by an older person (aged over 8 years). This person shall be familiarized with the toboggan run and shall have been assigned responsibility by a person authorized to provide supervision/training.

c) The toboggan may only be loaded with X[1)] kg maximum.

d) The driver shall be able to operate the controls over the entire travel period.

e) Persons who are not able to properly ride on the toboggan owing to physical or mental impairments, etc., or operate it properly, shall be prevented from travelling for reasons of safety. If necessary, use is possible accompanied by experts or a person of trust who will then assume responsibility for the users.

f) Owing to the method of operation established, persons with health problems who might adversely affect practicing of the tobogganing sport or pregnant woman may not travel on the facility.

g) Persons who are under the influence of intoxicants (alcohol, drugs, medicines affecting the senses, etc.) may not use the facility.

5.5.2 General conveyance conditions

The following data represents minimum requirements and shall be indicated in a suitable manner at a location visible to the user.

a) Every user travels this sport facility at their own risk.

b) Upon buying a ticket, every user recognizes the conveyance conditions irrevocably.

c) Entry to the facility is only permitted at designated entry points.

d) It is prohibited to damage the operational equipment and the toboggans, create obstructions to travel, put the facility into motion without authorization, operate equipment without authorization or perform other actions that disrupt or endanger operation.

e) The users may only begin and end travel at designated points.

f) The use of the facility is only permitted by means of the toboggans provided.

g) Smoking is prohibited during travel.

1) See manufacturer's data.

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h) Accidents shall be reported immediately to the operating personnel.

i) Travel on the toboggan run and uphill transport system is only allowed if the safety equipment/controls on the toboggan are used as intended.

j) The start intervals indicated shall be complied with.

k) The restraint system of the toboggan may not be opened during travel.

l) Animals or umbrellas, walking sticks and other bulky, sharp, pointed or loose objects may not be taken aboard the toboggan.

m) Loose clothing (belts, scarves, shoelaces, etc.) and long hair (plaits) shall be kept away from the course or running wheels.

n) It is prohibited to lean out of the toboggan or extend arms and legs out from the toboggan. Do not touch the course.

o) A considerate method of operation shall be complied with (e.g. braking in sufficient time, observing minimum distances, arrival at the end of the toboggan run at a slow speed, choosing the speed so that you do not put yourself or others at risk).

p) Ramming other toboggans is strictly prohibited.

q) Do not travel too slowly, only stop in an emergency.

r) The upper body shall always point in the direction of travel. Do not turn around, kneel or stand.

s) Information signs shall be observed and the driver shall concentrate on the course.

t) Drivers shall always keep their hand/hands on the brake lever(s).

u) The larger of two persons shall always sit at the rear. The driver shall have a clear and free view.

v) The instructions of the personnel shall be followed. Use shall be prohibited upon failure to observe the conveyance conditions.

5.6 Rescue

Rescue and recovery shall always be performed following the instructions of the operating personnel.

The concrete procedure of the rescue, deployment of operating personnel, defining routes on the grounds, additional use of rescue vehicles on the grounds, assembly locations, etc. are incumbent on the operating instructions of the operator.

A rescue exercise shall be conducted regularly (e.g. once a year) with the involvement of the operating personnel and documented in the operational logbook.

6 Signs

6.1 General

The size of the signs on the course shall correspond as a minimum to the values according to Table 1, in order to ensure legibility at 25 m.

Table 1 — Minimum size of the signs

Dimensions in millimetres

Triangular	Rectangular	Square	Round
500 leg length	600 × 400	400 × 400	400

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