



Goal and net specifications

11 a-side hockey and Hockey5s

Introduction

This document describes the requirements for goals used for all official forms of hockey other than Indoor Hockey (which uses goals of a different size). The document comprises 3 parts.

Part 1 describes the basic requirements for a hockey goal. These form part of the *Rules of Hockey*, and all goals should conform.

Part 2 describes additional functional requirements for goals. These have been developed to ensure goals do not have unacceptable design features that may cause injury to players or grounds' staff and are of adequate quality to withstand the effects of play and prolonged outdoor exposure.

Goals seeking FIH Quality Programme Approval are required to comply with Parts 1 and 2.

Part 3 describes the requirements required of companies producing FIH approved goals. It also describes the procedures a company needs to follow when applying to have a goal approved.

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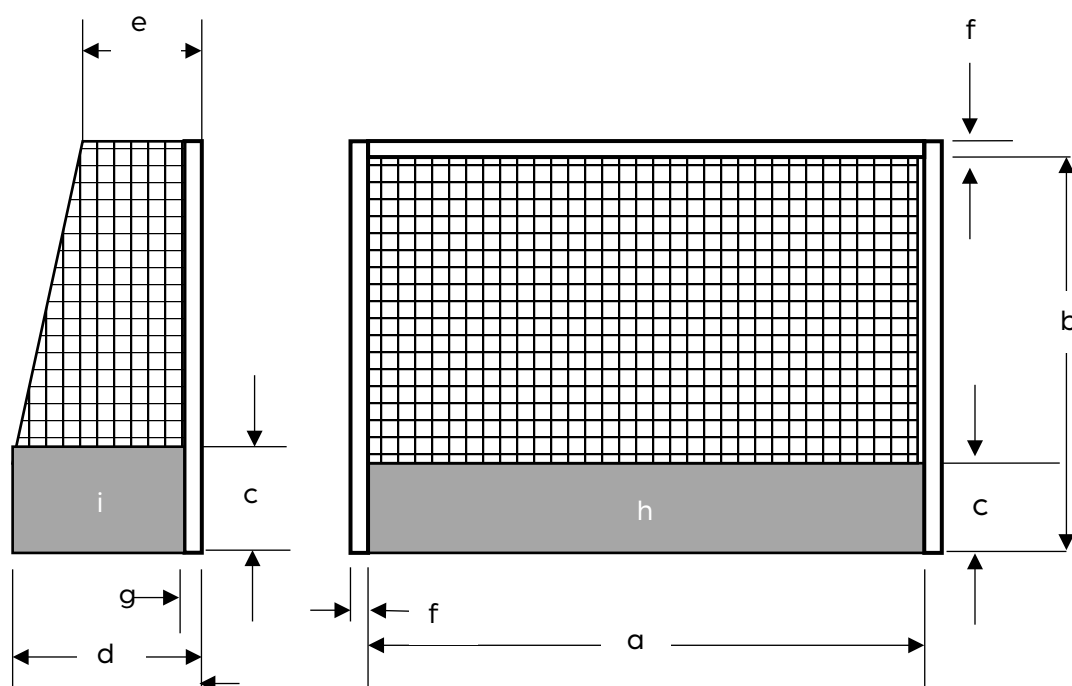
Any questions about this document should be addressed to: Email: facilities@fih.hockey

Note: This document refers to International (ISO) and European (EN) standards. Where equivalent or similar national or regional standards exist, they may also be used to demonstrate compliance with the quality requirements of this Standard.

Part 1 – Basic requirements for hockey goals

1.1 Dimensions

A goal comprises two vertical goalposts joined by a horizontal crossbar, two side-boards, a back-board, and a net.



a	3.66 m	b	2.14 m	c	460 mm	d	min 1.20 m
e	min. 0.90m	f	50 mm	g	50 to 75 mm	h	Back-board
i	Side-board						

1.2 Goal posts and crossbar

- the goal-posts and cross-bar should be:
 - white, or another approved colour
 - rectangular in cross section
 - 50 (± 1) mm wide
 - between 50 mm and 75 mm deep
- the front and side faces of the goal-posts and cross-bar shall be smooth with no protrusions or other features that may cause injury to players colliding with them, cause damage to a ball hitting them, or cause a ball to rebound in an unexpected way.
- the goal-posts must not extend vertically beyond the cross-bar and the cross-bar must not extend horizontally beyond the goal-posts

- d. the distance between the inner edges of the goalposts shall be 3.66 (\pm 0.01) metres and the distance from the lower edge of the cross-bar to the ground shall be 2.14 (\pm 0.01) metres
- e. the space outside the field, behind the goal-posts and cross-bar and enclosed by the net, side-boards and backboard should be a minimum of 0.90 metres deep at the cross-bar and a minimum of 1.20 metres deep at ground-level.

1.3 Side-boards and back-boards

- a. side-boards shall be 460 (\pm 1) mm high and a minimum of 1.20 metres long
- b. back-boards shall be 460 (\pm 1) mm high and 3.66 (\pm 0.01) metres long
- c. side-boards shall be positioned at ground level and at 90° to the back-line and be fixed to the back of the goal-posts without increasing their width
- d. back-boards shall be positioned at ground level and at 90° to the side-boards and parallel to the back-line. They should be fixed to the end of the side-boards. Side-boards should not protrude outside of the goal posts
- e. side-boards and back-boards should be an approved colour on the inside.

1.4 Nets

- a. the maximum mesh size should be 45mm.
- b. the net should be attached to the back of the goal-posts and crossbar at intervals of not more than 150 mm.
- c. the nets should be attached to the side and back-boards at intervals that prevent the ball passing between the net and the side-boards, and back-boards
- d. nets should be fitted loosely to prevent the ball rebounding.

Part 2 – functional and safety requirements

2.1 Classes of approved goal

This specification allows for two classes of goal:

Class 1 Goals

Freestanding goals with integral weights that ensure the goal does not tilt.

Goals may either be fitted with “impact resistant” back-boards and side-boards, or boards made from noise reducing materials that may be less resistant to damage from repeated ball impacts.

Class 2 Goals

Freestanding goals with ground anchors or separate weights used to ensure the goal does not tilt.

Goals may either be fitted with “impact resistant” back-boards and side-boards, or boards made from noise reducing materials that may be less resistant to damage from repeated ball impacts.

2.2 Goal design

- a. The goal should be free-standing. It should be supplied as a complete unit (e.g. goal, net, side and back-boards, net frame, stabilizers, anchors, etc.) together with any other accessories that may be required.
- b. The goal should be designed to withstand the stresses that may occur during a game, or during transport. Joints should be welded, or include locking mechanisms (lock nuts, etc) to ensure they do not become loose during use and movement.
- c. Brackets supporting the net or parts of the goal frame should not protrude outside the width of the goal post or crossbar.
- d. Frame fixings should not be attached to the side or back-boards in a way that could result in any ball entering the goal, rebounding off them.
- e. All corner profiles of the side and back-boards should be rounded to minimise the risk of them being a hazard if a player were to fall onto them, and to stop them cutting the pile of the Hockey Turf playing surface.
- f. Any vertical part of the net support frame should be outside the net and fixed in such a way that any ball entering the goal, cannot rebound off them.
- g. No part of the goal should disengage or drop unintentionally when the goal is being moved.

2.3 Materials

The goal should be made from materials selected so that the structural integrity of the goal is not affected during play, training, competition, transportation and under reasonably expected climatic conditions.

All materials should be non-toxic and comply with all national environmental and toxicology regulations.

When selecting materials, consideration should be given to the eventual disposal of the goal having regard to future recycling where possible, and any possible environmental impact through disposal.

Powder coating should be undertaken in accordance with EN 12206 or EN 13438, as appropriate.

Galvanized treatments to steel components should be applied in accordance with EN ISO 1461.

2.4 Goal posts and cross bar

The goal frame should be made from an impact resistant non-corrosive reinforced metal extrusion, or a solid non-corrosive metal section having a solid core (e.g. timber).

The minimum thickness of the walls should be:

- Front face: 6 mm.
- Sides walls: 3 mm.

Or independent testing should be undertaken to verify that repeated impacts of the frame by hockey balls travelling at speed do not cause the frame to dent or crack.

Note: The goal manufacturer/test laboratory should submit proposals to the FIH on how they propose to undertake the test in advance of it being undertaken.

The front and corner edges of the goal-posts and cross-bar should be rounded with a radius of 3 mm.

The goal frame should be powder coated.

2.5 Net

The net should be made from 3 mm (minimum) diameter UV resistant synthetic yarn.

The minimum mesh breaking strength, when tested in accordance with ISO 1806¹, should be 1080N ² (EN 750 Class B).

2.6 Net fixings

The net fixings should be made from non-corrosive metal or plastic material.

¹ ISO 1806, *Fishing nets — Determination of mesh breaking force of netting*

² This corresponds to a breaking strength of 900 N when, tested in accordance with EN ISO 2062

Net fixings should be designed in such a way that the player cannot be hurt. Metal cup hooks shall not be used.

Net head-line ropes should be made from UV resistant synthetic fibres having a minimum rope breaking force of 7000 N when tested in accordance with ISO 2307³ (EN 750 Class Z).

2.7 Back-boards and side-boards

If the back-boards and side-boards are designated as being “IMPACT RESISTANT” they should be manufactured from:

- extruded solid profile, 20 mm thick (min), UV resistant High-Density Polyethylene (HDPE).
- rubber profile having a minimum tensile strength 0.40 MPA and minimum elongation at break of 40%, when tested in accordance with EN 12230.
- or other materials where the manufacturer can demonstrate the boards’ ability to withstand repeated ball impacts, by independent testing*.

Note: * Independent testing should be based on a hockey ball being fired repeatedly at speed at the same position on the backboard to assess the board’s ability to withstand the impacts. The goal manufacturer/test laboratory should submit proposals to the FIH on how they propose to undertake tests in advance of it being undertaken.

2.8 Ground anchoring systems

Any ground frame and anchoring system should be made of light metal and/or steel protected against corrosion (e.g. galvanized).

2.9 Goal stability

When tested in accordance with Clause 5.3 of EN 750⁴, the goal should not tilt from the ground.

2.10 Cross bar strength

When tested in accordance with Clause 5.2 of EN 750, the crossbar should not fracture or collapse or show permanent deformation greater than 10 mm.

2.11 Goal frame security

When tested in accordance with Clause 5.2 of EN 750 the corner section of the goal frame should not deform or be damaged after the test.

2.12 Entrapment

Goals should be designed and constructed so that during use, transportation, and storage (if applicable) they should not have any crushing or shearing hazards between moving parts

³ ISO 2307:2007 *Fibre ropes. Determination of certain physical and mechanical properties*

⁴ EN 750 *Playing field equipment — Hockey goals — Functional and safety requirements, test methods*

and/or fixed parts or risk of entrapment of finger, head, and neck. This shall be assessed using the procedures given in EN 913, Annex A, and Clause 6.3 of Annex A of EN 16579⁵.

Any possible points of entrapment in the frame, 1200 mm or above the ground, e.g. net supports, should not have downwards angle of less than 60° and no openings of less than 230 mm diameter.

⁵ EN 16579:2018, Playing field equipment — Portable and permanent socketed goals — Functional and safety requirements and test methods

Part 3 – Criteria for manufacturers wishing to have their goals approved by the FIH

3.1 Introduction

The commercial benefits of being able to offer FIH approved goals is available to companies that are member of the FIH Quality Programme (FQP).

As a member of the FQP, you become part of an exclusive group that is working in partnership with the FIH to ensure the quality of hockey fields and the equipment used on it.

3.2 Membership criteria for manufacturers of field equipment

Either manufacturers or brand owners¹ of hockey equipment satisfying the requirements of this Standard may apply to join the FIH Quality Programme, subject to the following conditions:

- 1 The goal is manufactured under a quality management system (ISO 9001 or similar) at the time of application and for the duration of the goal's approval.
- 2 The manufacturing company complies with all national and local employment laws and the *United Nations Convention on the Rights of the Child*.
- 3 The manufacturer shall provide comprehensive written instructions for assembly, installation, transportation, and safe storage of the goal.
- 4 The manufacturer shall guidance on maintenance on the periodic checking of goals in accordance with the recommendations of Annex E of EN 16579.
- 5 FIH Approved goals shall be supplied with a warranty that provides cover against manufacturing defects and the premature failure of materials.
- 6 The minimum duration of the warranty should be two years (noting manufacturers may include a disclaimer against premature failure due to abuse, misuse, and lack of maintenance).
- 7 Payment of the appropriate annual licensing fee, as advised by the FIH.

Notes:

1. Brand owners are defined as companies that own the intellectual properties rights to a goal but outsource the manufacturing to a third-party company.
2. Suppliers of white label products that have previously been shown to comply with this Standard may also apply for FIH Approval of the product under their own name, subject to them entering a separate licensing contract to the manufacturer and payment of the appropriate licensing fee.

For a goal to be registered as an FIH Approved product the following process needs to be followed:

1. The goal manufacturer (or supplier) shall be a member of the FIH Quality Programme.
2. The goal manufacturer should submit the goal to a test institute that is able to undertake all the necessary tests to the standards of accuracy and reproducibility stipulated by the FIH.

Ideally the test institute will operate an ISO accredited quality management programme that includes the testing of hockey goals.

3. The results obtained should be reported in English, and be sent to the FIH, by the test institute, for review.
4. If the goal is found to meet the quality levels detailed in this guide; it shall be granted the right to be designated an *FIH Approved Hockey Goal*.
5. A goal shall remain approved providing the manufacturer remains a member of the FIH Quality Programme; no goals are found to be non-compliant with this guide; and the specification and construction of the goal does not change.

Membership of the FQP is subject to an annual membership fee, payable to the FIH. For further details please contact facilities@fih.hockey.



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