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**Zařízení hracích ploch – Branky pro fotbal –
Funkční a bezpečnostní požadavky, zkušební metody**



English version

Playing field equipment - Football goals - Functional and safety requirements, test methods

Equipements de jeux - Buts de football - Exigences fonctionnelles et de sécurité, méthodes d'essai

Spielfeldgeräte - Fußballtore - Funktionelle und sicherheitstechnische Anforderungen, Prüfverfahren

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Foreword

This document (EN 748:2004) has been prepared by Technical Committee CEN/TC 136 "Sports, playground and other recreational equipment", the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by March 2005, and conflicting national standards shall be withdrawn at the latest by March 2005.

On the comments resolution meeting of CEN/TC 136/WG 22 the German comment has been adopted to add a Type 4 "Freestanding football goal with counterweight" to EN 748, which is part of ÖNORM S 4700 "Football goals-Additional requirements to ÖNORM EN 748". The intention of CENTC 136/WG 22 behind this decision was to make ÖNORM S 4700 unnecessary, being a national standard not one to one related to European Standards.

Regarding the inclusion of a Type 4 France asked for an national deviation due to a French national regulation (decree n° 96-495 of June 4, 1996), see Annex ZB.

This document supersedes EN 748:1995 + A1:1998.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

1 Scope

This document specifies the functional requirements for 4 types and 2 sizes (see Clause 3) and the safety requirements (see Clause 4) for football goals.

It is applicable to football goals for training and competition in outdoor sports facilities and indoor arenas.

2 Normative references

The following referenced documents are indispensable for the application 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.

EN ISO 1806, *Fishing nets — Determination of mesh breaking force of netting (ISO 1806:2002)*

prEN ISO 2307, *Fibre ropes — Determination of certain physical and mechanical properties (ISO/DIS 2307:2003)*

3 Requirements for sizes 7,32 m × 2,44 m and 5,00 m × 2,00 m

3.1 Classification

Football goals shall be classified by the design (types and sizes) as shown in Table 1.

Table 1 — Types

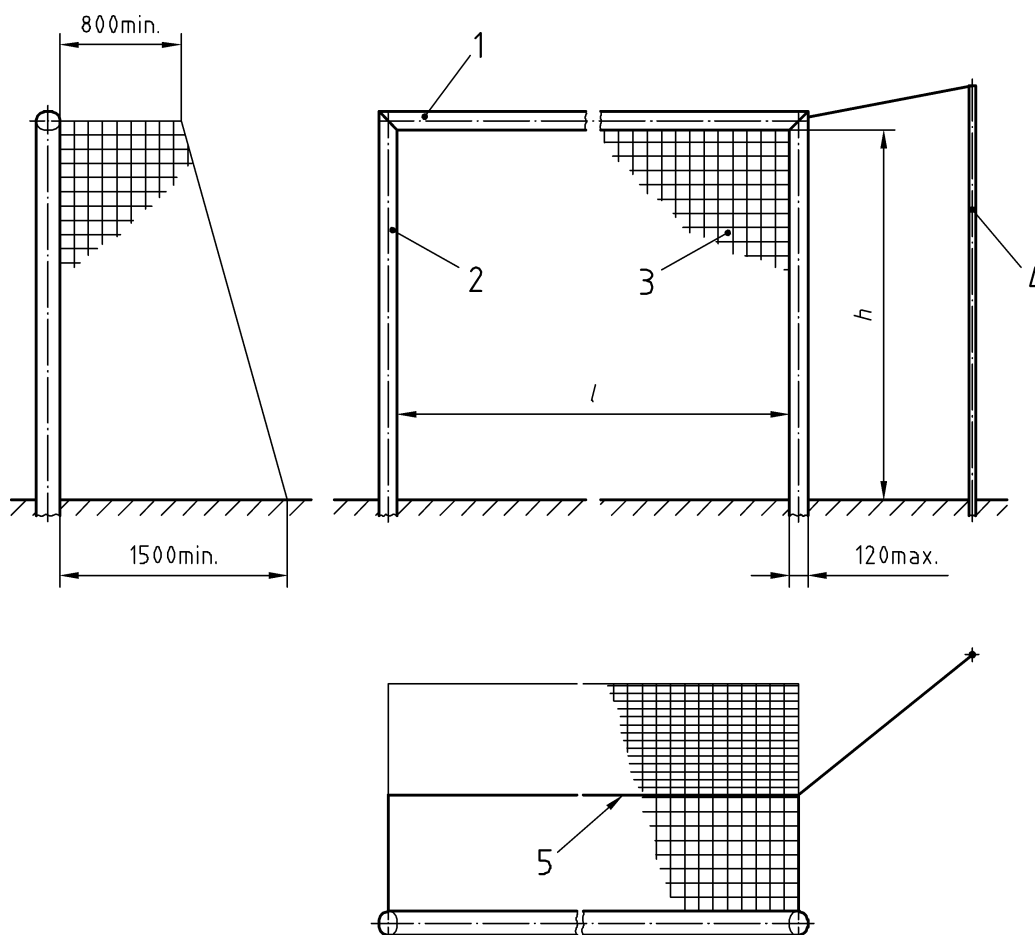
Dimensions in metres

Type	Size <i>l x h</i>	Description
1	7,32 × 2,44 5,00 × 2,00	Football goal with free guy of the net and with ground sockets
2	7,32 × 2,44 5,00 × 2,00	Football goal with net supports and ground sockets
3	7,32 × 2,44 5,00 × 2,00	Freestanding football goal with ground fixings
4	7,32 × 2,44 5,00 × 2,00	Freestanding football goal with counterweight

3.2 Dimensions

Football goals shall comply with the dimensions shown in Table 2 and Figures 1 to 4.

Dimensions in millimetres



Key

- 1 Crossbar
- 2 Upright
- 3 Net
- 4 Pole for net head line (example)
- 5 Net head line

NOTE Referring to key 4 "pole for net head line" requirements to the poles and its position depend on national regulation of free space for safety and to football federation.

Figure 1 — Football goal Type 1

Table 2 — Dimensions

Dimensions in millimetres

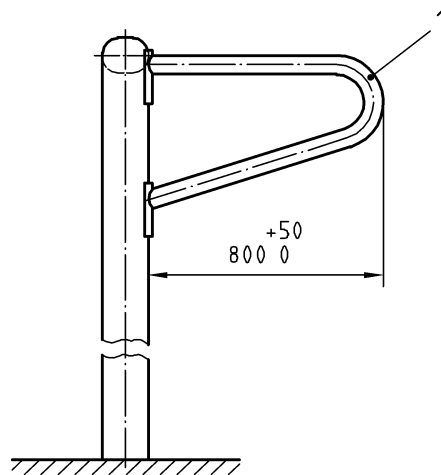
Size code	<i>l</i>	<i>h</i>
732 × 244	7 320 ± 8	2 440 ± 8
500 × 200	5 000 ± 8	2 000 ± 8

For an example for foundation see Annex A.

One football goal Type 1 consists of:

- the goal frame (2 uprights and 1 crossbar) including net fixings;
- the ground sockets;
- the net with net head line including means of contact with the ground;
- the poles with ground sockets.

Dimensions in millimetres



Key

1 Net supports

NOTE see 4.6

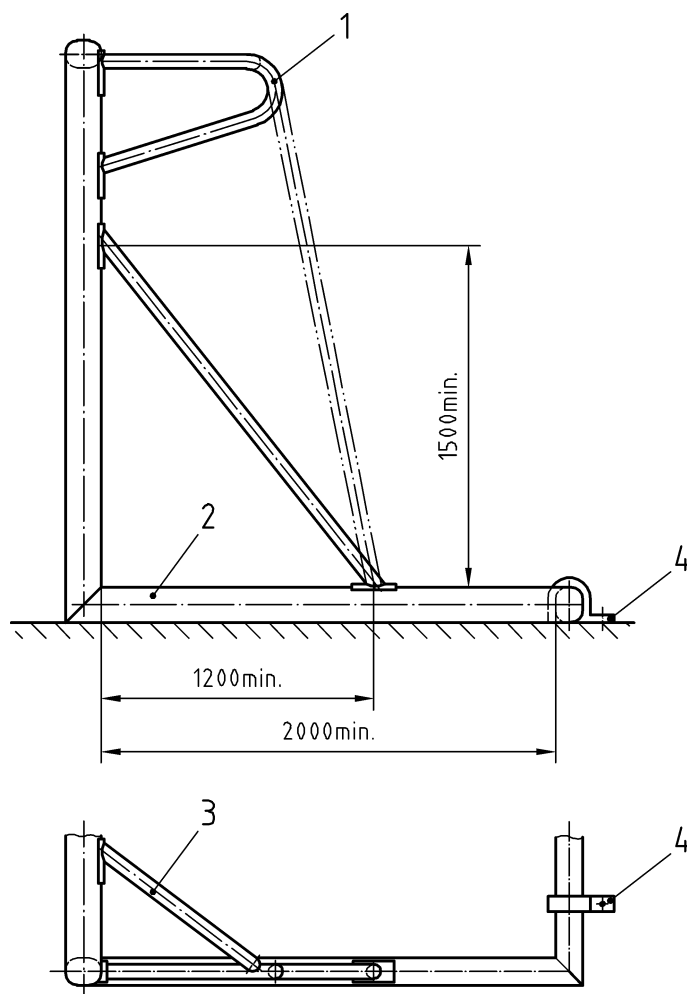
Figure 2 — Football goal Type 2

Other dimensions and specifications as Type 1.

One football goal Type 2 consists of:

- the goal frame (2 uprights and 1 crossbar) including net fixings and net supports;
- the ground sockets;
- the net with net head line including means of contact with the ground.

Dimensions in millimetres

**Key**

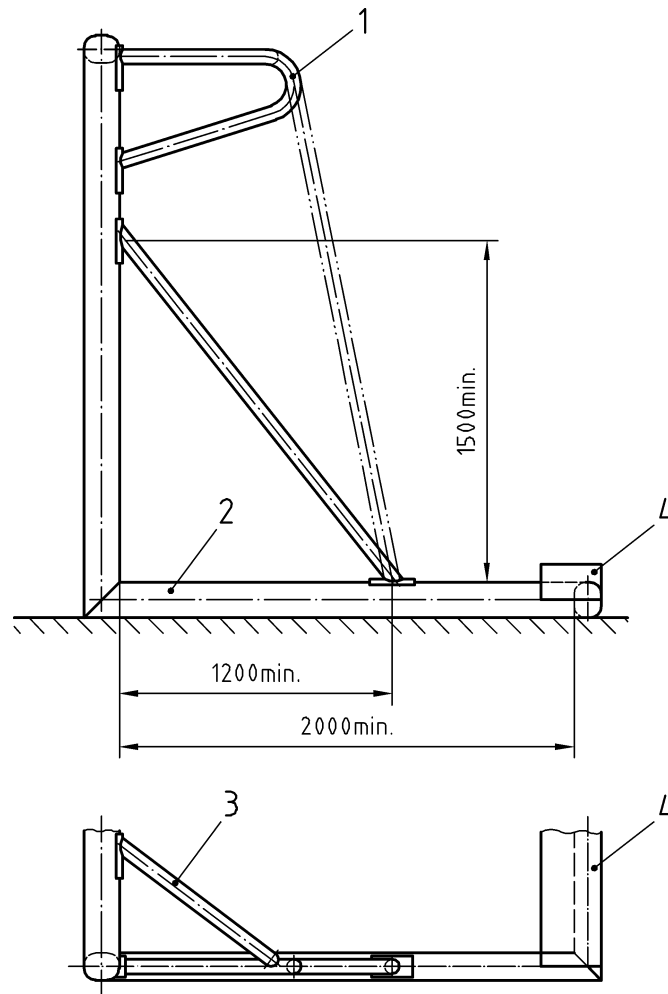
- 1 Net supports
- 2 Ground frame
- 3 Cross bracket
- 4 Ground fixings

Figure 3 — Football goal Type 3

Other dimensions and specifications as Type 1.

One football goal Type 3 consists of:

- the goal frame (2 uprights, 1 crossbar and the ground frame) including net fixings, net supports including cross bracket and ground fixings (at least one at each side);
- the net with net head line including means of contact with the ground.



Key

- 1 Net supports
- 2 Ground frame
- 3 Cross bracket
- 4 Counterweight

Figure 4 — Football goal Type 4

Other dimensions and specifications as type 1.

One football goal Type 4 consists of:

- the goal frame (2 uprights, 1 crossbar and the ground frame including a fixed counterweight) including net fixings, net supports including cross bracket;
- the net with net head line including means of contact with the ground.

3.3 Material

The goal frame may be made of steel, light metal or plastics, provided the requirements of this document are fulfilled.

The ground frame, the ground sockets, the brackets and the poles for the net head line shall be made of light metal and/or steel protected against corrosion (e. g. hot galvanized, powder coated or painted).

The fixings of the net to the goal shall be made of non-corrosive metal or of plastic material.

For the net, net yarns may be used made of synthetic or natural fibres.

For the net head line synthetic ropes shall be used.

3.4 Design

3.4.1 Goal frame

The construction shall be sufficiently secure to withstand the stresses during a game and when moved.

NOTE 1 The uprights and the crossbar may be made of one or more pieces.

The uprights and the cross-bar of one football goal shall have the same cross section.

The crossbar shall not be deformed by more than 10 mm when tested according to 5.2.

Each fixing point of the net shall withstand the test in 5.4 without breakage.

The goal frame shall be either white or be natural silver colour of light metal.

NOTE 2 White colour is in line with football federation's requirement.

The ground frame of Type 4 shall incorporate a fixed counterweight, which is part of the ground frame.

3.4.2 Nets

3.4.2.1 Dimensions

The net dimensions shall comply with Table 3.

Table 3 — Net dimensions

Dimensions in millimetres

size code	length	height	depth		width of mesh	diameter of yarn
	min.	min.	top min.	ground min.	max.	min. ^a
750 × 250	7 500	2 500	800	1 500	120	2
515 × 205	5 150	2 050	800	1 500	120	2

^a The diameter is minimum to minimize the risk of cutting.

3.4.2.2 Physical properties

Nets shall comply with Tables 4 and 5 as appropriate.

Table 4 — Mesh breaking strength

Class	N min.	Test method
A	1 800 (1 500) ^a	EN ISO 1806
B	1 080 (900) ^a	
C	792 (660) ^a	

^a This corresponds to the breaking strength of the net yarn, tested in accordance with EN ISO 2062.

Table 5 — Rope breaking forces of net head line

Class	N min.	Test method
Z	7 000	prEN ISO 2307
Y	3 000	

3.4.2.3 Net fixing

The net head line shall be connected to the net in such a way that there is no shifting.

The net shall be suspended loosely falling so that a ball scoring a goal cannot rebound immediately.

The net shall be loosely attached to the frame. In the case of Type 1 and 2 the net shall be held to the ground (e. g. with a weighted line or fixing points), to prevent the ball from passing through.

3.4.3 Ground sockets

The ground sockets shall be adapted to the diameter of the poles.

4 Safety requirements

4.1 General requirements

Exposed corners and edges shall be rounded with a radius of at least 3 mm.

4.2 Goal frame

Between the uprights and the ground frame (if any) there shall be no free area.

The cross section of the side parts of a ground frame shall not protrude past the uprights.

4.3 Strength

When tested in accordance with 5.2, the crossbar shall not fracture or collapse or show permanent deformation greater than 10 mm.

4.4 Stability

When tested in accordance with 5.3.1 , goals Type 1 to 3 shall not fall over nor slide.

NOTE The ground sockets should be placed in concrete blocks, example see Annex A, ensuring a drainage hole is inserted.

When tested in accordance with 5.3.2 , goals Type 4 shall not fall.

4.5 Net fixings

When tested according to 5.4, no point of fixation of the net shall break or deform.

Net fixings shall be designed in such a way that the player cannot be hurt.

This requirement is fulfilled if e. g. external openings (i.e. on the circumference of the cross section of the uprights and the cross bar) are ≤ 8 mm or ≥ 25 mm.

Metal cup hooks shall not be used. If spring hooks are used as means of fixation or for the end of a rope, they shall have screw caps.

4.6 Frame entrapment

Any possible entrapment in the frame above 1200 mm above the ground, e.g. net supports, shall have no downwards angle of less than 60° and no openings of less than 230 mm diameter.

5 Test methods

5.1 General

If not otherwise specified in the following the requirements of Clauses 3 and 4 are tested by measuring, visual inspection or practical test.

Execute the test after conditioning the goal for a minimum of 1 h at a test temperature of $(20 \pm 5) ^\circ\text{C}$.

5.2 Determination of strength

Apply a vertical force of 1 800 N at the centre of the crossbar for $1 \text{ min} + \begin{smallmatrix} 10 \\ 0 \end{smallmatrix} \text{ s}$.

Note any fracture or other damage to the goal.

Remove the force and measure any permanent deformation $30 \text{ min} + \begin{smallmatrix} 30 \\ 0 \end{smallmatrix} \text{ s}$ after removal of the force.

5.3 Determination of stability

5.3.1 Testing of Types 1 to 3

Install the goal in its normal position of use. Apply a horizontal force (F) of 1 100 N at the top of the centre of the crossbar for $1 \text{ min} + \begin{smallmatrix} 10 \\ 0 \end{smallmatrix} \text{ s}$ by means of a rope of 3 000 mm length, see figure 5.

Note any falling over or sliding.

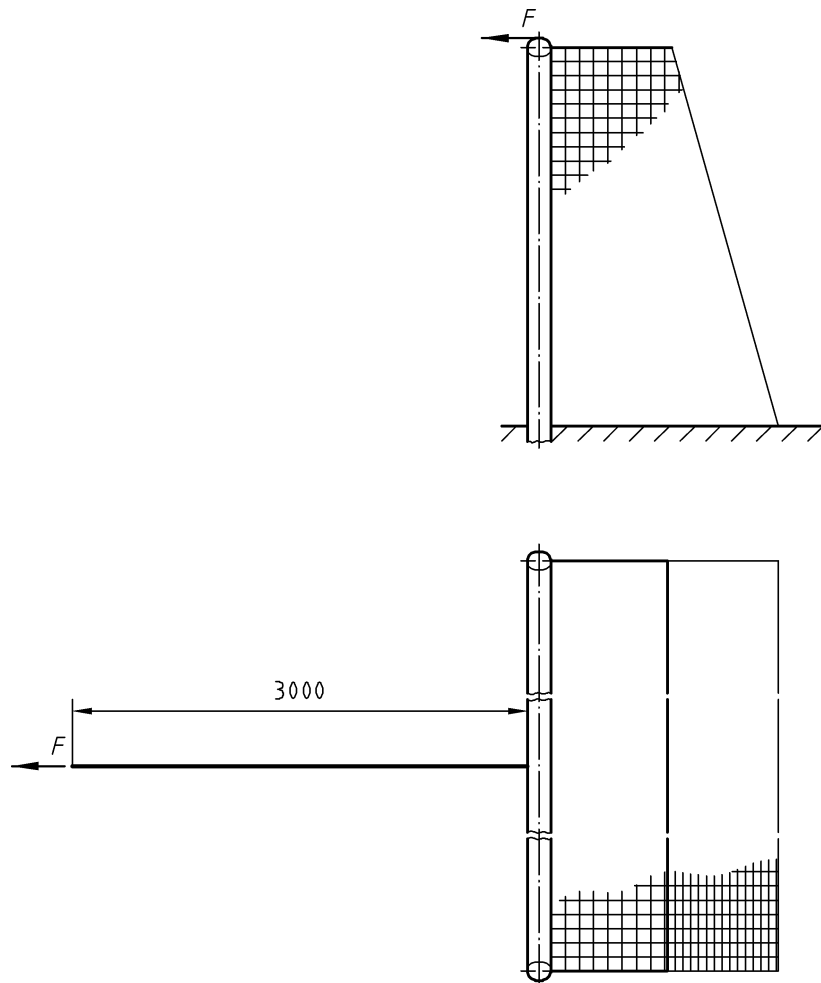


Figure 5 — Stability test Types 1 to 3

5.3.2 Stability test Type 4

Install the goal in its normal position of use. Block the goal with blocks and apply a horizontal force (F) of 1 100 N at the top of the centre of the crossbar for $1 \text{ min} + {}_0^{10} \text{ s}$ by means of a rope of 3 000 mm length, see figure 6.

Note any falling.

Dimensions in millimetres

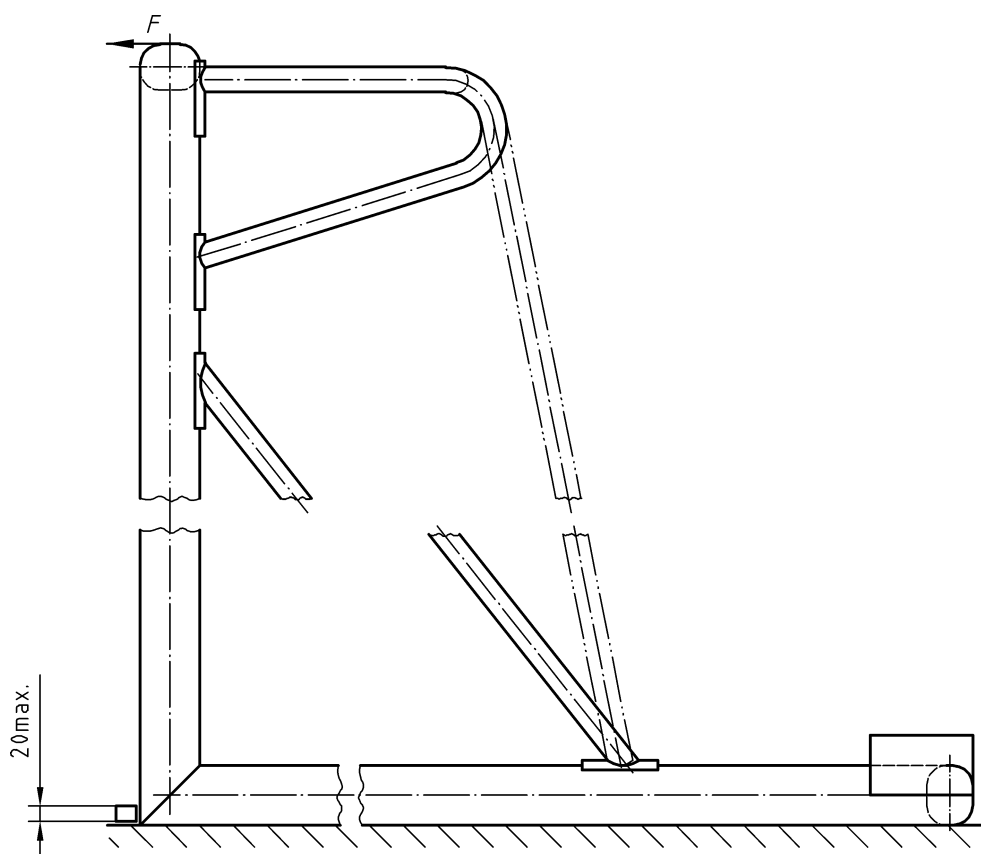


Figure 6 — Stability test Type 4

5.4 Strength test for net fixings

Apply a horizontal force of 1 100 N to the net mesh at 1 000 mm below the crossbar in the middle of the goal.

Monitor the force for 10 s.

Remove the force and check for any breakage and/or permanent deformation.

6 Assembly, installation and maintenance instruction

The manufacturer shall provide written instructions for assembly, installation and maintenance.

It shall be pointed out in the assembly instructions that any goals that are not being used at the moment should be secured against overturning.

7 Warning label

A permanent warning label shall be fixed to the goal with the following wording:

- This goal is designed to be used for football only and no other purpose;
- Check all fastenings are fully tightened before using this product and check periodically afterwards;
- At all times the goal shall be secured against tilting;
- Do not climb on the net or goal framework.

NOTE Also an appropriate graphical symbol may be used

8 Marking

Goals shall be marked with the following information:

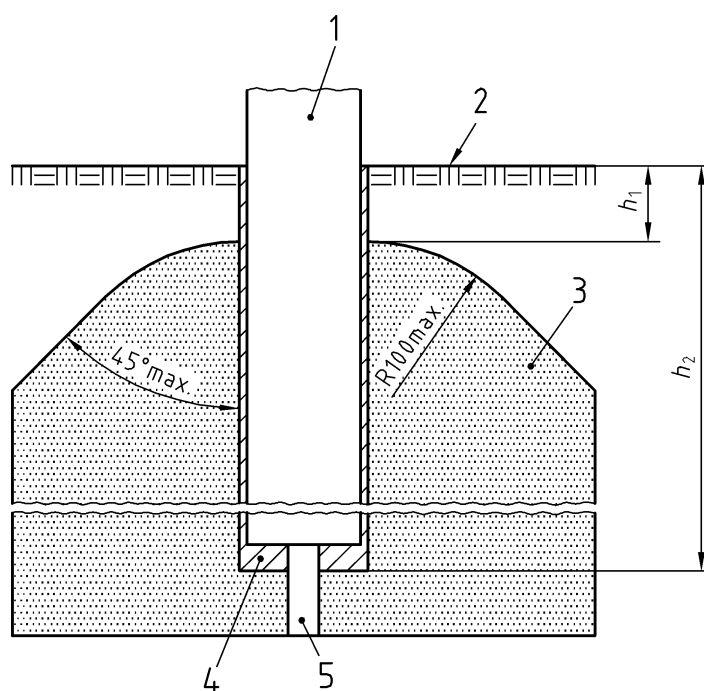
- a) the number of this document EN 748¹⁾;
- b) the name or trademark of the manufacturer, retailer or importer and the year of manufacturing of the frame;
- c) a warning label giving details of use that the goal is designed for and type of net in accordance with Clause 7.

¹⁾ Marking EN 478 on or in relation to a product represents the manufacturer's declaration of conformity, i. e. a claim by or on behalf of the manufacturer that the product meets the requirements of the standard. The accuracy of the claim is therefore solely the responsibility of the person making the claim. Such a declaration should not be confused with third party certification of conformity, which may also be desirable

Annex A (informative)

Example of foundations

Dimensions in millimetres



Key

- 1 Upright/pole
- 2 Sport surface
- 3 Concrete block
- 4 Ground socket
- 5 Drainage hole

Figure A.1 — Foundation

Table A.1 — Heights

Dimensions in millimetres

Height	Upright min.
h_1	40
h_2	500

Annex B (informative)

A-Deviation

A-deviation : National deviation due to regulations, the alteration of which is for the time being outside the competence of the CEN/CENELEC member.

This document does not fall under any Directive of the EC.

In the relevant CEN/CENELEC countries these A-deviations are valid instead of the provisions of the document until they have been removed.

France :

Considering the inclusion of an additional Type 4 for free standing football goals with counterweight and

considering the French national current regulation laying down the safety requirements to be fulfilled by football, handball, field and indoor hockey goals and basketball goals (decree n° 96-495 of June 4, 1996), which provides under article 3 that

"The equipment placed on the market shall be provided with an installation device enabling to ensure that it is firmly secured.

The fixing device shall allow to prevent the equipment from falling, overturning or toppling over under reasonably foreseeable conditions of use.

It shall in particular ensure the stability of the equipment in the event of hanging onto or swinging from the horizontal crossbar of the football, handball, hockey goal or onto or from the ring of the basketball goal. ... (article 3)

The making available to users for sports or game activity purposes, either free of charge or against payment, of football, handball, hockey goals and of basketball goals intended for outdoor or indoor use, is prohibited if this equipment is not firmly secured/fixed and if it does not meet the safety requirements specified by this decree... (article 6)"

France has asked for this national deviation.

In France all provisions in EN 748 regarding Type 4 are not valid.

This concerns Clauses 3.1, 3.2, 4.4 and 5.3.2.

Bibliography

EN ISO 2062, *Textiles — Yarns from packages — Determination of single-end breaking force and elongation at break*(ISO 2062:1993)

U p o z o r n ě n í : Změny a doplňky, jakož i zprávy o nově vydaných normách jsou uveřejňovány ve Věstníku Úřadu pro technickou normalizaci, metrologii a státní zkušebnictví.

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