

INSTRUCTION MANUAL

Safety cage for discus throw

KLD17-5/7-A

and ground anchor set K1-0237



Safe assembly and use

- Before you start to assemble and use the cage please read this manual carefully and store the manual in a safe place for further reference. Polanik Sp. z o. o. shall not be liable for any cage damages which are the result of the failure to follow this manual.
- Unauthorized copying of this manual, in whole or in part, is prohibited.
- The contents of this manual are subject to change without notice.
- Warning! The sports equipment produced by Polanik Sp. z o. o. is designed for athletics training and use in sports competitions only. Please pay special attention especially when using throwing implements and other throwing equipment, misuse of athletics equipment and implements can cause serious injury or in extreme cases even death. That is why training and use during sports events have to be always supervised by authorized sports personnel. In no event shall Polanik Sp. z o. o. be liable for any special, incidental, indirect or consequential damages in connection with the purchase or use of POLANIK products or costs over the original cost of the product.
- Specific warranty terms:
 - 1) The use of the throwing cage (KLD17-5/7-A) is to be done in the properly marked and secured sports facility designed for that purpose and under supervision of qualified coaches, and according to: the rules of World Athletics (WA), respective national athletics federation and local safety regulations. Failure to follow the above restrictions results in loss of the warranty rights.
 - 2) The throwing cage (KLD17-5/7-A) is designed to protect the spectators against the improperly released discus which misses the cage mouth. The execution of that task brings a risk of damages to the cage elements (for example the pillars), as a crumple zone of an automobile is damaged to absorb energy from the impact during an accident to save passengers. The damages caused by the proper cage operation, which is stopping improperly thrown discuses from flying outside the cage and absorbing the impact energy in order to protect the thrower inside the throwing circle, are recognized as a normal wear of the product and are excluded from the warranty. The damages can be removed in course of payable repair or replacement of the cage elements.
 - 3) The use of the non-genuine spare parts (not produced by Polanik) results in loss of the warranty rights and the termination of the WA certificate validity.

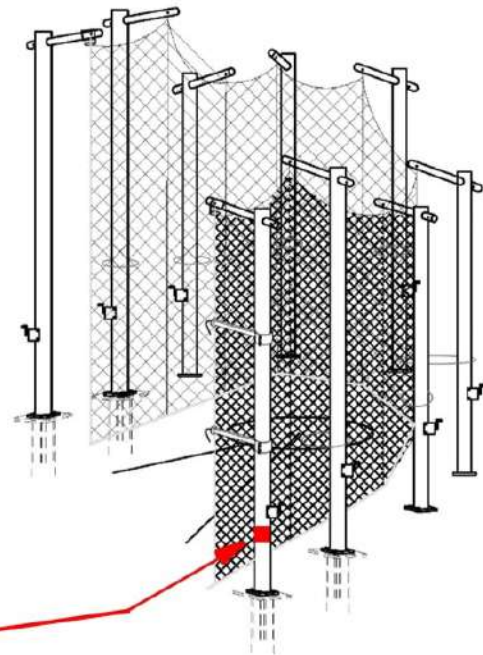
WARNING!

The safety net must be lowered:

- when the cage is not used,
- at wind speed 15 m/s.

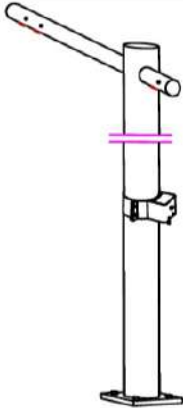
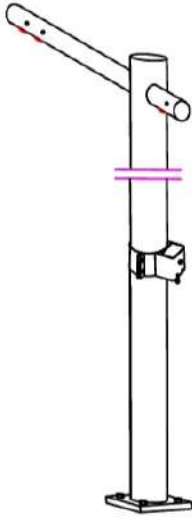
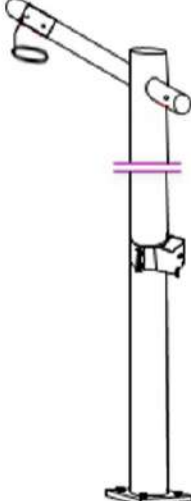
Before using the cage, note the current wind speeds or possible gusts or storms warnings.

The security of the network must be tested every year.



The data plaque of the cage is situated on the extreme pillar

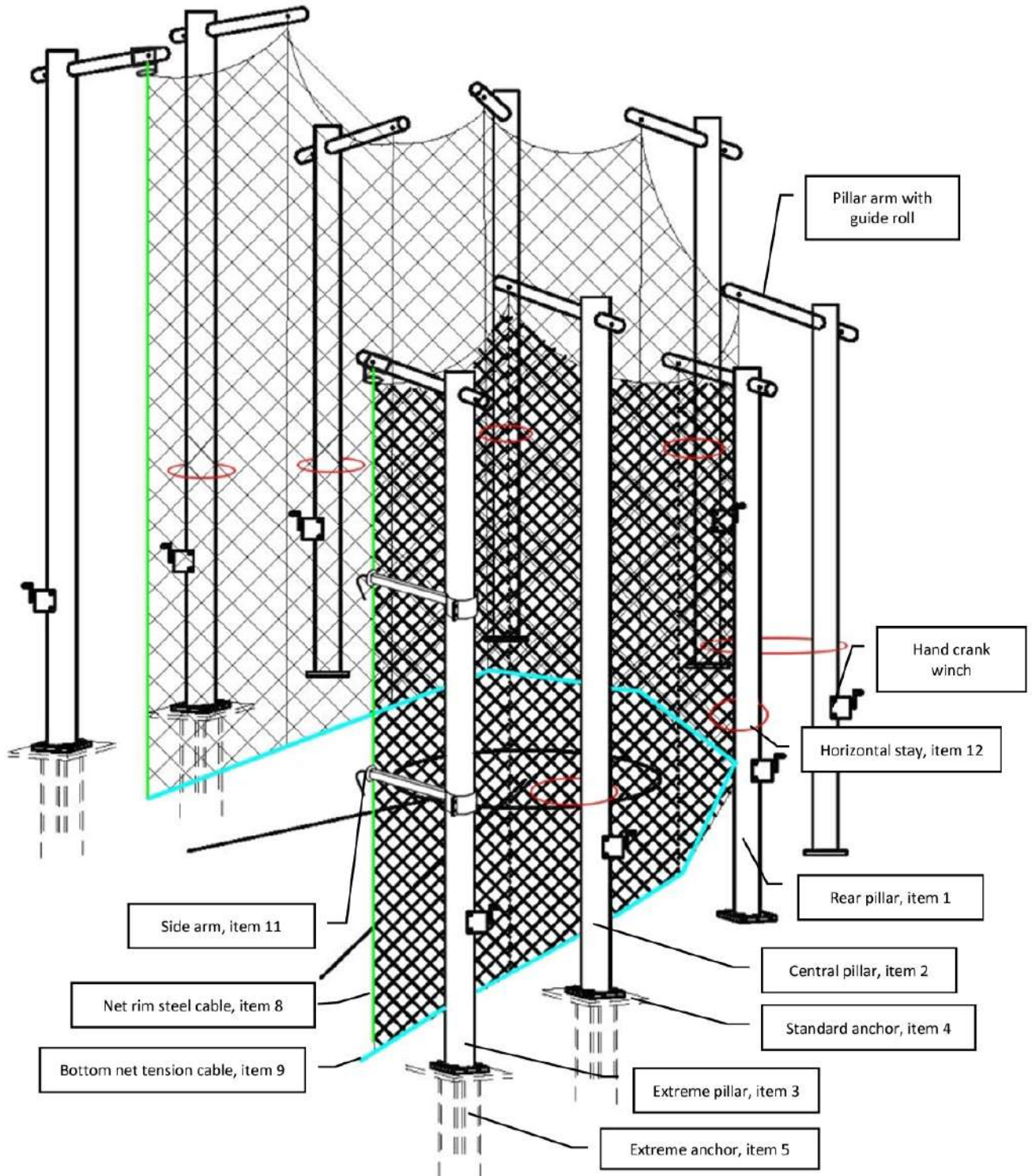
II. Parts (part sets) list

Item	Part/set description	Q-ty Pcs.	Material	Draw. no.	Part/set sketch
1	Rear pillar length [cm]: 535,5 diameter [cm]: 12	5	Anodized aluminium and electro- galvanized steel	1	
2	Central pillar length [cm]: 730,5 diameter [cm]: 12	2	Anodized aluminium and electro- galvanized steel	2	
3	Extreme pillar with guide loop installed length [cm]: 730,5 diameter [cm]: 12	2	Anodized aluminium and electro- galvanized steel	3	

Item	Part/set description	Q-ty Pcs.	Material	Draw. no.	Part/set sketch
4	Standard anchor (screws screwed down and secured with rubber sleeves) included in: K1-0237 ground anchor set available separately	7	Electro-galvanized steel	1, 2	
5	Extreme anchor (with reinforced arm equipped with two eyelets, screws screwed down and secured with rubber sleeves) included in: K1-0237 ground anchor set available separately	2	Electro-galvanized steel	3, 4	
6	Hinge axle \varnothing 11 x 350	1	Electro-galvanized steel		
7	Crank	2	Electro-galvanized steel	1, 2, 3	
8	Net with rim vertical steel cables net size [cm]: 2550 x 550/750 mesh size [mm]: 44 x 44 mesh rope diameter [mm]: 5	1	polypropylene		
9	Bottom net tension steel cable +nut M 16 (1 pc) + washer 16 (1 pc)	1	Electro-galvanized steel		
10	Net hooks	100	Electro-galvanized steel		
11	Side arm + screw M 8x25 (16 pcs) + nut M 8 (16 pcs) +washer 8 (16 pcs)	4	Electro-galvanized steel, powder painted		
12	Horizontal stay rope length ~1,6 m	7			

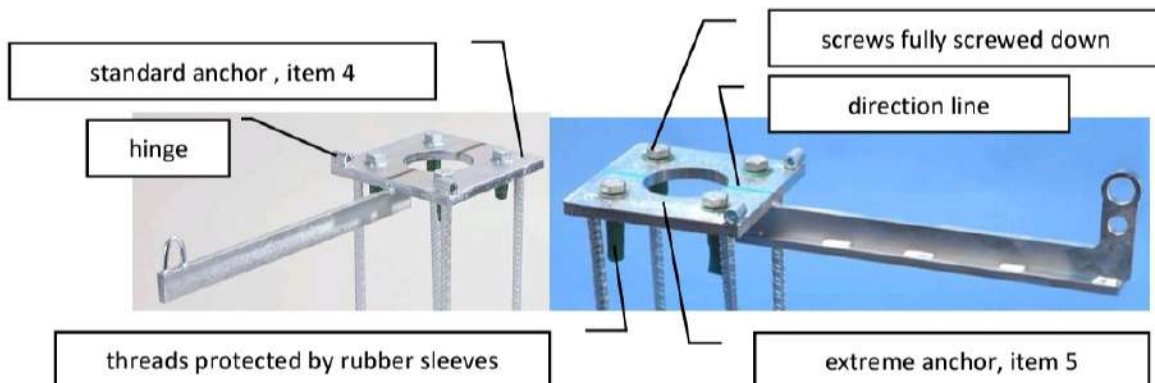
III. General assembly description

We ship the cage to a customer in partially assembled units. Extension arm with rollers and ratchet mechanism is already installed in each cage pillar (item 1) (see drawing no. 1, 2 and 5). The cage construction consists of 9 pillars 5 m high (item 1, drawing no. 1, 2 and 5). Pillars are fastened to anchors (item 2, drawing no. 1 and 2), which are embedded in concrete according to the plan of the foundation blocks – drawing no. 3. The anchors should be positioned in concrete in such a way that their hinges and arms face the throwing circle. Installed pillars constitute the main structure of the cage which is ready for affixing the net and hoisting it.



IV. Anchors – placing in concrete

The installation of the anchors is a key stage to the whole assembly process of the cage and its further proper functioning, so please pay particular attention and install the anchors with high precision. The anchors are delivered ready for installation – the screws situated in the upper plates of the anchors are fully screwed down and their threads are protected by rubber sleeves. If concrete plasters the threads of the screws, it will be impossible to install the pillars. Before installation please make sure the screws are fully screwed down and the threads are secured with rubber sleeves.



All the anchors must be positioned in concrete foundation blocks towards inside the cage (throwing circle), according to the direction lines on the anchors plates (see Draw. no. 4, p. 18). Each anchor must be embedded in the foundation block in such a way that its upper surface is exactly horizontal (then the pillar is vertical) and flash with the target surface of the throwing facility (see Drawings no.: 1, 2 and 3; p. 15 and next).



ATTENTION! The anchors should be placed in the concrete of the class B20 (C16/20) quality or higher. Each time the anchor is put into the foundation the concrete should be mixed, so that it covers tightly the ribbed bars and there are no air chambers inside. During the concrete setting the foundations should be moistened (in the first week twice a day, in the second week once a day). You ought to wait minimum 2 weeks before you proceed with the installation of the pillars.

Correctly embedded standard anchor



Correctly embedded extreme anchor



V. Pillars installation

The installation of pillars (item 1, 2 and 3) on anchors (item 4 and 5) is done as follows:

- a) unpack delivered pillars



- b) remove blocking screws (M 8x16) from the ratchet mechanisms



- c) loosen steel ropes,



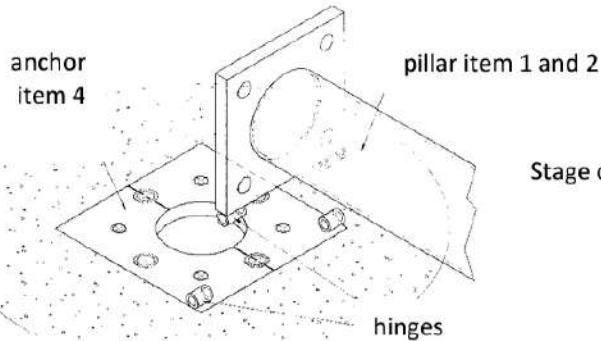
- d) fasten temporarily steel rope loop to lever of ratchet mechanisms.



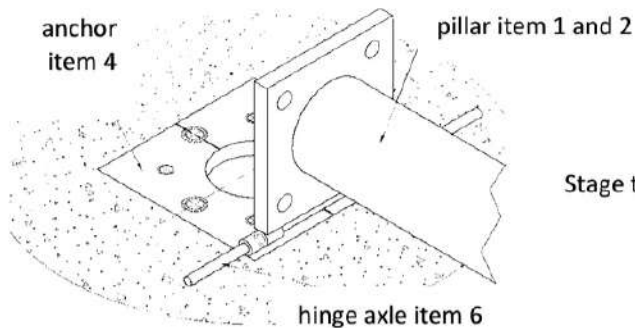


WARNING: failure to follow the sequence of these assembly operations could result in serious accident or damages to the cage construction.

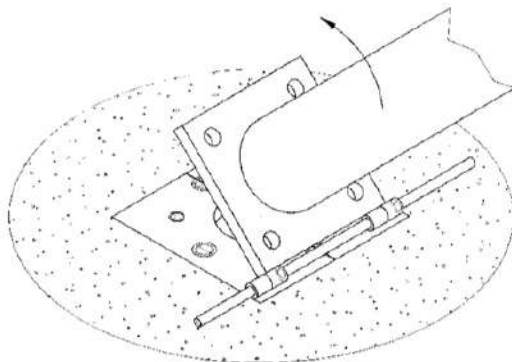
Next rear pillars (item 1) and central pillars (item 2) should be installed one by one according to the sequence shown below:



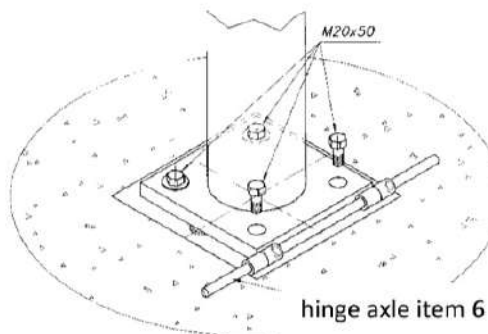
Stage one - position the pillar in the anchor hinges.



Stage two - slide hinge axle (item 6) into the anchor hinges.



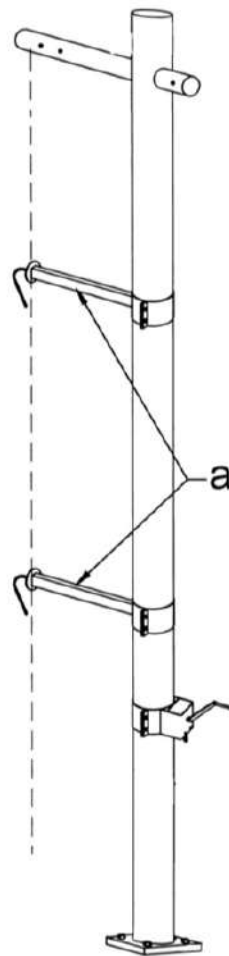
Stage three - lift the pillar to vertical position.



Stage four - while one man is supporting the pillar in upright position, the other person is screwing it to the anchor in the following sequence:

- a) screw down two screws (M 20 x 50) opposite the anchor hinges,
- b) then screw down two remaining screws (M 20 x 50) next to the anchor hinges,
- c) remove hinge axle (item 6).

Before you install extreme pillars (item 3), two side arms (item 11) must be installed on each extreme pillar, one side arm at the height of ~2,5 m and the other one at the height of ~5,5 m (the heights are marked on each extreme pillar with blue label bands) see the drawing below. Side arms (item 11) and the extreme pillar arm are to be lined up, and the ends of their hooks directed towards the outside of the cage, see the drawing below.

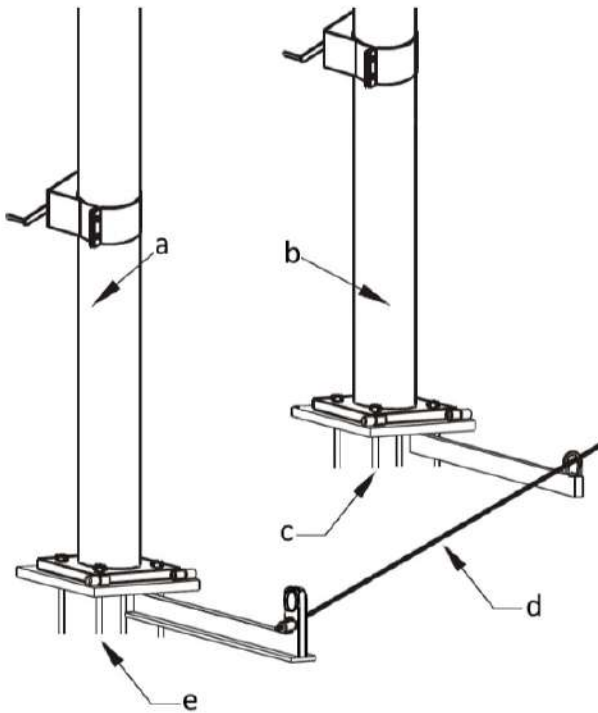


a – side arm (item 11)

Extreme pillars (item 3) are mounted on extreme anchors (item 5) in the same way as rear pillars (item 1) and central pillars (item 2) are installed.

VI. Net hoisting

When the pillars are screwed bottom net tension cable (item 9) ought to be mounted, see the diagram below.



- a – extreme pillar ~7 m, item 3
- b – central pillar ~7 m, item 2
- c – standard pillar, item 4
- d – bottom net tension steel cable, item 9
- e – extreme anchor, item 5

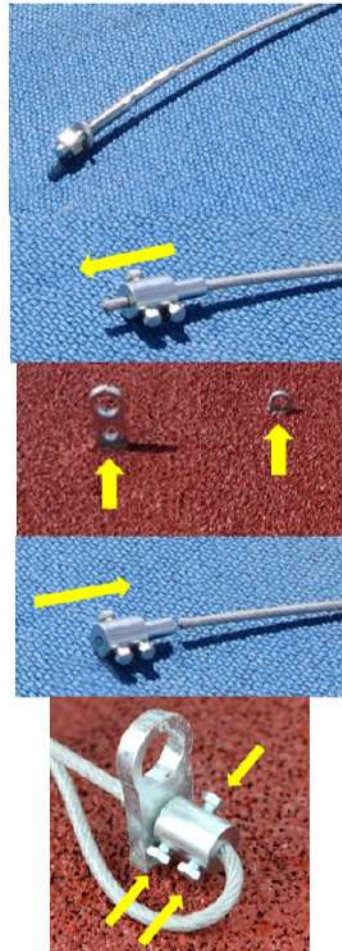
Unscrew the adjusting nut until 1 cm of threads remains.

Remove the clamp from the other end of the steel rope.

Thread the rope end through the loops of the embedded anchors starting from the extreme anchor, use its lower loop

Then reinstall the clamp, pull the rope end to tighten it preliminarily.

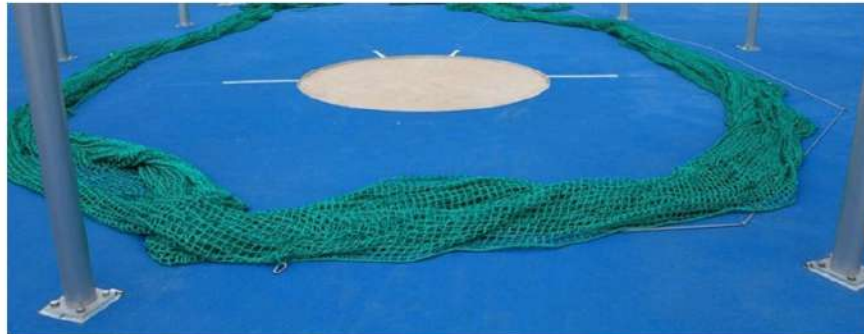
Next block the clamp on the rope using the screws.



Now screw down adjusting screw to tighten the rope fully.



When we complete these preliminary works, the net can be laid down on its circumference according to drawing no. 4.



Then we begin with attaching it to the steel ropes of the pillars by means of special catches. One end of each steel rope is fixed permanently to the bobbin of the ratchet mechanism and the other one, which has been temporarily fastened to the pillar, should be now untied and attached to the net. That operation is repeated at each pillar.

Rear and central pillar rope fastened to cage net.



Extreme pillar steel rope fastened to cage net.



After linking the net with steel lines of the pillars, we can hoist the net. The lifting of the net should be executed successively by approx. 2 m at each pillar and ought to be continued up to the maximum height except the extreme pillars, at which a space of approximately 20 cm before the maximum height must be left. **Do not lift the steel ropes of the pillars without the net – it may not be possible to lower them without the appropriate load.**

Next we put the net edge under the bottom net tension cable (item 9), strain the net and fix its edge to the meshes with supplied net hooks (item 10).



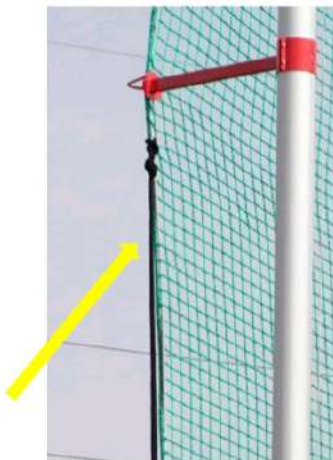
Now attach vertical steel rope (which is woven into the net mesh edge) to the upper loop of the extreme anchor.



Then we lift the net at the extreme pillars (item 3) all the way to the maximum height using the crank (item 7). Now the side edges (with the steel vertical rope) of the hoisted net have to be hooked up on the side arms (item 11, mounted earlier, see Chapter V).

Auxiliary ropes which are attached to the net edge will help you to hook the net without a ladder

Properly hooked net on the side arms is **extremely important** for correct impact absorption and pillars' life.



In order to provide proper net position (during strong winds the net may deflect from the required projection like a sail) horizontal stay ropes 1,6 m long (item 12) are supplied. The net is tied to each pillar (except for the extreme pillars) at 2m from the ground. **Please make sure that the rope loops around the pillars are loose enough to provide easy sliding. That allows you to lower the net smoothly to its idle position – max. 1/3 of its height, which is recommended for breaks in competitions or training periods, and especially during strong winds.**



VII. Final adjusting

The ratchet mechanisms of the pillars should be blocked with screws (M 8 x 20) or padlocks. That secures the net against accidental loosening. The cage is ready for use provided that the above operation is completed.



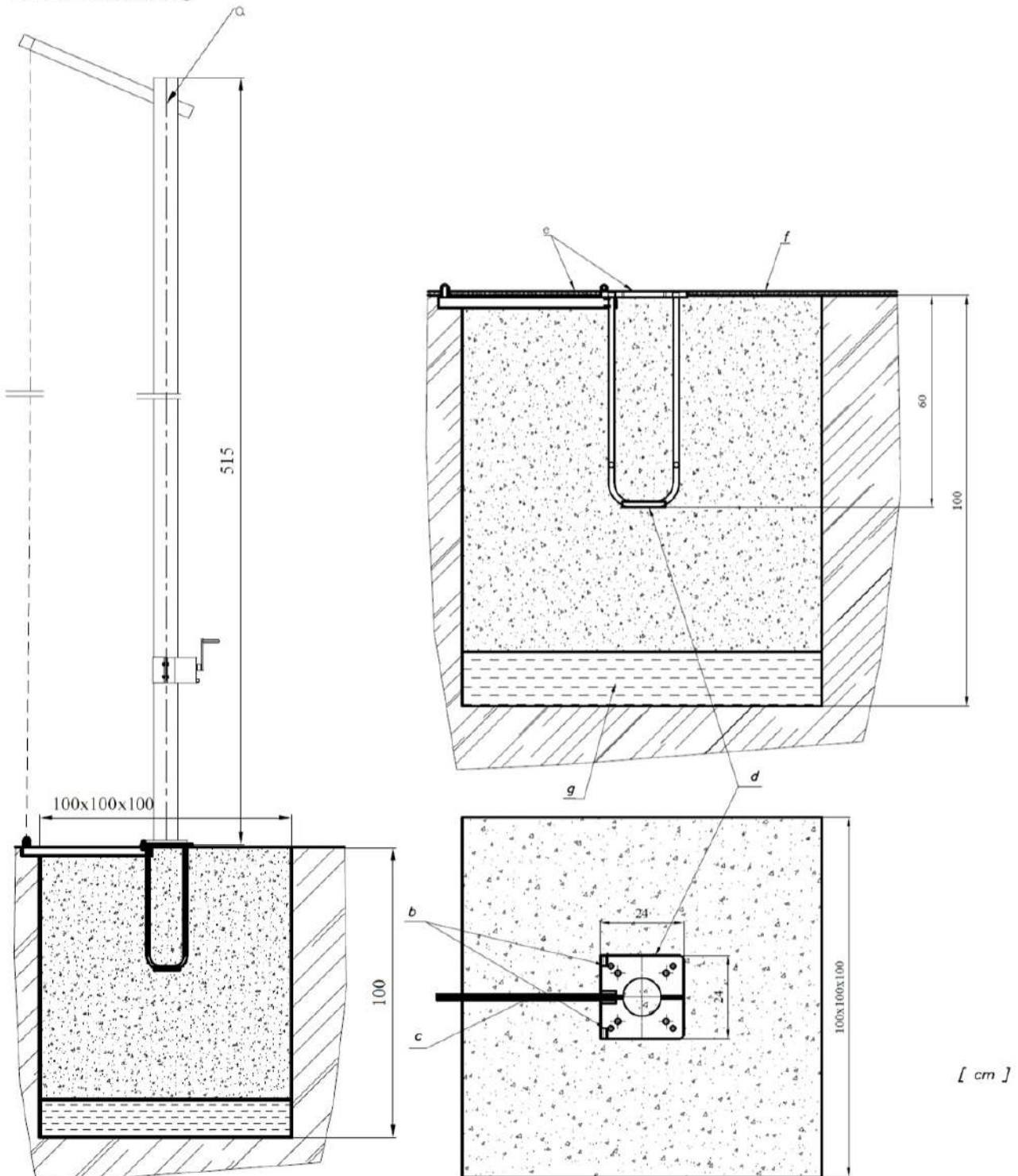
VIII. Maintenance and periodical inspection

As the producer we have done our best to make the cage guarantee maximum safety level, be easily operated and reliable in use. However the cage like any other pieces of sports equipment requires periodical inspections and must be used according to the instruction manual, the IAAF rules and operated by authorized personnel.

To keep the cage in good condition, the following maintenance operations and periodical inspections should be executed after every athletic season:

- Check the tensile strength of the net (use the samples attached to the net) according to the WA instructions.
- Clean and grease the steel lines of the cage pillars.
- Remove the cranks. Keep them in safe place for future use.
- Fold the net provided it is dry and tie it. Keep it in safe place.
- **The steel lines should be always secured and strained when the net is taken off. It prevents the steel lines from hitting the anodized aluminium surfaces of the pillars.**
- **Do not lift the steel lines of the pillars without the net – it may not be possible to lower them if they are not loaded.**
- **During idle periods the net must be absolutely lowered. Lift the net only for using.**
- **In case of strong winds, at the wind speed of 15 m/s and more, the net must be absolutely lowered.**

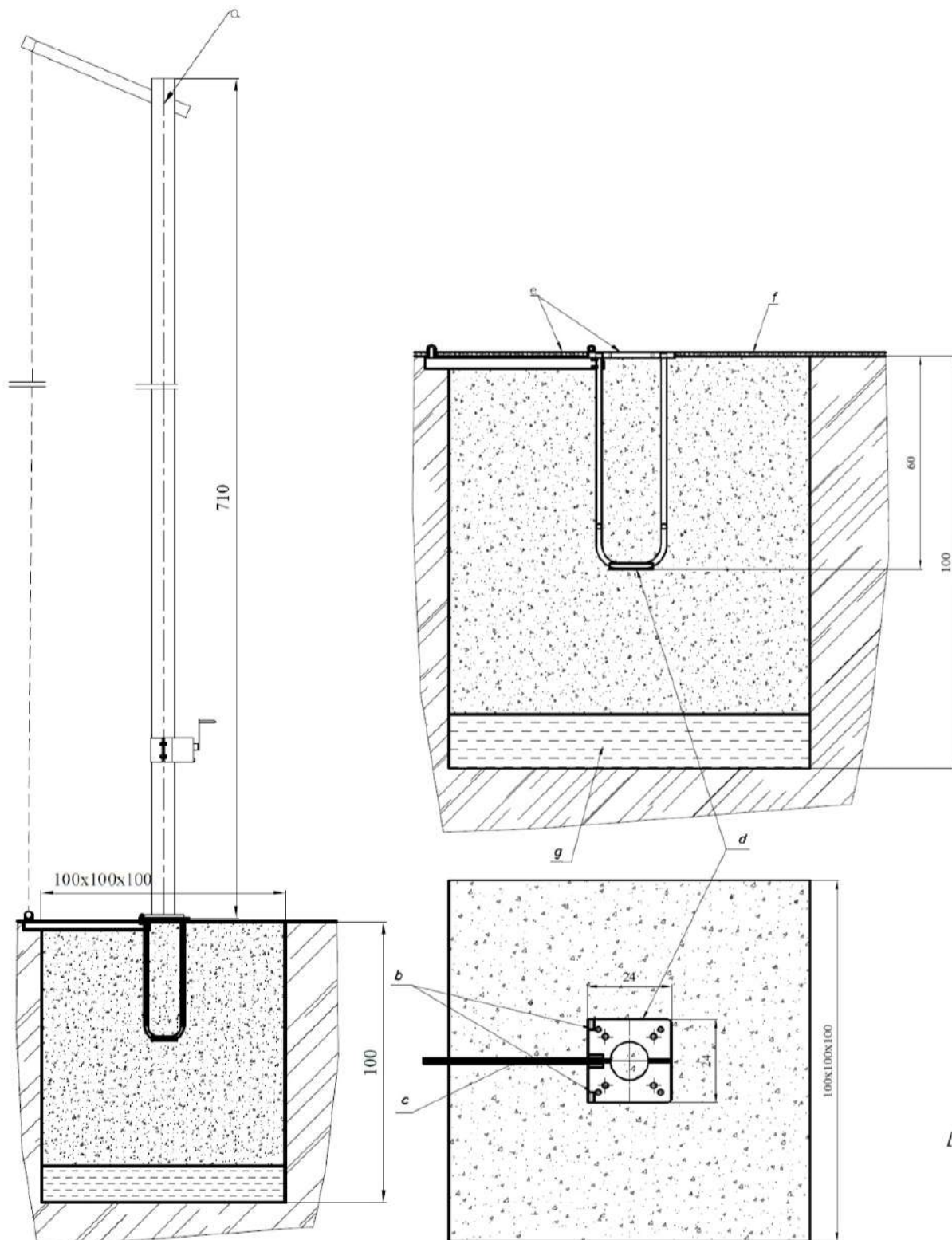
IX. Technical drawings



[cm]

- a – rear pillar ~5 m, item 1
- b – hinges of standard anchor, item 4
- c – direction line of anchor positioning
- d – standard anchor, top view and vertical section, item 4
- e – top surface flash with anchor top surface
- f – synthetic sports surface (optional)
- g – sand bed

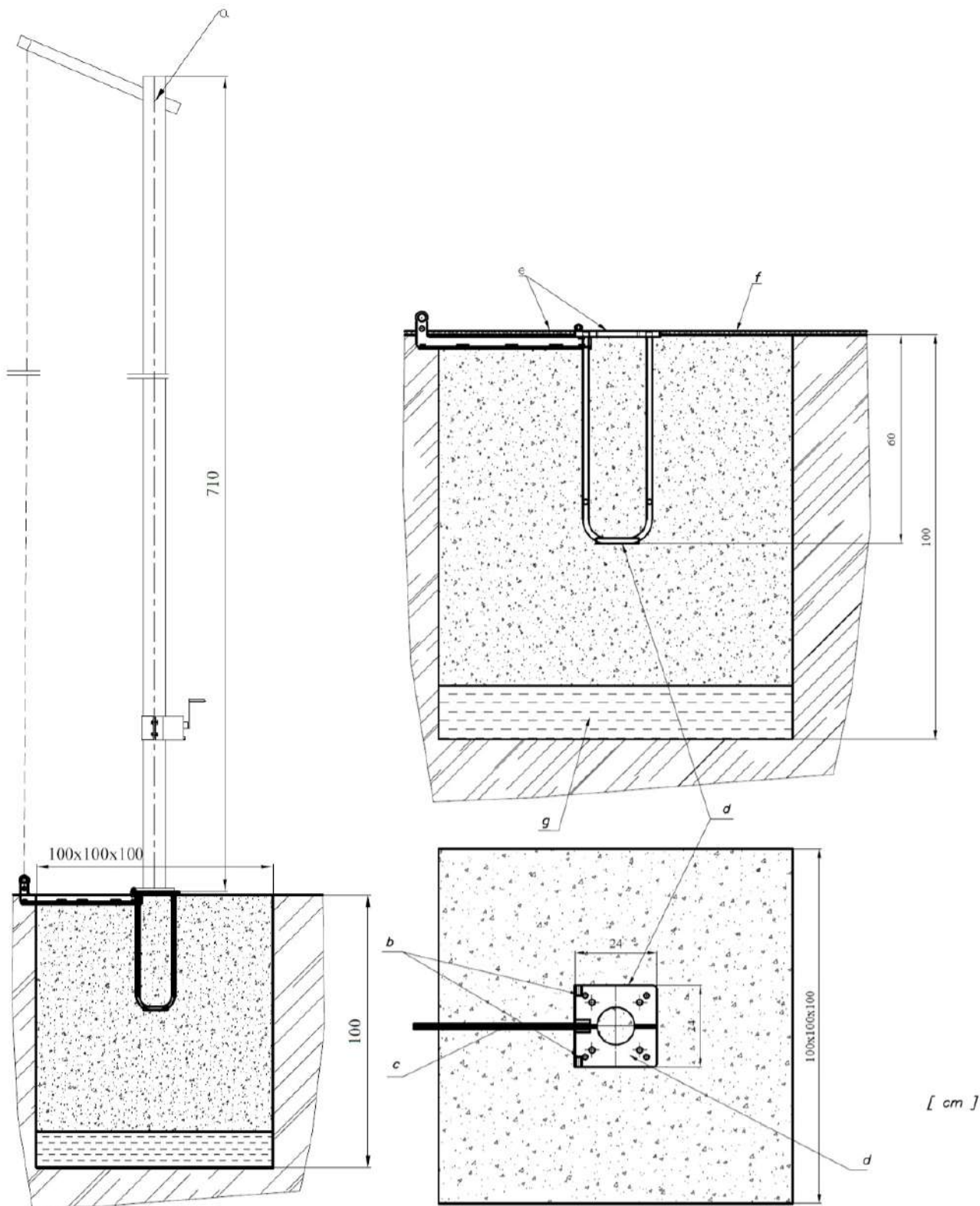
Foundation block of rear pillar
Drawing no. 1



[cm]

- a – central pillar ~7 m, item 2
- b – hinges of standard anchor, item 4
- c – direction line of anchor positioning
- d – standard anchor, top view and vertical section, item 4
- e – top surface flash with anchor top surface
- f – synthetic sports surface (optional)
- g – sand bed

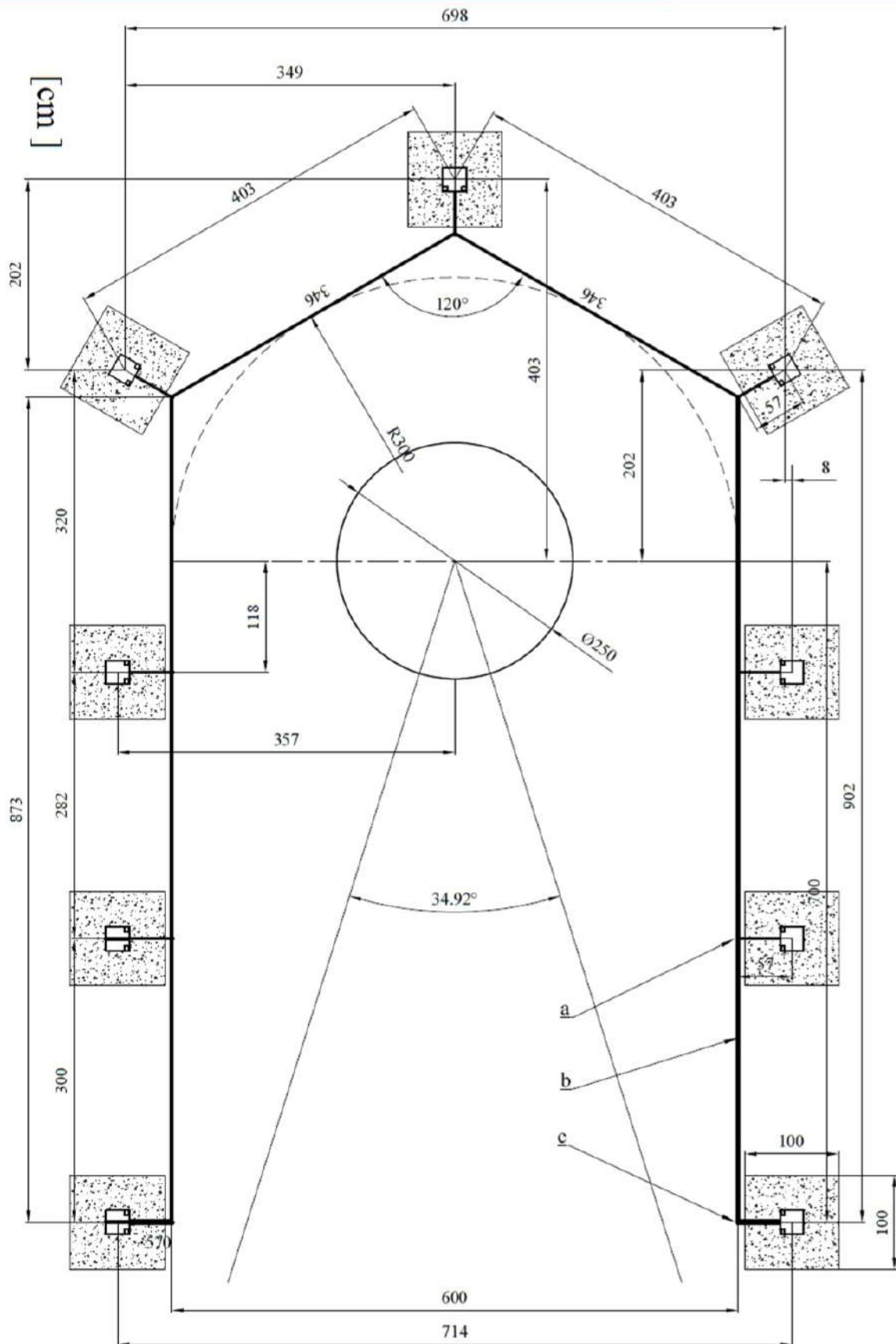
Foundation block of central pillar
Drawing no. 2



[cm]

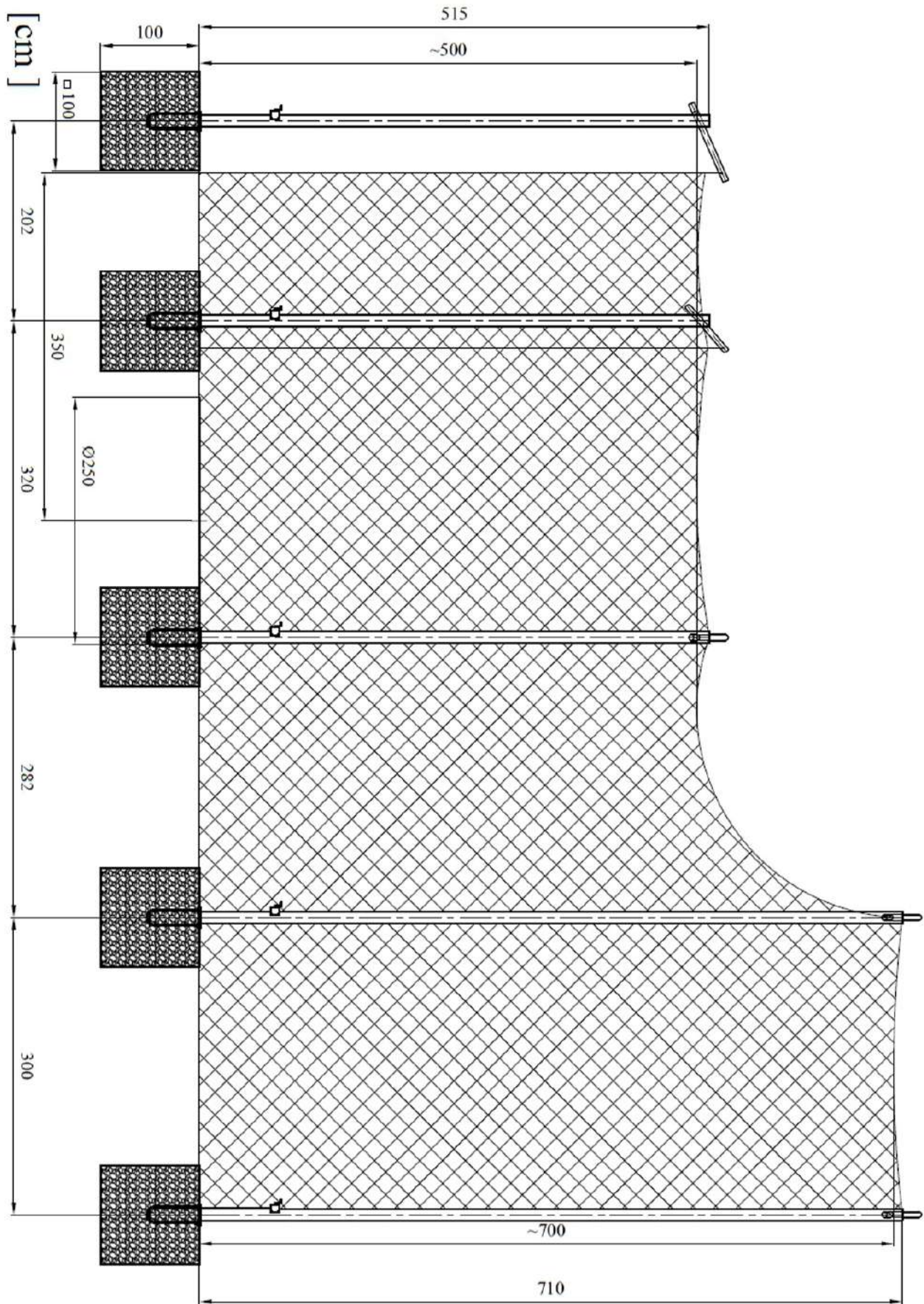
- a – extreme pillar ~7 m, item 3
- b – hinges of extreme anchor, item 5
- c – direction line of anchor positioning
- d – extreme anchor, top view and vertical section, item 5
- e – top surface flash with anchor top surface
- f – synthetic sports surface (optional)
- g – sand bed

Foundation block of extreme pillar
Drawing no. 3



- a – standard anchor, item 4
- b – projection of net
- c – extreme anchor, item 5

Positions of anchor foundation blocks
Drawing no. 4



KLD17-5/7-A side view
Drawing no. 5