

Ref. DOMO 3

Dome type three dimensional net



## **THREE-DIMENSIONAL NETS**

### **INSTALLATION AND MAINTENANCE**

#### **Points of interest:**

20 mm diameter rope of a fibre or steel core and six braided nylon threads.

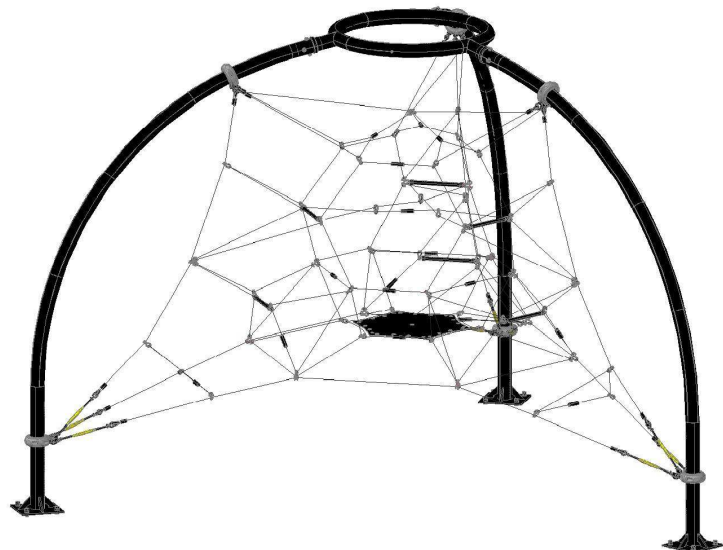
Metal structure of galvanized steel and aluminum or stainless steel hardware.

**The Domo 3 consists of a metal structure with three legs and an interior net that is designed for children from five to twelve years old and manufactured in accordance with EN 1176-1:2008 and EN 1176-11:2008 for children's playgrounds.**

The following instructions must be followed correctly for the safe installation of the equipment.

### Contents

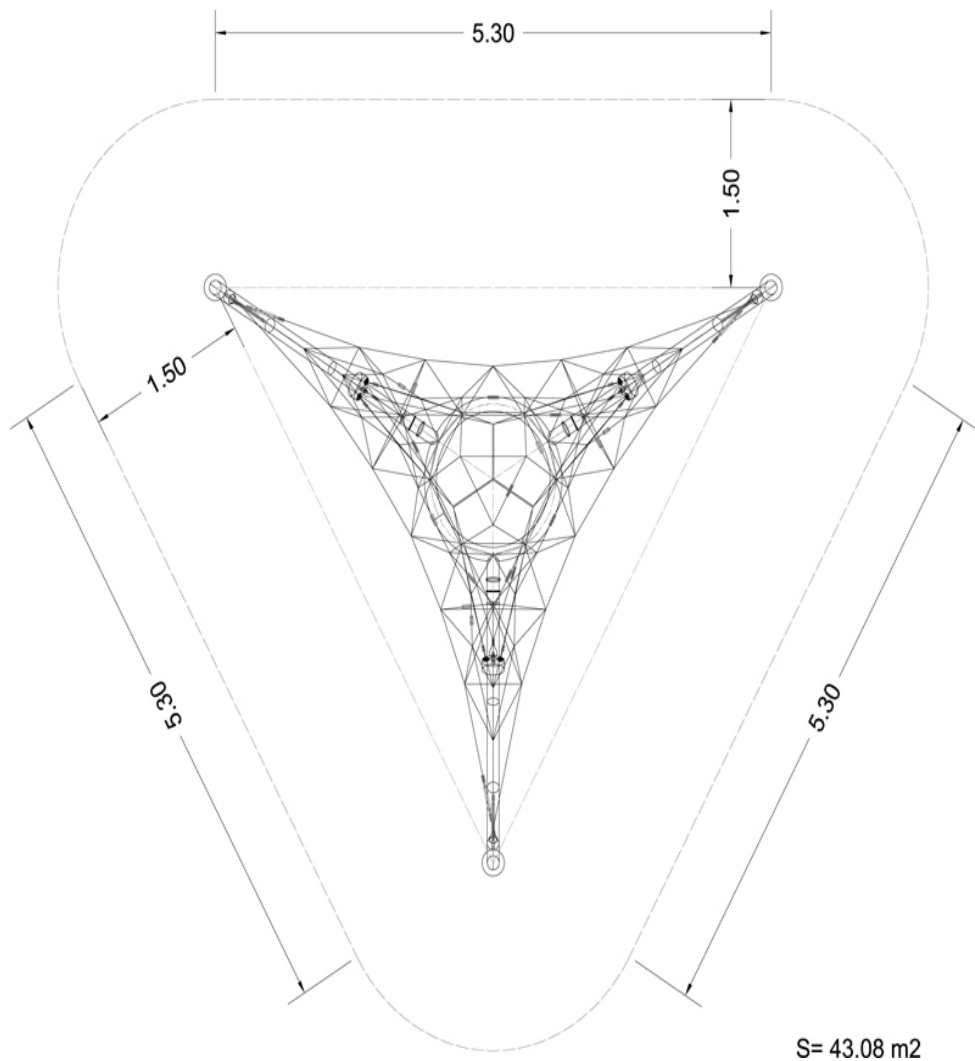
Space required and maximum free fall height	Page 2
Planning	Page 3-4
Foundation	Page 5
Excavation and foundations	Page 6-7
Net assembly	Page 8
Maintenance	Page 9



## Space required and maximum free fall height

The required safety spaces and distances are taken from EN 1176-1:2008 and EN 1176-11:2008.

The equipment requires a minimum free area of 1.50 metres around the floor plan of the three-dimensional net. These means that is will occupy a safety area of 43.08 square metres.



### **Maximum free-fall height**

The maximum free-fall height from which a child can vertically fall to the impact-attenuating surface is 960 mm, which is the highest point of the net lower surface perimeter. In order to protect children from such a fall, an impact-attenuating surface must be installed over the entire safety area, such as 40-mm rubber tiles, 30 cm of shredded rubber or other material contemplated in the standard which absorbs this impact.

## **Planning**

### **Necessary tools:**

- 1) Laser level (or similar) and 20-metre tape-measure for foundation marking out.
- 2) Excavator, concrete mixer and jib crane.
- 3) Formwork wood and hand tools, including spade, saw, drill, pliers, mallet, hammer and tips etc (see page 6 on installation instructions).
- 4) Hand tools required for Domo installation, including ladder, belt with winch, two sets of fixed metric spanners 10, 16, 20 and 24 mm.

### **Time for installation:**

Although each installation is different, the estimated time for full installation of Domo 3, with a minimum of two persons and the above-indicated equipment is three days:

#### **- Day one:**

- 1) Preparing the area
- 2) Foundation marking out and excavation, together with formwork if ground conditions make this necessary.
- 3) Foundation reinforcement and marking out of threaded anchor rods using the supplied templates.

#### **- Day two:**

- 1) Concreting the footings (half a day).

**- Day three\***

- 1) Lifting and assembling the central ring arches using the supplied small hardware and the crane.
- 2) Removal of foundation templates and formwork in order to secure the main structure to the foundation with supplied small hardware and the crane.
- 3) Installation of ring bolts that are already fitted to the ends of the net with their associated half-clamps using the supplied small hardware.
- 4) Lifting the net with the crane to complete clamp installation to the metal structure that has the exact positions marked. The installation must always be carried out from top to bottom because it may be necessary to employ a belt with winch to position the lower clamps.
- 5) When the net is installed and all joints have been inspected, the guys at the lower net ends are then gradually tensioned.
- 6) Safety surface material installation after filling in and compacting if required.

*\* Seven days must be allowed to elapse between foundation execution and net installation in order to ensure correct concrete setting.*

## Foundation\*

The Domo 3 was designed for installation, preferably, on a soft surface with a minimum required depth of 70 cm (see foundation drawings), with isolated reinforced concrete footings being required to anchor the metal structure.

It is recommended that the area be prepared prior to net installation and left free from obstacles etc.

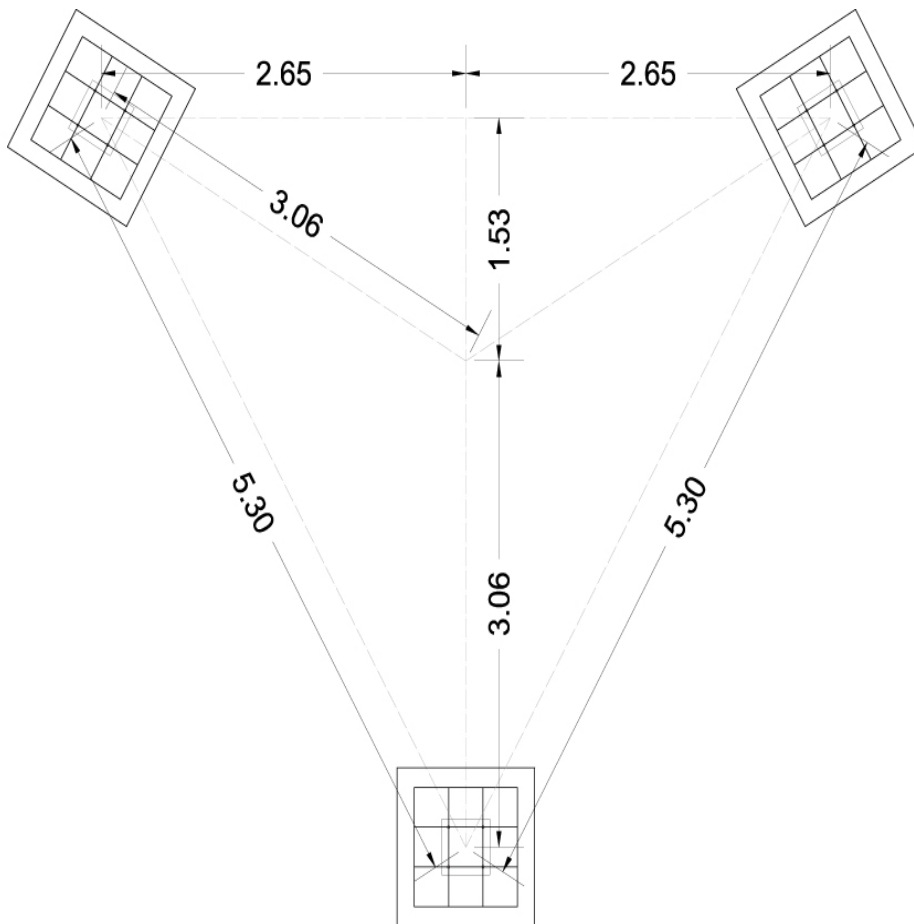
Procedure:

The foundation consists of three excavated holes.

Isolated footing: 1000 x 1000 x 500 mm.

EHE concrete: 250, Required volume=  $0,5 + 0,5 + 0,5 = 1,5 \text{ m}^3$

ALL THREE FOUNDATION SECTIONS MUST BE AT THE SAME LEVEL



\* Foundation details Under normal conditions

\* Foundation 100x100x50 cm

\* Concrete grill  $d$  12 mm/ 250 mm

\* 4 threaded rods M 20 L 450 mm

\* 8 nuts M 20

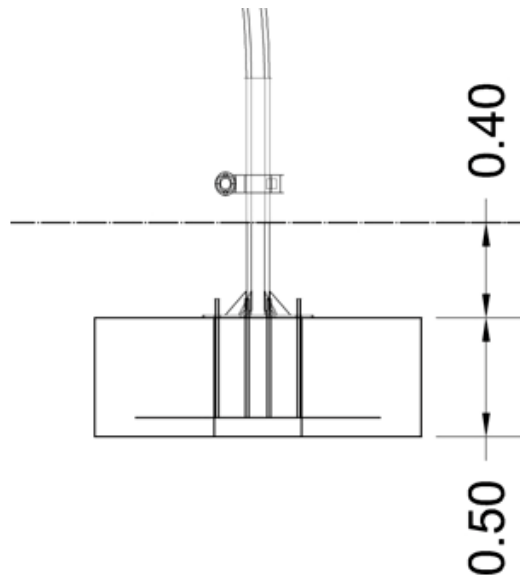
## Excavation and foundations

### - Soft ground

Formwork must be employed in soft ground to prevent the holes filling with soil. It will also prevent excessive use of concrete.

It is necessary to maintain a distance of 400 mm between the upper foundation level and the finished surface. When the footing positions are marked and their formwork has been put into place, the distances to the footing centre and the rotation of each base plate must be marked out again in order to correctly position the threaded rods using the supplied templates.

It is extremely important to ensure that the base-plate template position is correct, together with the threaded rod verticality and to maintain them well-supported during concreting to reduce any displacement to a minimum.



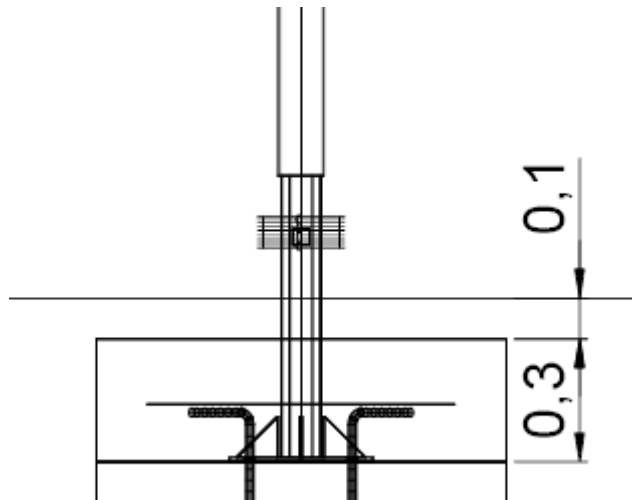
The 40 cm separation between the upper foundation level and the finished surface enables different materials to be chosen for impact attenuation. Depending on the choice and site conditions, excavation or filling and compacting may be necessary over the entire safety area in order to obtain the correct installation elevation.

**- Hard ground**

Occasionally, when excavation is not possible to a minimum 70 cm depth, the following option can be used:

- 1) Foundation excavation to approximately 50 cm.
- 2) Pouring of a layer of lean concrete to guarantee its upper level is 40 cm from the impact-attenuating material surface and that all footings are at the same level.
- 3) Marking out of the structure base plates on each footing and drilling of the threaded rod positions.
- 4) Metal structure assembly and securing with threaded rod installation in the inverted position.
- 5) Foundation reinforcing and concreting.

This alternative allows for a 10 cm thickness of covering material, which means impact attenuating material that requires greater thickness cannot be employed.



This alternative allows for a 10 cm thickness of covering material, which means impact attenuating material that requires greater thickness cannot be employed.

## **Net assembly**

After seven days, when the concrete has correctly set, it will have optimum strength of withstanding the net stresses.

- 1) Remove the net from its packaging.
- 2) Unfold the net and group together the ends corresponding to each clamp. Install the ring bolts that are already fitted to the ends of the net with their associated half-clamps using the supplied small hardware.
- 3) Raise the net with a crane in order to complete the installation of the clamps to the metal structure, beginning by hanging the net from the upper clamps so that lower ones can be installed. Verify that, before fixing the lower clamps, all guys are fully extended. It may be necessary to use a winch to position the lower clamps.
- 4) The crane can be removed when all clamps are installed and checked. Each guy is then successively tightened until the correct geometry is achieved and the entire net has been checked for rope tension. Ensure that all guys are equally tensioned so that the original net geometry is not deformed.
- 5) The ropes should be re-tightened\* one week after installation.

*\* Tighten so that the net flexes by 3 cm when a weight of 80 kg is applied.*



## Maintenance

**Two or three weeks** after initial installation, the net should be re-tightened\* to uniformly distribute the tension among all guys.

**Weekly:** the general condition of the playground should be visually inspected to ensure there is no damage or danger to the users.

**Monthly:** check that there are no unwound threads in the ropes or displaced or loose joints.

Verify that structural stability is the same as the very first day.

Check net and terminal tension.

Inspect all small hardware and their protections.

**Yearly:** inspect all metal parts for corrosion.

Ensure that the steel cores of the ropes are not visible.

Inspect the foundations.

For further information about the Domo 3, please contact GALOPÍN PLAYGROUNDS, S.L. by telephone: **981 688 070**.