

Inspection and maintenance instructions

The combination must be checked for correct operation and safety, especially the points listed below:

Proof of maintenance


for Climbing Forest 10.80000

with steel foot,
from production year April 2020 onwards

These maintenance instructions comply with the standard EN 1176-7, Guidance for installation, inspection, maintenance and operation in its valid version.

Intervals for maintenance work and checks generally depend on, amongst other things:

- the location
- the use
- the frequency of use
- vandalism.



Attention
The maintenance intervals must be strictly adhered to!

For more details see also our general instructions for maintenance of playgrounds as well as the maintenance instructions for individual equipment.

1. Fall protection

Continually inspect fall protection surfacing material for functional capability, i.e. regularly remove foreign materials.

Refill surfacing material as required until a layer thickness of at least 40 cm is reached again.

2. Safety distance use zones

The safety distance of play equipment from all hard objects (e.g. fences, curb stones, other play equipment, trees) specified in the foundation plan for the installation of play equipment must always be adhered to.

Any regrowth of branches should be cut back to the stump.

3. Trunks/structural stability

Climbing forest trunks should be considered to be one-legged equipment in respect to safety, and consequently require particular care when carrying out maintenance work to guarantee structural stability.

Trunks

The condition of the wood should be inspected for wood-destroying fungi by qualified personnel using the appropriate test instrument twice a year. Dig around the trunks down to the foundation to carry this out.

Check steel foot for corrosion.

Recommendation: apply paraffin wax to the upper end grain areas once a year, please refer to order No. 0.90100.

Ropes

Inspect ropes and net elements for damage to the steel strands and the connection points. Replace the strands in the case of damage.

Fastening frames

Check the wood for stability, wear and rotting.

Fittings

Check bushes and chains for wear and tear. Check that bolts/screws and all wood connections are tight and retighten if necessary. Replace if damaged.

Repair not carried out, it is still possible to play on equipment

Repair not carried out, equipment ist taken out of action

All work carried out, everything is in order

Maintenance carried out by

..... Date

Special notes (e. g. for repairs):

Additional notes

Maintenance of one post equipment with steel foot

This product is a one post equipment according to DIN EN 1176-1.

Equipment of this kind requires special diligence with regard to planning, construction and maintenance.

In this document, you will find additional maintenance notes.

The following principles generally apply to one post equipment:

The longer the equipment has been in operation, the more diligence is required during maintenance.

Dynamic loads additionally stress the structural stability.

Frequency of use and a given excessive load must be taken into account when scheduling maintenance.

The goal of any inspection must be to ensure that the equipment can be safely used until the next check is due.

It is important to pay attention to the following special aspects for safe operation of one post equipment during regular inspections:

- Check the structural stability twice a year, uncover the foundations to do this
- Measures for ensuring structural stability of load-bearing components
 - tensile test: load test resulting in highly relevant safety-related information
(see separate instructions)

Climbing Forest

Checking the structural stability of trunks

Richter Spielgeräte GmbH manufactures all climbing forests in accordance with EN 1176. For the trunks in particular we ensure they meet the load requirements of their designated users as laid down in the above standard.

The relevant load results from tensile forces, which pull on the trunks in a horizontal direction. These tensile forces create a theoretical maximum load that is applied to each trunk and causes it to be "clamped" in the foundation.

The following describes how to simulate this maximum load by carrying out a tensile test. The test equipment can be arranged in accordance with on-site conditions.

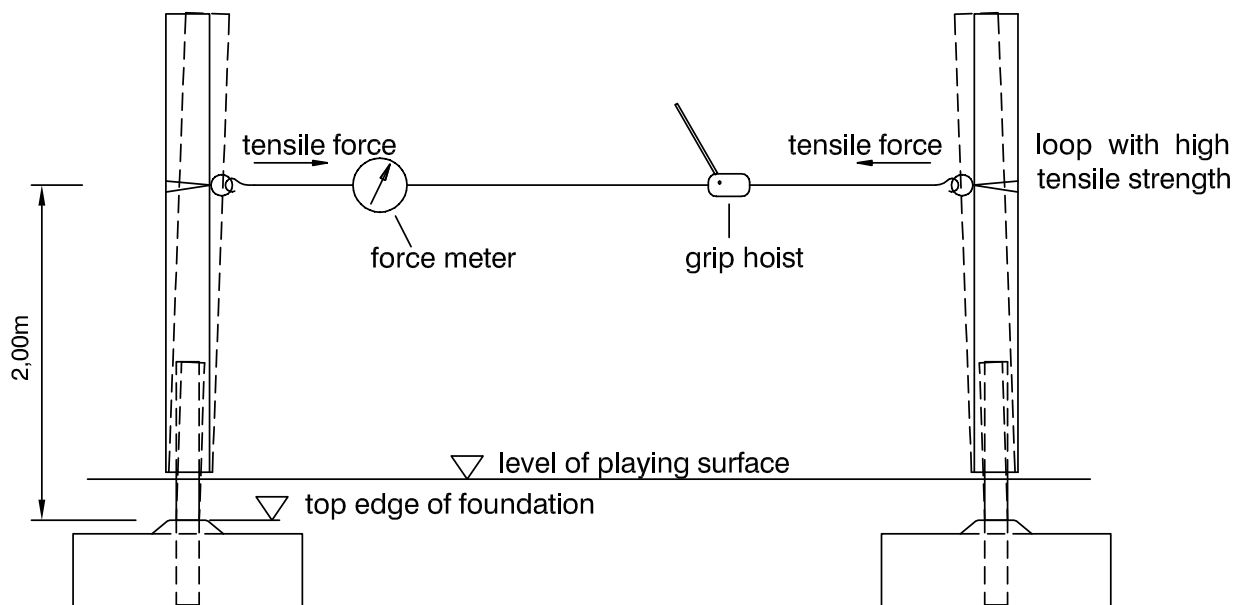
Method A

Two trunks are inspected at the same time. This procedure requires much less time and effort than the single test.

However, it is very important that you use the higher of the two test loads. Therefore, the difference between the loads should not be too large.

Tools and aids

pulling rope with grip hoist, force meter, fastening loops, rule, carpenter's tools, shovel, table of test loads, camera



Note



When carrying out the above tensile test, pay attention that the specifications of all equipment, ropes, etc. used are appropriate for the test forces and that they are used/installed correctly. If the equipment is not handled with due care or if unsuitable equipment is used, the high forces may cause serious injuries!

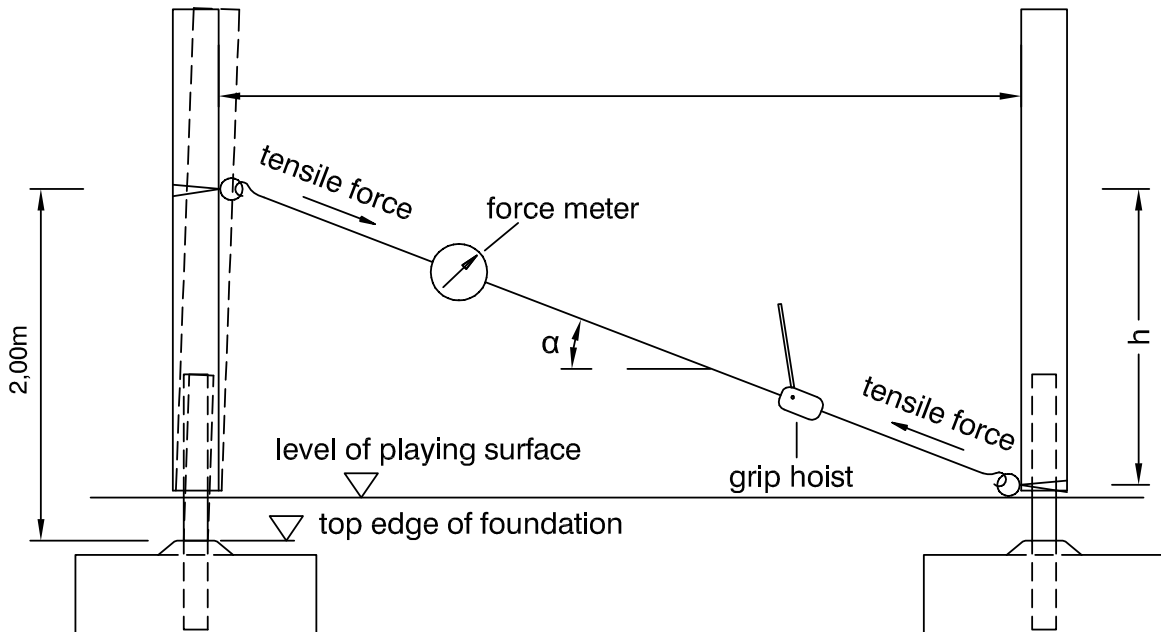
Method B

Single measurement for which the tensile rope must be reliably anchored close to the ground (see sketch).

With this arrangement, the test load must be increased since it is applied at an angle.

Determine the load increase before the test is started.

To do this, measure the clearance between the trunks (a) and the height difference between the rope anchoring points.



Note

When carrying out the above tensile test, pay attention that the specifications of all equipment, ropes, etc. used are appropriate for the test forces and that they are used/installed correctly. If the equipment is not handled with due care or if unsuitable equipment is used, the high forces may cause serious injuries!

The steeper the angle at which the rope is installed, the more the test load must be increased. The following tables shows some examples.

Test load increase table

a	h	α	increase
3.00 m	1.50 m	26.57 °	11.8 %
3.50 m	1.50 m	23.20 °	8.8 %
4.00 m	1.50 m	20.56 °	6.8 %
4.50 m	1.50 m	18.43 °	5.4 %
5.00 m	1.50 m	16.70 °	4.4 %
5.50 m	1.50 m	15.26 °	3.7 %
6.00 m	1.50 m	14.04 °	3.1 %
6.50 m	1.50 m	12.99 °	2.6 %
7.00 m	1.50 m	12.09 °	2.3 %

Example:

The horizontal test load according to the table of test loads is 13.5 kN (= approx. 1350 kg).

The clearance between the trunks is a = 4.0 m, the height difference between the rope anchoring points is h = 1.50 m. The load must be increased by: $F = 13.5 \text{ kN} \times 1.068 = 14.4 \text{ kN}$ (= approx. 1440 kg)

How to prepare for and carry out the test

1. Uncover the foundations and mark the top edge of the playing surface on the trunk. Normally, the relevant top edge of the concrete foundations is 30 cm to 40 cm below the level of the playing surface (see sketch).
2. Select a pair of trunks, and decide which measuring method (A or B) to use. Choose the tensile direction in such a way that the deflection of the trunk will not be prevented by playground equipment attached to it. If necessary, such equipment must be removed before carrying out the test.
3. Fasten force meter and grip hoist without tension for now (see sketch). The installed height on the trunks to be inspected is 2 m* above top edge of foundation (see sketch). Ensure that the tensile strength of all parts loaded with tensile forces is equal to or higher than the test loads as indicated in the included table of test loads.
4. Slowly tension the rope by means of the grip hoist, and check that the connections to the trunks are tight. Apply the test load as indicated in the table of test loads (we recommend increasing the value by 10 % for reasons of safety). While tensioning, pay attention to signs of breaking wood or material failure (sounds, cracks, compression, etc.).
5. Record the maximum load applied as well as any irregularities in a protocol. Supplement the documentation with photographs of the inspection.
6. Unload the pulling rope and remove the test equipment. Re-assemble any equipment you may have removed before.
7. Check the trunk for deformations or cracks. If you find any take photographs and record in writing.
8. Re-cover the foundations with impact-absorbing material.
9. If the tensile test reveals that the stability of a trunk is not safe anymore, it must be marked and the equipment must be taken out of operation immediately.
10. Create a final report and inform the playground operator of the results. Should refurbishing be necessary, please don't hesitate to contact us.

*** If it is not possible to carry out the test using an installed height of 2.0 m, the test load must be adjusted. The greater the installed height of the test rope, the lower the tensile load.**

Example 1:

test load 11.8 kN
 installed height of rope 2.65 m
 new test load $11.8 \text{ kN} \times 2.0 \text{ m} / 2.65 \text{ m} = 8.9 \text{ kN}$

Example 2:

test load 11.8 kN
 installed height of rope 1.65 m
 new test load $11.8 \text{ kN} \times 2.0 \text{ m} / 1.65 \text{ m} = 14.3 \text{ kN}$

Caution

Tension the rope with utmost care. If the wood suddenly breaks, parts of the trunk may be thrown in any direction. Persons not involved should keep a safety distance of at least 10 m.