

# Outdoor signs

Mistakes that we often encounter with on-site foundations are frequently encountered.

# Outdoor signs

Foundation types, secure anchoring and structural calculations.

## General information

### Professional foundations

The internal structure and foundation must form a unit that is suitable for wind loads. For a concealed anchoring below the sidewalk or green areas, all of our pillars and pedestal signs are designed accordingly lower.



### Foundation surface too high

The installation depth to cover the flange fastening and the concrete is missing.



### Almost Right!

The foundation is lower than the grass hub, but not enough. The terrain around had to be raised a little.



### Right!

The foundation is covered with the slab covered.



### Edge distance of the concrete too small

The anchor holes must remain at least 100 mm from the concrete edge. The stela must not be fastened in this way.

**Causes:** Foundation too small, in this case incorrect alignment.



### Foundation surface is not flat

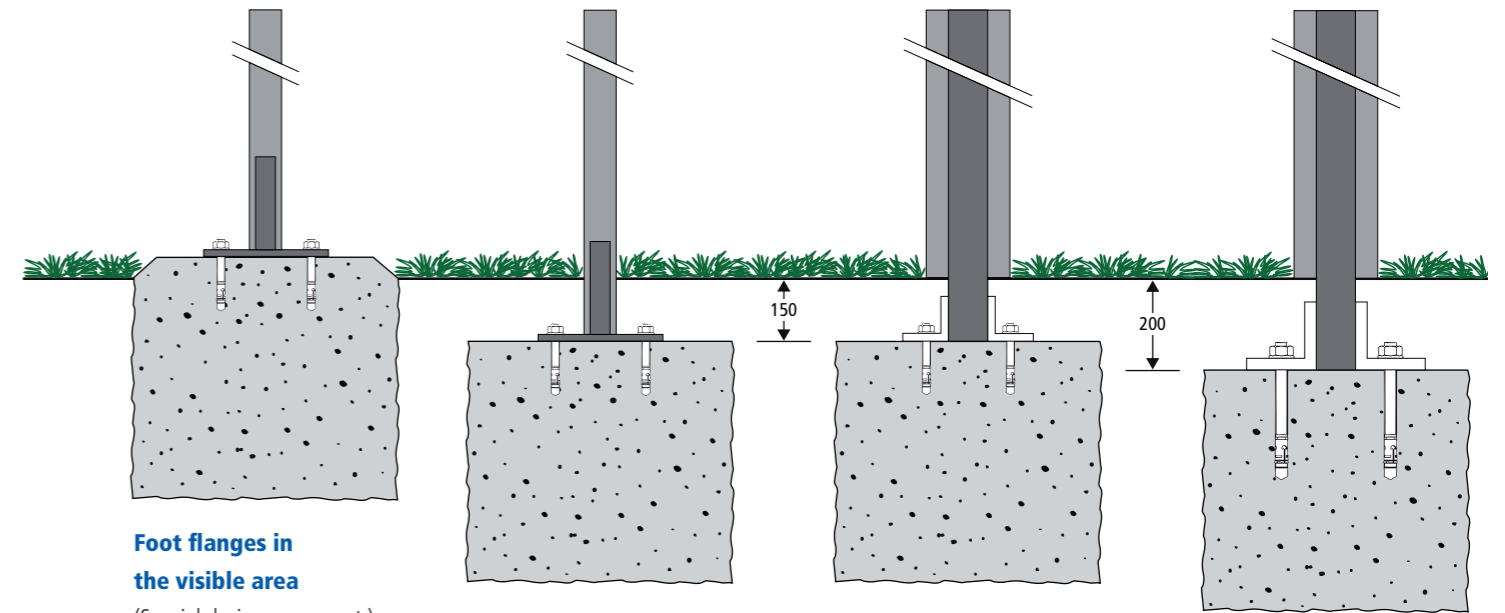
A maximum of 20 mm may be compensated with the shims, otherwise the depth of the anchors will no longer be sufficient. The stela had to be fixed with extra-long anchors and the flange had to be underfilled with concrete.



### Analysis after storm damage

Strength of the concrete was not sufficient. The concrete structure is destroyed. Anchors torn out, remaining anchors torn off.

## General information

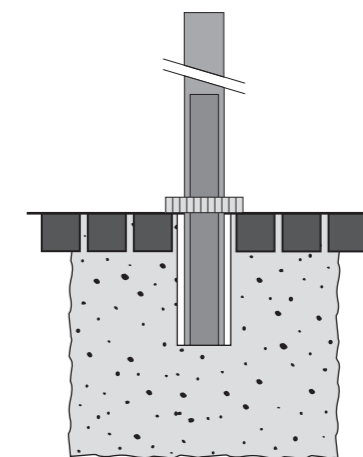


**Foot flanges in the visible area**  
(Special design on request.)

**Post foundation** with foot flange for anchoring 150 mm under floor. Outdoor stand system **rohr+fläche**.

**Stelae foundation** for all systems.

**Pylon foundation** for the very large outdoor signs in the **quintessenz** system.



**Ground sockets** for removable posts  $\varnothing$  76, 60 and 48 mm for installation flush with the ground in sidewalks. (Special design according to requirement.)

## Static calculations

### 1 Simple cross-section calculation and foundation plans

Simple cross-section calculations and foundation plans are available and included for all standard exterior sign elements.

### 2 Verifiable statics

The authorities may also require a verifiable structural analysis. This is calculated individually by a certified civil engineer. Both this calculation and the resulting requirements and bracing are not included in the sign prices and quotations and will be charged at cost.

### 3 Test statics

A test structural analysis can be imposed as an additional obligation for particularly exposed locations and very large pylons. In this case, the aforementioned structural analysis is cross-checked by an engineer approved for this purpose. External costs are also incurred for this.

### Concealed foundations

For most projects, our customers request a concealed anchoring below the sidewalk or green areas. Therefore all stelae and post signs are designed 150 mm deeper. For very large pylons, at least 200 mm.

### Special solutions

Any requirements deviating from this must be submitted before production begins. Special solutions are available for installation e.g. on underground car park ceilings etc.

### Faulty or correct foundations?

In all cases, the foundation surface must be level and smoothed true to plumb. The specified concrete quality must be adhered to, as must sufficient drying time prior to sign installation. If necessary, data sheets are available for this purpose.