SAFENCE Wire Rope Safety Fence System

In the SAFENCE wire rope safety barrier range we have 4 different designs. SAFENCE 3RI, 4RI, 3RC and 4RC. The safety fences differ in the number of wire ropes and type of posts.

3-4 = number of ropes  R = Rope system  I-C = I-post or C-post

For all designs the distance between the posts can vary from 1 metre up to 3 metres. In the table on drawing No. SRB-004 it is shown how the distance between posts changes the working width.

The dimensions of the concrete foundations depend on the method of manufacturing and the local ground conditions SRB-005.

On drawings SRB-001 - SRB-009 the SAFENCE wire rope safety fence system is presented. The drawings apply to all the designs.

The dimensions of the concrete foundations depend on the local ground conditions. Drawing No. SRB-005.

3-rope system

4-rope system
Installation guide

1. End anchors
   Install the pre-fabricated or cast-on-site anchors at the beginning and end of each stretch.
   Drawing No. SRB-003

2. Post footings
   Install the pre-fabricated or cast-on-site footings. Drawing No. SRB-004 + SRB-005

3. Posts, plastic dust covers
   Assemble all posts with plastic joint and stand in footing. Drawing No. SRB-006

4. Installation of wire rope.
   Run out the wire rope. Drawing No. SRB-006

5. End fitting, swage fitting, rigging screw
   Mount end fitting, swage fitting and rigging screw. Drawing No. SRB-007

6. Tensioning
   Tension the ropes to the right force. Drawing No. SRB-007

End anchors

-The concrete anchors can be cast or pre-fabricated.
-Ensure that the anchor is in line with the wire rope safety fence.
-The embedded wire anchor fitting is to be at ground level and follow the slope of the ground.
-Afterwards the hollow space around the anchor is filled with friction facing that is to be vibrated.

Embedded wire anchor fitting 3- or 4- ropes.
Post footings

- The post footings are to be installed in a compacted material.
- The upper edges of the post footings are to be at ground level or max. 4 cm. below ground level.
- If the post footings are cast-on-site a plastic mould can be used.

-The wire rope safety barrier is to follow the contours and line of the road without any visible horizontal or vertical deviations.

**Distance between the posts (post footings)**

<table>
<thead>
<tr>
<th>Containment level N2</th>
<th>Containment level H1</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SAFENCE 3RI, 3RC, 4RI, 4RC</strong></td>
<td><strong>SAFENCE 4RI, 4RC</strong></td>
</tr>
<tr>
<td><strong>Post distance</strong></td>
<td><strong>Working width</strong></td>
</tr>
<tr>
<td>1,0m</td>
<td>0,8m</td>
</tr>
<tr>
<td>1,5m</td>
<td>0,9m</td>
</tr>
<tr>
<td>2,0m</td>
<td>1,0m</td>
</tr>
<tr>
<td>2,5m</td>
<td>1,3m</td>
</tr>
<tr>
<td>3,0m</td>
<td>1,7m</td>
</tr>
</tbody>
</table>

Post distances 1,0 and 1,5 metres should only be used when passing bridges or other obstacles. Radius etc. Drawing No. SRB-008
Post footings

Concrete plate

Only together with the first post and only if the ground conditions are bad (clay, sand etc.)

Post footing

I-post

C-post

The hole tolerance for post footings cast on site.

From the middle 15mm

The external dimensions of the post footing are the same no matter which post is used.

Post footing sizes.

<table>
<thead>
<tr>
<th>Type</th>
<th>A</th>
<th>ØB</th>
<th>Manufacturing method</th>
<th>Concrete quality</th>
<th>Ground conditions</th>
<th>Angle</th>
<th>Weight of material</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>600</td>
<td>200</td>
<td>Pre-fab.</td>
<td>k40</td>
<td>≥ 42°</td>
<td>1.8 ton/m³</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>600</td>
<td>260</td>
<td>Pre-fab.</td>
<td>k40</td>
<td>≥ 38°</td>
<td>1.8 ton/m³</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>600</td>
<td>300</td>
<td>Cast-on-site</td>
<td>k40</td>
<td>≥ 32°</td>
<td>1.8 ton/m³</td>
<td></td>
</tr>
</tbody>
</table>

Slope steeper than 1:6

≥0.3m  Footings as above.
Post - plastic joint

I-post (SRD-001)

C-post (SRD-008)

Plastic joint (SRD-002)

Plastic joint (SRD-002)

Wire ropes - installation

SAFENCE 3RI

SAFENCE 4RI

SAFENCE 3RC

SAFENCE 4RC

For end posts steel spreaders are used. (SRD-022) and (SRD-021).
End fittings - Rigging screws

1. Swage end fittings onto all wire ropes with the swaging machine. Mount end fitting in end anchor A.
2. Tension the wire ropes by hand to the first rigging screw, max. 150m (tension panel)
3. Swage the fittings in the swaging machine and mount the rigging screw between the 2 posts.
4. Tension the wire ropes by hand to the next tension panel, max. 300 m. Mount the rigging screw between the 2 posts and so forth.
5. Finish by mounting the end fitting in anchor B.

Tensioning

1. Tension the wire ropes with the nuts at anchor A and B.
2. Tension the wire to the right tensioning force at each rigging screw (see table). Start on the middle of the stretch and work by turns towards anchor A and B.

<table>
<thead>
<tr>
<th>Temperature (°C)</th>
<th>Kp</th>
</tr>
</thead>
<tbody>
<tr>
<td>-40</td>
<td>3.200</td>
</tr>
<tr>
<td>-30</td>
<td>2.900</td>
</tr>
<tr>
<td>-20</td>
<td>2.600</td>
</tr>
<tr>
<td>-10</td>
<td>2.300</td>
</tr>
<tr>
<td>0</td>
<td>2.000</td>
</tr>
<tr>
<td>+10</td>
<td>1.700</td>
</tr>
<tr>
<td>+20</td>
<td>1.400</td>
</tr>
<tr>
<td>+30</td>
<td>1.100</td>
</tr>
<tr>
<td>+40</td>
<td>800</td>
</tr>
</tbody>
</table>

Note: Should the length of the rigging screw not be sufficient to obtain the right tensioning force, tension to half of the length of the rigging screw. Then adjust the rigging screws so they all have the right tensioning force.
Alternatives to post footing

If there should be a problem in mounting the concrete post footing, two alternatives can be used.

C-post or I-post

Mounting plate
500 x 500mm
(SRD-006, SRD-013)

Casting concrete beam

M8 x 70

C-post or I-post

Embedded foundation plate
208 x 208 x 12mm
(SRD-015)

Concrete

Radii

<table>
<thead>
<tr>
<th>Radii</th>
<th>Post distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥ 105m</td>
<td>max. 1.5m</td>
</tr>
<tr>
<td>≥ 200m</td>
<td>max. 2.0m</td>
</tr>
<tr>
<td>≥ 250m</td>
<td>max. 2.5m</td>
</tr>
<tr>
<td>≥ 300m</td>
<td>max. 3.0m</td>
</tr>
</tbody>
</table>

Mounting in horizontal curves

Mounting in vertical curves

Mounting should not be done in a depression with a radius <1200m.
Alternative to post footing

When mounting in asphalt an alternative can be used

Ground condition where steel socket can be used

Post (MEK-001)
Steel socket (D-034)
Minimum 100 mm Asphalt
Minimum 300 mm Beam