Flood protection: Urgent need for action.

People have settled near rivers and coasts for thousands of years. Over the past few centuries river courses have been straightened and constricted, flood plains reclaimed and built on, and forests cut down. The consequences of these human interventions are climate change and an increasing number of environmental disasters. Floods, formerly once-in-a-century events, are occurring more and more frequently.

Experts are agreed that urgent action is needed: flood damage already tops the European loss statistics. Some of the losses are foreseeable and can be prevented by flood protection measures matched to local requirements. Flood protection and prevention are therefore among the most urgent tasks facing the local communities concerned.

End-to-end competence.

thyssenkrupp Infrastructure is a world-renowned supplier of flood protection equipment. We offer a broad spectrum of high-quality products and diverse technical services in hydraulic engineering and water management.

Contents

Technical handbook for mobile flood protection system tk 150

01 Flood protection systems
  02 Flood protection wall
  03-04 Gap closure
02 Posts, stop logs
  05 Load cases
  06-08 Post height and stop log length
03 Anchor plate systems
  9-10 Anchor plate AP 150 T1 – T2
04 Wall connections
  11 Connection with concrete anchor
05 Corner post, anchor plate
  12 Corner post
  13 Anchor plate 90 degrees
06 Seals
  14 Base, post and stop log seals
07 Locking system
  15 Stop log locking system
08 Storage systems
  16 Storage box for stop logs
Flood protection wall

Detail A

Section A-A
Flood protection wall

Detail B        Detail A        Detail C
Cross section A-A
Two load cases

Load case 1: water pressure

Re 1)
Hydrostatic water pressure with a weight density of 10 kN/m³ and a safety factor of 1.35.

Load case 2: water pressure and impact

Re 2)
In addition to the hydrostatic water pressure an impact load of 20 kN on an area of 50 cm x 50 cm is taken into account.

Further loads such as flow pressure, wave impact, ice impact, vehicle impact and load of people are not taken into account.
### System 250x150

<table>
<thead>
<tr>
<th>Stop log numbers</th>
<th>Protection height mm</th>
<th>Post height mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>270</td>
<td>370</td>
</tr>
<tr>
<td>2</td>
<td>520</td>
<td>620</td>
</tr>
<tr>
<td>3</td>
<td>770</td>
<td>870</td>
</tr>
<tr>
<td>4</td>
<td>1,020</td>
<td>1,120</td>
</tr>
<tr>
<td>5</td>
<td>1,270</td>
<td>1,370</td>
</tr>
<tr>
<td>6</td>
<td>1,520</td>
<td>1,620</td>
</tr>
<tr>
<td>7</td>
<td>1,770</td>
<td>1,870</td>
</tr>
<tr>
<td>8</td>
<td>2,020</td>
<td>2,120</td>
</tr>
<tr>
<td>9</td>
<td>2,270</td>
<td>2,370</td>
</tr>
<tr>
<td>10</td>
<td>2,520</td>
<td>2,620</td>
</tr>
</tbody>
</table>
Aluminum stop log DB 250 x 150

Technical data

- Moment of inertia $I$: 1,410 cm$^4$
- Section modulus $W$: 188 cm$^3$
- Cross sectional area $A$: 42.20 cm$^2$
- Weight: 11.4 kg/m
- Material: EN AW-6063 [AlMg0.7Si] T66
Post MS 225 x 160

**Table**

<table>
<thead>
<tr>
<th>Height (mm)</th>
<th>max. width (mm)</th>
<th>Weight (kg)</th>
<th>Anchor plate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.000</td>
<td>8.000</td>
<td>20.0</td>
<td></td>
</tr>
<tr>
<td>1.250</td>
<td>7.000</td>
<td>25.0</td>
<td></td>
</tr>
<tr>
<td>1.500</td>
<td>6.000</td>
<td>28.5</td>
<td></td>
</tr>
<tr>
<td>1.750</td>
<td>5.000</td>
<td>32.0</td>
<td></td>
</tr>
<tr>
<td>2.000</td>
<td>4.000</td>
<td>35.0</td>
<td></td>
</tr>
<tr>
<td>2.250</td>
<td>3.500</td>
<td>37.5</td>
<td></td>
</tr>
<tr>
<td>2.500</td>
<td>3.000</td>
<td>40.0</td>
<td></td>
</tr>
<tr>
<td>2.750</td>
<td>2.750</td>
<td>42.5</td>
<td></td>
</tr>
<tr>
<td>3.000</td>
<td>2.500</td>
<td>45.0</td>
<td></td>
</tr>
<tr>
<td>3.250</td>
<td>2.250</td>
<td>47.5</td>
<td></td>
</tr>
<tr>
<td>3.500</td>
<td>2.000</td>
<td>50.0</td>
<td></td>
</tr>
<tr>
<td>3.750</td>
<td>1.750</td>
<td>52.5</td>
<td></td>
</tr>
<tr>
<td>4.000</td>
<td>1.500</td>
<td>55.0</td>
<td></td>
</tr>
</tbody>
</table>

**Technical data**

- Moment of inertia: $I = 12.53 \text{ cm}^4$
- Section modulus: $W = 573 \text{ cm}^3$
- Cross sectional area: $A = 81.93 \text{ cm}^2$
- Weight: $22.10 \text{ kg/m}$
- Material: EN AW-6082 [AlMgSi1] T6
Anchor plate: AP150 T1

Steel grades

<table>
<thead>
<tr>
<th>Material</th>
<th>Grade</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stainless steel</td>
<td>1.4301</td>
<td>Top plate and sleeves</td>
</tr>
<tr>
<td>Steel</td>
<td>S 355</td>
<td>Retaining plates</td>
</tr>
<tr>
<td>Steel</td>
<td>8.8</td>
<td>Threaded rod and nut</td>
</tr>
</tbody>
</table>

![Diagram of anchor plate AP150 T1]
Anchor plate: AP150 T2

Steel grades

<table>
<thead>
<tr>
<th>Material</th>
<th>Grade</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stainless steel</td>
<td>1.4301</td>
<td>Top plate and sleeves</td>
</tr>
<tr>
<td>Steel</td>
<td>S 355</td>
<td>Retaining plates</td>
</tr>
<tr>
<td>Steel</td>
<td>8.8</td>
<td>Threaded rod and nut</td>
</tr>
</tbody>
</table>

![Anchor plate diagram](image-url)
Wall connection – post

(connection with concrete anchor)

Material: stainless steel 1.4301
Corner post 90° with post MS 225/160
Anchor plate: 90° post
Sealing systems

Base seal

Post seal

Stop log seal
Locking system

Lock for post

Lock for wall connection

Material: stainless steel 1.4301
Storage systems

Prevent part contact using plastic profiles.
Secure parts in pallet with lashing straps.
thyssenkrupp Infrastructure GmbH
Hollestrasse 7a
45127 Essen, Germany
T: +49 201 844 - 562313
F: +49 201 844 - 562333
hochwasserschutz.tkinfrastructure@thyssenkrupp.com
www.thyssenkrupp-infrastructure.com

Regionalbereich Nord
thyssenkrupp Infrastructure GmbH
Max-Planck-Strasse 10
28832 Achim, Germany
T: +49 4202 5197-0
F: +49 4202 5197-20

Regionalbereich West
thyssenkrupp Infrastructure GmbH
Hollestrasse 7a
45127 Essen, Germany
T: +49 201 844-563739
F: +49 201 844-563777

Regionalbereich Ost
thyssenkrupp Infrastructure GmbH
Zeppelinring 11 – 13
15749 Mittenwalde, Germany
T: +49 3375 9217-0
F: +49 3375 9217-10

Regionalbereich Süd
thyssenkrupp Infrastructure GmbH
Ottostrasse 7
85757 Karlsfeld, Germany
T: +49 8131 3814-10
F: +49 8131 3814-30