

# Product Catalogue

**HW-B50H**

**HW-W50L**

**HW-W50LU**



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## 1 Coverage and Terminology

### 1.1 Design Standards

DIN 19704-1: 2012-05 Hydraulic steel structures Part 1: Criteria for design and calculation

DIN EN 1990: 2010-12 Eurocode: Basis of structural design

DIN EN 1991-1-1: 2010-12 Eurocode 1: Actions on structures Part 1-1: General actions – Densities, self-weight, imposed loads for buildings

DIN EN 1993-1-1: 2010-12 Eurocode 3: Design of steel structures Part 1-1: General rules and rules for buildings

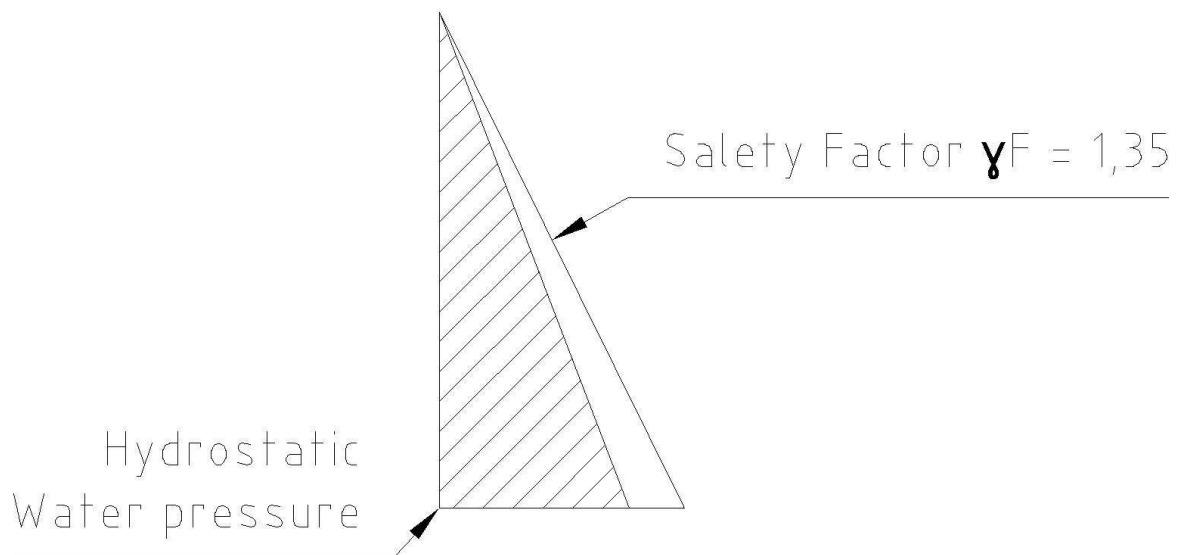
DIN EN1999-1-1: 2010-05: Eurocode 9: Design of aluminium structures Part 1-1: General structural rules

DIN 19569-4: 2000-11: Wastewater treatment plants – Principles for the design of structures and technical equipment

Part 4: Specific principles for shutoff devices as penstocks, sluice gates, stop logs etc.

Table 1 Leakage Rates for Systems out of dam beams / stop logs

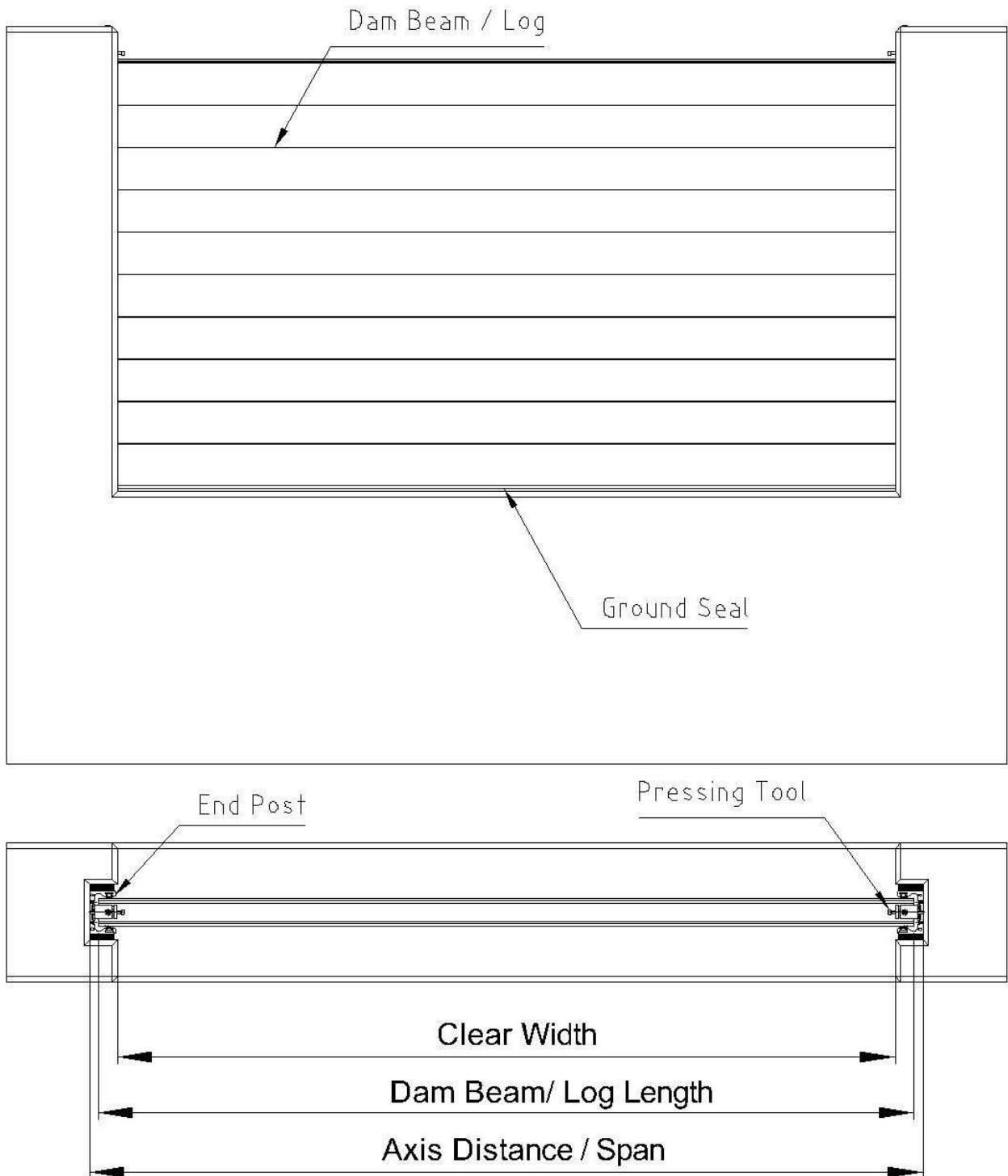
1.2 Load Criteria



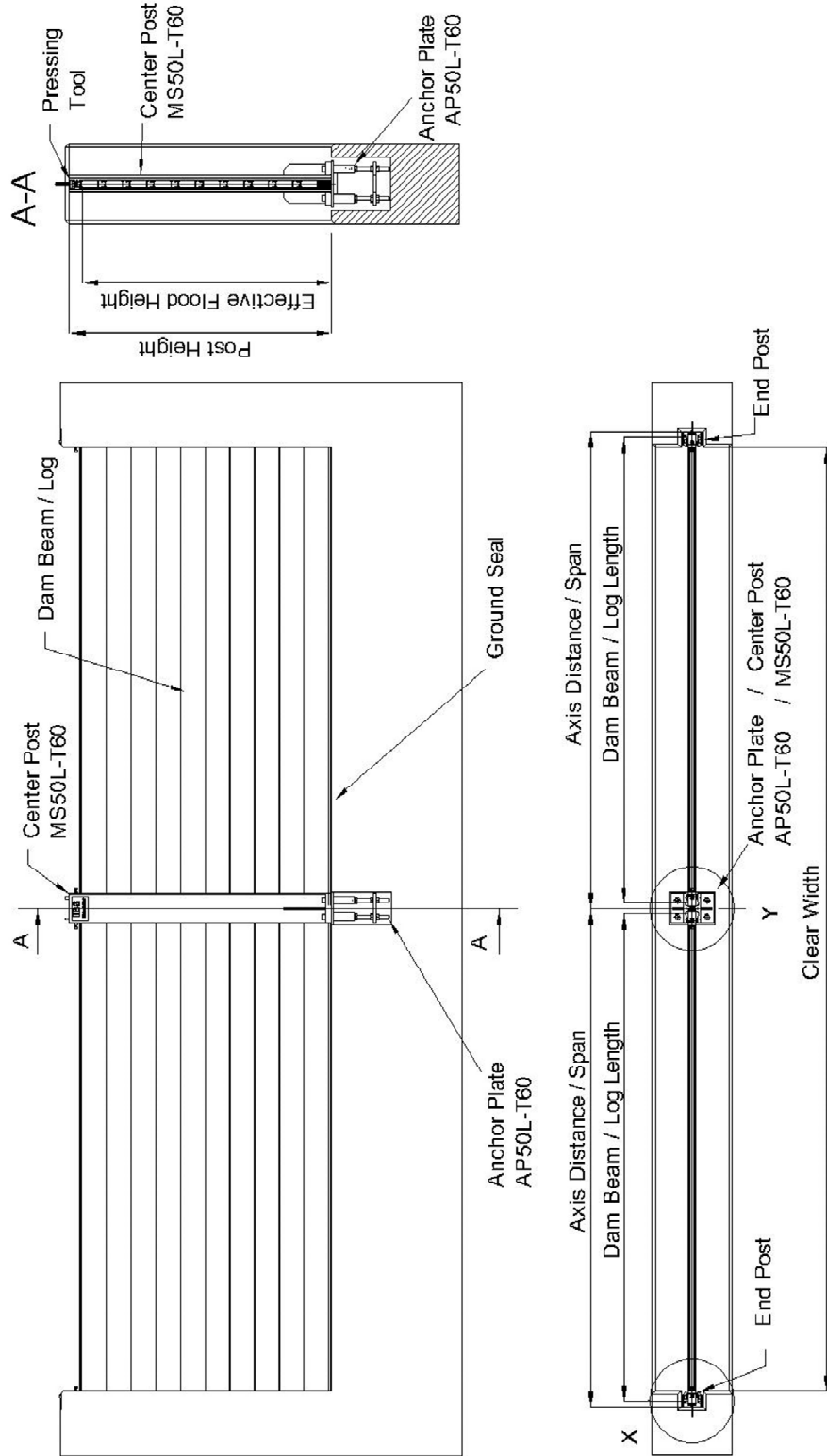
Specific Weight Water: 10kN/m<sup>3</sup>.

### 1.3 Definition of Terms

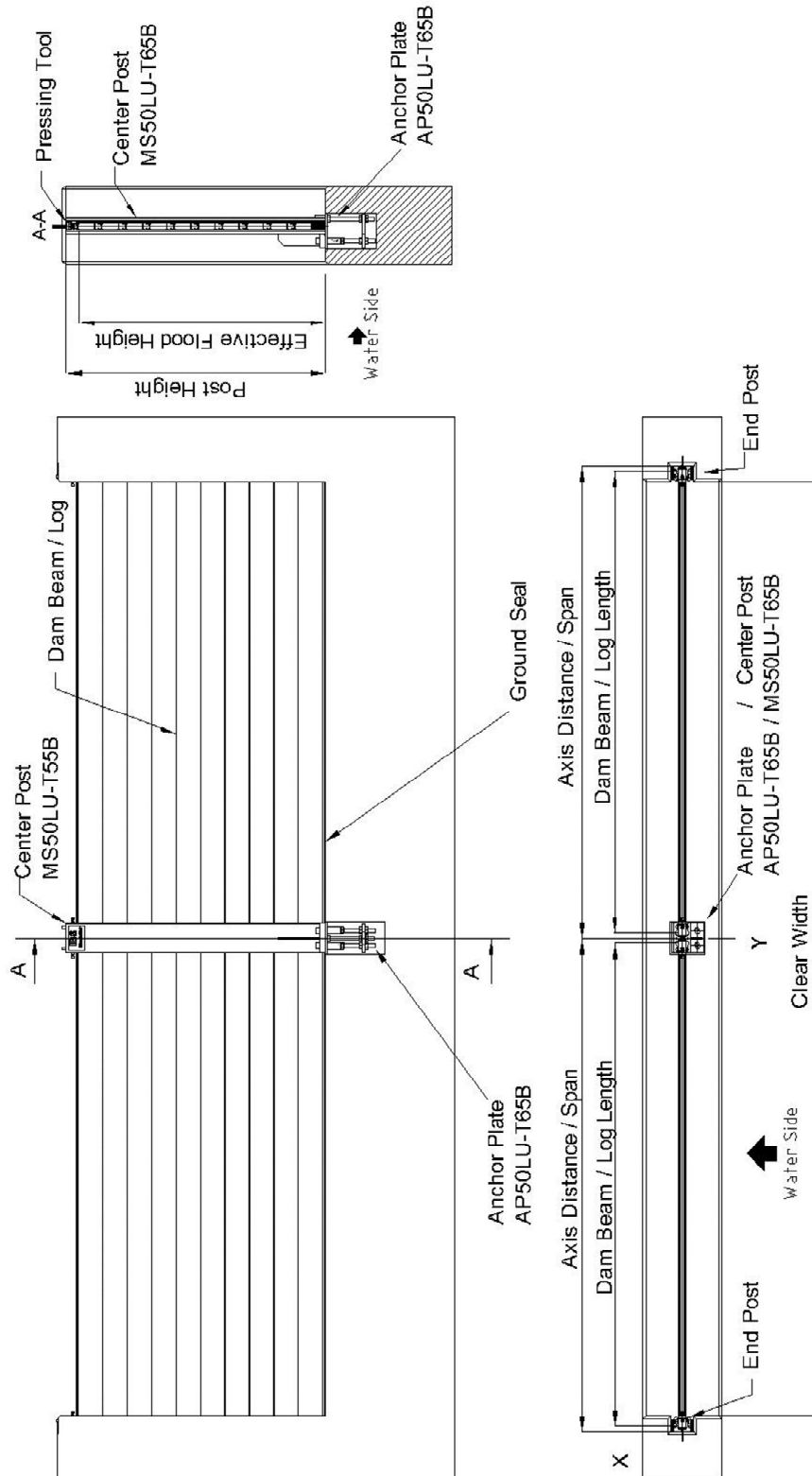
#### 1.3.1 Flood Barrier HW-B50H



1.3.2 Flood Protection Walls HW-W50L

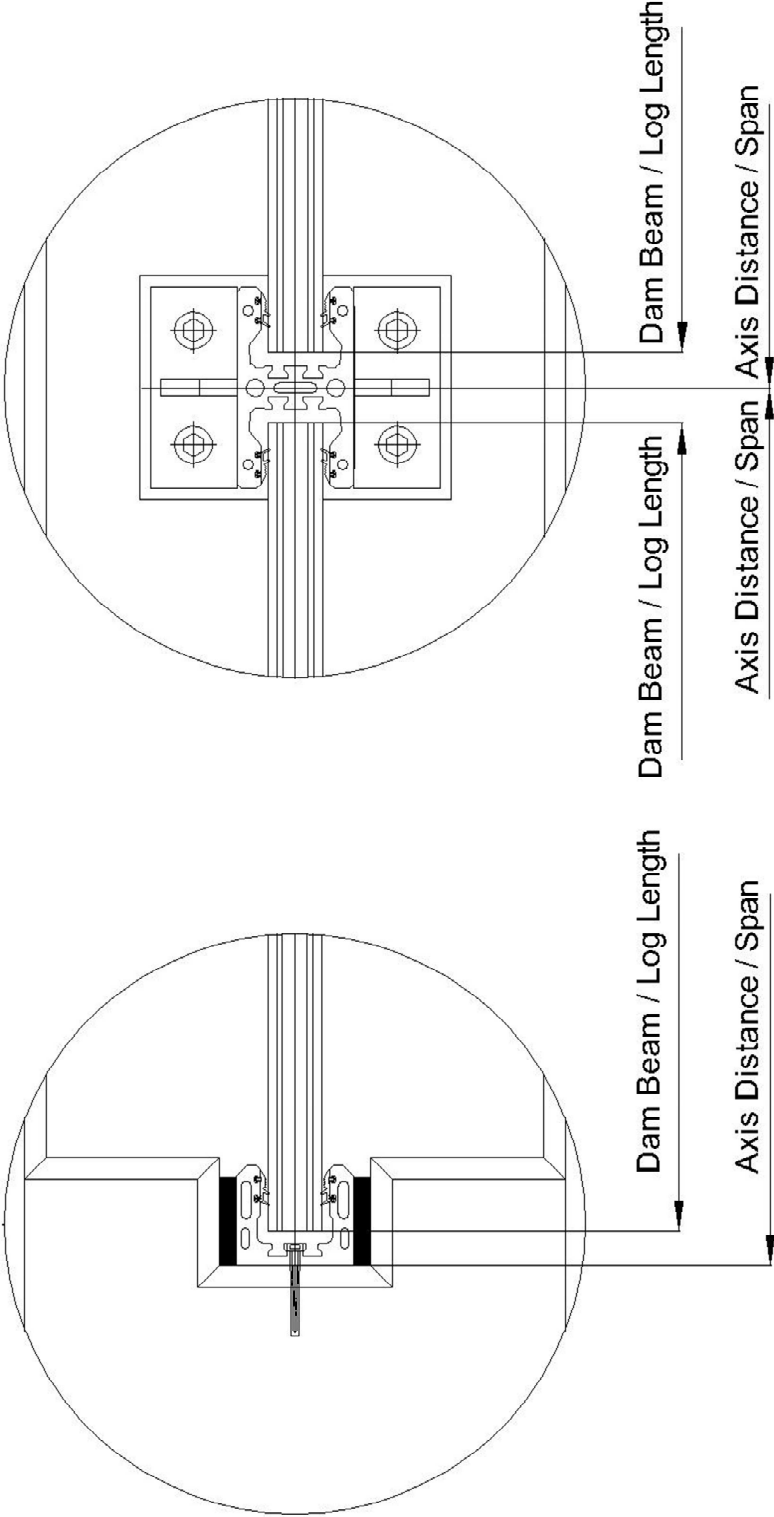


1.3.3 Flood Protection Walls HW-W50LU

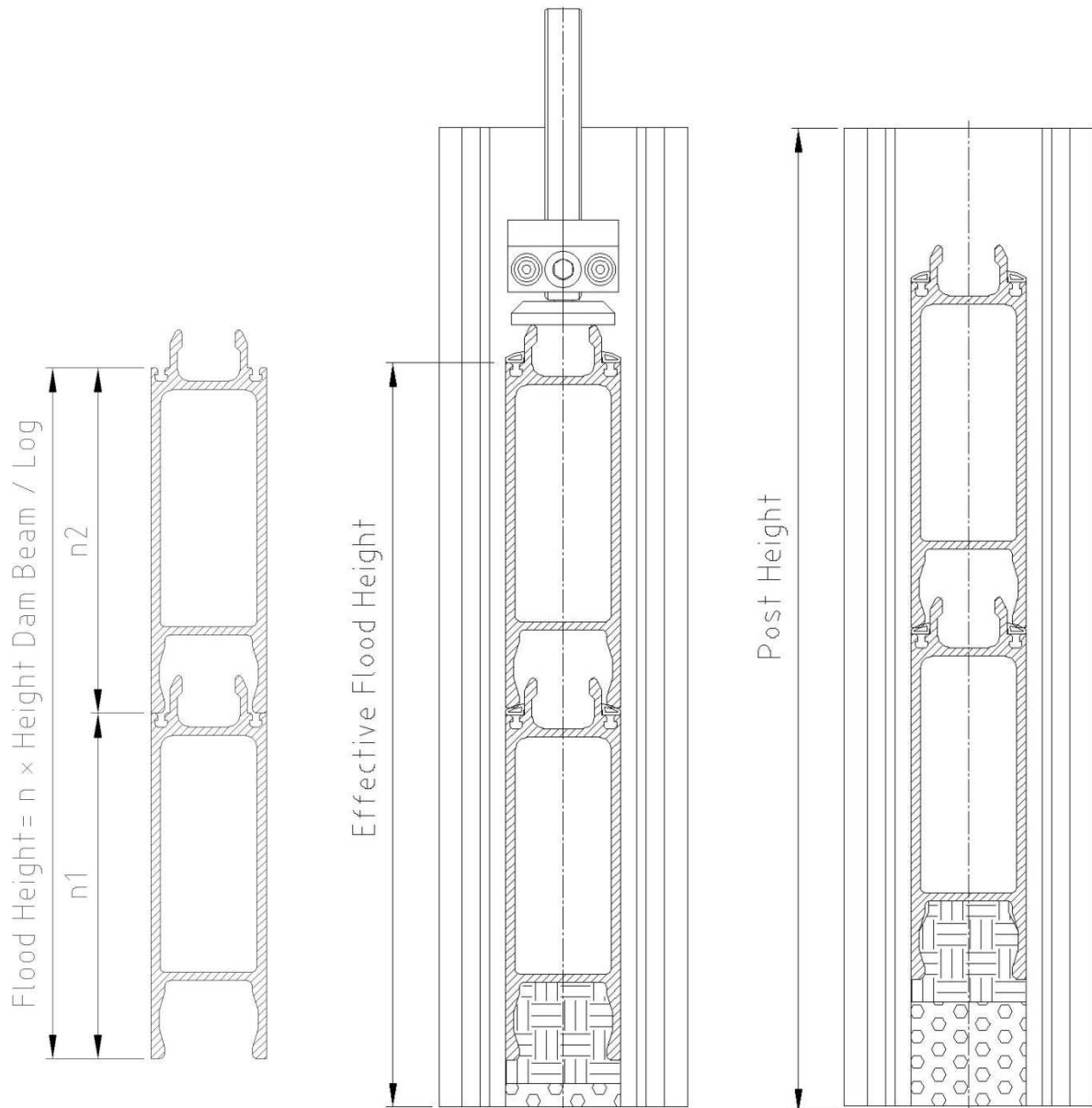




1.3.4 Axis Distance and Log Length



1.3.5 Flood Height, effective Flood Height, Post Height



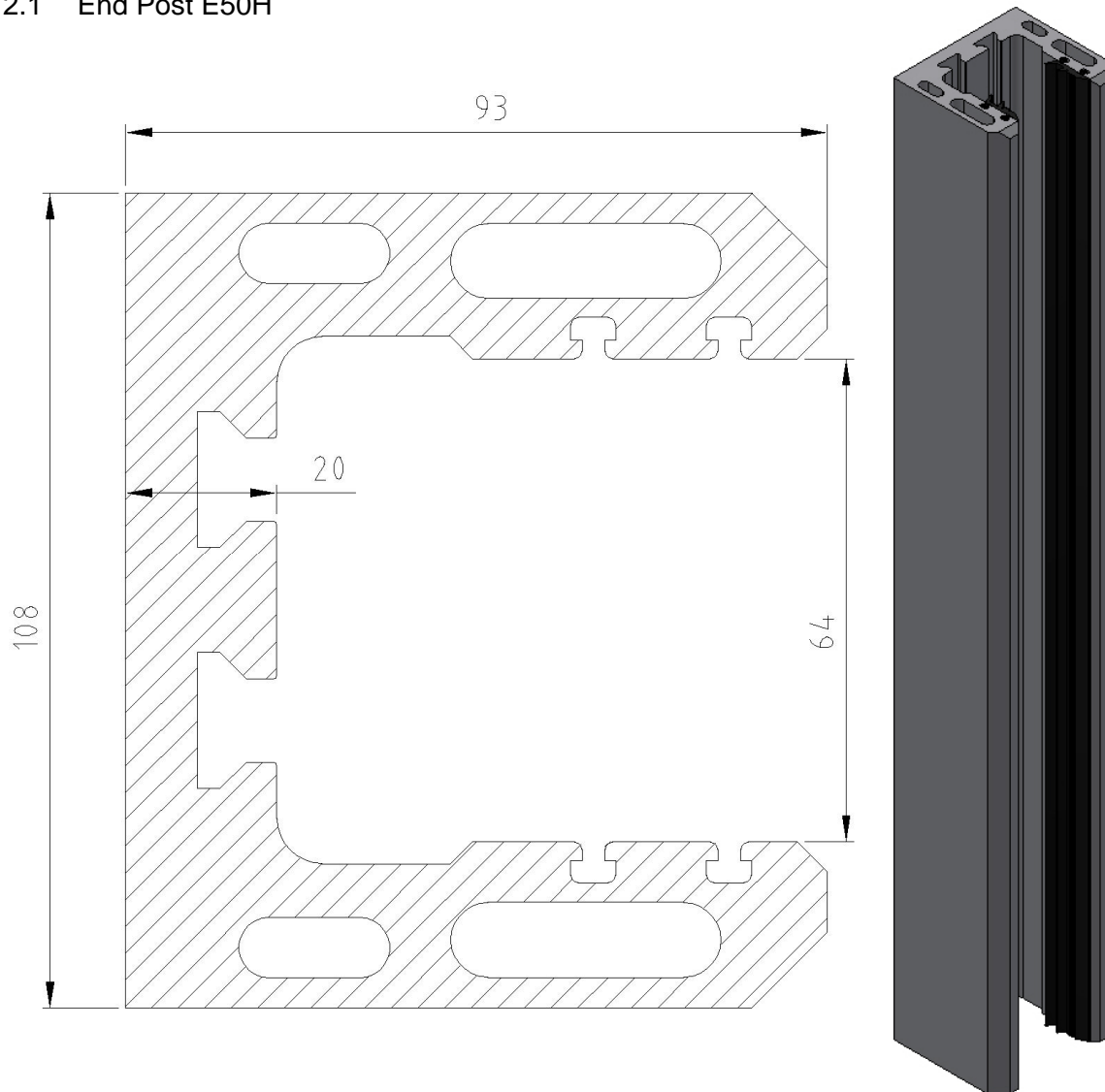
DBAL50x150-4,0			
NUMBER OF DAM BEAMS/LOGS	FLOOD HEIGHT [MM]	EFFECTIVE FLOOD HEIGHT [MM]	POST HEIGHT [MM]
1	150	165	280
2	300	317	425
3	450	469	580
4	600	621	735
5	750	773	885
6	900	925	1040
7	1050	1077	1190
8	1200	1229	1345
9	1350	1381	1500
10	1500	1533	1650
11	1650	1685	1805
12	1800	1837	1955
13	1950	1989	2110
14	2100	2141	2265
15	2250	2293	2415
16	2400	2445	2570
17	2550	2597	2720
18	2700	2749	2875
19	2850	2901	3030
20	3000	3053	3180

<b>DBAL50x200-2,0</b>			
<b>NUMBER OF DAM BEAMS/LOGS</b>	<b>FLOOD HEIGHT [MM]</b>	<b>EFFECTIVE FLOOD HEIGHT [MM]</b>	<b>POST HEIGHT [MM]</b>
1	200	225	330
2	400	427	525
3	600	619	735
4	800	821	935
5	1000	1023	1135
6	1200	1225	1345
7	1400	1427	1540
8	1600	1629	1745
9	1800	1831	1955
10	2000	2033	2150
11	2200	2235	2355
12	2400	2437	2570
13	2600	2639	2760
14	2800	2841	2965
15	3000	3043	3180

<b>DBAL50x300-4,0</b>			
<b>NUMBERS OF DAM BEAMS/LOGS</b>	<b>FLOOD HEIGHT [MM]</b>	<b>EFFECTIVE FLOOD HEIGHT [MM]</b>	<b>POST HEIGHT [MM]</b>
1	300	315	425
2	600	617	735
3	900	919	1040
4	1200	1221	1345
5	1500	1523	1650
6	1800	1825	1955
7	2100	2127	2265
8	2400	2429	2570
9	2700	2731	2875
10	3000	3033	3180

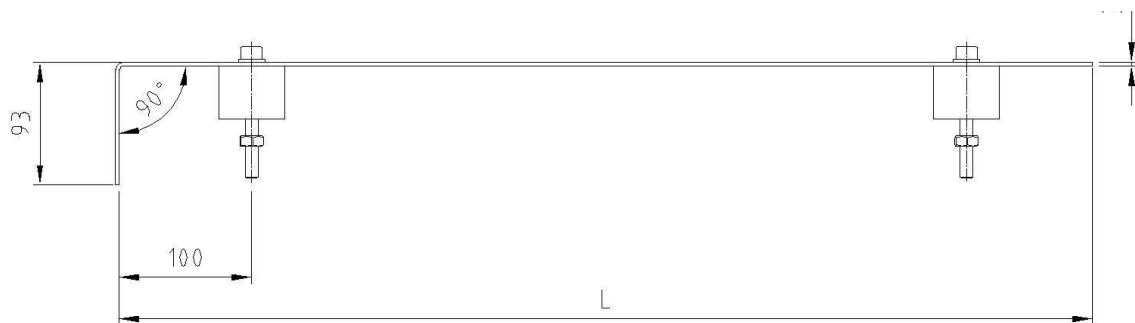
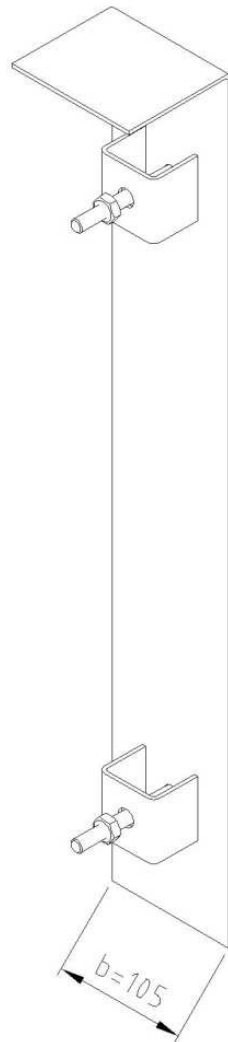
## 2 System Components

### 2.1 End Post E50H



PROFILE CHARACTERISTICS		
Height	mm	108
Width	mm	93
Thickness	mm	20
Cross-sectional area	cm <sup>2</sup>	37,7
Weight per linear m	kg/m	10,5
Material	-	EN AW-6063-T66
Moment of inertia	cm <sup>4</sup>	554
Modulus of elasticity E	N/mm <sup>2</sup>	70.000

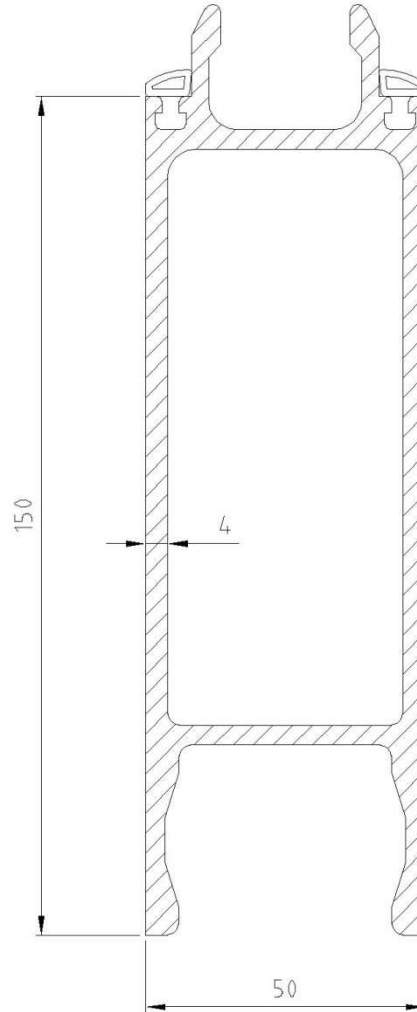
2.2 Cover for End Post AD50H



LEGEND	
L	Cover Length
b	Cover Width [mm]
Material	Stainless Steel, Grade: SS 304

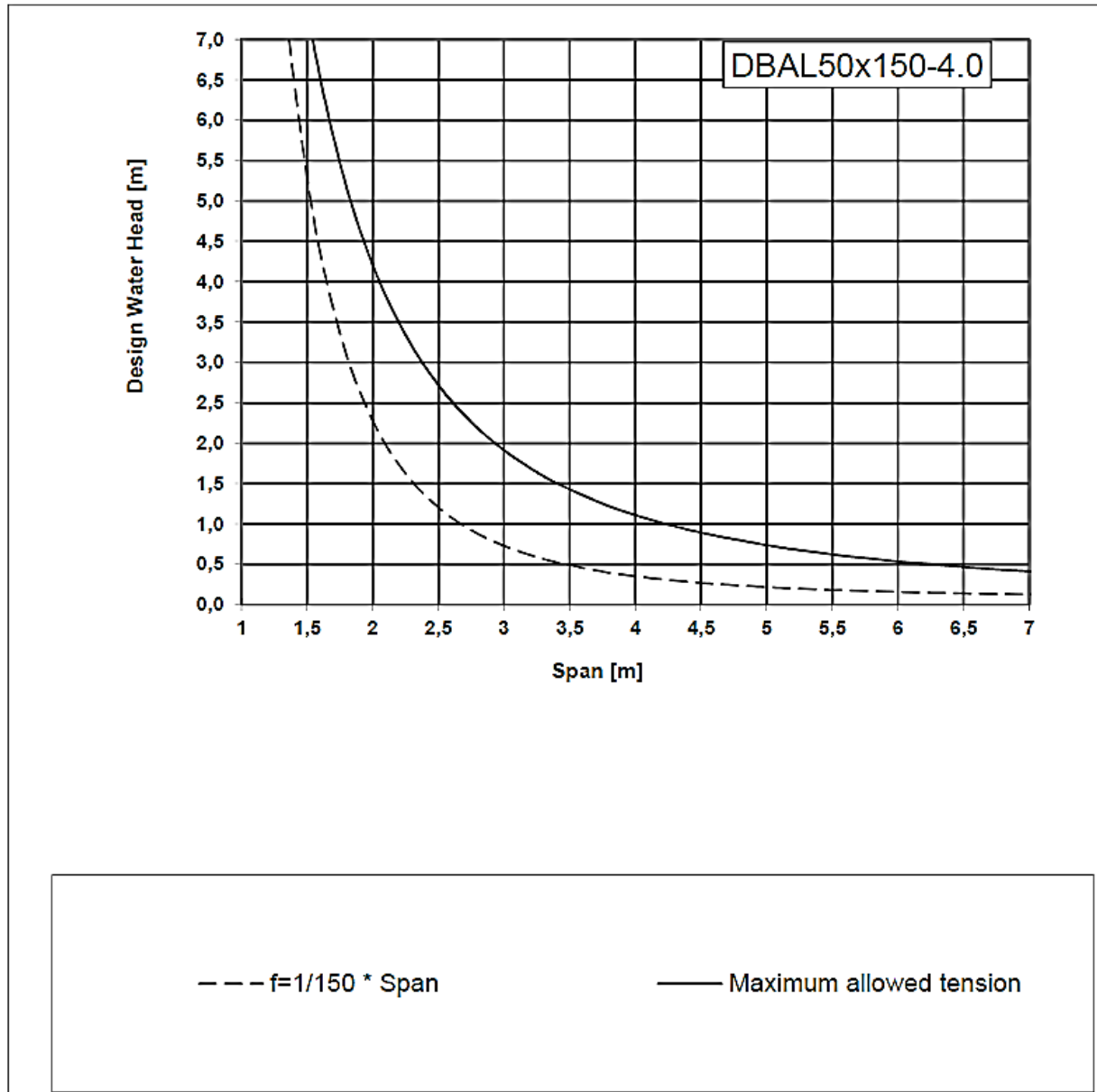
2.3 Dam Beam/Logs

2.3.1 DBAL50x150-4.0



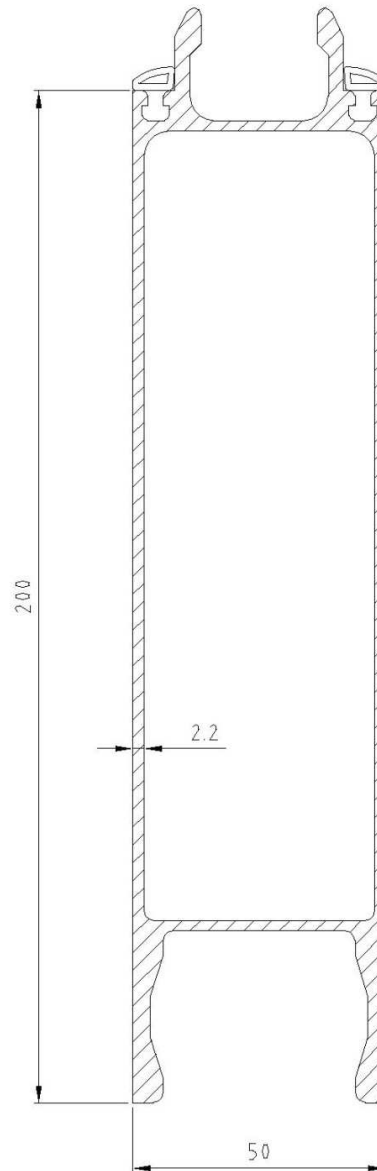
PROFILE CHARACTERISTICS		
Height	mm	150
Width	mm	50
Thickness	mm	4
Cross-sectional area	cm <sup>2</sup>	17,3
Weight per linear m	kg/m	4,6
Material	-	EN AW-6063-T66
Moment of inertia	cm <sup>4</sup>	73,8
Modulus of elasticity E	N/mm <sup>2</sup>	70.000

Deflection Graph DBAL50x150-4.0



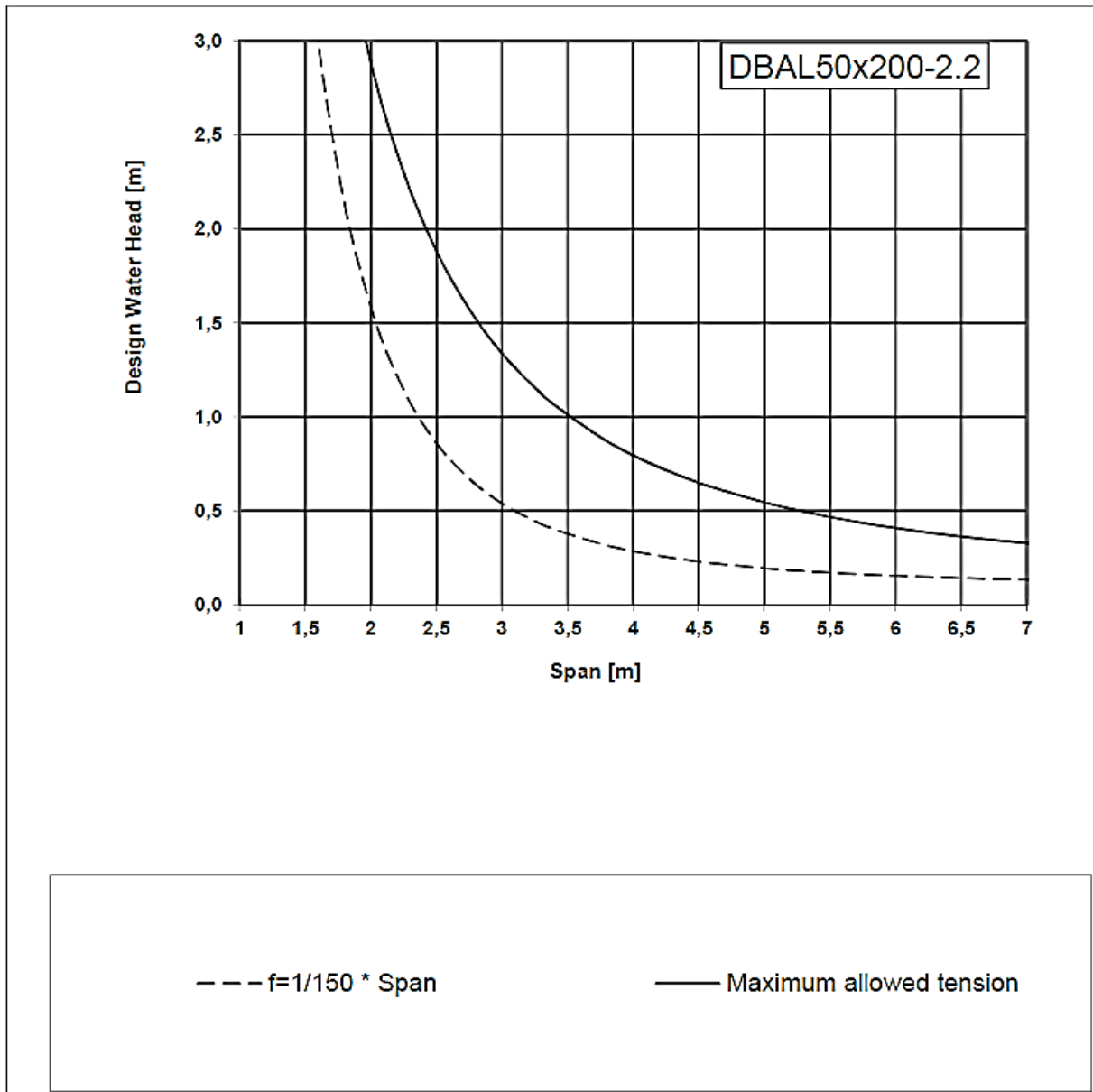


2.3.2 DBAL50x200-2.2

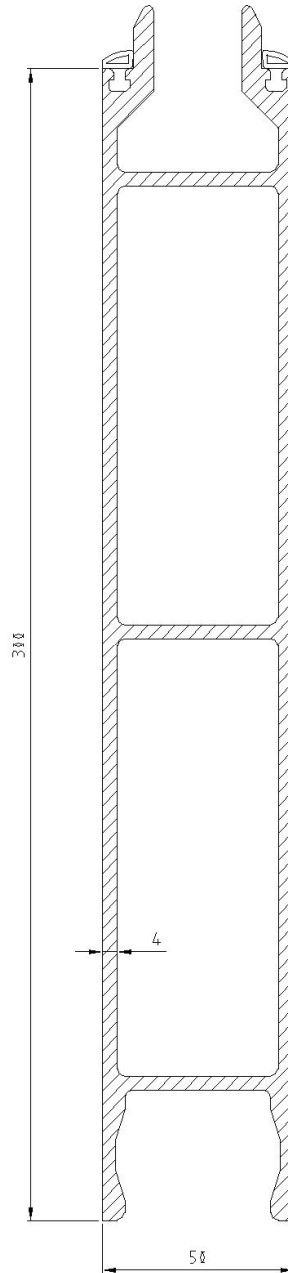


PROFILE CHARACTERISTICS		
Height	mm	200
Width	mm	50
Thickness	mm	2,2
Cross-sectional area	cm <sup>2</sup>	14,4
Weight per linear m	kg/m	3,9
Material	-	EN AW-6063-T66
Moment of inertia	cm <sup>4</sup>	66,3
Modulus of elasticity E	N/mm <sup>2</sup>	70.000

Deflection Graph DBAL50x200-2.2

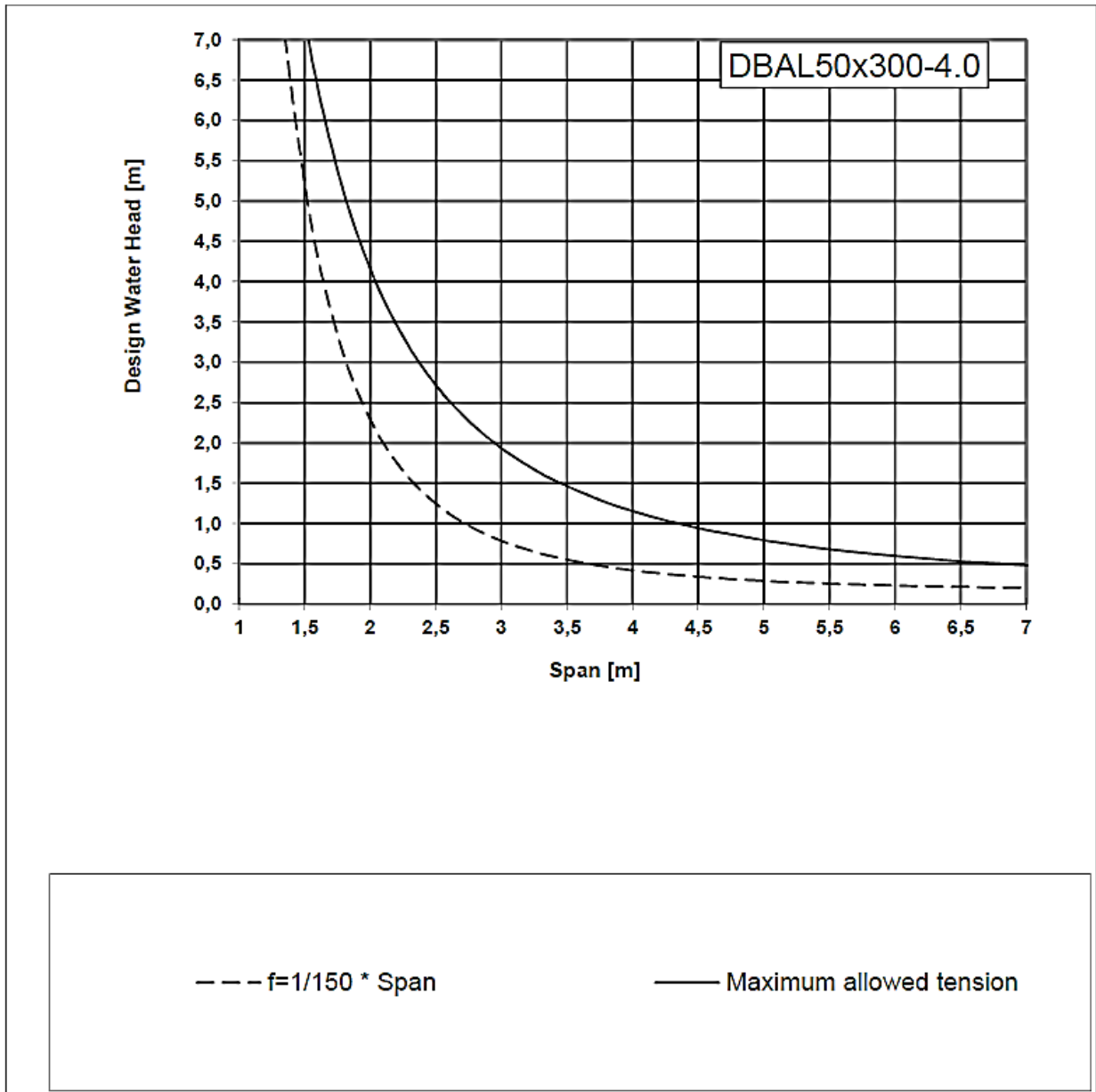


2.3.3 DBAL50x300-4.0



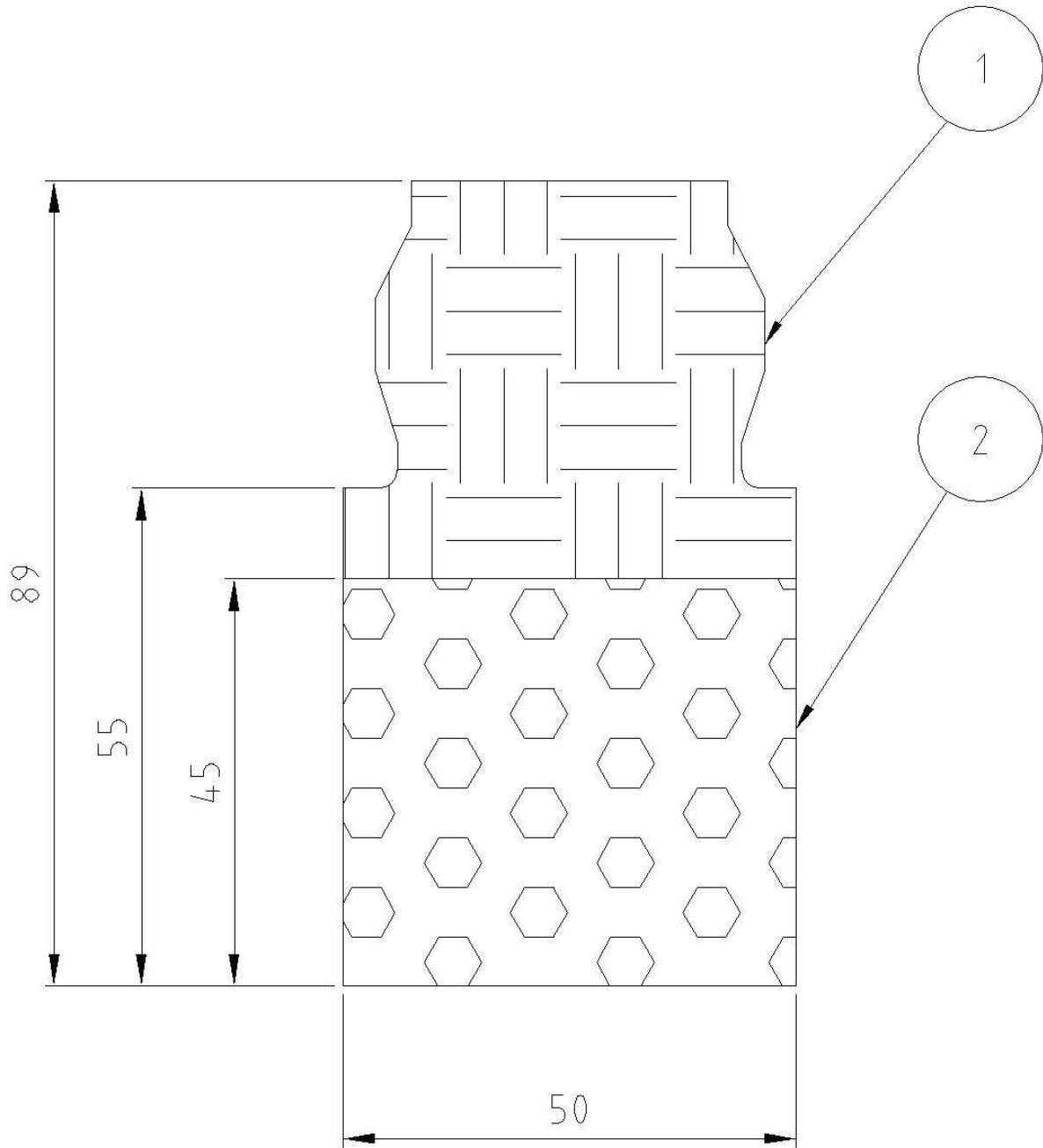
PROFILE CHARACTERISTICS		
Height	mm	300
Width	mm	50
Thickness	mm	4
Cross-sectional area	cm <sup>2</sup>	32,1
Weight per linear m	kg/m	8,7
Material	-	EN AW-6063-T66
Moment of inertia	cm <sup>4</sup>	143,2
Modulus of elasticity E	N/mm <sup>2</sup>	70.000

Deflection Graph DBAL50x300-4.0



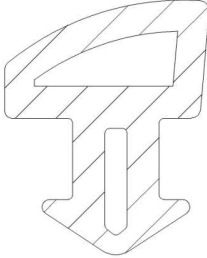
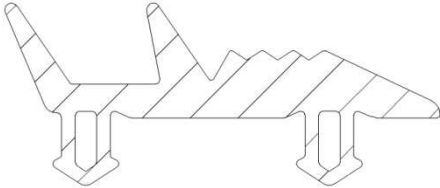
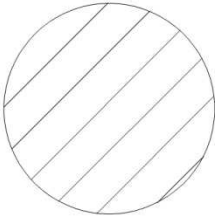
2.4 Seals

2.4.1 Ground Seal BD50\_PE/PU



LEGEND	
Material Pos 1	PE (Polyethylene)
Material Pos 2	PU (Polyurethane)
Weight per linear m	0,412 kg/m

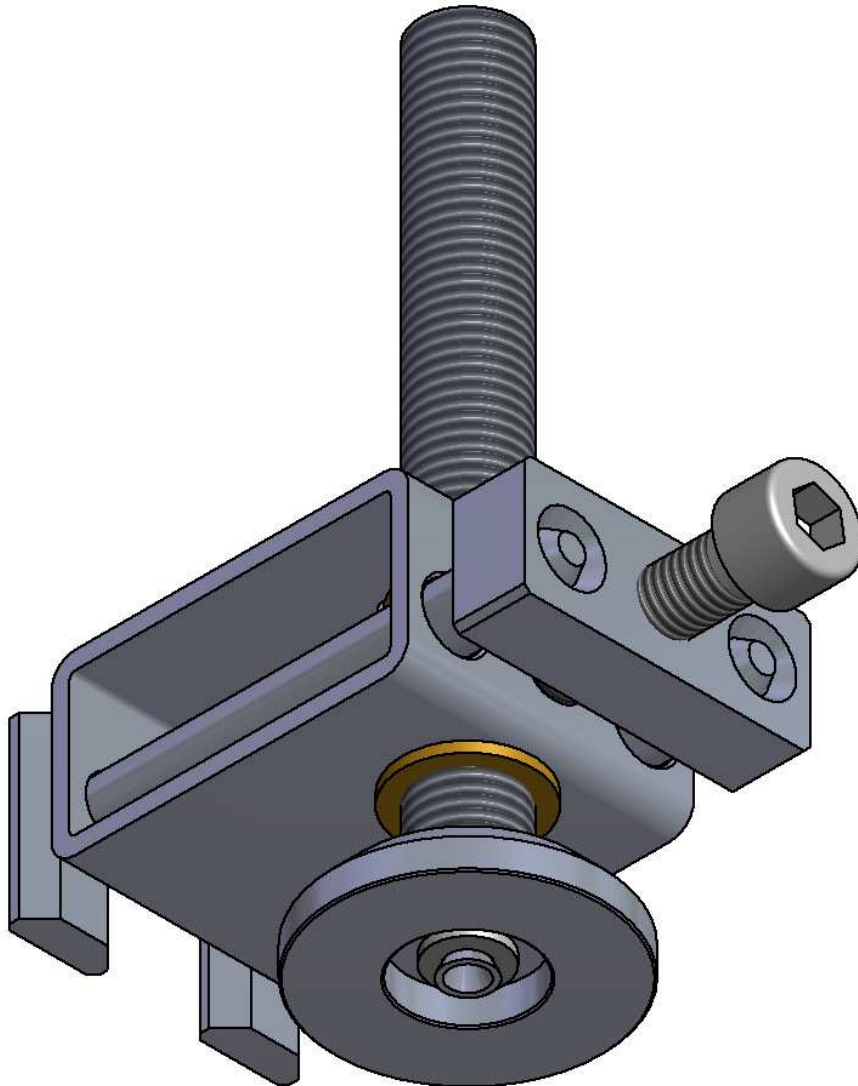
2.4.2 Dam Beams/Logs, End Posts, Center Posts

<p>Dam Beam / Log Clamping Seal</p>	
<p>Post Seal</p>	
<p>Center Post Foot Seal</p>	

<p><b>LEGEND</b></p>	
<p>Material</p>	<p>Ethylene Propylene Diene Monomer rubber (EPDM)</p>

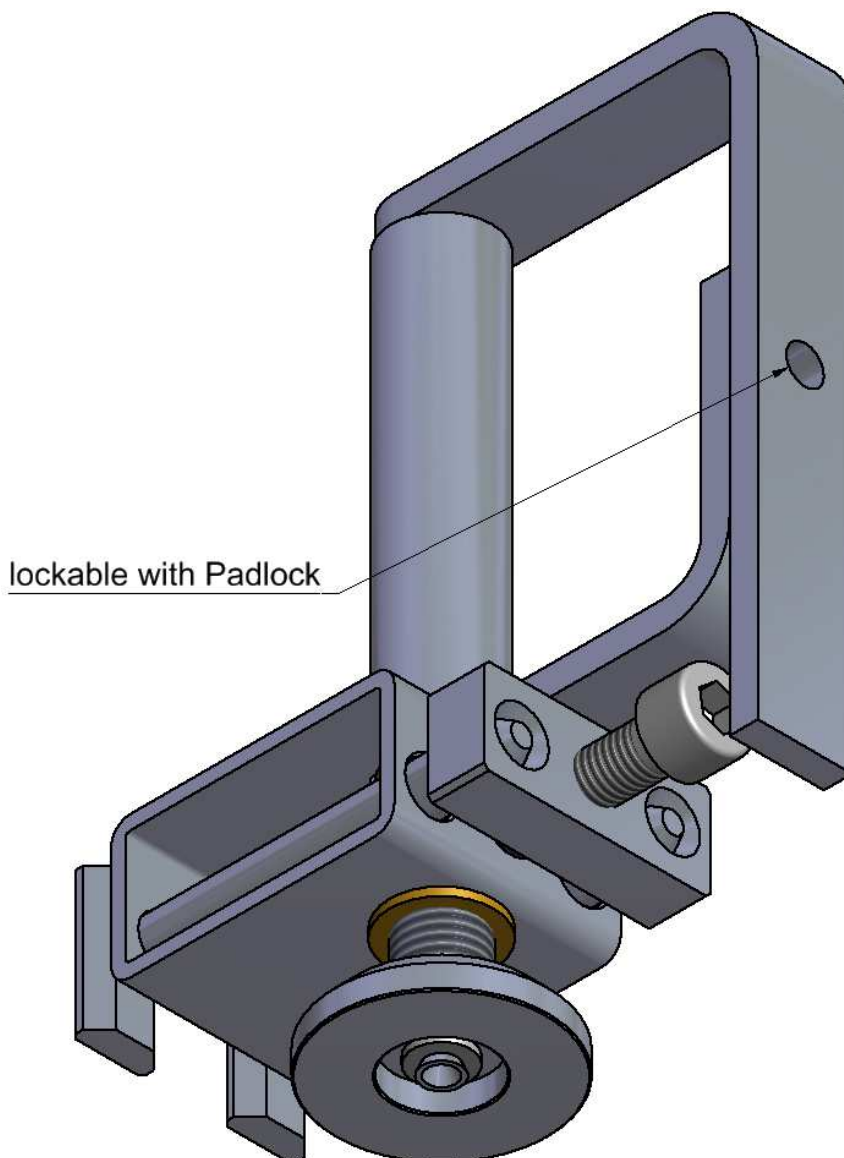
2.5 Pressing Tool

2.5.1 VS100L



LEGEND	
Material	Stainless Steel, Grade.: SS 304
Incl. Brass bush to prevent cold welds at moving parts	

2.5.2 VS100L lockable

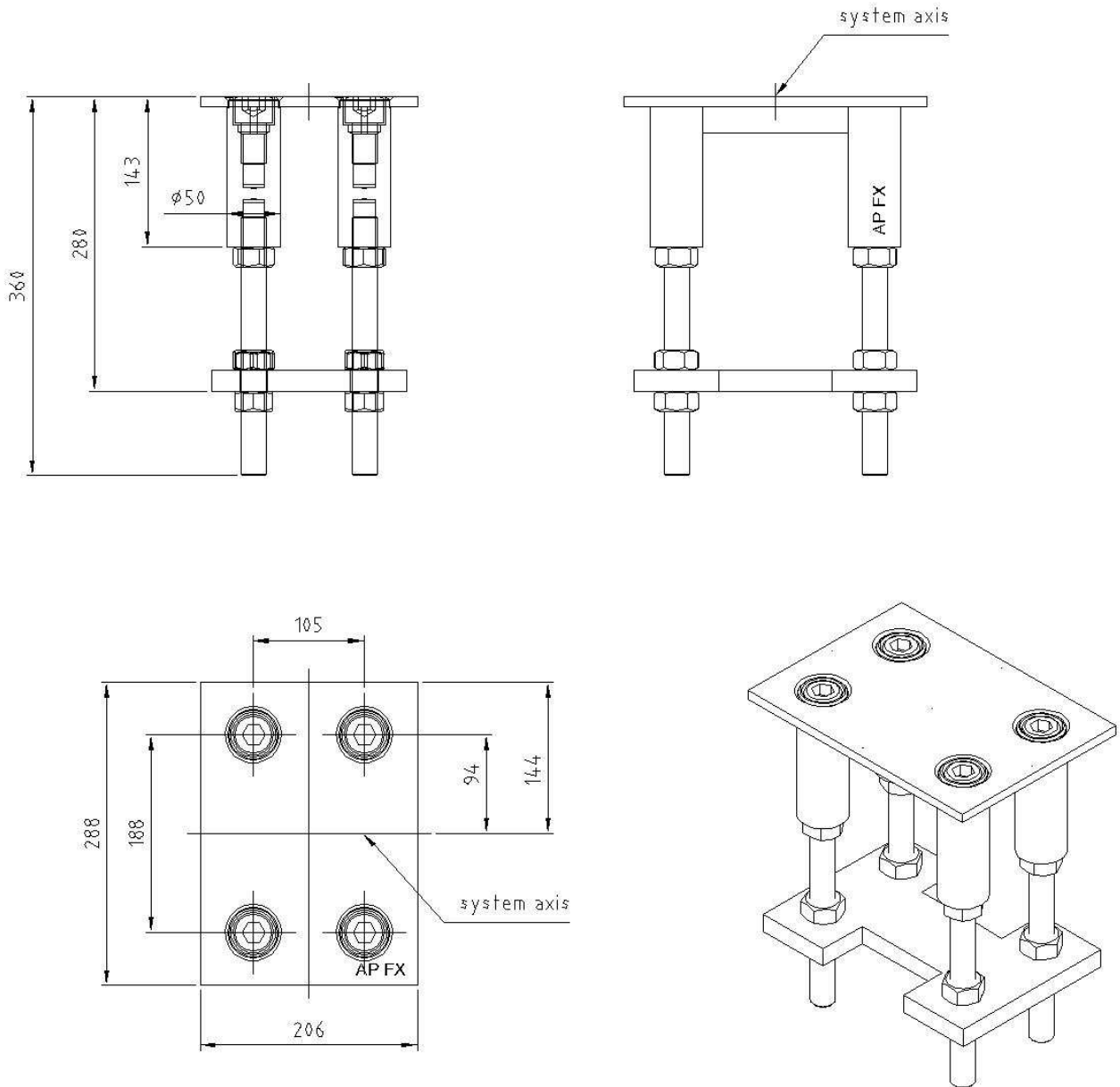


LEGEND	
Material	Stainless Steel, Grade.: SS 304
Incl. Brass bush to prevent cold welds at moving parts	



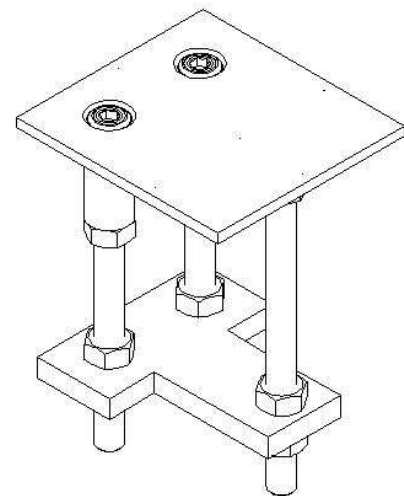
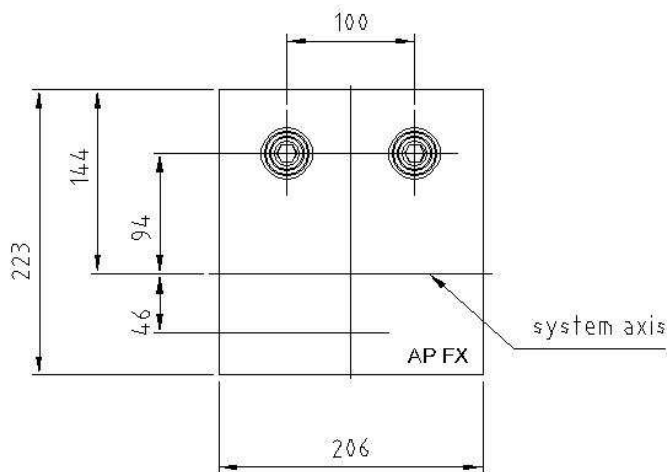
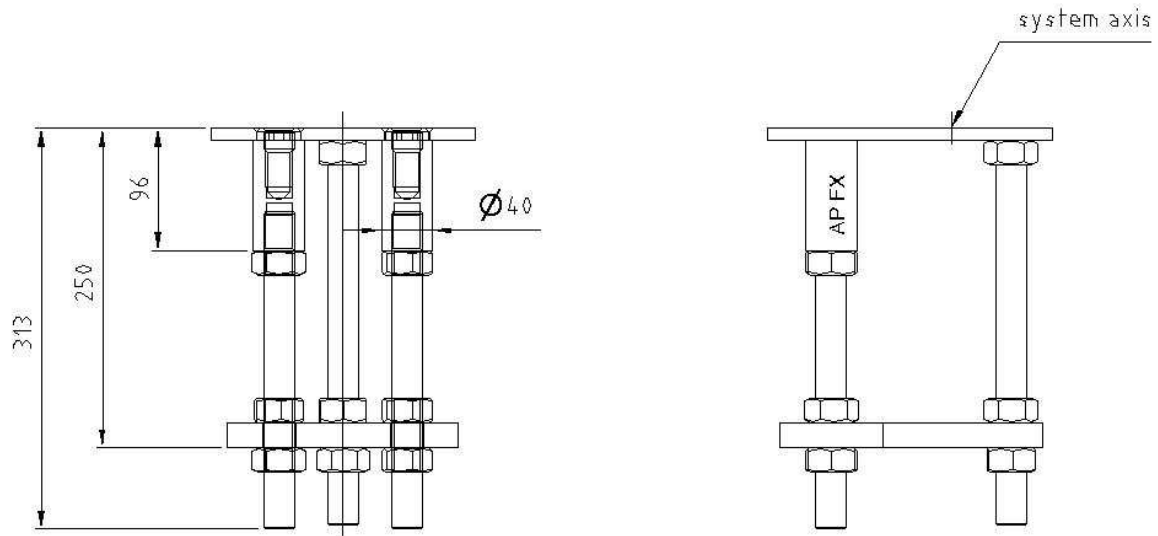
2.6 Anchore Plate

2.6.1 AP50L-T60



Coverplate	Stainless Steel, Grade.: SS 304
Bushes	Stainless Steel, Grade.: SS 304
Reinforcement Spindles	Mild Steel, Grade: S235; 8.8 blanc
Reinforcement Plate	Mild Steel, Grade: S235
Nuts	Mild Steel, Grade: S235; 8.8
Dummy Bolt (cylinder head bolt)	DIN912 M24x40 A4-70

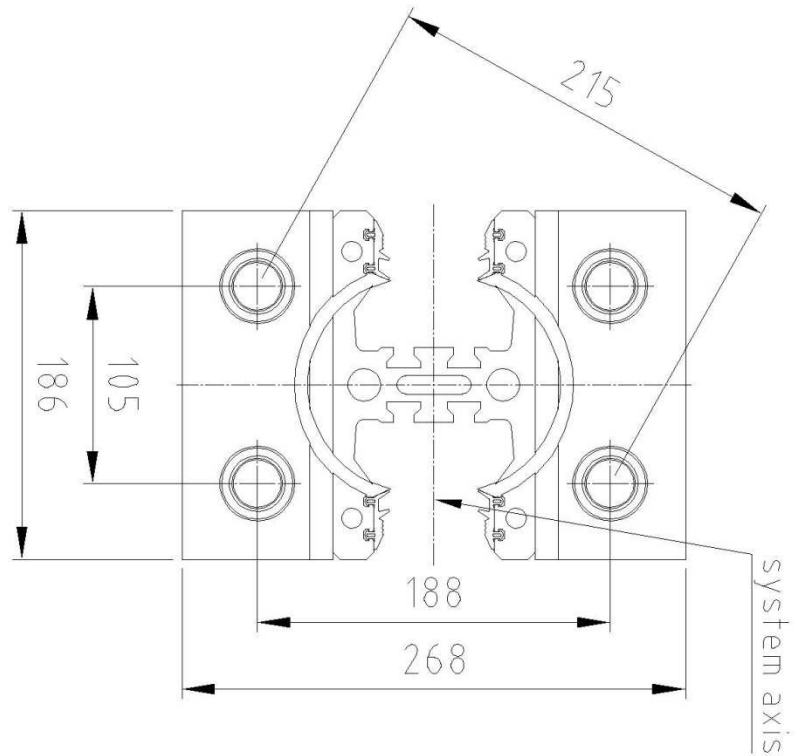
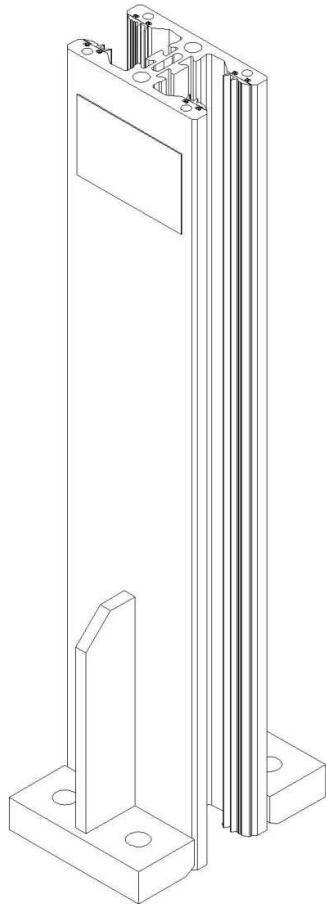
2.6.2 AP50LU-T65



Coverplate	Stainless Steel, Grade.: SS 304
Bushes	Stainless Steel, Grade.: SS 304
Reinforcement Spindles	Mild Steel, Grade: S235; 8.8 blanc
Reinforcement Plate	Mild Steel, Grade: S235
Nuts	Mild Steel, Grade: S235; 8.8
Dummy Bolt (grub screw)	Stainless Steel, Grade.: SS 304

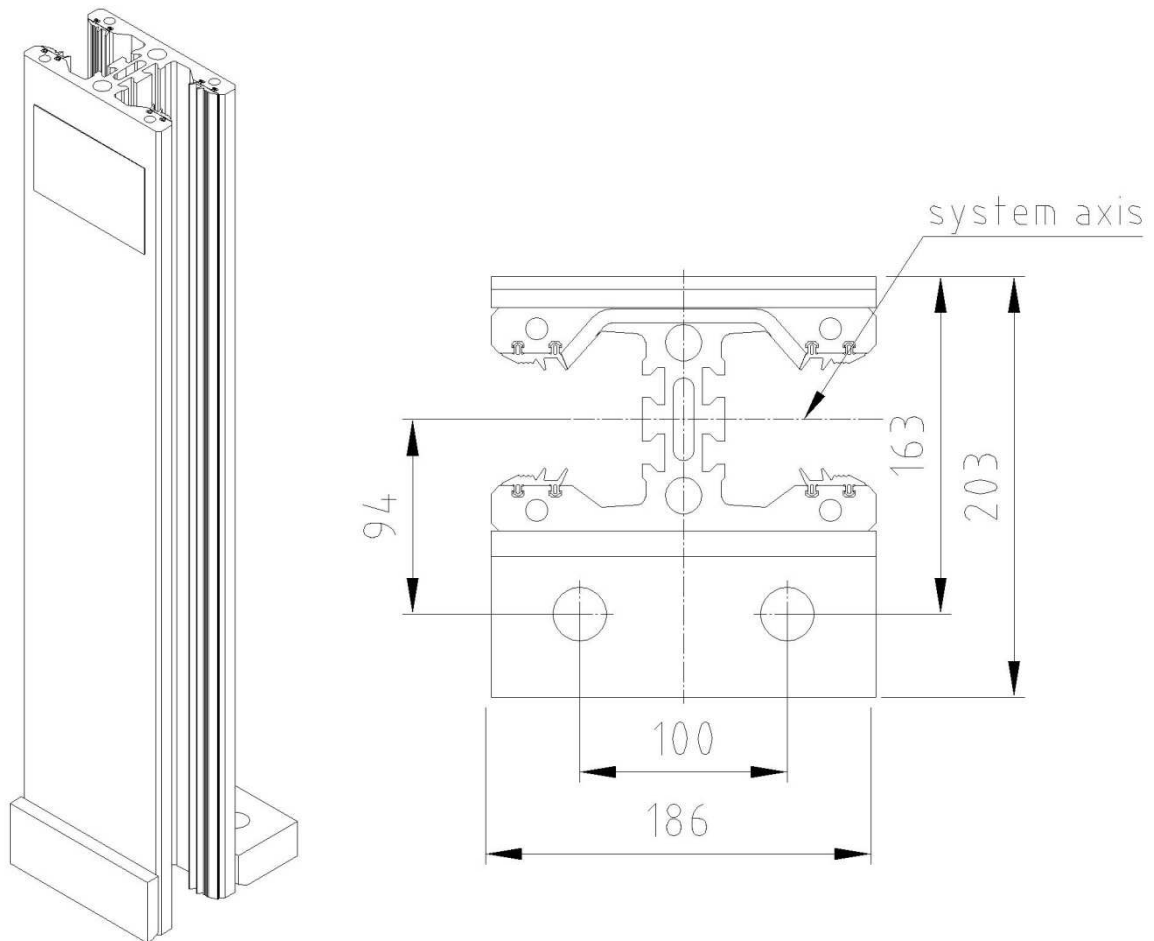
2.7 Center Post

2.7.1 MS50L-T60



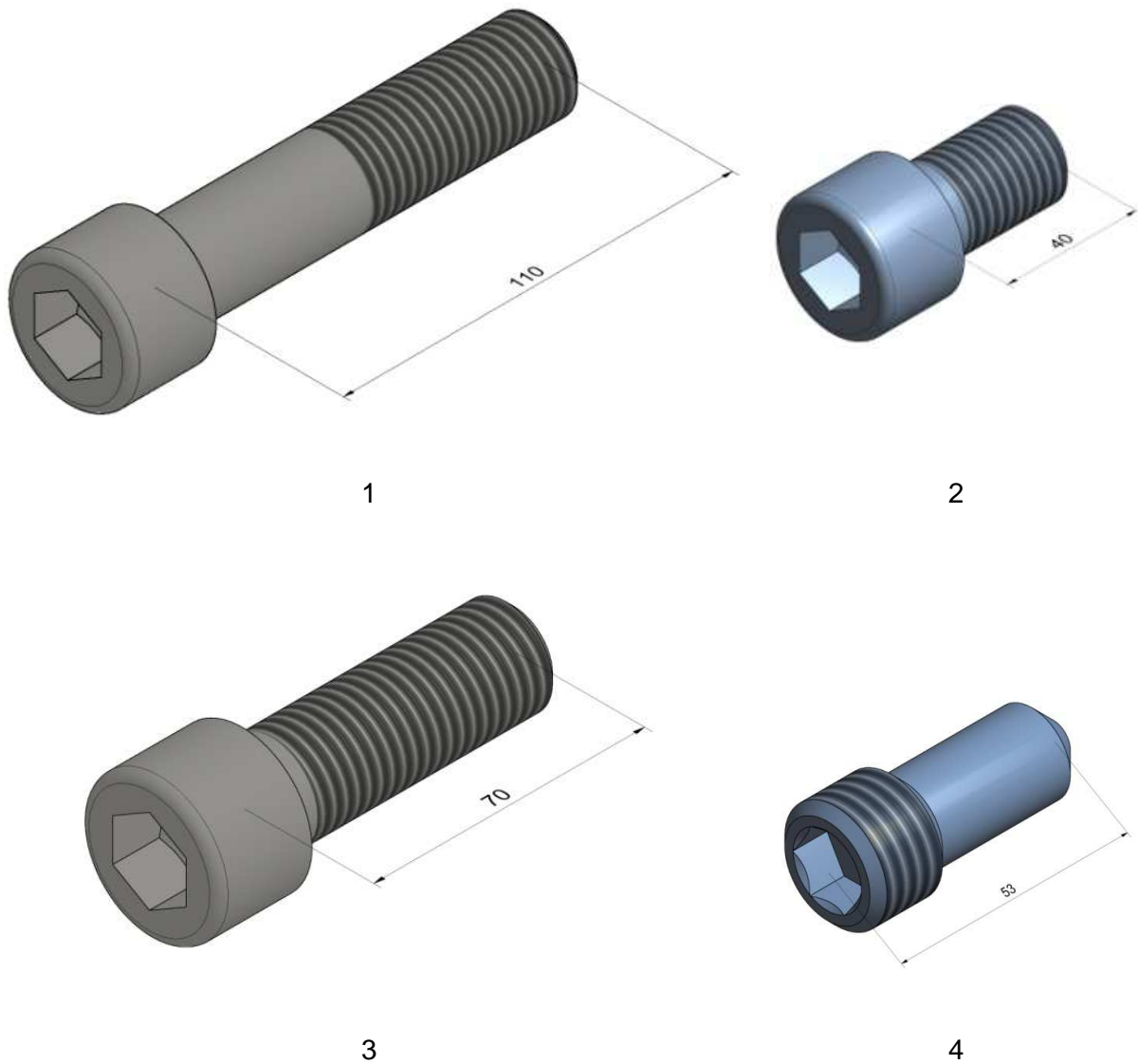
LEGEND				
Description	Flood Height [mm]	Max. Axis Distance/Span a [mm]	Weight [kg]	Material
MS50L-T60-280	150	6000	9,9	En AW 6063 T66
MS50L-T60-330	200	6000	10,9	
MS50L-T60-425	300	6000	12,8	
MS50L-T60-525	400	5000	14,9	
MS50L-T60-580	450	4500	16,5	
MS50L-T60-735	600	4000	19,6	
MS50L-T60-885	750	3500	22,7	
MS50L-T60-935	800	3000	23,7	
MS50L-T60-1040	900	3000	25,8	
MS50L-T60-1135	1000	3000	28,2	
MS50L-T60-1190	1050	3000	29,3	
MS50L-T60-1345	1200	3000	32,5	

2.7.2 MS50LU-T65B



LEGEND				
Description	Flood Height [mm]	Max. Axis Distance/Span a [mm]	Weight [kg]	Material
MS50L-T65B-280	150	6000	8,1	En AW 6063 T66
MS50L-T65B-330	200	6000	9,1	
MS50L-T65B-425	300	6000	11,1	
MS50L-T65B-525	400	5000	13,1	
MS50L-T65B-580	450	4500	14,4	
MS50L-T65B-735	600	4000	17,6	
MS50L-T65B-885	750	3500	20,6	
MS50L-T65B-935	800	3000	21,6	
MS50L-T65B-1040	900	3000	23,7	
MS50L-T65B-1135	1000	3000	25,9	
MS50L-T65B-1190	1050	3000	27,0	
MS50L-T65B-1345	1200	3000	30,1	

2.7.3 Bolts

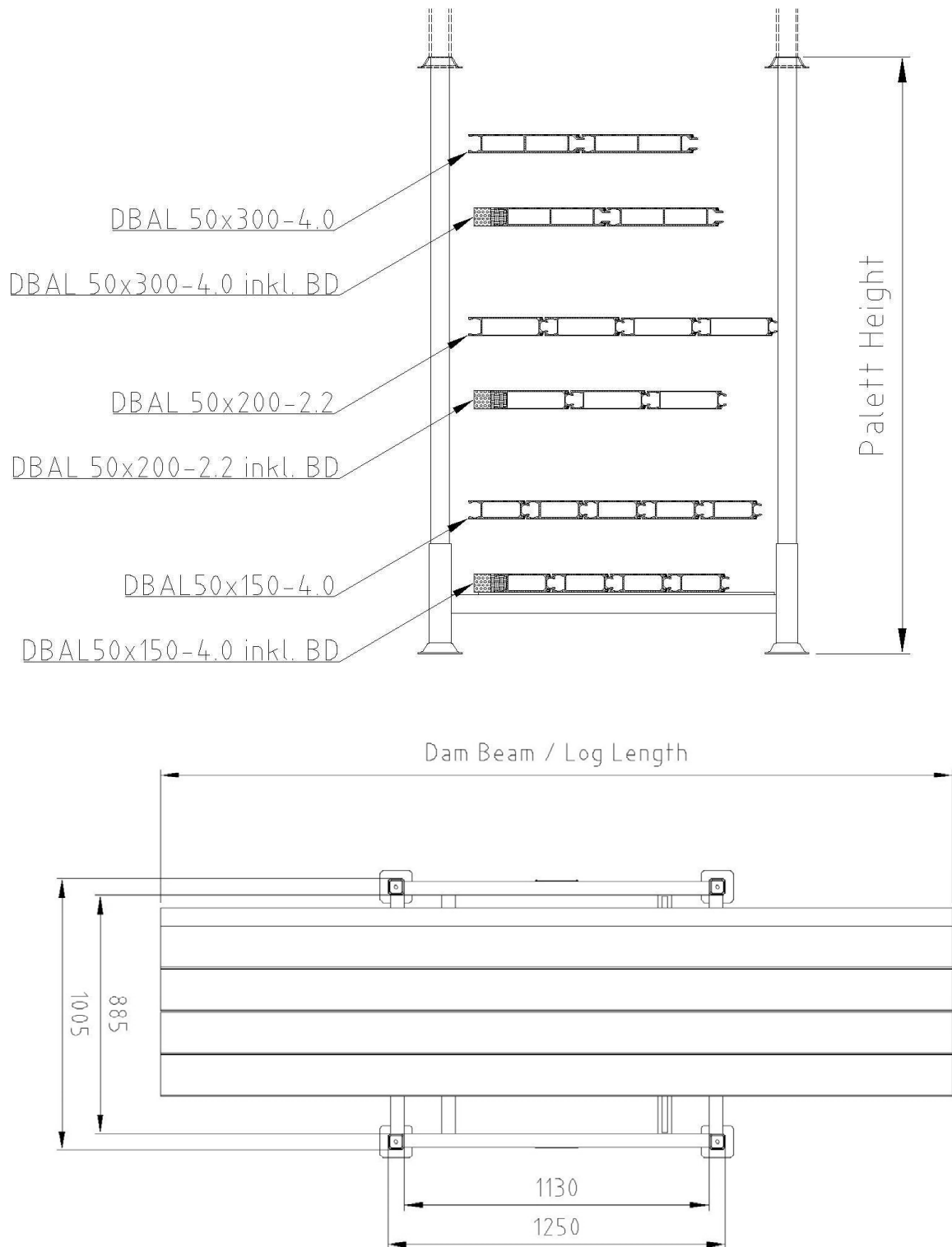


SYSTEM	FOOTNOTE	FUNCTION	DESCRIPTION
HW-W50L	1	Cylinder Head Center Post Bolt	DIN 912 M24x110 8.8 galv. zincd
	2	Anchor Plate Dummy Bolt	DIN 912 M24x40 SS 316
HW-W50LU	3	Cylinder Head Center Post Bolt	DIN 912 M24x70 8.8 galv. zincd
	4	Cylinder Head Anchor Plate Dummy Bolt	Spindles M24x53 SW 14

### 3 Storage

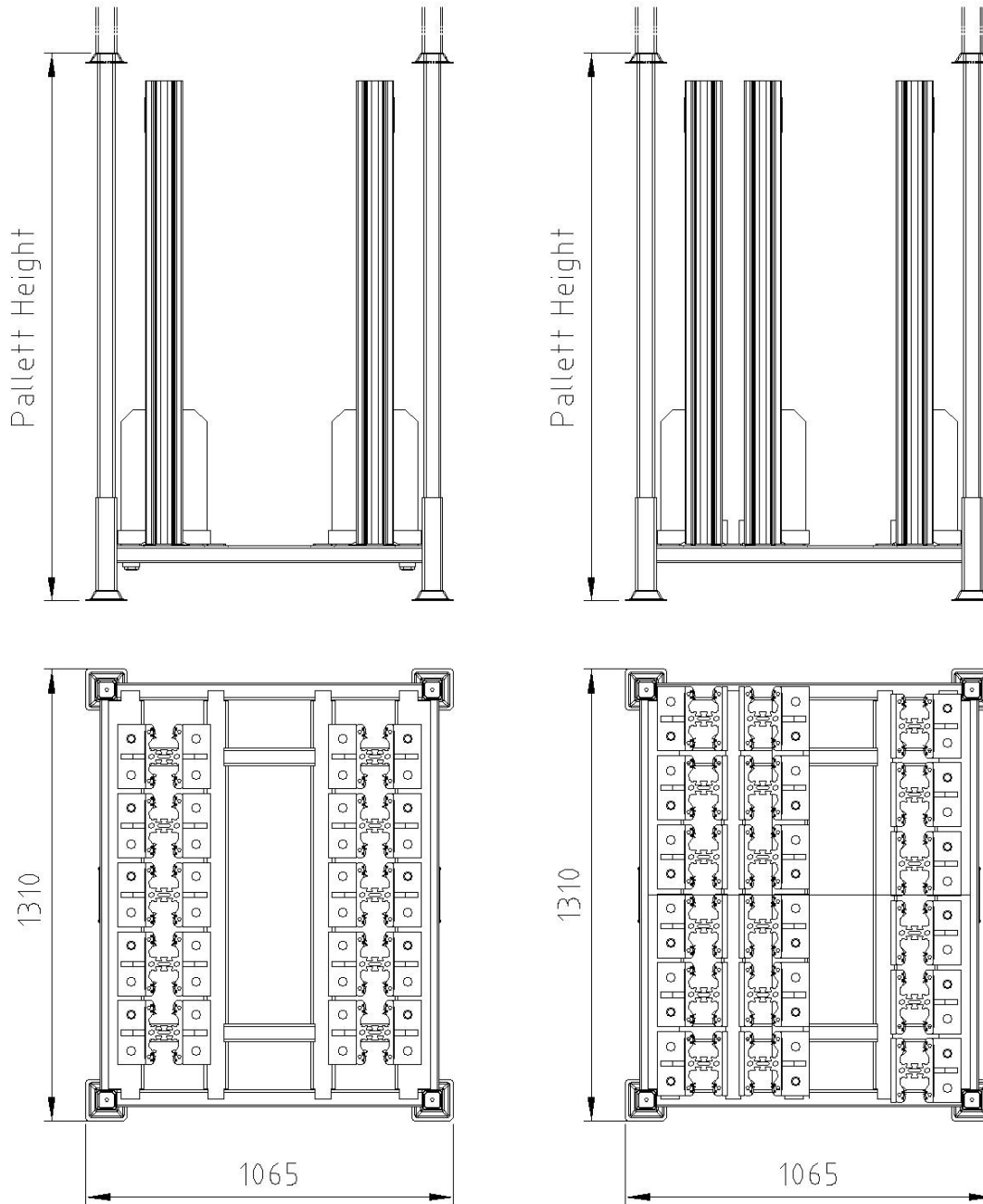
#### 3.1 Dam Beam/Log Pallet

##### 3.1.1 Dam Beams/Logs



Description	Pallet Height [mm]	Dam Beam	Max. Number of Layers	Number DB/Layer	
				Without BD50H	With BD50H
LT-P02-DB-800	830	DBAL50x150-4,0	10	5	4
LT-P02-DB-800	830	DBAL50x200-2,2	10	4	3
LT-P02-DB-800	830	DBAL50x300-4,0	10	2	2
LT-P02-DB-1400	1430	DBAL50x150-4,0	21	5	4
LT-P02-DB-1400	1430	DBAL50x200-2,2	21	4	3
LT-P02-DB-1400	1430	DBAL50x300-4,0	21	2	2
LT-P02-DB-2100	2130	DBAL50x150-4,0	33	5	4
LT-P02-DB-2100	2130	DBAL50x200-2,2	33	4	3
LT-P02-DB-2100	2130	DBAL50x300-4,0	33	3	3

3.1.2 Center Post Pallets



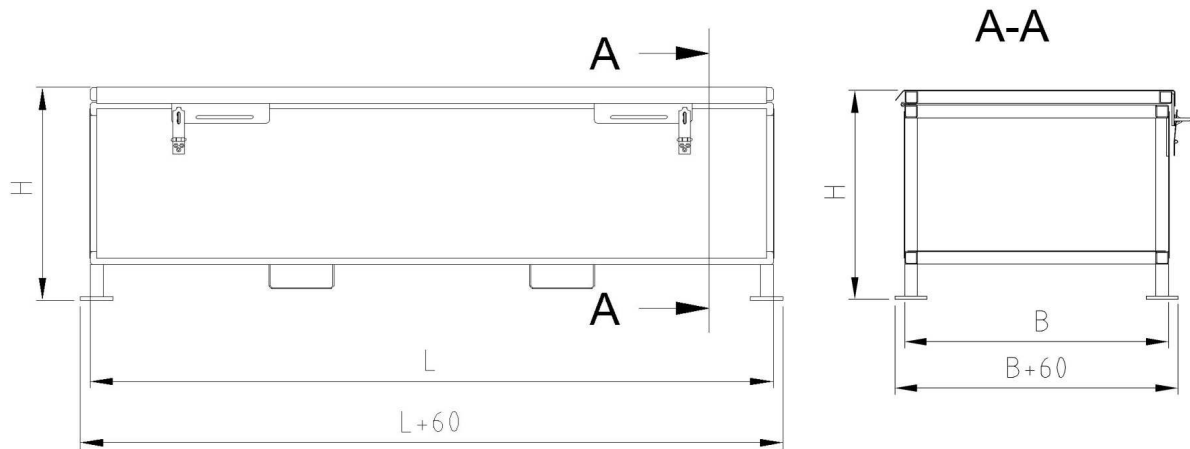
MS 50 L

MS 50 LU

Description	Pallet Height [mm]	Center Post MS50	Max. Number MS50/Pallet [Piece]	Flood Height MS50	
				from [mm]	till [mm]
LT-P02-MS50L-T60-V (800)	830	MS50L	10	150	750
LT-P02-MS50LU-T65-V (800)	830	MS50LU	18	150	750
LT-P02-MS50L-T60-V (1400)	1430	MS50L	10	800	1200
LT-P02-MS50LU-T65-V (1400)	1430	MS50LU	18	800	1200



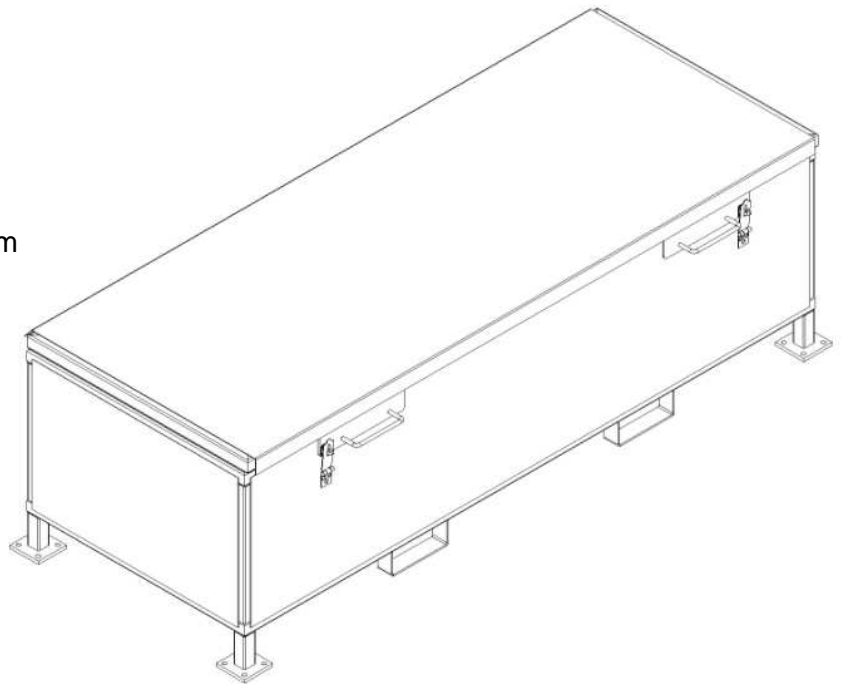
3.2 Storage Box-LB



Standard Dimensions  
B x H: 930mm x 660mm

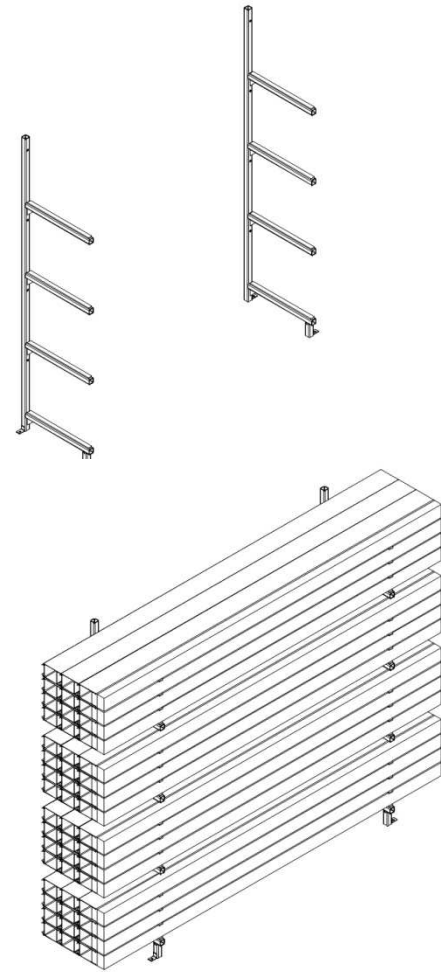
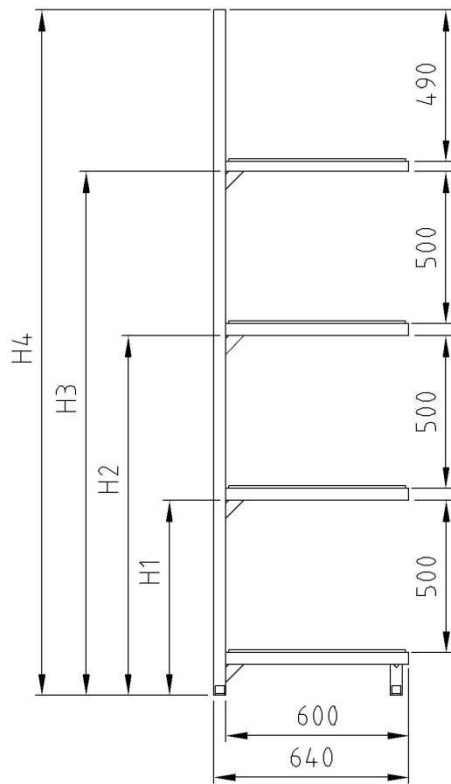
in three different lengths  
L: 2.500mm / 3.000mm / 4.000mm

Material:  
Subconstruction S235 fv  
Planking aluminium sheet d=2mm



Dam Beam	Max. Number Layer	Number DB/Layer	
		Without BD 50H	With BD 50H
DBAL50x150-4.0	8	5	4
DBAL50x200-2.2	8	4	3
DBAL50x300-4.0	8	2	2

3.3 Storage Rack for Dam Beams/Logs-LR



Storage Rack Type	Number Layers	Height [mm]	Dam Beam	Max. Number Layer	Number DB/Layer	
					Without BD50H	With BD50H
H1	1	640	DBAL50x150-4,0	8	4	3
H1	1	640	DBAL50x200-2,2	8	3	2
H1	1	640	DBAL50x300-4,0	8	2	2
H2	2	1180	DBAL50x150-4,0	16	4	3
H2	2	1180	DBAL50x200-2,2	16	3	2
H2	2	1180	DBAL50x300-4,0	16	2	2
H3	3	1720	DBAL50x150-4,0	24	4	3
H3	3	1720	DBAL50x200-2,2	24	3	2
H3	3	1720	DBAL50x300-4,0	24	2	2
H4	4	2250	DBAL50x150-4,0	32	4	3
H4	4	2250	DBAL50x200-2,2	32	3	2
H4	4	2250	DBAL50x300-4,0	32	2	2

### 3.4 Storage Box

#### 3.4.1 Alu-Box 47 Liters



**Description:**

- Material thickness 1,0 mm.
- Reinforced edge profile.
- High stability
- Low dead weight.
- Safe and space-saving storage through four stacking edges possible.
- Revolving rubber seal protects against environmental influences like splashing water, dust and unpleasant smells.
- Synthetically covered self fold up safety handles.
- Integrated wrist strap.
- Stainless, weatherproof and temperature-resistant.

Dimensions	
Width outside	582 mm
Height outside	277 mm
Depth outside	385 mm
Width inside	550 mm
Height inside	245 mm
Depth inside	350 mm
Weight	4,5 kg
Volume	47 l

3.4.2 Alu-Box 76 Liters



**Description:**

- Material thickness 1,0 mm.
- Reinforced edge profile.
- High stability
- Low dead weight.
- Safe and space-saving storage through four stacking edges possible.
- Revolving rubber seal protects against environmental influences like splashing water, dust and unpleasant smells.
- Synthetically covered self fold up safety handles.
- Integrated wrist strap.
- Stainless, weatherproof and temperature-resistant.

Dimensions	
Width outside	592 mm
Height outside	409 mm
Depth outside	388 mm
Width inside	560 mm
Height inside	380 mm
Depth inside	353 mm
Weight	5,3 kg
Volume	76 l

3.4.3 Alu-Box 91 Liters



**Description:**

- Material thickness 1,0 mm.
- Reinforced edge profile.
- High stability
- Low dead weight.
- Safe and space-saving storage through four stacking edges possible.
- Revolving rubber seal protects against environmental influences like splashing water, dust and unpleasant smells.
- Synthetically covered self fold up safety handles.
- Integrated wrist strap.
- Stainless, weatherproof and temperature-resistant.

Dimensions	
Width outside	782 mm
Height outside	379 mm
Depth outside	385 mm
Width inside	750 mm
Height inside	350 mm
Depth inside	350 mm
Weight	6,1 kg
Volume	91 l

3.5 Equipment

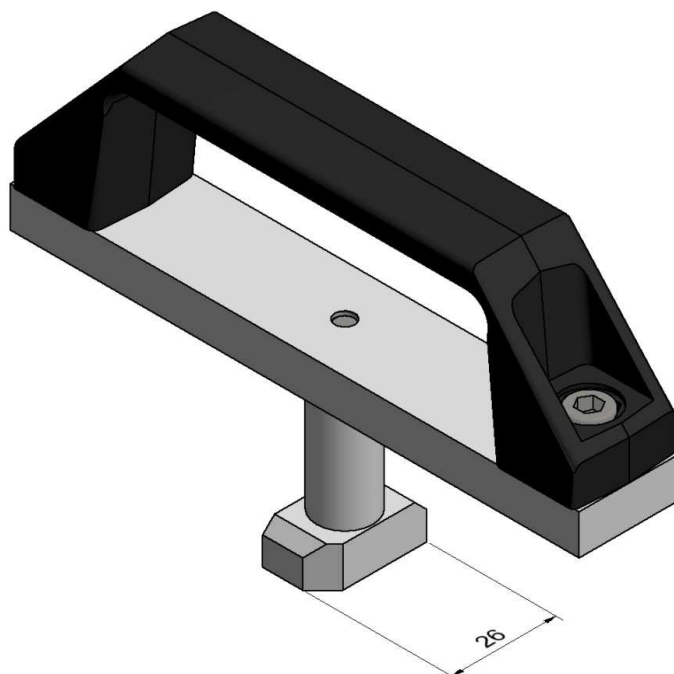
3.5.1 Tools



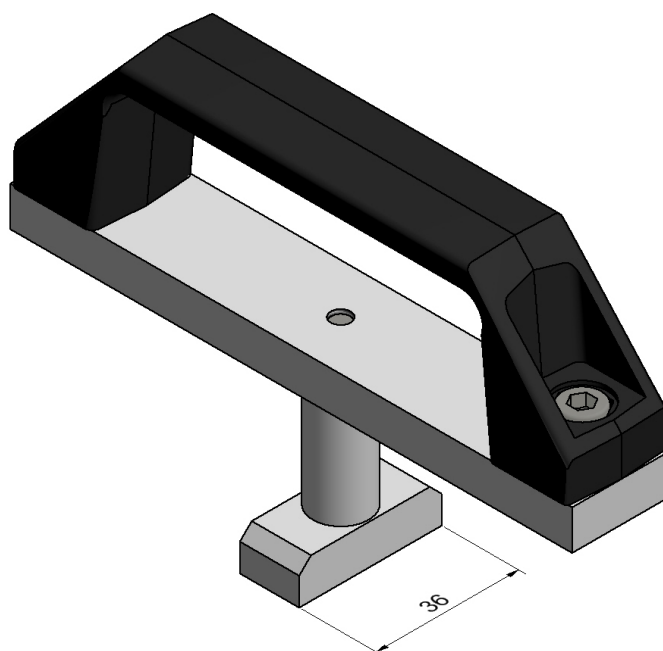
System	Usage	Tool	
HW-W50L/LU	Pressing Tool	Ratchet ½"	Hexagon Socket SW 8mm
HW-W50L/LU	Cover	Ratchet ½"	Hexagon Socket SW 8mm
HW-W50L	Cylinder Head Center Post Bolt	Ratchet ½"	Hexagon Socket SW 19mm
HW-W50L	Anchor Plate Dummy Bolt	Ratchet ½"	Hexagon Socket SW 19mm
HW-W50LU	Cylinder Head Center Post Bolt	Ratchet ½"	Hexagon Socket SW 19mm
HW-W50LU	Anchor Plate Dummy Bolt	Ratchet ½"	Hexagon Socket SW 14mm

3.5.2 Extracting Tool

AW50-26



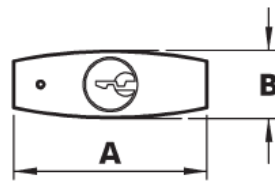
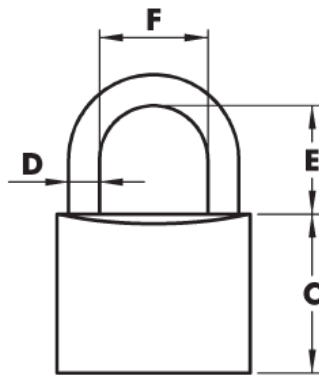
AW50-36



Tool	Usage/Log
AW50-26	Dam Beam DBAL 50x150-4.0
AW50-26	Dam Beam DBAL 50x200-2.2
AW50-36	Dam Beam DBAL 50x300-4.0

3.5.3 Padlock

Mango 30GS W1-30, corresponding with IBS Pressing Tool lockable, Alu-Box, Storage Box



Dimensions:

A	30	mm
B	12,8	mm
C	28,5	mm
D	5	mm
E	17,0	mm
F	16,0	mm



**Description:**

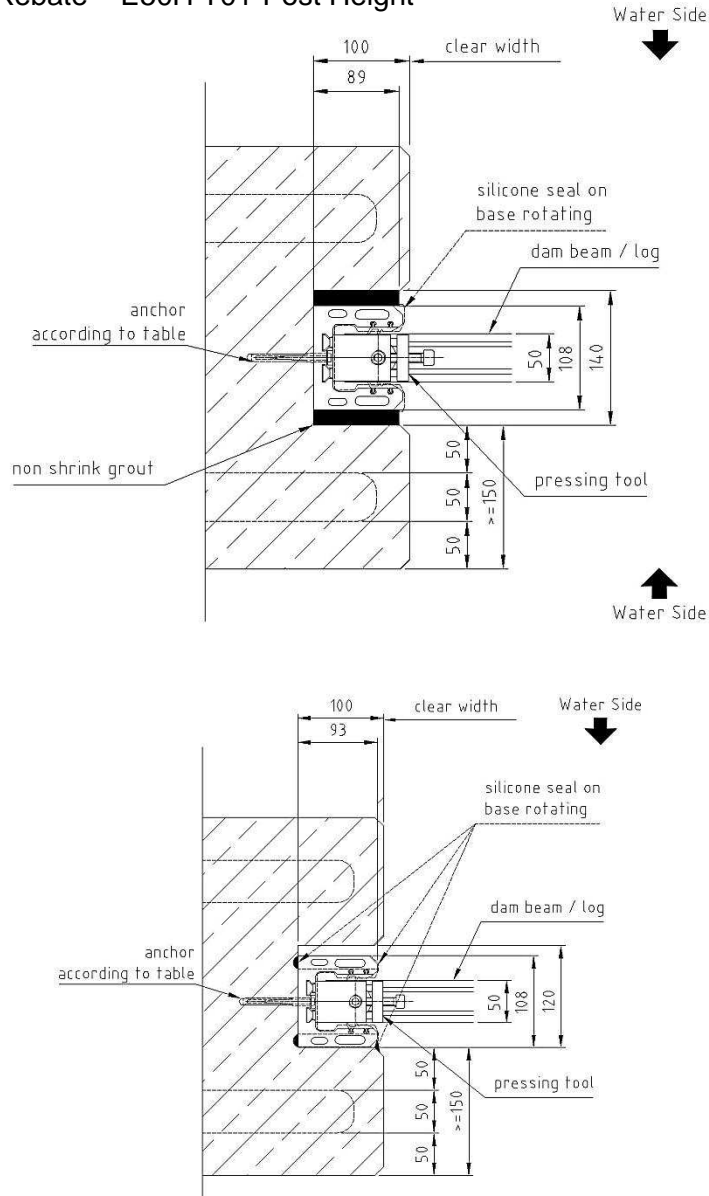
- Keyed alike
- Material: Casing: brass massive, Inside stainless  
Bail: steel hardened, chromed  
Key: brass nickel plated
- Scope of Supply: 2 keys per lock



## 4 End Post – Mounting Types

### 4.1 Mounting Types in Recess and First Concrete

#### 4.1.1 Type 1 in Rebate – E50H T01-Post Height



#### Mounting Tolerance:

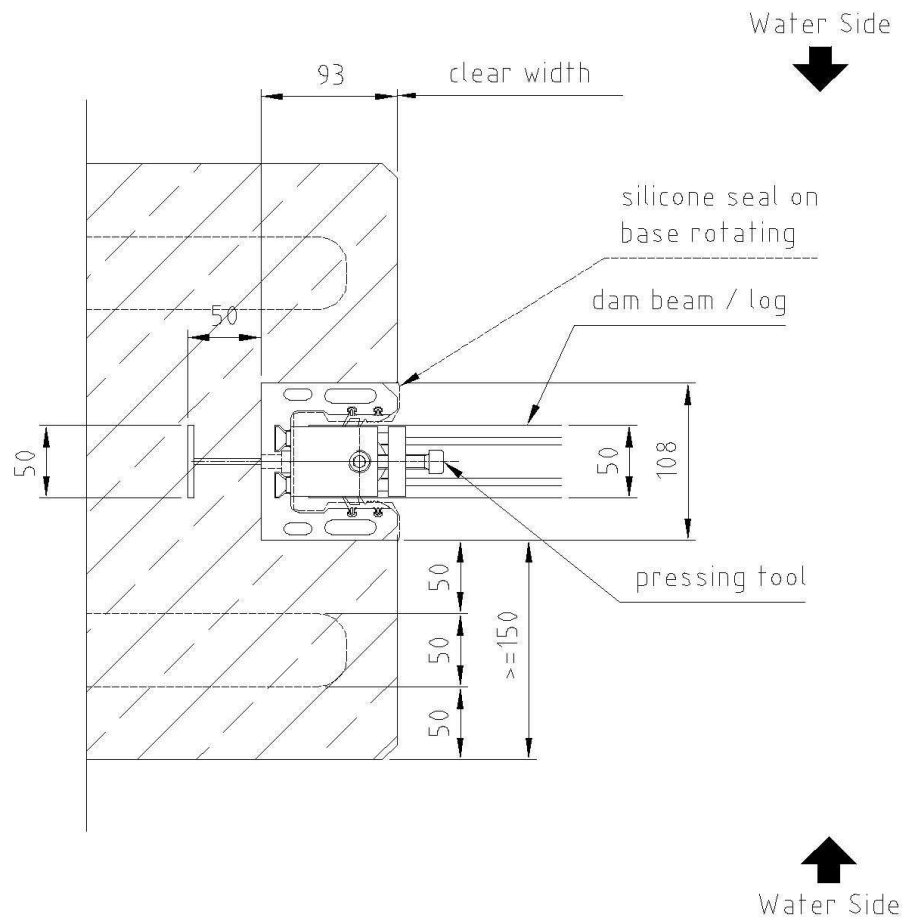
##### Frame Assembly

- In Axis + / - 3mm
- Vertically + / - 3mm
- Total max. 6mm

#### Dimensioning

Wall	Area	Height	Width	Anchorage
Concrete	As per Dam Beam/Log Deflection Graph			Fischer SX 8 x65, Screw DIN 571 M5 x 60 SS 304, washer DIN 9021 5.3 SS 304

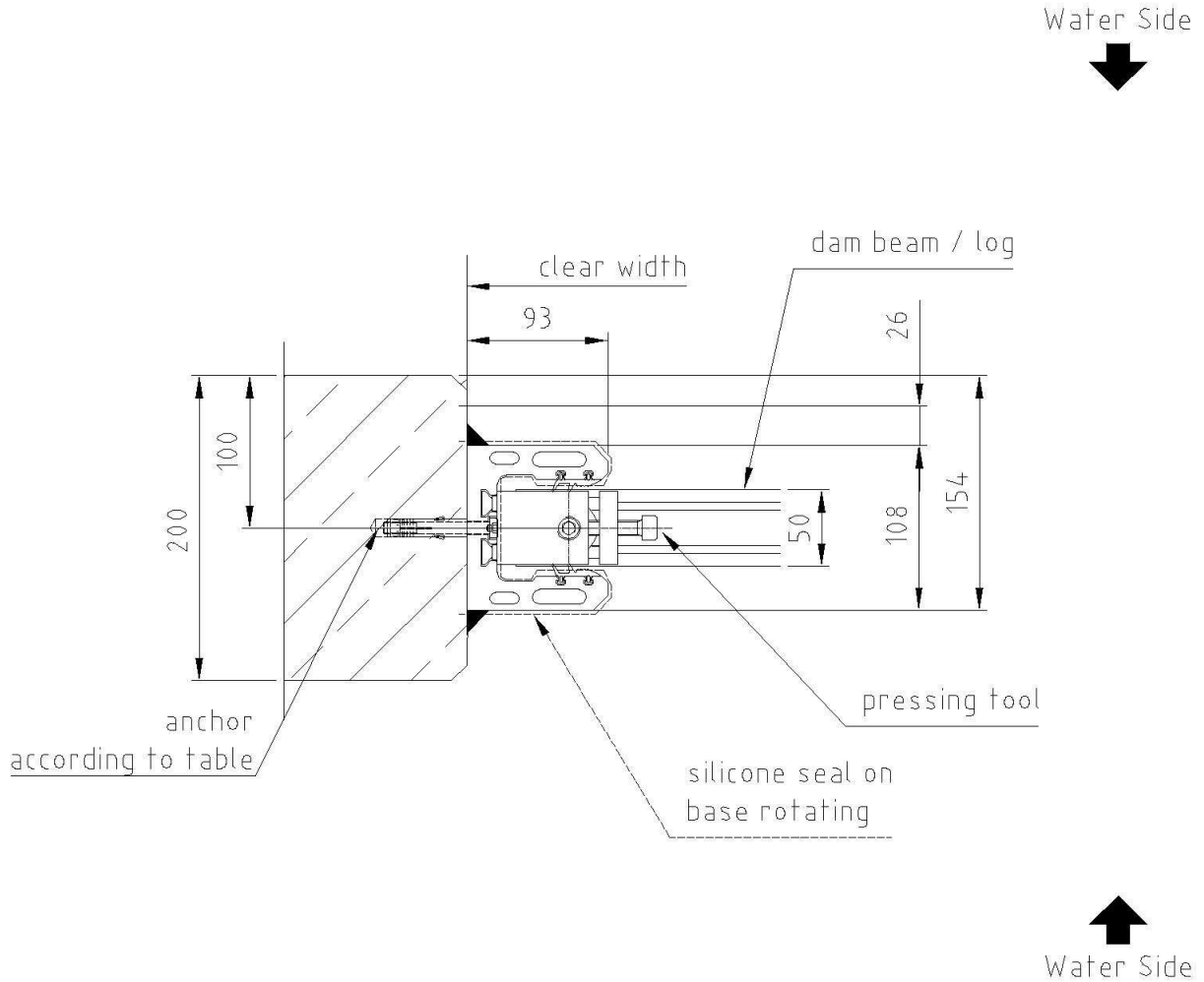
4.1.2 Type 6 in First Concrete – E50H T06-Post Height



Mounting Tolerance:	Dimensioning			
	Wall	Area	Height	Width
Frame Assembly - In Axis + / - 3mm - Vertically + / - 3mm - Total max. 6mm	Concrete	As per Dam Beam/Log Deflection Graph		

4.2 Mounting Types – Side Wall Mounted

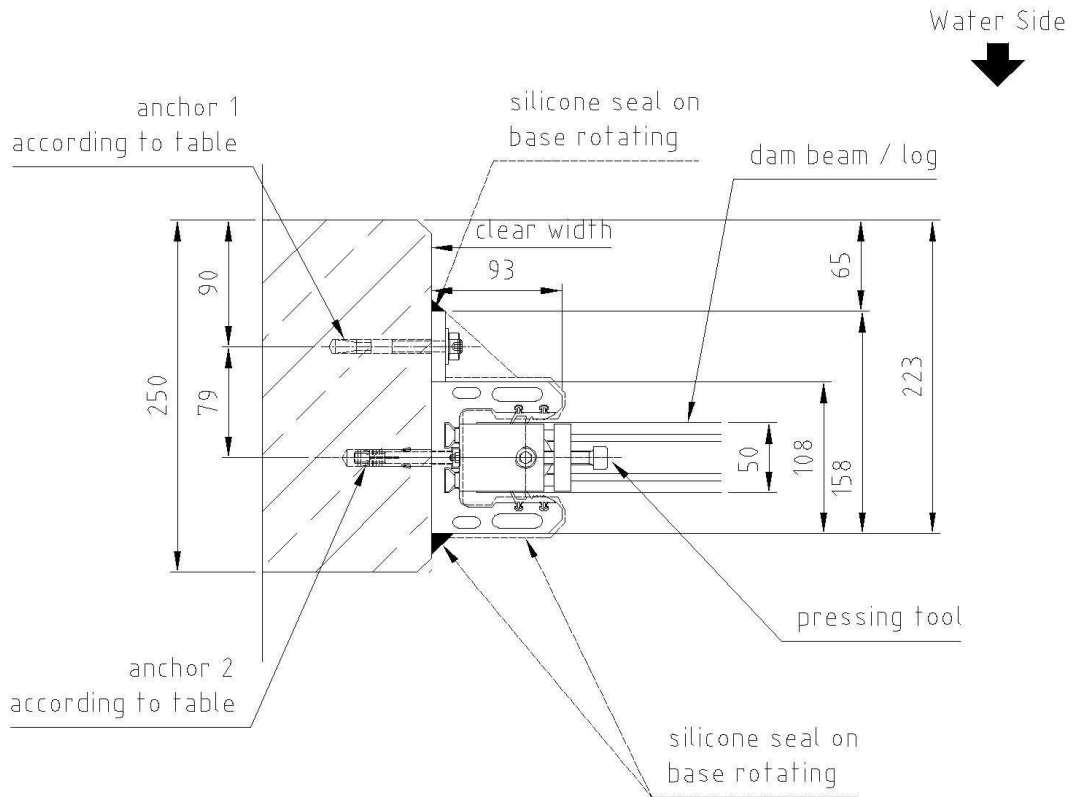
4.2.1 Type 8 side wall mounted – E50H T08-Post Height



<b>Mounting Tolerance:</b>
<b>Frame Assembly</b> - In Axis +/- 3mm - Vertically +/- 3mm - Total max. 6mm

Dimensioning				
Wall	Area	Height	Width	Anchorage
Concrete	0-2,1 m <sup>2</sup>	Max 0,6m	Max 3m	Fischer SLM 8N SS 316, Screw DIN 912 M8x70 SS 304
Full Brick	0-1,5 m <sup>2</sup>			Insert HIS RN M8x90, fast curing mortar HFX, Screw DIN 912 M8x35 SS 304
Perforated Brick	0-1,2 m <sup>2</sup>			Insert HIS RN M8x90, fast curing mortar HFX, Screen tube HIT S16x85, Screw DIN 912 M8x35 SS 304

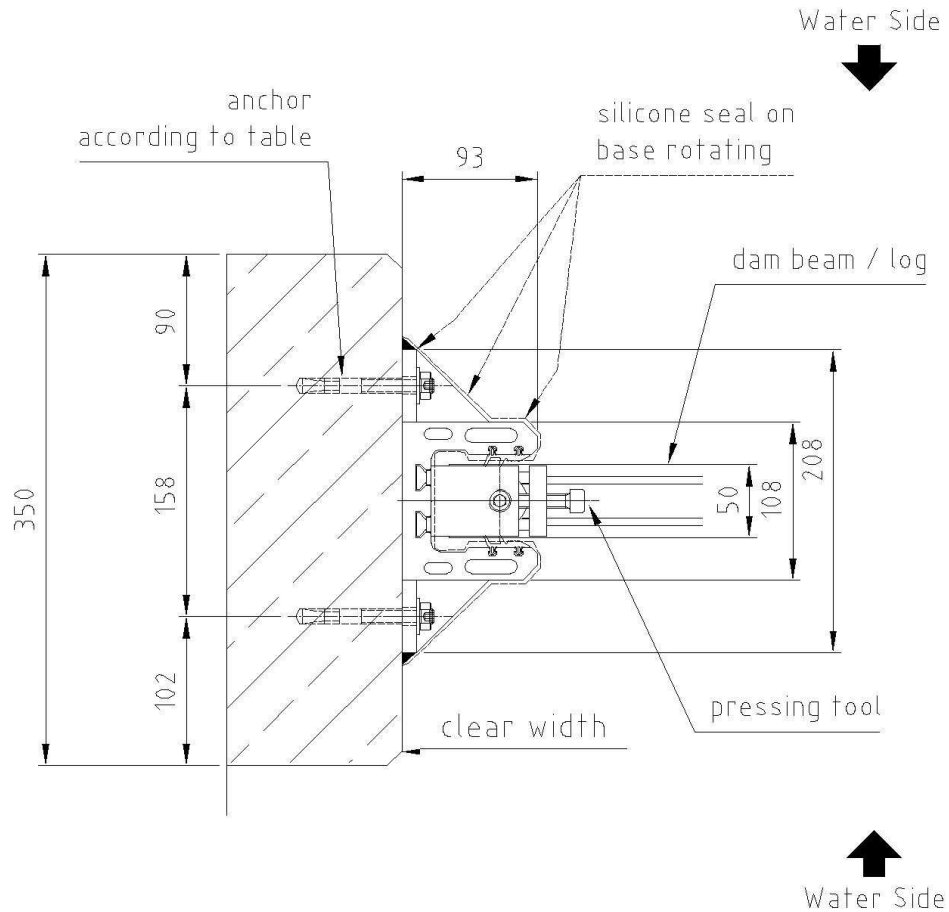
4.2.2 Type 9 side wall mounted – E50H T09-R / L - Post Height



<b>Mounting Tolerance:</b>
Frame Assembly
- In Axis + / - 3mm
- Vertically + / - 3mm
- Total max. 6mm

Dimensioning				
Wall	Area	Height	Width	
Concrete	2,1-2,5 m <sup>2</sup>	Max 0,85m	Max 3m	<b>Anchorage 1</b>
Full Brick	1,5-2,0 m <sup>2</sup>			HILTI HST-R M10x90/10
Perforated Brick	1,2-1,5 m <sup>2</sup>			Anchor HIT-VR M10x95, fast curing mortar HFX, screen tube HIT-SC 16x85
<b>Anchorage 2</b>				
Concrete	Fischer SX M 8x65, Screw DIN 571 M5x60 SS304, washer DIN 90215.3 SS304			
Full Brick	Fischer SX M 8x65, Screw DIN 571 M5x60 SS304, washer DIN 90215.3 SS304			
Perforated Brick	Fischer SX M 8x65, Screw DIN 571 M5x60 SS304, washer DIN 90215.3 SS304			

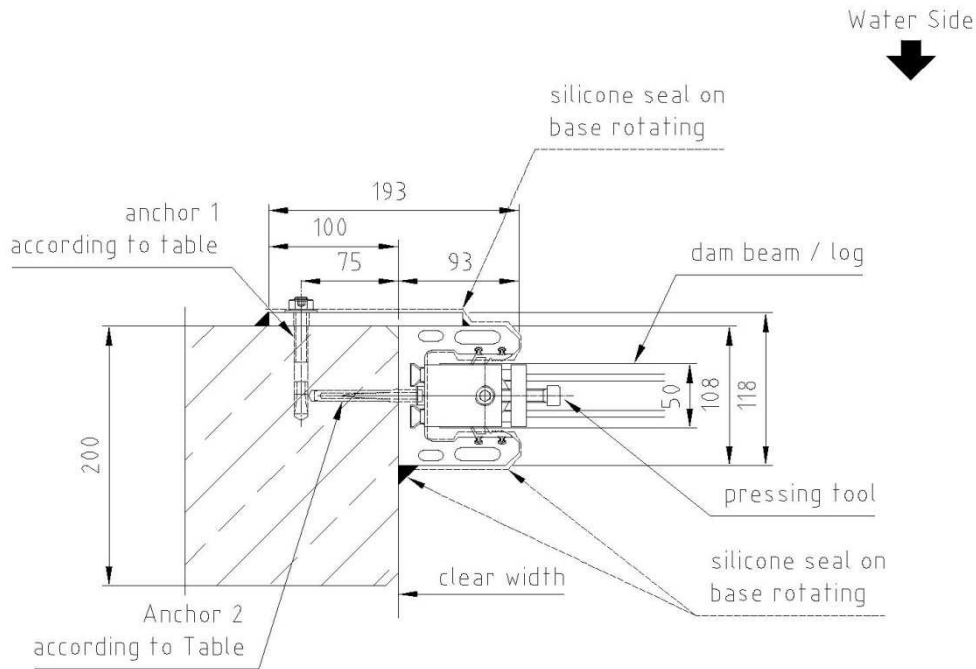
4.2.3 Type 3 side wall mounted – E50H T03-Post Height



<b>Mounting Tolerance:</b>
Frame Assembly
- In Axis + / - 3mm
- Vertically + / - 3mm
- Total max. 6mm

Dimensioning				
Wall	Area	Height	Width	Anchorage
Concrete	2,5-3 m <sup>2</sup>	Max 1,05m	Max 3m	HILTI HST-R M10x90/10
Full Brick	1,9-2,5m <sup>2</sup>			Anchor HIT-VR M10x95, Fast curing mortar HFX,
Perforated Brick	1,6-2,0 m <sup>2</sup>			Anchor HIT-VR M10x95, Fast curing mortar HFX, Screen tube HIT-SC 16x85

4.2.4 Type 13 side wall mounted – E50H T13-R / L – Post Height



**Mounting Tolerance:**

**Frame Assembly**

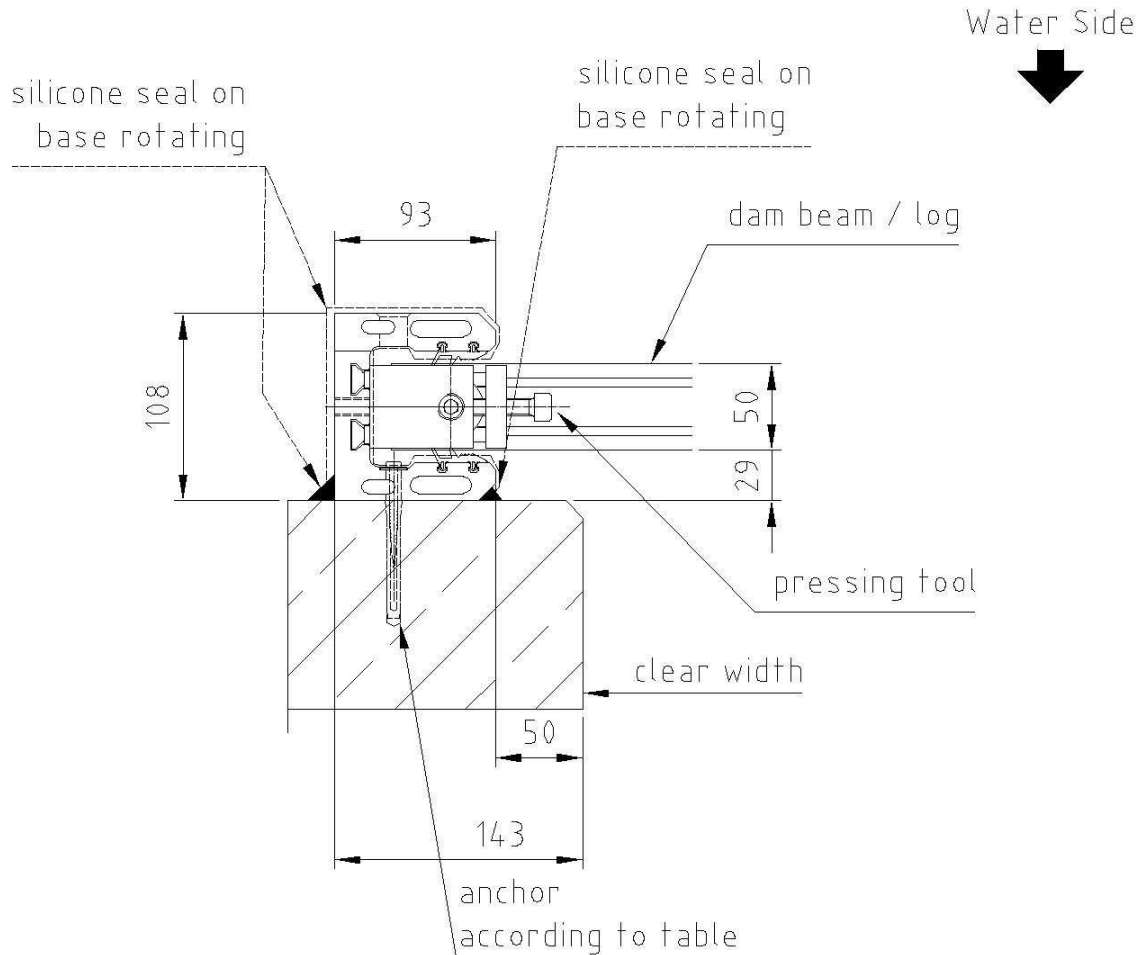
- In Axis + / - 3mm
- Vertically + / - 3mm
- Total max. 6mm

**Dimensioning**

Wall	Area	Height	Width	<b>Anchorage 1</b>
Concrete	0-2,5 m <sup>2</sup>	Max 1,05m	Max 3m	HILTI HST-R M10x90/10
Full Brick	0-2 m <sup>2</sup>			Anchor HIT-VR M10x95, Fast curing mortar HFX
Perforated Brick	0-1,5 m <sup>2</sup>			Anchor HIT-VR M10x95, Fast curing mortar HFX, Screen tube HIT-SC 16x85
<b>Anchorage 2</b>				
Concrete	Fischer SX 8 x65, Screw DIN 571 M5 x 60 SS 304, Washer DIN 90215.3 SS304			
Full Brick	Fischer SX 8 x65, Screw DIN 571 M5 x 60 SS 304, Washer DIN 90215.3 SS304			
Perforated Brick	Fischer SX 8 x65, Screw DIN 571 M5 x 60 SS 304, Washer DIN 90215.3 SS304			

4.3 Mounting Types Wall mounted on-seating

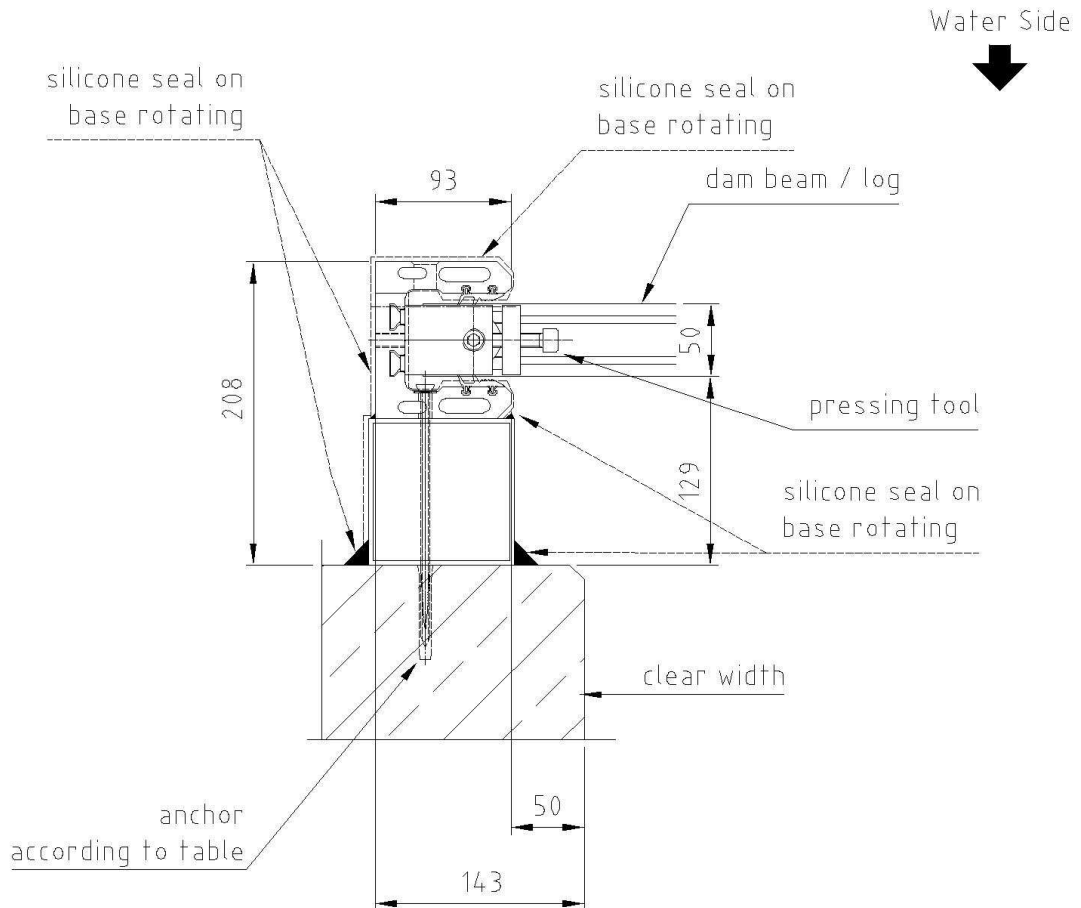
4.3.1 Type 16 wall mounted on-seating – E50H T16-R / L – Post Height



<b>Mounting Tolerance:</b>
Frame Assembly
- In Axis + / - 3mm
- Vertically + / - 3mm
- Total max. 6mm

Dimensioning				
Wall	Area	Height	Width	Anchorage
Concrete	As per Dam Beam/Log Deflection Graph			Fischer SX 8 x65, Screw DIN 571 M5 x 60 SS 304, Washer DIN 9021 5.3 SS304
Full Brick				Fischer SX 8 x65, Screw DIN 571 M5 x 60 SS 304, Washer DIN 9021 5.3 SS304
Perforated Brick				Fischer SX 8 x65, Screw DIN 571 M5 x 60 SS 304, Washer DIN 9021 5.3 SS304

4.3.2 Type 24 wall mounted on-seating (clearance 100mm) – E50H T24-R / L - Post Height



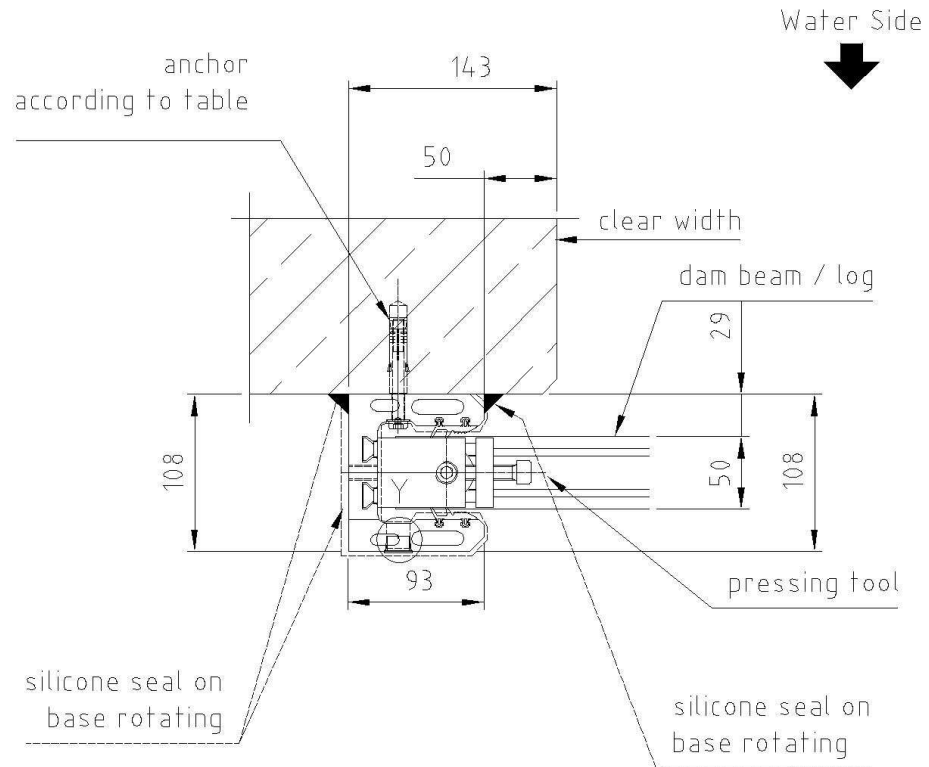
<b>Mounting Tolerance:</b>
Frame Assembly
- In Axis +/- 3mm
- Vertically +/- 3mm
- Total max. 6mm

Dimensioning				
Wall	Area	Height	Width	Anchorage
Concrete	As per Dam Beam/Log Deflection Graph			Screw Assy 3.0 countersunk head AW30 6x180 SS304, washer DIN 125-1A 8.4 SS304, Fischer SX 8x65
Full Brick				Screw Assy 3.0 countersunk head AW30 6x180 SS304, washer DIN 125-1A 8.4 SS304, Fischer SX 8x65
Perforated Brick				Screw Assy 3.0 countersunk head AW30 6x180 SS304, washer DIN 125-1A 8.4 SS304, Fischer SX 8x65

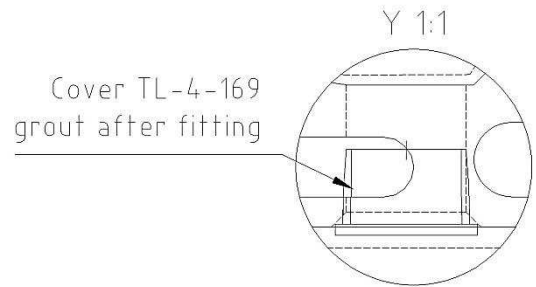


4.4 Mounting Types wall mounted off-seating

4.4.1 Type 5 wall mounted off-seating – E50H T05-R / L - Post Height



<b>Mounting Tolerance:</b>
<b>Frame Assembly</b> - In Axis +/- 3mm - Vertically +/- 3mm - Total max. 6mm



Dimensioning				
Wall	Area	Height	Width	Anchorage
Concrete	0-2 m <sup>2</sup>	Max 0,85m	Max 2m	Fischer SLM 8N SS316, screw DIN 912 M8x70 SS304
Full Brick	0-1,5 m <sup>2</sup>			Insert HIS RN M8x90, Fast curing mortar HFX, screw DIN 912 M8x70 SS304
Perforated Brick	0-1 m <sup>2</sup>			Insert HIS RN M8x90, Fast curing mortar HFX, Screen tube HIT SC16x85, Screw DIN 912 M8x35 SS 304

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