

Preparatory work for assembly of dalben tower / foundations/ lightning protection

- Assign a device location considering the use zone which is demarcated by the standard EN 1176-1. Recommended direction of slides north-east or in half-shade of trees.
- Excavate the ground for the foundations of the dalben tower (x type A) and the access ladder (x type D) according to the drawing. Please note: To achieve maximum stability and a safe installation, a moderate level of soil solubility is required (especially for the dalben tower foundations, see information on the minimum soil pressure of 100 kN/m² in x-Type A Foundation Towers). Make foundations from concrete C20/25; for this purpose insert the reinforcement cage according to the drawing (50 mm minimum coverage to the top and sides). Then make the upper sides of the foundations absolutely horizontal and smooth. All four foundations type A and ladder foundation type D (do not forget the ground rods described under point 3) must be arranged exactly at the same height! If there is a height offset within the four foundations type A, the tower will later stand inclined! The reinforcement cages are included in the delivery.
- For lightning protection, insert the 2 ground rods supplied (l=2.00 m) into the foundation base of the ladder in their full length before concreting. The installed cables must be screwed to the base of the ladder after the tower has been erected. The screw connection must be carefully masked with the supplied corrosion protection tape.
- After setting the tower upright, attach the ladder access according to the drawing (see text "Fixing and installation of the ladder access").
- After setting the tower upright, install the tunnel spiral slide according to the drawing (see text "Installation of tunnel spiral slide").
- After setting the tower upright, install the wide slide according to the drawing (see text "Installation of wide slide").

Release for assembly of the tower only after the concrete foundations have set! The foundation size of the tower is determined on the basis of a static calculation and requires a minimum ground pressure of 100 kN/m².

Installation instruction of dalben tower

- For details of screw connections, see the attached [list of screw connections \(top page 2\)](#). To install the pre-assembled components or individual parts, the screws must be slightly lubricated with the supplied installation paste.
- Do not tighten all posts, platforms, infills and single parts until they are completely aligned while lying. We recommend using a suitable crane or telehandler during horizontal assembly.
- Place posts 1 and 2 horizontally onto the ground or onto e.g. wooden planks (do not mark on the circular base plates of the posts!). Assembly can be simplified, if the posts are positioned at an angle of 10°, for example by means of a suitable trestle or pallet stack. **Figure 1**
 - Screw the pre-assembled dalben tower top / corrugated flag (HPL) covering open on one side for mounting purposes) with posts 1 and 2. It is essential to observe the eccentric position of the post flanges (screw case SFDT 4000014). **Figure 2, see also detail A.**
 - Screw platforms no. 1 (h=500mm), no. 3 (h=300mm) and no. 5 (h=100mm) with posts 1 and 2 (screw case SFDT 4000011). Align the platforms centrally to the posts, if necessary by means of e.g. a screw clamp. The platform screw connection/post screw connection must be secured with the threadlocker (e.g. Loctite SFWZ 0000071) supplied. **Figure 3, see also detail B.**
 - Place the post 4 from above on the dalben tower top and the platform floors and screw them together (screw case SFDT 4000011/ SFDT 4000014). **Figure 4**
 - Screw platforms no. 2 (h=400mm) and no. 4 (h=200mm) to the posts 2 and 4 (screwing case SFDT 4000011). **Figure 5**
 - Place the post 3 from above on the dalben tower head and the platform floors and screw them together (screw case SFDT 4000011/ SFDT 4000014). **Figure 6**

Installation of infills
Screw standard infills type 1, 2, 3, 4 and 5 to the posts according to the drawing (screw case SFDT 4000008). **Figures 7-10, see also spiral views.**

Installation of roof plate and cover plate
Screw the HPL roof plate to the dalben tower top (screw case SFDT 4000003 / -4/ -5), then close the dalben tower top from below with the HPL cover panel (screw case SFDT 4000015). Afterwards, the dalben tower is completely assembled except for the wide slide, ladder access and the tunnel spiral slide. **Figure 11 and Figure 12**

Setting the tower upright
Erect the dalben tower with a suitable crane (note the weight). Use traverse crane hook and round slings/lifting belts. Attachment points below the infill barrier attachment of the two upper posts 3 and 4 (**Figure 12**). Raise the tower, then bring lifting belts/round slings diagonally opposite! Place the tower vertically hanging on the set foundations and align it. Make sure that the green HPL hood including corrugated flag and the posts are not damaged or scratched.
Weight of the dalben tower approx. 3336 kg
Weight of the tunnel spiral slide approx. 980 kg
Heaviest single part (lower platform no. 5): approx. 400 kg

Fixing of the tower
Provide drill holes for the compound anchors according to the enclosed manufacturer's specifications. Use the circular base plates as a drilling template (screw case SFDT 4000005; two screw connections per base). See **Type A Foundation tower**.
After the composite anchors have hardened, screw the posts to the foundations. Screw the cables of the two ground rods to the respective post (screw case SFDT 4000025). The screw connection must be carefully masked with the corrosion protection tape supplied.
Cover the dalben tower foundations with 430 mm of soil material which has an adequate level of impact attenuation corresponding to the fall height.

Fixing and installation of the ladder access
Provide drill holes for the compound anchors according to the enclosed manufacturer's specifications. Use the ladder flange as a drilling template (SFDT 4000025 screw case; two screw connections). See **Type D Ladder**.
After the composite anchors have hardened, screw ladder 5 (play level to platform 5) to the foundation/platform (screw cases SFDT 4000025, SFDT 4000020). Cover the ladder foundation with 0.43 m of soil material which has an adequate level of impact attenuation corresponding to the fall height.
Screw the remaining ladder segments to the platform floors (screwing cases SFDT 4000020). Use flat steel 82x40x4 to close the unused boreholes (screw case SFDT 4000049). See also **Detail C/ Detail F**.
Screw the guardrail of the ladder access on platform no. 1 together with the infill barrier (screw case SFDT 4000022), see also **Detail D**.

Installation of tunnel spiral slide

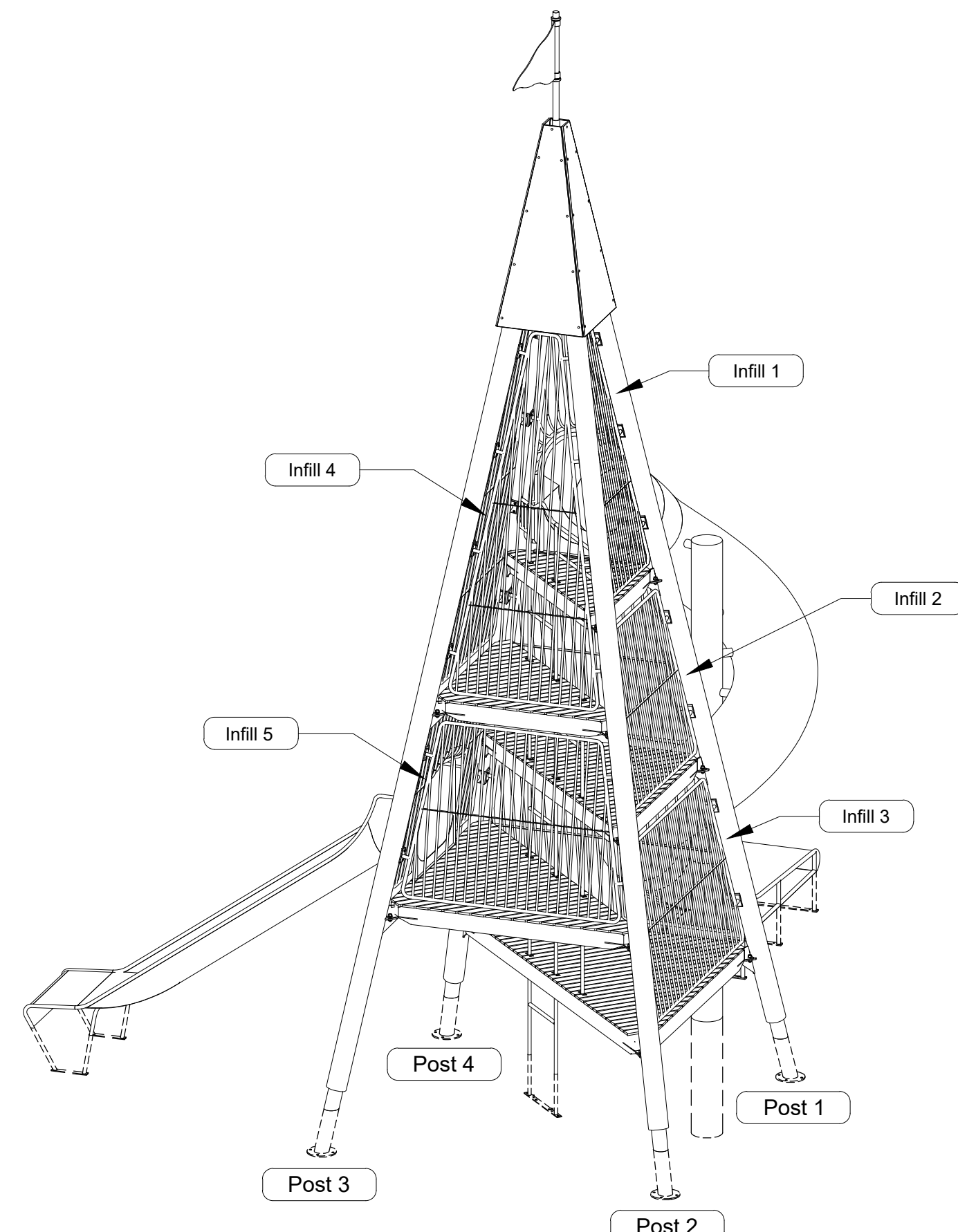
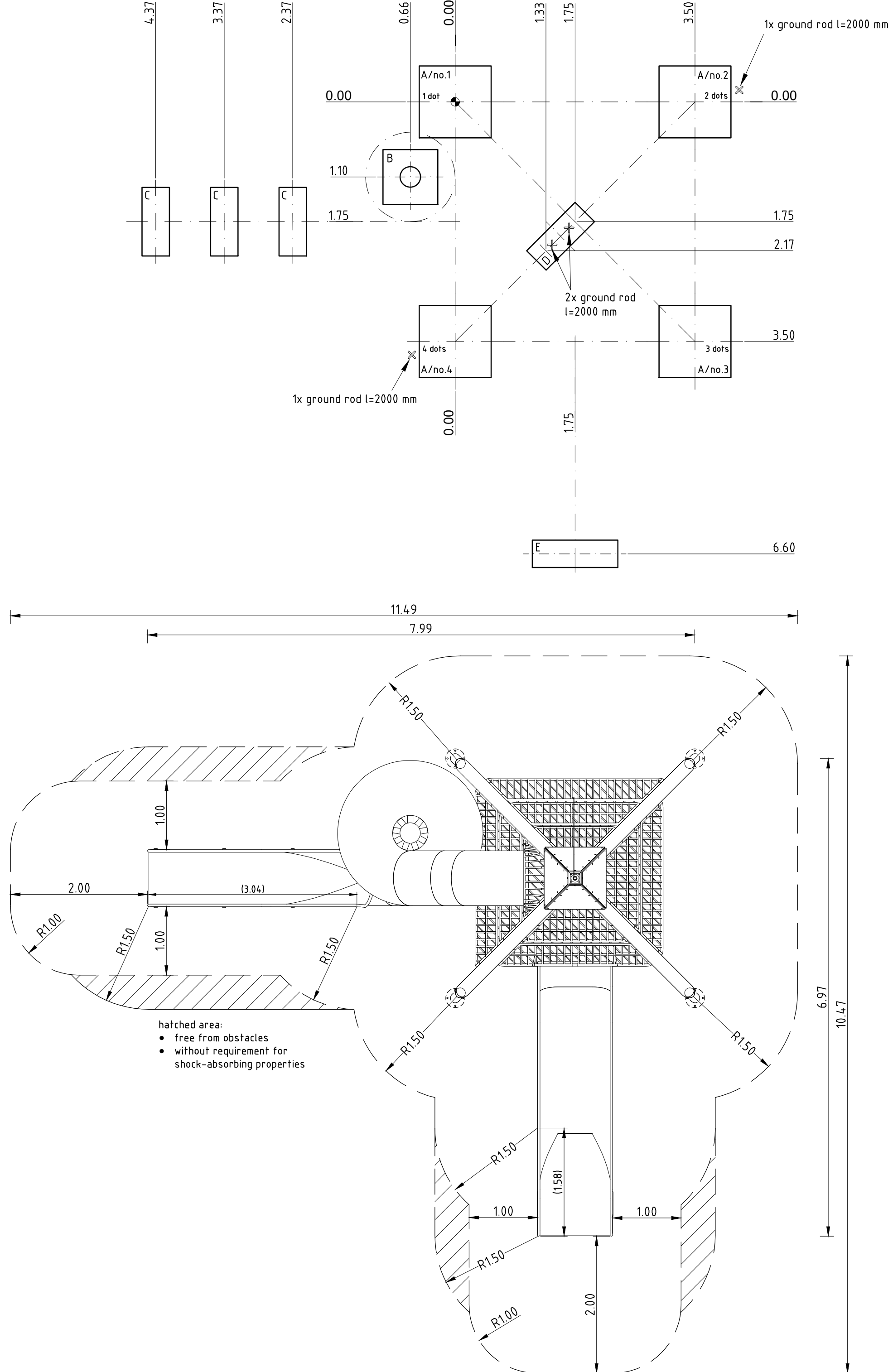
- The installation height specified for the slide (distance between play level and upper edge of platform no. 1, height 5000 mm), must be observed.
- The specified inclination of the slide (30°/38°) must be observed. This does not apply to the run-out section.
- The starting section of the tunnel slide must be installed horizontally.
- The slide run-out section must have an inclination of 3° in the direction of the slide so that rainwater can run off (see **Type C Run-out section**!).

- Before assembly, slightly lubricate the screws with the enclosed installation paste. Screw together the three tunnel sections according to drawing, having brought the marks (notched on flange bars to coincide (SFAS/070014). The tube surfaces must not be displaced against each other. By using the clearance in the holes of the flange bars, the tunnel sections can be adjusted dimensionally accurate.
- Carry out foundation excavation for central pylon and run-out section according to the drawing details (see **Type B Central pylon** and **Type C Run-out section**!).
- Use e.g. lifting gear to carry the tunnel slide to the intended mounting place.
- Screw the starting section to the uppermost platform no. 1 of the dalben tower (SFDT 4000047) and align the tunnel spiral slide.
- Make the foundations for the central pylon and run-out section according to the drawing with concrete C20/25 (SFAS 1070010) and cover the foundation with material which has an adequate level of impact attenuation corresponding to a fall height of at least 1000 mm (acc. to EN 1176-3).
- Screw connections see details on list of screw cases as annexed.

Installation of wide slide

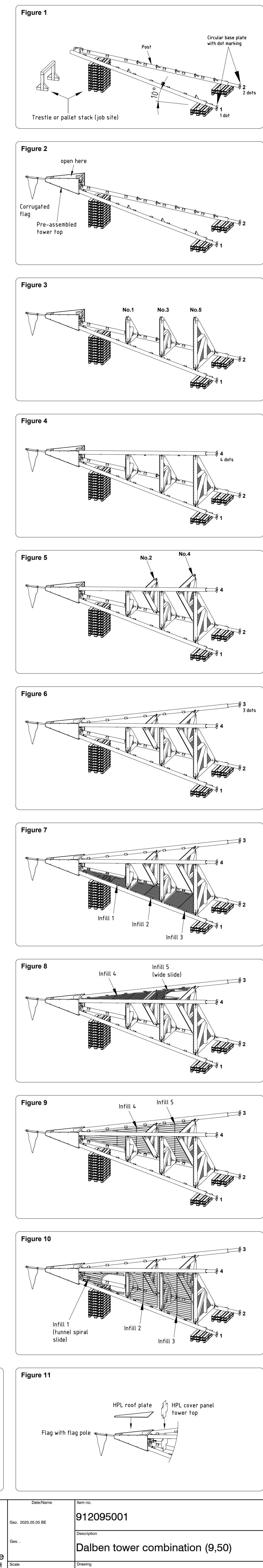
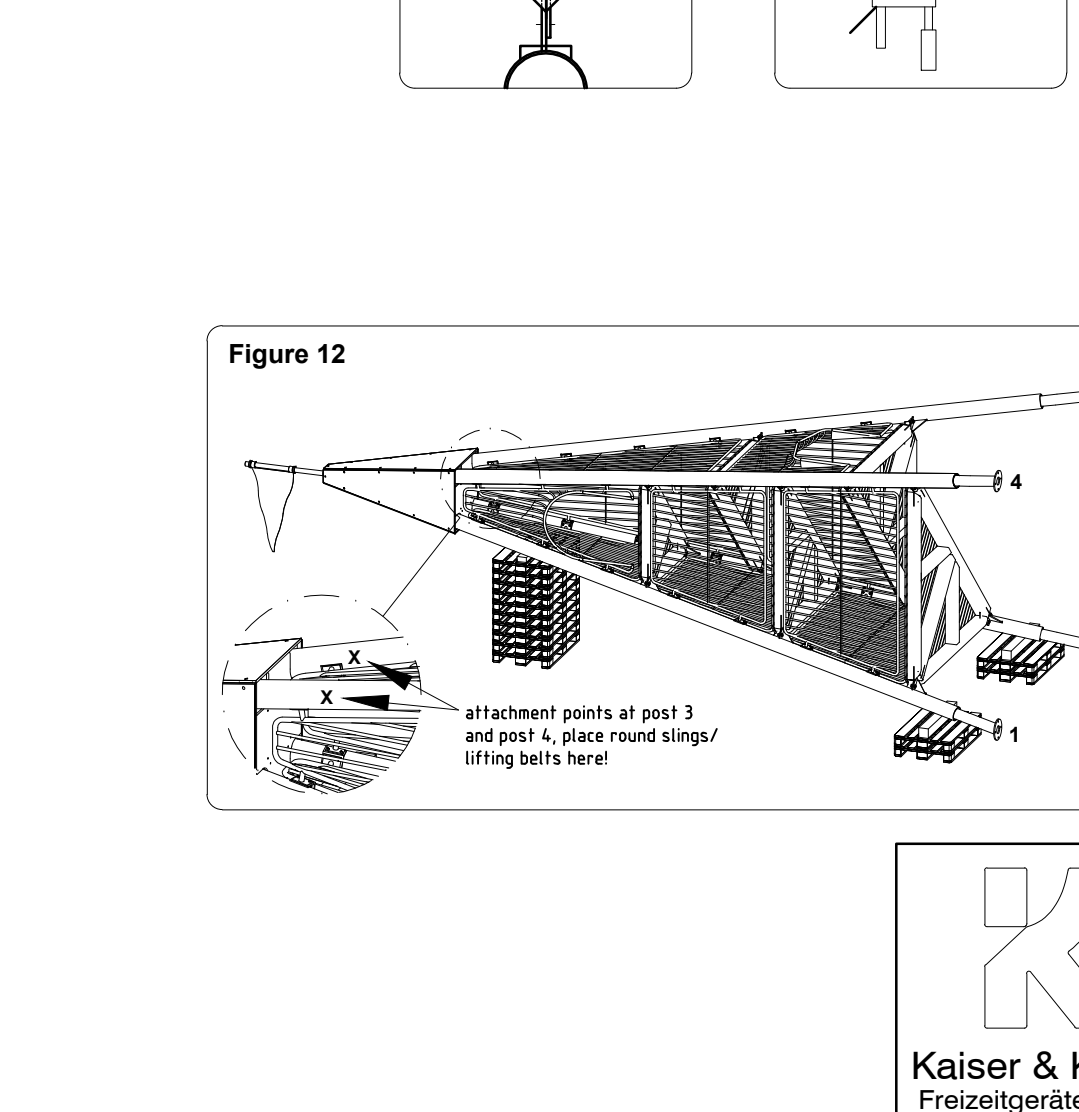
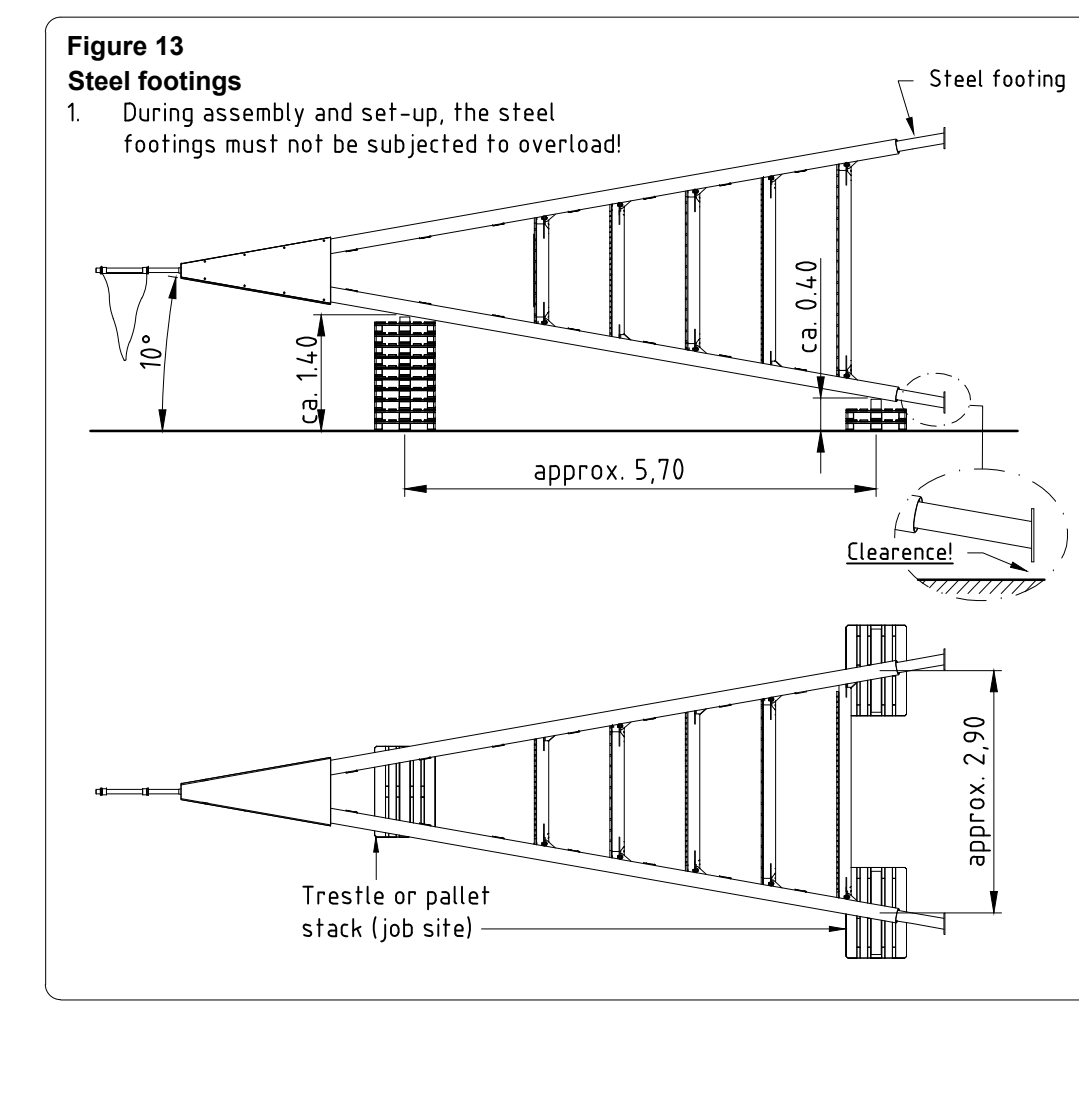
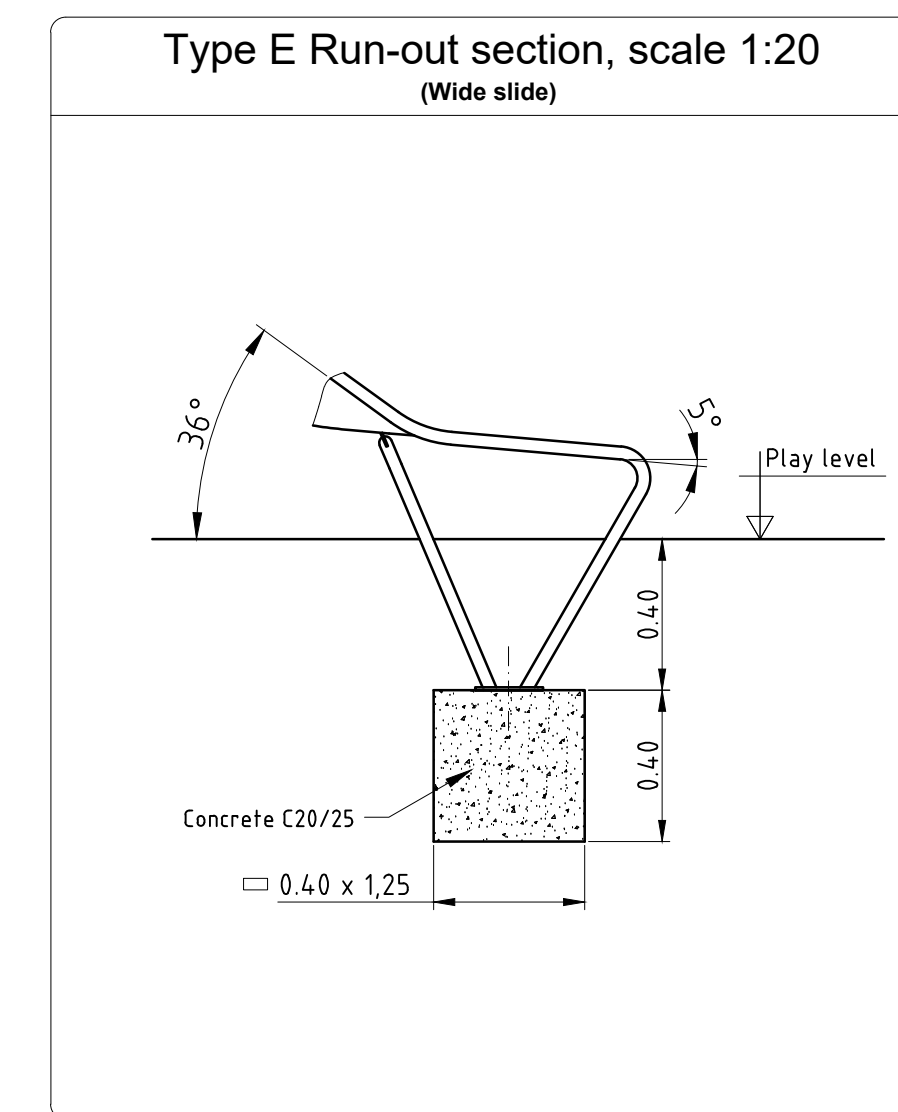
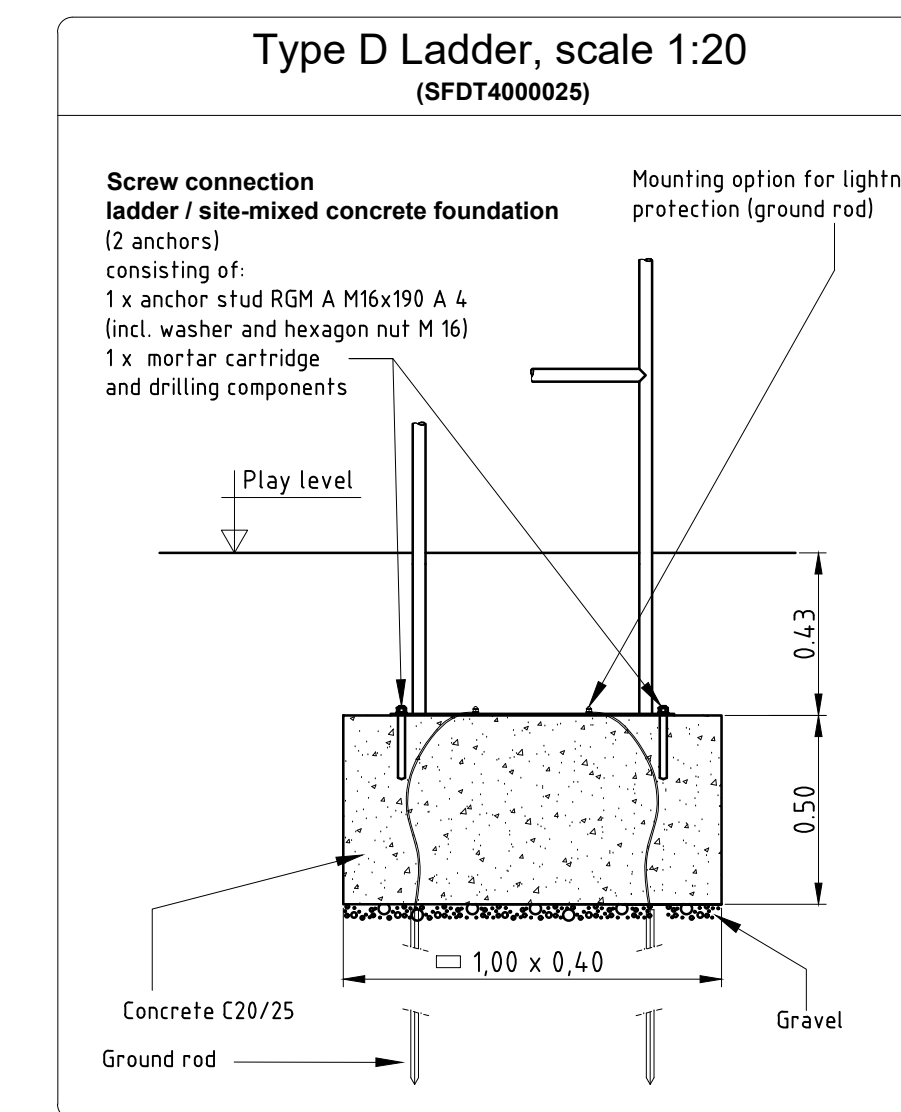
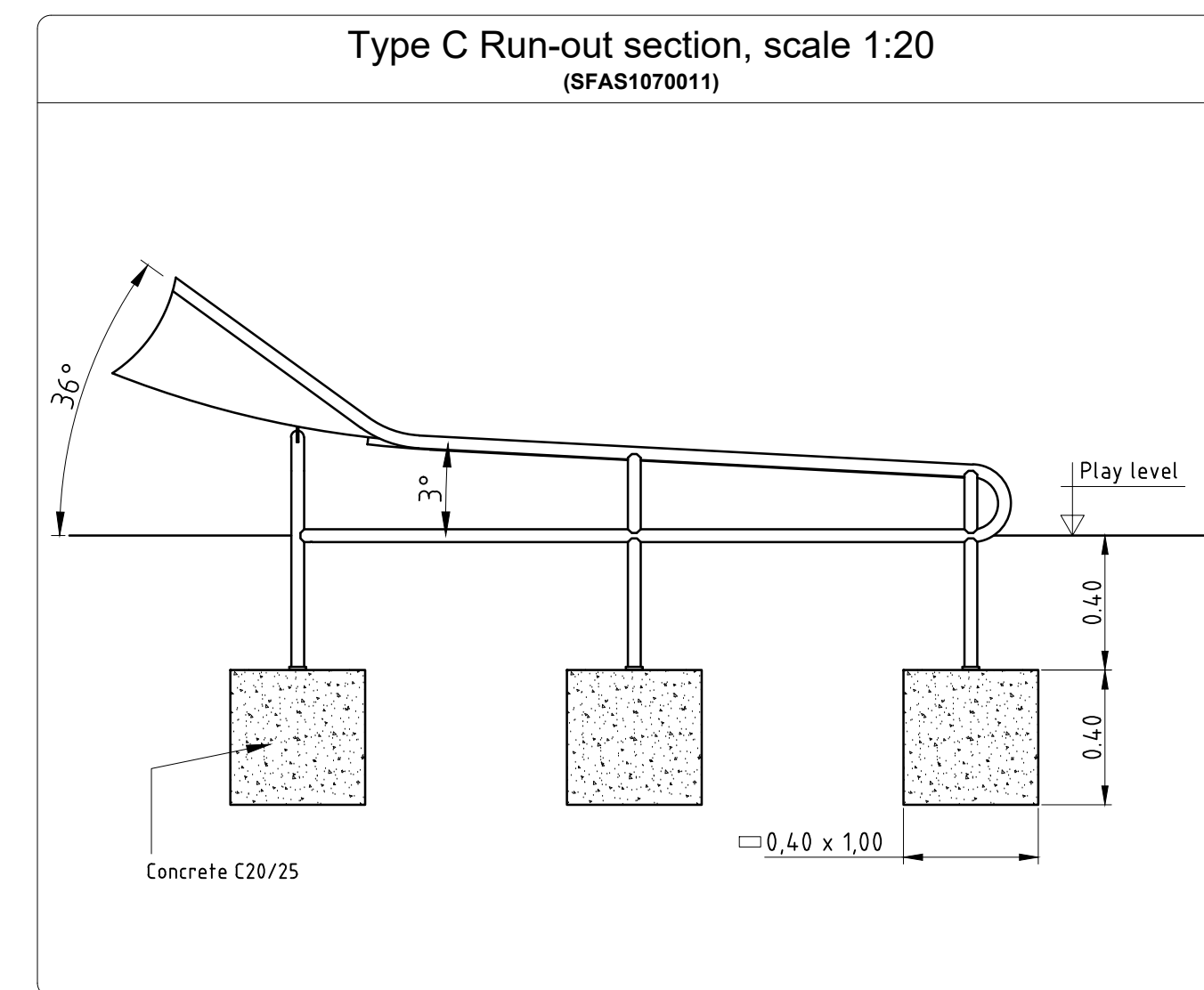
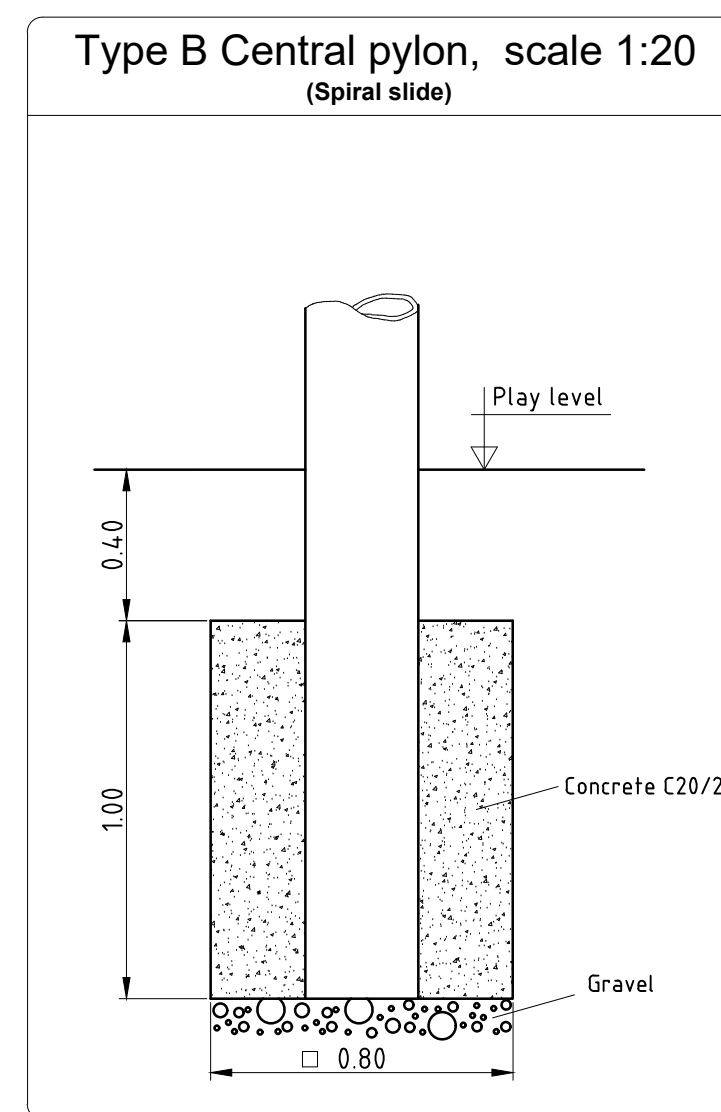
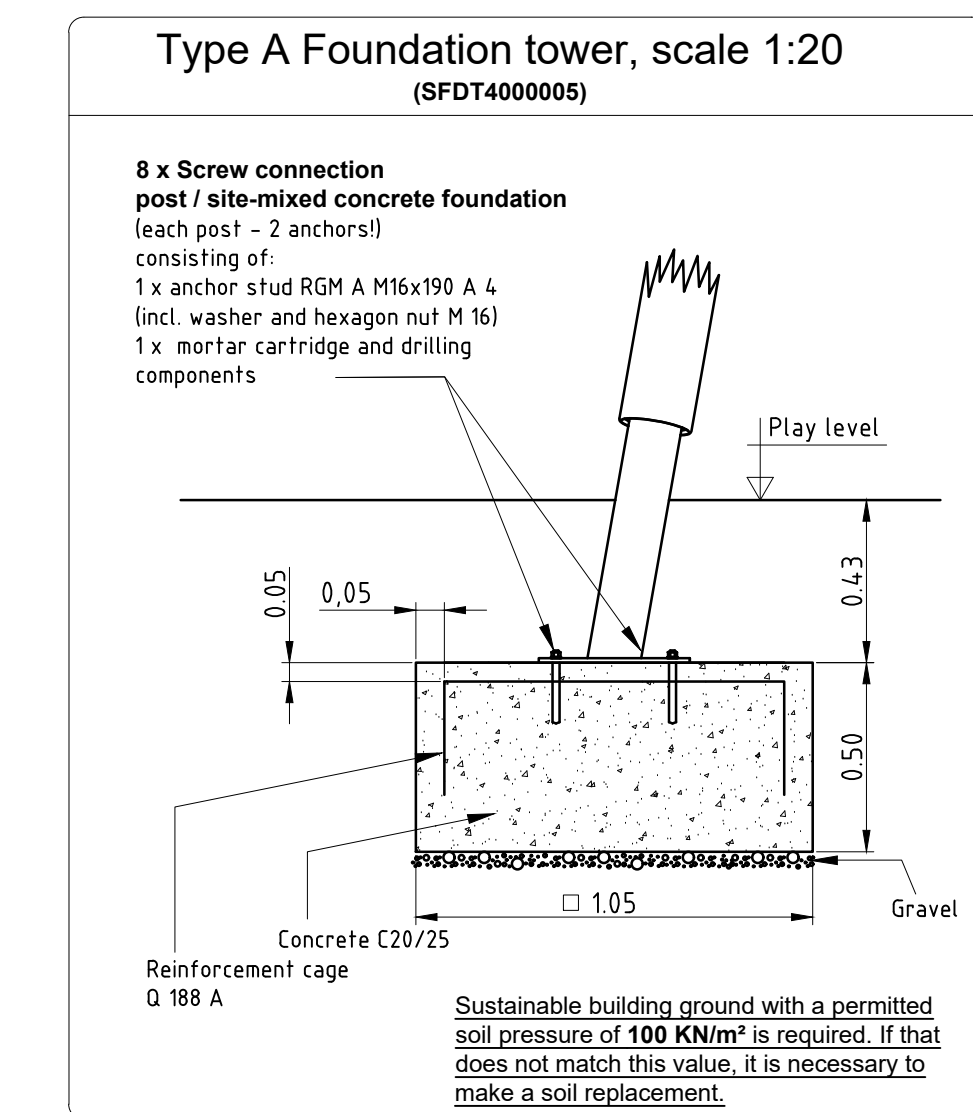
- The installation height specified for the slide (distance between play level and upper edge of platform no. 4, height 2000 mm), must be observed.
- The specified inclination of the slide (36°) must be observed. This does not apply to the run-out section.
- The starting section of the slide must be installed horizontally.
- The slide run-out section must have an inclination of 5° in the direction of the slide so that rainwater can run off (see **Type E Run-out section**!).
- The slide run-out section fall zone must have an adequate level of impact attenuation corresponding to a fall height of at least 1000 mm (acc. to EN 1176-3).
- Fix the slide entrance at the platform according to SFDT 4000001.

- Before attaching, slightly lubricate the screws with the enclosed installation paste.
- Carry out foundation excavation for the run-out section according to the drawing details (see **Type E Run-out section**!).
- Use e.g. lifting gear to carry the slide sideways to the intended mounting place.
- Screw the starting section to the platform no. 4 of the dalben tower (SFDT 4000001).
- Make the foundation for the run-out section according to the drawing with concrete C20/25. Screw the run-out (SFAS 1070010) and cover the foundation with material which has an adequate level of impact attenuation corresponding to a fall height of at least 1000 mm (acc. to EN 1176-3).
- Screw connections see details on list of screw cases as annexed.



Parts list

1	4	Posts	1-4	1	Tunnel slide, three parts.
		laminated larch timber with steel footing			Tunnel spiral slide 30°/38°, Item-No. 94/000145
2	5	Platform	1-5	1	Mounting height: 5000 mm
		Platform 1 with thread to fix tunnel slide			
		Platform 2		6	Set of ladder accesses 1-5
		Platform 3			Ladder access 1 x play level to platform 5
		Platform 4 with boreholes to fix wide slide			Ladder access 4 x standard (platform-platform)
		Platform 5			Ladder access 1 x guardrail platform 1
3	8	Infill barrier	1,2,3,4,5	7	Wide slide, Item-No. 041452001
		Infill 1	1 x Standard		Mounting height: 2000 mm
		Infill 2	1 x Opening for tunnel spiral slide	8	Reinforcement cage 0.188 A, pre-fabricated
		Infill 3	2 x Standard		(for dalben tower foundation type A)
		Infill 4	2 x Standard	9	Lightning protection/ ground rod
		Infill 5	1 x Standard		(lower cable and corrosion protection tape)
		Infill 6	1 x Opening for wide slide	10	Fixing kit
4	1	Tower top with hood			(incl. anchor studs and mortar cartridges for foundation type A and type D)
		pre-fabricated, with corrugated flag			



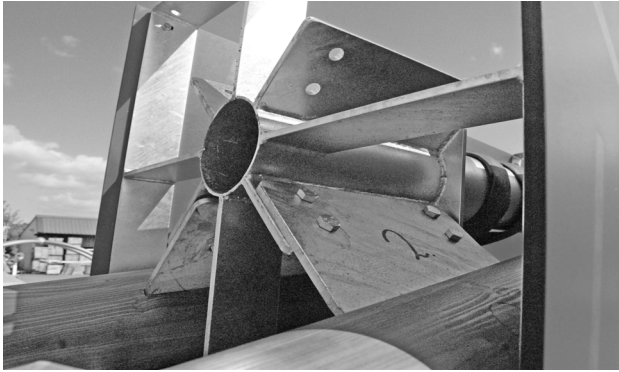
Item: **912095001**
 Dalben tower (9,50)
 Location:

Order:

1297246

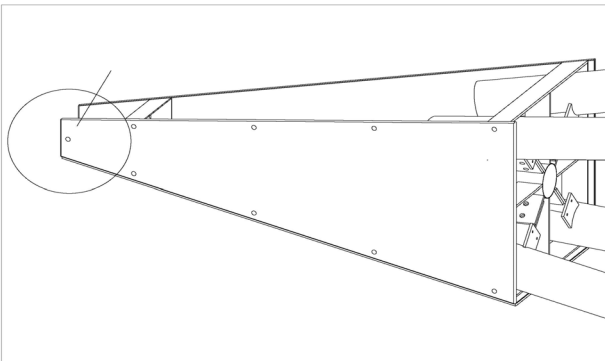
Building Project:

16 x SFDT4000014 Dalben tower top at Dalben tower post



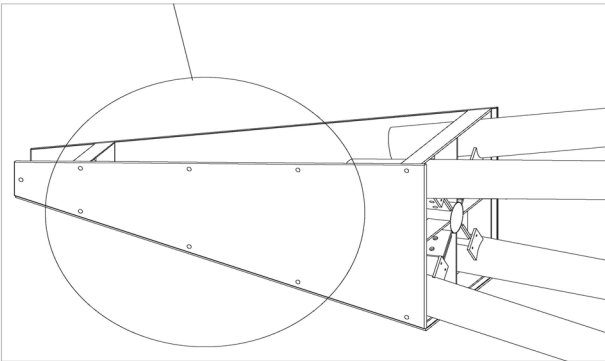
per set	total	item no.	material short text
1 x	16 x	3430041	Hexagon cap nut M16 DIN986 A2
1 x	16 x	3430060	Washer Ø 17 DIN125 A2
1 x	16 x	3400729	Screw M16x 45 DIN933 A2

1 x SFDT4000003 HPL panels on Dalben tower top (blind screw)



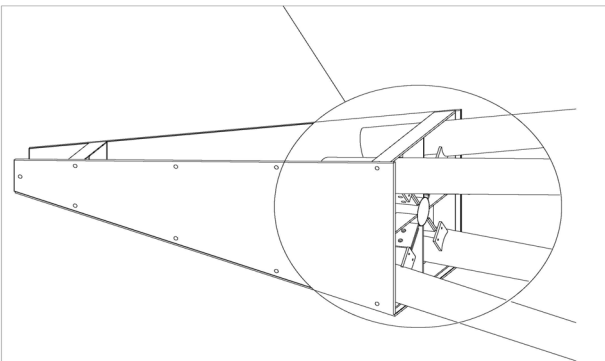
per set	total	item no.	material short text
1 x	1 x	3430011	hexagon cap nut M10 DIN986 A2
1 x	1 x	3430014	washer Ø 10,5 DIN125 form B A2
1 x	1 x	3400195	Dome head security screw-M10x30-Resistorx T45 A

6 x SFDT4000004 HPL panels on Dalben tower top



per set	total	item no.	material short text
1 x	6 x	3430014	washer Ø 10,5 DIN125 form B A2
1 x	6 x	3400195	Dome head security screw-M10x30-Resistorx T45 A

2 x SFDT4000006 HPL panels on Dalben tower top (blind screw)



per set	total	item no.	material short text
1 x	2 x	3430011	hexagon cap nut M10 DIN986 A2
1 x	2 x	3430014	washer Ø 10,5 DIN125 form B A2
1 x	2 x	3400195	Dome head security screw-M10x30-Resistorx T45 A

Item: **912095001**
Dalben tower (9,50)
Location:

Order:

1297246

Building Project:

30 x SFDT4000011 Dalben tower platform at Dalben tower post
Necessarily use threadlocker (Loctite) !!!



per set	total	item no.	material short text
1 x	30 x	3430130	Hexagon domed cap nut M20 DIN 1587 A2
2 x	60 x	3430131	Washer Ø 21 DIN125 A2
1 x	30 x	3400617	Hexagon head screw M20 x 50 DIN933 A2

1 x SFDT4000009 Note: Centre Dalben tower platform!



per set	total	item no.	material short text
0 x	0 x	000103	Installation instruction

1 x SFWZ0000017 High-strength threadlocker



per set	total	item no.	material short text
1 x	1 x	5200152	Loctite high-strength threadlocker

104 x SFDT4000008 Lateral infill at Dalben tower post



per set	total	item no.	material short text
1 x	104 x	3430014	washer Ø 10,5 DIN125 form B A2
1 x	104 x	3400464	Dome head security screw-M10x20-Resistorx T45 A

Item: **912095001**
Dalben tower (9,50)
Location:

Order:

1297246

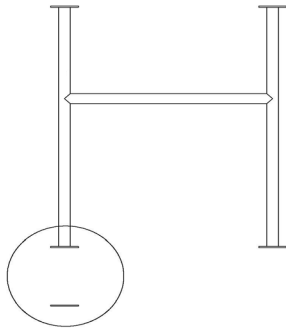
Building Project:

30 x SFDT4000020 Ladder climb up on wooden Dalben tower platform



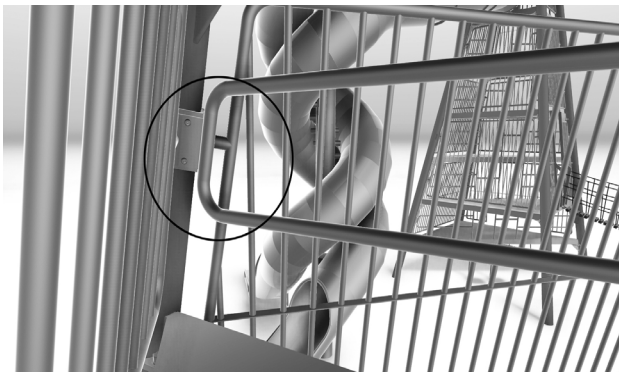
per set	total	item no.	material short text
1 x	30 x	3430011	hexagon cap nut M10 DIN986 A2
1 x	30 x	3430014	washer Ø 10,5 DIN125 form B A2
1 x	30 x	3400424	Mushroom head screw M10x220 DIN603 A2

2 x SFDT4000049 attachment of ladder access to tower platform with opposing single flat steel (78 mm hole to hole)



per set	total	item no.	material short text
1 x	2 x	2003632	flat steel bar, ladder access to platform 106x40x4 mm

4 x SFDT4000022 Lateral infill with ladder climb up at Dalben tower post



per set	total	item no.	material short text
1 x	4 x	3430014	washer Ø 10,5 DIN125 form B A2
1 x	4 x	3400688	Dome head security screw-M10x25-Resistorx T45 A

8 x SFDT4000005 Dalben tower post on concrete foundation on site by means of anchor rod M16



per set	total	item no.	material short text
1 x	8 x	3420024	Two-component resin capsule RSB16
1 x	8 x	3420025	Threaded rod RG M16 x 190 A4 Fischer

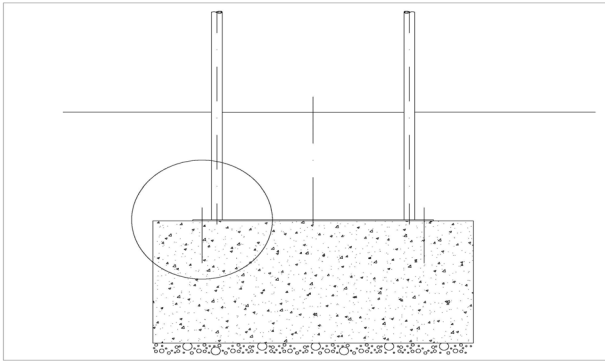
Item: **912095001**
 Dalben tower (9,50)
 Location:

Order:

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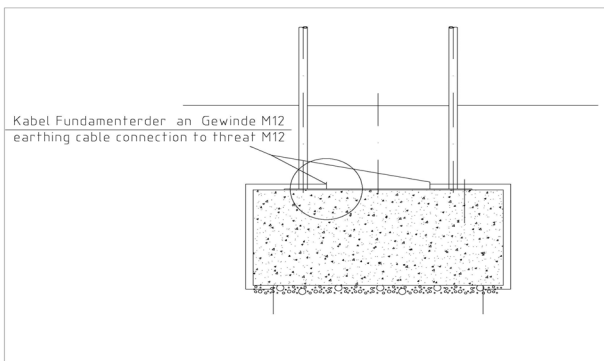
Building Project:

2 x SFDT4000025 Dalben tower ladder climb up on foundation on site



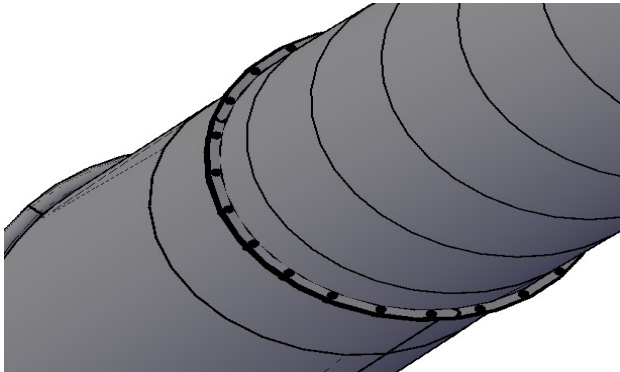
per set	total	item no.	material short text
1 x	2 x	3420024	Two-component resin capsule RSB16
1 x	2 x	3420025	Threaded rod RG M16 x 190 A4 Fischer

2 x SFDT4000026 Ground wire for foundation earth electrode fixed to Dalben tower ladder climb up



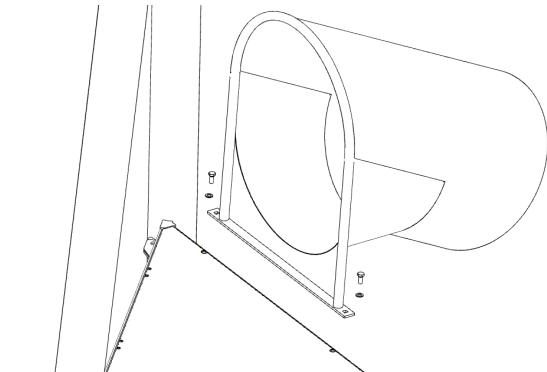
per set	total	item no.	material short text
1 x	2 x	3430025	washer Ø 13 DIN125 A2
1 x	2 x	3430051	Hexagon cap nut M12 DIN 986 A2

48 x SFAS1070014 Flange connection of tunnel slide sections



per set	total	item no.	material short text
1 x	48 x	3430011	hexagon cap nut M10 DIN986 A2
1 x	48 x	3430014	washer Ø 10,5 DIN125 form B A2
1 x	48 x	3400162	Cheese head screw M10 x 30 DIN912 A2

2 x SFDT4000047 Flange of tunnel slide at Dalben tower platform



per set	total	item no.	material short text
1 x	2 x	3400634	Hexagon head cap screw M16 x 40 DIN 933 A2
1 x	2 x	3430060	Washer Ø 17 DIN125 A2

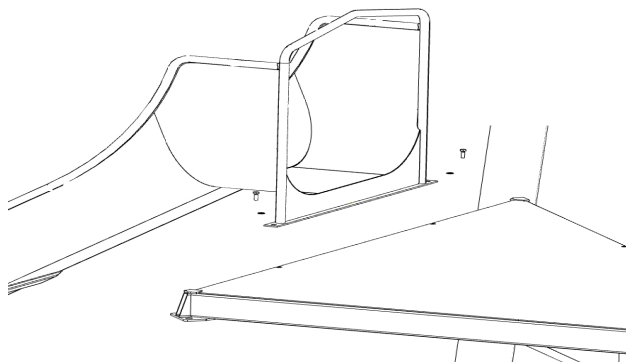
Item: **912095001**
 Dalben tower (9,50)
 Location:

Order:

1297246

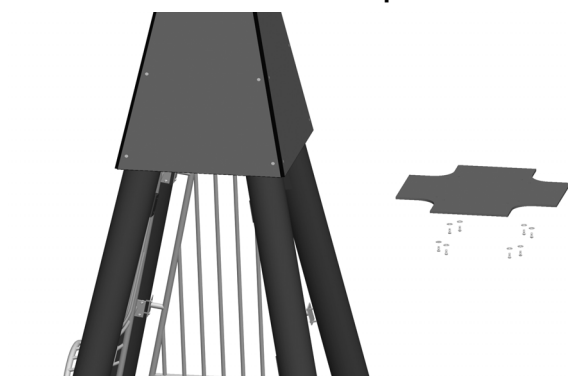
Building Project:

2 x SFDT4000048 Flange of bedway slide on Dalben tower platform



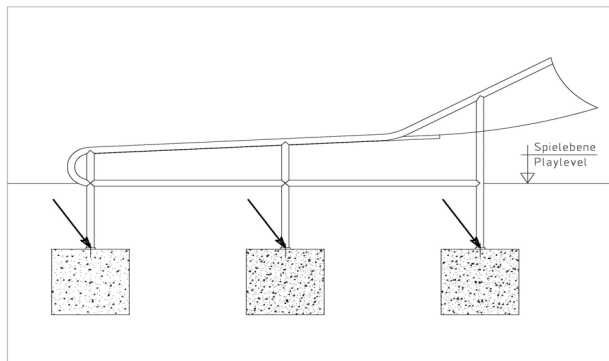
per set	total	item no.	material short text
1 x	2 x	3430025	washer Ø 13 DIN125 A2
1 x	2 x	3400354	Hexagon head cap screw M12 x 35 DIN 933 A2

8 x SFDT4000015 Cover panel for bottom side of Dalben tower top



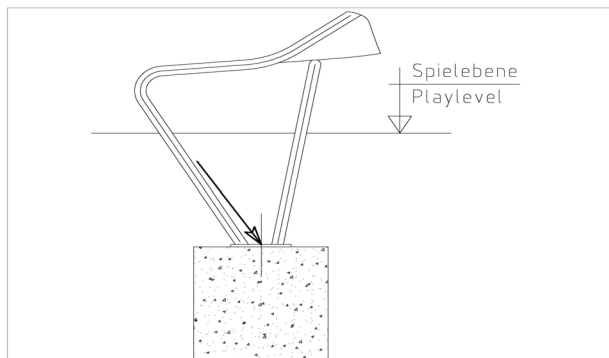
per set	total	item no.	material short text
1 x	8 x	3430014	washer Ø 10,5 DIN125 form B A2
1 x	8 x	3400195	Dome head security screw-M10x30-Resistorx T45 A

6 x SFXS1070011 (Short) Tunnel slide run-out section stone bolt assembly



per set	total	item no.	material short text
1 x	6 x	1070365	Set of stone bolts for slide run-out section M12x160

2 x SFXS1070006 Slide run-out section (up to 2,00 m) on foundation stone bolt assembly



per set	total	item no.	material short text
1 x	2 x	1070365	Set of stone bolts for slide run-out section M12x160

Item: **912095001**
 Dalben tower (9,50)
 Location:

Order:

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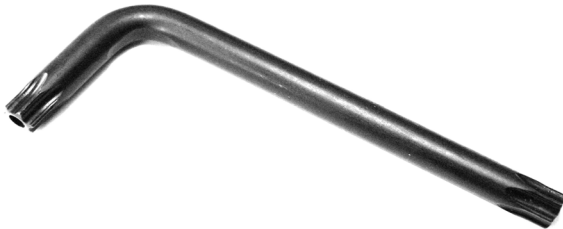
Building Project:

6 x SFWZ0000012 lubricating metal (30 g box) incl. brush



per set	total	item no.	material short text
1 x	6 x	5300039	lubricating metal box 30g
1 x	6 x	5200026	brush for lubricating metal

5 x SFWZ0000002 Security TORX wrench TR45



per set	total	item no.	material short text
1 x	5 x	3490033	Allen key security TORX TR45

1 x SFWZ0000015 Blow-out pump for drill holes



per set	total	item no.	material short text
1 x	1 x	3490056	Blow-out for drilled holes

2 x SFWZ0000016 Cleaning brush for anchor drill holes



per set	total	item no.	material short text
1 x	2 x	3490045	Nozzle cleaning brush Ø 20 mm, Nylon