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Authorised and notified according to Article 29 of the Regulation (EU) No 305/2011 of the European Parliament and of the Council of 9 March 2011

European Technical Assessment ETA-21/0756 of 2021/09/03

General Part

Technical Assessment Body issuing the ETA and designated according to Article 29 of the Regulation (EU) No 305/2011: ETA-Danmark A/S

Trade name of the construction product:	EJOT CROSSFIX
Product family to which the above construction product belongs:	Kits for external wall claddings
Manufacturer:	EJOT Baubefestigungen GmbH Geschäftsbereich Building Fasteners In der Stockwiese 35 DE-57334 Bad Laasphe Telephone: +49 2752 9080 www.ejot.de
Manufacturing plant:	EJOT AUSTRIA GmbH & Co KG Grazer Vorstadt 146 AU-8570 Voitsberg
This European Technical Assessment contains:	34 pages including 28 annexes which form an integral part of the document
This European Technical Assessment is issued in accordance with Regulation (EU) No 305/2011, on the basis of:	EAD 090034-00-0404 – Kit composed by subframe and fixings for fastening cladding and external wall elements
This version replaces:	-

II SPECIFIC PART OF THE EUROPEAN TECHNICAL ASSESSMENT

1 Technical description of product

The EJOT CROSSFIX subframe kit for external wall elements is composed by brackets, fixings to the subframe and the subframe profiles.

The components identified in Table 1 have the geometrical characteristics defined in Annexes 1 to 3 and are factory produced by different suppliers. The kit is made of components mechanically assembled and the ETA holder is ultimately responsible for the kit.

Component	Name	Geometrical characteristics [Annex]
Brackets	Mouse 40	1-5
	Mouse 60	
	K1 80	
	K1 100	
	K1 120	
	K1 140	
	K1 160	
	K1 180	
	K1 200	
	K1 220	
	K1 240	
	K1 260	
	K1 280	
	K1 300	
	K1 320	
	K1 340	
	K1 360	
	K1 380	
	K1 400	
Subframe fixings	JT6-2/5-5,0x25 E14 VARIO JT9-2/5-5,0x25 E14 VARIO	6
Subframe	Vertical or horizontal profiles	7, 8 & 9
Optional subframe stabilisation	Power key	1, 2 & 5
Skin element fixings	JT4-LT-3-5,5x25 KD16	6

Table 1: Components for the EJOT CROSSFIX subframe kit.

The brackets are made of stainless steel A2 (1.4301) or A4 (1.4404). The brackets are composed of the bracket, a stress plate for load distribution, a thermostop (PA6) to prevent thermal bridging, and an optional Power key which can be twisted up to 2 times, as given in Annex 1 & 25.
The self-drilling screw (JT6-2/5-5,0x30 E14 VARIO or JT9-2/5-5,0x25 E14 VARIO) between vertical or horizontal profile and the brackets are made of austenitic stainless steel A4 and zinc plated and shown in Annex 6.
The vertical or horizontal profile are made of aluminum (EN AW 6063-T66 or EN AW 6060-T66, 2 mm) in different shapes, given in Annex 7.

2 Specification of the intended use(s) in accordance with the applicable European Assessment Document (hereinafter EAD)

The subframe kit "EJOT CROSSFIX" is intended to be used as subframe for façades with air space, ventilated or not, which can be fixed to supporting structure and the external wall in new or existing buildings. The supporting structure is made of masonry (bricks or blocks), concrete (cast on site or as prefabricated panels), timber or metal frame. An insulation layer is usually fixed on the external wall.
The kit is a non-load-bearing construction element. It does not contribute to the stability of the structure on which are installed, neither to ensure the airtightness of the building structure, but it can contribute to durability of the works by providing enhanced protection from the effect of weathering.

The installation should be carried out according to the ETA holder's specifications, using the specific kit components, manufactured by suppliers of the ETA holder and carried out by appropriately qualified staff with supervision of the technical responsible of the site.
Maintenance of the assembled systems or kit components includes inspections on site, taking into account the following aspects:

- any damage such as cracking or detachment due to permanent and irreversible deformation of the cladding elements.
- corrosion or water accumulation at metallic components.

Furthermore, necessary repairs should be done rapidly, using the same kit components and following the repair instructions given by ETA holder.

The façade kit is assessed as a system 6 in accordance with EAD 090034-00-0404.

The verification and assessment methods on which this European Technical Assessment is based lead to the assumption of a working life of at least 25 years, that the conditions lay down for the installation, packaging, transport and storage as well as appropriate use, maintenance and repair are met.

The indications given on the working life cannot be interpreted as a guarantee given by the manufacturer but are to be regarded only as a means for choosing the right product in relation to the expected economically reasonable working life of the works.

3 Performance of the product and references to the methods used for its assessment.

Characteristic	Assessment of characteristic

3.2 Safety in case of fire (BWR 2)

Reaction to fire

The Corium Cladding System are classified as **Euroclass A1** in accordance with EN 13501-1.

3.4 Safety and accessibility in use (BWR 4)

Wind load resistance

Profile	Max. load Q [Pa]	Maximum deflection under load [mm]	Maximum permanent deflection [mm]	Calculated values [Pa]
horizontal T-profile	10.265	51,1	17,5	6.646
vertical T-profile	7.674	29,7	6,7	6.015

Resistance to vertical load of the whole assembled system

Calculated values:

Assembled system	Sum of bracket resistance F_{3d} [N]	Shear resistance of:	
		subframe fixings [N]	skin element fixings [N]
Horizontal profiles with powerkey	**699**	21828	8229
Horizontal profiles without powerkey	**396**	21828	8229
Vertical profiles with powerkey	**1758**	10914	8229
Vertical profiles without powerkey	**828**	10914	8229

Resistance to vertical load:

Assembled system	R_V [N]	Q_w [N]	Q_{ad} [N]	Δdeflection		
				Initial [mm]	1 hour [mm]	2 hour [mm]
Horizontal profiles with powerkey	233	**1348**	**50**	*0,00*	1,78	0,06
Horizontal profiles without powerkey	132	**359**	**37**	*0,00*	2,15	0,04
Vertical profiles with powerkey	586	**1743**	**15**	*0,00*	1,83	0,01
Vertical profiles without powerkey	276	**689**	**139**	*0,00*	2,67	0,03

Resistance to vertical load of skin element fixings	No performance assessed
Resistance to horizontal load of skin element fixings	No performance assessed
Resistance to pulsating load of skin element fixings	No performance assessed
Resistance of skin element fixings in case of inaccuracies of installation	No performance assessed
Pull-through resistance of fixings (from profiles)	Not relevant
Pull-out resistance of fixings (from profiles)	**F_m = 2.068 N** **F_c = 1.905 N**
Inertia and resistance of profiles	**For information see annex 7**
Resistance to vertical loads of brackets	**For information see annex A**
Resistance to horizontal load of brackets	**For information see annex B**
Mechanical characteristics of subframe fixings	**For information see annex C and annex 6**

Characteristic	Assessment of characteristic
Corrosion	The kits may be used in the following external atmosphere exposure: Rural environment, moderate industrial/urban environment, but excluding industrial and marine environment. The kits may be used in other external atmospheric conditions exposure if the components are protected as specified in the standard EN 1999.

3.8 Methods of verification

The product is fully covered by EAD EAD 090034-00-0404. According to the Regulation (EU) No 305/2011.

3.9 General aspects related to the fitness for use of the product.

The European Technical Assessment is issued for the product based on agreed data/information, deposited with ETA-Danmark, which identifies the product that has been assessed and judged. Changes to the product or production process, which could result in this deposited data/information being incorrect, should be notified to ETA-Danmark before the changes are introduced. ETA-Danmark will decide if such changes affect the ETA and consequently the validity of the CE marking based on the ETA and if so whether further assessment or alterations to the ETA, shall be necessary.

The EJOT CROSSFIX subframe kit for external wall elements is manufactured in accordance with the provisions of this European Technical Assessment using the manufacturing processes as identified in the inspection of the plant by the notified inspection body and laid down in the technical documentation.

4 Assessment and verification of constancy of performance (hereinafter AVCP) system applied, with reference to its legal base.

4.1 AVCP system

According to the decision 2003/640/EC of the European Commission, as amended by 2001/596/EC, the system(s) of assessment and verification of constancy of performance (see Annex III to Regulation (EU) No 305/2011) is 2+.

5 Technical details necessary for the implementation of the AVCP system, as foreseen in the applicable EAD.

Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited at ETA-Danmark.

Issued in Copenhagen on 2021-09-03 by

Thomas Bruun
Managing Director, ETA-Danmark

Vertical profiles:

Bracket	without powerkey				with powerkey			
	F_r	F_{1d}	F_{3d}	F_s	F_r	F_{1d}	F_{3d}	F_s
	[N]	[N]	[N]	[N]	[N]	[N]	[N]	[N]
Mouse 40	1381	1494	3374	3046	-	-	-	-
Mouse 60	785	974	2607	2766	-	-	-	-
K1 80	1057	854	2204	2372	-	-	-	-
K1 100	937	843	2179	2180	-	-	-	-
K1 120	916	579	1558	1649	1018	611	1652	1770
K1 140	819	510	1380	1531	963	600	1548	1647
K1 160	722	441	1202	1413	908	590	1444	1523
K1 180	624	372	1023	1294	853	579	1339	1400
K1 200	527	303	845	1176	798	569	1235	1276
K1 220	430	234	667	1058	743	558	1131	1153
K1 240	413	219	624	985	739	532	1068	1150
K1 260	396	204	580	912	735	507	1006	1147
K1 280	379	188	537	840	730	481	943	1143
K1 300	362	173	493	767	726	456	881	1140
K1 320	346	158	450	694	722	430	818	1137
K1 340	329	143	406	621	671	387	760	1082
K1 360	312	127	363	549	619	345	702	1026
K1 380	295	112	319	476	568	302	644	971
K1 400	278	97	276	403	516	259	586	915

Horizontal profiles:

Bracket	without powerkey				with powerkey			
	F_r	F_{1d}	F_{3d}	F_s	F_r	F_{1d}	F_{3d}	F_s
	[N]	[N]	[N]	[N]	[N]	[N]	[N]	[N]
Mouse 40	-	-	-	-	-	-	-	-
Mouse 60	-	-	-	-	-	-	-	-
K1 80	160	124	313	456	-	-	-	-
K1 100	226	102	295	415	-	-	-	-
K1 120	206	94	271	370	236	100	276	477
K1 140	202	90	261	368	275	98	276	506
K1 160	198	85	251	366	314	97	277	534
K1 180	195	81	240	364	352	95	277	563
K1 200	191	76	230	362	391	94	278	591
K1 220	187	72	220	360	430	92	278	620
K1 240	179	69	210	354	429	91	276	620
K1 260	171	66	200	347	428	90	273	619
K1 280	163	63	191	341	427	88	271	619
K1 300	155	60	181	334	426	87	268	618
K1 320	147	56	171	328	425	86	266	618
K1 340	139	53	161	321	424	86	258	617
K1 360	131	50	152	315	423	85	250	616
K1 380	123	47	142	308	421	85	241	614
K1 400	115	44	132	302	420	84	233	613

F_r Load that causes a residual distortion on the bracket equal to L/500
F_{1d}/F_{3d} Loads that causes a displacement under load of 1 mm and 3 mm.
F_s Failure load (Defined as residual distortion = max(0,75 mm; L/150))

EJOT CROSSFIX subframe kit	
Resistance to vertical load of brackets, vertical/horizontal profiles	Annex A

Vertical profiles:

Bracket	F_m [N]	F_t [N]
Mouse 40	2179	3049
Mouse 60	2309	3059
K1 80	3149	4625
K1 100	3149	4625
K1 120	3149	4625
K1 140	3149	4625
K1 160	3149	4625
K1 180	3149	4625
K1 200	3149	4625
K1 220	3149	4625
K1 240	3149	4625
K1 260	3149	4625
K1 280	3149	4625
K1 300	3149	4625
K1 320	3149	4625
K1 340	3149	4625
K1 360	3149	4625
K1 380	3149	4625
K1 400	3149	4625

Horizontal profiles:

Bracket	F_m [N]	F_t [N]
Mouse 40	-	-
Mouse 60	-	-
K1 80	2118	3231
K1 100	2118	3231
K1 120	2118	3231
K1 140	2118	3231
K1 160	2118	3231
K1 180	2118	3231
K1 200	2118	3231
K1 220	2118	3231
K1 240	2118	3231
K1 260	2118	3231
K1 280	2118	3231
K1 300	2118	3231
K1 320	2118	3231
K1 340	2118	3231
K1 360	2118	3231
K1 380	2118	3231
K1 400	2118	3231

F_m Load that causes a residual distortion on the bracket equal to 1 mm.
F_t Failure load (Defined as residual distortion equal to 3 mm)

The EJOT self-drilling screw JT4-LT-3-5,5x25 KD16 (stainless steel A2) is used to connect the skin element fixing to the subframe.

The screw is shown in the following figure.

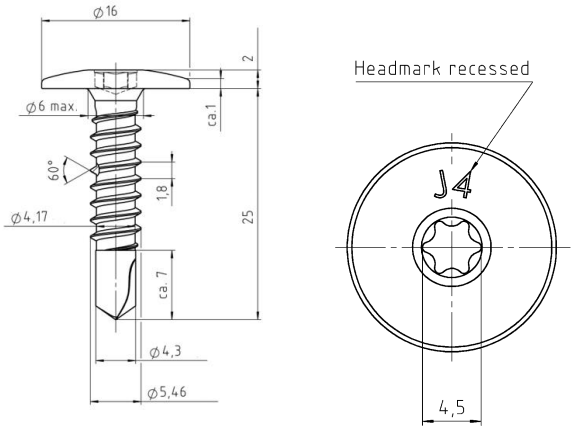


Figure 1: EJOT self-drilling screw JT4-LT-3-5,5x25 KD16

The EJOT self-drilling screws JT9-2/5-5,0xL Vario (stainless steel A4) with carbon steel drill tip) and JT6-2/5-5,0xL Vario (stainless steel A4) used to connect the subframe to the wall brackets.

The screws are shown in the following figure.

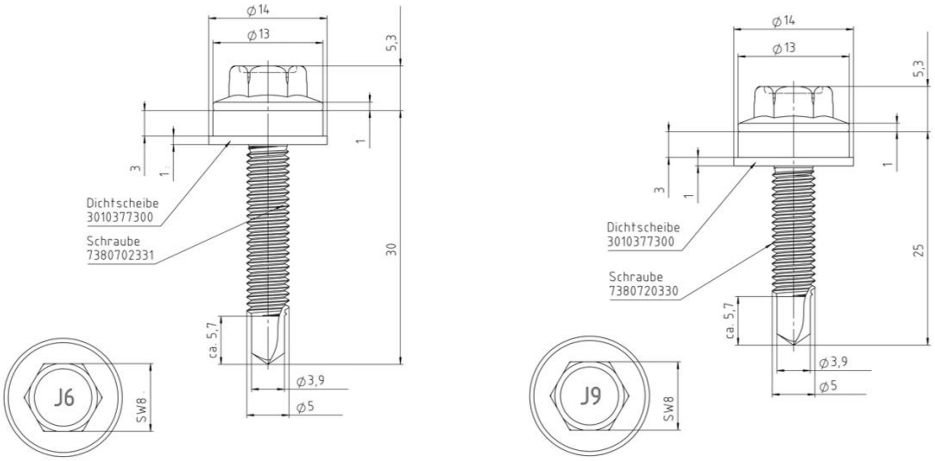
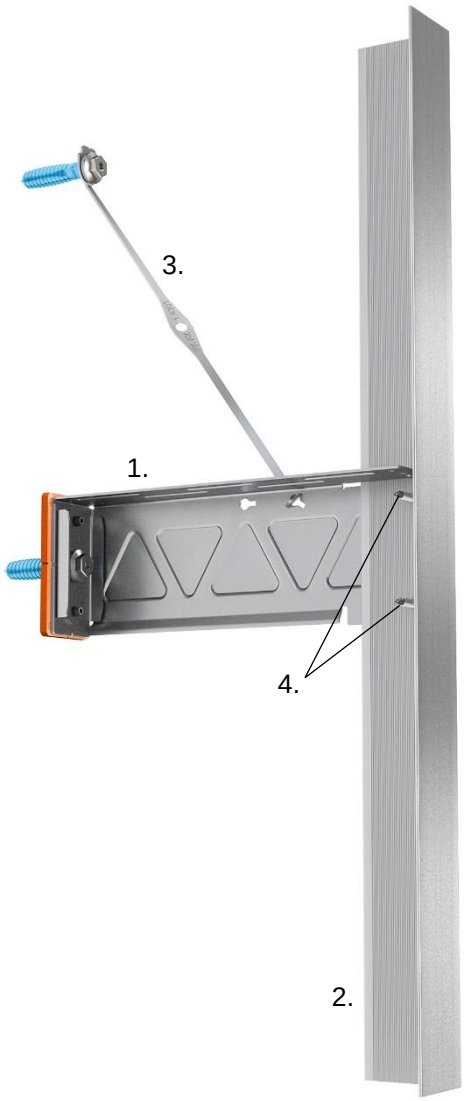


Figure 2: EJOT self-drilling screws JT6-2/2-5,0xL Vario and JT9-2/2-5,0xL Vario

The detailed characteristic shear and tensile strength of the screws are given in Annex 6.

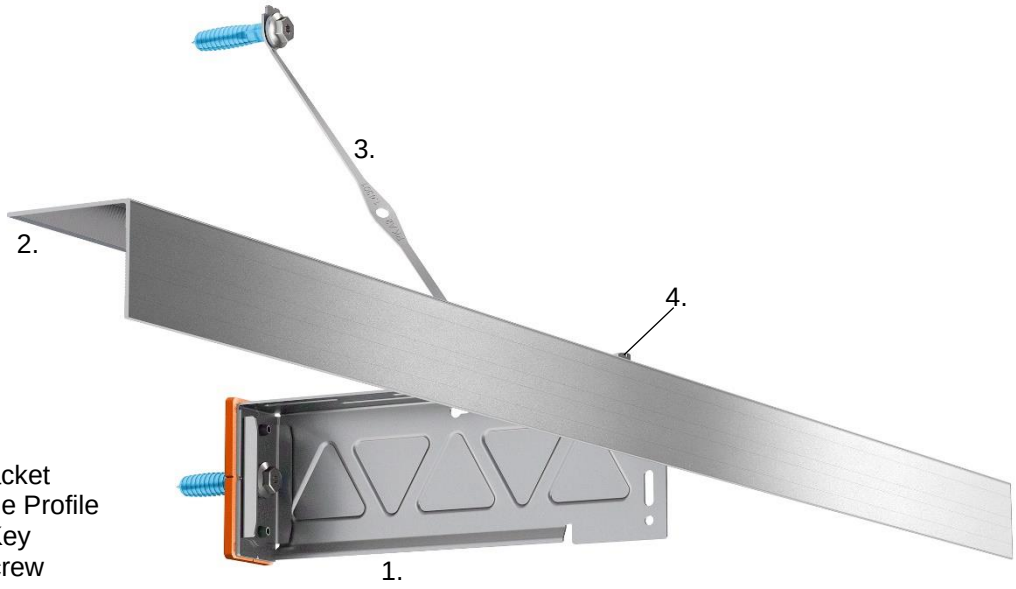
EJOT CROSSFIX subframe kit	
Mechanical characteristics of subframe fixings	Annex C

Vertical assembled CROSSFIX system



1. Wall Bracket
2. Subframe Profile
3. Power-Key
4. Vario Screw

Horizontal assembled CROSSFIX system



1. Wall Bracket
2. Subframe Profile
3. Power-Key
4. Vario Screw

Terms and explanations	
System overview	**Annex 1**

Brackets and components

Geometry characteristics			
Form	**Bracket - K1**	**Powerkey - PK**	**Stressplate - SP**
			 **Thermostop - TS** 

Dimensions	**Width w** [mm]	**Height h** [mm]	**Length L** [mm]	**Thickness t** [mm]	**Cross section A** [mm^2]	**Weight m** [kg/pcs]	**Drawing -** [-]
Bracket	40	84	45 - 405	≥ 1,5	185,91	0,089 - 0,692	Figure 1.1 to 1.5
Stressplate	36,7	72	-	≥ 1,5	-	0,036	
Thermostop	44,5	88,5	-	≥ 5	-	0,016	
Powerkey	21	-	334	≥ 1,5	-	0,025	Figure 1.6

Material properties	**Symbol**	**Unit**	**Value**		
			Brackets, Stressplate, Powerkey		**Thermostop**
Type of material	-	[-]	Stainless steel A2 (1.4301)	Stainless steel A4 (1.4404)	PA 6 - I
Density	ρ	[kg/m^3]	7.900	7.980	1.100
Modulus of elasticity	E	[MPa]	200.000		790 - 840
Thermal expansion coefficient	α	[K^{-1}]	$16*10^{-6}$		-
Elastic limit	$R_{p0,2}$	[MPa]	230	240	-
Tensile strength	R_m	[MPa]	500 - 750	500 - 700	-
Elongation	A	[%]	35	55	42 - 50
Elongation	A_{50mm}	[%]		40	-
Brinell hardness	H	[HB]	≥ 215		-

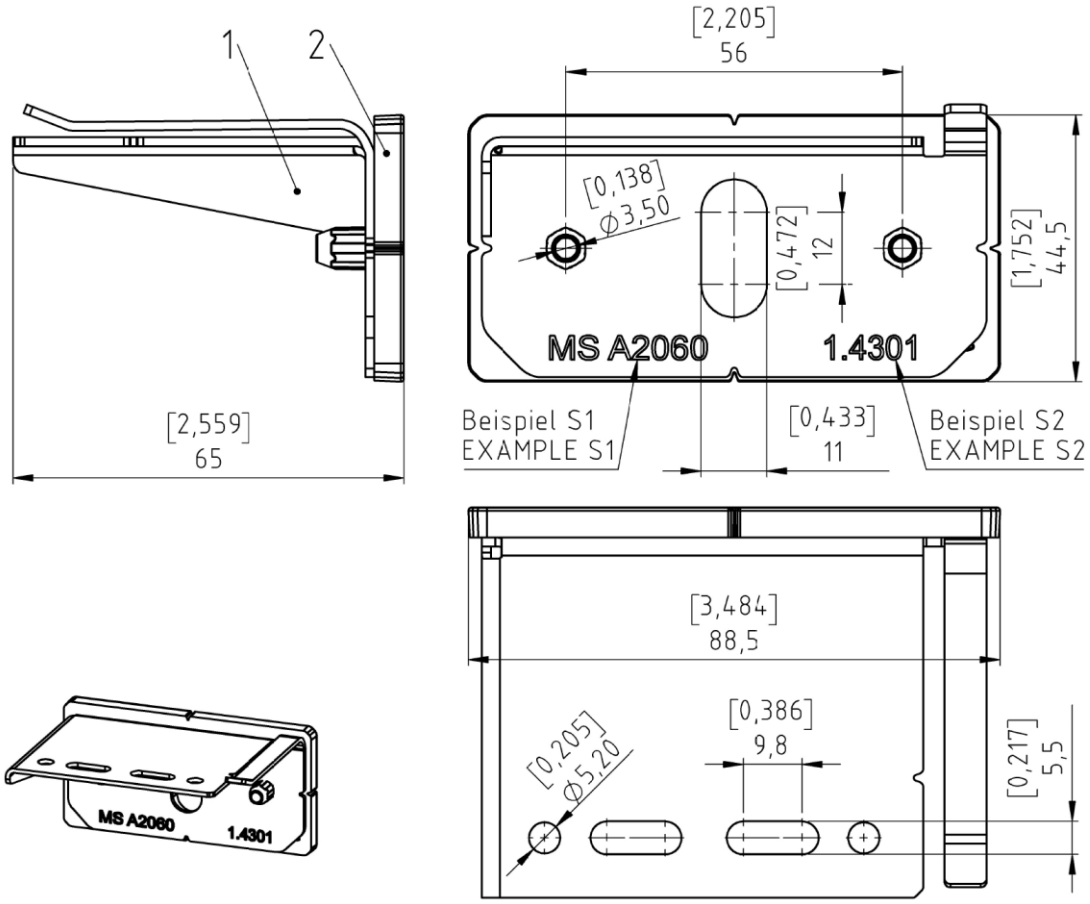


Figure 1.1: Bracket EJOT CF Console MS 60

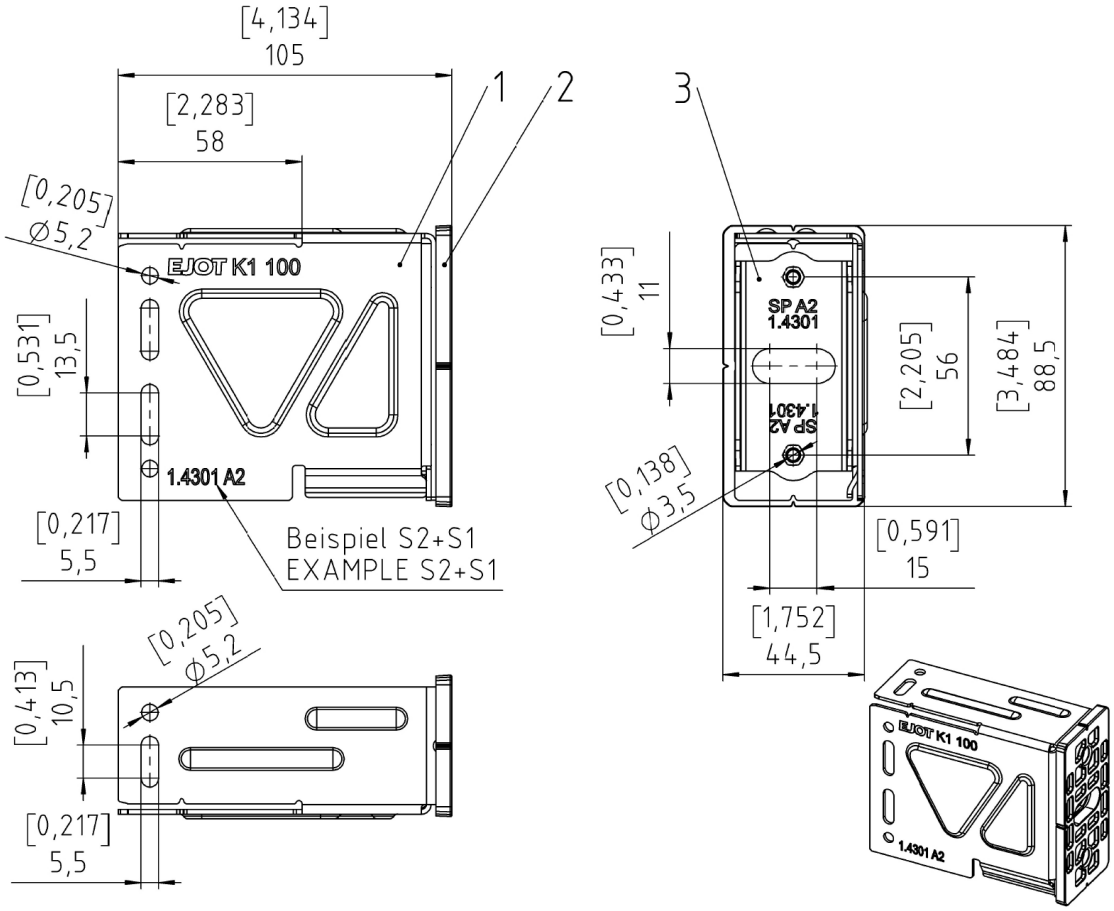


Figure 1.2: Bracket EJOT CF Console K1 80

Terms and explanations	
Brackets and components	Annex 3

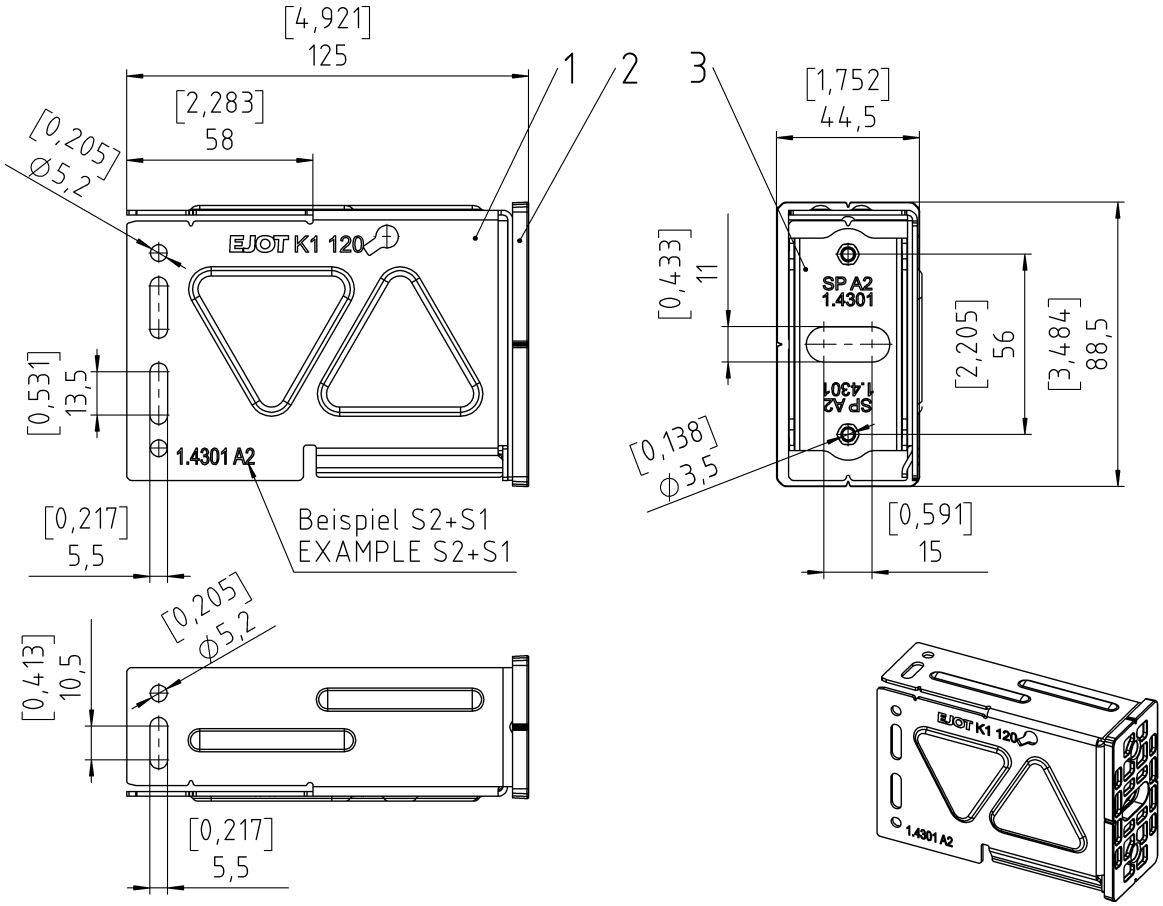


Figure 1.3: Bracket EJOT CF Console K1 120

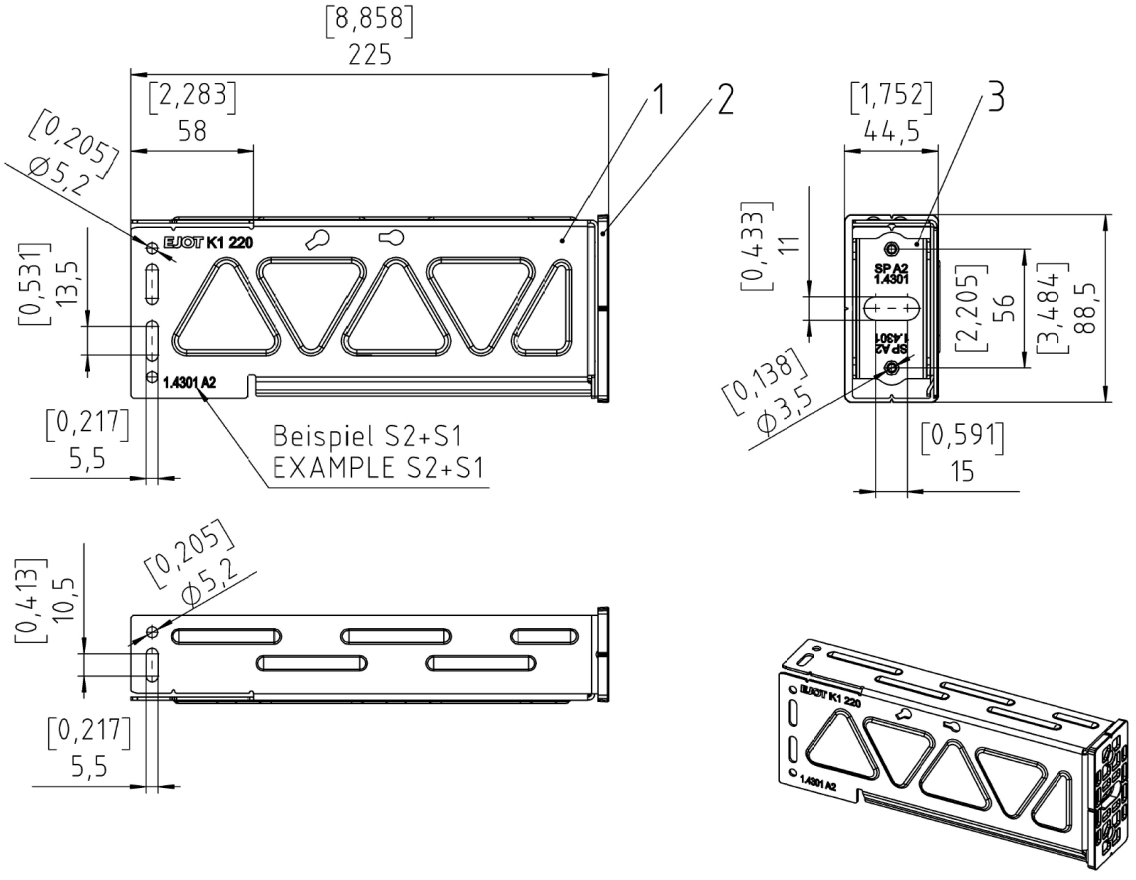


Figure 1.4: Bracket EJOT CF Console K1 220

Terms and explanations	
Brackets and components	Annex 4

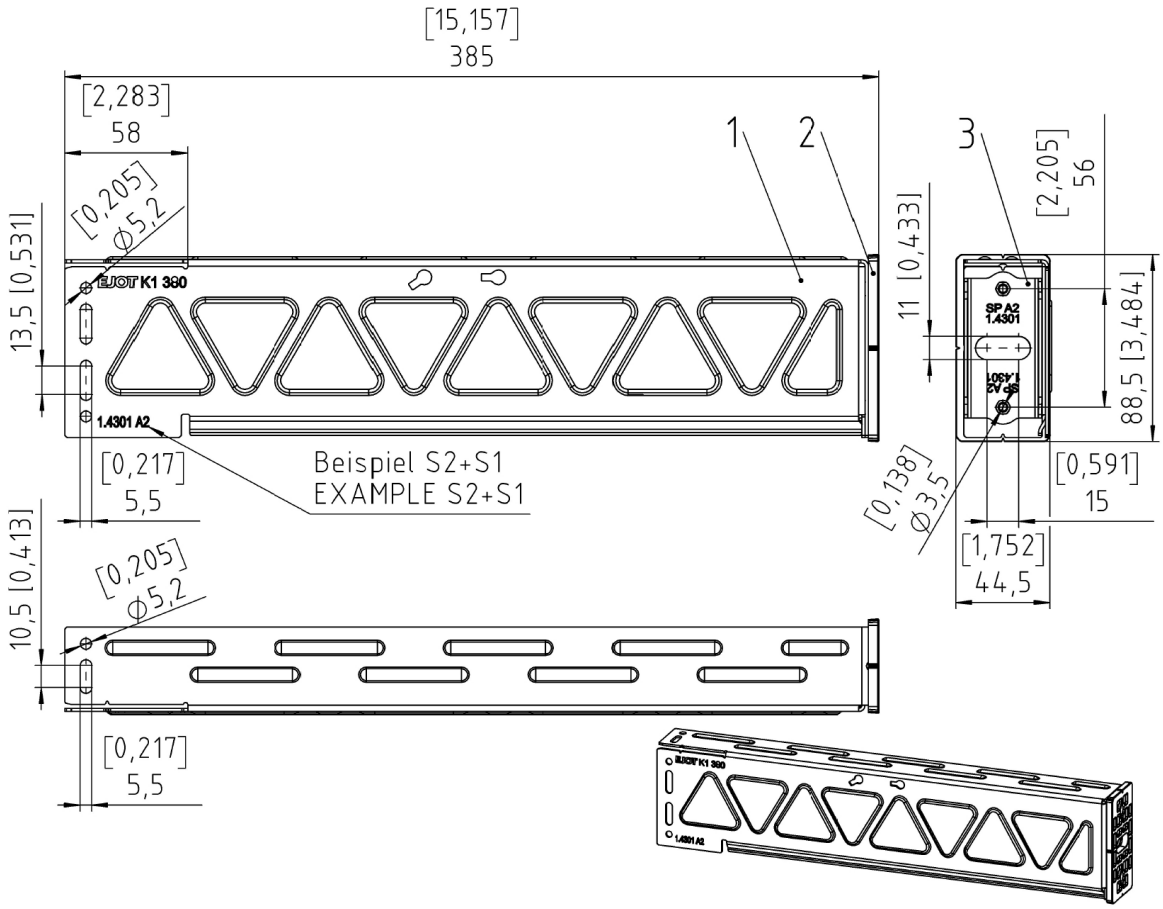


Figure 1.5: Bracket EJOT CF Console K1 400

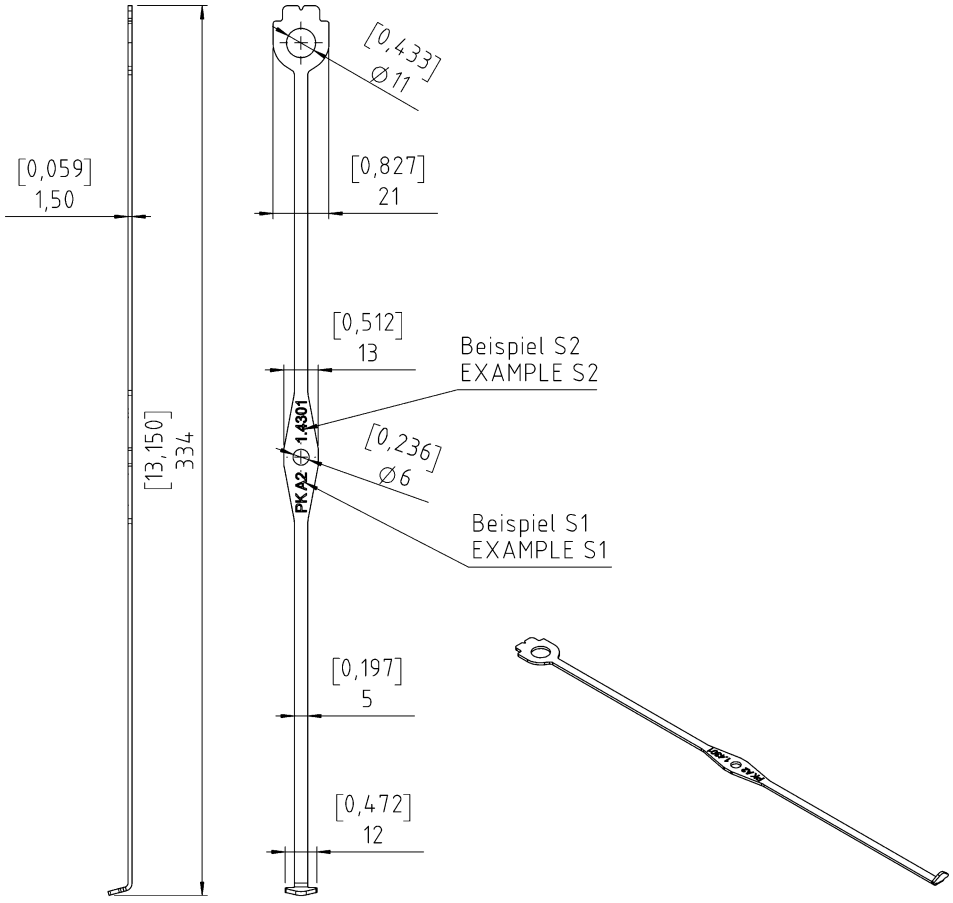


Figure 1.6: Powerkey EJOT CF Kraftschlüssel PK

Terms and explanations	
Brackets and components	Annex 5

Subframe and skin element fixings

Geometry characteristics		
	Subframe fixing JT6-2/5-5,0xL Vario & JT9-2/5-5,0xL Vario	**Skin element fixing** JT4-LT-3-5,5xL KD16
Form		

Dimensions	**Diameter** **Ø** [mm]	**Length** **L** [mm]	**Drawing** **-** [-]
JT6-2/5-5,0xL Vario	5	30	See Figure 2.1
JT9-2/5-5,0xL Vario	5	25	See Figure 2.2
JT4-LT-3-5,5xL KD16	5,5	25	See Figure 2.3

Material properties	**Symbol**	**Unit**	**Reference**	**Value**		
				JT6-2/5-5,0xL Vario	**JT9-2/5-5,0xL Vario**	**JT4-LT-3-5,5xL KD16**
Type of material	-	[-]	EN ISO 3506	Stainless steel A4 with carbon steel drill tip	Stainless steel A4	Stainless steel A2
Elastic limit	$R_{p0,2}$	[MPa]		210	210	210
Tensile strength	R_m	[MPa]		500	500	500
Elongation	A	[%]		0,6 · d	0,6 · d	0,6 · d
Shear load	-	[kN]	-	8,0	8,0	8,0

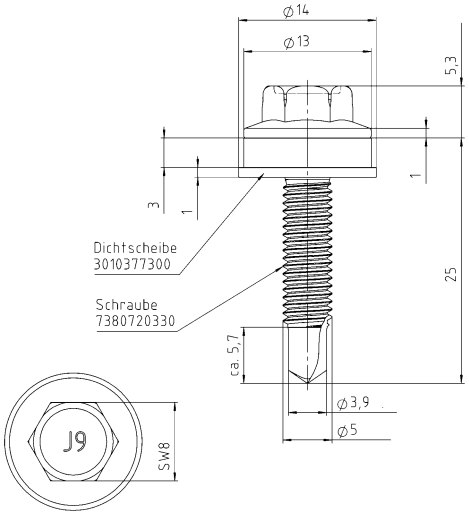


Figure 2.1: JT6-2/2-5,0xL Vario

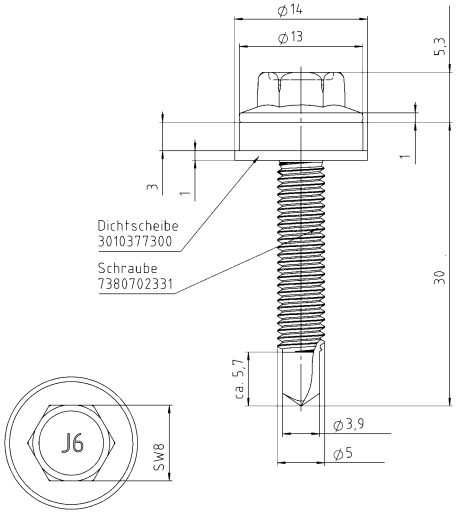


Figure 2.2: JT9-2/5-5,0xL Vario

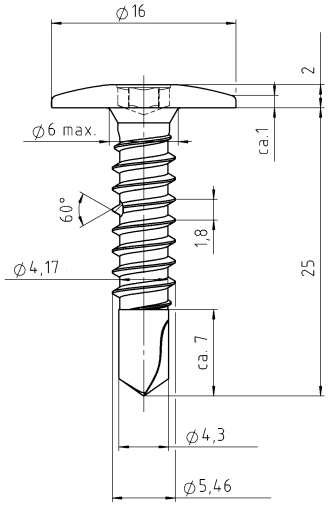


Figure 2.3: JT4-LT-3-5,5xL KD16

Installation and additional provisions	
Subframe and skin element fixing	Annex 6

Subframe Profiles

Geometry characteristics					
Form	**L - Profile** without grooves 	**L - Profile** with grooves 	**T - Profile** without grooves 	**T - Profile** with grooves 	**T - Profile** with grooves and slot 
	Z - Profile with grooves 	**Ω - Profile** with grooves 	**C - Profile** with grooves 	**LB - Profile** 	**Y - Profile** with grooves 

Dimensions	Width [mm]	Height [mm]	Thickness t [mm]	Cross section A [mm^2]	Weight m [kg/m]	Inertia of profile section Ixx [cm^4]	Inertia of profile section Iyy [cm^4]	Drawing - [-]
L - Profile without grooves	40	60	2	196	0,529	7,52	2,78	Figure 3.1
L - Profile with grooves	40	60	2	184	0,497	7,09	2,62	Figure 3.2
T - Profile without grooves	100	60	2	317	0,855	9,71	15,38	Figure 3.3
T - Profile with grooves	120	60	2	355	0,958	9,26	26,92	Figure 3.4
T - Profile with grooves and slot	120	60	2	368	0,994	8,99	29,63	Figure 3.5
Z - Profile with grooves	40	27	2	184	0,497	2,43	4,74	Figure 3.6
Ω - Profile with grooves	120	27	2	364	0,982	4,41	35,23	Figure 3.7
C - Profile with grooves	20	66	2	224	0,604	12,31	1,08	Figure 3.8
LB - Profile	50	27	1,6	240	0,648	4,96	10,18	Figure 3.9
Y - Profile without grooves	110	87	2	468	1,264	21,62	35,03	Figure 3.10
Y - Profile with grooves	120	87	2	468	1,264	24,82	36,83	Figure 3.11

Material properties	Symbol	Unit	Value	Reference
Type of material	-	[-]	EN AW 6063 - T66	EN 1999-1-1
Density	ρ	[kg/m^3]	2.700	EN 1999-1-1
Modulus of elasticity	E	[MPa]	70.000	EN 1999-1-1
Thermal expansion coefficient	α	[K^{-1}]	$23{,}4*10^{-6}$	EN 1999-1-1
Elastic limit	$R_{p0,2}$	[MPa]	200	EN 1999-1-1 & EN 755-2
Tensile strength	R_m	[MPa]	245	EN 1999-1-1 & EN 755-2
Elongation	A	[%]	8	EN 1999-1-1 & EN 755-2
Elongation	A_{50mm}	[%]	6	EN 1999-1-1 & EN 755-2
Brinell hardness	H	[HB]	75	EN 1999-1-1

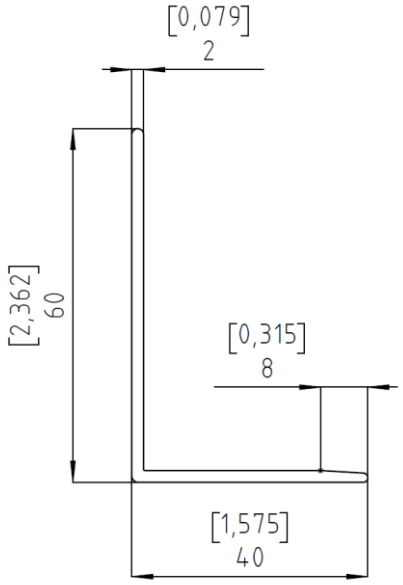


Figure 3.1: L – Profile without grooves

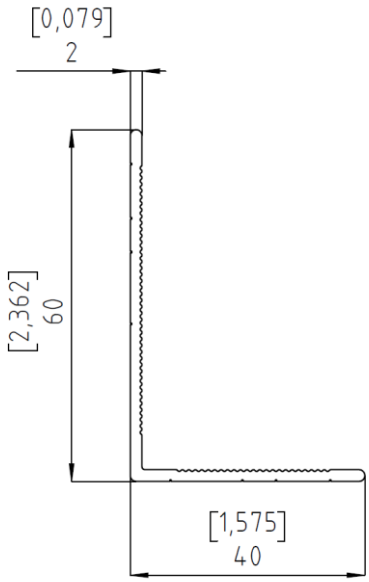


Figure 3.2: L – Profile with grooves

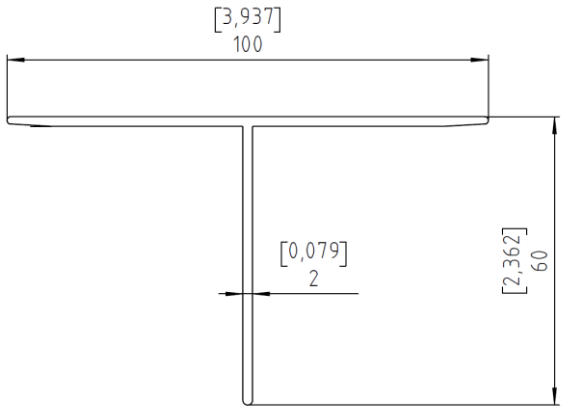


Figure 3.3: T – Profile without grooves

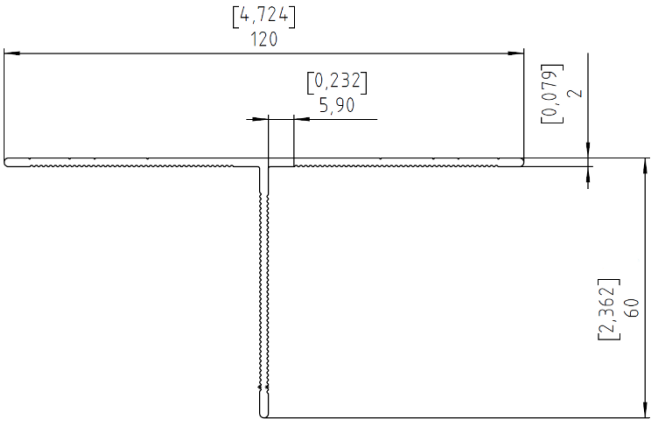


Figure 3.4: T – Profile with grooves

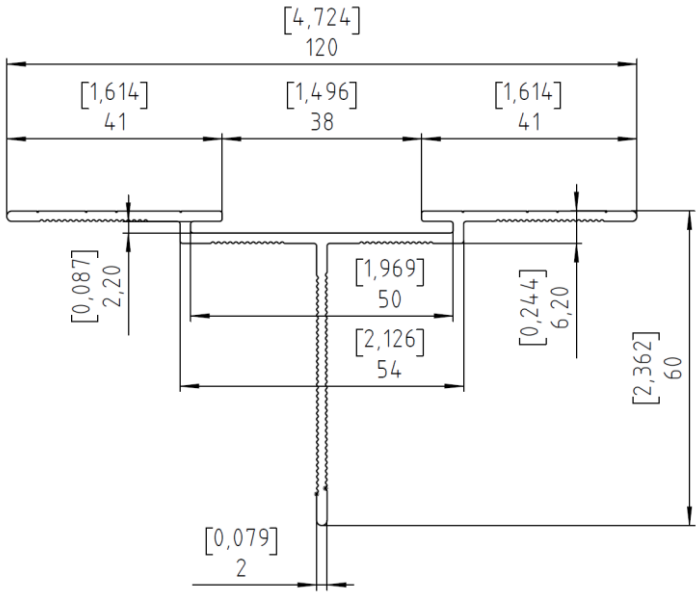


Figure 3.5: T – Profile with grooves and slot

Terms and explanations	
Subframe profiles	Annex 8

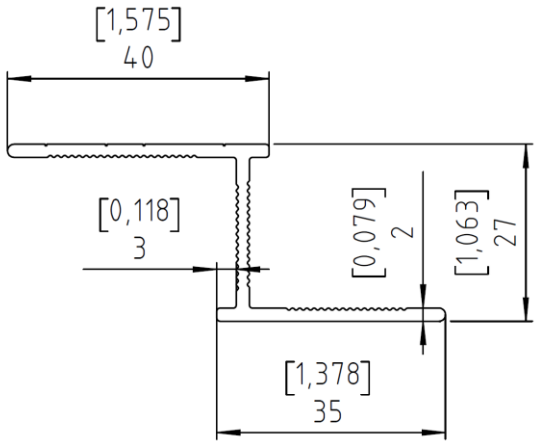


Figure 3.6: Z – Profile with grooves*

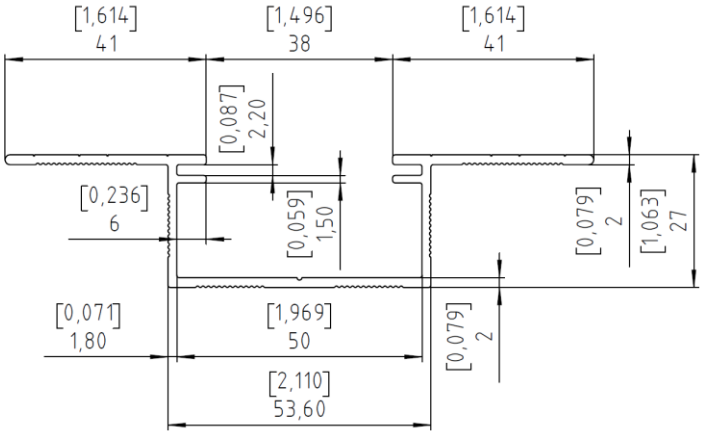


Figure 3.7: Ω – Profile with grooves*

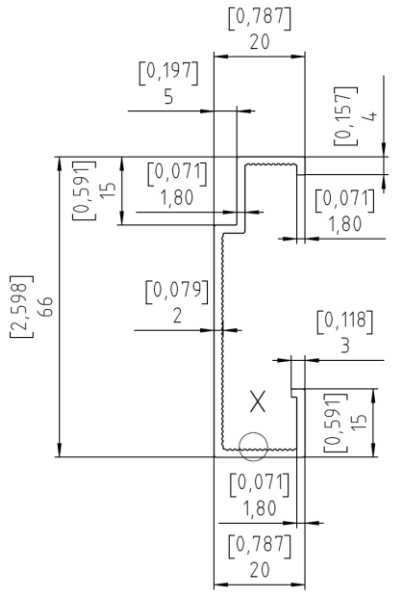


Figure 3.8: C – Profile with grooves*

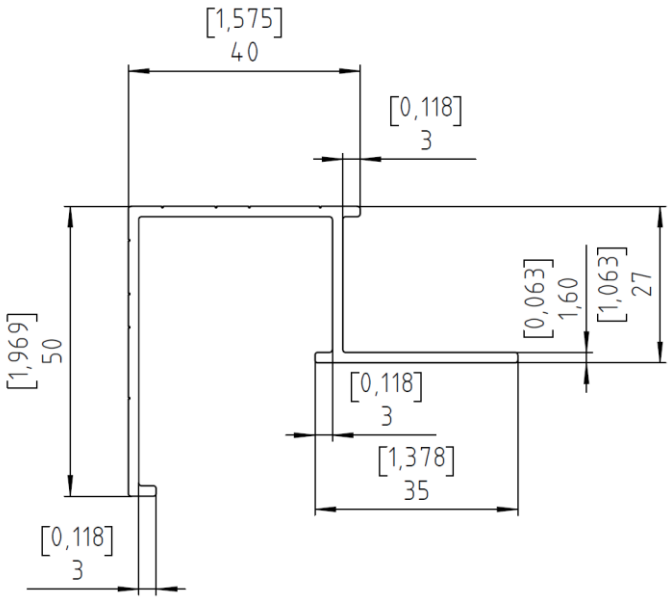


Figure 3.9: LB – Profile

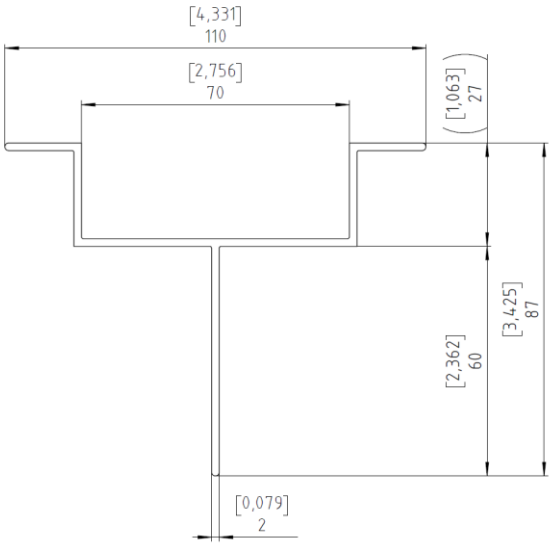


Figure 3.10: Y – Profile without grooves

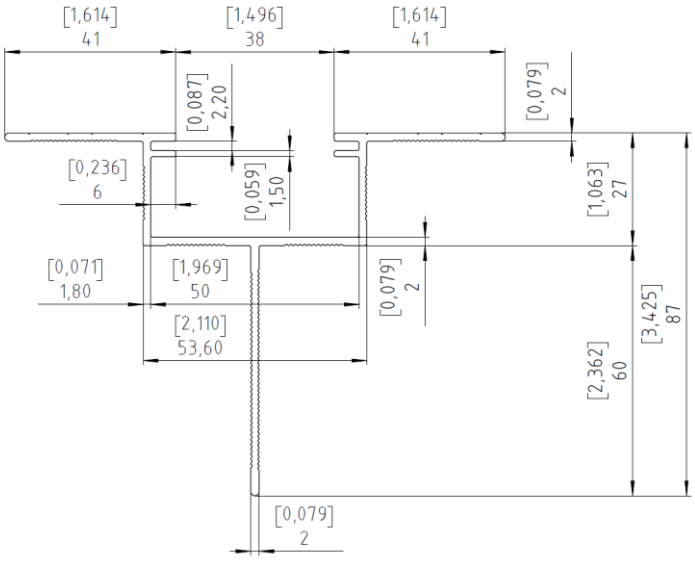


Figure 3.11: Y – Profile with grooves

*Profile can be pre-punched.

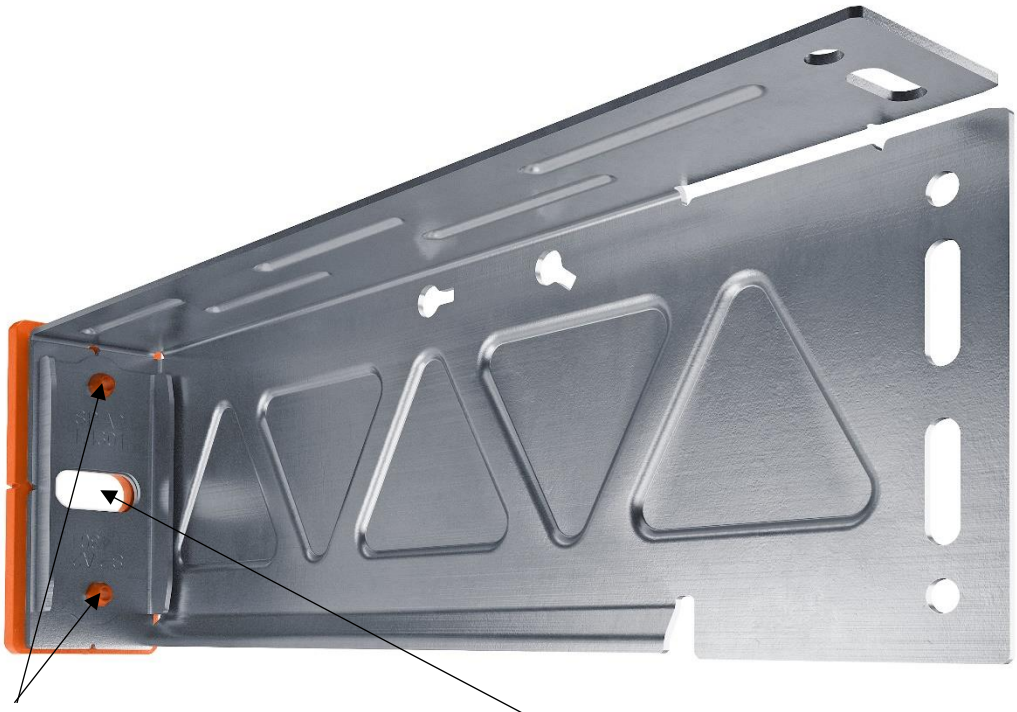
Installation and additional provisions	
Subframe profiles	Annex 9

Installation of the substrate fixing (Anchoring element)

The fixings between subframe and substrate are not part of the kit, therefore have not been assessed. Even so it is important to define type position and number of the anchorage according to the substrate material and the resistance required. CE marking according to the ETA via EAD is recommended.

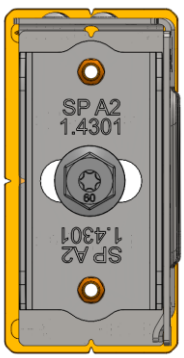
Substrate fixings or anchoring elements are not part to the kit, but they are needed for the execution of the CROSSFIX subframe kit as fixings between the brackets and the substrate. The main specifications to be met by these products to be used with the kit are:

- Fixings must be chosen according to the substrate or supporting structure material (concrete, masonry, timber or metal frame, etc.) and the resistance required due to wind load and dead load (pull-out and shear strength respectively).
- Fixings between the brackets and the substrate may be CE marked according to an ETA on the basis of the relevant EAD (see www.eota.eu) as long as this CE marking is mandatory in the Member State where the kit is used.



Anchoring points for metal or timber substrate
Anchor example: JF6-6,8xL E16
(See also Figure 4.7 and 4.8)

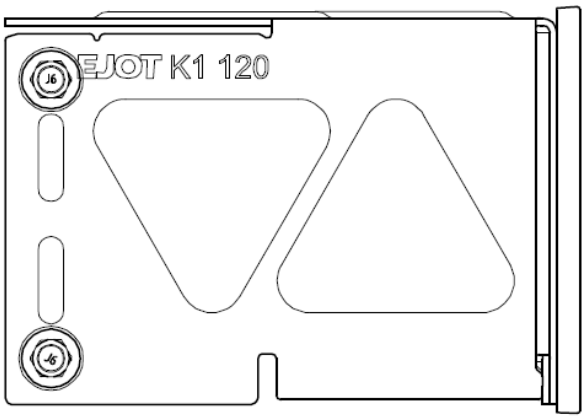
Anchoring point for concrete or masonry
Anchor example: SDF-KB-10HxL
(See also Figure 4.1 to 4.6)



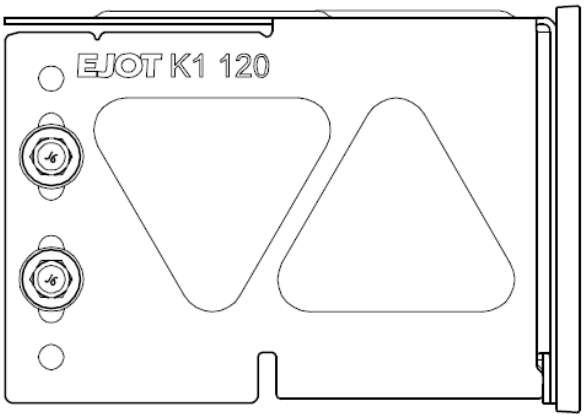
Installation of the subframe fixing

Fixed and sliding points must be installed centrical in the correct holes as shown, the positions of the fixed and sliding brackets are given by the planning documents.

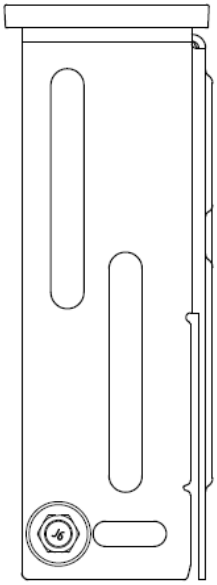
Fixed point



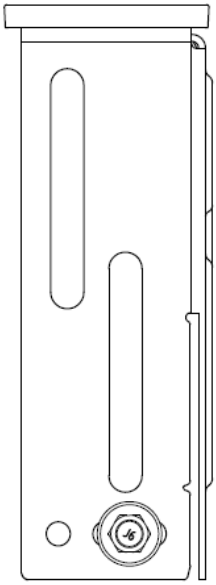
Sliding point



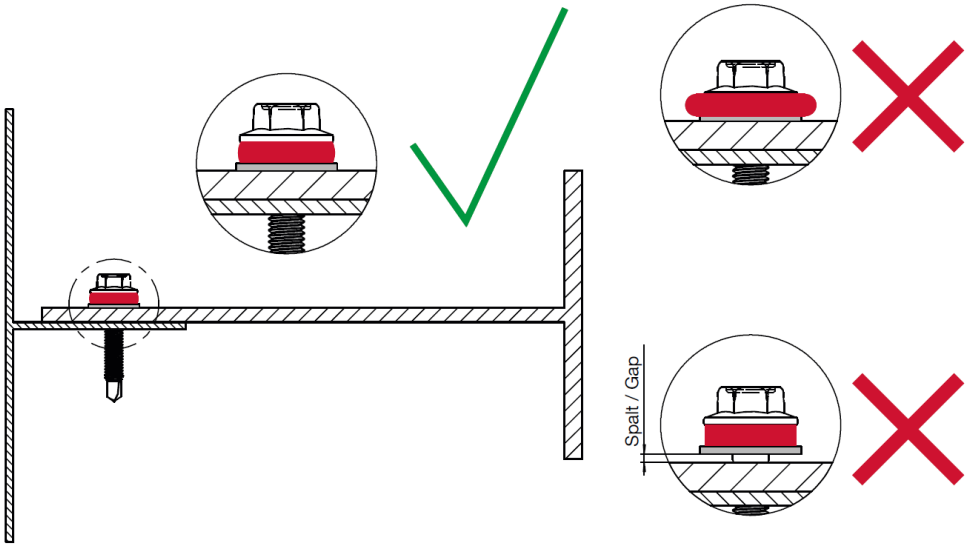
Fixed point



Sliding point



The correct compression of the JT6-2/5-5,0xL Vario and JT9-2/5-5,0xL Vario screw is important for its function

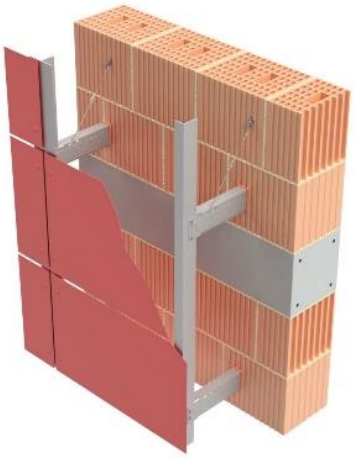


Terms and explanations	
Installation of subframe fixing	Annex 11

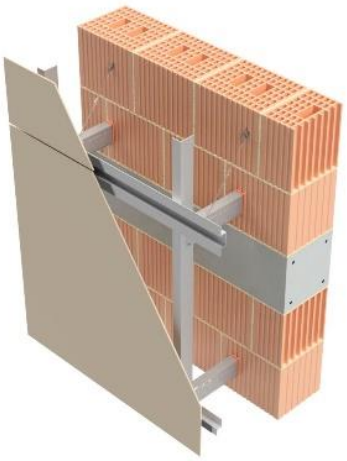
Installation of the skin element fixing

The skin element must be fixed constraint-free, using fixed and sliding points.
The combination of the skin element fixing JT4-LT-3-5,5xL KD16 with EJOT centering grommets Ø11 is recommended to ensure centering of the screw, prevent damage on the panel surface and generate defined fixed and sliding points.
The screwing process needs to be stopped once the screw head touches the surface to ensure moderate pressure within the connection and allow for expansion or contraction movements.

Overview of assembly examples

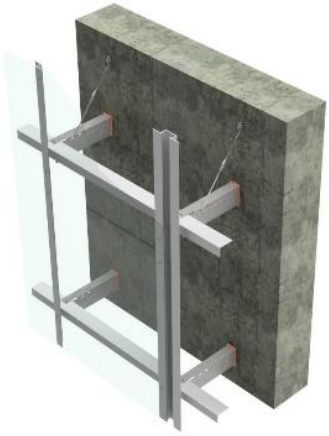


CF-U-102 (Figure 4.1)

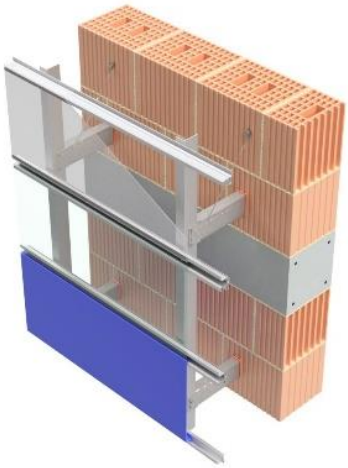


CF-S-301 (Figure 4.2)

CF-U-108 (Figure 4.3)



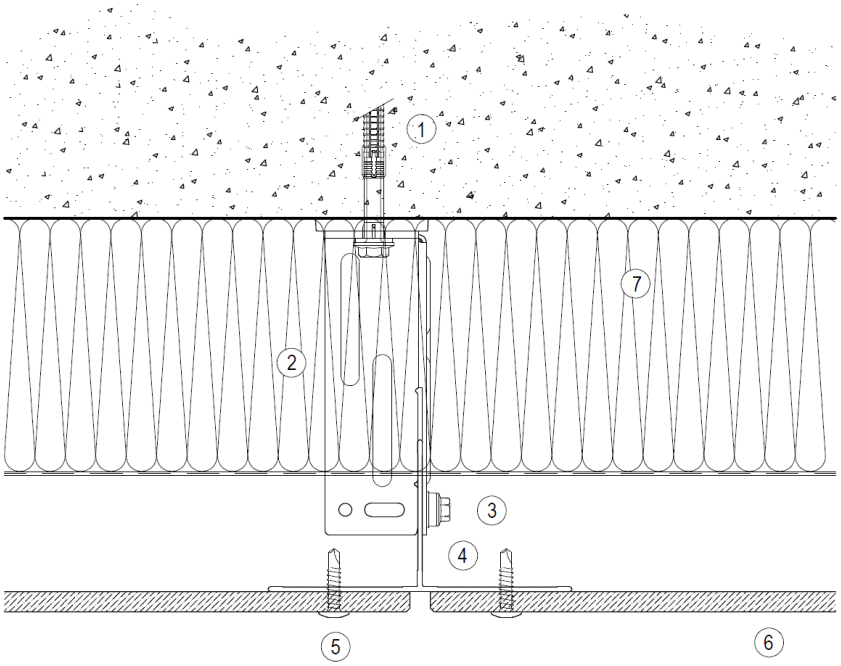
CF-U-400 (Figure 4.4)

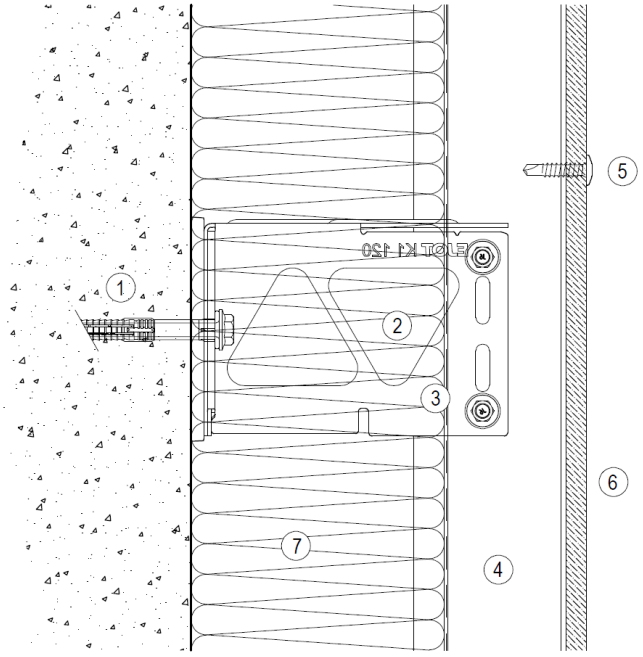


CF-U-104 (Figure 4.5)

CF-U-503 (Figure 4.6)

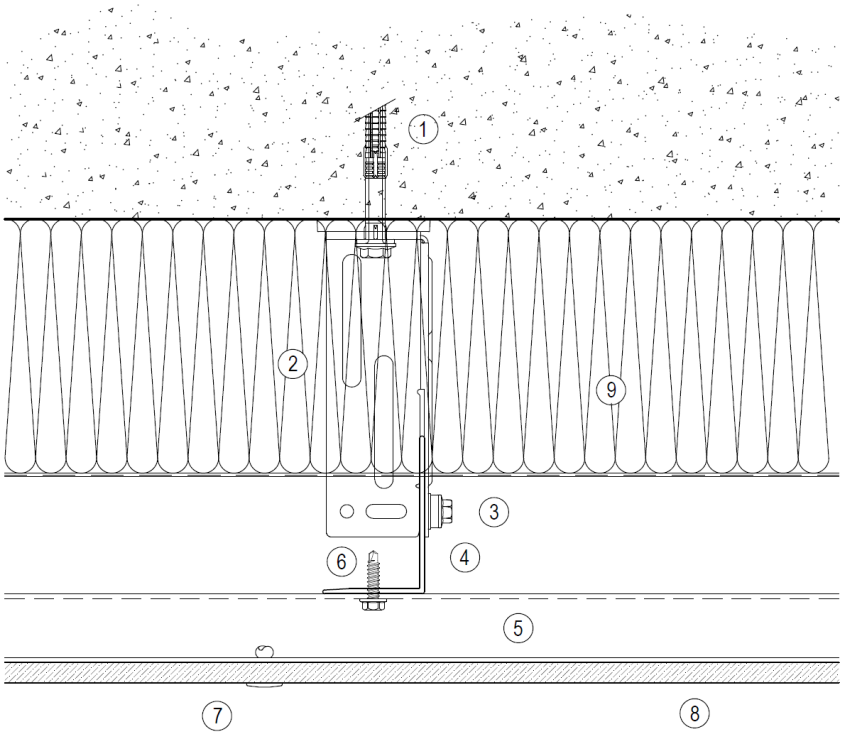
Assembly examples and details of execution

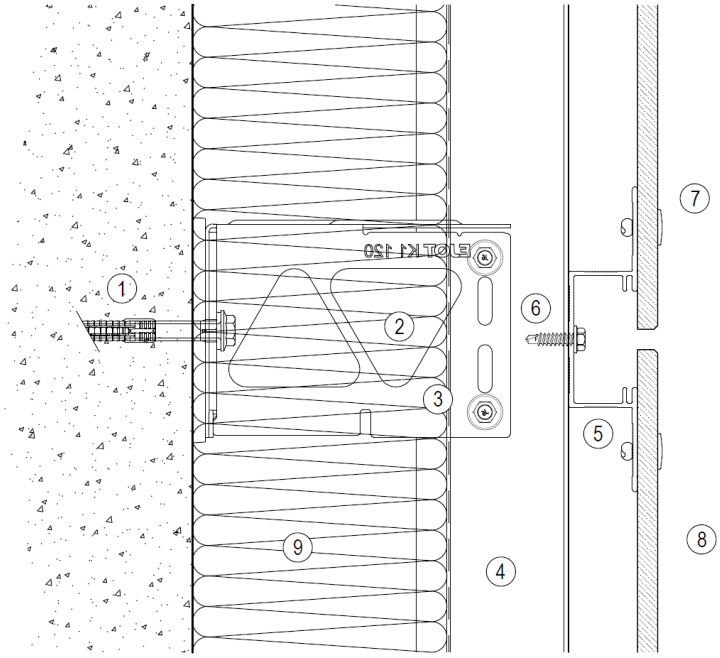




1.Anchoring element (e.g. SDF, BA, USF, JC2,...)
2. CF Wallbracket K1 - L
3. JT6-2/5-5,0 x 30 - VARIO
4. CF T-L Vertical profile
5. EJOT JT-4-LT-3-5,5 x L Self-drilling Screw with LT centering bush
6. Façade Cladding Plate
7. Thermal insulation

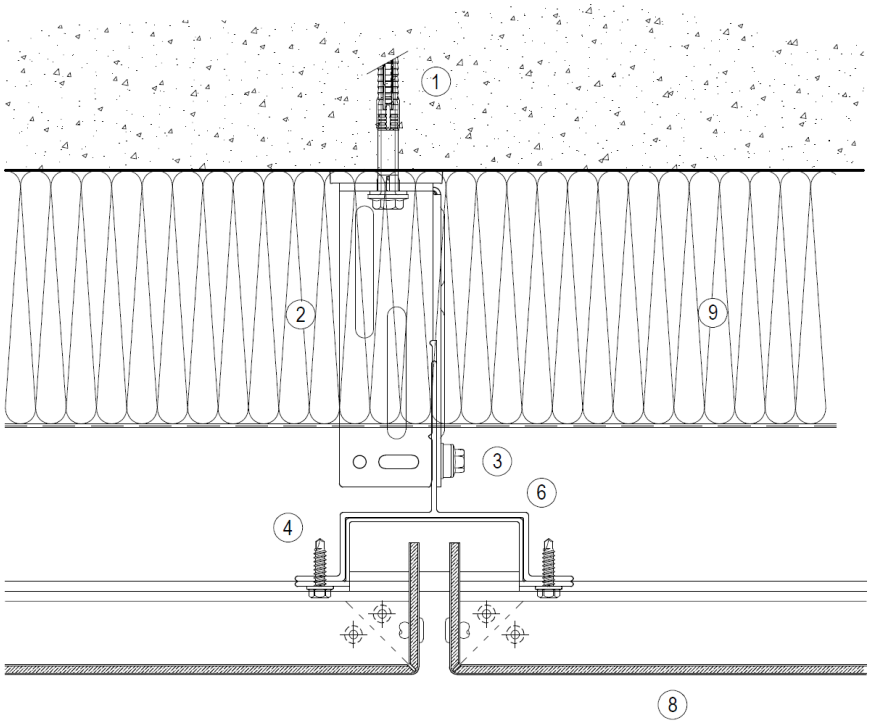
Figure 4.1: CF-U 102

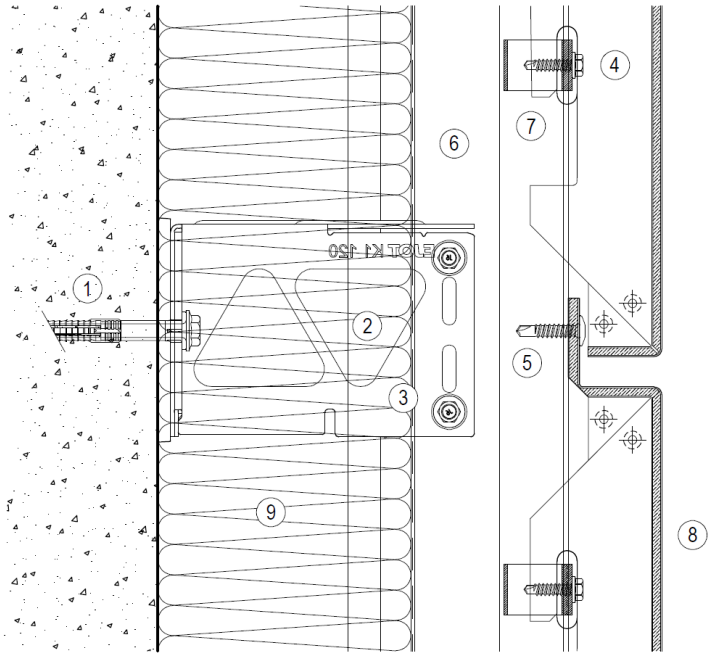




1. Anchoring element (e.g. SDF, BA, USF, JC2,...)
2. CF Wallbracket K1 - L
3. JT6-2/5-5,0 x 30 - VARIO
4. CF T-L Vertical profile
5. CF O/Z Horizontal profile
6. JT4-6-5,5 x19
7. Aluminium Rivets - RAL laquered Head
8. Façade Cladding Plate
9. Thermal insulation

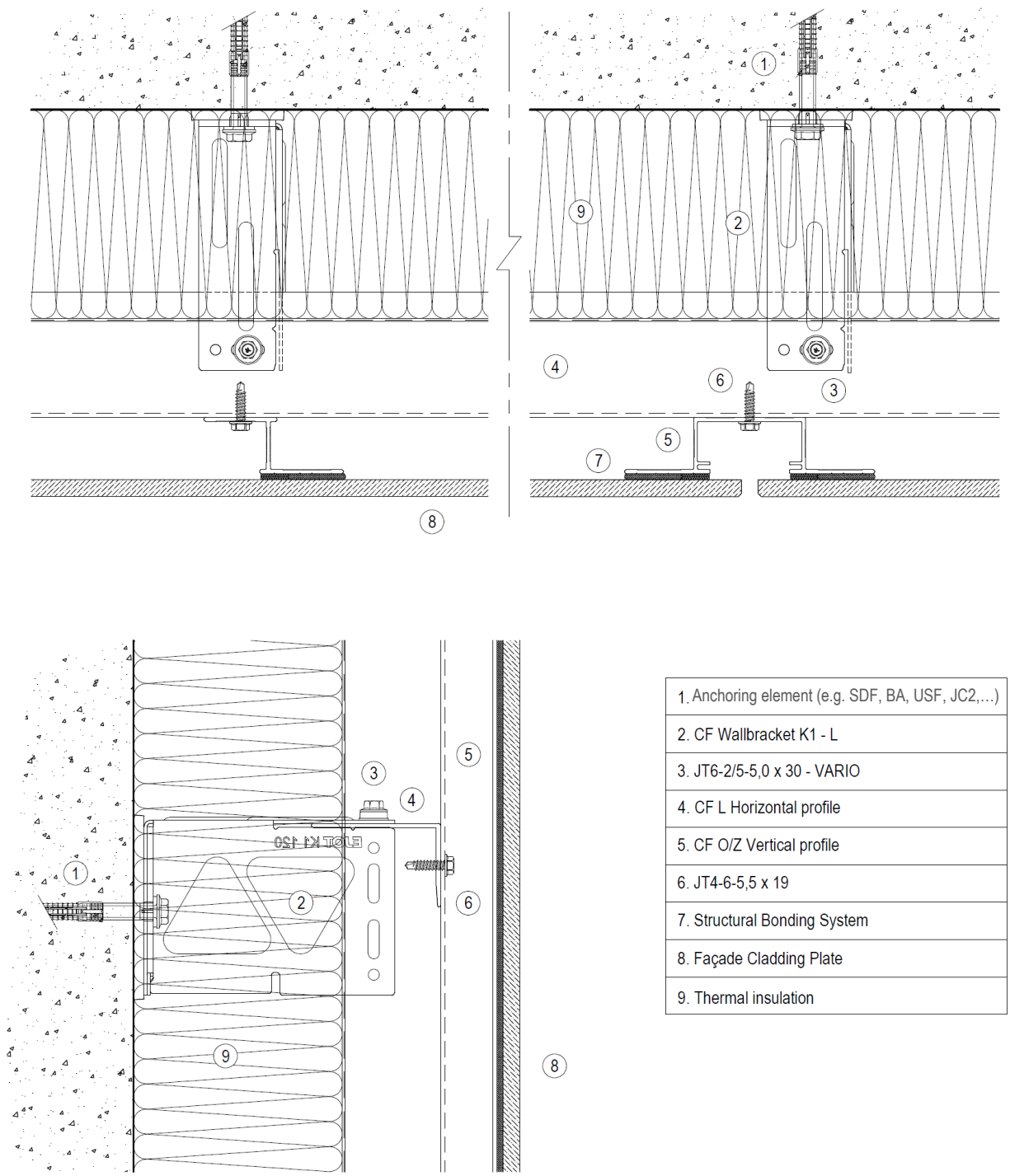
Figure 4.2: CF-S 301





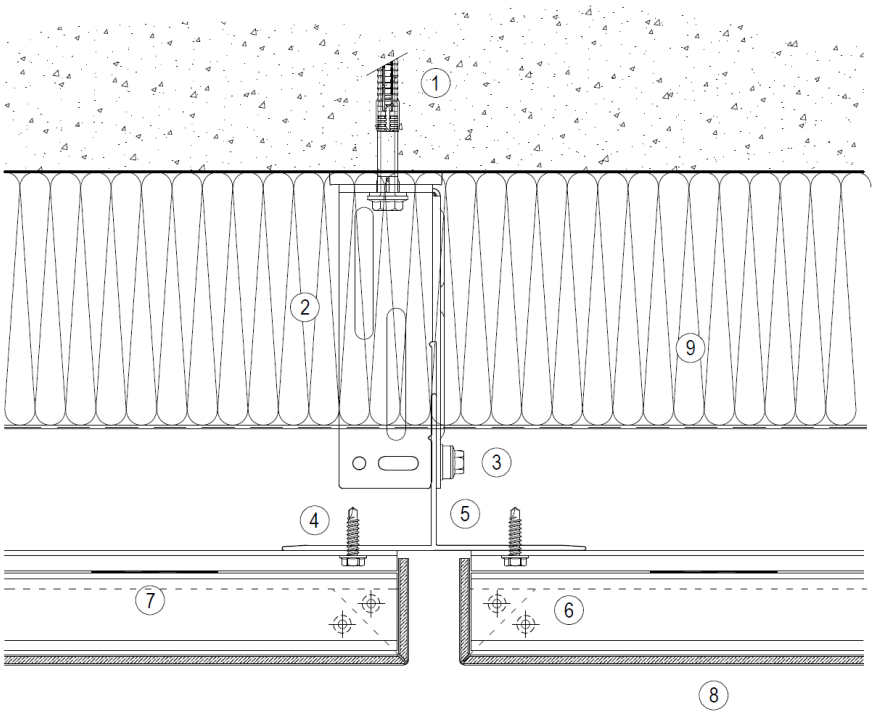
1. Anchoring element (e.g. SDF, BA, USF, JC2,...)
2. CF Wallbracket K1 - L
3. JT6-2/5-5,0 x 30 - VARIO
4. JT4-6-5,5 x 19
5. JT4-LT-2/6,0 x 25 RAL laquered
6. CF Vertical profile
7. CF Hanging element
8. Aluminium Composite Panel
9. Thermal insulation

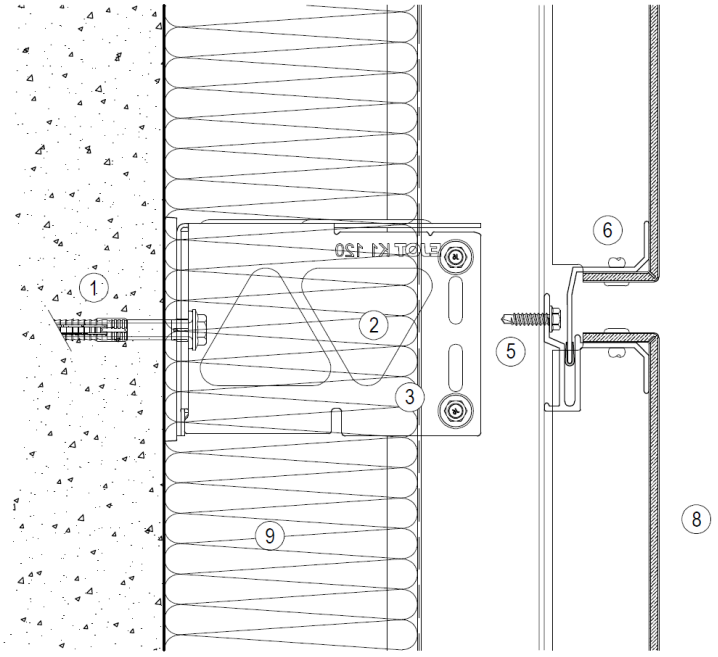
Figure 4.3: CF-U 108



1. Anchoring element (e.g. SDF, BA, USF, JC2,...)
2. CF Wallbracket K1 - L
3. JT6-2/5-5,0 x 30 - VARIO
4. CF L Horizontal profile
5. CF O/Z Vertical profile
6. JT4-6-5,5 x 19
7. Structural Bonding System
8. Façade Cladding Plate
9. Thermal insulation

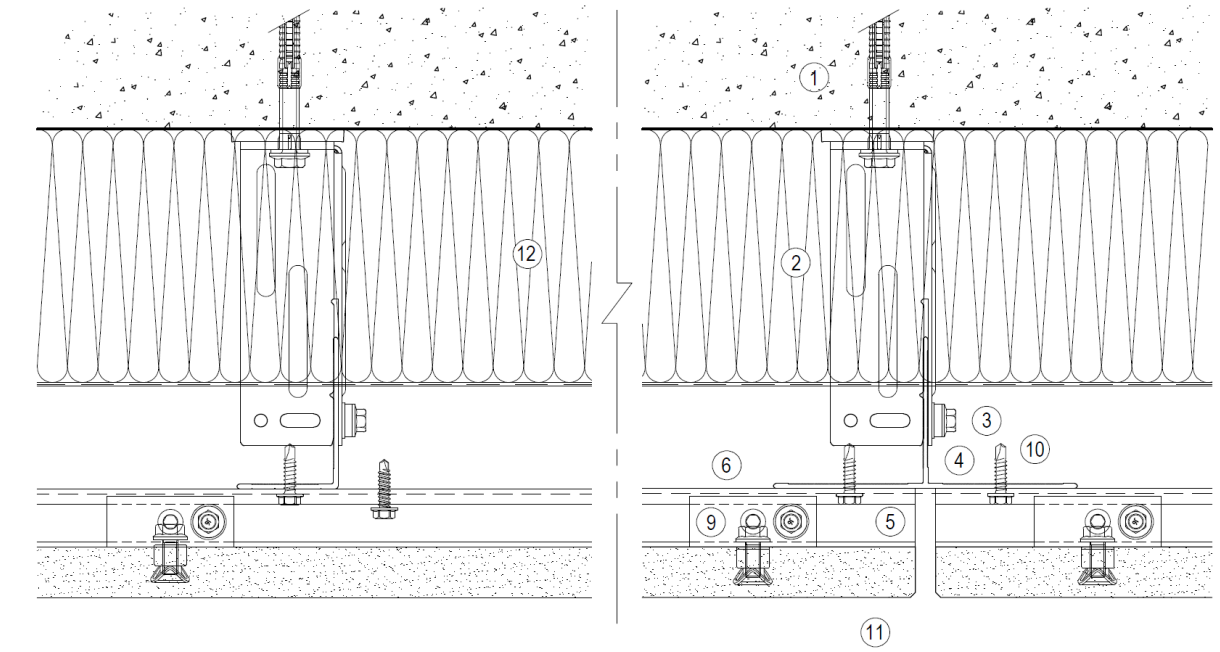
Figure 4.4: CF-U 400

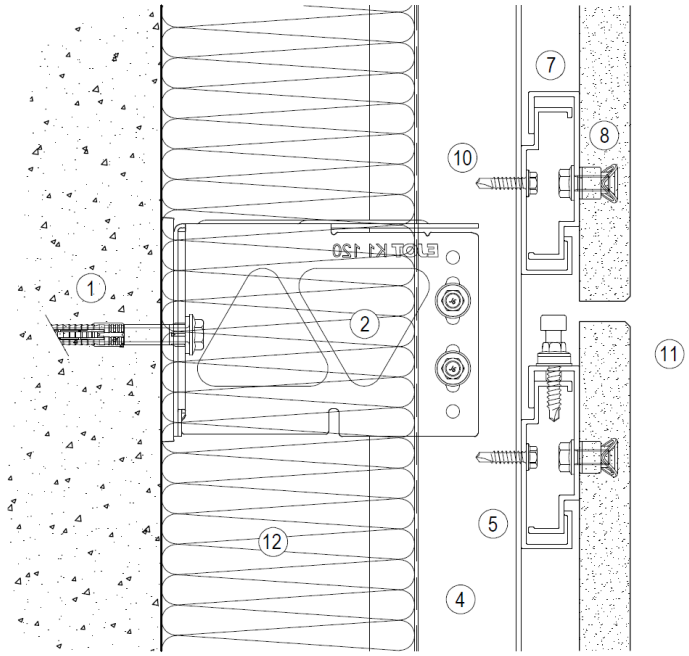




1.Anchoring element (e.g. SDF, BA, USF, JC2,...)
2. CF Wallbracket K1 - L
3. JT6-2/5-5,0 x 30 - VARIO
4. JT4-6-5,5 x 19
5. CF T-L Vertical profile
6. CF Aluminium Hanging Profiles set
7. CF Gasket
8. Aluminium Composite Panel
9. Thermal insulation

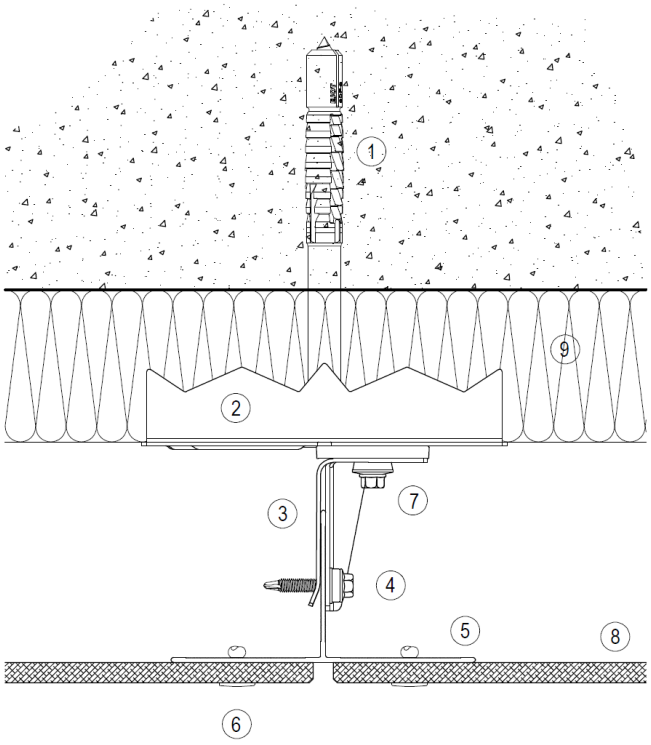
Figure 4.5: CF-U 104

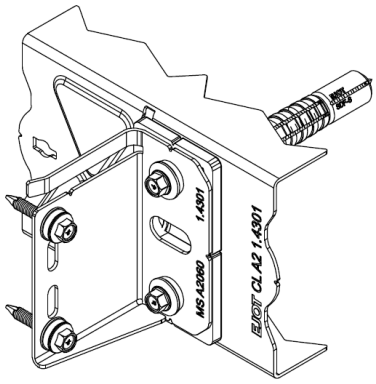


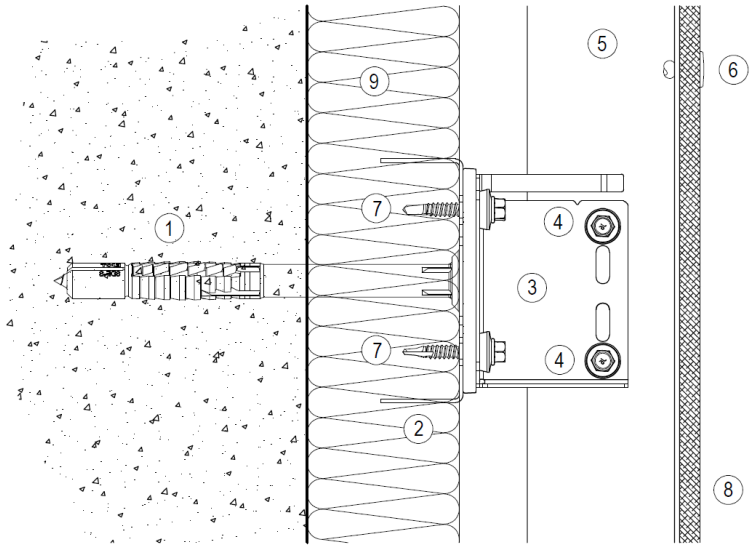


1. Anchoring element (e.g. SDF, BA, USF, JC2,...)
2. CF Wallbracket K1 - L
3. JT6-2/5-5,0 x 30 - VARIO
4. CF L/T Vertical profile
5. CF C Profile - Fixing rail
6. CF C-A Top adjustable clip
7. CF C-A Bottom clip
8. EU-I-13 x L A4 Undercut Anchor
9. M6x20 A2 Adjustment screw
10. JT4-6-5,5 x 22
11. Façade Cladding Plate
12. Thermal insulation

Figure 4.6: CF-U 503

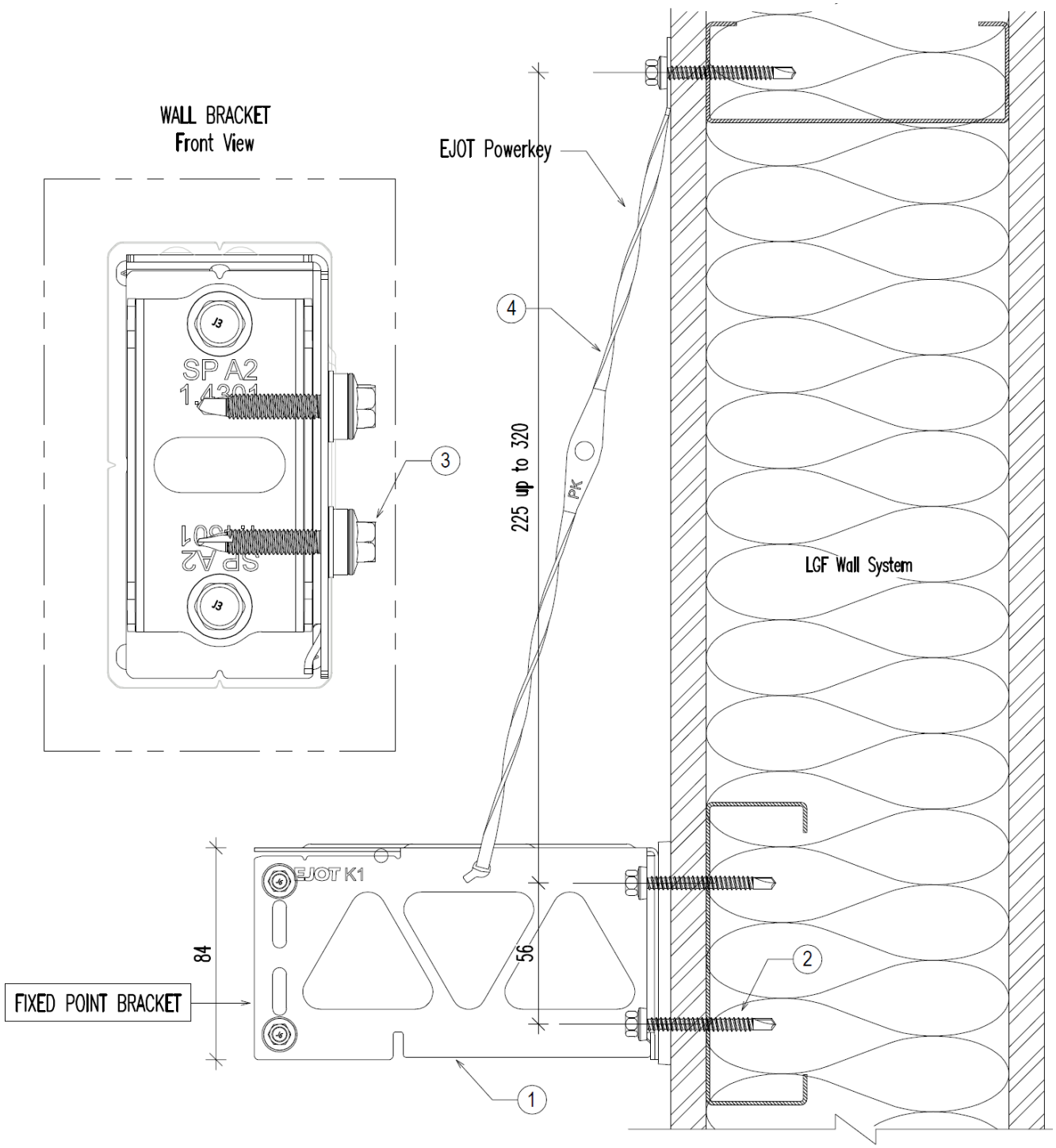






1. SDF-S-14A x L - V façade anchor
2. CF Claw A2
3. CF Wallbracket MS40 MS60 K1 80-200
4. JT6-2/5-5,0 x 30 - VARIO
5. CF T - Aluminium Profile 120 (100)/60/2.0 mm CF L - Aluminium Profile 40/60/2.0 mm
6. Cladding Fastening System
7. EJOT JT3 - Screw
8. Façade Cladding Plate
9. Hard Insulation Layer (Check compressive strenght for System)

Figure 4.7: CROSSFIX Claw anchoring example on ETICS



CROSSFIX SYSTEM ELEMENTS

Nr	Description
1	CF Wall bracket K1 - L
2	JT3-3-5,5XL E16
3	JT6-2/5-5,0X30 - VARIO
4	EJOT Powerkey

Figure 4.8: Anchoring example on metal substrate

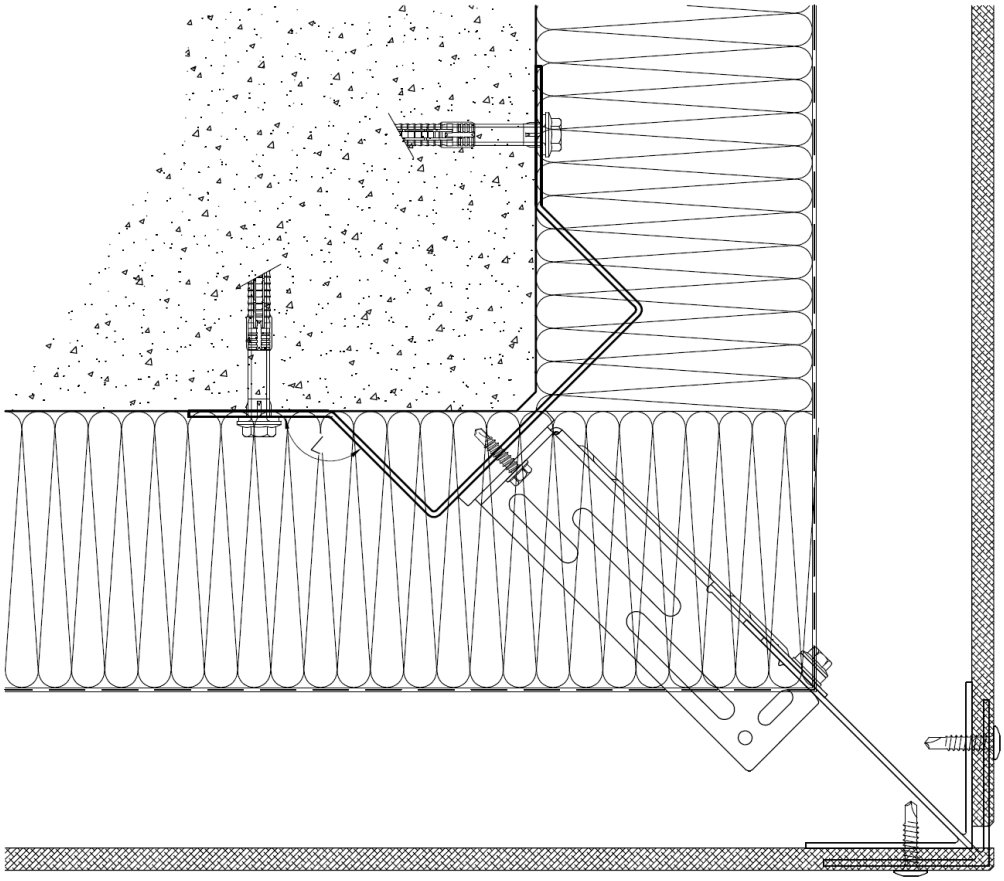


Figure 4.9: Example for corner support (Corner bracket)

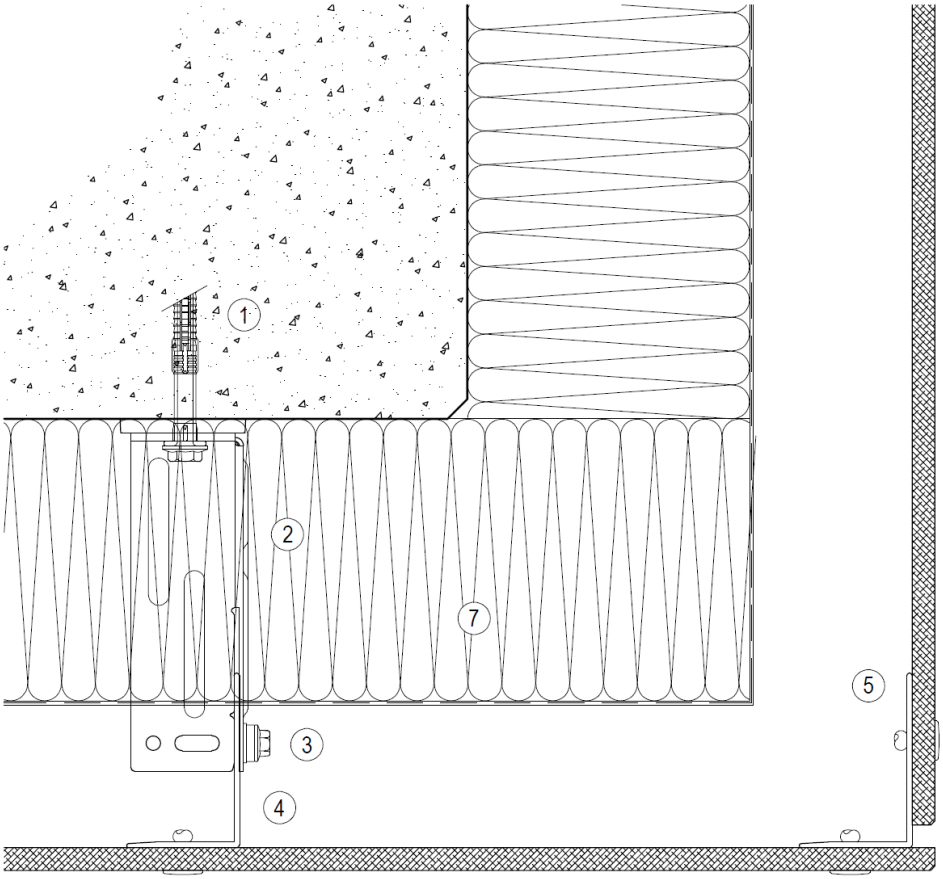


Figure 4.10: Example for corner support (Corner joint)

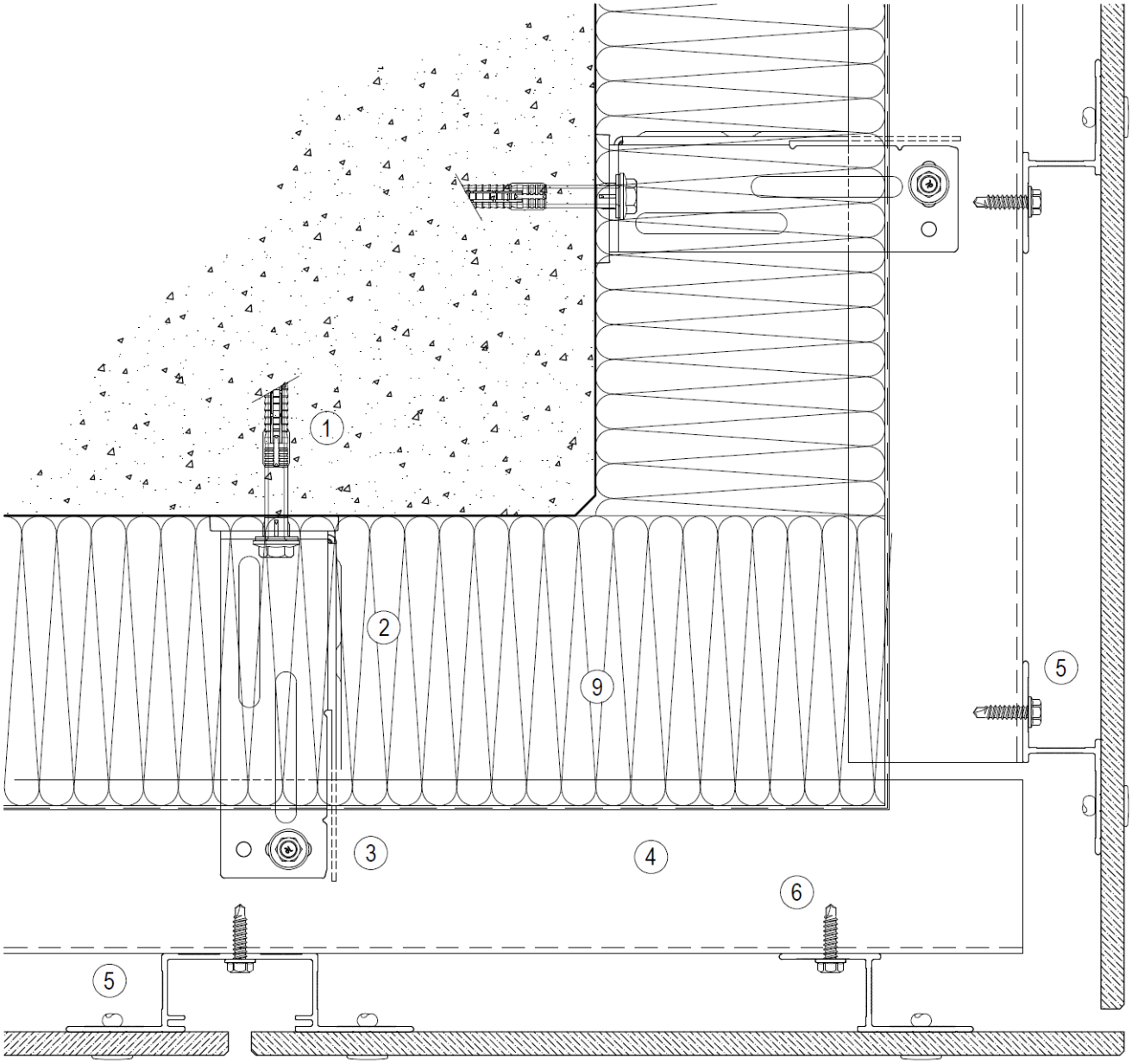


Figure 4.11: Example for corner support (Two-layer installation)

Design

The design of the CROSSFIX subframe system, its anchorage, subframe and skin element fixings should consider:

- The verification of the designed system by means of calculation, considering the mechanical characteristic values of the kit components to resist the actions (dead loads, wind loads, etc.) applying on the specific components. National safety factors and other national provisions must be followed.
- The actions according to the EN 1991 (EC1) series of standards and the respective national annexes must be considered.
- The ultimate limit state and serviceability limit state shall be verified in accordance with EN 1990 using the resistance values from this approval.
- The selection and verification of the anchors between the brackets and the external walls (substrate), taking into account the substrate material and the minimum resistance required (pull-out and shear resistance) according to the envisaged actions obtained from the mechanical calculation of the designed system.
- The anchorage is verified according to the specifications of the ETA or national approval of the respective anchorage element. The anchor positions, depending on the substrate are shown in annex 10.
- Power keys are an optional component and used on fixed point brackets to increase resistance.
- Alternative skin element fixings are possible, therefore consider the element manufacturers approval and installation instructions.
- Multi-layer substructures (vertical / horizontal or horizontal / vertical) can be calculated in accordance with EN 1999-1-1.
- The system must allow for expansion and contractions movements, using fixed and sliding points according to annex 11.
- The system examples shown are on annex 13 to 23 are possible solutions, but the system is not limited to the examples given.

Storage and handling

- All system elements should be handled with care, and in such way that handling does not cause any damage to the element that could, in term, have a negative influence on element’s chemical and/or physical properties, or to an entire system it will be used in.
- All aluminum elements (i.e., profiles) should be stored in a way that prevents a direct atmospheric and/or corrosive influence and/or direct contact with other organic or inorganic material that may harm the profile.
- It is suggested that all aluminum profiles, pre installation, be protected from natural occurring oxidation and/or corrosion by applying electrolytic passivation process of anodization or powder coating its surface area.

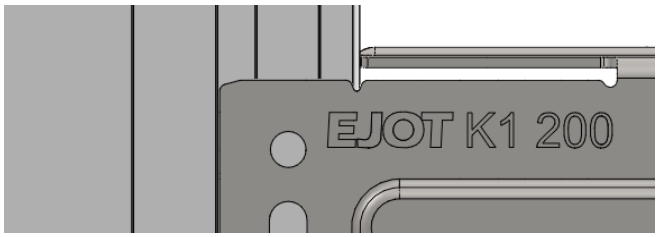
Installation and Maintenance

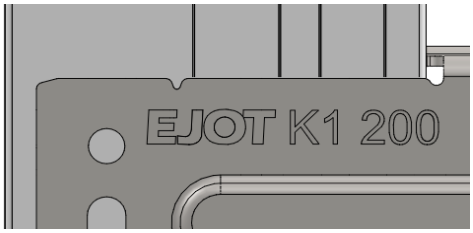
Installation of the subframe system should be carried out:

- According to the specifications of the manufacturer and using the components specified in this ETA.
- In accordance with the design and drawings prepared for the specific works. The manufacturer should ensure that the information on these provisions is given to those concerned.
- By appropriately qualified staff and under the supervision of the technical responsible of the specific works.
- If the façade panel will be mechanically fixed, EJOT recommends aluminum profiles with decorative protection layer to be installed (anodization of powder coating).

Profile insertion depth marking on the bracket

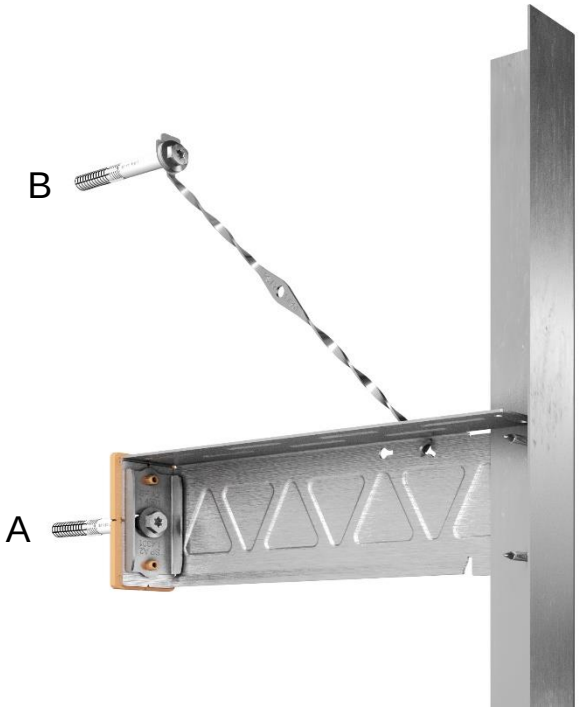
The minimal and maximal profile insertion is marked on the brackets and ensures correct edge distance of the subframe fixing to the profile.





Tolerance compensation with the Powerkey

In case of small inaccuracies of the anchor distance (A and B) the Powerkey can be twisted up to two revelations to preload anchor B.



Maintenance

Maintenance of the subframe system includes inspections on site, considering the following aspects:

- the appearance of any permanent irreversible deformation.
- the presence of corrosion or presence of water accumulation.

When necessary, any repair to localized damaged areas must be carried out with the same components and following the repair instructions given by the manufacturer.