Deutsches Institut für Bautechnik

Approval body for construction products and types of construction

Bautechnisches Prüfamt

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European Technical Assessment

ETA-20/0798 of 2 August 2021

English translation prepared by DIBt - Original version in German language

General Part

Technical Assessment Body issuing the European Technical Assessment:	Deutsches Institut für Bautechnik
Trade name of the construction product	Universal mounting bracket "UMP-ALU-TR"
Product family to which the construction product belongs	Universal mounting bracket "UMP-ALU-TR" for the low thermal bridging fixation of attachment parts in external thermal insulation composite systems (ETICS) and other facade systems
Manufacturer	Dosteba GmbH Julius-Kemmler-Straße 45 72770 Reutlingen DEUTSCHLAND
Manufacturing plant	Plant 1
This European Technical Assessment contains	13 pages including 8 annexes which form an integral part of this assessment
This European Technical Assessment is issued in accordance with Regulation (EU) No 305/2011, on the basis of	EAD 040868-00-0404

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Specific Part

1 Technical description of the product

The universal mounting bracket "UMP-ALU-TR" correspond to product family a) of EAD 040868-00-0404[1]. The universal mounting brackets consist of

- a sheet steel insert,
- a pressure distribution plate made of HPL,
- an aluminium extrusion profile for fixation of the attachment parts,
- four polyamide tension bars for the force transmission,
- owo inner and two outer steel brackets with four retaining washer
- four polyamide injection feets for mounting on the outer wall.

The components are joined at the factory and foamed to an one-sided stepped body element using black rigid polyurethane foam. The universal mounting bracket have a height of 238 mm with a 138 mm long. The thickness (contilever) of 80 mm to 300 mm, in increments of 20 mm.

Detailed information and data for all the components are provided in the annexes to this ETA and in the associated test reports and control plan.

The components and the system setup of the product are provided in Annex A 1.

2 Specification of the intended use in accordance with the applicable European Assessment Document

The universal mounting bracket "UMP-ALU-TR" is intended for use as a low thermal bridging fixation of primarily static loads from attachment parts such as such as awnings, canopies, stairways, railings, window blinds and sun protection elements on external walls with external thermal insulation composite systems (ETICS) or other facade systems.

The universal mounting bracket is fixed with their entire surface to the level, solid, load-bearing external wall (substrate) using four anchor elements.

The performances given in Section 3 are only valid if the universal mounting bracket is used in compliance with the specifications and conditions given in Annex B.

The verifications and assessment methods on which this ETA is based lead to the assumption of a working life of the universal mounting brackets of at least 25 years. 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 products in relation to the expected economically reasonable working life of the works.

[1] EAD 0040868-00-0404, edition June 2019 - RIGID POLYURETHANE FOAM (PUR) ELEMENTS FOR FASTENING ATTACHMENT PARTS IN EXTERNAL THERMAL INSULATION COMPOSITE SYSTEMS

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

3.1 Safety in case of fire (BWR 2)

Essential characteristic	Performance
Reaction to fire	E in accordance with DIN EN 13501

3.2 Safety and accessibility in use (BWR 4)

Essential characteristic		Performance
Swelling in thickness after immersion in water		Length/width/thickness [%] 0.17 / 0.16 / 0.14
Apparent density of PU foam		0.35 g/cm³ with EN 1602
Mechanical resistance	Tensile strength	See Annex C 2 – C 3
	Compressive strength	See Annex C 2 – C 3
	Shear strength	See Annex C 2 – C 3
	Lateral tensile strength	No performance assessed
	Flexural strength	No performance assessed
	Pull-through resistance of anchor elements	No performance assessed
	Embedment strength (local bearing strength) of the anchorage area	No performance assessed
Influencing factors		See Annex C 1

3.3 Energy economy and heat retention (BWR 6)

Essential characteristic	Performance
Thermal conductivity	$\lambda < 0.0651$ W/(mK)[1] with EN 12677
Thermal resistance	No performance assessed
Thermal transmittance	No performance assessed
[1] As a measured value which was not exceeded.	

4 Assessment and verification of constancy of performance system applied, with reference to its legal basis

In accordance with European Assessment Document (EAD) no. 040868-00-0404, the following legal basis shall apply: 2003/640/EC.

The following system for the assessment and verification of constancy of performance (AVCP) shall be used for the universal mounting brackets: 2+ for all intended uses except for uses subject to reaction-to-fire requirements.

For intended uses subject to reaction-to-fire requirements, AVCP system 1, 3 or 4 shall be used for the reaction to fire, depending on the boundary conditions listed in the above-mentioned Decision.

5 Technical details necessary for the implementation of the AVCP system as provided for in the applicable EAD

The technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited with DIBt.

Issued in Berlin on 2 August 2021 by Deutsches Institut für Bautechnik

Renée Kamanzi-Fechner
Head of Section

beglaubigt:
Beckmann

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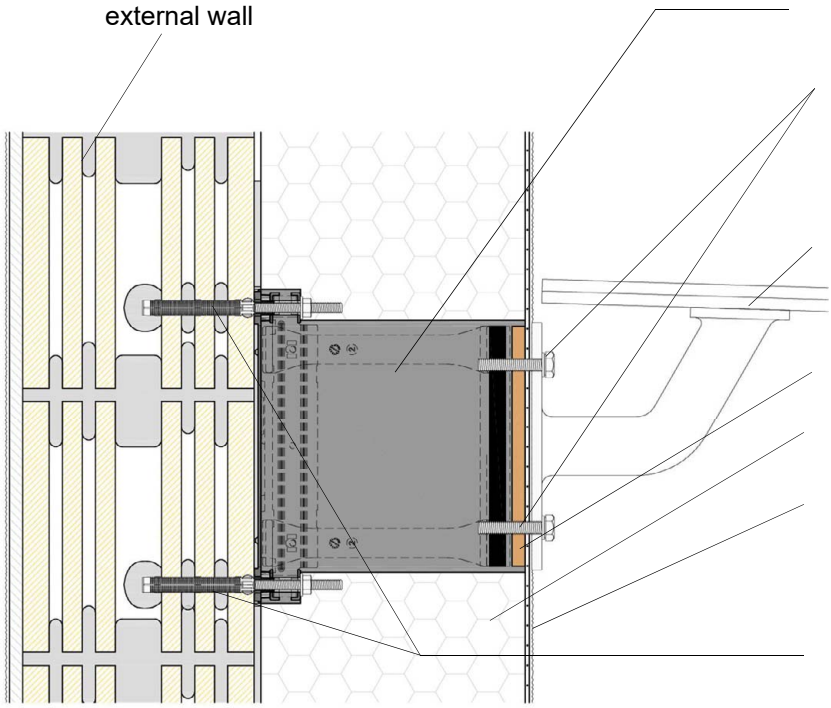
universal mounting bracket UMP-ALU-TR

bracket vertically installed

bracket horizontally installed

Installation situation using the example of a canopy:



Universal mounting bracket

Fastening of attachment part to pressure distributing plate using 4 screws M10 in accordance with Annex B1

Attachment part

pressure distribution plate made of HPL

e.g. ETICS

e.g. render system of ETICS

Anchoring of universal mounting bracket in external wall using 4 anchors ∅ 8 mm in accordance with Annex B1

Universal mounting bracket "UMP-ALU-TR"	Annex A 1
Product description Product and installed condition of UMP-ALU-TR	

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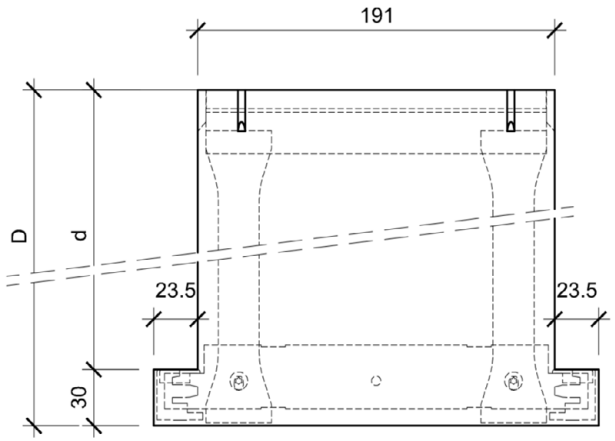
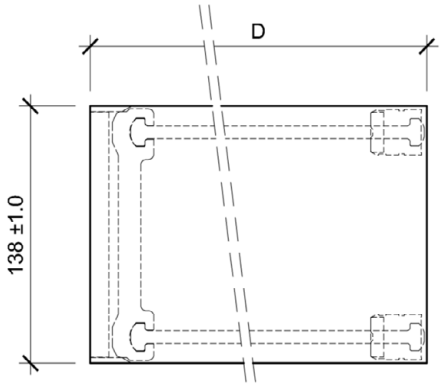
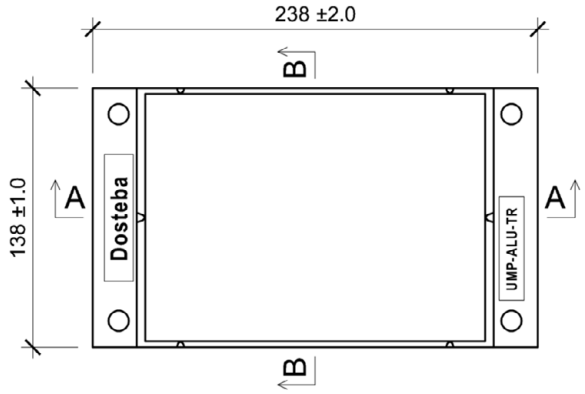
View A-A



View B-B



Top view



For measurements without specified tolerances, tolerance class "c (coarse)" applies in accordance with ISO 2768

Description	D (mm)	Weight (g)		
		-3%	Nominal value	+ 3%
UMP-ALU-TR 80	80	2566	2645	2725
UMP-ALU-TR 100	100	2759	2845	2930
UMP-ALU-TR 120	120	2953	3045	3136
UMP-ALU-TR 140	140	3148	3245	3342
UMP-ALU-TR 160	160	3342	3445	3549
UMP-ALU-TR 180	180	3536	3646	3755
UMP-ALU-TR 200	200	3731	3846	3961
UMP-ALU-TR 220	220	3925	4046	4168
UMP-ALU-TR 240	240	4119	4246	4374
UMP-ALU-TR 260	260	4313	4447	4580
UMP-ALU-TR 280	280	4508	4647	4786
UMP-ALU-TR 300	300	4702	4847	4993

Details in control plan

Universal mounting bracket "UMP-ALU-TR"

Product description
Outside dimensions and weight of UMP-ALU-TR

Annex A 2

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Field of application

Product family a) heavy-load elements in accordance with EAD 090868-00-0404, June 2019

Loading of the Universal mounting brackets

Static and quasi-static loads (primarily static loads) from attachment parts

structural analysis

The verification of the universal mounting bracket as well as the anchoring and fastening shall take into account all loads which occur. For each application case, a structural analysis shall be carried out for the ultimate limit state (ULS) and for the serviceability limit state (SLS). Relevant national regulations shall be observed.

For table C1 in Annex C 1:

The following loading durations shall be used:

- Self-weight (attachment parts, may also have to be considered here): permanent
- Imposed loads (traffic loads):

  The actions of Clauses 6.3.1, 6.3.4 and 6.4 of EN 1991-1-1:2010-12 shall be considered as imposed loads. The actions listed in Clauses 6.3.2 and 6.3.3 of the standard shall be excluded.

  Unless other values exist, the following loading durations shall be assumed:
  - Loads in accordance with Clause 6.3.1: 25 % permanent; 75 % short
  - Loads in accordance with Clause 6.3.4: short
  - Loads in accordance with Clauses 6.4 (1) and 6.4 (2): medium
  - Loads in accordance with Clauses 6.4 (NA.3) * to 6.4 (NA.6): permanent
- Wind loads: very short
- Snow loads: medium
- Extraordinary snow loads: short

The actions E_k shall be increased through multiplication by the influencing factors depending on the load scenario.

* acc. DIN EN 1991-1/NA:2010-12

Installation

The universal mounting bracket are fixed with their entire surface to the level, solid, load-bearing external wall (substrate) using four anchor elements.The anchor elements shall be inserted so they are perpendicular to the surface of the building. Where applicable, the adhesive mortar of the ETICS used shall be placed between the universal mounting bracket and the external wall over the entire mounting area.For anchoring the universal mounting brackets in the external wall, the loading point shall be 30 mm from the rear edge of the universal mounting bracket, only fit-for-use anchor elements with the following properties shall be used:

- strength class of at least 8.8 in accordance with EN ISO 898-1
- four anchor elements with a diameter of 8 mm

The load-bearing capacity of the anchoring elements in the substrate must be verified for each individual case.

The attachment parts are always fastened to the universal mounting bracket on the mounting area (fastening area of attachment part) using an M10 screw. The screw is connected to the pressure distribution plate and the aluminium extrusion profile.

Universal mounting bracket "UMP-ALU-TR"	Annex B 1
Intended use Technical data - application and installation	

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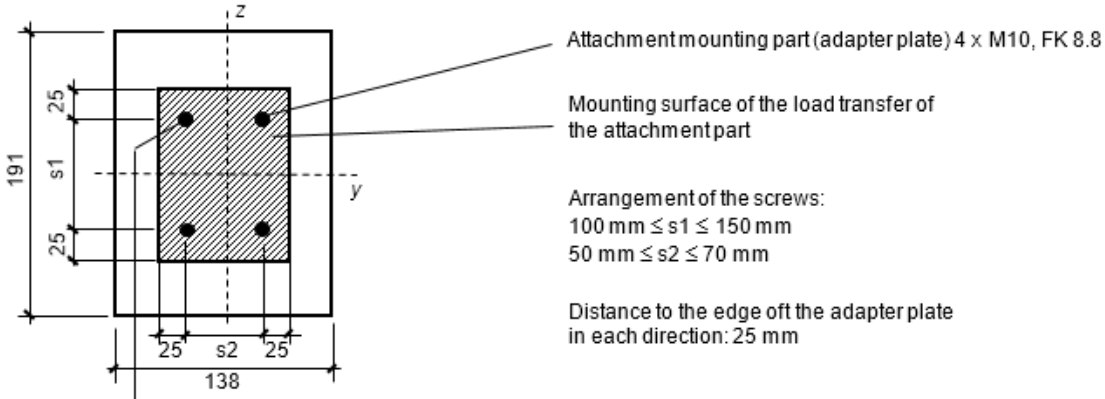
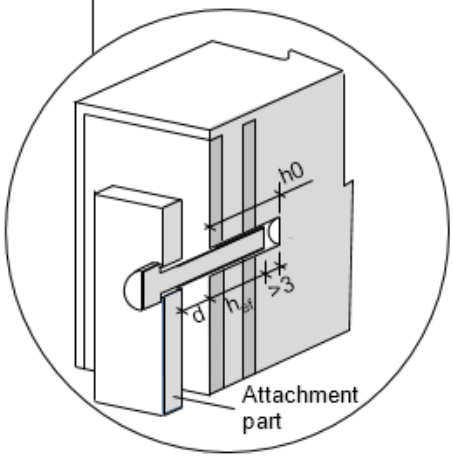
A blind hole connection with an embedment depth of at least 32 mm from the top edge of the pressure distribution plate is provided for this purpose. To fasten the attachment part to the universal mounting plate, an M10 screws with a minimum strength class of 8.8 in accordance with EN ISO 898-1 shall be used.
The screws shall not be loosened. The attachment parts are mounted directly on the pressure distribution plate or can be attached to the universal mounting plate with a distance of maximum 20 mm between the attachment part and the pressure distribution plate. The specifications given in Annex B 2 regarding the fixation of the attachment parts shall be adhered to. Impact drivers shall not be used.

The following shall be observed when fastening the attachment parts:
- The attachment part shall be fastened at the pressure distribution plate according below pictured.
- Four M10 screws in accordance with Annex B 1 shall be used for fastening.
- The installation depth from the upper edge of the pressure distribution plate shall be at least 32 mm.
- The blind hole shall be positioned perpendicular to the pressure distribution plate and can be created on-site or at the factory.
- The screw shall not be loosened.

Fastening of attachment part



View: pressure distribution



Blind hole:
Drill hole: ∅ 8.5 mm
Drill hole depth h0: min. 35 mm
Screw: M10, FK 8.8
Setting depth h_{ef}: min. 32 mm
Internal thread M10 on whole borehole
Distance d to attachment part: ≤ 20 mm

The verification of serviceability for non-load-bearing layer (plaster etc.) is not part of this approval

Universal mounting bracket "UMP-ALU-TR"	Annex B 2
Intended use Technical data - application and installation	

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Tab. C1: Influencing factors of duration of action

Duration of load action	A_1^f	A_1^E
very short	1.00	
short up to one week	1.35	
medium up to three months	1.45	
long to permanent	1.65	

Tab. C2: Influencing factors for media, temperature and cyclic loading

	ULS Breakage	SLS Deflection
Influencing factor for media effects A_2	1.30	1.10
Influencing factor for temperature effects A_3 for F_x (tension), F_y and M		
- in summer, 80 °C	1.20	1.10
- in winter, -20 °C	1.20	1.20
Influencing factor for temperature effects A_3 for $-F_x$ (pressure)		
- in summer, 80 °C	2.10	1.20
- in winter, -20 °C	1.20	1.20
Influencing factor for cyclic loading A_4	1.10	1.20

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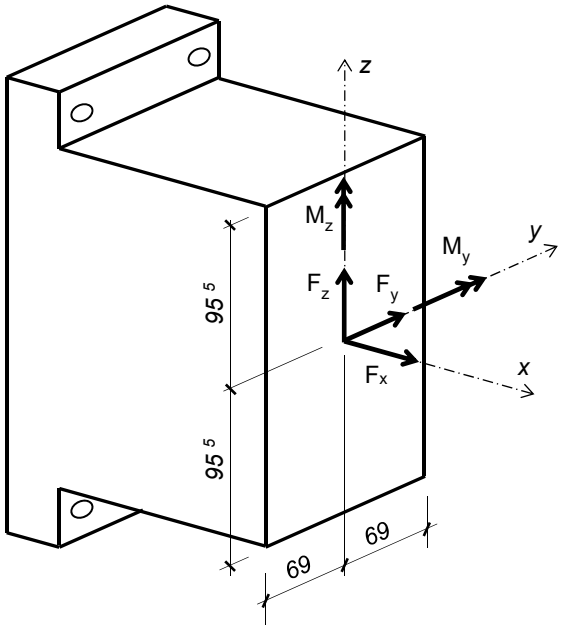
Fig. C1: Stress resultants for structural resistances Fx, Fy, Fz, Mz and My at the pressure distribution plate of the universal mounting bracket



Universal mounting bracket "UMP-ALU-TR"	Annex C 2
Performance stress resultant directions (structural resistances)	

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Tab. C4: Characteristic structural resistances R_k for the ultimate limit state (ULS) of the UMP-ALU-TR without distance fixing

Characteristic structural resistances R_k in [kN] without distance fixing						
UMP-ALU-TR	$F_{x,R,k}$ [kN] Tension	$F_{x,R,k}$ [kN] Pressure	$F_{y,R,k}$ [kN]	$F_{z,R,k}$ [kN]	$M_{z,R,k}$ [kNm]	$M_{y,R.k}$ [kNm]
80	78	342 [1)]	29.8	43.5	4.64	6.48
100			28.0	41.6	4.54	6.43
120			26.2	39.6	4.44	6.38
140			24.4	37.7	4.34	6.33
160			22.6	35.8	4.24	6.28
180			20.8	33.9	4.14	6.23
200			19.1	31.9	4.04	6.18
220			17.8	29.3	3.97	5.95
240			16.5	26.7	3.91	5.72
260			15.3	24.2	3.84	5.50
280			14.0	21.6	3.78	5.27
300			12.7	19.0	3.71	5.04

Tab. C5: Characteristic structural resistances R_k for the ultimate limit state (ULS) of the UMP-ALU-TR with distance fixing

Characteristic structural resistances R_k in [kN] with distance fixing						
UMP-ALU-TR	$F_{x,R,k}$ [kN] Tension	$F_{x,R,k}$ [kN] Pressure	$F_{y,R,k}$ [kN]	$F_{z,R,k}$ [kN]	$M_{z,R,k}$ [kNm]	$M_{y,R.k}$ [kNm]
80	78	342 [1)]	27.7	44.5	4.70	5.98
100			26.0	41.9	4.58	5.92
120			24.2	39.2	4.45	5.85
140			22.5	36.6	4.33	5.79
160			20.8	33.9	4.20	5.72
180			19.0	31.3	4.08	5.66
200			17.3	28.6	3.95	5.59
220			16.4	26.5	3.90	5.51
240			15.5	24.5	3.85	5.43
260			14.7	22.4	3.79	5.35
280			13.8	20.4	3.74	5.27
300			12.9	18.3	3.69	5.19

[1)] Compressive load only for the mounting surface 190 x 120 mm

Universal mounting bracket "UMP-ALU-TR"	Annex C 3
Performance Characteristic structural resistance R_k for the ultimate limit state of UMP-ALU-TR	

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Tab. C6: Characteristic structural resistances C_k for the serviceability limit state (SLS) of the UMP-ALU-TR without distance fixing

Characteristic structural resistances C_k in [kN] without distance fixing						
UMP-ALU-TR	$F_{x,C,k}$ [kN] Tension	$F_{x,C,k}$ [kN] Pressure	$F_{y,C,k}$ [kN]	$F_{z,C,k}$ [kN]	$M_{z,C,k}$ [kNm]	$M_{y,C.k}$ [kNm]
80	39	171 [1)]	13.5	19.2	2.32	3.24
100			12.8	18.7	2.27	3.21
120			12.2	18.1	2.22	3.19
140			11.5	17.6	2.17	3.17
160			10.9	17.0	2.12	3.14
180			10.2	16.5	2.07	3.12
200			9.53	15.9	2.02	3.09
220			8.90	14.6	1.99	2.98
240			8.26	13.3	1.96	2.86
260			7.63	12.1	1.92	2.75
280			6.99	10.8	1.89	2.63
300			6.36	9.49	1.86	2.52

Tab. C7: Characteristic structural resistances C_k for the serviceability limit state (SLS) of the UMP-ALU-TR with distance fixing

Characteristic structural resistances C_k in [kN] with distance fixing						
UMP-ALU-TR	$F_{x,C,k}$ [kN] Tension	$F_{x,C,k}$ [kN] Pressure	$F_{y,C,k}$ [kN]	$F_{z,C,k}$ [kN]	$M_{z,C,k}$ [kNm]	$M_{y,C.k}$ [kNm]
80	39	171 [1)]	13.9	22.3	2.35	2.99
100			13.0	21.0	2.29	2.96
120			12.1	19.6	2.23	2.93
140			11.3	18.3	2.17	2.90
160			10.4	17.0	2.10	2.86
180			9.52	15.6	2.04	2.83
200			8.64	14.3	1.98	2.80
220			8.20	13.3	1.95	2.76
240			7.77	12.2	1.93	2.72
260			7.33	11.2	1.90	2.68
280			6.90	10.2	1.88	2.64
300			6.46	9.15	1.85	2.60

[1)] Compressive load only for the mounting surface 190 x 120 mm

Universal mounting bracket "UMP-ALU-TR"	Annex C 4
Performance Characteristic structural resistance C_k for the serviceability limit state of UMP-ALU-TR	