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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-21/0146 of 2021/03/24

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:	HAZ PA2 Façade Anchor
Product family to which the above construction product belongs:	Façade Anchor
Manufacturer:	HAZ Metal Deutschland GmbH Alfred-Zippe-Strasse 1 DE-97877 Wertheim Telephone: +49 9342 93590 www.haz.eu
Manufacturing plant:	HAZ Metal AS, Şehit Er Ali Çıracı Caddesi, No: 10, Akçay Sanayi Bölgesi TR-31200 İskenderun/Hatay
This European Technical Assessment contains:	16 pages including 3 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:	European Assessment Document (EAD) 333220-00-0601: Pre-installed anchor for fastening façade elements, version January 2021
This version replaces:	-

II SPECIFIC PART OF THE EUROPEAN TECHNICAL ASSESSMENT

1 Technical description of the product

Technical description of the product

The HAZ PA2 Façade Anchor consists of a lower part that is cast-in with reinforcement stirrups (see Figure 1, detail no. 2) in the substrate (detail no. 4), a tension bar (detail no. 5) that is connected through a joint with the lower part and through a screwed connection with the upper part (detail no. 1). The upper part will be connected to the anchor channel that is cast-in the substrate (detail no. 4). Spacer bolts will be set on the upper and the lower part of the substrate (detail 3). On the lower spacer bolt, a bolt restraint will be set. Figure 2 displays the detailed installation.

The pre-installed anchors embedded in concrete according to EN 206 may only be used for external wall claddings with a minimum strength class C30/37.

The façade anchor is part of a complete anchoring system (see figure 1) for fastening façade elements to the loadbearing substructure

The anchor is made from stainless steel 1. 4462 according to EN 10088-2, which is cast into the concrete façade element.
The stirrups are made of steel B500B according to EN 10088-2.

The strength properties of the components are given in section Annex A3-A6.

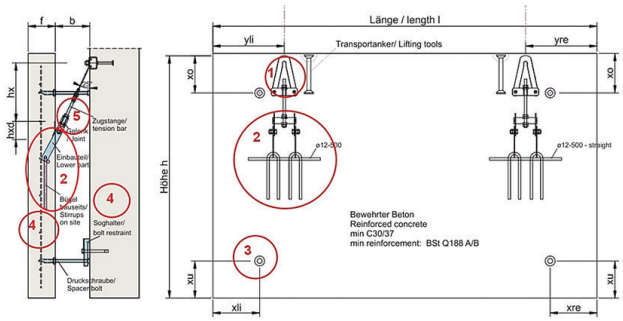


Figure 1: Illustration of the installed façade system, see annex A2 for more information.

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

The cast-in anchor is intended to be used for permanent anchorages of concrete façade panels under predominantly static actions or quasi-static actions in reinforced normal weight concrete with minimum strength class C30/37.

The cast-in anchor is intended to be anchored in uncracked concrete.

The cast-in anchor is intended to be used for transmission of tensile loads, shear loads or a combination of both.

Depending on the materials used for the cast-in anchor it shall be used in structures subjected to external atmospheric exposure or exposure in permanently damp internal conditions

The cast-in anchor is intended to be used in the temperature range of -40°C to +80°C without special assessment.

The anchor is intended to be used for anchorages which are designed according to the design method given in EN 1992-4.

The hardened concrete is at least 21 days old.

See annex 1 for illustration of the product.

The provisions made in this European Technical Assessment are based on an assumed intended working life of the anchor channels of 50 years, provided the manufacturers conditions for the packaging, transport, storage, installation, use, maintenance, and repair are met.

The indications given on the working life cannot be interpreted as a guarantee given by the producer or Assessment Body 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.

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

<table>
<tr><th>Characteristic</th><th>Assessment of characteristic</th></tr>
<tr><td colspan="2">3.1 Mechanical resistance and stability (BWR1)</td></tr>
<tr><td>Characteristic resistance to concrete failure under inclined load not influenced by edges, spacing and reinforcement</td><td>No tests are required if $F_{Rk,s} \leq F_{Rk,0}$</td></tr>
<tr><td>Characteristic resistance to concrete failure under inclined load influenced by edges, and reinforcement.</td><td>
<table>
<tr><td>Geometry</td><td>Type</td><td>A</td><td>B</td><td>C</td><td>D</td><td>E</td></tr>
<tr><td>Results</td><td>$F_{Rk,s} \leq F_{RK5\%,1}$ [kN]</td><td>19,4</td><td>25,0</td><td>35,6</td><td>52,6</td><td>85,8</td></tr>
</table>
</td></tr>
<tr><td colspan="2">3.2 Safety in case of fire (BWR2)</td></tr>
<tr><td>Reaction to fire</td><td>The anchor channels are made from steel classified as class A1 in accordance with EN 13501-1 and Commission Delegated Regulation 2016/364.</td></tr>
<tr><td colspan="2">3.3 Safety and accessibility in use (BWR 4)</td></tr>
<tr><td>Corrosion</td><td>No performance assessed</td></tr>
</table>

3.3 Methods of verification

The product is fully covered by EAD 333220-00-0601, January 2021. According to the Regulation (EU) No 305/2011.

3.4 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 HAZ Metal PA2 Façade Anchor are 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 97/161/EC of the European Commission, as amended, the system(s) of assessment and verification of constancy of performance is system 2+ (see Annex V to Regulation (EU) No 305/2011).

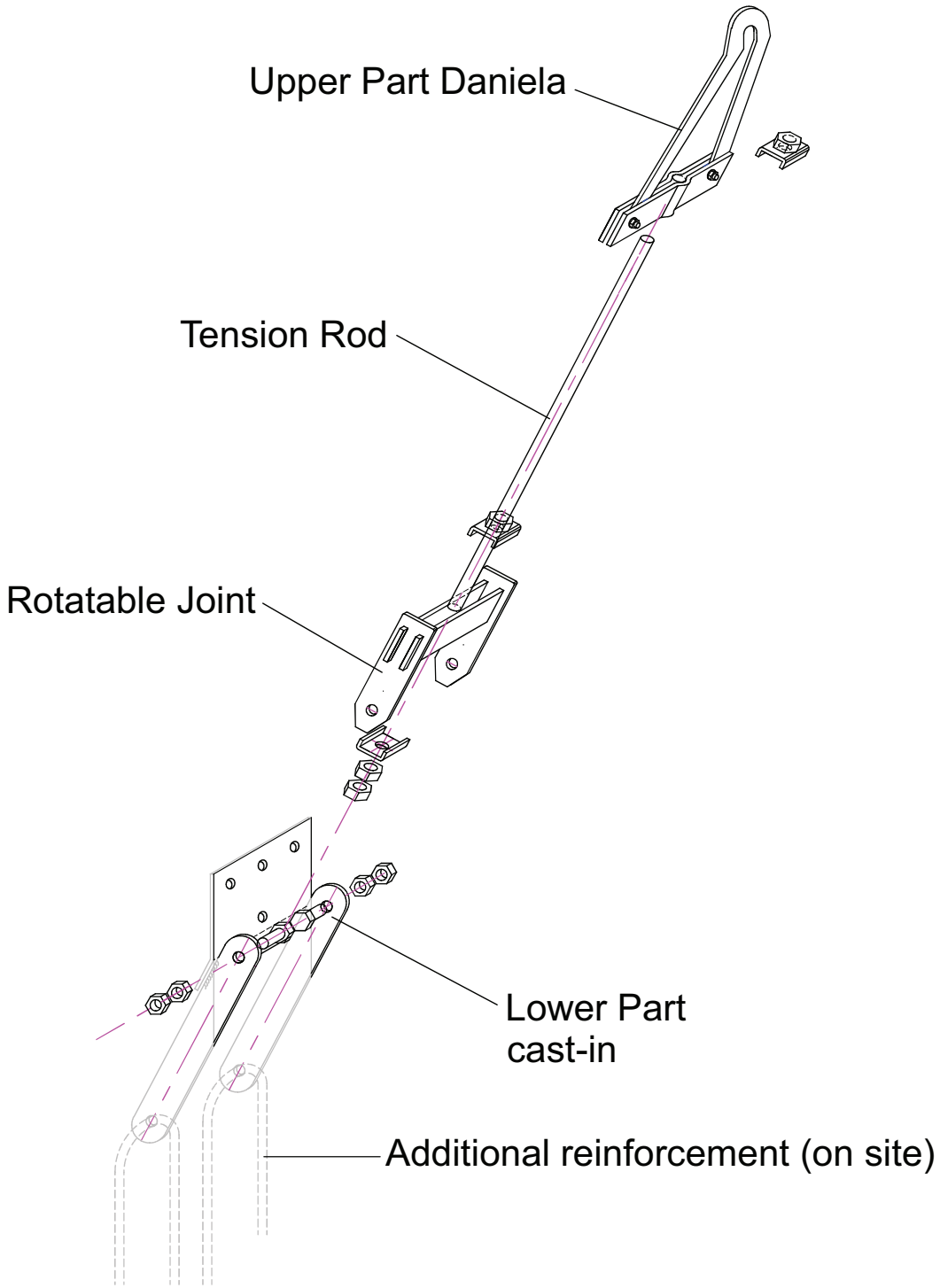
5 Technical details necessary for the implementation of the AVCP system, as provided for in the applicable EAD

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

Issued in Copenhagen on 2021-03-24 by

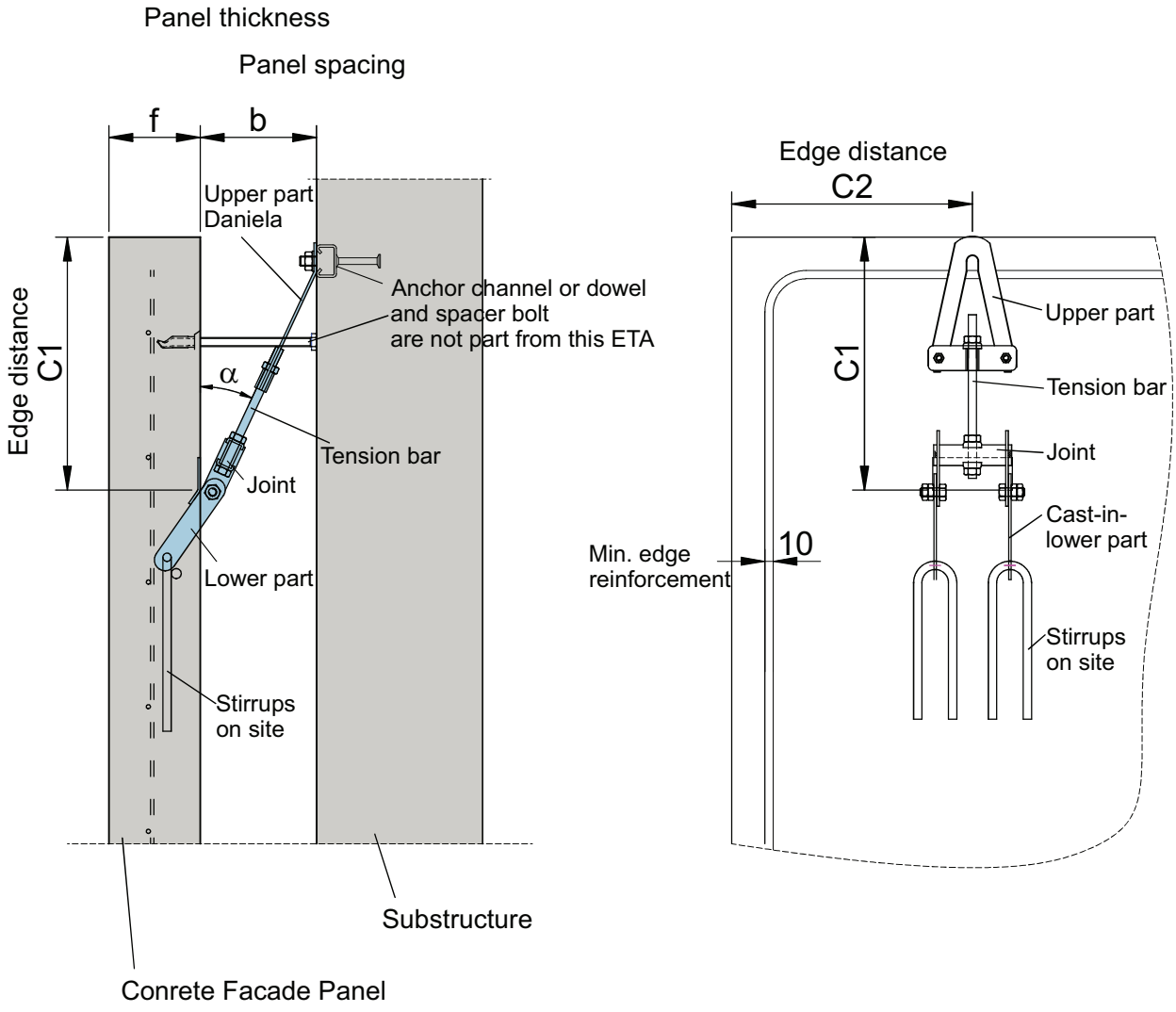
Thomas Bruun
Managing Director, ETA-Danmark

PA2- Panel Anchor



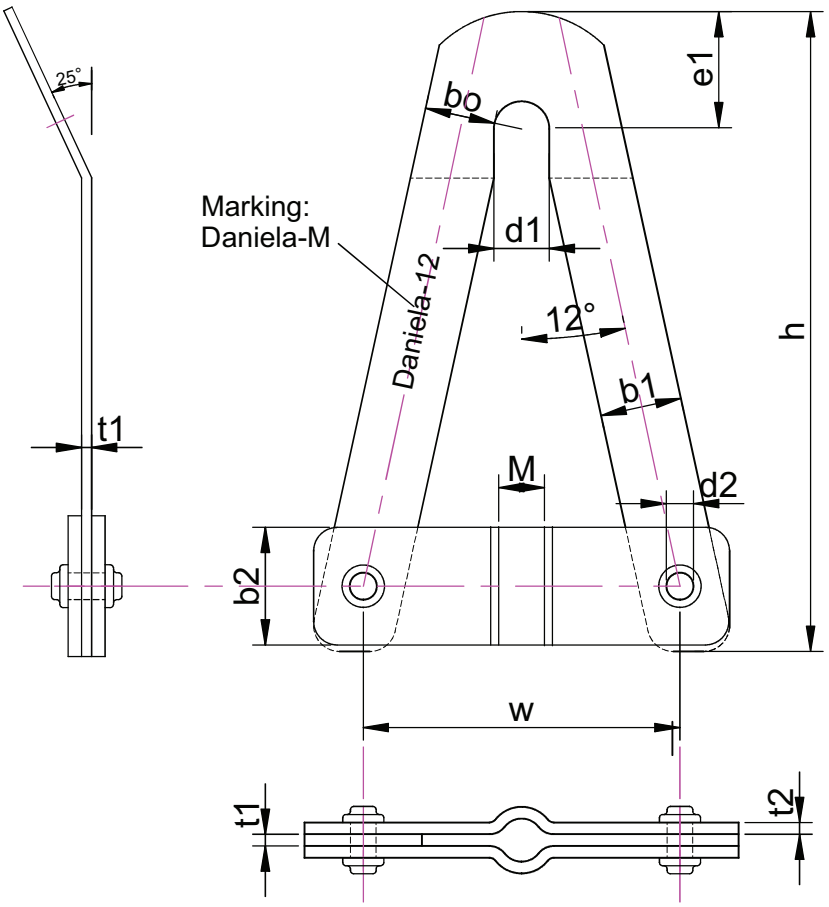
HAZ-Metal Panel Anchor PA2	Annex A1
Product Description	

PA2- Panel Anchor



HAZ-Metal Panel Anchor PA2	Annex A2
Product Description Installed Condition	

PA2- Upper part Daniela



Daniela type matching PA2-size

Type	10	12	20
Suitable for Type	A	C	D
	B		E

Material

Part	Material
Plates	1.4462
Rivet	A4-70

Dimension Upper Part Daniela (mm)

Type	10	12	20
h	162	200	259
w	81	97	118
bo	17,1	21,6	25,0
b1	21	25	36
t1	3	3	4
d1	16	17	24,2
b2	31	40	55
t2	3	4	4
d2	8	8	10
e1	30	40	45

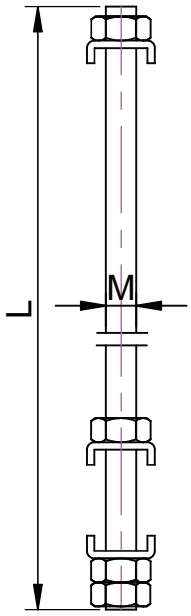
HAZ-Metal Panel Anchor PA2- Upper Part Daniela

Product Description

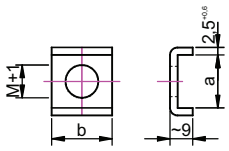
Dimension, Marking and Materials

Annex A3

PA2- Tension Rod



U-washer



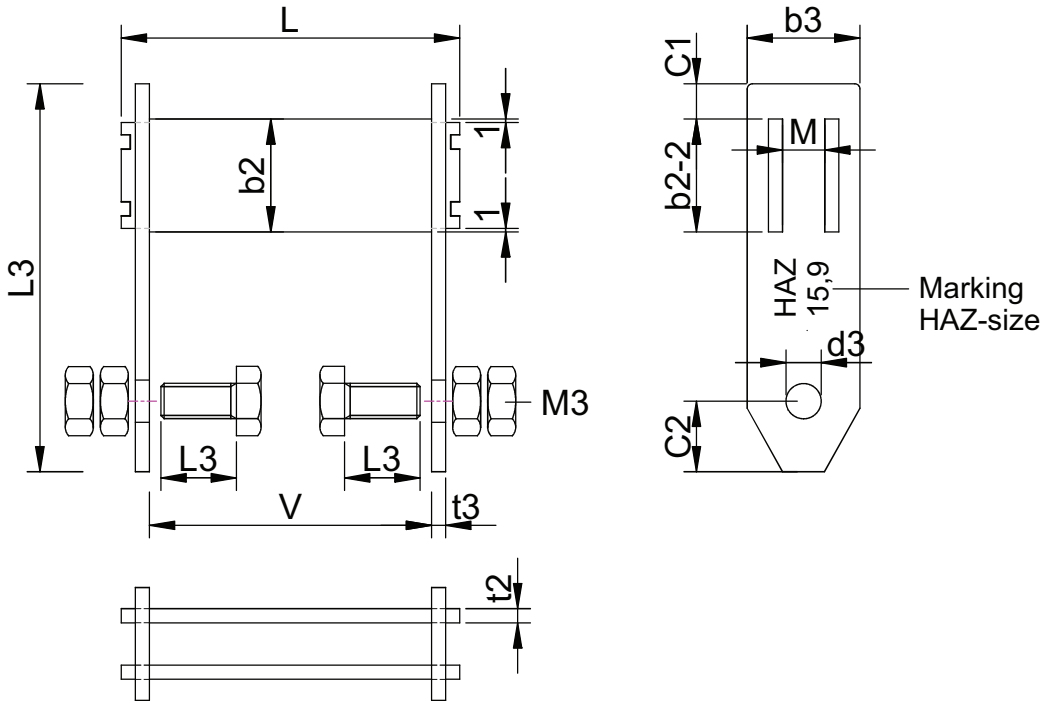
Material

Part	Material
Rod, Nut	A4-70
U-washer	1.4571; 1.4404; 1.4401

Dimension Tension Rod and U-washer (mm)

Type	A	B	C	D	E
M	10	10	12	20	20
L	Length depends on panel spacing b				
a	18,5	18,5	21,0	31,0	31,0
b	22,0	22,0	24,0	37,0	37,0

PA2- Joint



Dimension Joint and hex bolt with nut (mm)

Type	A	B	C	D	E
b2	28	28	32	42	42
t2	3	3	4	5	5
L	80	80	80	106	106
V	94	94	96	86	86
M	10	10	12	20	20
b3	26	26	32	40	40
t3	3	3	4	5	5
L3	92	92	110	166	166
C1	9	9	10	32	32
C2	20	20	24	13	13
M3	10	10	12	16	16
d3	10,5	10,5	13	17	17

Material

Part	Material
Bolt, Nut	A4-70
Plates	1.4462

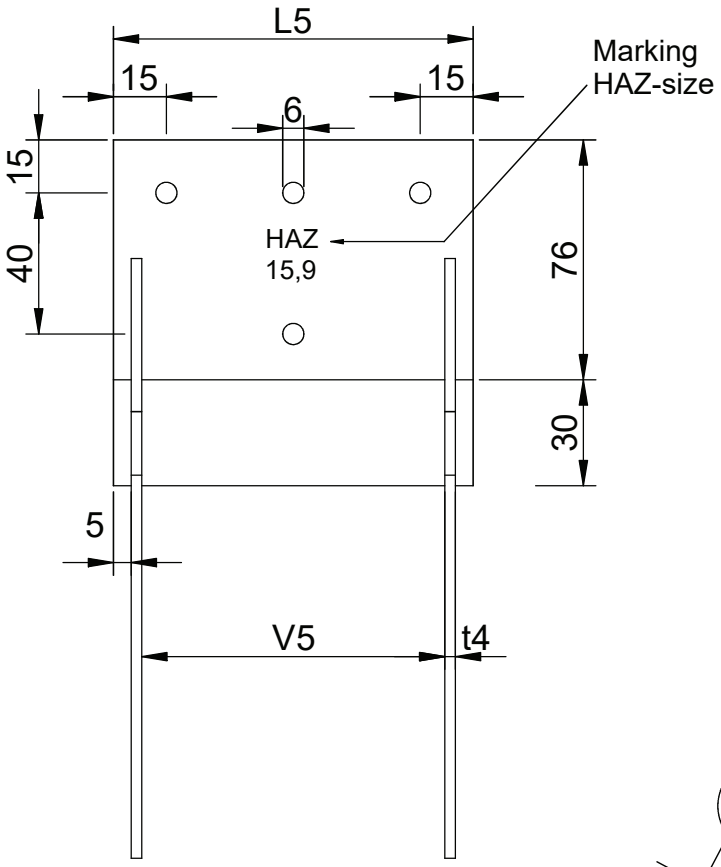
HAZ-Metal Panel Anchor PA2

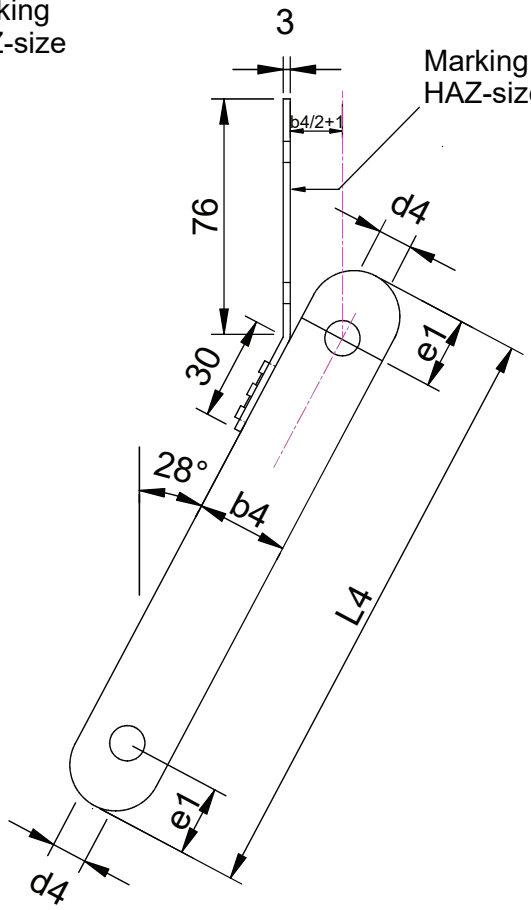
Annex A5

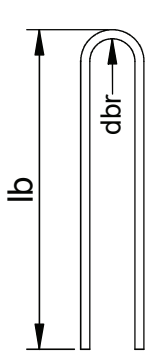
Product Description

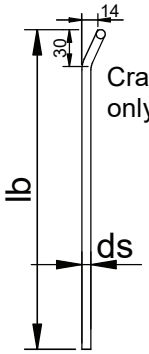
Dimension, Marking and Materials

PA2- Lower part, Stirrup









Cranked stirrup
only for type E

Material

Part	Material
Plates	1.4462
Rebars	B500B

Dimension Lower part and stirrup (mm)

Type	A	B	C	D	E
b4	26	26	32	40	40
t4	3	3	4	5	5
e1	20	20	24	32	32
d4	10,5	10,5	13	17	17
L4	170	170	182	227	227
v5	86,5	86,5	88,5	97	97
L5	102,5	102,5	107	117	117
ds	6	6	8	12	12
lb	250	250	300	350	500*
dbr	24	24	32	48	48

* = cranked, see Annex B4

HAZ-Metal Panel Anchor PA2

Product Description

Dimension, Marking and Materials

Annex A6

Intended use

B.1 Intended use

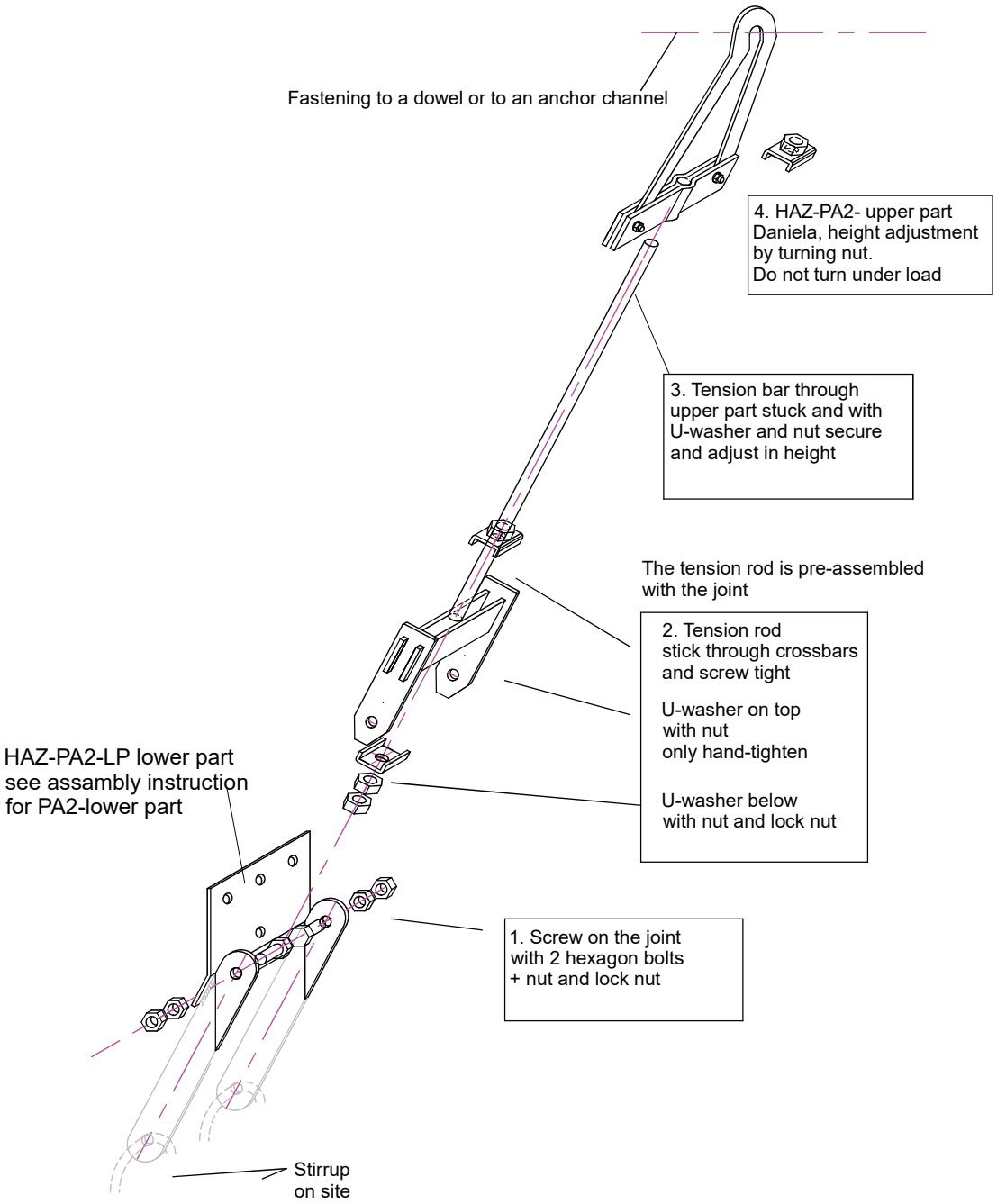
The cast-in anchor PA2 is intended to be used for permanent anchorages of heavy-duty concrete façade panels under predominantly static actions or quasi-static actions in reinforced normal weight concrete with minimum strength class C30/37.

The cast-in anchor PA2 is intended to be used in the temperature range -40°C to +80°C. The anchor is intended to be used for anchorages which are designed according to the design method given in EN 1992-4 "Design of fastenings for use in concrete".

Design

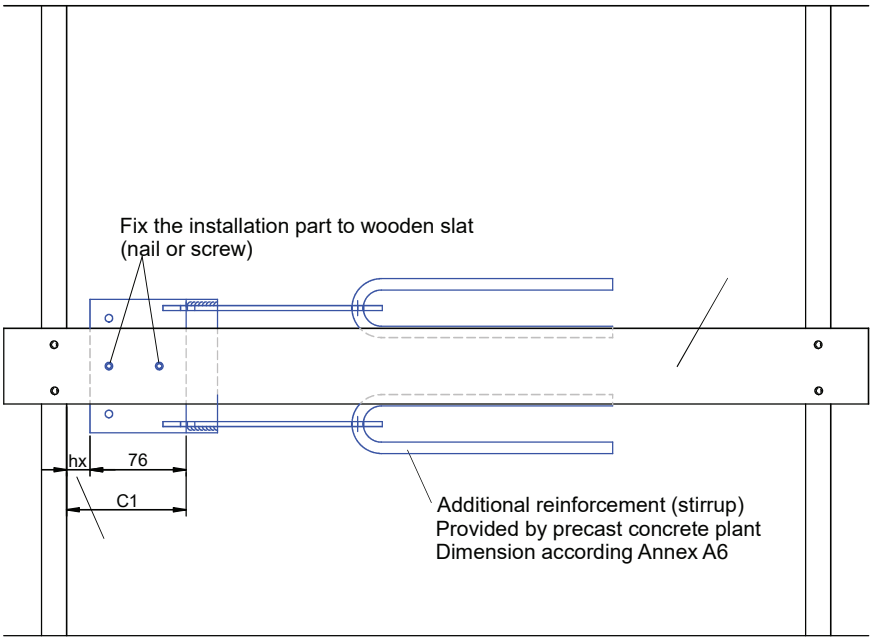
- Anchorages are designed under the responsibility of an engineer experienced in anchorages and façade design.
- Verifiable calculations notes and drawings are prepared taking account of the loads to be anchored.
- Anchorages under static or quasi-static loading are designed in accordance with: EN 1992-4 „Design of fastenings for use in concrete“.

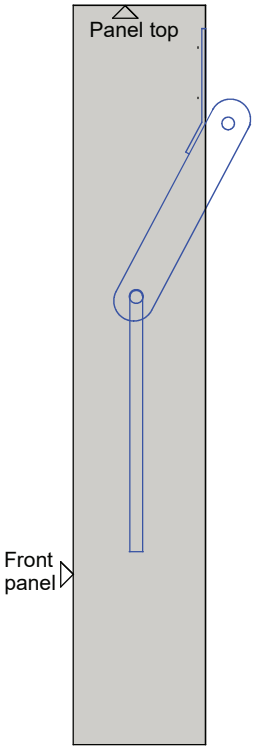
PA2- Installation

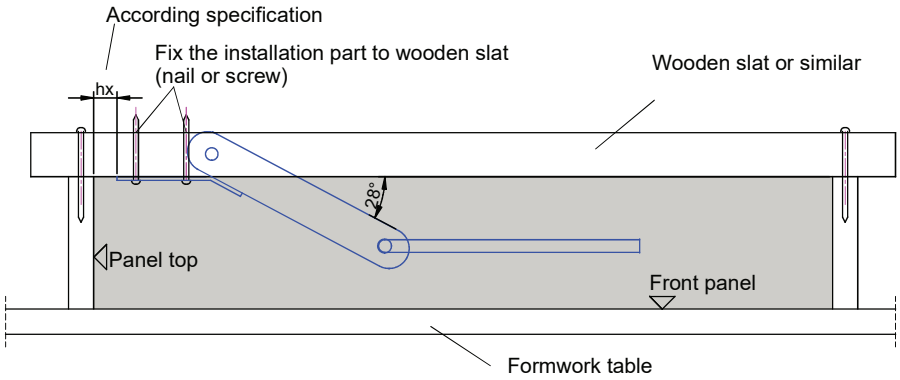


HAZ-Metal Panel Anchor PA2	Annex B2
Installation Assemble parts	

PA2- Installation

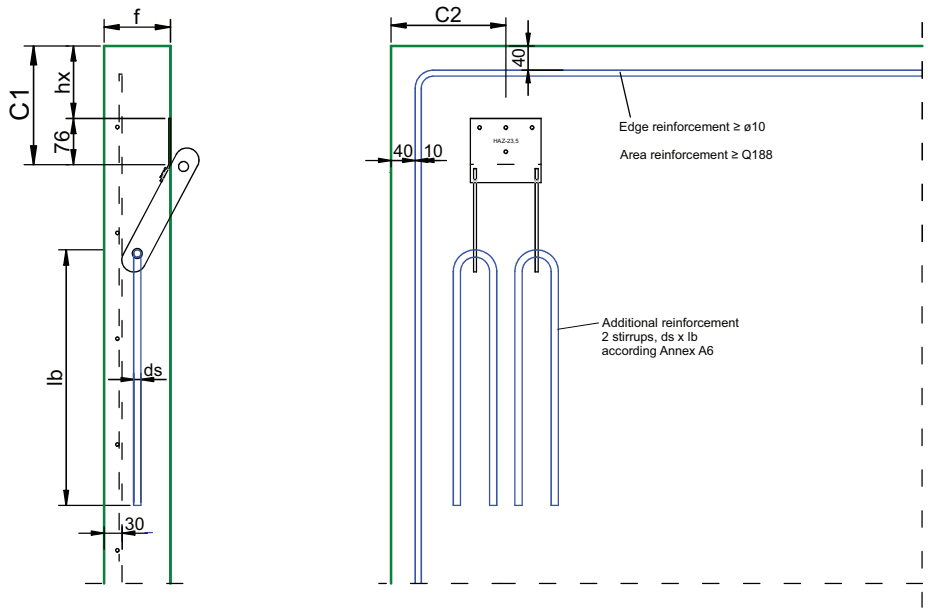




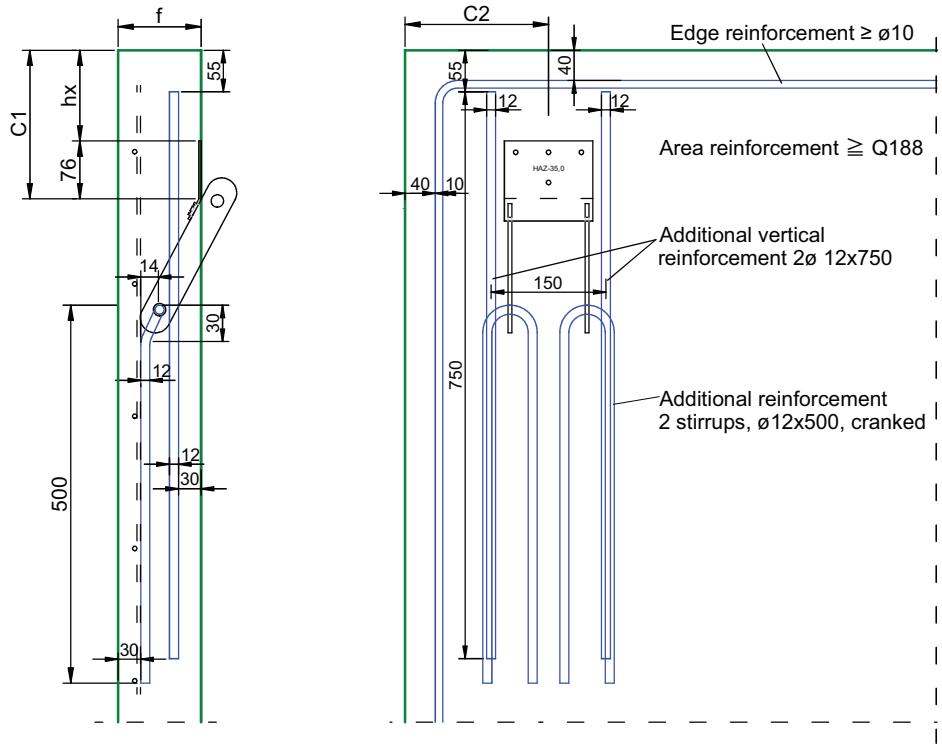


HAZ-Metal Panel Anchor PA2	Annex B3
Installation Cast-in Lower part	

PA2- Additional reinforcement for PA2-Type A, -B, -C, -D

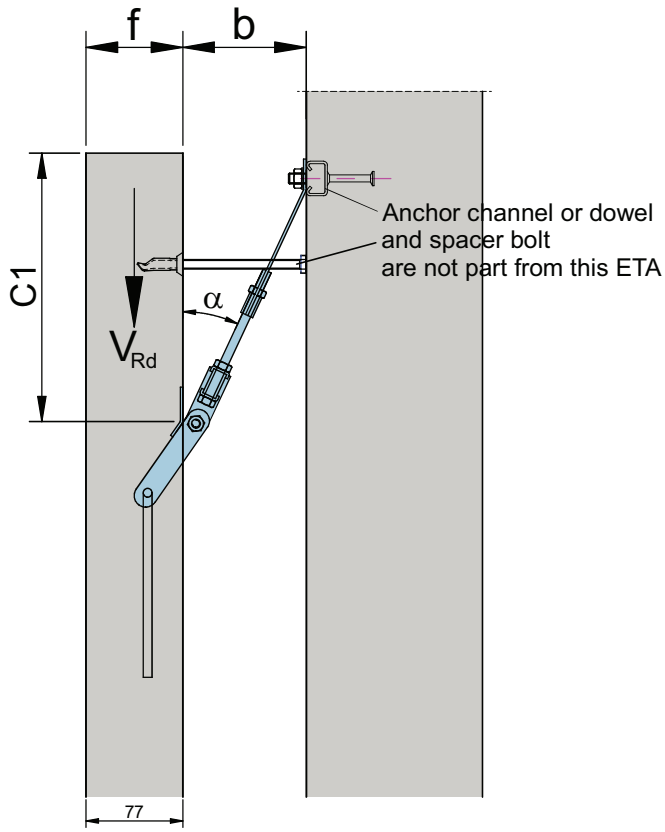


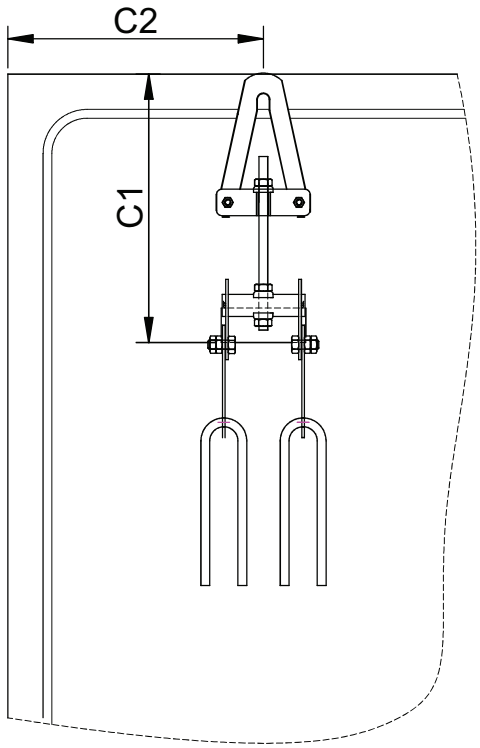
PA2- Additional reinforcement for PA2-Type E

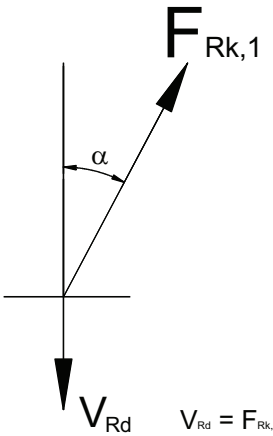


HAZ-Metal Panel Anchor PA2	Annex B4
Installation Additional reinforcement	

PA2- Panel Anchor design value







$V_{Rd} = F_{Rk,1} \times \cos(\alpha) / \gamma_{Mc}$

PA2 - Characteristic resistant (kN)
Edge distance, Panel thickness (mm)

Type	A	B	C	D	E
$F_{Rk,1}$	19,4	25,0	35,6	52,6	85,8
min f	80	80	90	110	110
min C1	100	100	156	196	196
min C2	110	120	160	190	190
α	25°	25°	25°	25°	25°
γ_{Mc} 1)	1,5				

1) in absent of other national regulations

HAZ-Metal Panel Anchor PA2	Annex C1
Design value Edge distance, Panel thicknes	