Kraftfahrt-Bundesamt

DE-24932 Flensburg

E 1

MITTEILUNG

ausgestellt von:
Kraftfahrt-Bundesamt

über die Erteilung einer Genehmigung
für einen Typ einer Einrichtung für den hinteren Unterfahrschutz nach Teil I der Regelung Nr. 58 einschließlich Änderung Nr. 03 Ergänzung 00

COMMUNICATION

issued by:
Kraftfahrt-Bundesamt

concerning the granting of an approval
with regard to a type of rear underrun protection device (RUPD)
pursuant to Part I of Regulation No. 58 including amendment No 03
supplement 00

Genehmigungsnummer: **E1*58R03/00*0646*00**
Approval number:

1. Fabrik- oder Handelsmarke der Einrichtung:
   Trade name or mark of device:
   ERMAX

2. Typ der Einrichtung:
   Type of device:
   0168609

3. Name und Anschrift des Herstellers:
   Name and address manufacturer:
   Ermax A/S
   DK-6000 KOLDING

4. Gegebenenfalls Name und Anschrift des Vertreters des Herstellers:
   If applicable, name and address of manufacturer's representative:
   Entfällt
   Not applicable

5. Merkmale der Einrichtung (Abmessungen und Befestigungsteile):
   Characteristics of the device (dimensions and its fixing elements):
   Siehe Beschreibungsbogen bzw. Anlagen
   See description document or enclosure

Genehmigungsnummer: **E1*58R03/00*0646*00**
Approval number:

6. **Entfällt**
Not applicable

7. Lage der Angriffspunkte der Prüfkräfte auf der Einrichtung:
Position on the device of the points of application of the test forces:
Siehe Prüfbericht
See test report

8. Während und nach dem Aufbringen der Prüfkräfte nach Anhang 5 beobachtete höchste waagerechte Verformung:
Maximum horizontal and vertical deflection observed during and after the application of the test forces in annex 5:
21 mm

9. Einschränkungen für die Anwendung
Restrictions on application

Fahrzeuge, an denen die Einrichtung angebaut werden darf (falls zutreffend):
Vehicles on which the devices may be installed (if applicable):
N2, N3, O3, O4

Merkmale des Chassis, auf dem das Gerät montiert werden soll (z. B. Steifigkeit,Profil) (falls zutreffend)
Charactieristics of the chassis to which the device myay be installed (e.g. stiffnes, profile) (if applicable):
Entfällt
Not applicable

10. Gesamtgewicht des Fahrzeugs, an das die Einrichtung angebaut werden darf:
Maximum mass of vehicle on which the device may be installed:
Unbegrenzt
Unlimited

11. Einrichtung zur Genehmigung vorgelegt am:
Device submitted for approval on:
24.03.2020

12. Technischer Dienst, der die Prüfungen für die Genehmigung durchführt:
Technical service responsible for conducting approval tests:
SGS-TÜV Saar GmbH
DE-81379 München

13. Datum des Gutachtens des Technischen Dienstes:
Date of report issued by that service:
20.02.2020

Genehmigungsnummer: **E1*58R03/00*0646*00**
Approval number:

14. Nummer des Gutachtens des Technischen Dienstes:
Number of report issued by that service:
R0A90001-00

15. Die Genehmigung wird **erteilt**
Approval is **granted**

16. Anbringungstelle des Genehmigungszeichens an der Einrichtung:
Position of the approval mark on the device:
Auf dem Unterfahrschutz-Profil, geklebt
On the underrun protection profile, stuck

17. Bemerkung(en):
Remark(s)
Entfällt
Not applicable

18. Ort: **DE-24932 Flensburg**
Place:

19. Datum: **26.03.2020**
Date:

20. Unterschrift: **Im Auftrag**
Signature:

D St
(D. Stieglitz)

KRAFTFAHRT-BUNDESAMT 511

21. Dieser Mitteilung liegt ein Verzeichnis der Unterlagen bei, die bei der Behörde, die diese Genehmigung erteilt hat, eingereicht wurden und auf Anforderung erhältlich sind.
Annexed to this communication is a list of documents in the approval file deposited at the Administrative services having delivered the approval and which can be obtained upon request.

Anlagen:
Enclosures:
Gemäß Inhaltsverzeichnis
According to index

Kraftfahrt-Bundesamt

DE-24932 Flensburg

Zu: **E1*58R03/00*0646*00**
To:

Erklärung über die Einhaltung der Anforderungen hinsichtlich der Übereinstimmung der Produktion gemäß dem Übereinkommen von 1958
Statement of compliance with the conformity of the production requirements of the 1958 Agreement

1. Name des Herstellers:
   Manufacturer's name:
   Ermax A/S
   DK-6000 KOLDING

2. Datum der Anfangsbewertung:
   Date of the initial assessment:
   01.12.2015

3. Datum aller durchgeführten Überwachungstätigkeiten:
   Date of any surveillance activities:

Aktenzeichen Register number	Datum der Begehung Date of inspection	Genehmigungsnummer Approval number

   CoP-Q:
   Entfällt
   Not applicable

   CoP-P:
   Entfällt
   Not applicable

Kraftfahrt-Bundesamt

DE-24932 Flensburg

Zu: **E1*58R03/00*0646*00**
To:

Inhaltsverzeichnis zu den Beschreibungsunterlagen
Index to the information package

Ausgabedatum: Date of issue:	**26.03.2020**	Letztes Änderungsdatum: Last date of amendment:	**--**

Nebenbestimmungen und Rechtsbehelfsbelehrung
Collateral clauses and instruction on right to appeal

Prüfbericht(e) Nr.: Test report(s) No.: **R0A90001-00**	Datum: Date: **20.02.2020**
Beschreibungsbogen Nr.: Information document No.: **0168609-00**	Datum: Date: **20.02.2020**
Liste der Änderungen: List of modifications: **Entfällt** **Not applicable**	Datum: Date:

Kraftfahrt-Bundesamt

DE-24932 Flensburg

Nummer der Genehmigung: **E1*58R03/00*0646*00**

- Anlage -

Nebenbestimmungen und Rechtsbehelfsbelehrung

Nebenbestimmungen

Jede Einrichtung, die dem genehmigten Typ entspricht, ist gemäß der angewendeten Vorschrift zu kennzeichnen.

Die Einzelerzeugnisse der reihenweisen Fertigung müssen mit den Genehmigungsunterlagen genau übereinstimmen. Änderungen an den Einzelerzeugnissen sind nur mit ausdrücklicher Zustimmung des Kraftfahrt-Bundesamtes gestattet.
Änderungen der Firmenbezeichnung, der Anschrift und der Fertigungsstätten sowie eines bei der Erteilung der Genehmigung benannten Zustellungsbevollmächtigten oder bevollmächtigten Vertreters sind dem Kraftfahrt-Bundesamt unverzüglich mitzuteilen.
Verstöße gegen diese Bestimmungen können zum Widerruf der Genehmigung führen und können überdies strafrechtlich verfolgt werden.

Die Genehmigung erlischt, wenn sie zurückgegeben oder entzogen wird, oder der genehmigte Typ den Rechtsvorschriften nicht mehr entspricht. Der Widerruf kann ausgesprochen werden, wenn die für die Erteilung und den Bestand der Genehmigung geforderten Voraussetzungen nicht mehr bestehen, wenn der Genehmigungsinhaber gegen die mit der Genehmigung verbundenen Pflichten - auch soweit sie sich aus den zu dieser Genehmigung zugeordneten besonderen Auflagen ergeben - verstößt oder wenn sich herausstellt, dass der genehmigte Typ den Erfordernissen der Verkehrssicherheit oder des Umweltschutzes nicht entspricht.

Das Kraftfahrt-Bundesamt kann jederzeit die ordnungsgemäße Ausübung der durch diese Genehmigung verliehenen Befugnisse, insbesondere die genehmigungsgerechte Fertigung sowie die Maßnahmen zur Übereinstimmung der Produktion, nachprüfen. Es kann zu diesem Zweck Proben entnehmen oder entnehmen lassen. Dem Kraftfahrt-Bundesamt und/oder seinen Beauftragten ist ungehinderter Zutritt zu Produktions- und Lagerstätten zu gewähren.

Die mit der Erteilung der Genehmigung verliehenen Befugnisse sind nicht übertragbar. Schutzrechte Dritter werden durch diese Genehmigung nicht berührt.

Rechtsbehelfsbelehrung

Gegen diese Genehmigung kann innerhalb eines Monats nach Bekanntgabe Widerspruch erhoben werden. Der Widerspruch ist beim **Kraftfahrt-Bundesamt, Fördestraße 16, DE-24944 Flensburg,** schriftlich oder zur Niederschrift einzulegen.

Approval No.: **E1*58R03/00*0646*00**

- Attachment -

Collateral clauses and instruction on right to appeal

Collateral clauses

All equipment which corresponds to the approved type is to be identified according to the applied regulation.

The individual production of serial fabrication must be in exact accordance with the approval documents. Changes in the individual production are only allowed with express consent of the Kraftfahrt-Bundesamt.
Changes in the name of the company, the address and the manufacturing plant as well as one of the parties given the authority to delivery or authorised representative named when the approval was granted is to be immediately disclosed to the Kraftfahrt-Bundesamt.
Breach of this regulation can lead to recall of the approval and moreover can be legally prosecuted.

The approval expires if it is returned or withdrawn or if the type approved no longer complies with the legal requirements. The revocation can be made if the demanded requirements for issuance and the continuance of the approval no longer exist, if the holder of the approval violates the duties involved in the approval, also to the extent that they result from the assigned conditions to this approval, or if it is determined that the approved type does not comply with the requirements of traffic safety or environmental protection.

The Kraftfahrt-Bundesamt may check the proper exercise of the conferred authority taken from this approval at any time. In particular this means the compliant production as well as the measures for conformity of production. For this purpose samples can be taken or have taken. The employees or the representatives of the Kraftfahrt-Bundesamt may get unhindered access to the production and storage facilities.

The conferred authority contained with issuance of this approval is not transferable. Trade mark rights of third parties are not affected with this approval.

Instruction on right to appeal

This approval can be appealed within one month after notification. The appeal is to be filed in writing or as a transcript at the **Kraftfahrt-Bundesamt, Fördestraße 16, DE-24944 Flensburg.**

Technical Report / *Technischer Bericht*

Test standard / *Prüfgrundlage:*
UN-R 058
Part I / *Teil I*

Level of amendment / *Änderungsstand:*
03 series of amendments, supplement 0

Title / *Titel*:
Rear underrun protective devices (RUPDs) and their installation
Einrichtungen für den hinteren Unterfahrschutz und ihr Anbau

Manufacturer / *Hersteller:*
ERMAX A/S

Type / *Typ:*
0168609

Subject of testing / *Gegenstand der Prüfung:*
separate technical unit / *selbständige technische Einheit*

0	**General / *Allgemeine Angaben*:**	
0.1	Make (Trade name of manufacturer) / *Fabrikmarke* *(Firmenname des Herstellers):*	ERMAX
0.2	Type / *Typ:*	0168609
0.2.1	Commercial description / *Handelsname:*	Aluminium underrunprotection bar
0.3	Means of identification of type, if marked on the STU / *Merkmale zur Typidentifizierung, sofern an der STE vorhanden:*	n.a.
0.3.1	Location of that marking / *Anbringungsstelle dieser Merkmale:*	n.a.
0.4	Category of vehicle / *Fahrzeugklasse:*	n.a.
0.5	Manufacturer's name and address / *Name und Anschrift des Herstellers:*	ERMAX A/S Bjerringbrovej 116 DK-2610 Rødovre
0.8	Name(s) and address(es) of assembly plant(s) / *Name(n) und Anschrift(en) der Fertigungsstätte(n):*	refer to 0.5 / *siehe 0.5*
0.9	Name and address of representative / *Name und Anschrift des Beauftragten:*	n.a.
0.10	Location of the approval mark / *Anbringungsstelle des Genehmigungszeichens:*	on the underrun protection profile / *auf dem Unterfahrschutz-Profil*

1 Test record / *Prüfprotokoll*:

See appendix /
Siehe Anhang

2 Attachments / *Anlagen*:

2.1 List of modifications /
Liste der Änderungen:

2.2 Information folder /
Beschreibungsmappe:

No. / *Nr.*: 0168609-00

Date of issue /
Ausgabedatum: 20.02.2020

3 Statement of conformity / *Schlussbescheinigung*:

The information folder as mentioned under no. 2.2 and the type described therein are in compliance with the test standard mentioned above. /
Die unter Nr. 2.2 angegebene Beschreibungsmappe und der darin beschriebene Typ entsprechen der oben aufgeführten Prüfgrundlage.

With regard to the required level of performance to be achieved, the test specimen were representative for the type to be approved. /
Die verwendeten Prüfmuster waren im Hinblick auf das erforderliche Leistungsniveau für den zu genehmigenden Typ repräsentativ.

The tests were carried out in accordance to the relevant requirements of the
Die Durchführung der Prüfungen entsprach den relevanten Anforderungen der

☐ EN ISO/IEC 17025:2005 ☒ EN ISO/IEC 17020:2012

Test Laboratory / *Prüflaboratorium*

SGS-TÜV Saar GmbH

notified by
benannt durch

Kraftfahrt-Bundesamt (KBA), Federal Republic of Germany	National Standards Authority of Ireland (NSAI)	Rijksdienst voor het Wegverkeer (RDW), The Netherlands
No. KBA - P 00084 – 10	**No. 101**	**No. 99050064 00**

Responsible expert **Signature**

Christian Pscheidl Feb 20, 2020

Conformity check **Signature**

Efrossina Daltcheva

Test record

1 Test conditions

1.1.1	The mechanical strength of the device has been shown on a vehicle	[ ]	fulfilled
		[ ]	not fulfilled
		[X]	n.a.
1.1.2	The mechanical strength of the device has been shown on a representative part of the frame on a test bench	[ ]	fulfilled
		[ ]	not fulfilled
		[X]	n.a.
1.1.3	The mechanical strength of the device has been shown by calculation	[X]	fulfilled
		[ ]	not fulfilled
		[ ]	n.a.
1.1.4	The mounting position on the vehicle has been tested	[ ]	fulfilled
		[ ]	not fulfilled
		[X]	n.a.
1.2	Test equipment	[X]	n.a.

2 Test results

Numbers in [ ] are related to ECE requirements

2.1 [2] General Requirements

2.1.1 [2.1]	All vehicles shall be so constructed and/or equipped as to offer effective protection over their whole width against under-running of vehicles mentioned in paragraph 1. of this Regulation in the event of rear collision with vehicles of Category M_1 and N_1	[ ] fulfilled [ ] not fulfilled [X] n.a.
[2.2]	The vehicle shall be tested under the conditions as laid down in Paragraph 2. of Annex 5	[ ] fulfilled [ ] not fulfilled [X] n.a.
2.2	**PART I** Approval of Rear Underrun Protective Devices (RUPDs)	[ ] n.a.
2.2.1 [7]	Requirements	
[7.1]	The cross-member shall have a section of at least 120 mm. The lateral extremities of the cross-member shall not bend to the rear or have a sharp outer edge; this condition is fulfilled when the lateral extremities of the cross-member are rounded on the outside and have a radius of curvature of not less than 2.5 mm.	[X] fulfilled [ ] not fulfilled [ ] n.a.
	RUPD intended to be fitted on vehicles of Categories M, N_1, N_2 with a maximum mass not exceeding 8t, O_1, O_2, on vehicles of Category G and on vehicles fitted with a platform lift, the cross-member shall have a section height of at least 100 mm.	[ ] fulfilled [ ] not fulfilled [X] n.a.
[7.2]	The RUPD may be so designed to have several positions at the rear of the vehicle. In this event, there shall be a guaranteed method of securing it in the service position so that any unintentional change of position is precluded. The force applied by the operator to vary the position of the device shall not exceed 40 daN.	[ ] fulfilled [ ] not fulfilled [X] n.a.
	For RUPD that are designed to have several positions at the rear of the vehicle, a label shall be provided either with (a) symbol(s) or in the language(s) of the country where the device is sold to inform the operator about the standard position of the RUPD to offer effective protection against under-running.	[ ] fulfilled [ ] not fulfilled [X] n.a.

	Label minimum size is 60x120 mm	[ ] fulfilled [ ] not fulfilled [X] n.a.
[7.3]	The RUPD shall offer adequate resistance to forces applied parallel to the longitudinal axis of the vehicle. (This shall be demonstrated in accordance with the test procedure and test conditions specified in Annex 5 to this Regulation.) The maximum horizontal deflection of the RUPD observed during and after the application of the test forces specified in Annex 5 shall be recorded on the type approval communication (Annex 1, Item 8).	[X] fulfilled [ ] not fulfilled [ ] n.a.
[7.4]	For vehicles fitted with a platform lift at the rear, the underrun device may be interrupted for the purposes of the mechanism. In this case, the following special requirements apply:	[ ] fulfilled [ ] not fulfilled [X] n.a.
2.3	**Part II** Vehicles with regard to the installation of an RUPD of an approved type	[X] n.a.
2.4	**Part III** Vehicles with regard to their rear underrun protection (RUP)	[X] n.a.
2.5	**Part I or III** Application of efforts on RUPDs or vehicles	[ ] n.a.
	Numbers in [ ] are related to ECE-requirements stated in Annex 5	
[1.2]	When tests are conducted on a part of the chassis, this part is equivalent to those which are used to secure the RUPD when it is installed on the vehicle.	[ ] fulfilled [ ] not fulfilled [X] n.a.
	The part of the chassis can be fixed on a test bench as shown in Figure 1, representing the minimum requirements to be fulfilled. The structures used as side rails shall be representative of the chassis of vehicles for which the underrun protection system is intended.	[ ] fulfilled [ ] not fulfilled [X] n.a.

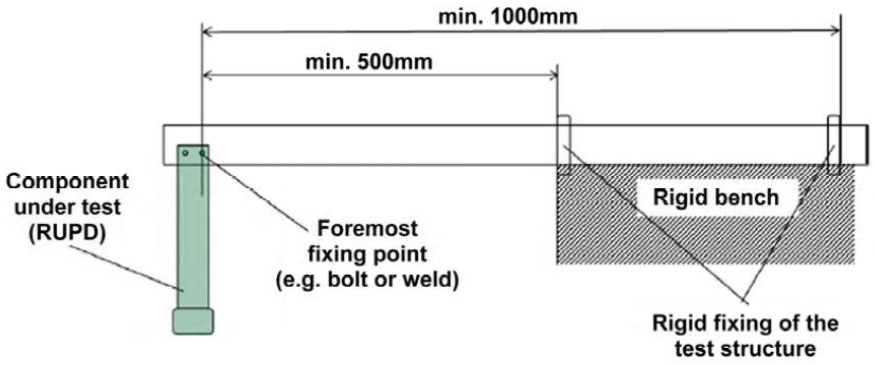


Figure 1

The distance of the foremost fixing point of the RUPD from the rigid test bench shall not be less than 500mm. If a diagonal strut is used to support the RUPD, this distance shall be measured between the foremost fixing point of the strut to the side rail structures and the rigid test bench.

[ ] fulfilled
[ ] not fulfilled
[X] n.a.

[3] Test procedure

[3.1] Application of the forces is done according to the requirements stated in Paragraph 3.1 of Annex 5

[X] fulfilled
[ ] not fulfilled
[ ] n.a.

[3.1.1] A horizontal force of 180kN or 85% of the force generated by the maximum mass of the vehicle, whichever is the lesser, shall be applied consecutively to two points situated symmetrically about the centre line of the device or of the vehicle whichever is applicable at a minimum distance apart of 700mm and a maximum of 1m

Distance between the centre line of the vehicle and the force application points: 1 m

Notwithstanding the provision above for non-separate cab vehicles of Category N_2 with a maximum mass not exceeding 8t, the horizontal forces may be reduced to 100kN or 50%

[3.1.2] A horizontal force of 100kN or 50% of the force generated by the maximum mass of the vehicle, whichever is the lesser, shall be applied consecutively to two points located 300 ± 25mm from the longitudinal planes tangential to the outer edges of the wheels on the rear axle or of the RUPD, if it exceeds the width of the rear axle, and to a third point located on the line joining these two points, in the median vertical plane of the vehicle.

Notwithstanding the provision above for non-separate cab vehicles of Category N_2 with a maximum mass not exceeding 8t, the horizontal forces may be reduced to 50kN or 25%.

Horizontal forces applied value (in kN):

P1	P2	P3	P2	P1
100	180	100	180	100

Horizontal and vertical displacements during the application of the forces (in mm):

a) Frame width 980 - 1249 mm

P1		P2		P3		P2		P1	
horiz.	vertic.	horiz.	vertic.	horiz.	vertic.	horiz.	vertic.	horiz.	vertic.
20	4	8	3	7	1	9	3	20	4

b) Frame width 1250 - 1450 mm

P1		P2		P3		P2		P1	
horiz.	vertic.	horiz.	vertic.	horiz.	vertic.	horiz.	vertic.	horiz.	vertic.
21	2	8	3	7	1	9	3	20	2

Horizontal and vertical displacements after the application of the forces (in mm):

a) Frame width 980 - 1249 mm

P1		P2		P3		P2		P1	
horiz.	vertic.	horiz.	vertic.	horiz.	vertic.	horiz.	vertic.	horiz.	vertic.
4	1	3	1	1	0	3	2	4	1

b) Frame width 1250 - 1450 mm

P1		P2		P3		P2		P1	
horiz.	vertic.	horiz.	vertic.	horiz.	vertic.	horiz.	vertic.	horiz.	vertic.
5	1	3	1	1	0	4	2	4	1

[3.1.3] Manufacturer has requested to reduce the forces applied to 80% of the requirements stated in Paragraphs 3.1.1 and 3.1.2 because the vehicle is a

- [ ] Vehicle with tipping body
- [ ] Vehicle with platform lift
- [X] n.a.

[3.2] Replacement force application points.
Any or all the points of application of the forces are located within the interruption area of the underrun protection devices. Replacement points have been chosen according to the requirements in Paragraphs 3.2.1 or/and 3.2.2 of Annex 5

- [ ] fulfilled
- [ ] not fulfilled
- [X] n.a.

3	**Other information**	
3.1	Date of test:	20.02.2020
3.2	Place of test:	SGS-TÜV Saar GmbH, München
4	**Remarks**	n.a.

List of modifications /
Liste der Änderungen

1	Correction of / *Es wird berichtigt:*	---
2	Modification of / *Es wird geändert:*	---
3	Addition of / *Es wird hinzugefügt:*	---
4	Deletion of / *Es entfällt:*	---

Nr./*No*.: **0168609-00** Datum/Date: **20.02.2020**

Beschreibungsbogen
betreffend die ECE-Genehmigung einer hinteren Unterfahrschutzeinrichtung
als selbständige technische Einheit (ECE-R 58, Teil I)
Information document
concerning the ECE approval of a rear underrun protective device
as a separate technical unit (ECE-R 58, Part I)

0.	Allgemeine Angabe / *General:*	
0.1	Fabrikmarke (Firmenname des Herstellers) / *Make (Company name of manufacturer):*	ERMAX
0.2	Typ / *Type:*	0168609
0.2.1	Handelsname / *Trade name:*	Aluminium underrunprotection bar
0.5	Name und Anschrift des Herstellers / *Manufacturer's name and address:*	ERMAX A/S Bjerringbrovej 116 DK-2610 Rødovre
0.7	Lage und Anbringungsart des ECE-Genehmigungszeichens / *Position and method of fixation of the ECE approval mark:*	auf dem Unterfahrschutz-Profil, geklebt / *on the underrun protection profile, stuck*
0.8	Name(n) und Anschrift(en) der Fertigungsstätte(n) / *Name(s) and address(es) of assembly plant(s):*	ERMAX A/S Bjerringbrovej 116 DK-2610 Rødovre

1.	Allgemeine Baumerkmale der Fahrzeuge, an die die Einrichtung angebracht werden soll, soweit sie sich auf den hinteren Unterfahrschutz beziehen *General technical features of the vehicles to which the device shall be fitted, as far as they refer to the rear underride guard*	
1.1	Mindestsumme der Trägheitsmomente an der horizontalen Achse der Längsträger des Fahrgestells im Querschnitt / *Minimum sum of the moments of inertia at the horizontal axis of the longitudinal members in cross section*	3892 x 10^4 mm^4
1.2	Abstand zwischen den Längsträgern des Fahrgestells und den Befestigungsteilen der Einrichtung / *Distance between the longitudinal members of the chassis and the fixation parts of the device*	a) 980 - 1249 mm b) 1250 - 1450 mm
1.3	Unterfahrschutz ist für die folgende Fahrzeugart zulässig / *Underrun protection is permitted for the following vehicle type*	N_2, N_3, O_3, O_4
2.	Massen und Abmessungen / *Masses and dimensions.*	
2.1	Technisch zulässige Gesamtmasse / *Technically permissible total mass*	ohne Begrenzung / *without limitation*
2.2	Maximaler horizontaler Abstand von der Hinterkante des Unterfahrschutzrohres bis Ende Aufbau / *Maximum horizontal distance between the rear edge of the tube of the underride guard and the rear end of the superstructure*	a) max. 280 mm b) max. 279 mm
3	Aufbau / *Superstructure*	
3.1	Ausführliche Beschreibung des hinteren Unterfahrschutzes einschließlich der Befestigungs- und Zubehörteile / *Detailed description of the rear underride guard incl. fixation parts and accessories*	siehe Anlagen / *see attachments*

Dokument / Zeichnung *Document / drawing*	Zeichnungs-NR. *Drawing no.*	Datum *Date*
Mounting instruction underrun protection bar	LEP Rev.0	20-02-2020
Alu profile type no. 0168609 Frame center dist. 980-1249mm	075-1261	19-02-2020
Alu profile type no. 0168609 Frame center dist. 1250-1450mm	075-1241	19-02-2020
Alu profile type no. 0168609 Frame center dist. 980-1249mm	075-1265	19-02-2020
Alu profile type no. 0168609 Frame center dist. 1250-1450mm	075-1245	19-02-2020
Alu profile type 0168609	016860950	19-02-2020
Reinforcement bracket	099299625	19-02-2020
Reinforcement plate	016860040	19-02-2020
Steel bracket profile	016860060	19-02-2020
Console 1	099299623	19-02-2020
Console 2	099299622	19-02-2020
Endcap	099299615	19-02-2020
T-bolt	099110000	18-02-2020
Type sign	016860425	05-02-2020

Mounting instruction underrun protection bar

Type: 0168609

The underrun protection bar complies with the ECE58-3 part I and is intended for vehicles of categories N_2, N_3, O_3 and O_4, with a frame steel bar design with a minimum moment of inertia of $3892 \cdot 10^4 mm^4$

Assembly instruction of the underrun protection bar for frame width 980-1249 mm:

The underrun protection bar (0168609) is mounted together with the reinforcement bracket (part no 099299625) onto two consoles (part no.099299623 and 099299622) with eight T bolts (part no. 099110000) with prevailing nuts (part no. 016017300) and washers (part no. 016026910).
The nuts are tightened to a torque of 75Nm. The consoles are welded onto the vehicle frame with a circumferential 7 mm fillet welding. The plastic endcaps (part no.099299615) are pressed into the ends of the profile with a tight fit and if necessary secured with a rivet. Assembly instruction is shown on drawing 075-1261 and bill of material is shown on drawing 075-1265.

Assembly instruction of the underrun protection bar for frame width 1250-1450 mm:

The underrun protection bar (0168609) is mounted together with two reinforcement brackets (part no 099299625) onto two consoles (part no.099299623 and 099299622) with four T bolts (part no. 099110000) with prevailing nuts (part no. 016017300) and washers (part no. 016026910). The nuts are tightened to a torque of 75Nm. The Consoles are welded onto the vehicle frame with a circumferential 7 mm fillet welding. The plastic endcaps (part no. 099299615) are pressed into the ends of the Profile with a tight fit and if necessary secured with a rivet. Assembly instruction is shown on drawing 075-1241 and bill of material is shown on drawing 075-1245.

Mounting instruction of underrun protection bar onto the vehicle for all frame widths:

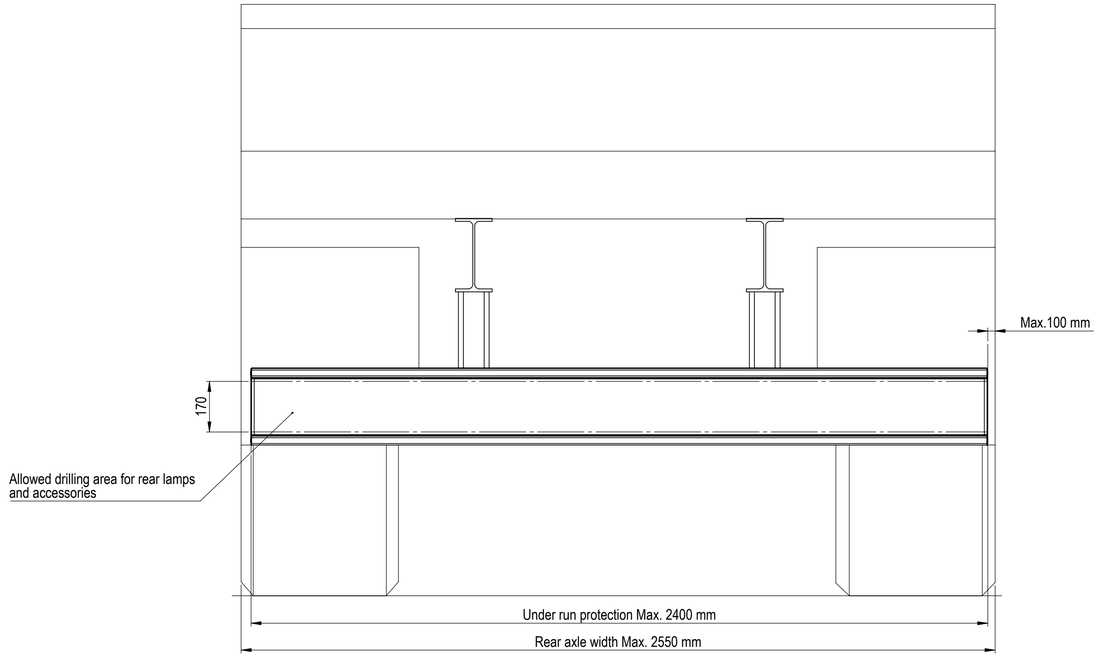
The underrun protection bar must be mounted on the vehicle in a way that the horizontal distance from the rear of the vehicle to the profile do not exceed the following distances for each width intervals:

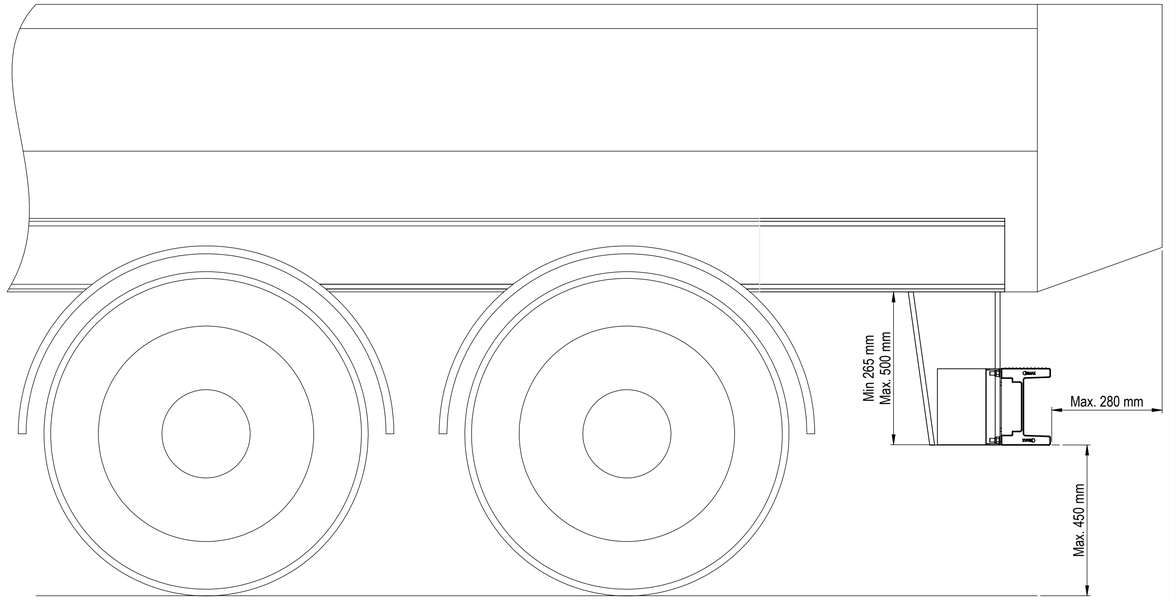
- Frame width of 980-1249mm = max 280 mm.
- Frame width of 1250-1450mm = max 279 mm.

The height measured from the ground and to the bottom of the profile mounted on the unloaded vehicle must not exceed 450 mm. It is permitted to reduce the height of the consoles (099299622, 099299623) to min. 265 mm according to drawing.

The width of the underrun protection bar must not exceed 2400 mm. The width of the rear axle of the vehicle on the widest point without consideration of the load on the tires should not exceed 2550 mm meaning the distance between the underrun protection bar and the outer point of the tires must not be larger than 100 mm on each side.

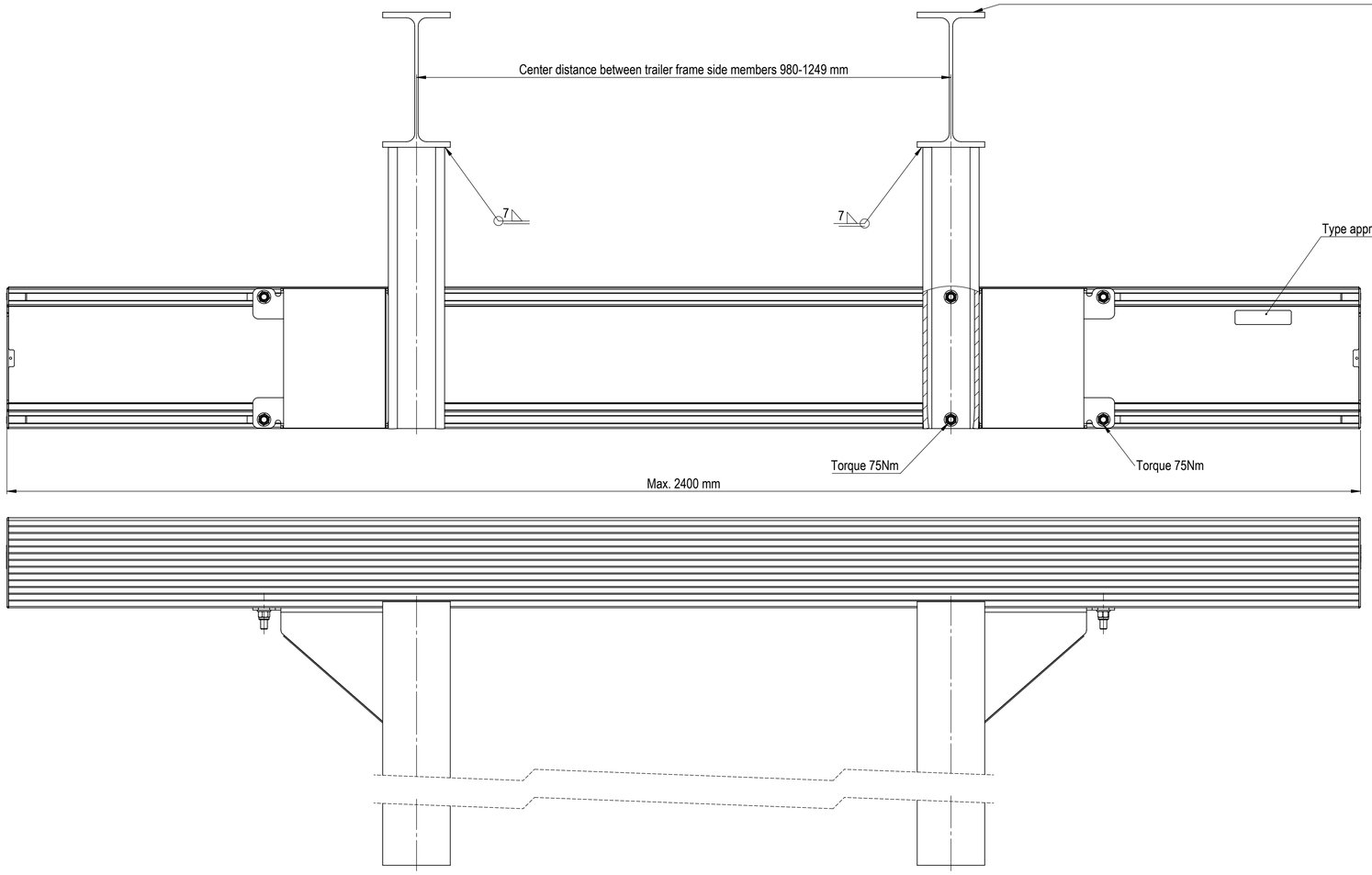
The underrun protection bar must not exceed the width of the rear axle.

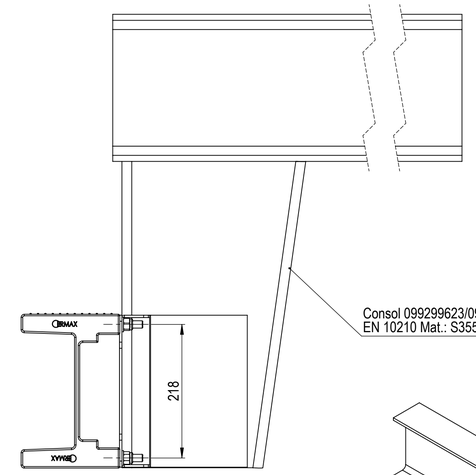


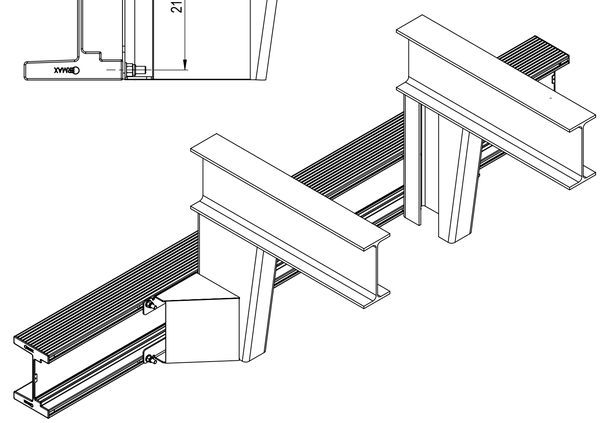


Vehicle frame must be equally strong or stronger than an IPE 240 profile DIN 1025-5

Moment of innertia: $I_{x_{min}} \geq 3892 \cdot 10^{4}$ mm^{4}







Dimension tolerance according to ISO 2768-m								
Dimension	0,5 to 3 mm	3 to 6 mm	6 to 30 mm	30 to 120 mm	120 to 400 mm	400 to 1000 mm	1000 to 2000 mm	
Tolerance	±0,1	±0,1	±0,2	±0,3	±0,5	±0,8	±1,2	

Angle tolerance according to ISO 2768-m							
Dimension	0 to 10 mm	10 to 50 mm	50 to 120 mm	120 to 400 mm	400 to - mm		
Tolerance	±1°	±0°30'	±0°20'	±0°10'	±0°05'		

Dimension without tolerance
tolerance according to ISO 2768-m

ERMAX®

SCALE: 1:5

DATE: 19-02-2020

NAME: MAC

MATERIAL: -

WEIGHT: -

SURFACE TREATMENT: -

Brake and debur sharp edges and corners

TITLE:

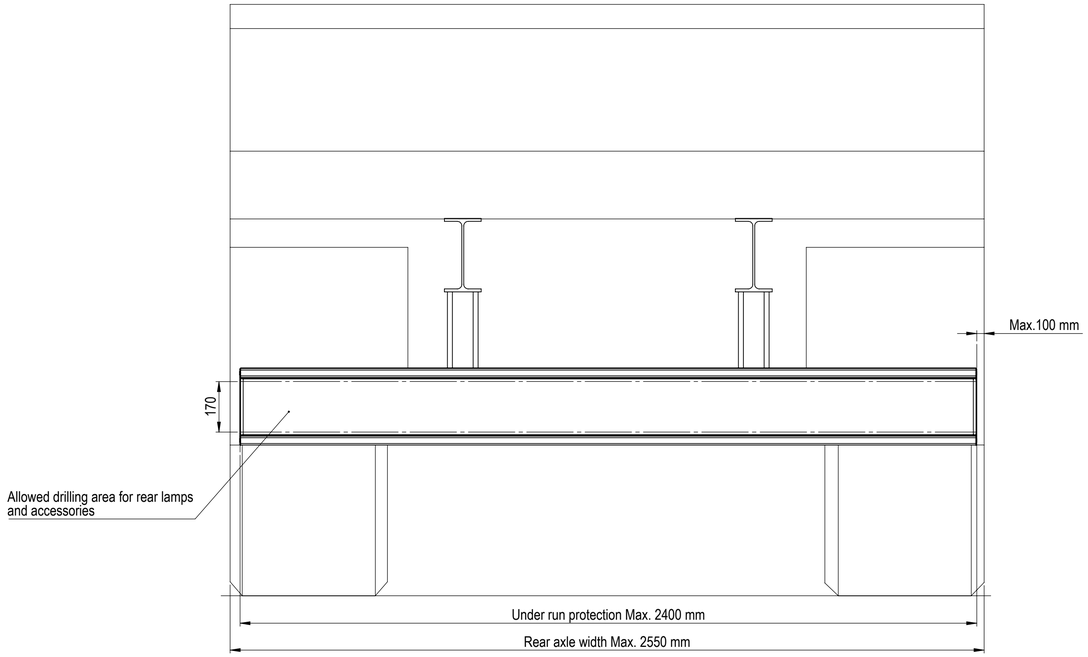
Alu profile type no. 0168609
Frame distance 980mm to 1249mm

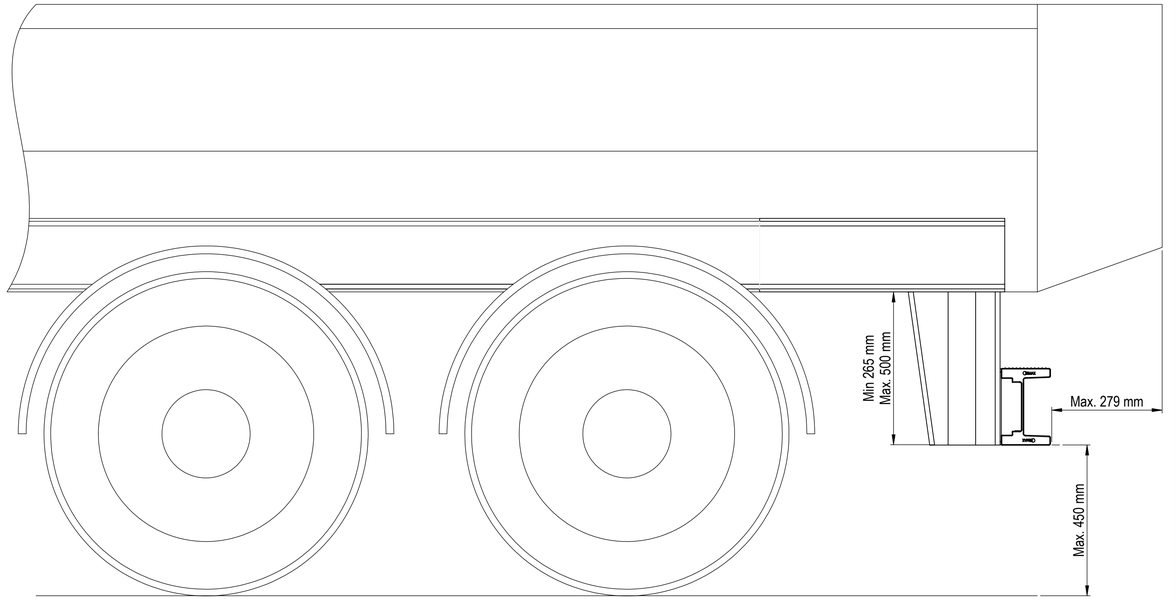
REVISION	NAME	DATE
1		
2		
3		
4		

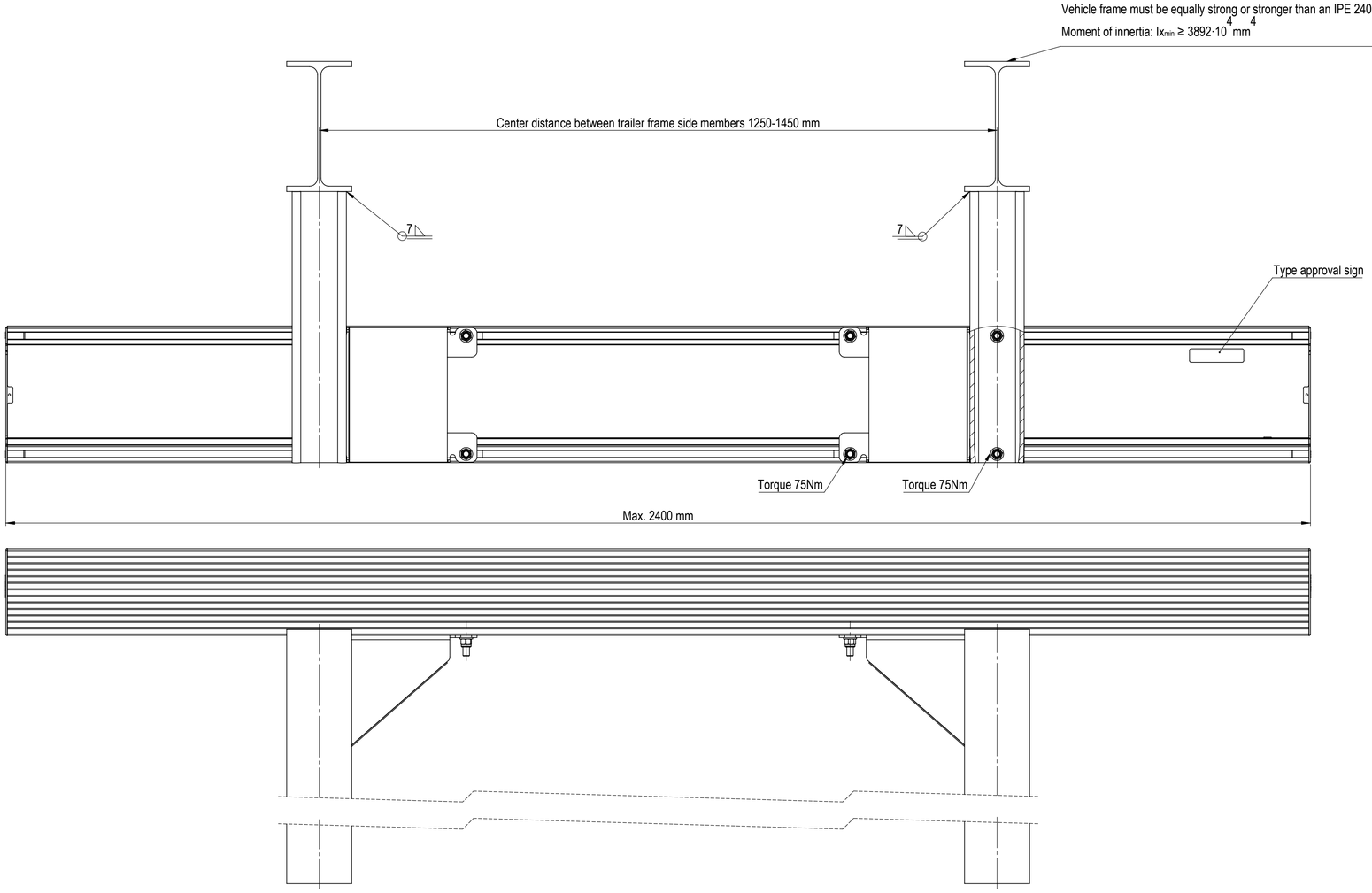
PART NO. 075-1261

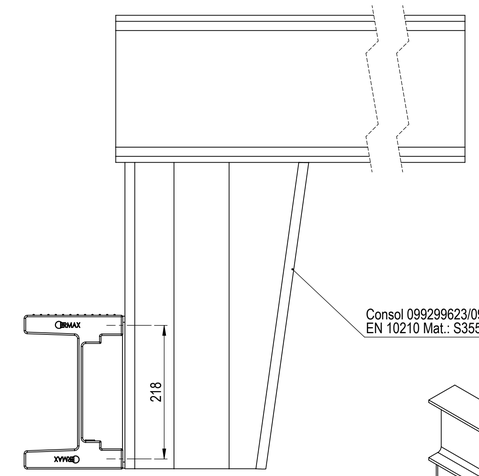
A1

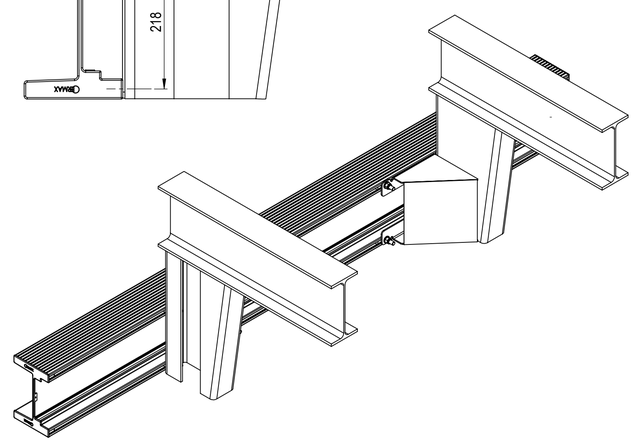
R58 I E1*58R03/00*0646*00











Dimension tolerance according to ISO 2768-m								
Dimension	0,5 to 3 mm	3 to 6 mm	6 to 30 mm	30 to 120 mm	120 to 400 mm	400 to 1000 mm	1000 to 2000 mm	
Tolerance	±0,1	±0,1	±0,2	±0,3	±0,5	±0,8	±1,2	

Angle tolerance according to ISO 2768-m						
Dimension	0 to 10 mm	10 to 50 mm	50 to 120 mm	120 to 400 mm	400 to - mm	
Tolerance	±1°	±0°30'	±0°20'	±0°10'	±0°05'	

Dimension without tolerance tolerance according to ISO 2768-m

ERMAX®

SCALE: 1:5

DATE: 19-02-2020

NAME: MAC

MATERIAL: -

WEIGHT: -

SURFACE TREATMENT : -

Brake and debur sharp edges and corners

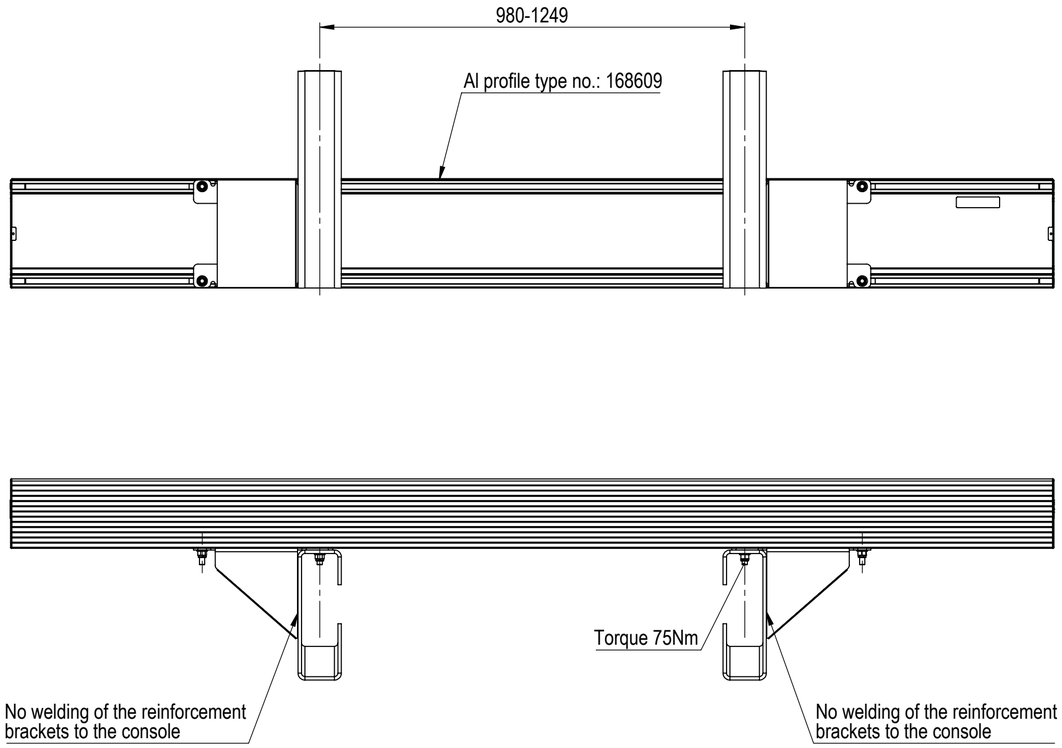
TITLE:

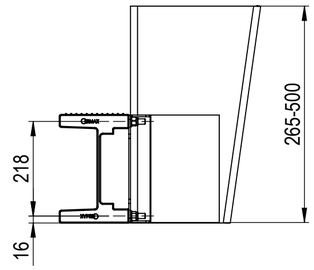
Alu profile type no. 0168609
Frame distance 1250mm to 1450mm

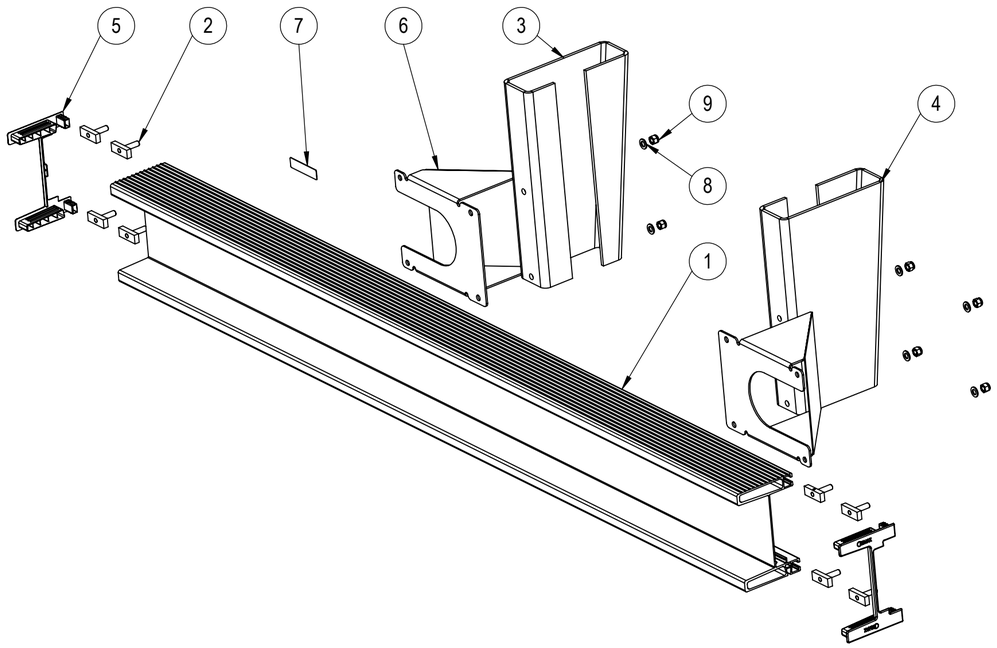
REVISION	NAME	DATE
1		
2		
3		
4		

PART NO. 075-1241

A1







Item no.	Part number	Description	QTY.	Material
1	0168609xx	Al-profile	1	Alloy 6005 A T6
2	099110000	M12x55 bolt	8	Bolt grade 10.9
3	099299623	Console 1	1	S355
4	099299622	Console 2	1	S355
5	099299615	Endcap	2	PP black
6	099299625	Reinforcement bracket	2	S355
7	016860425	Type sign	1	AL
8	016026910	Washer M12	8	Steel 140 HV DIN125
9	016017300	Prevailing nut M12	8	Steel 6

Dimension without tolerance
tolerance according to ISO 2768-m

ERMAX®

SCALE: 1:10

DATE: 19-02-2020

NAME: MAC

MATERIAL: -

WEIGHT: -

SURFACE TREATMENT : -

Brake and debur sharp edges and corners

TITLE:

Alu profile type no. 0168609
Frame distance 980mm to 1249mm

REVISION	NAME	DATE
1		
2		
3		
4		

PART NO. 075-1265

A2

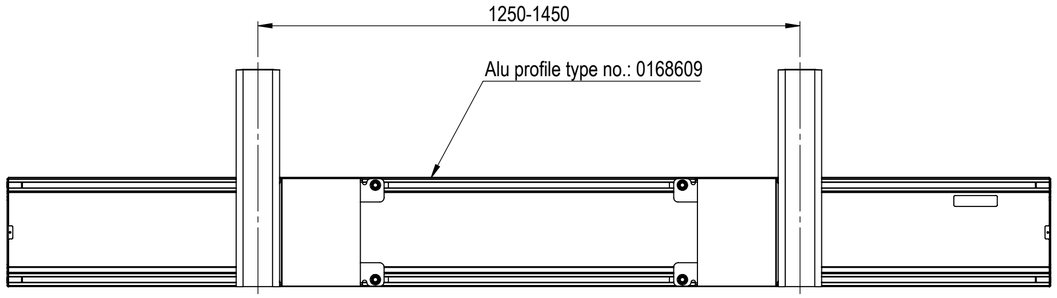
Dimension tolerance according to ISO 2768-m

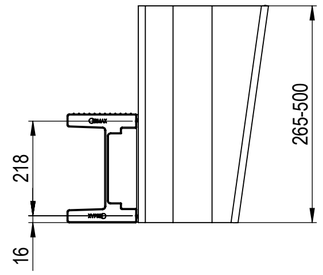
Dimension	0.5 to 3 mm	3 to 6 mm	6 to 30 mm	30 to 120 mm	120 to 400 mm	400 to 1000 mm	1000 to 2000 mm
Tolerance	±0,1	±0,1	±0,2	±0,3	±0,5	±0,8	±1,2

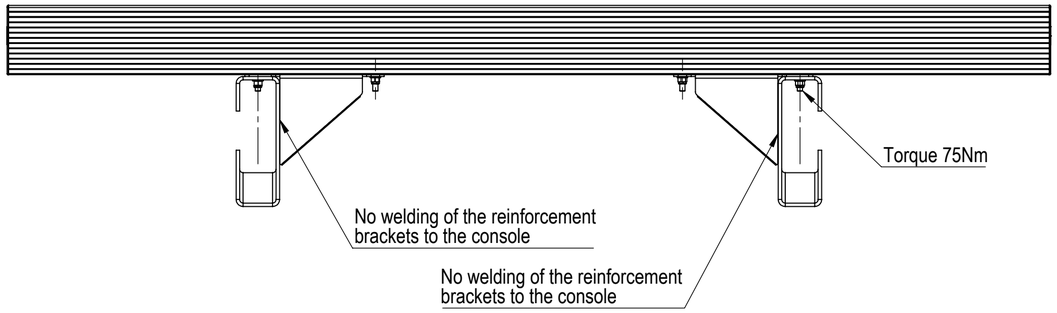
Angle tolerance according to ISO 2768-m

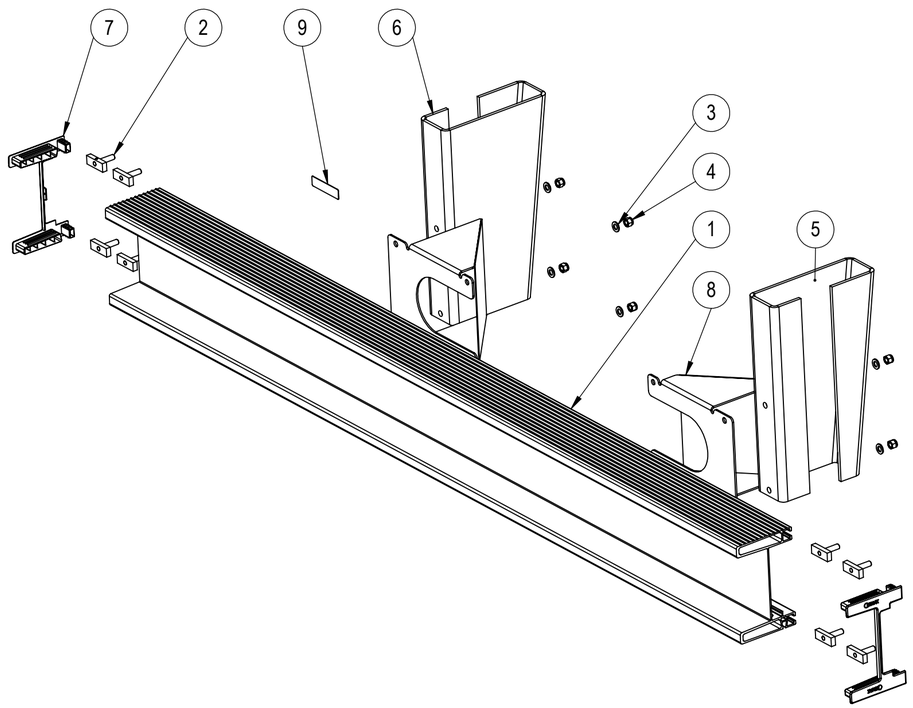
Dimension	0 to 10 mm	10 to 50 mm	50 to 120 mm	120 to 400 mm	400 to - mm
Tolerance	±1°	±0°30'	±0°20'	±0°10'	±0°05'

R58 | E1*58R03/00*0646*00









Item no.	Part number	Description	QTY.	Material
1	0168609xx	Al-profile	1	Alloy 6005 A T6
2	099110000	M12x55 T-bolt	8	Bolt grade 10.9
3	016026910	Washer M12	8	Steel 140 HV DIN125
4	016017300	Prevailing nut M12	8	Steel 6
5	099299623	Console 1	1	S355
6	099299622	Console 2	1	S355
7	099299615	Endcap	2	PP black
8	099299625	Reinforcement bracket	2	S355
9	016860425	Type sign	1	AL

Dimension without tolerance
tolerance according to ISO 2768-m

ERMAX®

SCALE: 1:10

DATE: 19-02-2020

NAME: MAC

MATERIAL: -

WEIGHT: -

SURFACE TREATMENT : -

Brake and debur sharp edges and corners

TITLE:

Alu profile type no. 0168609
Frame distance 1250mm to 1450mm

REVISION	NAME	DATE
1		
2		
3		
4		

PART NO. 075-1245

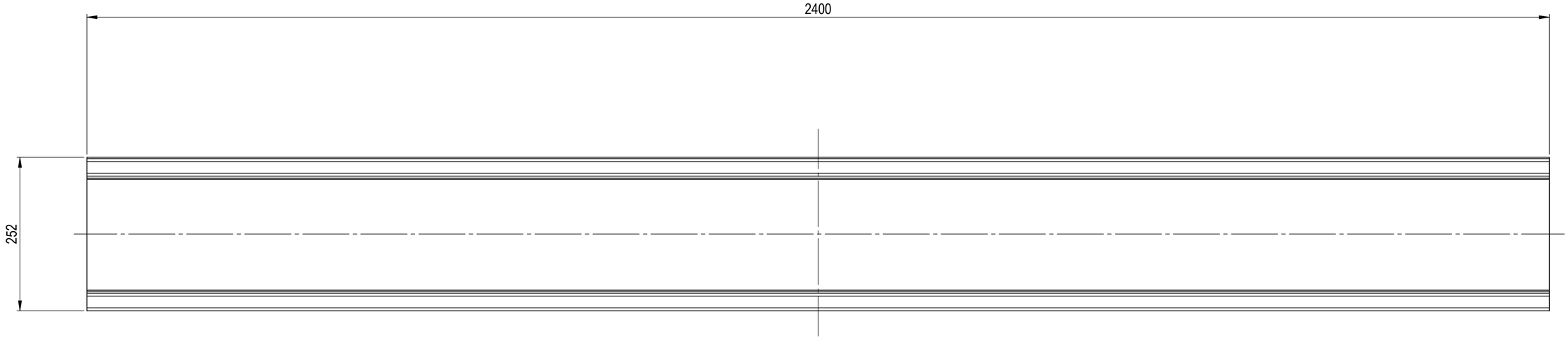
A2

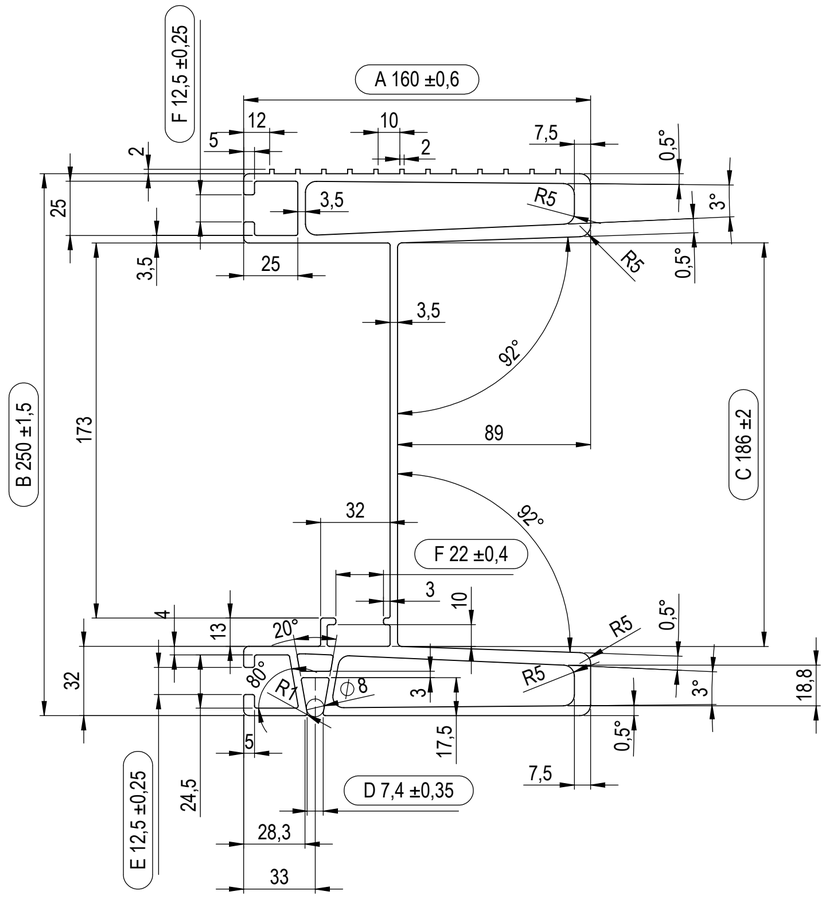
Dimension tolerance according to ISO 2768-m

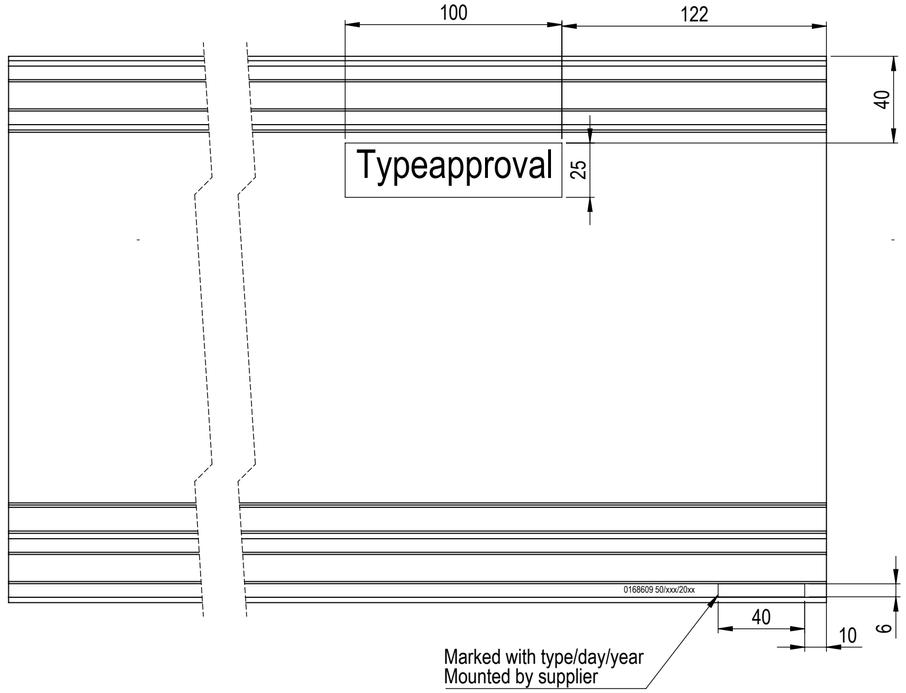
Dimension	0,5 to 3 mm	3 to 6 mm	6 to 30 mm	30 to 120 mm	120 to 400 mm	400 to 1000 mm	1000 to 2000 mm
Tolerance	±0,1	±0,1	±0,2	±0,3	±0,5	±0,8	±1,2

Angle tolerance according to ISO 2768-m

Dimension	0 to 10 mm	10 to 50 mm	50 to 120 mm	120 to 400 mm	400 to - mm
Tolerance	±1°	±0°30'	±0°20'	±0°10'	±0°05'



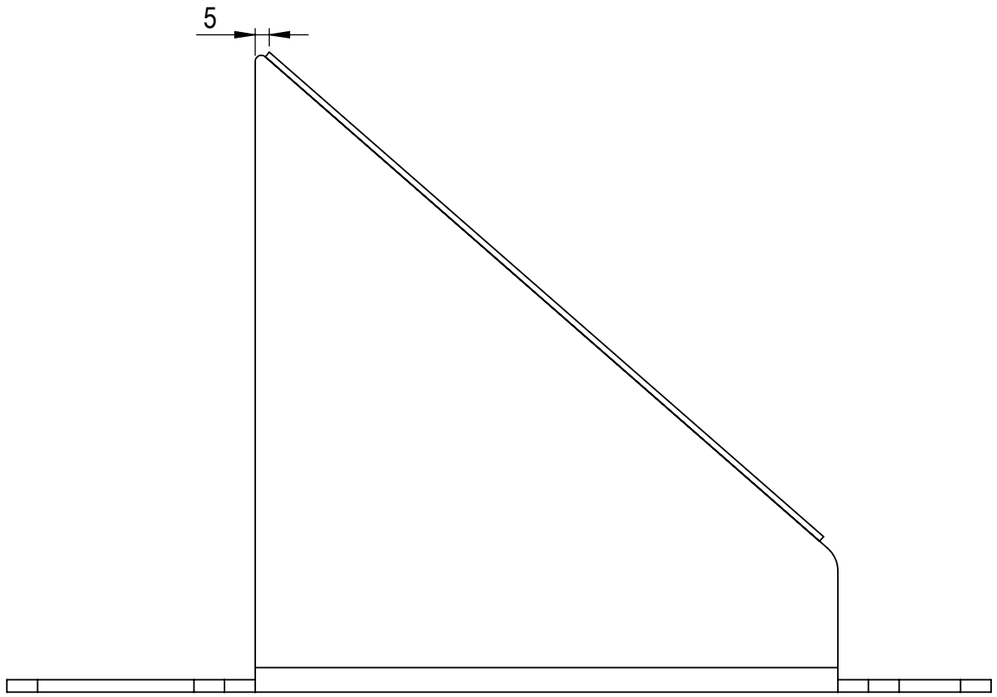


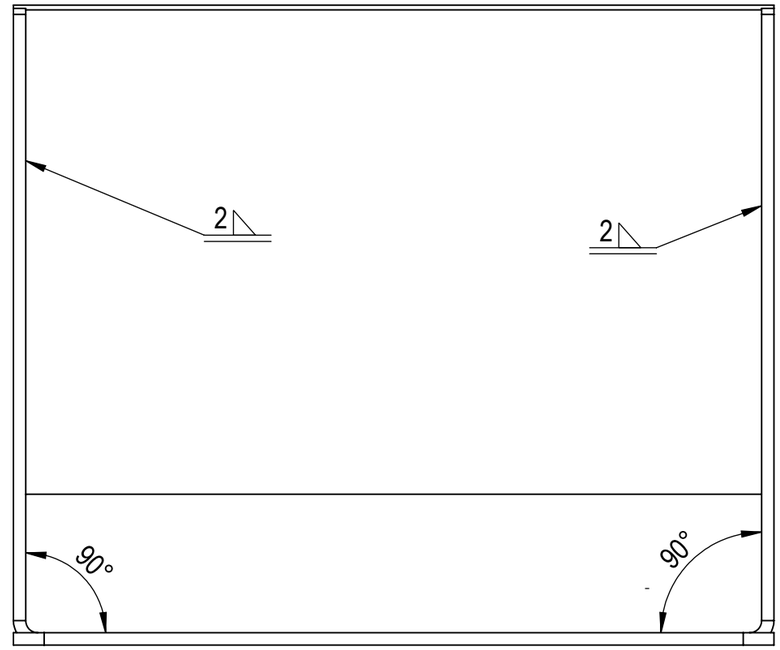


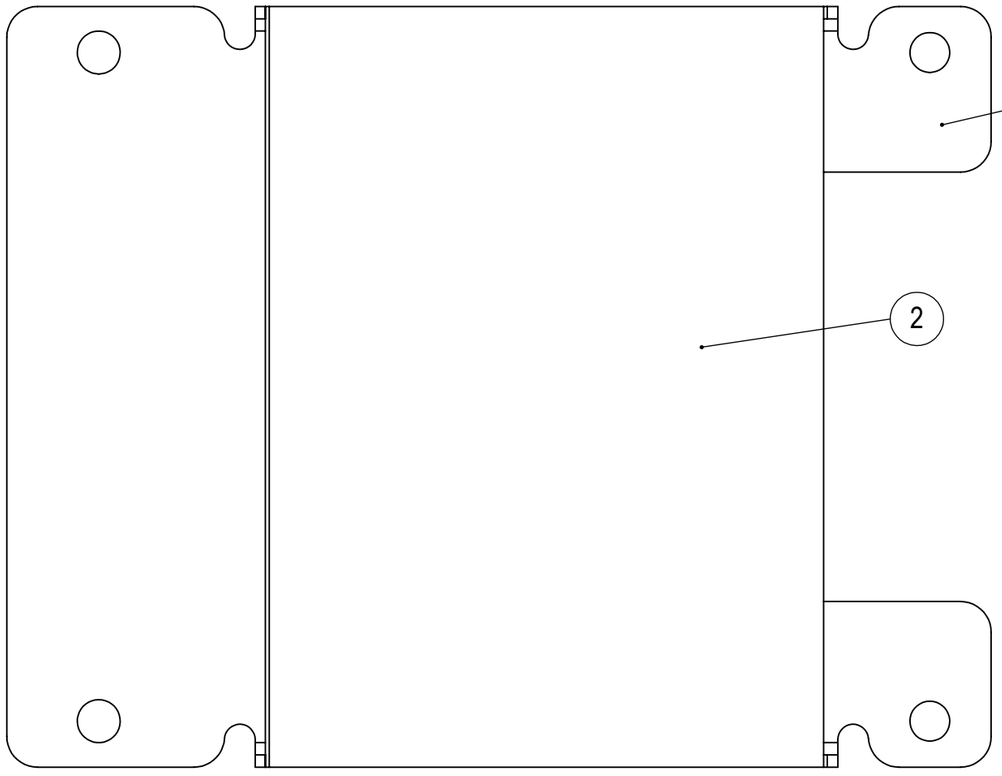
Dimension tolerance according to ISO 2768-m							
Dimension	0,5 to 3 mm	3 to 6 mm	6 to 30 mm	30 to 120 mm	120 to 400 mm	400 to 1000 mm	1000 to 2000 mm
Tolerance	±0,1	±0,1	±0,2	±0,3	±0,5	±0,8	±1,2

Angle tolerance according to ISO 2768-m					
Dimension	0 to 10 mm	10 to 50 mm	50 to 120 mm	120 to 400 mm	400 to - mm
Tolerance	±1°	±0°30'	±0°20'	±0°10'	±0°05'

Dimension without tolerance tolerance according to ISO 2768-m	ERMAX®	SCALE: 1:5	DATE: 19-02-2020
			NAME: MAC
MATERIAL: Alloy 6005 A T6	TITLE: Al-profile Ermax Type 0168609	REVISION	NAME / DATE
WEIGHT: 28000 g		1	
SURFACE TREATMENT : Anodizing		2	
Brake and debur sharp edges and corners		3	
		4	
		PART NO. 016860950	A2







Item no.	Part number	Description	QTY.	Material
1	016860060	Steel bracket	1	S355
2	016860040	Reinforcement plate	1	S355

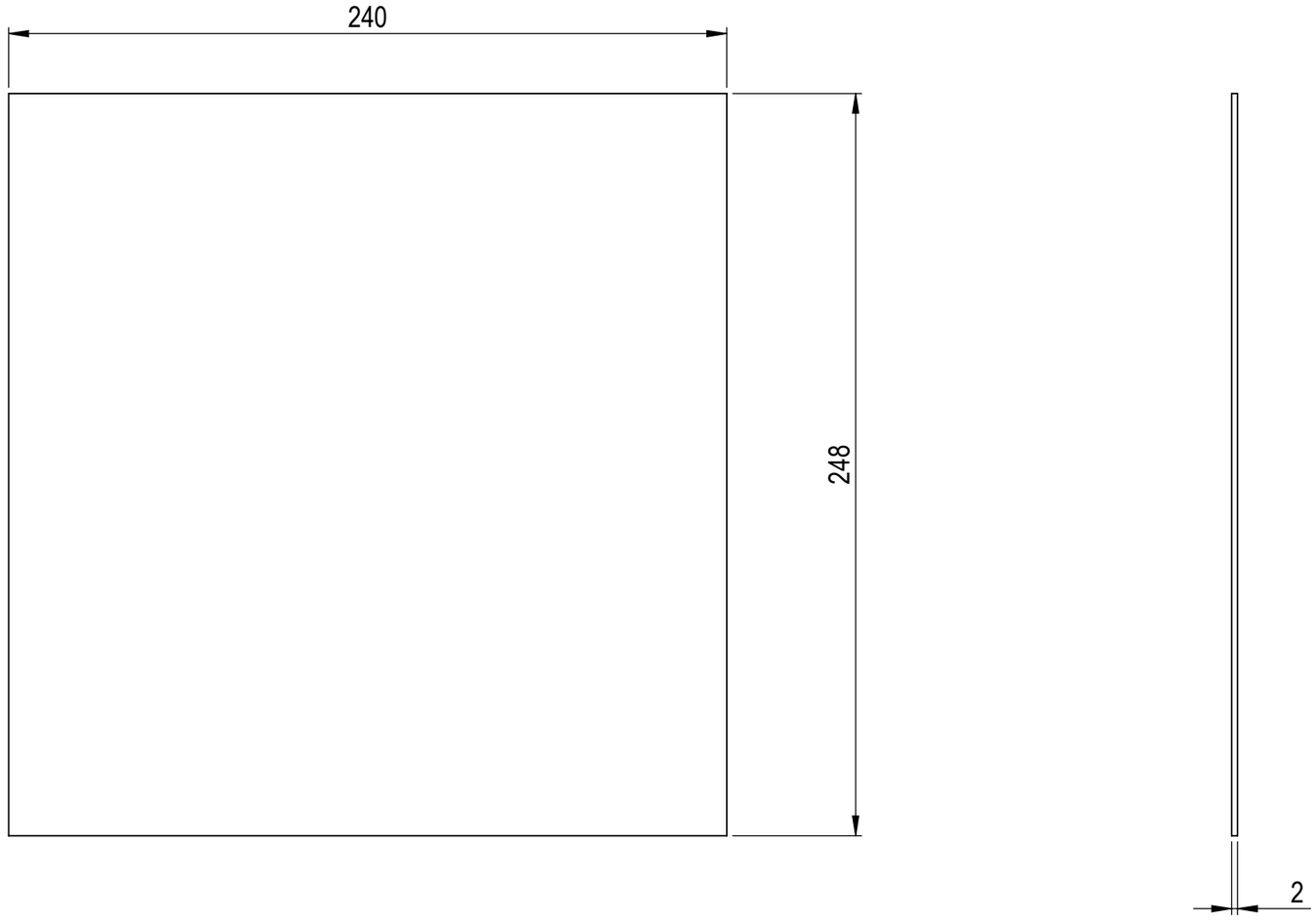
Dimension without tolerance tolerance according to ISO 2768-m	ERMAX®	SCALE: 1:2	DATE:	19-02-2020
			NAME:	MAC
MATERIAL: -	TITLE:	REVISION	NAME	DATE
WEIGHT: 3929 g	Reinforcement bracket	1		
SURFACE TREATMENT : -		2		
		3		
Brake and debur sharp edges and corners		4		
		PART NO. 099299625		A3

Angle tolerance according to ISO 2768-m

Dimension	0 to 10 mm	10 to 50 mm	50 to 120 mm	120 to 400 mm	400 to - mm
Tolerance	±1°	±0°30´	±0°20´	±0°10´	±0°05´

Dimension tolerance according to ISO 2768-m

Dimension	0,5 to 3 mm	3 to 6 mm	6 to 30 mm	30 to 120 mm	120 to 400 mm	400 to 1000 mm	1000 to 2000 mm
Tolerance	±0,1	±0,1	±0,2	±0,3	±0,5	±0,8	±1,2



Dimension tolerance according to ISO 2768-m						
Dimension	0,5 to 3 mm	3 to 6 mm	6 to 30 mm	30 to 120 mm	120 to 400 mm	400 to 1000 mm
Tolerance	±0,1	±0,1	±0,2	±0,3	±0,5	±0,8

Angle tolerance according to ISO 2768-m						
Dimension	0 to 10 mm	10 to 50 mm	50 to 120 mm	120 to 400 mm	400 to - mm	1000 to 2000 mm
Tolerance	±1°	±0°30´	±0°20´	±0°10´	±0°05´	±1.2

Dimension without tolerance
tolerance according to ISO 2768-m

ERMAX®

SCALE: 1:2

DATE: 19-02-2020

NAME: MAC

MATERIAL: Steel S355

WEIGHT: 934 g

SURFACE TREATMENT : -

Brake and debur sharp edges and corners

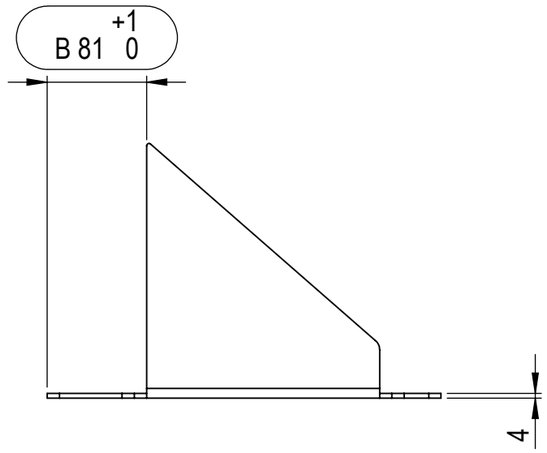
TITLE:

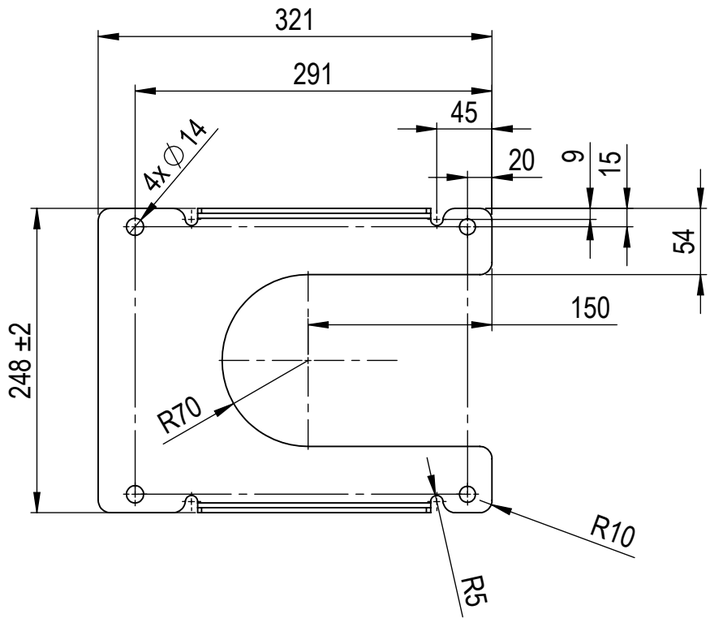
Reinforcement plate

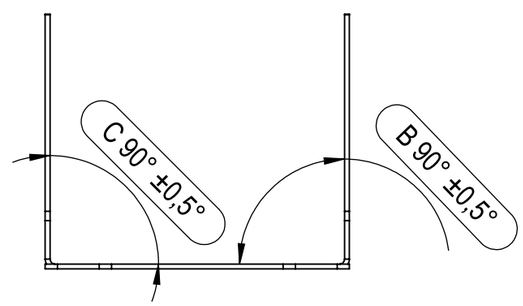
REVISION	NAME	DATE
1		
2		
3		
4		

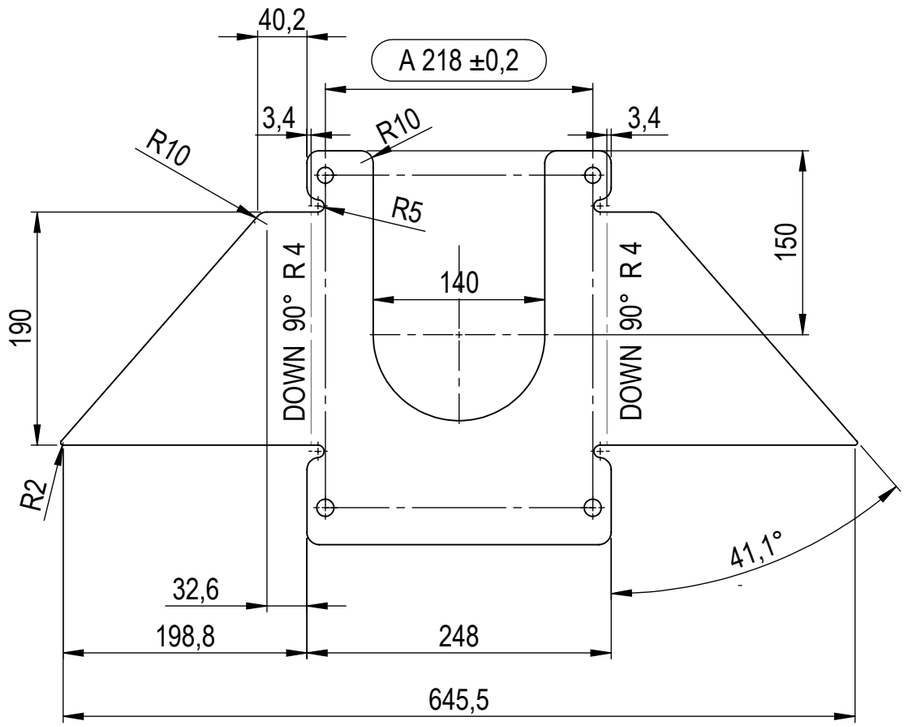
PART NO. 016860040

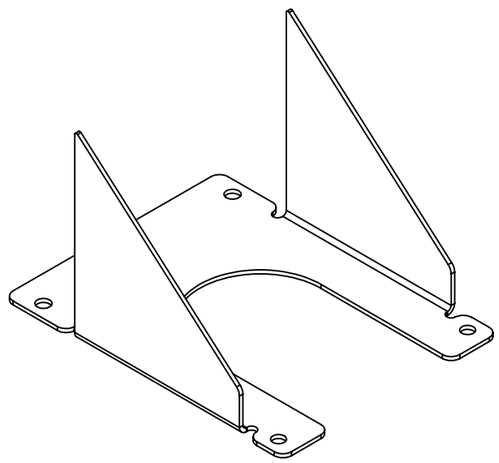
A3











Angle tolerance according to ISO 2768-m							
Dimension	0 to 10 mm	10 to 50 mm	50 to 120 mm	120 to 400 mm	400 to - mm		
Tolerance	±1°	±0°30′	±0°20′	±0°10′	±0°05′		

Dimension tolerance according to ISO 2768-m							
Dimension	0,5 to 3 mm	3 to 6 mm	6 to 30 mm	30 to 120 mm	120 to 400 mm	400 to 1000 mm	1000 to 2000 mm
Tolerance	±0,1	±0,1	±0,2	±0,3	±0,5	±0,8	±1,2

Dimension without tolerance
tolerance according to ISO 2768-m

ERMAX®

SCALE: 1:5

DATE: 19-02-2020

NAME: MAC

MATERIAL: Steel S355

WEIGHT: 2994 g

SURFACE TREATMENT :

Brake and debur sharp edges and corners

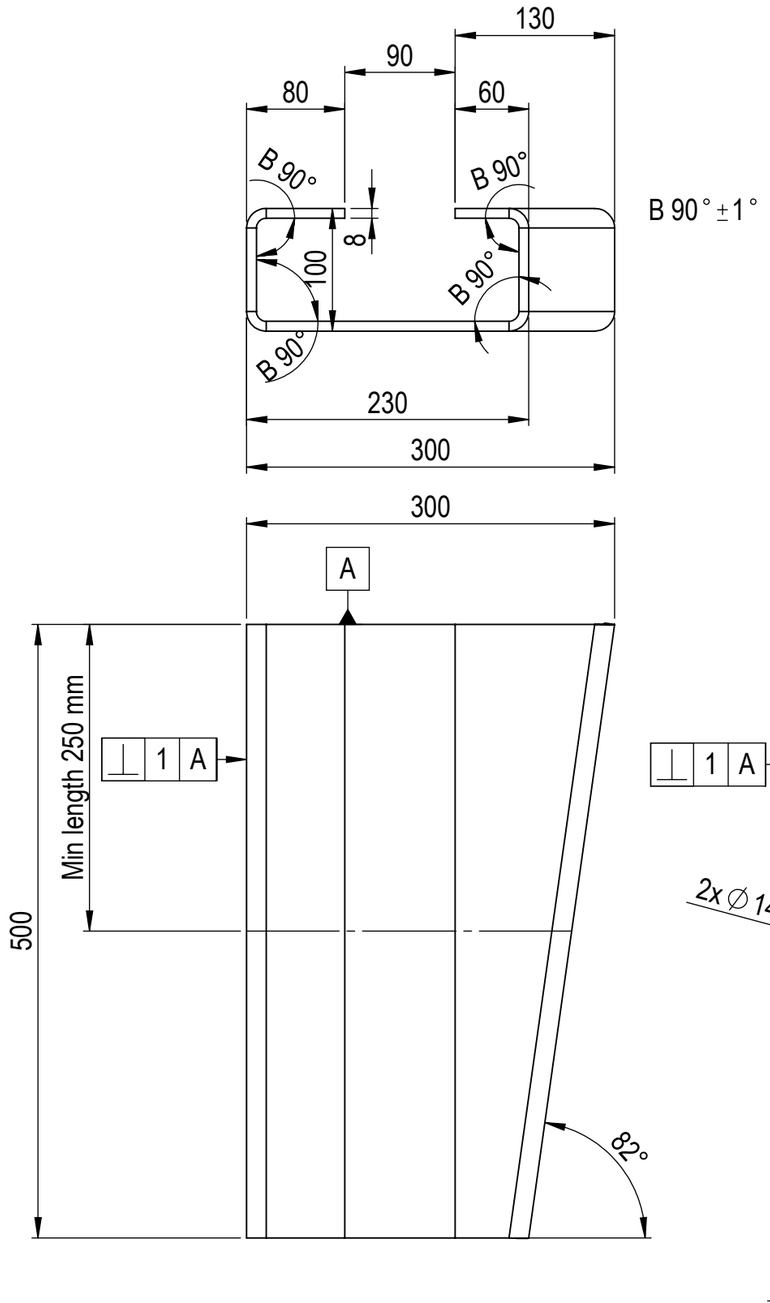
TITLE:

Steel bracket Profile

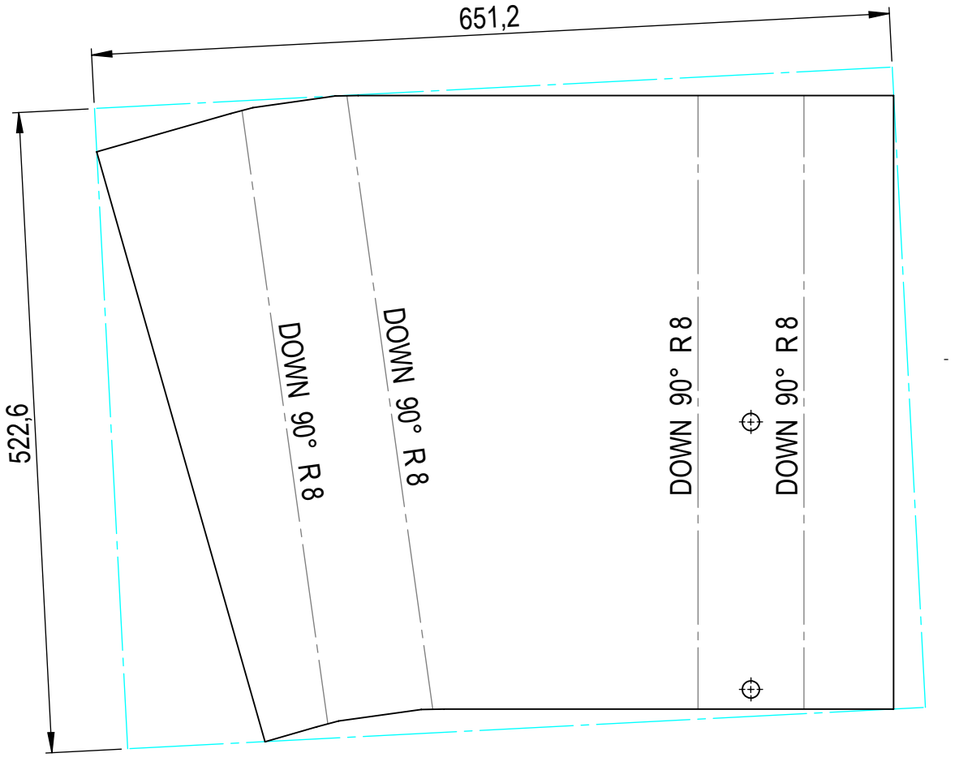
REVISION	NAME	DATE
1		
2		
3		
4		

PART NO. 016860060

A3



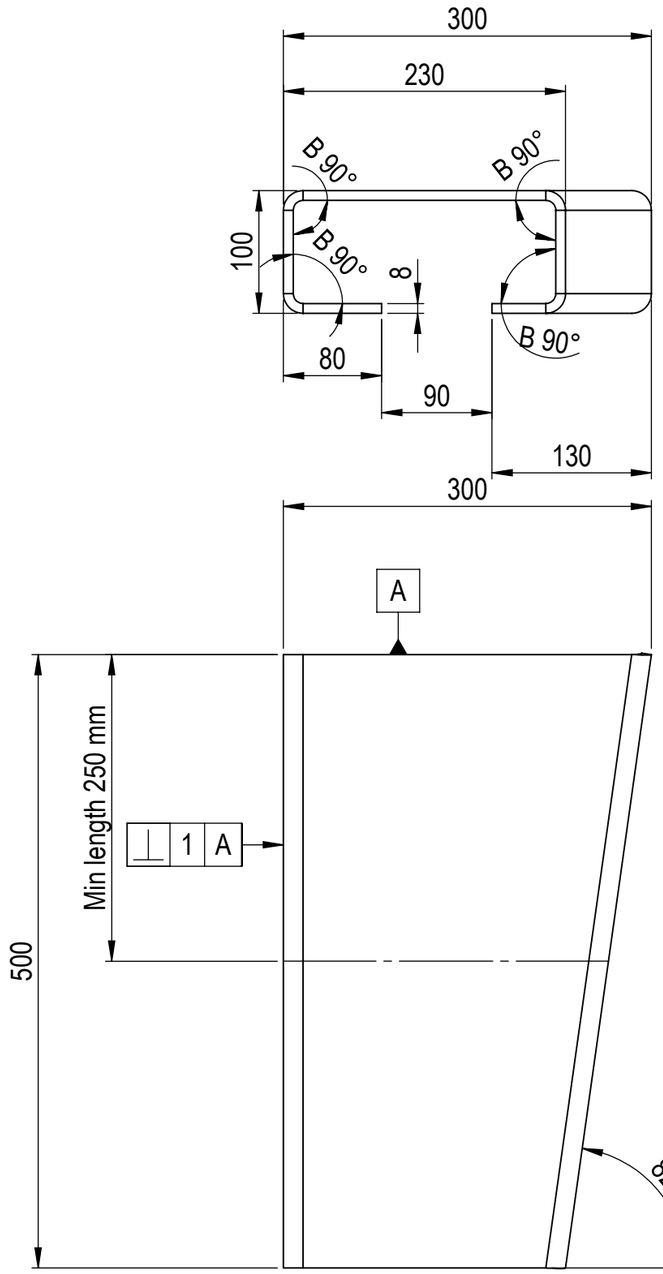
B 90° ±1°



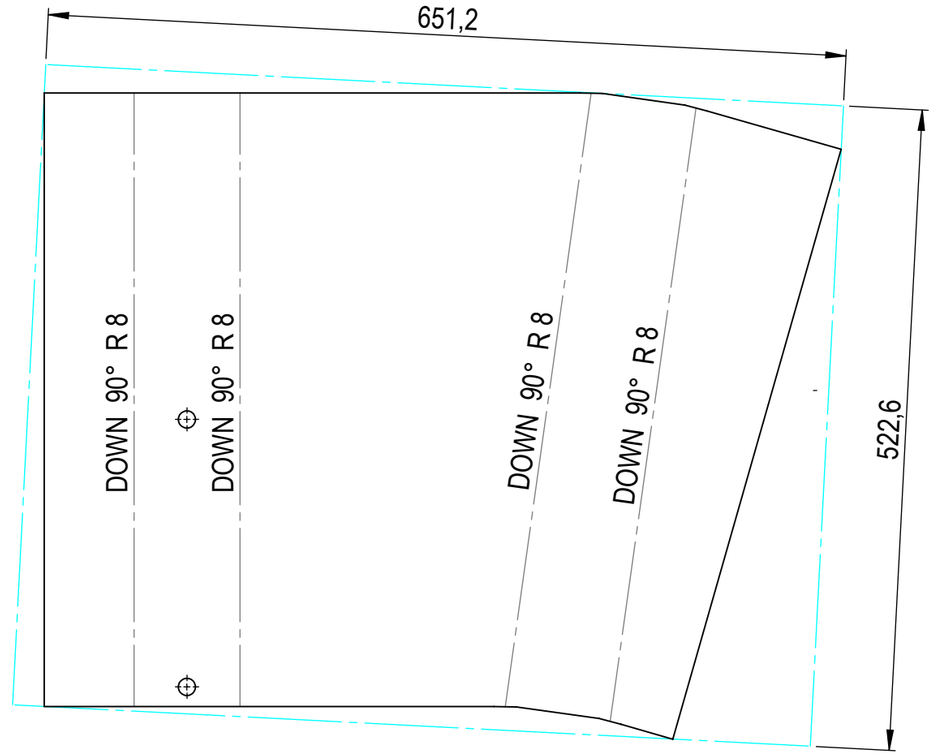
Angle tolerance according to ISO 2768-m							
Dimension	0 to 10 mm	10 to 50 mm	50 to 120 mm	120 to 400 mm	400 to - mm		
Tolerance	±1°	±0°30′	±0°20′	±0°10′	±0°05′		

Dimension tolerance according to ISO 2768-m							
Dimension	0,5 to 3 mm	3 to 6 mm	6 to 30 mm	30 to 120 mm	120 to 400 mm	400 to 1000 mm	1000 to 2000 mm
Tolerance	±0,1	±0,1	±0,2	±0,3	±0,5	±0,8	±1,2

Dimension without tolerance tolerance according to ISO 2768-m	ERMAX®	SCALE: 1:5	DATE: 19-02-2020
			NAME: MAC
MATERIAL: Steel S355	TITLE: Consol 1	REVISION	NAME / DATE
WEIGHT: 18447 g		1	
SURFACE TREATMENT : -		2	
Brake and debur sharp edges and corners		3	
		4	
		PART NO. 099299623	A3



B 90° ±1°



Angle tolerance according to ISO 2768-m							
Dimension	0 to 10 mm	10 to 50 mm	50 to 120 mm	120 to 400 mm	400 to - mm		
Tolerance	±1°	±0°30´	±0°20´	±0°10´	±0°05´		

Dimension tolerance according to ISO 2768-m							
0,5 to 3 mm	3 to 6 mm	6 to 30 mm	30 to 120 mm	120 to 400 mm	400 to 1000 mm	1000 to 2000 mm	-
±0,1	±0,1	±0,2	±0,3	±0,5	±0,8	±1,2	-

Dimension without tolerance
tolerance according to ISO 2768-m

ERMAX®

MATERIAL:
Steel S355

WEIGHT:
18447 g

SURFACE TREATMENT :
-

Brake and debur sharp edges and corners

TITLE:

Console 2

SCALE: 1:5

DATE: 19-02-2020

NAME: MAC

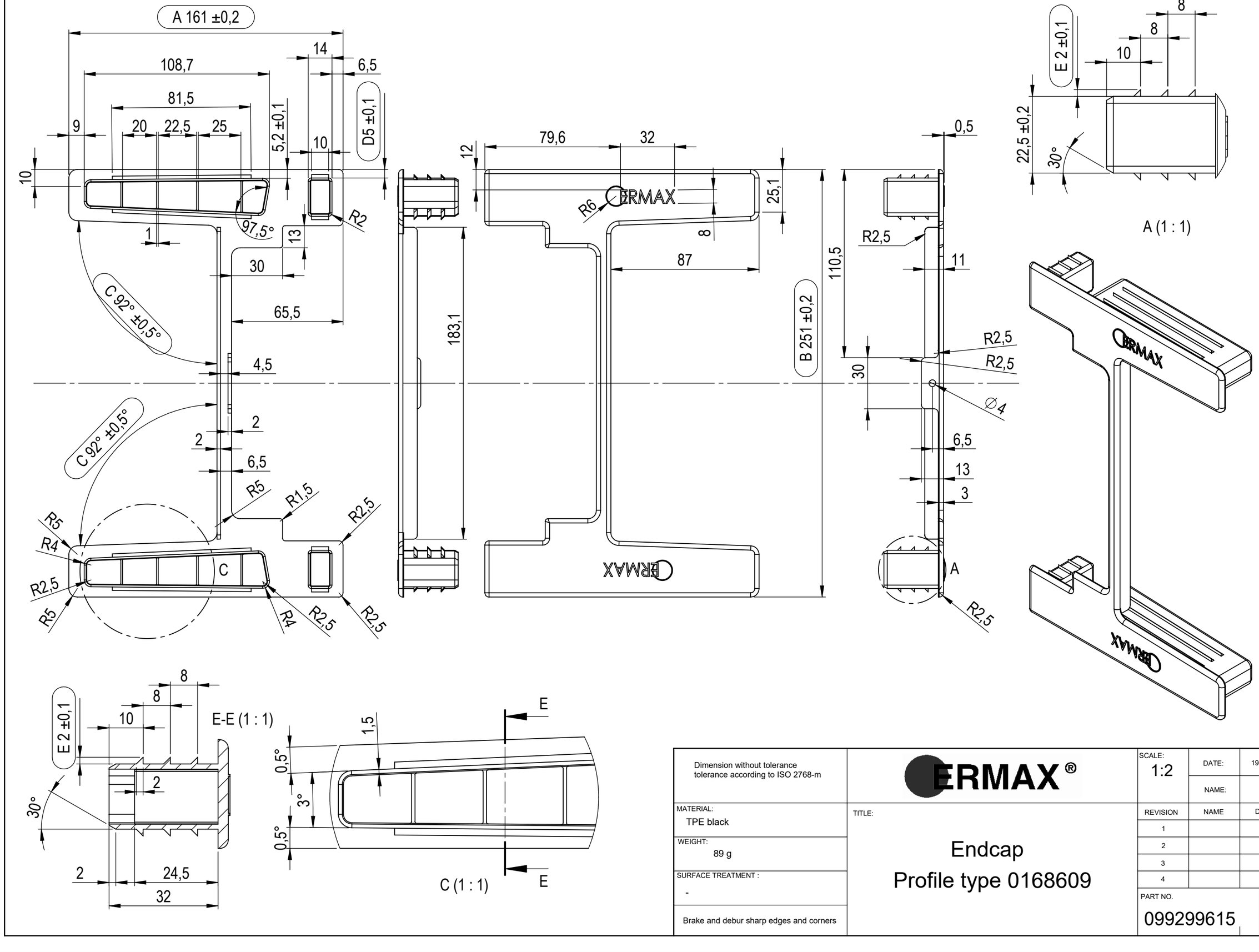
REVISION	NAME	DATE
1		
2		
3		
4		

PART NO.
099299622

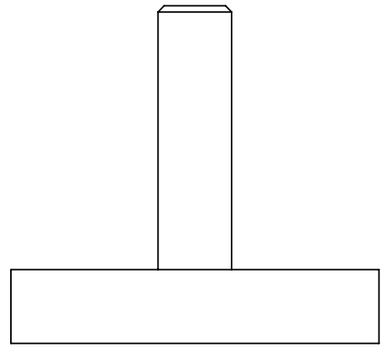
A3

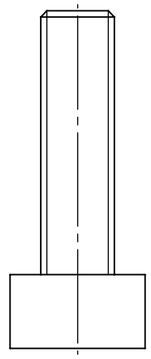
Angle tolerance according to ISO 2768-m							
Dimension	0 to 10 mm	10 to 50 mm	50 to 120 mm	120 to 400 mm	400 to - mm		
Tolerance	±1°	±0°30´	±0°20´	±0°10´	±0°05´		

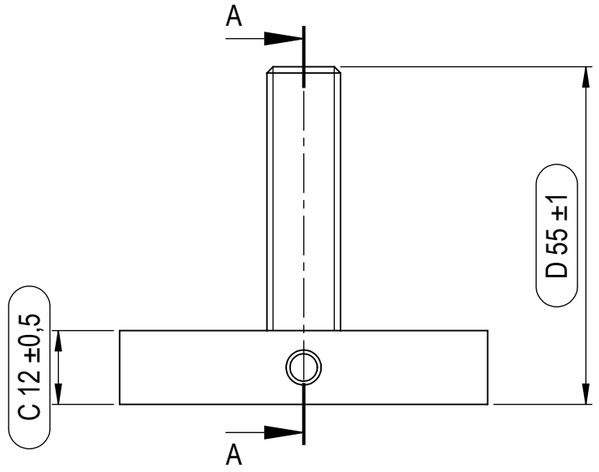
Dimension tolerance according to ISO 2768-m							
Dimension	0,5 to 3 mm	3 to 6 mm	6 to 30 mm	30 to 120 mm	120 to 400 mm	400 to 1000 mm	1000 to 2000 mm
Tolerance	±0,1	±0,1	±0,2	±0,3	±0,5	±0,8	±1,2

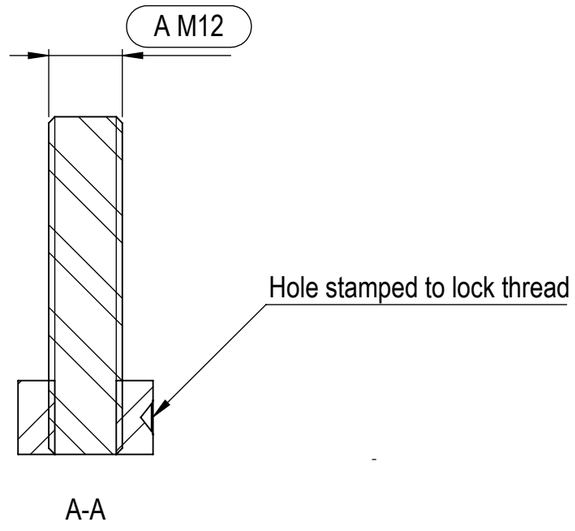


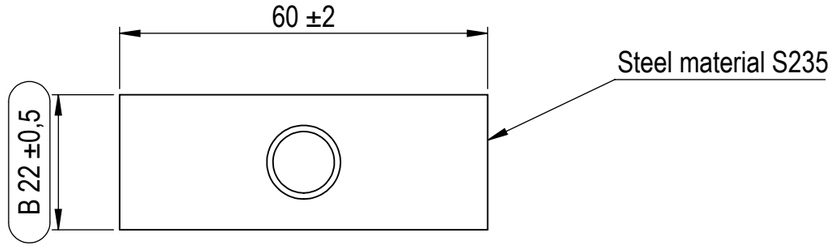
Dimension without tolerance tolerance according to ISO 2768-m	ERMAX®	SCALE: 1:2
MATERIAL: TPE black	TITLE: Endcap Profile type 0168609	DATE: 19-02-2020
WEIGHT: 89 g		NAME: MAC
SURFACE TREATMENT : -		REVISION / NAME / DATE 1 2 3 4
Brake and debur sharp edges and corners		PART NO. 099299615 — A3

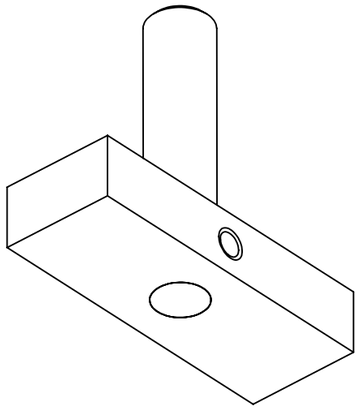












Bolt grade 10.9

Dimension without tolerance tolerance according to ISO 2768-m	ERMAX®	SCALE: 1:1	DATE:	18-02-2020
			NAME:	MAC
MATERIAL: -	TITLE:	REVISION	NAME	DATE
WEIGHT: 164 g	M12x55 bolt	1		
SURFACE TREATMENT : Blue 3-eq cromated		2		
Brake and debur sharp edges and corners		3		
		4		
		PART NO. 099110000		A3

Angle tolerance according to ISO 2768-m

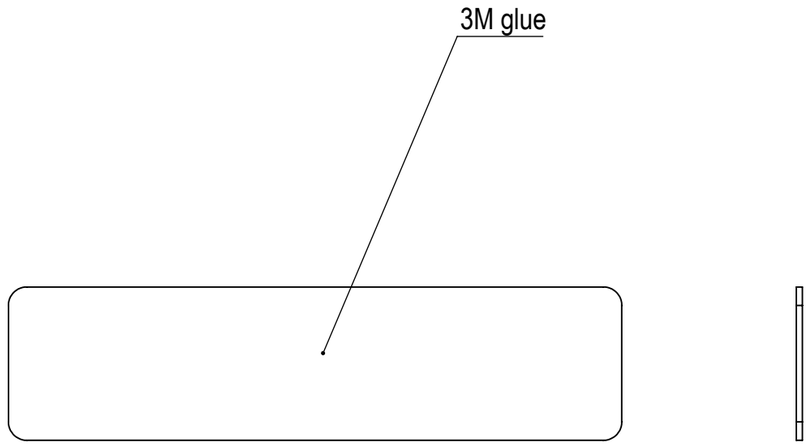
Dimension	0 to 10 mm	10 to 50 mm	50 to 120 mm	120 to 400 mm	400 to - mm
Tolerance	±1°	±0°30´	±0°20´	±0°10´	±0°05´

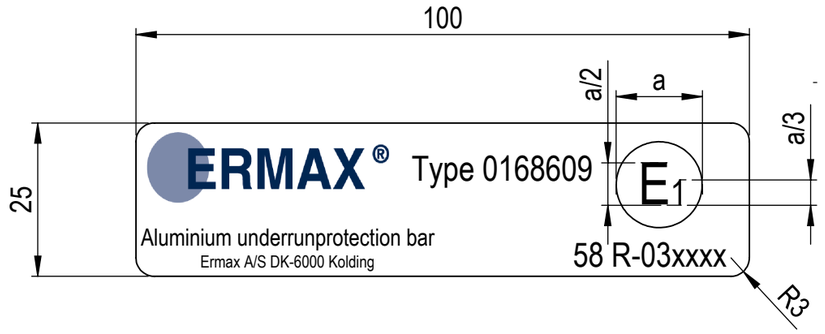
Dimension tolerance according to ISO 2768-m

Dimension	0,5 to 3 mm	3 to 6 mm	6 to 30 mm	30 to 120 mm	120 to 400 mm	400 to 1000 mm	1000 to 2000 mm
Tolerance	±0,1	±0,1	±0,2	±0,3	±0,5	±0,8	±1,2

Angle tolerance according to ISO 2768-m							
Dimension	0 to 10 mm	10 to 50 mm	50 to 120 mm	120 to 400 mm	400 to - mm
Tolerance	±1°	±0°30´	±0°20´	±0°10´	±0°05´

Dimension tolerance according to ISO 2768-m							
Dimension	0,5 to 3 mm	3 to 6 mm	6 to 30 mm	30 to 120 mm	120 to 400 mm	400 to 1000 mm	1000 to 2000 mm
Tolerance	±0,1	±0,1	±0,2	±0,3	±0,5	±0,8	±1,2





Dimension without tolerance tolerance according to ISO 2768-m	ERMAX®	SCALE: 1:1	DATE: 05-02-2020
			NAME: MAC
MATERIAL: Al	TITLE: Sign Typeapproval	REVISION	NAME / DATE
WEIGHT: 2 g		1	
SURFACE TREATMENT : -		2	
		3	
Brake and debur sharp edges and corners		4	
		PART NO. 016860425	A3