



NATIONAL TEST CERTIFICATE
(ABP)

SQUARE LINE[®]
60 X 30

Labor für Stahl- und Leichtmetallbau GmbH

(Laboratory for steel and light-metal construction)

Management: Prof. Dr. - Ing. Ö. Bucak

at the Munich University

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Bay 27

National Test Certificate

on the usability of a construction product

Test certificate number: P-2014-3039

Subject: point-mounted laminated safety glazing in conformance to Construction Products List A Part 3 – Edition 2014/1
Type of construction in conformance to seq. no. 2.12

System: SQUARE LINE® 60x30

Intended use: Fall prevention in conformance to TRAV (technical rules for the use of safety-barrier glazing)

Safety barrier category: C1

Applicant: Q-railing Europe GmbH & Co. KG
Marie-Curie-Straße 8 - 14
46446 Emmerich am Rhein

Date of issue: 21 July 2014

Period of validity: until 20 July 2019

On the basis of this National Test, the above-designated subject is usable in conformance to the Bavarian state building regulations.

This National Test Certificate comprises 7 pages and 8 annexes.



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I. General Provisions

1. The National Test Certificate does not replace the approvals, consents and certificates which are legally required for conducting construction projects.
2. The National Test Certificate is issued without prejudice to third-party rights, in particular private property rights.
3. The manufacturer of this type of construction must, notwithstanding more extensive rules in the "Special Provisions", provide the user of this type of construction with copies of the National Test Certificate and point out that a copy of the same must be kept available at the site of use. On request, copies of the National Test Certificate must be made available to the authorities that are involved.
4. The National Test Certificate may be duplicated only in its entirety. Publication of excerpts shall require the approval of Labor für Stahl- und Leichtmetallbau GmbH. Texts and drawings in promotional literature must not contradict the National Test Certificate. Translations of the National Test Certificate must contain the reference "This is a translation of the original German version and has not been checked by Labor für Stahl- und Leichtmetallbau GmbH." or a similar wording to that effect.

II. Special Provisions

1 Subject and Field of Application

1.1 Subject

The subject of the National Test Certificate is the SQUARE LINE® 60x30 post-and-railing system distributed by Q-railing Europe GmbH & Co. KG in conformance to Construction Products List A Part 3 – Edition 2014/1.

1.2 Field of Application

The above-designated subject is employed in conformance to **Category C1** of the technical rules for the use of safety-barrier glazing (TRAV).



2 Requirements Set for the Type of Construction

2.1 Description of the Design

2.1.1 Supports

Each glass pane is fastened to the posts by means of 4 clamps. All system components of relevance to the glass-pane fastening are shown in Annexes 3 to 8.

There are no requirements with respect to the hand rail section that is used; all that is necessary is for it to be able to bear the planned capping loads.

The posts are fixed in the reinforced concrete by means of chemical anchors from Q-railing (Q VMZ-IG M12) or fastened to steel structures by means of M10 screws.

2.1.2 Glazing

The following glass structures are possible:

Single-pane tempered safety glass structure (ESG):

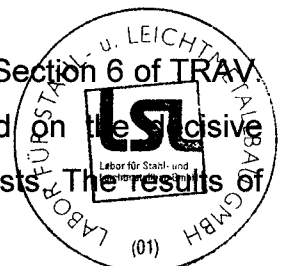
	Structure 1	Structure 2	Structure 3
Single-pane tempered safety glass (ESG)	4.00 mm	5.00 mm	6.00 mm
Polyvinyl butyral film (PVB film) at least	0.76 mm	0.76 mm	0.76 mm
Single-pane tempered safety glass (ESG)	4.00 mm	5.00 mm	6.00 mm
Total glass thickness approx.	8.8 mm	10.8 mm	12.8 mm

Only glass products which conform to Construction Products List A Part 1 or those with the „abZ“ national technical approval for use in conformance to the TRAV technical rules may be used. It is also possible to use ESG-H (heat-soaked thermally toughened safety glass) instead of ESG (single-pane tempered safety glass).

The glass quality must be confirmed by the manufacturer or supplier by means of factory certificates or declarations of conformity.

2.2 Applicable Test Procedures

The safety-barrier function of the glazing was tested in conformance to Section 6 of TRAV. The bearing capacity of loads under impact conditions was verified on the successive dimensions of the described glazing by means of pendulum impact tests. The results of the tests are recorded in Test Report 2014-3039.



2.3 Use, Maintenance and Repair

The construction must be fitted and secured by means of suitable measures so that it will permanently fulfil the requirements set with respect to fall prevention. The relevant technical construction regulations must be adhered to when proving that the glass structures are anchored to the building securely.

3 Field of Application and Dimensioning Provisions

3.1 Field of Application

The National Test Certificate applies to the type of construction described under Point 2. The glass panes have a safety-barrier function in conformance to Category C1. The permissible dimensions are given in the following tables.

Table 1: Dimensional limits

Glass-pane width b [mm]		Glass-pane height h [mm]	
min	max	min	max
500	2,000	800	1,100

4 Declaration of Conformity

4.1 General Points

Under Construction Products List A, Part 3 the type of construction specified in this National Test Certificate requires a certificate of conformity from the user (contractor). In this certificate of conformity, the contractor declares to the customer that the type of construction produced agrees in all details with this National Test Certificate.

4.2 Production Control

Production control must be set up and conducted at each site where the respective type of construction is used. Production control is understood to mean the contractor's continuous monitoring of production to ensure that the type of construction that is manufactured conforms to the provisions in this National Test Certificate.

The production control must cover the description and inspection of the raw materials and the constituent parts.

The results of the production control must be recorded and evaluated. The records must contain the following details at least:



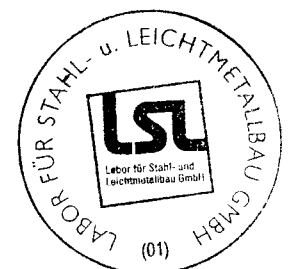
- designation of the type of construction with a description of the constituent parts
- date of manufacture and inspection of the type of construction
- results of the inspection and comparison with the requirements
- signature by the person responsible for production control

The records must be kept for at least five years and submitted to the appropriate highest construction supervision authority on demand.

5 Other Applicable Provisions

The provisions of TRAV (technical rules for the utilisation of safety-barrier glazing) - as amended in January 2003 - must be observed when producing the constructions. Please refer also to the following standards and information leaflets:

- [a] Construction Products Lists A, B and C; version 2014-1
- [b] TRLV (Technical rules for the use of glazing with linear supports), version 2006-8
- [c] DIN EN 12600; Glass in building - pendulum test - impact test method and classification of flat glass, version 2003-4
- [d] DIN EN 14449; Glass in building - laminated glass and laminated safety glass, version 2005-7
- [e] DIN 572, Parts 1-2; Glass in building - Basic soda lime silicate glass products, version 2004-9
- [f] DIN 12150, Part 1; Glass in building - thermally toughened soda lime silicate safety glass, version 2000-11
- [g] DIN 18008 Part 1-2; Glass in building – design and construction rules, version 2010-12
- [h] Test report 2014-3039; Pendulum impact tests in conformance to the technical rules for the use of safety-barrier glazing (TRAV) from Labor für Stahl and Leichtmetallbau GmbH



III. Legal Basis

This National Test Certificate is issued on the basis of Sections 17 and 19 of the Bavarian Building regulations (BayBO) of 14 August 2007 in conjunction with Construction Products List A.

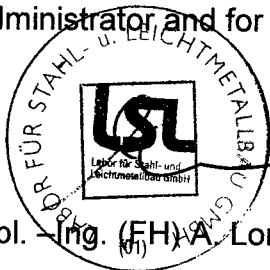
Under Section 25 Sub-section 2 of the MBO (Model Building Code) in conjunction with Section 23 Sub-section 2 of BayBO (Bavarian Building Regulations) of 14 August 2007 a National Test certificate issued in any one constituent state is valid for all constituent states in the Federal Republic of Germany.

IV. Instructions about Available Legal Remedies

An appeal may be filed against this National Test certificate within one month of notification. The appeal must be made in writing or declared at Labor für Stahl- und Leichtmetallbau GmbH for recording.

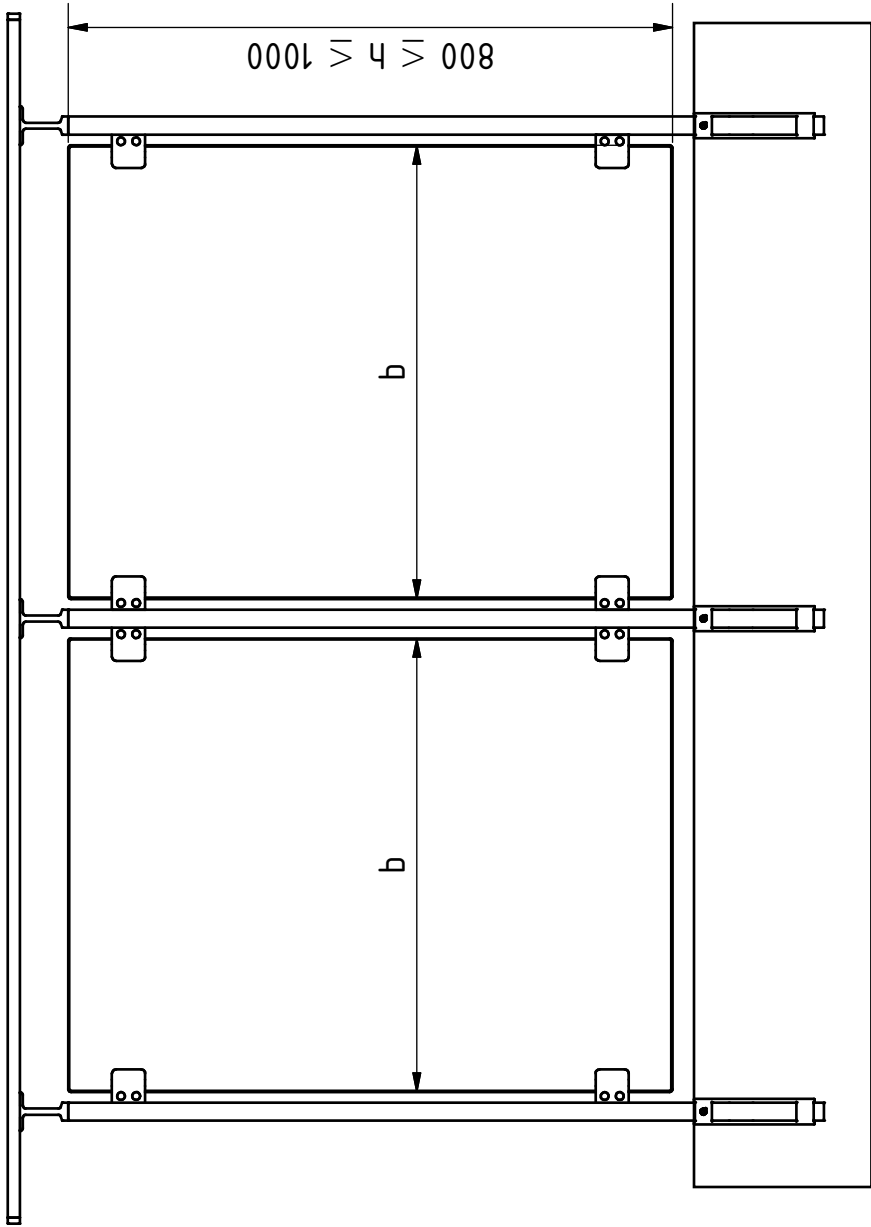
Munich, 21 July 2014

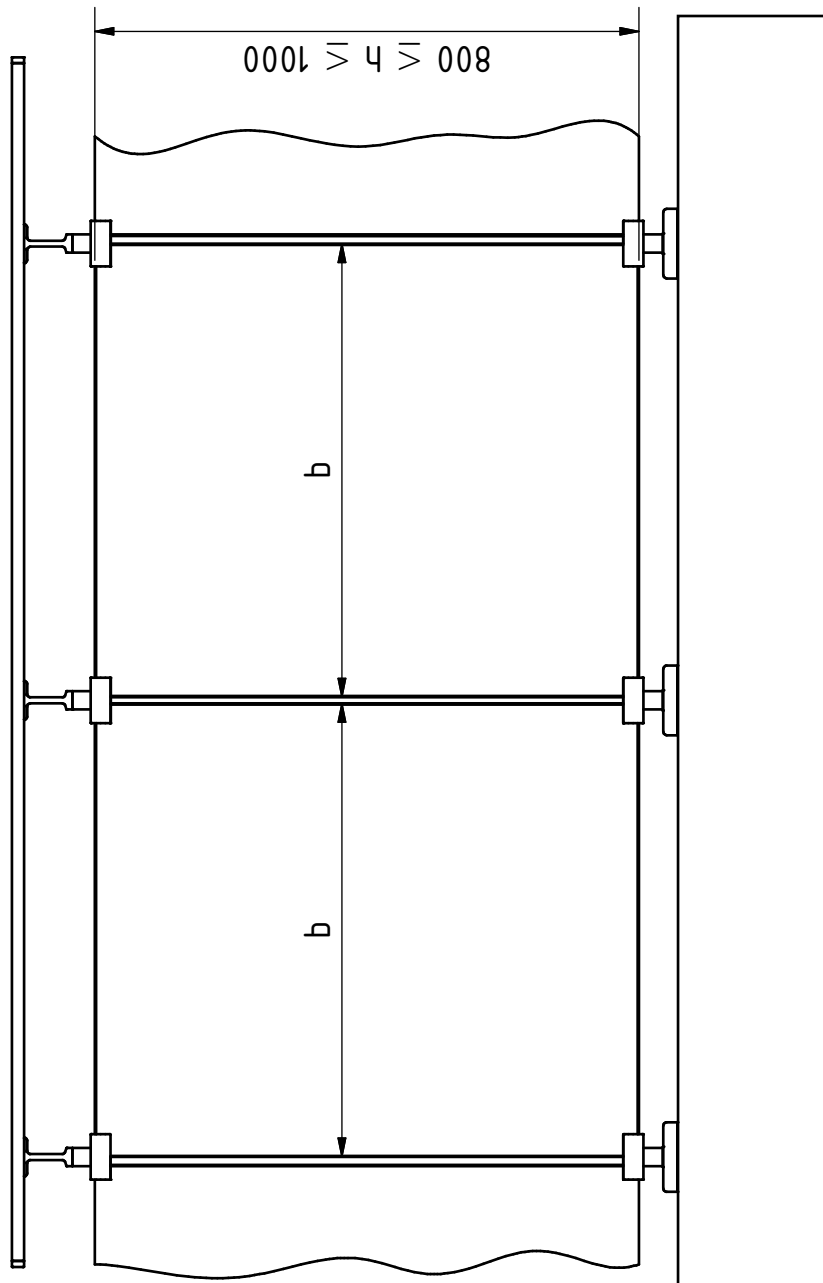
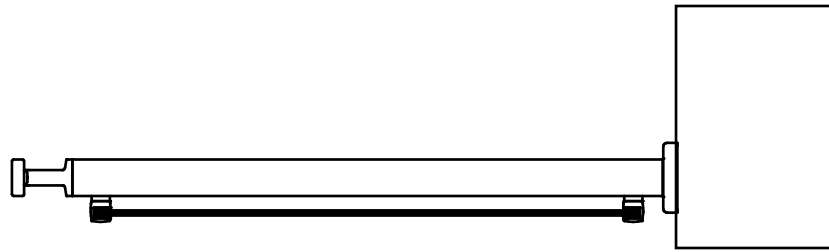
Administrator and for Management

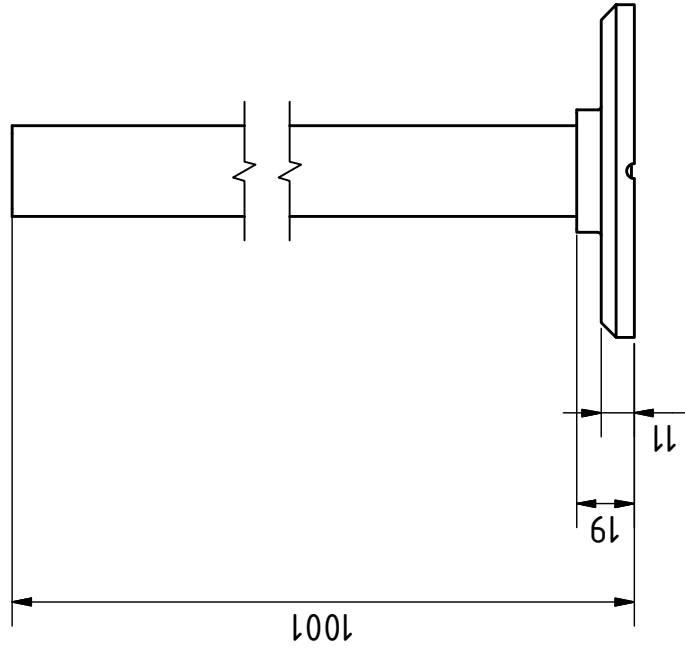
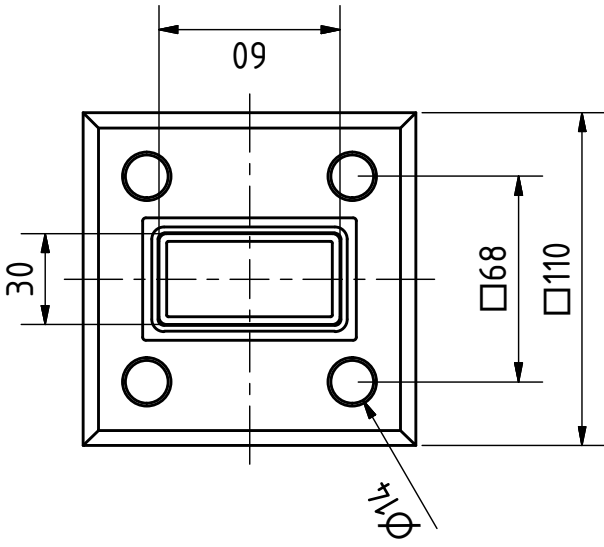


Dipl.-Ing. (FH) A. Lorenz

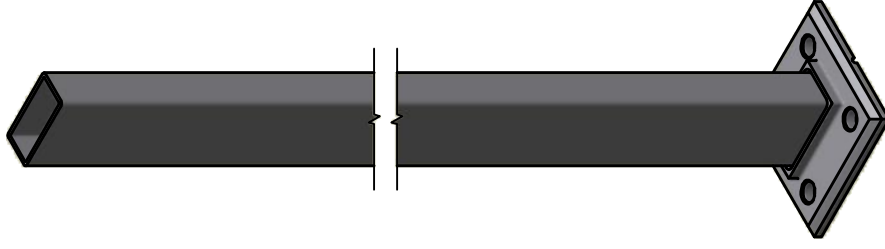
(Deputy Manager of the Testing, Inspection and Certification Body)







3D view





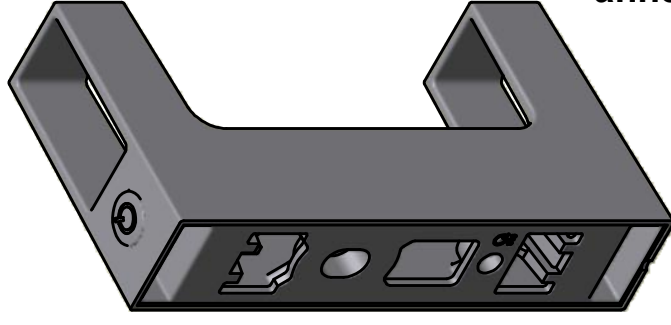
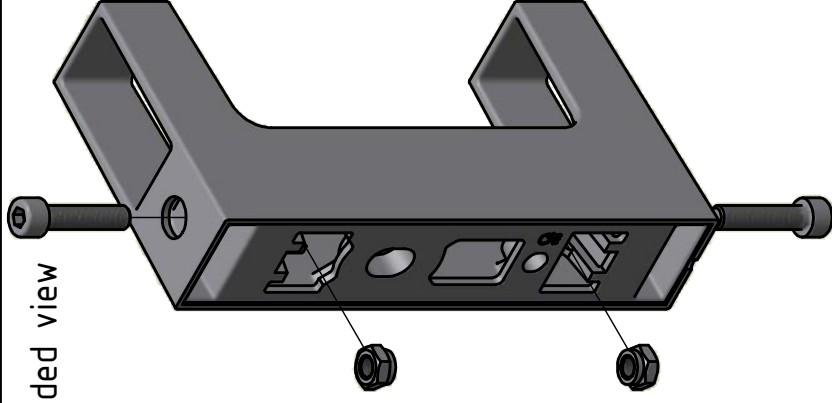
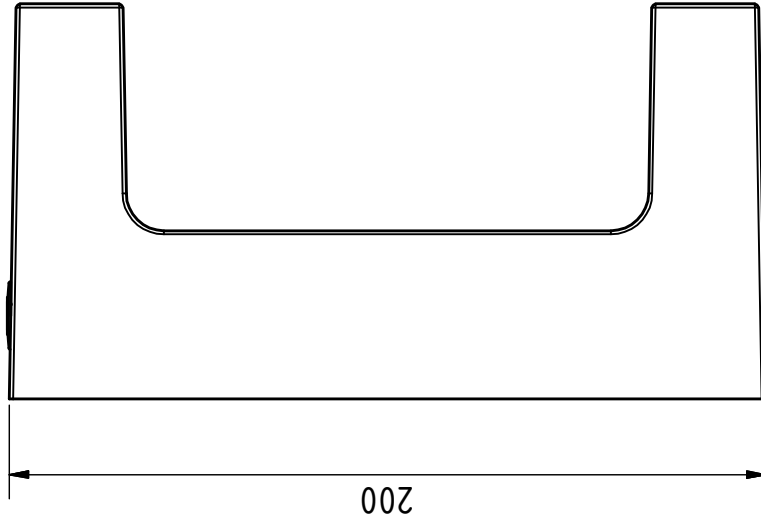
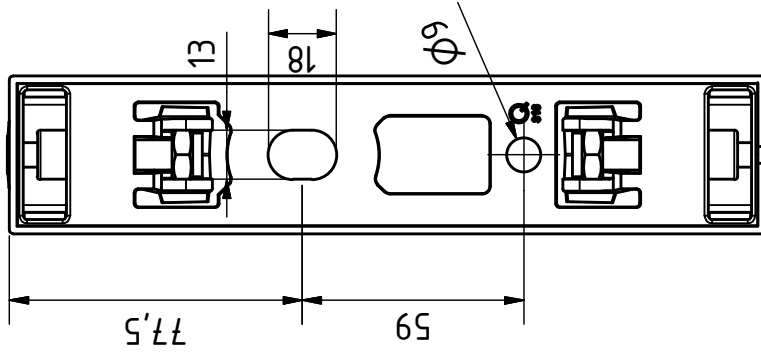
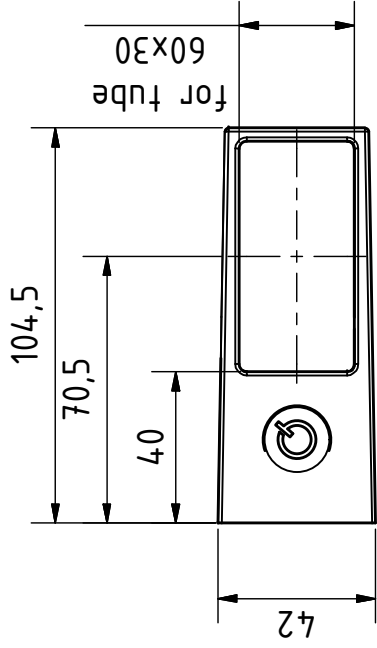
annex 3



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Drawn	Date	Name
Checked	13.01.2014	TYPE

Scale: 1 : 2,5	Weight: N/A		Rev.No.: 0
Material: Stainless steel AISI 316	Finish: Satin grain ~320		
Product line: rectangular post system			
Description: assembly topflange welded			
Drawing no.: CD-14490106312			Sheet: 1 / 1
			A4



annex 4



Scale: 1 : 2 | Weight: N/A | Rev.No.: U

Material: Stainless steel AISI 316
Finish: Satin grain ~320

Product line:

Description: fascia flange

Date	Name
13.01.2014	YPE
13.01.2014	TRR

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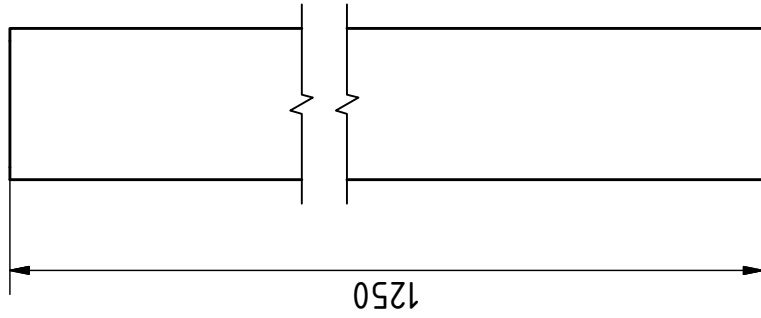
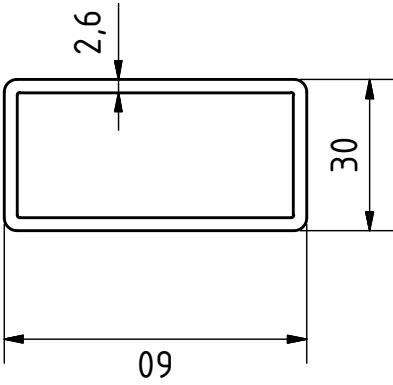
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Sheet: 1 / 1
A4

Assembled view



annex 5



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	Date	Name
Drawn	13/01/2014	YPE
Checked	13/01/2014	TRR



Scale: 1 : 1,5 | Weight: 4276 g | Rev.No.: 0

Material: Stainless steel AISI 316

Finish: Satin grain ~320

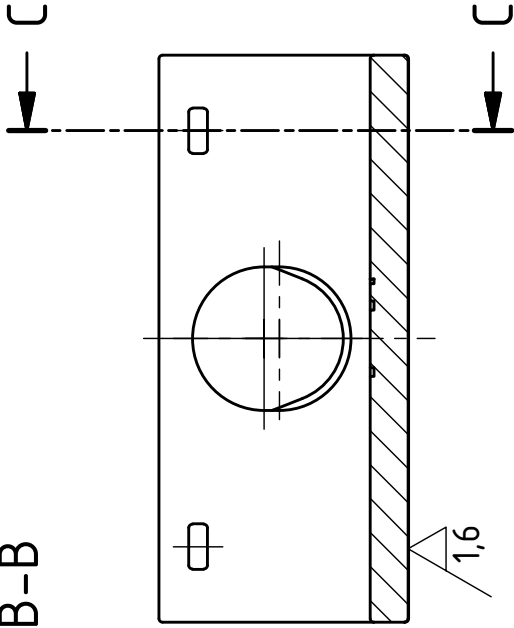
Product line:

Description:
30x60x1250mm

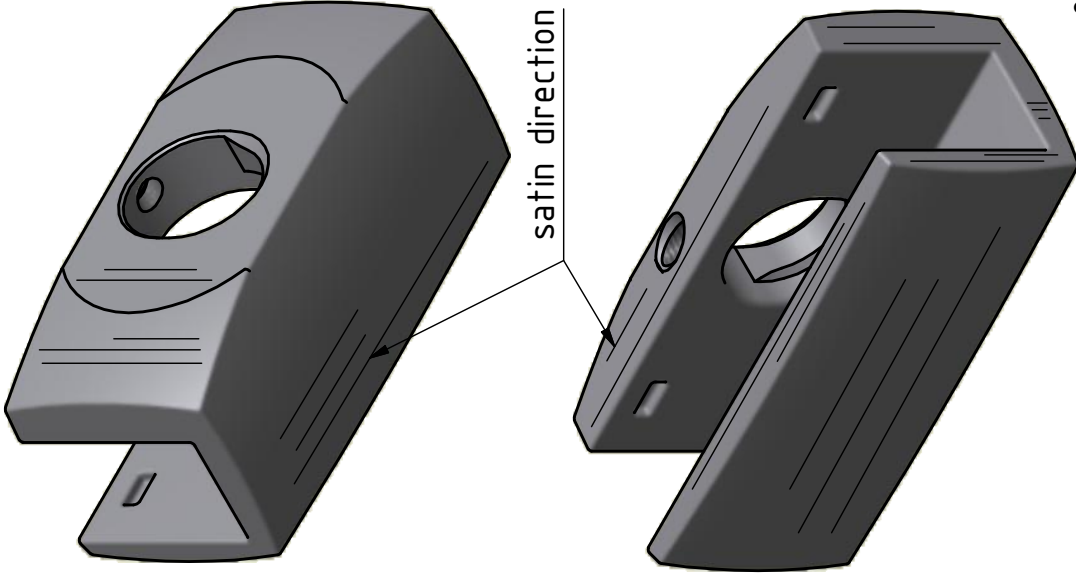
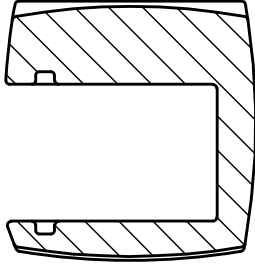
Drawing no.:
CD-14490206312

Sheet:
1 / 1
A4

B-B



C-C



annex 6



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Date	Name
22/07/2013	LBR
07/02/2014	MYN

General tolerance according
VDG P690-D1

Scale: 1 : 1 | Weight: 297 g | Rev.No.:

Material: Stainless steel AISI 316

Finish: According sample no.12 (approx. satin grain 320)

Product line:
linear line

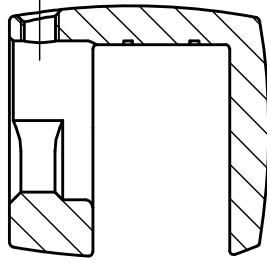
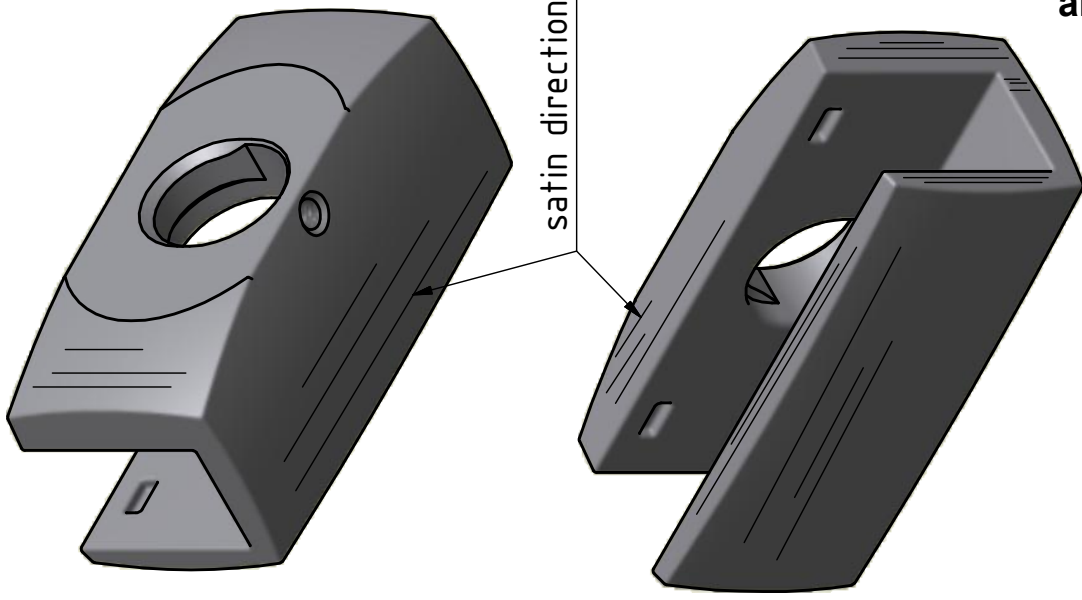
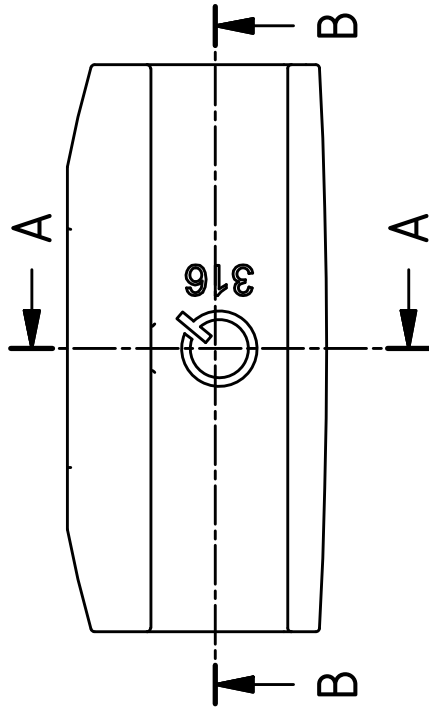
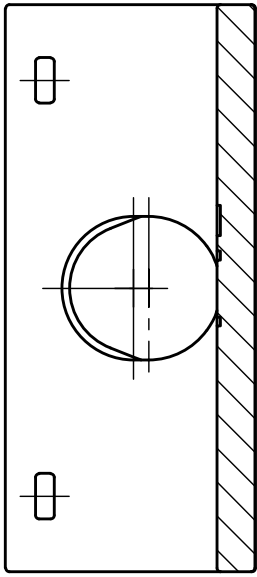
Description:
clamp top

Drawing no.:

14305505412

Sheet:
1 / 1
A4

B-B



A-A

annex 7



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Date	Name
23/07/2013	LBR
21/01/2014	TRR

General tolerance according VDG P690-D1

Scale: 1 : 1 | Weight: 297 g | Rev.No.: 7

Material: Stainless steel AISI 316

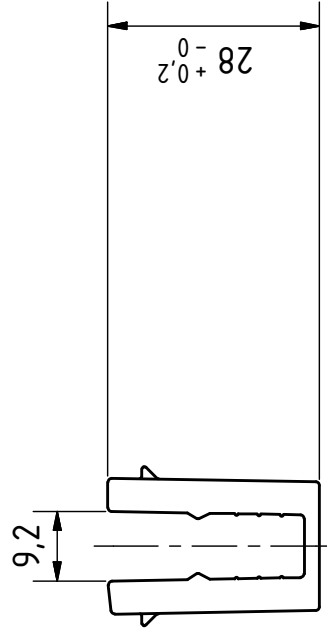
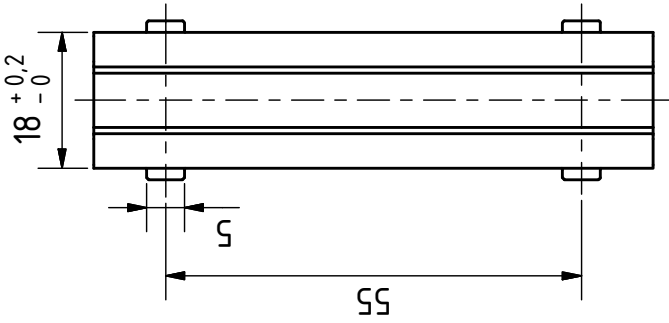
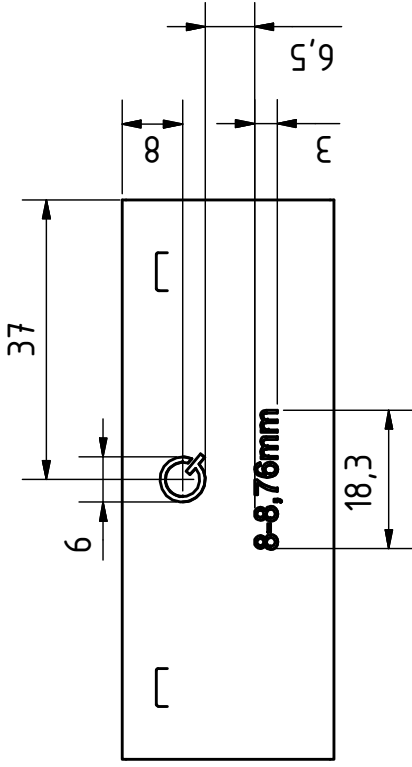
Finish: According sample no.12 (approx. satin grain)

Product line: linear line

Description: clamp bottom

Drawing no.: 14305515412

Sheet: 1 / 1
A4



annex 8

General radius: 0,5mm

Text style of logo:

Arial Unicode MS, 3mm height, 0,5mm deep below surface



Scale: 1 : 1 | Weight: 25 g | Rev.No.: 2

Material: EPDM 65° ±5 shore A

Finish: black

Product line: Accessories

Description: rubber 8-8,76

Drawing no.:

19501400800

Sheet: 1 / 1

A4

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Drawn	Checked	Date	Name
LBR	LBR	23/07/2013	LBR
TRR	TRR	26/11/2013	TRR

REV	DESCRIPTION	DATE
2	changed shape	26.11.2013
1	changed shape	18.11.2013
0	first release	12.08.2013
	DRAWN	

General tolerance according ISO 3302-1 M3

GOOD LUCK WITH
YOUR INSTALLATION!

VIEL ERFOLG MIT
IHRER MONTAGE!

SUCCES MET
DE INSTALLATIE!