

European Technical Assessment

ETA 24/0534

Version 01

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UBA^{tc} Assessment Operator



Buildwise

Kleine Kloosterstraat 23
1932 Sint-Stevens-Woluwe
info@buildwise.be
www.buildwise.be



SECO Belgium

Registered office:
Cantersteen 47 1000 Bruxelles
Corporate office:
Hermeslaan 9 1831 Diegem
mail@seco.be -
www.groupseco.be

Technical Assessment Body issuing the European Technical Assessment: UBA^{tc}.
UBA^{tc} has been designated according to Article 29 of Regulation (EU) No 305/2011
and is member of EOTA (European Organisation for Technical Assessment)

Trade name of the construction product:

FIXI3D hanger system

Product family to which the construction product belongs:

33 FIXINGS (façade anchor)

Manufacturer:

Fixinox sa
Z.I. de Jumet – Première rue n°8
B-6040 Jumet
Belgium

Manufacturing plant(s):

01

Website:

www.fixinox.com

This European Technical Assessment is issued in accordance with Regulation (EU) No 305/2011, on the basis of:

European Assessment Document (EAD): EAD 333220-00-0601

This version replaces

-

This European Technical Assessment contains:

11 pages including 7 annexes which form an integral part of the document



European Organisation
for Technical Assessment

Legal bases and general conditions

- 1 This European Technical Assessment is issued by UBAtc (Union belge pour l'Agrément technique de la construction, i.e. Belgian Union for technical Approval in construction), in accordance with:
 - Regulation (EU) No 305/2011¹ of the European Parliament and of the Council of 9 March 2011 laying down harmonised conditions for the marketing of construction products and repealing Council Directive 89/106/EEC
 - Commission Implementing Regulation (EU) No 1062/2013² of 30 October 2013 on the format of the European Technical Assessment for construction products.
 - European Assessment Document (EAD) : EAD-333220-00-0601.
- 2 Under the provisions of Regulation (EU) No 305/2011, UBAtc is not authorized to check whether the provisions of this European Technical Assessment are met once the ETA has been issued.
- 3 The responsibility for the conformity of the performances of the products with this European Technical Assessment and the suitability of the products for the intended use remains with the holder of the European Technical Assessment.
- 4 Depending on the applicable Assessment and verification of constancy of performance (AVCP) system, (a) notified body(ies) may carry out third-party tasks in the process of assessment and verification of constancy of performance under this Regulation once the European Technical Assessment has been issued.
- 5 This European Technical Assessment allows the manufacturer of the construction product covered by this ETA to draw up a declaration of performance for the construction product.
- 6 CE marking should be affixed to all construction products for which the manufacturer has drawn up a declaration of performance.
- 7 This European Technical Assessment is not to be transferred to other manufacturers, agents of manufacturers, or manufacturing plants other than those indicated on page 1 of this European Technical Assessment.
- 8 The European Technical Assessment holder confirms to guarantee that the product(-s) to which this assessment relates, is/are produced and marketed in accordance with and comply with all applicable legal and regulatory provisions, including, without limitation, national and European legislation on the safety of products and services. The ETA-holder shall notify the UBAtc immediately in writing of any circumstance affecting the aforementioned guarantee. This assessment is issued under the condition that the aforementioned guarantee by the ETA-holder will be continuously observed.
- 9 According to Article 11(6) of Regulation (EU) No 305/2011, when making a construction product available on the market, the manufacturer shall ensure that the product is accompanied by instructions and safety information in a language determined by the Member State concerned which can be easily understood by users. These instructions and safety information should fully correspond with the technical information about the product and its intended use which the manufacturer has submitted to the responsible Technical Assessment Body for the issuing of the European Technical Assessment.
- 10 Pursuant to Article 11(3) of Regulation (EU) No 305/2011, manufacturers shall adequately take into account changes in the product-type and in the applicable harmonised technical specifications. Therefore, when the contents of the issued European Technical Assessment do not any longer correspond to the product-type, the manufacturer should refrain from using this European Technical Assessment as the basis for their declaration of performance.
- 11 All rights of exploitation in any form and by any means of this European Technical Assessment is reserved for UBAtc and the ETA-holder, subject to the provisions of the applicable UBAtc regulations.
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- 13 Subject to the application introduced, this European Technical Assessment is issued in English and may be issued by the UBAtc in its official languages. The translations correspond fully to the English reference version circulated in EOTA.
- 14 This European Technical Assessment was first issued by UBAtc on November 7th 2024.

¹ OJEU, L 88 of 2011/04/04

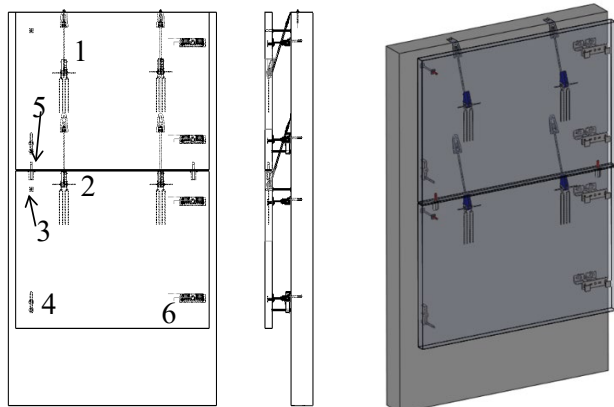
² OJEU, L 289 of 2013/10/31

Technical Provisions

1 Technical description of the product

1.1 General

The FIXI3D hanger system ("2.0" range, see Figure 1 – details no. 2) consists of a mounting plate that is designed to be hooked onto the supporting structure, a straight threaded rod for height adjustment and an insert, made out an axle for lateral adjustment, a fork and lugs, that is placed inside in the panel before it is suspended; the entire assembly is made from stainless steel.



1. Attika suspension hooks
2. Single suspension hooks
3. Spacers
4. Wind anchors
5. Pins
6. Earthquake protection (not shown)

Figure 1 – Illustration of the installed façade system with "2.0" range (details in Annex 1)

The insert embedded in concrete according to EN 206 may only be used for external wall claddings with a minimum strength class C25/30.

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

The hanger system components are made from stainless steel from type according to EN 10088-1 or EN ISO 4032 as defined in Table 1.

Details on the components are given in Annex II to IV.

The stirrups are made of steel B500B according to EN 10080.

Table 1 – Material for the hanger system components

Component	Steel type
Plate	1.4401 / 1.4404 / 1,4162
Square plate	1.4401 / 1.4404 / 1,4162
Straight threaded rod	A4 – 70
Axle – 5.0 kN-60.0 kN classes	1.4401 / 1.4362 / 1,4462
Fork	1.4401 / 1.4404
Insert lugs	1.4401 / 1.4404 / 1,4162

1.2 Ancillary products

Ancillary products (spacer, wind anchors, pin, attachment plugs, bolts, steel frames) referred to in this ETA, as a part of installation provisions or in the framework of determining performances (e.g. fire resistance), are not covered by this ETA and may not be CE-marked on the basis of it.

Specification of the intended use(s) in accordance with the applicable EAD

1.3 Intended uses

The product is intended to be used for permanent anchorages of concrete façade panels under predominantly static actions or quasi-static actions (transmission of self-weight) in reinforced normal weight concrete with minimum strength class C25/30.

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

Depending on the materials used for the product, it shall be used in structures subjected to external atmospheric exposure or exposure in permanently damp internal conditions.

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

The hardened concrete is at least 21 days old.

The provisions made in this European Technical Assessment are based on the assumed working life of 50 years³, provided the manufacturers conditions for the packaging, transport, storage, installation, use, maintenance, and repair are met.

1.4 Assumptions under which the fitness of the product(s) for the intended use was favourably assessed

1.4.1 Manufacturing directives

The European technical assessment is issued for the product on the basis of agreed data/information, deposited with the approved body, 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 the approved body before the changes are introduced. The approved body will decide whether or not such changes affect the ETA and consequently the validity of the CE marking on the basis of the ETA and if so whether further assessment or alterations to the ETA, shall be necessary.

³ The indications given as to the working life of the products cannot be interpreted as a guarantee given by the ETA-holder or the assessment body. It should only be regarded as a means for specifiers to choose the appropriate criteria for this product in relation to the expected, economically reasonable working life of the works.

1.4.2 Design

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

The products are designed under the responsibility of an design office experienced in anchorages and façade design.

Verifiable calculations notes and drawings are prepared taking into account of the loads to be anchored.

1.4.3 Installation

The placing of the FIX3D hanger system shall respect the installation requirements of the manufacturer.

1.5 Recommendations

Concerning product packaging, transport, storage, maintenance, replacement and repair, it is the responsibility of the manufacturer to undertake the appropriate measures to advises his clients on the transport, storage, maintenance, replacement and repair of the product as he considers necessary.

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

2.1 Mechanical resistance and stability (BWR1)

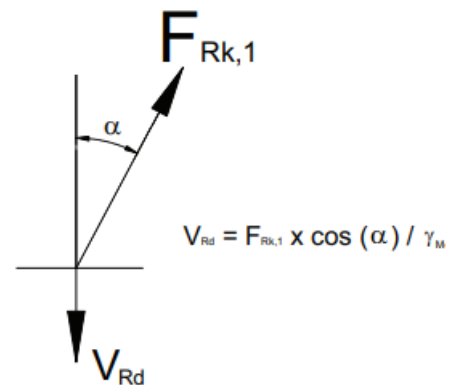
2.1.1 Characteristic resistance to concrete failure under inclined load not influenced by edges, spacing and reinforcement

No tests are required if $F_{Rk,0} \leq F_{Rk,1}$.

2.1.2 Characteristic resistance to concrete failure under inclined load influenced by edges, spacing and reinforcement

Table 2 – Characteristic resistance to concrete failure under inclined load influenced by edges, spacing and reinforcement

"2.0" range			
Designation	$F_{Rk,1}$ [kN]	Designation	$F_{Rk,1}$ [kN]
5	11,2	25	56,0
10	22,4	35	78,4
15	33,6	45	100,9
20	44,8	60	134,5



$\alpha = 20^\circ$, see Annex II

$\gamma_M = 1,56$, in absent of other national regulations.

2.1.3 Characteristic resistance to steel failure under inclined load

No tests required ($F_{Rk,s} \leq F_{Rk,1}$ and tests with all parts of the product).

2.2 Safety in case of fire (BWR2)

2.2.1 Reaction to fire

The anchor channels are made from stainless steel classified as class A1 in accordance with EN 13501-1 and Commission Delegated Regulation 2016/364.

2.3 Aspect of durability

2.3.1 Corrosion

No performance assessed.

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

In accordance with Regulation (EU) N° 305/2011, Directive 89/106/EEC is repealed, but references to the repealed Directive shall be construed as references to the Regulation.

For the products covered by this ETA the applicable European legal act is Commission Decision 97/161/EC⁴, as amended, of the European Commission for metal anchors for use in concrete for fixing lightweight systems.

The AVCP system applicable is 2+.

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

4.1 Tasks for the ETA-holder

4.1.1 Factory production control (FPC)

4.1.1.1 General

The manufacturer shall establish, document and maintain a FPC system to ensure that the products placed on the market conform to the stated performance characteristics. The FPC system shall consist of procedures, regular inspections and tests and/or assessments and the use of the results to control raw and other incoming materials or components, equipment, the production process and the product.

The results of inspections, tests or assessments requiring action shall be recorded, as shall any action taken. The action to be taken when control values or criteria are not met shall be recorded.

4.1.1.2 Equipment

All weighing, measuring and testing equipment shall be calibrated and regularly inspected according to documented procedures, frequencies and criteria.

4.1.1.3 Raw materials and components

The specifications of all incoming raw materials and components shall be documented, as shall the inspection scheme for ensuring their conformity.

4.1.1.4 Non-conforming products

In the event of any non-conformity of any product, that product shall be placed into quarantine and action taken to rectify the cause of the non-conformity. Products may not subsequently be dispatched until the problem has been resolved.

4.1.1.5 Tests and frequencies

All the elements, requirements and provisions adopted by the manufacturer are documented in a systematic manner in the form of written policies and procedures. This production control system ensures that the product is in conformity with the European Technical Assessment (ETA).

4.2 Tasks for the Technical Assessment Body

4.2.1 Initial Type Testing

Assessment tests on the product have been conducted under the responsibility by the Technical Assessment Body (UBAtc) in accordance with EAD 333320-00-0601.

UBAtc has assessed the results of these tests in accordance with EAD 333320-00-0601, as part of the ETA issuing procedure. In accordance with Regulation (EU) N° 305/2011, Annex V, 1.6, these tests should be used for the purposes of Initial Type Testing.

⁴ Commission Decision of 17 February 1997 on the procedure for attesting the conformity of construction products pursuant to Article 20 (2) of Council Directive 89/106/EEC as regards metal anchors for use in concrete for fixing lightweight systems (OJ L 62, 4.3.1997, p. 41-42).

4.2.2 Assessment of the factory production control - Initial inspection and continuous surveillance

Assessment of the FPC is the responsibility of a Notified Body.

An assessment shall be carried out on the required manufacturing steps of each manufacturing plant to demonstrate that the factory production control is in conformity with the ETA and any subsidiary information. This assessment is based on an initial inspection of the factory.

Subsequently continuous surveillance of factory production control is necessary to ensure continuing conformity with the ETA.

5 Bibliography

- EAD 333220-00-0601:2021 Pre-installed anchor for fastening concrete façade elements
- EN 10080:2005 Steel for reinforcement of concrete – Weldable reinforcing steel - General
- EN 10088-1:2023 Stainless steels - Part 1: List of stainless steels
- EN ISO 4032:2023 Fasteners - Hexagon regular nuts (style 1).
- EN 1992-4:2018 Eurocode 2 – Design of concrete structures - Part 4: Design of fastenings for use in concrete

NOTE: The editions of reference documents given above are those which have been adopted by the UBAtc for its specific use when establishing this ETA. When new editions become available, these supersede the editions mentioned only when confirmed by the UBAtc.

UBAtc asbl is a non-profit organization according to Belgian law. It is a Technical Assessment Body notified by the Belgian notifying authority, the Federal Public Services Economy, SMEs, Self-Employed and Energy, on 17 July 2013 in the framework of Regulation (EU) No 305/2011 of the European Parliament and of the Council of 9 March 2011 laying down harmonised conditions for the marketing of construction products and repealing Council Directive 89/106/EEC and is member of the European Organisation for Technical Assessment, EOTA (www.eota.eu).

This European Technical Assessment has been issued by UBAtc asbl, in Sint-Stevens-Woluwe, on the basis of the technical work carried out by the Assessment Operators, Buildwise and SECO Belgium.

On behalf of UBAtc asbl,


Eric Winnepenninckx,
director


Frederic De Meyer,
director

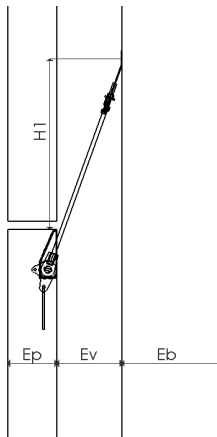
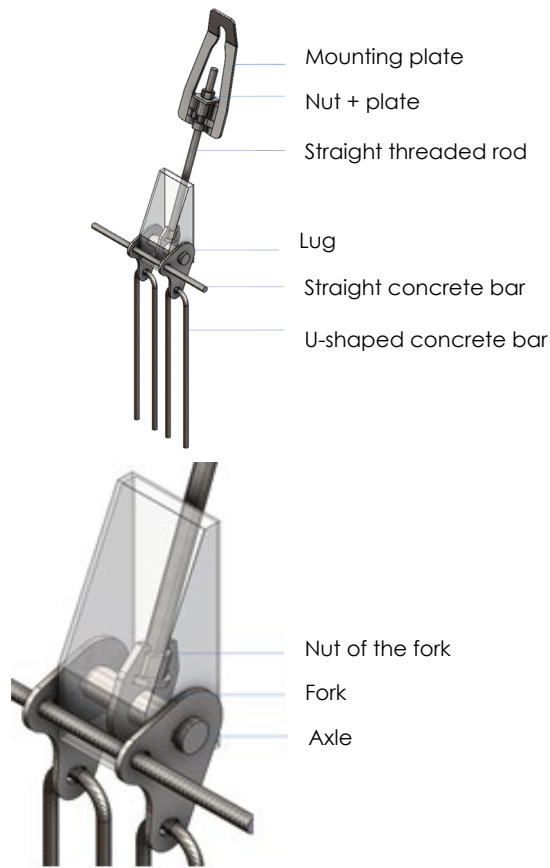
On behalf of the Assessment Operator,
Buildwise and SECO Belgium, responsible for the
technical content of the ETA,


Olivier Vandooren,
CEO Buildwise


Bernard Heiderscheidt,
CEO SECO Belgium

The most recent version of this European Technical Assessment may be consulted on the UBAtc website (www.butgb-ubadc.be).

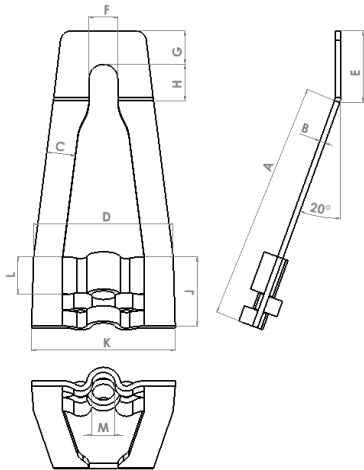
Annex I : Product description (“2.0” range)



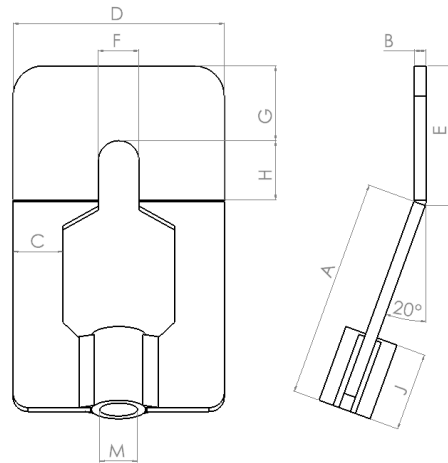
External dimensions			
Designation	$E_{b_{min}}$	$E_{v_{min}}$	$E_{p_{min}}$
	[mm]	[mm]	[mm]
5	100	60	70
10	100	60	70
15	140	60	80
20	140	80	80
25	170	80	100
35	220	80	100
45	220	80	120
60	220	90	120

Annex II : Plate ("2.0" range)

1. Single plate (PLS)



Single plate for classes 5,0 - 35,0 kN

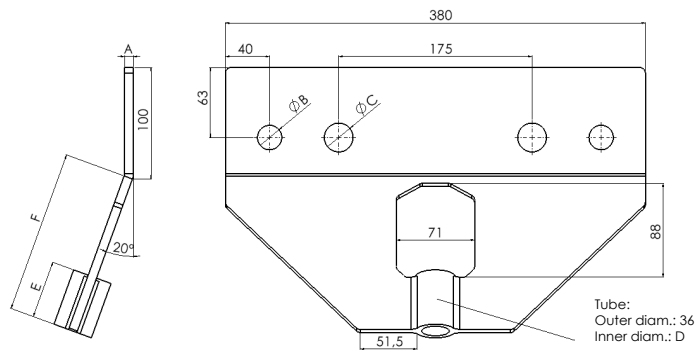


Single plate for classes 45,0 and 60,0 kN

Designation	Single plate dimensions [mm]													Recess former dimensions [mm]	
	"2.0" range													Height	Width
	A	B	C	D	E	F	G	H	J	K	L	M	N		
5	125	2	15	71	34	13	15	19	45	71	20	13	-	150	71
10	145	3	15	77	38	13	21	16	47	80	21	16	-	171	85.5
15	158	4	18	93	45	17	22	24	50	94	24	16	-	189	95
20	175	4	18	97	47	17	22	25	52	98	26	16	-	210	95
25	171	4	21	105	54	21	24	30	57	107	30	21	-	217	105
35	176	4	27	116	63	25	33	31	70	117	13 ^(*)	18	-	227	109
45	135	6	33	140	91	27	47	44	42	-	-	24	-	218	140
60	145	8	33	140	90	27	48	43	53	-	-	24	-	228	140

(*) 5 series of bends

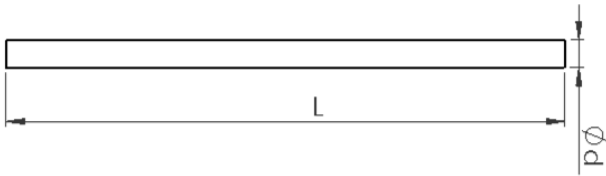
2. Double straight plate (PLD)



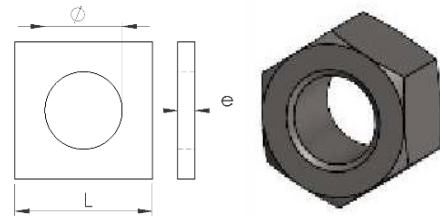
Single plate for classes 20,0 - 60,0 kN

Designation	Double plate dimensions [mm]						Recess former dimensions [mm]	
	"2.0" range						Height	Width
	A	B	C	D	E	F		
20	6	14	22	20	42	137	232	380
25	6	18	22	20	42	137	232	380
35	6	18	22	20	42	137	232	380
45	8	22	26	24	42	137	235	380
60	8	22	26	24	52	147	245	380

Annex III : Suspension straight threaded rod and square plate ("2.0 range)



Straight threaded rod



Square plate and accessory

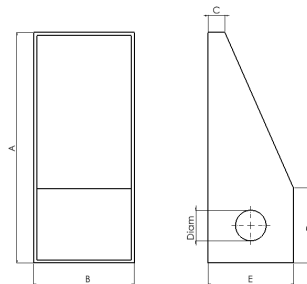
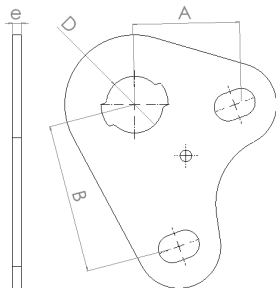
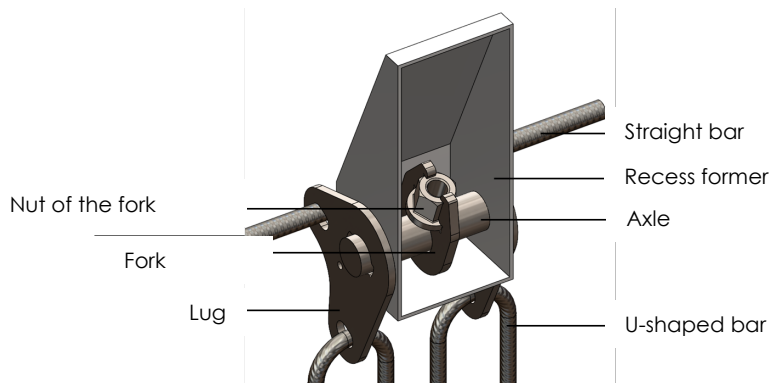
Designation	Colour	Rod dimensions [mm]	
		Diameter p	Length L
5	Black	8	Variable according to the gap length, plate type and suspension hook angle
10	Red	10	
15	Green	12	
20	White	12	
25	Yellow	16	
35	Blue	16	
45	Orange	20	
60	Pink	20	

Designation	Colour	Square plate dimensions [mm]			
		L	e	Φ	Nut
5	Black	24	4	8.5	M8
10	Red	24	4	10.5	M10
15	Green	24	4	12.5	M12
20	White	24	4	12.5	M12
25	Yellow	32	4	18	M16
35	Blue	32	4	18	M16
45	Orange	34	5	22	M20
60	Pink	34	5	22	M20

Note: The total length of the suspension rod depends on the selected suspension hook, cavity and plate type.

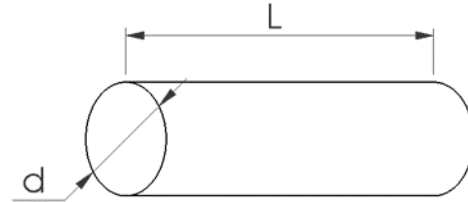
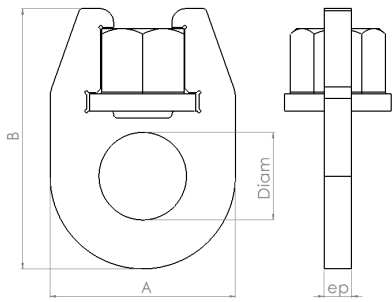
Annex IV : Insert ("2.0" range)

1. Lugs with plastic recess former, fork and axle



Designation	Lug dimensions [mm]			
	A	B	D	e
5	35	53	16.2	2
10	35	53	16.2	3
15	40.5	58	20.3	3
20	40.5	58	20.3	4
25	46	64	24.4	4
35	46	64	24.4	5
45	54.5	72	30.5	6
60	54.5	72	30.5	8

Designation	Box size	Recess former dimensions [mm]					Diam.
		A	B	C	D	E	
5	1	127	64	11	43	48	16
10							
15	2	151	66	11	49	56	20
20							
25	3	195	72	11	58	64	24
35							
45	4	206	79	11	68	76	30
60							

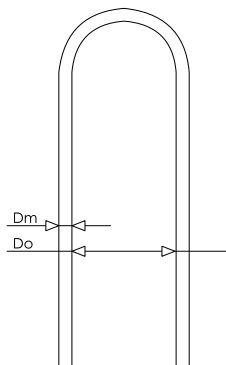


Designation	Fork dimensions [mm]				
	A	B	Diam	Thickness	Nut
5	36	48	17.5	3	M8
10	37	52	17.5	4	M10
15	44	61.1	21.5	5	M12
20	44	61.1	21.5	6	M12
25	54	75.8	25.5	6	M16
35	54	75.8	25.5	8	M16
45	64	91.8	31.5	8	M20
60	64	91.8	31.5	10	M20

Designation	Connecting axle dimensions [mm]	
	L	d
5	79	16
10	79	16
15	85	20
20	85	20
25	97	24
35	97	24
45	114	30
60	114	30

Annex V : Reinforcement bars ("2.0" range)

View of anchor frames



Total length L1 (prior to bending)

Designation	Frame dimensions [mm]			Quantity
	L1	Do	Dm	
5	460	24	6	2 (*)
10	520	24	6	
15	630	32	8	
20	730	32	8	
25	835	40	10	4
35	935	40	10	
45	1040	48	12	
60	1140	48	12	

(*): It is possible to replace the right frame with two U-shaped frames if they are only a short distance from the edge.

View of reinforcement frame



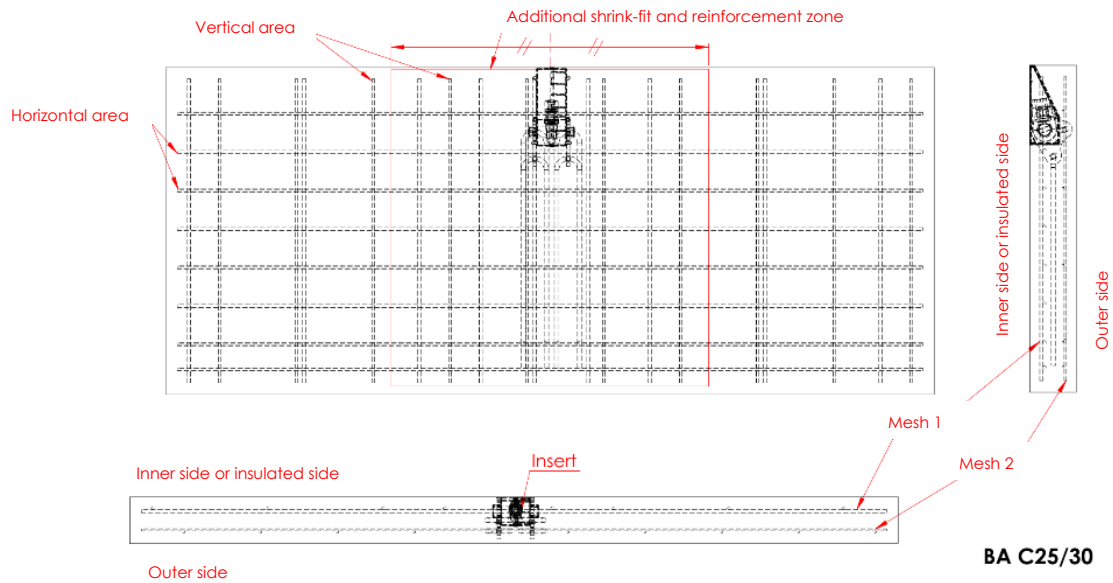
Total length L

Designation	Frame dimensions [mm]		Quantity
	L	D	
5	200	8	1 (*)
10	250	8	
15	250	10	
20	300	10	
25	Not available		-
35			
45			
60			

(*): It is possible to replace the right frame with two U-shaped frames if they are only a short distance from the edge.

Annex VI : Reinforcement ("2.0 range") and additional reinforcement for types 25 to and 60

Designation	Mesh over the entire surface of the panel					Reinforcement in the shrink-fit area (inside only)		Total reinforced area [cm ² /m]
	Mesh	Direction	Minimum area (cm ² /m)	Diameter [mm]	Spacing [mm]	Area [m x m]	Additional area [cm ² /m]	
5 and 10	1	horiz./vert.	1,42	6	200	-	-	1,42
	2	-	-	-	-	-	-	-
15 and 20	1	horiz./vert.	1,42	6	200	-	-	1,42
	2	-	-	-	-	-	-	-
25 and 35	1	horizontal	2,50	8	200	0,85 x 0,85	2,50	5
		vertical	2,50	8	200		-	
	2	-	-	-	-	-	-	-
45 and 60	1	horizontal	2,50	8	200	1,00 x 1,00	2,5	5
		vertical	2,50	8	200		-	
	2	horizontal	1,42	6	200	-	-	1,42
		vertical	1,42	6	200		-	1,42



Annex VII : Minimum distances from the middle of the insert to the edge of the panel (C2, C_{1,min} = 0)

Designation	Minimum distance	
	D1 [mm]	D2 [mm]
5	76	125
10	76,5	150
15	83,5	150
20	84	175
25	93	-
35	93,5	-
45	103,5	-
60	104,5	-

