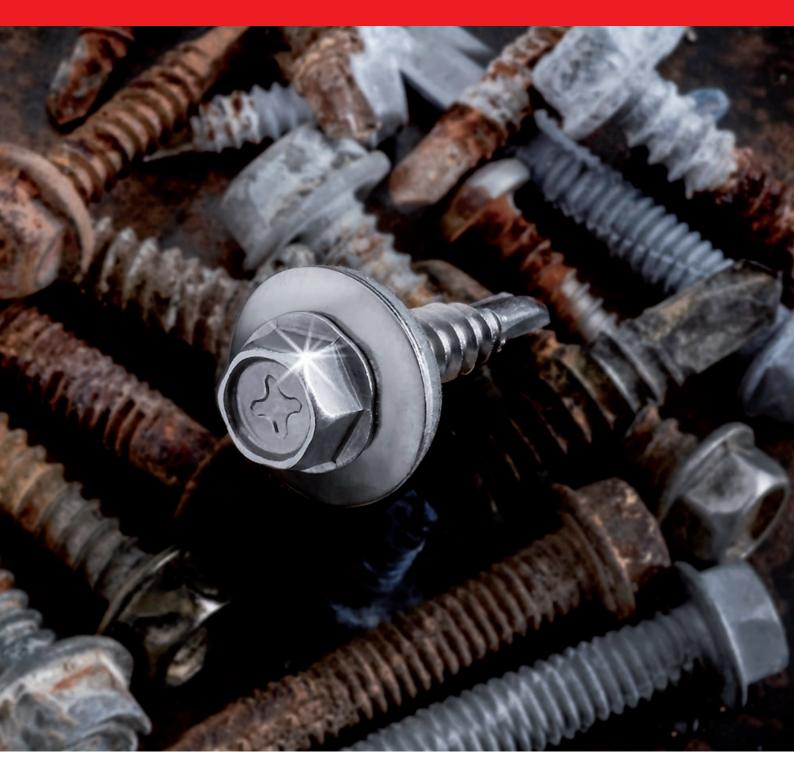
# **Marutex**<sup>®</sup>

The construction screw for those who want to invest for the future







# Marutex<sup>®</sup> is made for long life in harsh environments



Harsh environments make heavy demands on fastenings in building constructions. Heat, cold, vibrations, corrosion and high loads are commonplace in many industrial buildings. That is why Marutex is the obvious choice for a construction steel screw. Marutex is a self-drilling, stainless steel screw made of special heat-treated steel. Marutex has been tested by SP - Swedish Technology Research Institute - for corrosivity class C4 that assessed that Marutex have a lifespan of at least 50 years

in harsh environments.

Marutex also has an ETA - European Technical Approval by SITAC / EOTA for all of Europe.

#### Marutex is the choice of professionals

Marutex is manufactured for professional use. The assortment is extensive - you can find a Marutex for most areas of use on a building site, from assembly in thin sheet metal to fastenings in heavy steel beams.

A Marutex screw will hold even when the going gets tough and it is completely homogeneous, which means that the whole clamping length can be used. The drilling properties are excellent, even when drilling in many stainless steel qualities.

#### A long time in industrial service

The Marutex screw is used by most of the leading steel construction companies these days and has been supplied to many successful construction projects since 1996. Its drilling properties combined with very high corrosion resistance places the Marutex screws in a class of its own.



#### **Material composition**

The table below shows the material composition of Marutex. It is manufactured from modified stainless martensitic steel, which gives it its great strength. The addition of molybdenum increases corrosion resistance.

Material analysis Marutex in %									
Chromium	13,0-14,5								
Molybdenum	1,8-2,2								
Copper	0,4-0,6								
Silicon	0,4-0,6								
Manganese	0,4-0,6								
Nickel	0,4-0,6								
Carbon	0,20-0,30								
Phosphorous	0,03 max								
Sulphur	0,02 max								

## There's a difference between stainless and stainless

#### What is stainless steel?

Stainless steel is a general term referring to a large number of qualities in which the most important alloying material is chromium. According to European Standard SS-EN 10088-1:2005, steel containing at least 10.5% chromium is defined as stainless steel. The European standard is also used as a Swedish standard. The carbon content must be restricted when corrosion resistance is important. Chromium is a primary alloying material. Chromium, which is not bound to carbon, determines corrosion resistance. In order to additionally improve resistance, other alloying materials, such as nickel and molybdenum, are also added.

#### The correct surface?

In order to achieve satisfactory corrosion resistance, the surface must be free of all oxides. Oxides form during heat working or heat treatment of the product. The oxide can be removed chemically through pickling, and/or mechanically, through grinding and polishing. The cleaner the surface is, the better the corrosion resistance will be.

#### The correct alloy?

The choice of a steel alloy depends on the properties the product is to have, and on what is most important for its function. The corrosion resistance in the environment where the final product is to be used is naturally the most important property. However, other properties, such as mechanical strength and hardness, can also be important. Generally, a higher content of the alloying materials chromium, nickel and molybdenum provide better corrosion resistance.

#### Magnetism?

Certain types of stainless steel are magnetisable. What is most important is the microstructure of the steel and how they are tempered and heat-treated.

#### Literature references:

- Swedish standard SS-EN 10088-1:2005
- SMS Handbook nr 4, Rostfria stål (Stainless steel types), 6th edition, 2000
- Karlebo handbook 15th edition, 2000

# There are several reasons to choose Marutex<sup>®</sup>

Life span +50 years

Optimal drilling capacity -drilling properties that shorten building times Special stainless steel - high, consistent quality in material and performance

Strength in a class for itself







You will recognize a Marutex by the four-pointed star!



#### Tested by SP

Marutex has been tested by SP - Swedish Technology Research Institute for corrosivity class C4 and assessed that Marutex have a lifespan of at least 50 years in harsh environments. Marutex also has an ETA - European Technical Approval by SITAC / EOTA for all of Europe. (C4 = atmospheres with moderate

amounts of salt or significant amounts of pollutants – industrial and coastal areas)).

#### Save time on the building site

Marutex is made of stainless special purpose steel. The point is designed so that the screw very quickly drills through even very hard material – Marutex can also manage stainless steel much better than other corresponding drilling screws. Reducing the number of moments and not needing to pre-drill shortens building time considerably – and time as we all know is money!

#### No unpleasant surprises

You can always trust a Marutex. Marutex is a Japanese quality product with high standards in manufacturing. We carry out frequent random tests and control the quality of the product. The demands are high. Traceability reaches all the way back to the steel supplier. When we supply a

box of Marutex we can also guarantee that the contents are exactly what we promised.

# Dimensioning values for Marutex<sup>®</sup> stainless steel self-drilling screws

### European Technical Approval ETA-12/0504

Resistance according to ETA-12/0504 and Eurocode 3, Part 1-3 in corrosivity class up to C4 for joints in steel sheeting with characteristic strength 250 - 460 N/mm<sup>2</sup>

### Requirements

#### European standards

Tables of resistances are made according to

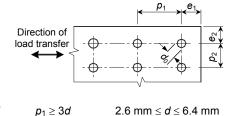
- EN 1993-1-3 Eurocode 3 Design of steel structures Part 1-3 Cold-formed members and sheeting.
- In Sweden: EKS, Boverkets föreskrifter och allmänna råd om tillämpning av europeiska konstruktionsstandarder (Eurocodes).
- In European countries: their National Annexes to EN 1993-1-3.
- EN 1995-1-1 Eurocode 5 Design of timber structures Part 1-1 Common rules and rules for buildings

The strength of the fastener in shear should not be the weakest link in a connection. This condition should be fulfilled when deformation capacity of the connection is needed. If these conditions are not fulfilled there should be proved that needed deformation capacity will be provided by other parts of the structure.

Connections with mechanical fasteners should be compact in shape. The position of the fasteners should be arranged to provide sufficient room for satisfactory assembly and maintenance.

Design values are given in kN per fastener.

## End distance, edge distance and spacing for fasteners in shear



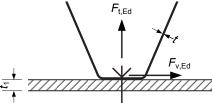
 $e_1 \ge 1.5d$   $p_1 \ge 3d$   $2.6 \text{ mm} \le d \le e_2 \ge 1.5d$   $p_2 \ge 3d$ 

where *d* is the diameter of the fastener.

#### Forces on connection

The shear forces on individual fasteners in a connection may be assumed to be equal, provided that the fasteners have sufficient ductility and that shear of fasteners is not he critical failure mode.

A fastener may be loaded in combined shear and tension, see Figure.



*t* is the thickness of the thinner connected part, usually the sheeting under the head of the fastener, and  $t_1$  is the thickness of the thicker connected part or sheet,  $t_1 \ge t$ . If the thicker sheeting is under the head of the fastener then the resistance for  $t = t_1$  should be used.

Note, that the notations for thickness and resistances are different in ETA-12/0504 (and in EN 1090-4, draft 2013) and in the Eurocode. Here the notations in the latter are used.

#### Failure modes and corresponding resistences for

tension force F<sub>t,Ed</sub>

shear force F<sub>v,Ed</sub>

- pull-through failure  $F_{p,Rd}$
- shear failure of screw F<sub>v,Rd</sub>
- pull-out failure *F*<sub>o,Rd</sub>
   tension of screw *F*<sub>t,Rd</sub>
- net section failure  $F_{n,Rd}$

- bearing failure F<sub>b.Rd</sub>

#### Design values of resistance

Design values of resistance for different failure modes are given in Table 1 to 7. I Table 1 values according to EKS, Table E-5 for hardened steel and stainless steel are compared to values according to ETA-12/0504.

## Table 1 **Tensile and shear resistance** $F_{t,Rd}$ and $F_{v,Rd}$ of Marutex screws (and other steel screws for comparison)

	EKS, hardened ste	eel/stainless steel	ETA, N	larutex
d	F <sub>t,Rd</sub>	F <sub>v,Rd</sub>	F <sub>t,Rd</sub>	F <sub>v,Rd</sub>
4.2			10.08	8.40
4.8	5.90/4.80	4.16/3.84	12.96	10.80
5.5	7.20/6.50	5.76/5.20	17.36	14.47
6.3	9.80/8.50	7.84/6.80	23.84	19.87

#### Bearing resistance F<sub>b,Rd</sub>

Design value of bearing resistance  $F_{b,Rd}$  for screws type B, C, D and FC are given in the tables 2 to 6 for  $t = t_1$  and  $t \ge 2.5t_1$  (not C). The resistance for  $t_1 < t < 2.5t_1$  is found by linear interpolation according to

$$F = F_1 + (F_{2.5} - F_1)(t_1 / t - 1) / 1,5$$

where  $F_1$  is the resistance for  $t_1/t = 1$  and  $F_{2,5}$  for  $t_1/t = 2.5$ 

#### Pull-out resistance Fo,Rd

Design value of the pull-out resistance  $F_{o,Rd}$  for screws type B, C, D, FC and D are given in the tables 2 to 7 for  $t = t_1$  and  $t \ge 2.5t_1$  (not C). The resistance for  $t_1 < t < 2.5t_1$  is found by linear interpolation.

#### Pull-through resistance F<sub>p,Rd</sub>

Design value of the pull-through resistance  $F_{p,Rd}$  for screws type B, C, D, FC and E are given in the tables 2 to 7. The values assume sealing washers with diameter

12 mm for 4.2 mm screws

14 mm for 4.8 mm screws

16 mm for 5.5 and 6.3 mm screws

#### **Combined loading**

The interaction formula (8.2) in the Eurocode is:

$$\frac{F_{t,Ed}}{\min(F_{p,Rd}, F_{o,Rd})} + \frac{F_{v,Ed}}{\min(F_{b,Rd}, F_{n,Rd})} \leq 1$$

6



#### Design value of resistance

Table 2 Marutex type B,  $t_1 = t_2$ 

Table		atox	iype i	5, 1	42					
	Туре	d	0.8	0.9	1.0	1.2	1.5	2.0	2.5	3.0
	B5x	4.2	1.62	1.89	2.25	2.75	3.24			
$F_{\rm b,Rd}$	B6x	4.8		1.90	2.27	2.83	3.39	4.14	5.33	
kN	B7x	5.5	1.47	2.03	2.40	2.92	3.57	4.38	5.64	7.21
	B8x	6.3		2.00	2.47	3.07	3.68	4.68	6.11	7.35
	B5x	4.2	0.51	0.57	0.64	0.76	1.38			
$F_{o,Rd}$	B6x	4.8		0.65	0.73	0.87	1.09	2.10	2.62	
kN	B7x	5.5	0.67	0.75	0.83	1.00	1.25	2.40	3.00	3.60
	B8x	6.3		0.86	0.95	1.14	1.43	2.75	3.44	4.13
	B5x	4.2	1.57	1.77	1.97	2.36	2.95			
$\textit{F}_{p,Rd}$	B6x	4.8		2.13	2.37	2.84	3.55	4.74	5.92	
kN	B7x	5.5	2.11	2.37	2.64	3.17	3.96	5.28	6.59	7.91
	B8x	6.3		2.37	2.64	3.17	3.96	5.28	6.59	7.91

	Туре	d	0.4	0.5	0.6	0.7	0.8	0.9	1.0
	D4x	4.2	0.46	0.57	0.67	1.15	1.62		
$F_{b,Rd}$	D5x	4.8	0.58	0.82	1.06	1.36	1.59	2.06	
kN	D6x	5.5	0.51	0.75	0.90	1.20	1.59	1.95	2.40
	D7x	6.3	0.58	0.81	1.04	1.38	1.69	2.00	2.47
	D4x	4.2	0.25	0.32	0.38	0.44	0.51		
$F_{o,Rd}$	D5x	4.8	0.29	0.36	0.44	0.51	0.58	0.65	
kN	D6x	5.5	0.33	0.42	0.50	0.58	0.67	0.75	0.83
	D7x	6.3	0.38	0.48	0.57	0.67	0.76	0.86	0.95
	D4x	4.2	0.79	0.98	1.18	1.38	1.57		
$F_{p,Rd}$	D5x	4.8	0.95	1.18	1.42	1.66	1.90	2.13	
kN	D6x	5.5	0.95	1.18	1.42	1.66	1.90	2.13	2.37
	D7x	6.3	1.27	1.59	1.91	2.22	2.54	2.86	3.18

Table 3 Marutex type B,  $t_1 \ge 2.5t_2$ 

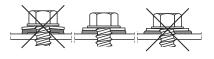
	Туре	d	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.2	1.5
	B5x	4.2	1.12	1.34	1.56	1.89	2.22				
$F_{\rm b,Rd}$	B6x	4.8	1.25	1.46	1.67	2.03	2.40	2.77	3.14		
kN	B7x	5.5	1.21	1.45	1.71	2.09	2.14	3.02	3.24	3.59	4.16
	B8x	6.3		1.54	1.86	2.17	2.49	3.01	3.52	3.92	4.45
	B5x	4.2	0.64	0.79	1.38	1.61	1.83				
$F_{o,Rd}$	B6x	4.8	0.73	0.91	1.09	1.83	2.10	2.36	2.62		
kN	B7x	5.5	0.83	1.04	1.25	1.46	2.40	2.70	3.00	3.60	4.50
	B8x	6.3		1.19	1.43	1.67	2.75	3.10	3.44	4.13	5.16
	B5x	4.2	0.79	0.98	1.18	1.38	1.57				
$F_{\rm p,Rd}$	B6x	4.8	0.95	1.18	1.42	1.66	1.90	2.13	2.37		
kN	B7x	5.5	1.06	1.32	1.58	1.85	2.11	2.37	2.64	3.17	3.96
	B8x	6.3		1.32	1.58	1.85	2.11	2.37	2.64	3.17	3.96

Table 4 Marutex type C,  $t_1 \ge 2.5t_2$ 

		Туре	d	1.2	1.5
$F_{v,Rd}$	kN	C3x, C4x	5.5	3.83	4.35
$F_{o,Rd}$	kN	C3x, C4x	5.5	3.60	4.50
$F_{\rm p,Rd}$	kN	C3x, C4x	5.5	3.17	3.96

#### Assembly instructions

- The execution should follow EN 1090-1 and -4.
- Use a cordless drill with depth stop holding burdened speed of 1500 - 2500 rpm when mounted in material < 2 mm and from 1200 to 1800 rpm when mounted in thicker material.
- Sealing washer must always be used for external mounting or where the danger of condensation or flooding exists.
- Depth stop should be used for proper tightness.
- Never over-tighten screws with rubber washer.



#### Table 6 Marutex type FC $t_1 = t_2$

Table 5 Marutex type D,  $t_1 = t_2$ 

	•	anatori	,	Č	· · 2						
		Туре	d	0.4	0.5	0.6	0.7	0.8	0.9		
$F_{\rm b,Rd}$	kN	FC6xM	6.3	0.97	1.37	1.77	2.28	2.80	2.45		
$F_{o,Rd}$	kN	FC6xM	6.3	0.38	0.48	0.57	0.67	0.76	0.86		
$F_{\rm p,Rd}$	kN	FC6xM	6.3	1.06	1.32	1.58	1.85	2.11	2.37		
	$t_1 \ge 2.5t_2$										
		Туре	d	0.4	0.5	0.6	0.7	0.8	0.9	1	1.2
$F_{\rm b,Rd}$	kN	FC6xM	6.3	1.35	1.62	1.98	2.34	2.70	3.14	3.58	4.10
$F_{\rm o,Rd}$	kN	FC6xM	6.3	0.95	1.19	1.43	1.67	2.75	3.10	3.44	4.13
$F_{\rm p,Rd}$	kN	FC6xM	6.3	1.06	1.32	1.58	1.85	2.11	2.37	2.64	3.17

#### Table 7 Marutex type E $t_1 = t_2$

		Туре	d	0,8	0,9	1,0	1,2	1,5	2,0	2,5	3,0	
$F_{\rm o,Rd}$	kN	E2x	5,5	0,67	0,75	0,83	1,00	1,25	2,40	3,00	3,60	
$F_{\rm p,Rd}$	kN	E2x	5,5	2,11	2,37	2,64	3,17	3,96	5,28	6,59	7,91	
	$t_1 \ge 2,5t_2$											
		Туре	d	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.2	1.5
$F_{o,Rd}$	kN	E2x	5.5	0.83	1.04	1.25	1.46	2.40	2.70	3.00	3.60	4.50
$F_{p,Rd}$	kN	E2x	5.5	1.06	1.32	1.58	1.85	2.11	2.37	2.64	3.17	3.96

The tables are valid for S350 with ultimate strength  $f_{\rm u}$  = 420 MPa. For other materials adjust the values by the factor  $\varphi = f_{\rm u} / 420$  MPa

x in column "Type" denotes a variation in the series. Example: B6x = B61, B6x, B6xK, B63 or B64.

#### Partial factor for resistance

Design values in the tables are based on the partial factor

 $\gamma_{\rm M2}$  = 1.25 according to the Swedish National Annex (EKS).

For other European countries the values should be multiplied with the conversion factor given in the next page.



#### Unifast - Light steel framing screw

Light steel framing screw for joining steel joists to light section steel. The low head prevent boards from breaking.





B08M 4,8x16

2x0,56 2x1,5 Ph2 500

Drill capacity

Drill capacity

Drill capacity

#### Roofing and cladding to light section steel

Stainless steel construction screws for fastening roofing and cladding to light section steel. Bonded EPDM sealing washer.



B51	4,2x13	Х	7	1	2x1,5	1/4"	500
B52	4,2x16	Х	7	1	2x1,5	1/4"	500
B61	4,8x16	Х	4	1,2	2x2,0	8 mm	250
B62	4,8x20	Х	8	1,2	2x2,0	8 mm	250
B63	4,8x25	Х	13	1,2	2x2,0	8 mm	250
B64	4,8x40	Х	28	1,2	2x2,0	8 mm	250
B71	5,5x20	Х	6	1,5	2x2,0	8 mm	250
B72	5,5x22	Х	8	1,5	2x3,0	8 mm	250
B73	5,5x25	Х	11	1,5	2x2,0	8 mm	250
B75	5,5x35	Х	21	1,5	2x2,0	8 mm	250
B74	5,5x40	Х	26	1,5	2x2,0	8 mm	250
B76	5,5x40	Х	36	1,5	2x2,0	8 mm	200
B81	6,3x19	Х	5	1,5	2x3,0	8 mm	250
B82	6,3x25	Х	11	1,5	2x3,0	8 mm	250
B62K	4,8x20	Х	8	1,5	2x2,0	SQ2*	250
B71K	5,5x20	Х	6	1,5	2x2,0	SQ3*	250
B72K	5,5x22	Х	8	1,5	2x3,0	SQ3*	250
B74K	5,5x40	Х	26	1,5	2x2,0	SQ3*	250
	B52 B61 B62 B63 B64 B71 B72 B73 B75 B74 B76 B81 B82 B62K B71K B72K	B52       4,2x16         B61       4,8x16         B62       4,8x20         B63       4,8x25         B64       4,8x40         B71       5,5x20         B72       5,5x22         B73       5,5x25         B75       5,5x40         B76       5,5x40         B81       6,3x19         B82       6,3x25         B62K       4,8x20         B71K       5,5x20         B72K       5,5x22	B52       4,2x16       X         B61       4,8x16       X         B62       4,8x20       X         B63       4,8x25       X         B64       4,8x40       X         B71       5,5x20       X         B72       5,5x22       X         B73       5,5x25       X         B75       5,5x35       X         B76       5,5x40       X         B81       6,3x19       X         B82       6,3x25       X         B62K       4,8x20       X         B71K       5,5x20       X	B52       4,2x16       X       7         B61       4,8x16       X       4         B62       4,8x20       X       8         B63       4,8x25       X       13         B64       4,8x40       X       28         B71       5,5x20       X       6         B72       5,5x22       X       8         B73       5,5x25       X       11         B75       5,5x35       X       21         B74       5,5x40       X       26         B76       5,5x40       X       36         B81       6,3x19       X       5         B82       6,3x25       X       11         B62K       4,8x20       X       8         B71K       5,5x20       X       6         B72K       5,5x22       X       8	B52       4,2x16       X       7       1         B61       4,8x16       X       4       1,2         B62       4,8x20       X       8       1,2         B63       4,8x25       X       13       1,2         B64       4,8x40       X       28       1,2         B71       5,5x20       X       6       1,5         B72       5,5x22       X       8       1,5         B73       5,5x25       X       11       1,5         B75       5,5x35       X       21       1,5         B74       5,5x40       X       26       1,5         B76       5,5x40       X       36       1,5         B81       6,3x19       X       5       1,5         B82       6,3x25       X       11       1,5         B62K       4,8x20       X       8       1,5         B71K       5,5x20       X       6       1,5         B72K       5,5x22       X       8       1,5	B52       4,2x16       X       7       1       2x1,5         B61       4,8x16       X       4       1,2       2x2,0         B62       4,8x20       X       8       1,2       2x2,0         B63       4,8x25       X       13       1,2       2x2,0         B64       4,8x40       X       28       1,2       2x2,0         B71       5,5x20       X       6       1,5       2x2,0         B72       5,5x22       X       8       1,5       2x3,0         B73       5,5x25       X       11       1,5       2x2,0         B75       5,5x35       X       21       1,5       2x2,0         B74       5,5x40       X       26       1,5       2x2,0         B76       5,5x40       X       36       1,5       2x2,0         B81       6,3x19       X       5       1,5       2x3,0         B82       6,3x25       X       11       1,5       2x2,0         B71K       5,5x20       X       6       1,5       2x2,0         B71K       5,5x22       X       8       1,5       2x3,0 <td>B52       4,2x16       X       7       1       2x1,5       1/4"         B61       4,8x16       X       4       1,2       2x2,0       8 mm         B62       4,8x20       X       8       1,2       2x2,0       8 mm         B63       4,8x25       X       13       1,2       2x2,0       8 mm         B64       4,8x40       X       28       1,2       2x2,0       8 mm         B71       5,5x20       X       6       1,5       2x2,0       8 mm         B72       5,5x22       X       8       1,5       2x3,0       8 mm         B73       5,5x25       X       11       1,5       2x2,0       8 mm         B73       5,5x25       X       11       1,5       2x2,0       8 mm         B75       5,5x35       X       21       1,5       2x2,0       8 mm         B74       5,5x40       X       26       1,5       2x2,0       8 mm         B76       5,5x40       X       36       1,5       2x3,0       8 mm         B81       6,3x19       X       5       1,5       2x3,0       8 mm         B82</td>	B52       4,2x16       X       7       1       2x1,5       1/4"         B61       4,8x16       X       4       1,2       2x2,0       8 mm         B62       4,8x20       X       8       1,2       2x2,0       8 mm         B63       4,8x25       X       13       1,2       2x2,0       8 mm         B64       4,8x40       X       28       1,2       2x2,0       8 mm         B71       5,5x20       X       6       1,5       2x2,0       8 mm         B72       5,5x22       X       8       1,5       2x3,0       8 mm         B73       5,5x25       X       11       1,5       2x2,0       8 mm         B73       5,5x25       X       11       1,5       2x2,0       8 mm         B75       5,5x35       X       21       1,5       2x2,0       8 mm         B74       5,5x40       X       26       1,5       2x2,0       8 mm         B76       5,5x40       X       36       1,5       2x3,0       8 mm         B81       6,3x19       X       5       1,5       2x3,0       8 mm         B82

C



Construction screws for fastening roofing and cladding to heavy section steel. Hexagon head or pan head. Bonded EPDM sealing washer.

C31 C41 C42	5,5x26 5,5x32 5,5x45	Х	10	4	15	8 mm 8 mm 8 mm	250
C41K	5,5x32	Х	10	4	15	SQ3*	250

**Roofing and** cladding to heavy section steel





Construction screw for overlapping thinner roofing and cladding. Hexagon head or pan head. Bonded EPDM sealing washer.

D) Stitching screws for roofing and cladding



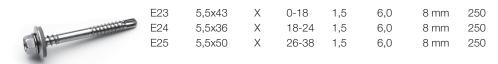
D41	4,2x13	Х	2x0,5	4x0,5	1/4"	500
D42	4,2x16	Х	2x0,5	4x0,5	1/4"	250
D51	4,8x19	Х	2x0,5	3x0,7	8 mm	250
D61	5,5x19	Х	2x0,7	3x0,7	8 mm	250
D51K	4,8x19	Х	2x0,5	3x0,7	SQ2*	250

\* Bit included in the pack

#### Unifast - Roofing/cladding + board to light section steel

Self-drilling screws for fastening roofing and intermediate board to light section steel. Thread-free section that prevents the sheet from being driven up against the head and deforming. Larger thread under the head for secure sealing against the outer sheet. Hexagon head and bonded EPDM sealing washer.

Drill capacity



Roofing/cladding + board to light section steel





**Unifast - Sandwich panels to heavy section steel** Self-drilling screw for fastening sandwich panels to heavy section steel. Larger thread under the head for secure sealing against the outer sheet. Hexagon head and bonded EPDM sealing washer.





EC31-085	5,5x85	40-55	4	15	8 mm	100
EC31-100	5,5x100	50-70	4	15	8 mm	100
EC31-120	5,5x120	60-90	4	15	8 mm	100
EC31-150	5,5x150	75-120	4	15	8 mm	100
EC31-189	5,5x189	110-155	4	15	8 mm	100
EC31-212	5,5x212	135-180	4	15	8 mm	100
EC31-241	5,5x241	165-210	4	15	8 mm	100

Drill capacity

#### Unifast - Fittings to sandwich panel

Screw for fastening pilasters and other sheet metal fittings to sandwich panels. Reduced drill point or sharp point. Pan head for aesthetic installation.

and alter the second second	SH14	4,2x16	2x0,9	8 mm	500/1000
2 million 100000	SH14S	4,2x16	2x0,7	8 mm	500



**G** Roof insulation to steel sheets/ sections



	G61	4,8x60	10-50	0,7	2x1,25	T25	250
	G62	4,8x80	30-70	0,7	2x1,25	T25	250
MANA	G63	4,8x100	50-90	0,7	2x1,25	T25	250



#### Unite - Outdoor board screw - outdoor boards to steel joists

Stainless steel screw for fastening outdoor boards to steel joists. Pilot drill point and head without countersinking prevent damage to the board material. Collated screws for faster installation with auto-feed screwdriving systems. Also drills in stainless steel joists.







#### Unite - Unifast self tapping screw C-thread to light section steel

Self tapping screws for pre-drilled holes. Intended for fastening in light section steel with thickness 1.0 - 3.0 mm. See installation instructions for selection of drill diameter.





FC49N	l 4,8x13		2x0,7 mm 8 mm	250
FC61N	l 6,3x19	Х	2x0,7 mm 8 mm	250



Unidrill - Self-drilling screw, pan head

B51 TG14 B52 TH11 B61 B62 B63 B64 B71 B73 B82

Self-drilling screw with pan head for various uses. Suitable for industrial needs. Also drills into stainless steel. Locking serrations.\*

AN ANNE	SD11* SE13* SE15*	3,5x9,5 4,2x13 4,2x16	2,25 3 3	Ph2 Ph2 Ph2	1000 1000 1000
	SH11 SH12 SH13 SH14 SH14S SH15 SH17 SH18	4,2x9,5 4,2x13 4,2x13 4,2x16 4,2x16 4,2x16 4,2x20 4,2x25	2x0,9 2x0,9 3,5 2x0,9 2x0,7 3,5 3,5 2x0,9	SQ2* SQ2* SQ2* SQ2* SQ2* SQ2* SQ2* SQ2*	1000 1000 500/1000 500 1000 1000 1000
Unidrill - Self-drilli	<b>ng screw,</b> TG10 TG12	hexagon head 4,2x9,5 4,2x13	2x0,9 2x0,9	1/4" 1/4"	1000 1000

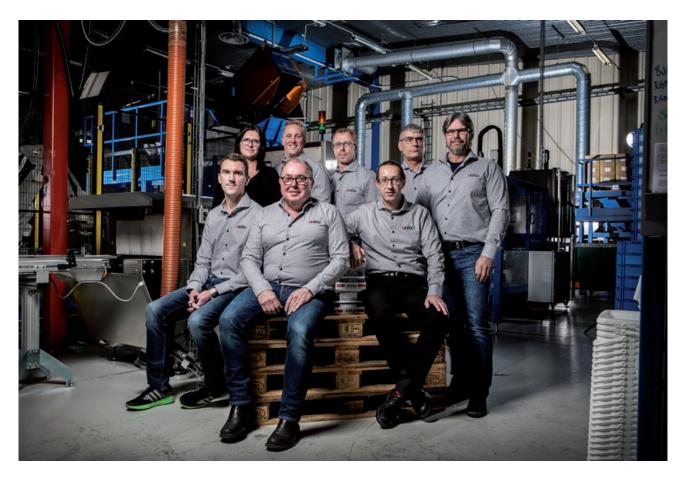




	4,2X16	3,5	SQ2*	1000
	4,2x20	3,5	SQ2*	1000
	4,2x25	2x0,9	SQ2*"	1000
N,	hexagon head			
	4,2x9,5	2x0,9	1/4"	1000
	4,2x13	2x0,9	1/4"	1000
	4,2x13	3	1/4"	1000
	4,2x16	2x0,9	1/4"	1000
	4,2x16	3	1/4"	1000
	4,8x13	4	1/4"	1000
	4,8x16	4	1/4"	1000
	4,8x20	4	1/4"	1000
	4,8x25	4	1/4"	1000
	4,8x40	4	1/4"	500
	5,5x20	4	1/4"	250
	5,5x25	4	1/4"	250
	6,3x25	2x3	1/4"	250

Drill capacity

## It's the final result that counts



We have successively strengthened and developed our range and we have one of the market's widest and most complete ranges of fastenings for structural steelwork, roofing and cladding contractors, ventilation installation and the manufacturing industry. A screw might well be one of a building's smallest components, but it is certainly not an insignificant one. Choosing the right screw, bolt, anchor or rivet is not only of crucial importance for the building or construction to meet the quality requirements and norms set, it is also crucial for smooth, ergonomic and economic installation.

Roofing, cladding and structural steelwork have been our natural environment for more than 30 years, and

our focus has always been on safe, secure and profitable fastening.

From our plant outside of Uddevalla, Sweden, we supply customers all over Scandinavia with fasteners. A large part of our products are also exported to other countries in Europe. You order, and we deliver. It's fast, simple and efficient. Reliable and accurate deliveries are our most important objectives. If you need to discuss solutions and options, please contact our qualified and service-oriented staff, who understands what you need.

Read more about us and our products at **unitefasteners.com** 



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