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**European Technical
Assessment**

**ETA-21/0739
of 03/10/2022**

English translation prepared by CSTB - Original version in French language

General Part

Nom commercial
Trade name

Drillex, Kovervit DX, Kovervit BS

Famille de produit
Product family

**Vis de fixation pour les éléments et les tôles métalliques.
*Fastening screws for metal and sheeting.***

Titulaire
Manufacturer

**Mustad Spa
Via S. Anna, 59/21
10070 BALANGERO
Italy**

Usine de fabrication
Manufacturing plant

**Via Santa Anna 59/21 10075 Balangero (Torino), Italie
Via Saluzzo 66 10064 Pinerolo (Torino), Italie**

Cette évaluation contient:
This assessment contains :

12 pages incluant 9 annexes qui font partie intégrante de cette évaluation
12 pages including 9 annexes which form an integral part of this assessment

Base de l'ETE
Basis of ETA

**EAD 330046-01-0602, Edition janvier 2016
EAD 330046-01-0602, Edition January 2016**

Cette évaluation remplace:
This assessment replaces:

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Specific Part

1 Technical description of the product

The fastening screws DRILLEX, KOVERVIT DX and KOVERVIT BS are listed in Table B1 to B7. The fasteners are made of carbon steel with electroplated coating.

The fasteners can be to large flanged head and hexagonal head. The fastening screws Kovervit BS and DX are normally completed with a elastic washer.

2 Specification of the intended use

The fastening screws are intended to be used for fastening steel sheeting to steel supporting substructures.

The component to be fastened is component I and the supporting structure is component II. The sheeting can either be used as wall or roof cladding or as load bearing wall and roof element. The fastening screws can also be used for the fastening of any other thin gauge steel members.

The intended use comprises fastening screws and connections for indoor and outdoor applications. Fastening screws which are intended to be used in external environments with \geq C2 corrosion according to the standard EN ISO 12944-2 are made of stainless steel.

Furthermore the intended use comprises connections with predominantly static loads (e.g. wind loads, dead loads).

The provisions made in this European Technical Assessment are based on an assumed working life of the fasteners of 25 years. The indications given on the working life cannot be interpreted as a guarantee given by the producer or Technical Assessment Body, but are to be regarded only as a means for choosing the right products in relation to the expected economically reasonable working life of the works.

3 Performance of the product

3.1 Mechanical resistance and stability (BWR 1)

Essential characteristic	Performance
Characteristic tension resistance for static and quasi-static action	See Annex B1 to B76
Characteristic shear resistance for static and quasi-static action	

3.2 Safety in case of fire (BWR 2)

Essential characteristic	Performance
Reaction to fire	Performance Class A1

3.3 Hygiene, health and the environment (BWR 3)

Regarding the dangerous substances contained in this European Technical Assessment, there may be requirements applicable to the products falling within its scope (e.g. transposed European legislation and national laws, regulations and administrative provisions). In order to meet the provisions of the Construction Products Directive, these requirements need also to be complied with, when and where they apply.

3.4 Safety in use (BWR 4)

Not relevant

3.5 Protection against noise (BWR 5)

Not relevant

3.6 Energy Economy and Heat Retention (BWR 6)

Not relevant

3.7 Sustainable Use of Natural Resources (BWR 7)

For the sustainable use of natural resources no performance has been determined for this product.

4 Assessment and Verification of Constancy of Performance (AVCP)

According to the Decision 2001/596/EC of the European Commission¹, as amended, the system of assessment and verification of constancy of performance (see Annex V to Regulation (EU) No 305/2011) given in the following table apply.

Product	Intended use	Level or class	System
Fastening screws for metal members and sheeting	For fixing steel sheeting to steel supporting substructures	—	2+

5 Technical details necessary for the implementation of the AVCP system

Technical details necessary for the implementation of the Assessment and verification of constancy of performance (AVCP) system are laid down in the control plan deposited at Centre Scientifique et Technique du Bâtiment.

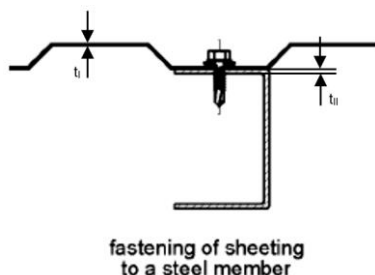
Issued in Marne La Vallée on **03/10/2022** by

Anca CRONOPOL
La Cheffe de Division

The original French version is signed

¹ Official Journal of the European Communities L 254 of 08.10.1996

Examples of execution of a connection



Materials and dimensions

Design relevant materials and dimensions are indicated in the Annexes of the fastening screws:

Fastener	Material of the fastening screw
Washer	Material of the sealing washer
Component I	Material of the metal member or sheeting
Component II	Material of the substructure

t_I	Thickness of component I
t_{II}	Thickness of component II made of metal

The thickness t_{II} corresponds to the load-bearing screws-in length of the fastening screw in component II, if the load-bearing screw-in length does not cover the entire component thickness.

Performance characteristics

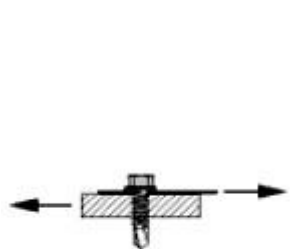
The design relevant performance characteristics of a connection are indicated in the Annexes of the fastening screws.

$N_{R,k}$	Characteristic value of tension resistance
$V_{R,k}$	Characteristic value of shear resistance

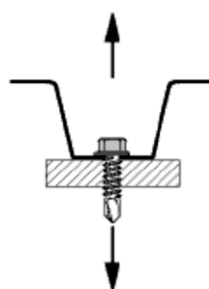
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Terms and explanations

Annex A1



Shear



Tension

Design values

The design values of tension and shear resistance of a connection have to be determined as follows:

$$N_{R,d} = \frac{N_{R,k}}{\gamma_M}$$

$N_{R,d}$ Design value of tension resistance

γ_M Partial safety factor

$$V_{R,d} = \frac{V_{R,k}}{\gamma_M}$$

$V_{R,d}$ Design value of shear resistance

γ_M Partial safety factor

The recommended partial safety factor γ_M is 1,33, provided no partial safety factor is given in national regulations or national Annexes to Eurocode 3.

Special conditions

In case of combined tension and shear forces the linear interaction formula according to EN 1993-1-3, section 8.3 (8) or EN 1999-1-4, section 8.1(7) should be taken into account.

Installation conditions

The installation is carried out according to manufacturer's instruction.

The load-bearing screw-in length of the fastening screw specified by the manufacturer has to be taken into account.

The fastening screws have to be processed with suitable drill driver (e.g. cordless drill driver with depth stop).

The use of impact wrench is not allowed.

The fastening screws have to be fixed rectangular to the surface of the component.

Component I and component II have to be in direct contact to each other.

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Design and installation

Annex A2

Table B1: Characteristic values for tension loads and shear loads

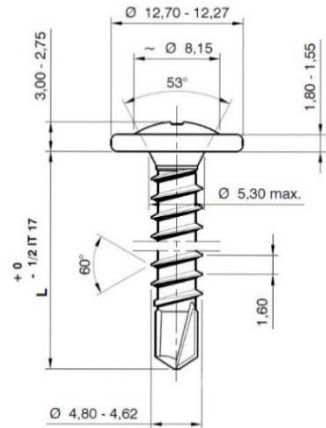
Materials Fastener: Carbon steel – with electroplated coating according EN ISO 4042 (8 µm) Minimum: Ø4,2x32 mm Component I: S250 GD Component II: S235						
Drilling Capacity: ≤ 3,50 mm						
Timber substructures No performance determined						
Intended use: Fastening screws which are intended to be used in internal environments only.						
t _{N,II} [mm]	0,8	1,25	1,50	2,0		
M _{t,nom} [Nm]	4,7					
V _{R,k} [kN] for t _{N,I} [mm]	0,6	1,01	1,68	1,68	1,78	
	0,8	1,01	1,68	1,68	1,78	
	1,25	1,01	1,68	1,68	1,78	
N _{R,k} [kN] for t _{N,I} [mm]	0,6	0,50	0,87	0,87	2,45	
	0,8	0,50	0,87	0,87	2,45	
	1,25	0,50	0,87	0,87	2,45	

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Annex B1

Performances – Characteristic resistance under tension load and shear. Drillex FFL 4,2 x 32 mm

Table B2: Characteristic values for tension loads and shear loads

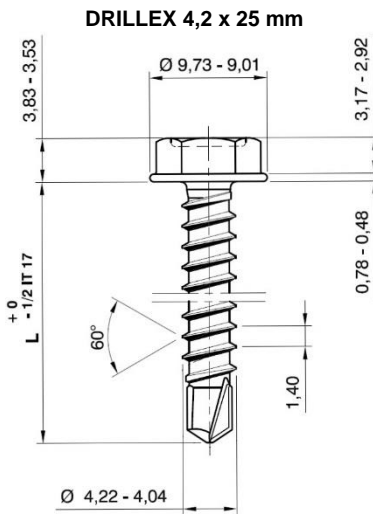
Materials Fastener: Carbon steel – with electroplated coating according EN ISO 4042 (8 µm) Minimum: Ø4,8x38 mm Component I: S250 GD Component II: S235		DRILLEX FFL 4,8 x 38 mm 	
Drilling Capacity ≤ 4,0 mm			
Timber substructures No performance determined			
Intended use: Fastening screws which are intended to be used in internal environments only.			
$t_{N,II}$ [mm]	0,8	1,25	1,50
$M_{t,nom}$ [Nm]	6,9		
$V_{R,k}$ [kN] for $t_{N,II}$ [mm]	0,6	1,24	1,28
	0,8	1,24	1,28
	1,25	1,24	1,28
	1,50	-	1,99
	2,0	-	1,99
$N_{R,k}$ [kN] for $t_{N,II}$ [mm]	0,6	0,41	0,54
	0,8	0,41	0,54
	1,25	0,41	0,54
	1,50	-	0,59
	2,0	-	0,59

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Annex B2

Performances – Characteristic resistance under tension load and shear. Drillex FFL 4,8 x 38 mm

Table B3: Characteristic values for tension loads and shear loads

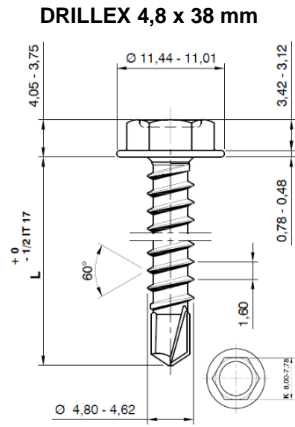
Materials Fastener: Carbon steel – with electroplated coating according EN ISO 4042 (8 µm) Minimum: Ø4,2x25 mm Component I: S250 GD Component II: S235				<div>DRILLEX 4,2 x 25 mm</div> 			
Drilling Capacity ≤ 3,50 mm							
Timber substructures No performance determined							
Intended use: Fastening screws which are intended to be used in internal environments only.							
t _{N,II} [mm]	0,8	1,25	1,50	2,0			
M _{t,nom} [Nm]	4,7						
V _{R,k} [kN] for t _{N,I} [mm]	0,6	0,98	0,98	0,98	1,11		
	0,8	0,98	0,98	0,98	1,11		
	1,25	0,98	0,98	0,98	1,11		
	1,50	-	2,25	2,25	-		
	2,0	-	2,25	2,25	-		
N _{R,k} [kN] for t _{N,I} [mm]	0,6	0,38	0,65	0,65	1,83		
	0,8	0,38	0,65	0,65	1,83		
	1,25	0,38	0,65	0,65	1,83		
	1,50	-	0,67	0,67	-		
	2,0	-	0,67	0,67	-		

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Annex B3

Performances – Characteristic resistance under tension load and shear. Drillex 4,2 x 25 mm

Table B4: Characteristic values for tension loads and shear loads

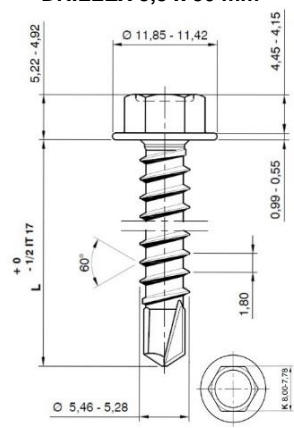
Materials Fastener: Carbon steel – with electroplated coating according EN ISO 4042 (8 µm) Minimum: Ø4,8x38 mm Component I: S250 GD Component II: S235					
Drilling Capacity ≤ 4,0 mm					
Timber substructures No performance determined					
Intended use: Fastening screws which are intended to be used in internal environments only.					
t _{N,II} [mm]		0,8	1,25	1,50	2,0
M _{t,nom} [Nm]		6,9			
V _{R,k} [kN] for t _{N,II} [mm]	0,6	0,86	0,86	0,86	1,07
	0,8	0,86	0,86	0,86	1,07
	1,25	0,86	0,86	0,86	1,07
	1,50	-	2,85	2,85	4,65
	2,0	-	2,85	2,85	4,65
N _{R,k} [kN] for t _{N,II} [mm]	0,6	0,42	0,61	0,61	1,83
	0,8	0,42	0,61	0,61	1,83
	1,25	0,42	0,61	0,61	1,83
	1,50	-	0,64	0,64	1,85
	2,0	-	0,64	0,64	1,85

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Annex B4

Performances – Characteristic resistance under tension load and shear. Drillex 4,8 x 38 mm

Table B5: Characteristic values for tension loads and shear loads

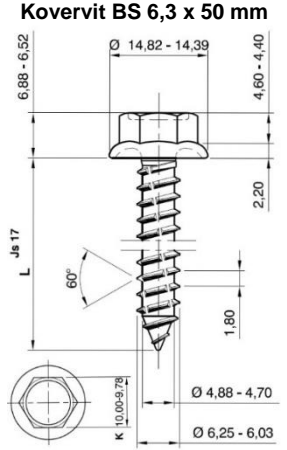
Materials Fastener: Carbon steel – with electroplated coating according EN ISO 4042 (8 µm) Minimum: Ø5,5x50 mm Component I: S250 GD Component II: S235						
Drilling Capacity ≤ 5,0 mm						
Timber substructures No performance determined						
Intended use: Fastening screws which are intended to be used in internal environments only.						
t _{N,II} [mm]	1,0	1,25	1,5	2,0	3,0	
M _{t,nom} [Nm]	10,4					
V _{R,k} [kN] for t _{N,II} [mm]	0,6	0,53	0,53	0,53	1,21	1,21
	1,0	0,53	0,53	0,53	1,21	1,21
	1,25	0,53	0,53	0,53	1,21	1,21
	1,5	-	3,16	3,16	4,79	5,80
	2,0	-	3,16	3,16	4,79	5,80
	3,0	-	3,16	3,16	4,79	-
N _{R,k} [kN] for t _{N,II} [mm]	0,6	0,58	0,59	0,59	1,67	1,67
	1,0	0,58	0,59	0,59	1,67	1,67
	1,25	0,58	0,59	0,59	1,67	1,67
	1,5	-	0,61	0,61	1,99	3,85
	2,0	-	0,61	0,61	1,99	3,85
	3,0	-	0,61	0,61	1,99	-

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Annex B5

Performances – Characteristic resistance under tension load and shear. Drillex 5,5 x 50 mm

Table B6: Characteristic values for tension loads and shear loads

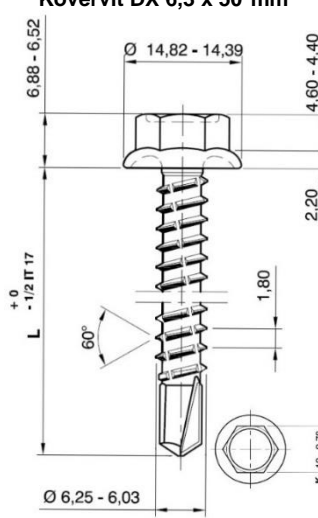
Materials Fastener: Carbon steel – with electroplated coating according EN ISO 4042 (8 µm) Minimum: Ø6,3x50 mm Component I: S250 GD Component II: S235					
Drilling Capacity: [-]					
Timber substructures No performance determined					
Intended use: Fastening screws which are intended to be used in internal and external environments.					
$t_{N,II}$ [mm]	1,5	2,0	4,0	7,0	
$M_{t,nom}$ [Nm]	13,6				
$V_{R,k}$ [kN] for $t_{N,II}$ [mm]	0,6	1,59	1,59	2,70	3,22
	1,5	-	4,06	4,29	4,29
	2,0	-	4,06	4,29	4,29
	4,0	-	4,06	4,29	4,29
	7,0	-	4,06	4,29	4,29
$N_{R,k}$ [kN] for $t_{N,II}$ [mm]	0,6	0,86	1,98	4,34	5,22
	1,5	-	2,55	5,22	5,22
	2,0	-	2,55	5,22	5,22
	4,0	-	2,55	5,22	5,22
	7,0	-	2,55	5,22	5,22

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Annex B6

Performances – Characteristic resistance under tension load and shear. Kovervit BS 6,3 x 50 mm

Table B7: Characteristic values for tension loads and shear loads

Materials Fastener: Carbon steel – with electroplated coating according EN ISO 4042 (8 µm) Minimum: Ø6,3x50 mm Component I: S250 GD Component II: S235		Kovervit DX 6,3 x 50 mm 			
Drilling Capacity ≤ 7,0 mm					
Timber substructures No performance determined					
Intended use: Fastening screws which are intended to be used in internal and external environments.					
$t_{N,II}$ [mm]		1,5	2,0	4,0	7,0
$M_{t,nom}$ [Nm]		17,0			
$V_{R,k}$ [kN] for $t_{N,II}$ [mm]	0,6	1,62	2,17	3,07	3,17
	1,5	-	5,63	6,48	6,48
	2,0	-	5,63	6,48	6,48
	4,0	-	5,63	-	-
$N_{R,k}$ [kN] for $t_{N,II}$ [mm]	0,6	1,36	1,80	3,62	3,38
	1,5	-	2,60	5,08	5,08
	2,0	-	2,60	5,08	5,08
	4,0	-	2,60	-	-

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Annex B7

Performances – Characteristic resistance under tension load and shear. Kovervit DX 6,3 x 50 mm