

## Centre Scientifique et Technique du Bâtiment

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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:*

## 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 Commission<sup>1</sup>, 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

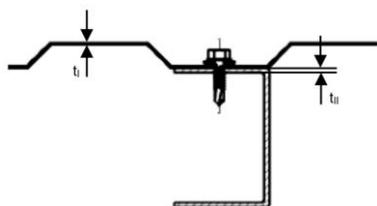
Anca CRONOPOL  
La Cheffe de Division

*The original French version is signed*

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<sup>1</sup> Official Journal of the European Communities L 254 of 08.10.1996

Examples of execution of a connection



fastening of sheeting  
to a steel member

**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**



**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  
 $\gamma_M$  Partial safety factor

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

$V_{R,d}$  Design value of shear resistance  
 $\gamma_M$  Partial safety factor

The recommended partial safety factor  $\gamma_M$  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.

<b>MUSTAD</b>	<b>Annex A2</b>
<b>Design and installation</b>	

**Table B1: Characteristic values for tension loads and shear loads**

<p><b>Materials</b>                  Fastener: Carbon steel – with electroplated coating according EN ISO 4042 (8 µm)                  Minimum: Ø4,2x32 mm                  Component I: S250 GD                  Component II: S235</p>					
Drilling Capacity: ≤ 3,50 mm					
<p><b>Timber substructures</b>                  No performance determined</p>					
<p><b>Intented use:</b>                  Fastening screws which are intended to be used in internal environments only.</p>					
$t_{N,II}$ [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 FLL 4,2 x 32 mm

**Table B2: Characteristic values for tension loads and shear loads**

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

**Table B3: Characteristic values for tension loads and shear loads**

<p><b>Materials</b>                  Fastener: Carbon steel – with electroplated coating according EN ISO 4042 (8 µm)                  Minimum: Ø4,2x25 mm                  Component I: S250 GD                  Component II: S235</p>					
Drilling Capacity ≤ 3,50 mm					
<p><b>Timber substructures</b>                  No performance determined</p>					
<p><b>Intended use:</b>                  Fastening screws which are intended to be used in internal environments only.</p>					
$t_{N,II}$ [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**

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

<p><b>Materials</b>                  Fastener: Carbon steel – with electroplated coating according EN ISO 4042 (8 µm)                  Minimum: Ø5,5x50 mm                  Component I: S250 GD                  Component II: S235</p>		<p><b>DRILLEX 5,5 x 50 mm</b></p>				
<p>Drilling Capacity ≤ 5,0 mm</p>						
<p><b>Timber substructures</b>                  No performance determined</p>						
<p><b>Intended use:</b>                  Fastening screws which are intended to be used in internal environments only.</p>						
$t_{N,II}$ [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**

<p><b>Materials</b>                  Fastener: Carbon steel – with electroplated coating according EN ISO 4042 (8 µm)                  Minimum: Ø6,3x50 mm                  Component I: S250 GD                  Component II: S235</p>		<p><b>Kovervit BS 6,3 x 50 mm</b></p>			
Drilling Capacity: [-]					
<p><b>Timber substructures</b>                  No performance determined</p>					
<p><b>Intended use:</b>                  Fastening screws which are intended to be used in internal and external environments.</p>					
$t_{N,II}$ [mm]	1,5	2,0	4,0	7,0	
$M_{t,nom}$ [Nm]	13,6				
$V_{R,k}$ [kN] for $t_{N,I}$ [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 $t_{N,I}$ [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**

<b>Materials</b>					
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 ≤ 7,0 mm					
<b>Timber substructures</b>					
No performance determined					
<b>Intended use:</b>					
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 $t_{N,I}$ [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 $t_{N,I}$ [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