

DECLARATION of PERFORMANCE

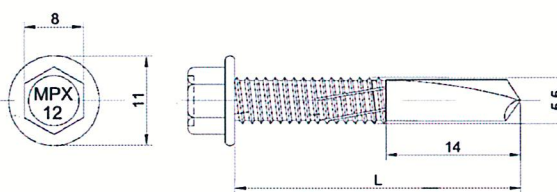
No 01/MPX12/0371/2019



1. *Unique identification code of the product-type:* **MPX 12**
2. *Intended use:* **MPX 12 self-drilling screws are intended to be used for fastening steel sheeting to steel supporting structures.**
3. *Name, registered trade name or registered trade mark and contact address of the manufacturer:* **Marcopol Sp. z o.o. Producer of Bolts str. Oliwska 100, 80-209 Chwaszczyno Poland**
4. *System or systems of assessment and verification of constancy of performance of the construction product:*
System "2+" of assessment
5. *European Technical Assessment:* **ETA 18/0371 issued 15.02.2019**
Technical Assessment Body: **Technický a zkušební ústav stavební Praha, s.p.**
Notified Body: **Number: 1488 - Instytut Techniki Budowlanej**
6. *Declared performance:*

	Essential characteristics	Performance	Technical specification
3.1 BWR 1: Mechanical resistance and stability			
3.1.1.	Characteristic Shear Resistance of the Connection	see Table 1 ÷ 5 below	ETA 18/0371
3.1.2.	Characteristic Tension Resistance of the Connection	see Table 1 ÷ 5 below	ETA 18/0371
3.1.3.	Durability		
	Stainless steel Bi-Metal with ceramic coating Ruspert Silver	Category $\geq$ C2	EN ISO 12944-2
3.2 BWR 2: Safety in case of fire			
3.2.1.	Reaction to fire	The performance of the product is class A1	EN 13501-1
3.3 BWR 3: Hygiene, health and the environment			
3.3.1.	Content, emission and/or release of dangerous substances	Content of dangerous substances less than 0,1%	EU Regulation REACH 1907/2006

Table 1: Characteristic Tension Resistance $N_{R,k}$ and Shear Resistance $V_{R,k}$ [kN]

	Materials Fastener: stainless steel – A2 Fastener: carbon steel - SAE1022 Washer: - Component I: S280GD, S320GD or S350GD – EN 10346 Component II: S235 – EN 10025-1 Drilling capacity: $\Sigma(t_{N2} + t_{II}) \leq 12,50$ mm Timber substructures no performance determined
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t _{N,II} [mm]	4,00	5,00	6,00	7,00	8,00	9,00	10,00	11,00	Wood class ≥ C24		
M _{t,nom}	5 Nm								—	—	
V _{R,k} [kN] for t _{N,I} [mm]	0,75	1,13	1,13	1,13	1,13	1,13	1,13	1,13	—	—	*bearing resistance of component I **bearing resistance of component II
	0,88	1,48	1,48	1,48	1,48	1,48	1,48	1,48	—	—	
	1,00	1,86	1,86	1,86	1,86	1,86	1,86	1,86	—	—	
	1,13	1,86	1,86	1,86	1,86	1,86	1,86	1,86	—	—	
	1,25	1,98	1,98	1,98	1,98	1,98	1,98	1,98	—	—	
	1,50	1,98	1,98	1,98	1,98	1,98	1,98	1,98	—	—	
	1,75	—	—	—	—	—	—	—	—	—	
	2,00	—	—	—	—	—	—	—	—	—	
N _{R,k} [kN] for t _{N,I} [mm]	0,75	1,38	1,38	1,38	1,38	1,38	1,38	1,38	—	—	*bearing resistance of component II **bearing resistance of component I
	0,88	1,45	1,45	1,45	1,45	1,45	1,45	1,45	—	—	
	1,00	2,00	2,00	2,00	2,00	2,00	2,00	2,00	—	—	
	1,13	2,00	2,00	2,00	2,00	2,00	2,00	2,00	—	—	
	1,25	2,06	2,06	2,06	2,06	2,06	2,06	2,06	—	—	
	1,50	2,06	2,06	2,06	2,06	2,06	2,06	2,06	—	—	
	1,75	—	—	—	—	—	—	—	—	—	
	2,00	—	—	—	—	—	—	—	—	—	

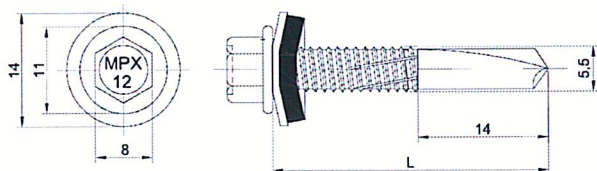
If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%

If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

MPX 12 fastening screws for metal members and sheeting

MPX 12 5,5 × L
with hexagon head

Table 1

Table 2: Characteristic Tension Resistance $N_{R,k}$ and Shear Resistance $V_{R,k}$ [kN]

Materials

Fastener: stainless steel – A2
 Fastener: carbon steel - SAE1022
 Washer: EPDM sealing ring with metal top
 made of stainless steel
 Component I: S280GD, S320GD or S350GD – EN 10346
 Component II: S235 – EN 10025-1

Drilling capacity: $\Sigma(t_{N2} + t_{II}) \leq 12,50$ mm

Timber substructures

no performance determined

$t_{N,II}$ [mm]	4,00	5,00	6,00	7,00	8,00	9,00	10,00	11,00	Wood class $\geq$ C24		
$M_{L,nom}$	5 Nm								—	—	
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,75	1,13	1,13	1,13	1,13	1,13	1,13	1,13	—	—	*bearing resistance of component I **bearing resistance of component II
	0,88	1,48	1,48	1,48	1,48	1,48	1,48	1,48	—	—	
	1,00	1,86	1,86	1,86	1,86	1,86	1,86	1,86	—	—	
	1,13	1,86	1,86	1,86	1,86	1,86	1,86	1,86	—	—	
	1,25	1,98	1,98	1,98	1,98	1,98	1,98	1,98	—	—	
	1,50	1,98	1,98	1,98	1,98	1,98	1,98	1,98	—	—	
	1,75	—	—	—	—	—	—	—	—	—	
	2,00	—	—	—	—	—	—	—	—	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,75	3,30	3,30	3,30	3,30	3,30	3,30	3,30	—	—	*bearing resistance of component II **bearing resistance of component I
	0,88	4,00	4,00	4,00	4,00	4,00	4,00	4,00	—	—	
	1,00	4,19	4,19	4,19	4,19	4,19	4,19	4,19	—	—	
	1,13	4,19	4,19	4,19	4,19	4,19	4,19	4,19	—	—	
	1,25	4,21	4,21	4,21	4,21	4,21	4,21	4,21	—	—	
	1,50	4,21	4,21	4,21	4,21	4,21	4,21	4,21	—	—	
	1,75	—	—	—	—	—	—	—	—	—	
	2,00	—	—	—	—	—	—	—	—	—	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%

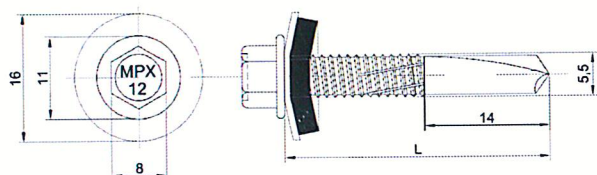
If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

MPX 12 fastening screws for metal members and sheeting

MPX 12 5,5 × L + I14

with hexagon head and sealing washer $\geq \varnothing 14$ mm
 with metal top made of stainless steel

Table 2

Table 3: Characteristic Tension Resistance $N_{R,k}$ and Shear Resistance $V_{R,k}$ [kN]

Materials

Fastener: stainless steel – A2

Fastener: carbon steel - SAE1022

 Washer: EPDM sealing ring with metal top
 made of stainless steel

Component I: S280GD, S320GD or S350GD – EN 10346

Component II: S235 – EN 10025-1

 Drilling capacity: $\Sigma(t_{N2} + t_{II}) \leq 12,50$ mm

Timber substructures

no performance determined

$t_{N,II}$ [mm]	4,00	5,00	6,00	7,00	8,00	9,00	10,00	11,00	Wood class $\geq$ C24		
$M_{t,nom}$	5 Nm								—	—	
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,75	1,13	1,13	1,13	1,13	1,13	1,13	1,13	—	—	*bearing resistance of component I **bearing resistance of component II
	0,88	1,48	1,48	1,48	1,48	1,48	1,48	1,48	—	—	
	1,00	1,86	1,86	1,86	1,86	1,86	1,86	1,86	—	—	
	1,13	1,86	1,86	1,86	1,86	1,86	1,86	1,86	—	—	
	1,25	1,98	1,98	1,98	1,98	1,98	1,98	1,98	—	—	
	1,50	1,98	1,98	1,98	1,98	1,98	1,98	1,98	—	—	
	1,75	—	—	—	—	—	—	—	—	—	
	2,00	—	—	—	—	—	—	—	—	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,75	3,33	3,33	3,33	3,33	3,33	3,33	3,33	—	—	*bearing resistance of component II **bearing resistance of component I
	0,88	4,04	4,04	4,04	4,04	4,04	4,04	4,04	—	—	
	1,00	4,23	4,23	4,23	4,23	4,23	4,23	4,23	—	—	
	1,13	4,23	4,23	4,23	4,23	4,23	4,23	4,23	—	—	
	1,25	4,26	4,26	4,26	4,26	4,26	4,26	4,26	—	—	
	1,50	4,26	4,26	4,26	4,26	4,26	4,26	4,26	—	—	
	1,75	—	—	—	—	—	—	—	—	—	
	2,00	—	—	—	—	—	—	—	—	—	

 If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%

 If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

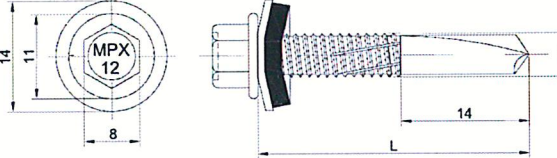
MPX 12 fastening screws for metal members and sheeting

MPX 12 5,5 × L + I16

 with hexagon head and sealing washer $\geq \varnothing 16$ mm
 with metal top made of stainless steel

Table 3

Table 4: Characteristic Tension Resistance $N_{R,k}$ and Shear Resistance $V_{R,k}$ [kN]

	<u>Materials</u> Fastener: stainless steel – A2 Fastener: carbon steel - SAE1022 Washer: EPDM sealing ring with metal top made of aluminum Component I: S280GD, S320GD or S350GD – EN 10346 Component II: S235 – EN 10025-1 Drilling capacity: $\Sigma(t_{N2} + t_{II}) \leq 12,50$ mm <u>Timber substructures</u> no performance determined
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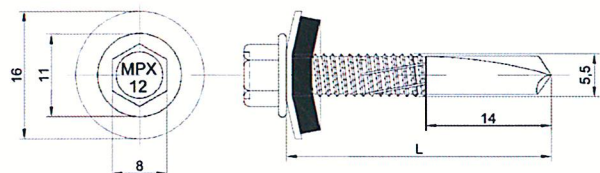
$t_{N,II}$ [mm]	4,00	5,00	6,00	7,00	8,00	9,00	10,00	11,00	Wood class $\geq$ C24		
$M_{L, nom}$	5 Nm								—	—	
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,75	1,13	1,13	1,13	1,13	1,13	1,13	1,13	—	—	*bearing resistance of component I **bearing resistance of component II
	0,88	1,48	1,48	1,48	1,48	1,48	1,48	1,48	—	—	
	1,00	1,86	1,86	1,86	1,86	1,86	1,86	1,86	—	—	
	1,13	1,86	1,86	1,86	1,86	1,86	1,86	1,86	—	—	
	1,25	1,98	1,98	1,98	1,98	1,98	1,98	1,98	—	—	
	1,50	1,98	1,98	1,98	1,98	1,98	1,98	1,98	—	—	
	1,75	—	—	—	—	—	—	—	—	—	
	2,00	—	—	—	—	—	—	—	—	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,75	3,30	3,30	3,30	3,30	3,30	3,30	3,30	—	—	*bearing resistance of component II **bearing resistance of component I
	0,88	4,00	4,00	4,00	4,00	4,00	4,00	4,00	—	—	
	1,00	4,19	4,19	4,19	4,19	4,19	4,19	4,19	—	—	
	1,13	4,19	4,19	4,19	4,19	4,19	4,19	4,19	—	—	
	1,25	4,21	4,21	4,21	4,21	4,21	4,21	4,21	—	—	
	1,50	4,21	4,21	4,21	4,21	4,21	4,21	4,21	—	—	
	1,75	—	—	—	—	—	—	—	—	—	
	2,00	—	—	—	—	—	—	—	—	—	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%
 If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

MPX 12 fastening screws for metal members and sheeting

MPX 12 5,5 × L + A14
 with hexagon head and sealing washer $\geq \varnothing 14$ mm
 with metal top made of aluminum

Table 4

Table 5: Characteristic Tension Resistance $N_{R,k}$ and Shear Resistance $V_{R,k}$ [kN]

Materials

Fastener: stainless steel – A2
 Fastener: carbon steel - SAE1022
 Washer: EPDM sealing ring with metal top
 made of aluminum
 Component I: S280GD, S320GD or S350GD – EN 10346
 Component II: S235 – EN 10025-1

Drilling capacity: $\Sigma(t_{N2} + t_{II}) \leq 12,50$ mm

Timber substructures

no performance determined

$t_{N,II}$ [mm]	4,00	5,00	6,00	7,00	8,00	9,00	10,00	11,00	Wood class $\geq$ C24		
$M_{L,nom}$	5 Nm								—	—	
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,75	1,13	1,13	1,13	1,13	1,13	1,13	1,13	—	—	*bearing resistance of component I **bearing resistance of component II
	0,88	1,48	1,48	1,48	1,48	1,48	1,48	1,48	—	—	
	1,00	1,86	1,86	1,86	1,86	1,86	1,86	1,86	—	—	
	1,13	1,86	1,86	1,86	1,86	1,86	1,86	1,86	—	—	
	1,25	1,98	1,98	1,98	1,98	1,98	1,98	1,98	—	—	
	1,50	1,98	1,98	1,98	1,98	1,98	1,98	1,98	—	—	
	1,75	—	—	—	—	—	—	—	—	—	
	2,00	—	—	—	—	—	—	—	—	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,75	3,33	3,33	3,33	3,33	3,33	3,33	3,33	—	—	*bearing resistance of component II **bearing resistance of component I
	0,88	4,04	4,04	4,04	4,04	4,04	4,04	4,04	—	—	
	1,00	4,23	4,23	4,23	4,23	4,23	4,23	4,23	—	—	
	1,13	4,23	4,23	4,23	4,23	4,23	4,23	4,23	—	—	
	1,25	4,26	4,26	4,26	4,26	4,26	4,26	4,26	—	—	
	1,50	4,26	4,26	4,26	4,26	4,26	4,26	4,26	—	—	
	1,75	—	—	—	—	—	—	—	—	—	
	2,00	—	—	—	—	—	—	—	—	—	

If both components I and II are made of S320GD the values $V_{R,k}$ may be increased by 8,3%

If both components I and II are made of S350GD the values $V_{R,k}$ may be increased by 16,6%

MPX 12 fastening screws for metal members and sheeting

MPX 12 5,5 × L + A16
 with hexagon head and sealing washer $\geq \varnothing 16$ mm
 with metal top made of aluminum

Table 5

7. The performance of the product identified in points 1 and 2 is in conformity with the declared performance in point 6

This declaration of performance is issued under the sole responsibility of the manufacturer identified in point 3.

Chwaszczyno, 01.04.2019

Signed by:

R&D Director

Janusz Kabała
Dyrektor Działu Rozwoju
Produktów


Janusz Kabała