



The specialist for fastening technology



## **IMPACT WRENCHES APPROVAL FOR WOOD SCREWS**

**IMPACT WRENCHES -  
PERMISSIBILITY FOR  
WOOD SCREWS**

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**PULL-OUT RESISTANCE  
IN SOFTWOOD LVL**  
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**TENSILE CARRYING  
CAPACITY**

# IMPACT WRENCHES - PERMISSIBILITY FOR WOOD SCREWS

## **Is the installation of screws by means of impact wrenches permissible?**

The installation method (continuous rotation or tangential impact) of wood screws is not regulated either by EN 14592 or by the European Technical Assessments (ETA). Impact wrenches are especially useful for installing very long screws, so the question of its admissibility arises.

To clarify this question, Eurotec wood screws made of carbon steel with a nominal diameter of 8,0 mm were subject of comparative tests. The screws were all installed with rotary drilling and tangential impact. Subsequently, pull-out resistance and tensile strength tests were made. This was done in each case with the longest partially and fully threaded screws in the most unfavorable material (softwood laminated veneer lumber).

**It was proven that the installation method has no significant effect on the load-bearing capacity of the screw itself or on its pull-out resistance.**

Therefore, Eurotec wood screws with partial or full thread made of carbon steel with a nominal diameter of 8,0 mm can be safely installed in solid wood, glulam timber, or softwood laminated veneer lumber using a tangential impact wrench.



ECO PT, Countersunk head, blue galvanised



Panelwistec, Countersunk head, yellow galvanised



ECO PT, Flanged button head, blue galvanised



Panelwistec, Flanged button head, yellow galvanised



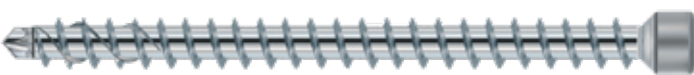
KonstruX ST, Countersunk head, blue galvanised



Panelwistec 1000, Flanged button head, special coated steel



KonstruX ST, Cylinder head, blue galvanised



SawTec, Cylinder head, blue galvanised



Panelwistec AG, Countersunk head, blue galvanised



Topduo, Flanged button head, specially coated



Panelwistec AG, Flanged button head, blue galvanised



Topduo, Cylinder head, specially coated

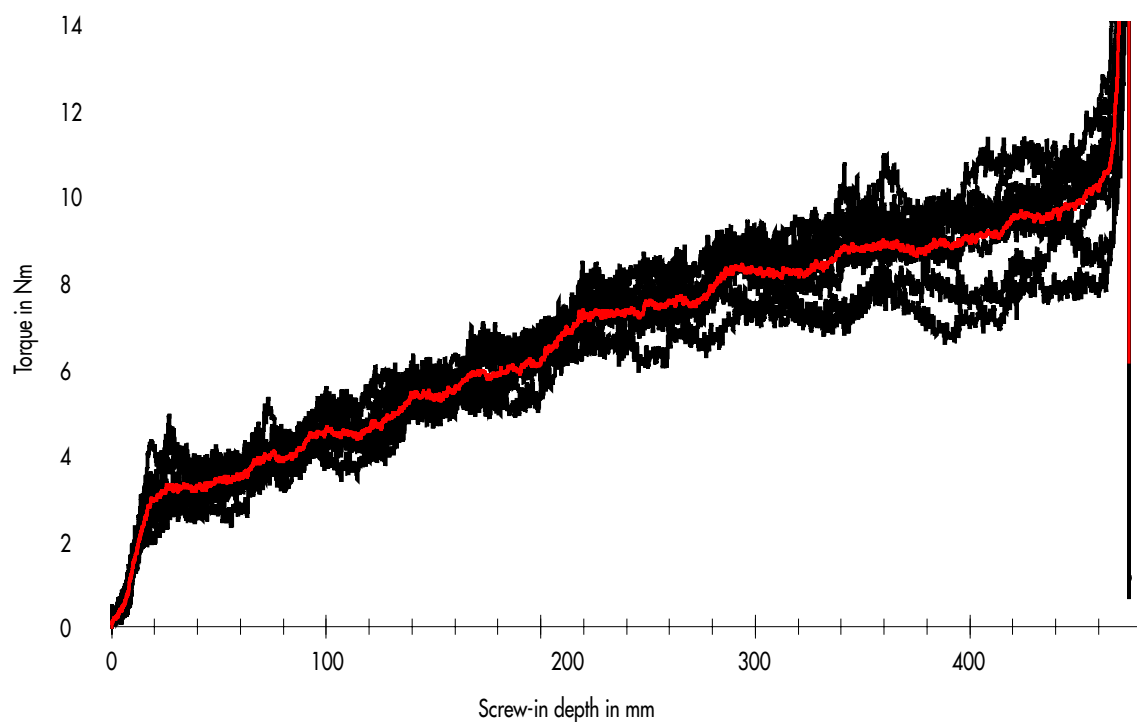


# PULL-OUT RESISTANCE IN SOFTWOOD LVL ( $\alpha=90^\circ$ )

	No.	KonstruX 8,0 x 195		PT SK <sup>a)</sup> 8,0 x 300 mm	
		Drill	Impact wrench	Drill	Impact wrench
Individual values [kN]	1	16,4	18,7	13,0	13,4
	2	17,2	18,4	14,4	14,8
	3	15,7	15,6	12,2	12,6
	4	17,1	16,8	13,5	14,0
	5	17,9	21,4	17,6	13,8
	6	15,4	16,0	14,2	15,6
	7	18,8	18,6	12,6	12,5
	8	14,7	13,9	13,5	12,3
	9	17,1	17,4	12,6	12,9
	10	16,1	15,7	15,2	14,6
Average value [kN]		16,6	17,3	13,8	13,7
Standard deviation [kN]		1,20	2,12	1,61	1,08
Coefficient of variation [%]		7,23	12,3	11,6	7,94
Embedment depth [mm]			112		95

<sup>a)</sup>Panelwistec Countersunk-head

Diagram for the screw-in torque of KonstruX 8,0 x 480 mm

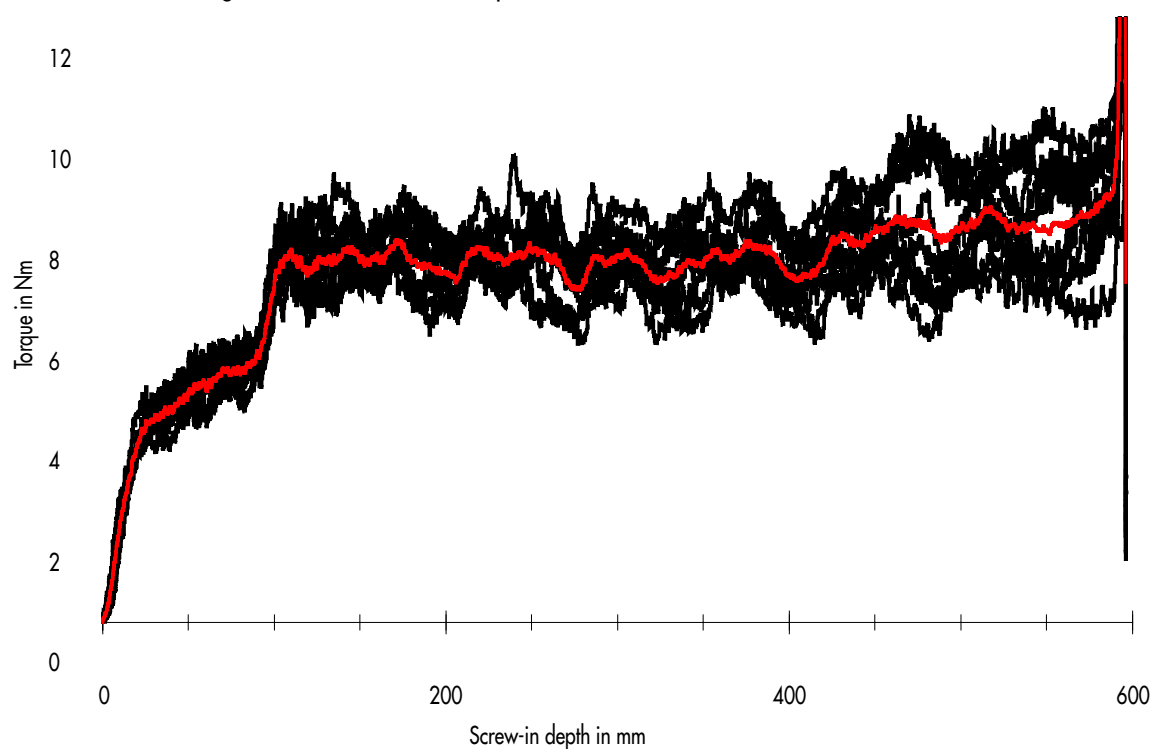


# TENSILE CARRYING CAPACITY

	No.	KonstruX 8,0 x 480		PT TK <sup>a)</sup> AG 8,0 x 600 mm	
		Drill	Impact wrench	Drill	Impact wrench
Individual values [kN]	1	31,3	30,8	25,9	26,0
	2	31,3	31,1	26,1	26,2
	3	31,5	31,2	26,2	26,0
	4	31,3	31,2	25,8	25,9
	5	31,2	31,2	25,8	26,1
	6	30,9	31,2	25,6	25,2
	7	31,2	30,6	26,2	25,9
	8	31,2	31,2	26,0	25,7
	9	31,3	31,3	26,2	26,1
	10	31,0	31,3	26,2	26,0
Average value [kN]		31,2	31,1	26,0	25,9
Standard deviation [kN]		0,152	0,239	0,210	0,286
Coefficient of variation [%]		0,487	0,767	0,809	1,104

<sup>a)</sup>Paneltwistec Flanged button-head

Diagram for the screw-in torque of Paneltwistec TK AG 8,0 x 600 mm







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