



The specialist for fastening technology



IMPACT WRENCHES APPROVAL FOR WOOD SCREWS

**IMPACT WRENCHES -
PERMISSIBILITY FOR
WOOD SCREWS**

**PULL-OUT RESISTANCE
IN SOFTWOOD LVL**

**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, it is also possible to use an impact screwdriver (tangential impact) for driving Eurotec wood construction screws made of carbon steel with partial or full thread and a nominal diameter of 8.0 mm into solid wood, glulam, laminated wood beams or laminated softwood veneers.



ECO Paneltwistec, Countersunk head, blue galvanised



Paneltwistec, Countersunk head, yellow galvanised



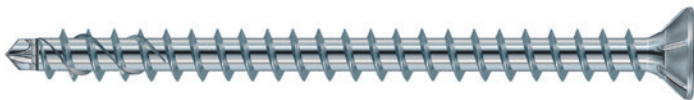
ECO Paneltwistec, Flanged button head, blue galvanised



Paneltwistec, Flanged button head, yellow galvanised



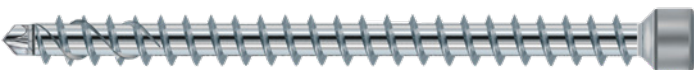
KonstruX ST, Countersunk head, blue galvanised



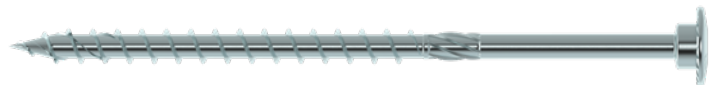
Paneltwistec 1000, Flanged button head, special coated steel



KonstruX ST, Cylinder head, blue galvanised



SawTec, Cylinder head, blue galvanised



Paneltwistec AG, Countersunk head, blue galvanised



Topduo, Flanged button head, specially coated



Paneltwistec AG, Flanged button head, blue galvanised



Topduo, Cylinder head, specially coated

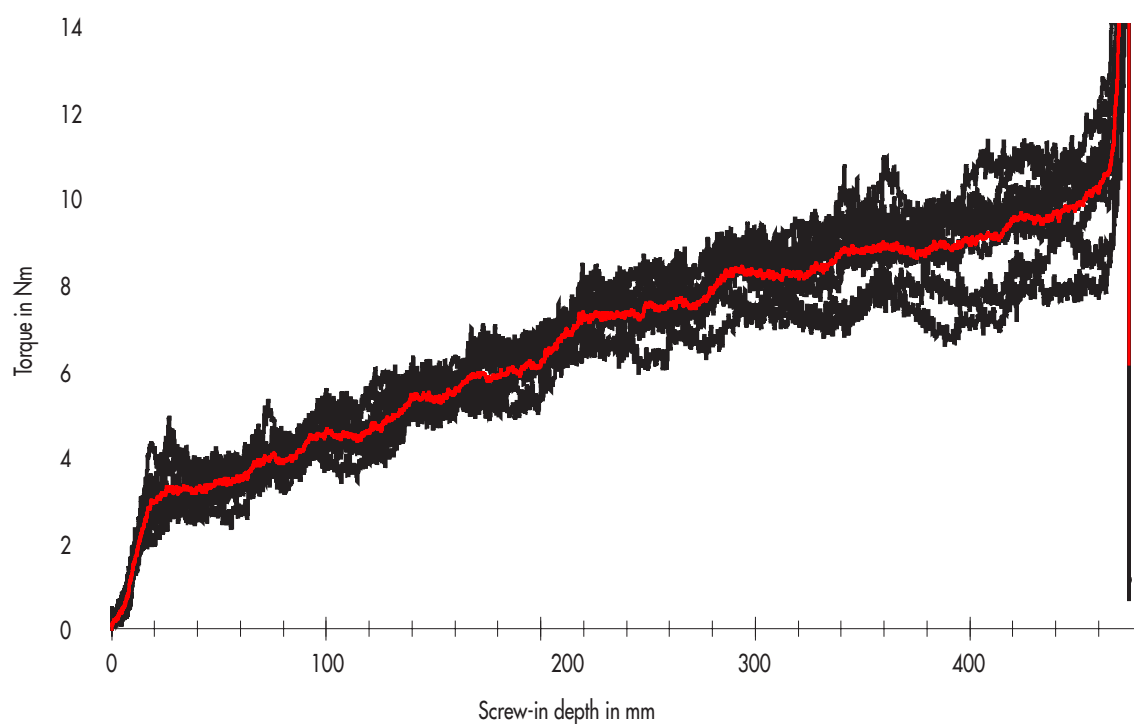


PULL-OUT RESISTANCE IN SOFTWOOD LVL ($\alpha=90^\circ$)

	No.	KonstruX 8,0 x 195		Paneltwistec SK ^{a)} 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	

^{a)}Paneltwistec Countersunk-head

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

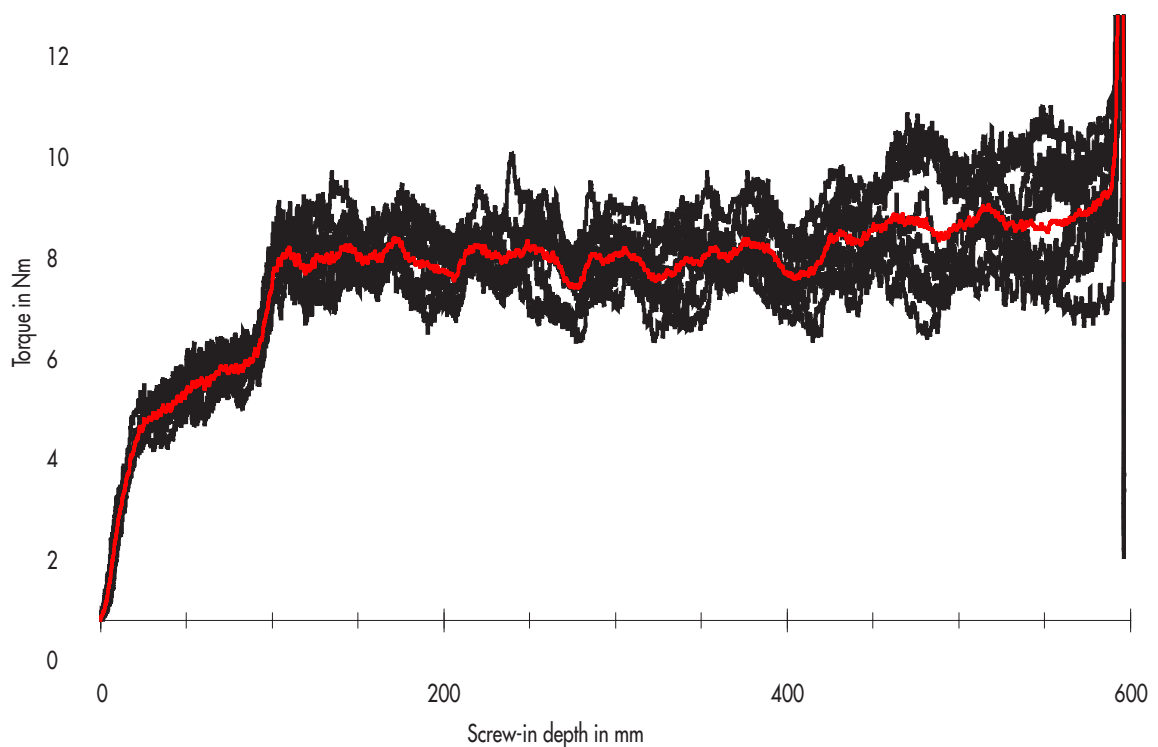


TENSILE CARRYING CAPACITY

	No.	KonstruX 8,0 x 480		Paneltwistec TK ^{a)} 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

^{a)}Paneltwistec Flanged button-head

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





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