



# The Ensats® – pull-out resistance due to flange cover ...



Connections using threaded insert Ensats® permit substantially smaller dimensions and consequently material and weight-saving designs.

The illustration below (Fig. 2) shows a screw connection with different screw cross-sections. Despite the smaller

screw cross-section, a screw joint with an Ensats® is capable of withstanding higher axial forces than the screw joint with larger screw cross-section; because the force – both under static and dynamic load – in the Ensats® male thread is distributed evenly over the individual thread turns of the Ensats® male thread.

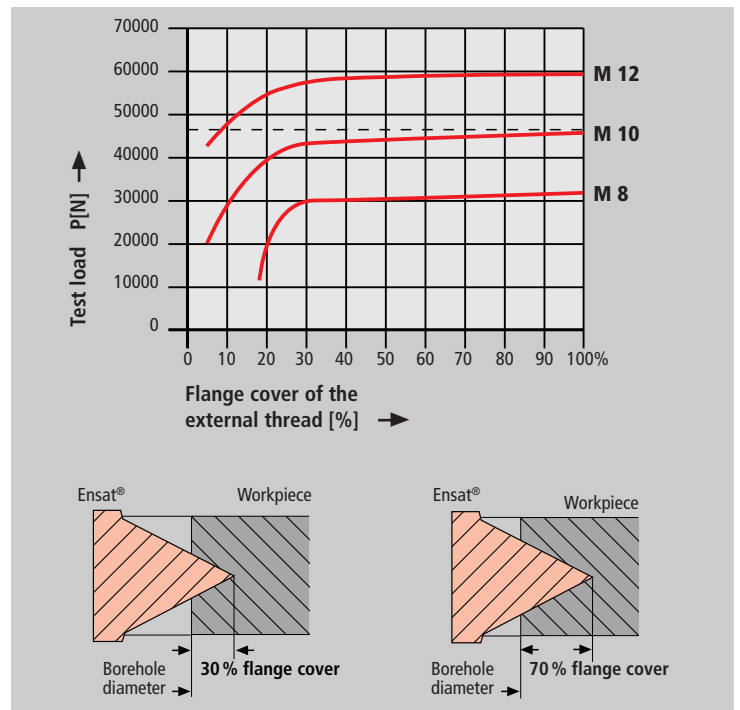


Fig. 3

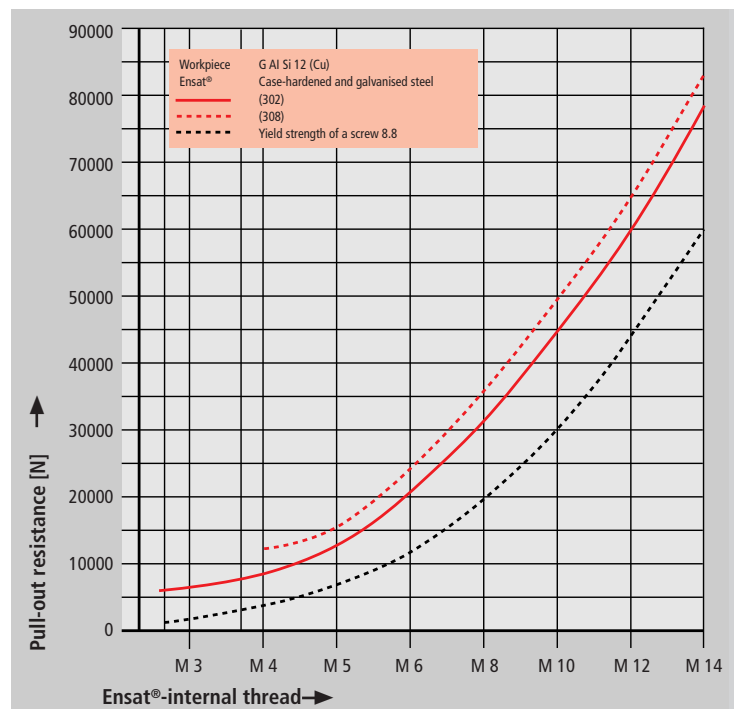
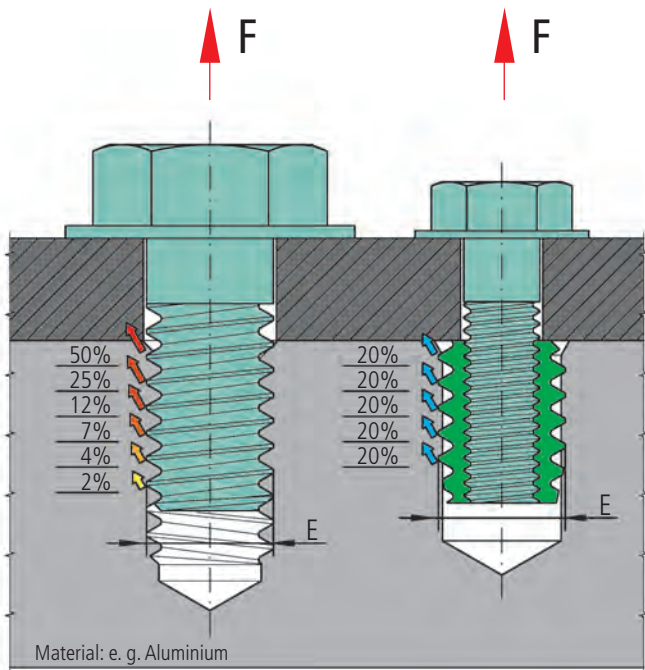


Fig. 4



E = Diameter cut thread = Outside diameter of the Ensats®

Fig. 2

### Flange cover

In a workpiece made of a light alloy, the Ensats® 302 achieves almost maximum pull-out strength with only 30% flange cover (Fig. 3).

### Pull-out strength

The Ensats® is capable of withstanding high loads. When used in light alloys, for example, a degree of pull-out strength is achieved which far exceeds the yield strength of the mating screw 8.8 (Fig. 4).





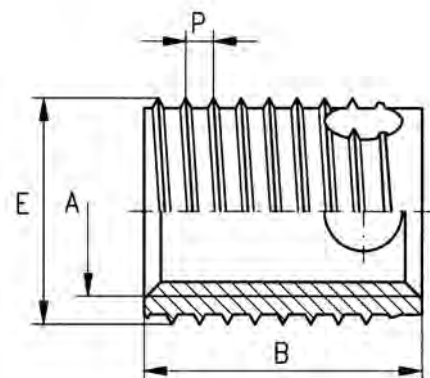
**Thin-walled threaded insert**  
self-tapping, with cutting bores

**Ensat®-SBD**  
Works Standard  
347 0 and 348 0

**Application**

Threaded insert Ensat®-SBD with three cutting bores in a special thinwalled version developed primarily for applications with thin residual walls and for lightweight constructions. These versions are designed primarily for processing on thread tapping machines, as the pitch of the outside and inside thread is identical.

For processing thinwalled inserts in metal, the tensile strength / hardness of the base material is always the determining factor. In critical cases, we recommend lubricating with suitable media in order to prevent fracture of the thinwalled inserts.



Dimensions in mm

Article number	Internal thread	External thread Special thread		Length	Guideline values for receiving hole diameter	Minimum borehole depth for blind holes
	A	E	P	B	L	T
347 000 035 ...	M 3,5	5	0,6	5	4,7 to 4,8	7
348 000 035 ...	M 3,5	5	0,6	8	4,7 to 4,8	10
347 000 040 ...	M 4	6	0,7	6	5,6 to 5,7	8
348 000 040 ...	M 4	6	0,7	8	5,6 to 5,7	10
347 000 050 ...	M 5	6,5	0,8	7	6,1 to 6,2	9
348 000 050 ...	M 5	6,5	0,8	10	6,1 to 6,2	13
347 000 060 ...	M 6	8	1	8	7,5 to 7,7	10
348 000 060 ...	M 6	8	1	12	7,5 to 7,7	15
347 000 080 ...	M 8	10	1,25	9	9,4 to 9,6	11
348 000 080 ...	M 8	10	1,25	14	9,4 to 9,6	17
347 000 100 ...	M 10	12	1,5	10	11,2 to 11,5	13
348 000 100 ...	M 10	12	1,5	18	11,2 to 11,5	22
347 000 120 ...	M 12	14	1,75	12	13,2 to 13,5	15
348 000 120 ...	M 12	14	1,75	22	13,2 to 13,5	26

**Example for finding the article number**

Self-tapping thin-walled threaded insert Ensat®-SBD to Works Standard 347 0 with internal thread A = M5 made of case-hardened, zinc plated and blue passivated steel: Ensat®-SBD 347 000 050.110

**Short design**  
**Long design**

Works Standard 347  
Works Standard 348

**Materials**

Case-hardened steel, zinc plated, blue passivated  
Case-hardened steel, zinc-nickel plated, transparent passivated  
Stainless steel 1.4305 (M3,5 to M8)

Article no. (**fourth** group of digits) ... .. 110  
Article no. (**fourth** group of digits) ... .. 143  
Article no. (**fourth** group of digits) ... .. 500

**Other materials, designs and finishes on request.**

**Tolerance**

ISO 2768-m

**Thread**

Internal thread A: as per ISO 6H  
External thread E: Special thread with flattened thread root, as per KKV standard  
Internal thread UNC, UNF, Whitworth on request