Data sheet self-drilling screws DIN 7504 — drilling capacity, speed, length, forms

Self-drilling screws (DIN 7504, ISO 15480–15483) drill the hole with their drill point first and then cut the thread: no pilot hole in steel sheet, profiles and thin-walled tube. The drill point decides how thick the steel may be: no. 2/3 up to about the screw diameter, no. 5 (long point on 5.5 and 6.3) up to about 12 mm. Stainless drills slower and about half as deep. Start the screw square and with pressure; once the thread bites the pressure drops and the torque limiter ends the drive.

Drilling capacity in steel and speed (guide values)

d (mm)	drill point no. 2/3 (mm)	drill point no. 5 (mm)	speed (rpm)
3.5	1.75 – 2	–	1,750
3.9	2 – 2.5	–	1,750
4.2	2.5 – 3	–	1,750
4.8	3 – 4	–	1,750
5.5	4 – 5	up to 12	1,000 – 1,500
6.3	5 – 6	up to 12	1,000 – 1,500

Forms DIN 7504 and ISO

form	head	ISO
K	hexagon head (with or without collar)	ISO 15480
N / M	pan head, cross recess or Torx	ISO 15481
P / O	countersunk head	ISO 15482
Q	raised countersunk head	ISO 15483
-H / -T / -S / -V	Phillips / Torx / square / square recess	drive
wing screw	countersunk head with wings	wood or board on steel: the wings ream the wood and snap off at the steel

Hexagon: width across flats

d (mm)	AF (mm)
2.9	5
3.5	5.5
3.9	6
4.2	7
4.8	8
5.5	8
6.3	10
8	13

Length, sealing and special versions

topic	rule
length	clamping thickness + drill point length + at least 3 threads through the steel; the drill point must be fully through the steel before the thread bites
EPDM sealing washer	tighten until the washer compresses slightly; do not overdrive; Ø 14/16 mm on flat sheet, Ø 19–25 mm on corrugated or soft sheet
sandwich panel	double thread: lower thread in the purlin, upper thread pulls the outer skin; length = panel thickness + purlin + 20–25 mm

roof insulation	with stress plate; length = insulation thickness + 20 mm steel or 30–40 mm wood; number per m² from the wind load
not suited	wood on wood (drill point finds no grip), concrete, sheet thicker than the drilling capacity
material	zinc plated indoors and under cover; stainless A2 outdoors, A4 near the coast; bimetal (A2 screw with hardened steel drill point) for stainless with full drilling capacity