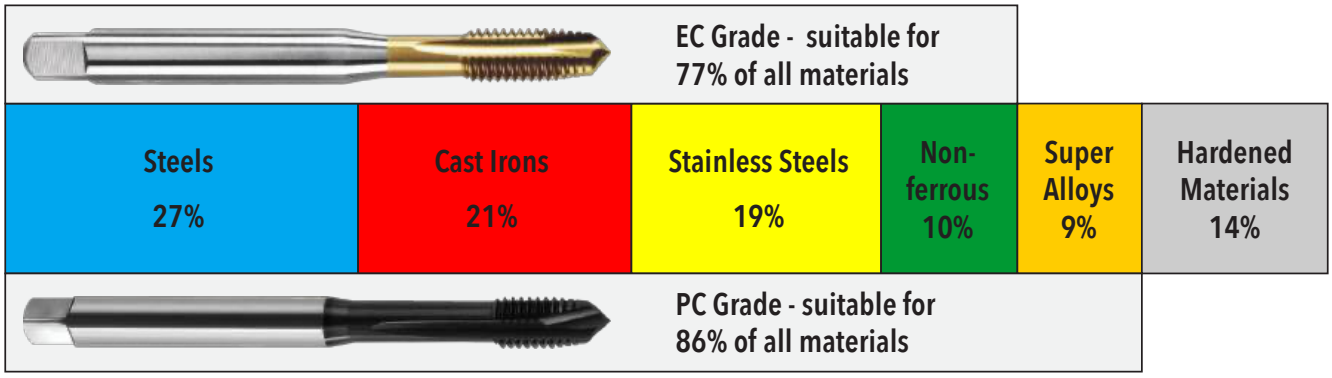
# Universal Threading Taps

Engineered to handle a wide range of materials with a single, reliable solution.

- *Longer Tool Life*
- *Shorter Machining Time*
- *Same Tap for Different Materials*
- *Trouble-Free Tapping*




Consumption of cutting tools depending on the material to be machined.
*Source: Dedalus Consulting*

# CUTTING DATA

SmiCut STS

## Cutting Speed ($V_c$)

| MATERIAL | | Hardness HB | Tensile Strenght N/mm² | Cutting Speed ($V_c$) m/min EC TT | EC TB | PC TT | PC TB |
|---|---|---|---|---|---|---|---|
| Steel | Low carbon, C < 0,25% | < 120 | < 400 | 25 - 30 | 20 - 25 | 30 - 40 | 20 - 30 |
| | Medium carbon, C < 0,55% | < 200 | < 700 | 20 - 25 | 15 - 20 | 30 - 40 | 20 - 30 |
| | High carbon, C < 0,85% | < 250 | < 850 | 15 - 18 | 12 - 15 | 22 - 30 | 15 - 22 |
| | Low alloy | < 250 | < 850 | 13 - 16 | 10 - 13 | 19 - 27 | 12 - 19 |
| | High alloy | < 350 | < 1200 | X | X | 15 - 20 | 10 - 15 |
| | Hardened, HRC < 45 | | | X | X | X | X |
| | Hardened, HRC < 55 | | | X | X | X | X |
| | Hardened, HRC < 65 | | | X | X | X | X |
| Cast iron | Lamellar graphite | < 150 | < 500 | 10 - 15 | X | 20 - 30 | 10 - 20 |
| | Lamellar graphite | < 300 | < 1000 | 15 - 20 | 10 - 15 | 20 - 30 | 10 - 20 |
| | Nodular graphite, malleable | < 200 | < 700 | 10 - 15 | X | 20 - 30 | 10 - 20 |
| | Nodular graphite, malleable | < 300 | < 1000 | 15 - 20 | 10 - 15 | 20 - 30 | 10 - 20 |
| Stainless steel | Free machining | < 250 | < 850 | 10 - 12 | 8 - 10 | 10 - 15 | 5 - 10 |
| | Austenitic | < 250 | < 850 | 9 - 11 | 7 - 9 | 10 - 15 | 5 - 10 |
| | Ferritic and austenitic | < 300 | < 1000 | 8 - 10 | 6 - 8 | 8 - 10 | 6 - 8 |
| Titanium | Unalloyed | < 200 | < 700 | X | X | 12 - 15 | 10 - 13 |
| | Alloyed | < 270 | < 900 | X | X | 5 - 8 | 2 - 5 |
| | Alloyed | < 350 | < 1250 | X | X | X | X |
| Nickel | Unalloyed | < 150 | < 500 | X | X | 5 - 8 | 2 - 5 |
| | Alloyed | < 270 | < 900 | X | X | X | X |
| | Alloyed | < 350 | < 1250 | X | X | X | X |
| Copper | Unalloyed | < 100 | < 350 | 20 - 25 | 15 - 20 | 20 - 30 | 10 - 20 |
| | Brass, bronze | < 200 | < 700 | 20 - 25 | 15 - 20 | 20 - 30 | 10 - 20 |
| | High strength bronze | < 470 | < 1500 | 20 - 25 | 15 - 20 | 20 - 30 | 10 - 20 |
| Aluminium | Unalloyed | < 100 | < 350 | 20 - 25 | 15 - 20 | 20 - 30 | 10 - 20 |
| | Alloyed, Si < 0.5% | < 150 | < 500 | 20 - 25 | 15 - 20 | 20 - 30 | 10 - 20 |
| | Alloyed, Si < 10% | < 120 | < 400 | 20 - 25 | 15 - 20 | 20 - 30 | 10 - 20 |
| | Alloyed, Si > 10% | < 120 | < 400 | 20 - 25 | 15 - 20 | 20 - 30 | 10 - 20 |
| Inconel | 718 | < 370 | | X | X | X | X |
| Graphite | | | | X | X | 15 - 20 | 10 - 15 |

TT = Spiral Point Taps for Throught Holes  TB = Spiral Flute Taps for Blind Holes

## Carbide Grades

### EC Grade
### First Choice for General Tapping

For most applications, you can use our EC grade. You will find that the tool life is longer compared to bright and vaporized taps. So, even if the initial cost may be higher, your overall tooling cost will be lower. Threading is faster, and you can use the same tap for different materials.

This is a high-speed steel (HSS) tap with cobalt (E). The tap has a multilayer coating: the TiAlN base is very hard and heat-resistant, while the TiN top layer provides low friction.

### PC Grade
### Best Choice for Trouble-Free Tapping

If your priority is trouble-free tapping, you should choose the PC Grade. It's never a bad choice, as tool life is even longer than with the EC Grade, and you can increase the cutting speed. These taps can even machine superalloys.

This is a powder metallurgical (PM) high-speed steel (HSS) tap with cobalt (E). The tap has a multilayer coating: the TiAlN base is very hard and heat-resistant, while the WC/C top layer (DLC) provides extremely low friction and excellent anti-stick properties.