

Standard austenitic stainless steel grades Machining Guideline

Recommendations

Standard austenitic stainless steel grades are the most common stainless steel grades on the market and therefore recommendations regarding cutting speed and feed can be found from cutting tool suppliers. These grades contain different contents of Cr, Ni, C, N, Ti and Mo all affecting the machining behavior. The machinability for the different standard austenitic stainless steel grades are shown in the graph below.

The graph

The graph shows the machinability of standard austenitic stainless steels in relation (%) to 4307. A typical recommendation for 4307 is estimated to 160 m/min for Cemented carbide (CC) set as 100% and 25 m/min for High speed steel tools (HSS) set as 100%.

Example

To find the cutting speed for machining 4406 read from the graph:

85% for cemented carbide. (CC)

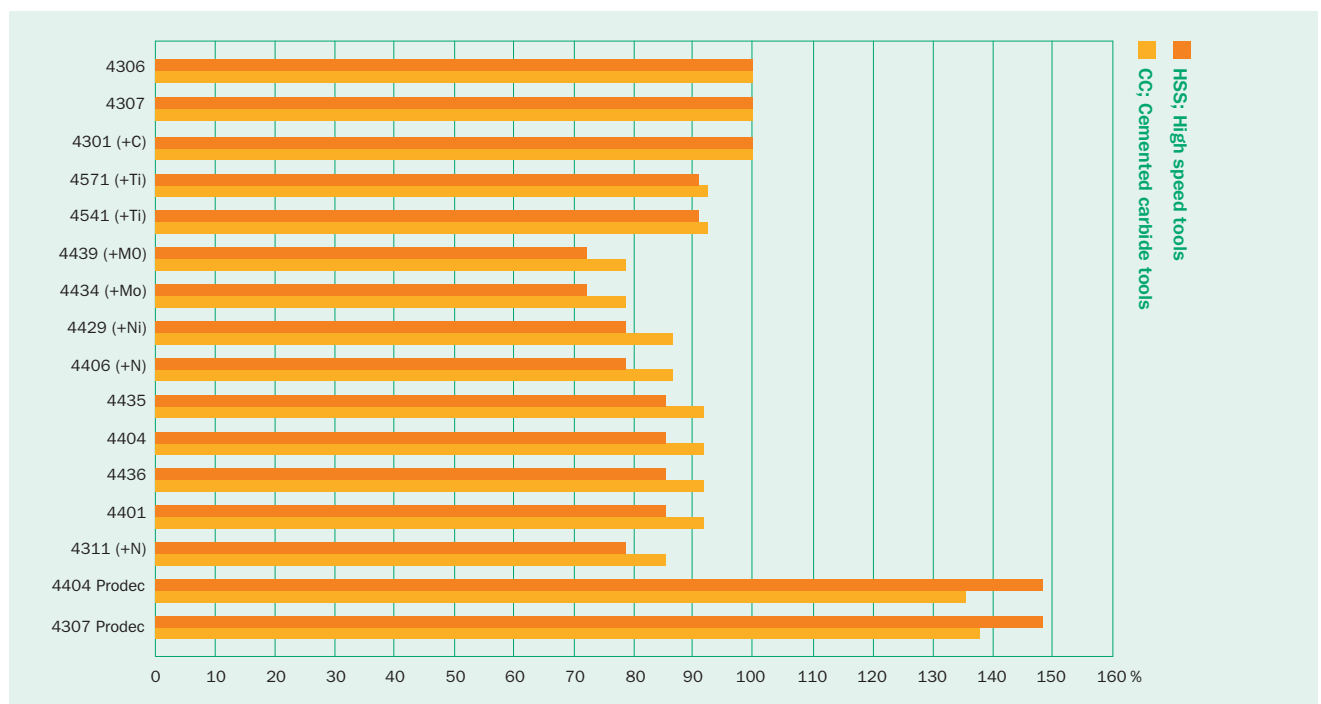
78% for high speed steel tooling. (HSS)

100% is the recommendation for 4307, i.e. 160 m/min for CC and 25 m/min for HSS

$160 \times 0.85 = 136$ m/min with CC

$25 \times 0.78 = 19.5$ m/min with HSS

Relation between different standard stainless steel grades



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