

Material

Tools from Gühring are manufactured of the following materials.

High speed steel (HSS). Standard material for universal usage.

High speed steel with increased cobalt content (HSCo and M42). Gives tools with high thermal strength for demands on high performance and productivity.

High speed steel with increased Vanadium content(HSS-E). Gives tools with high cutting edge stability, which is important with precision processing and sensitive processing, e.g. reaming.

Powder-metallurgical steel grades (PM). High speed steel with good characteristics when processing medium hard and hard materials difficult to process .

Material		Material	Analysis in %						Comparable steel types			
			No	C	Cr	Mo	V	W	Co	Sweden	USA	France
HSS	S 6-5-2 (DMo5)	1.3343	0.9	4.2	5.0	2.0	6.5	–	2722	M2	Z 90 WDCV	BM 2
HSCo HSS-E	S 6-5-2-5 (EMo5Co5)	1.3243	0.9	4.2	5.0	2.0	6.5	4.8	2723	M35	Z 90 WDKCV 06-05-05-04-02	–
HSS-E	S 6-5-3 (EMo5V3)	1.3344	1.2	4.2	5.0	3.0	6.5	–	–	M3	Z 120 WDCV 06-05-04-03	–
M42 HSS-E	S 2-10-1-8 (M42)	1.3247	1.1	4.2	10.0	1.2	1.8	8.0	2746	M42	Z 110 DKCWV 09-08-04-02-01	BM42
PM HSS-E	S 6-5-3-9		1.3	4.2	5.0	3.1	6.4	8.5	2726 (ASP 30)	CPM M45	–	–

Surface treatment

High speed steel has good basic characteristics without special surface treatment, i.e. in bright design. However, immense advantages can be obtained with different surface treatments, e.g. longer wear times and reduced swarf build-up.

Vapour treatment.Retains the lubricant and counteracts swarf build-up.

TiN-coating.The coating forms an effective thermal block, the heat is forced out into the swarf instead of the tool. Gives longer wear times and the possibility of higher cutting data. For all materials.

FIRE-coating is a multi-layer coating that unites the advantages of TiN, TiCN and TiAlN. The coating gives tools with a hard surface layer and low friction coefficient and which are insensitive to impact loads. For all materials.