

E2 E2 HIGH PRECISION TOOL MATERIAL	$\lambda = 40^\circ$ $\gamma = 18^\circ$ CUTTING ANGLES $\gamma 40^\circ \gamma 18^\circ$	$\phi < 6$ $\phi > 6$ 90° 45° CHAMFER $\phi < 6$ $\phi > 6$ 90° 45°	DUAL DIRECTION HELICAL DRILL BIT	l_1 2.2xD 2.2xD DEPTH FOR TOOLS	STANDARD TOOL WEAR INDICATOR
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MATERIAL COMPATIBILITY

●●● Excellent (3/3) ●●○ Good (2/3) ●○○ Possible (1/3) ○○○ Not recommended

MATERIAL	SPECIFICATION	GRP	21105D-20
Alloyed and non-alloyed steels Non-alloyed steels	Rm < 450 N/mm ²	1a	○○○
	Rm 450–700 N/mm ²	1b	○○○
	Rm 700–900 N/mm ²	1c	○○○
	Rm > 1200 N/mm ²	1d	○○○
Stainless steels Stainless steels	Rm < 650 N/mm ²	2a	○○○
	Rm 650–950 N/mm ²	2b	○○○
	Rm > 950 N/mm ²	2c	○○○
Hardened steels Hardened steels	44–56 HRC	3a	○○○
	57–67 HRC	3b	○○○
Exotic materials Special alloys	< 32 HRC	4a	○○○
	> 32 HRC	4b	○○○
Graphite Industrial graphite		5	●●●
Cast iron Grey / nodular cast iron	< 32 HRC	6a	○○○
	> 32 HRC	6b	○○○
Titanium Titanium alloys	Rm < 600 N/mm ²	7a	○○○
	600 < Rm N/mm ²	7b	○○○
Nickel alloys Inconel, Hastelloy	Rm < 1000 N/mm ²	8a	○○○
	Rm > 1000 N/mm ²	8b	○○○
Copper, brass, bronze Copper-based	Rm < 850 N/mm ²	9a	●●○
	Rm > 850 N/mm ²	9b	●●○
Aluminum Aluminum alloys	Si < 0.5%	10a	●○○
	0.5% < Si < 5%	10b	●○○
	Si > 5%	10c	●●●
Synthetic materials Engineering plastics	Thermoplastic	11a	●○○
	Thermoset	11b	●○○
Composite materials Reinforced composites	Glass fiber / GFK	12a	●●●
	Carbon fiber / KFK	12b	●●●
Precious metals Gold, platinum, silver	Gold	13a	●○○
	Platinum	13b	●●●

TECHNICAL DRAWING



DIMENSIONS

NOMINAL DIMENSIONS

D (0 / -0.01)	20 mm
d (h5)	20 mm
L	104 mm
l1	38 mm
l3	–
d3	–
R	–
e	–
Z	4
Chamfer K	0.1
w° collision	–

