

<p>E2</p> <p>E2 HIGH PRECISION TOOL MATERIAL</p>	<p><math>\lambda = 40^\circ</math> <math>\gamma = 18^\circ</math></p> <p>CUTTING ANGLES <math>\gamma 40^\circ \gamma 18^\circ</math></p>	<p><math>\phi \leq 6</math> <math>\phi &gt; 6</math></p> <p>90° 45°</p> <p>CHAMFER <math>\phi &lt; 6</math> <math>\phi &gt; 6</math> 90° 45°</p>	<p>DUAL DIRECTION HELICAL DRILL BIT</p>	<p>h 2.2xD</p> <p>2.2xD DEPTH FOR TOOLS</p>	<p>STANDARD TOOL WEAR INDICATOR</p>
--	--	--	---	---	-------------------------------------

## MATERIAL COMPATIBILITY

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

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

## TECHNICAL DRAWING



## DIMENSIONS

### NOMINAL DIMENSIONS

D (0 / -0.01)	12 mm
d (h5)	12 mm
L	83 mm
l1	26 mm
l3	–
d3	–
R	–
e	–
Z	4
Chamfer K	0.1
w° collision	–

