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Calculation formulas for circular saw blades

Symbols:

d	Diameter in mm	n	Rotation speed U/min
π	Pi (3,14…)	V_c	Cutting speed m/min
z	Number of teeth	V_f	Feed rate in mm/min
t	Tooth pitch in mm	f_z	Feed per tooth in mm/Zahn

Tooth pitch

$$t = \frac{d \cdot \pi}{z}$$

Number of teeth

$$z = \frac{d \cdot \pi}{t}$$

Cutting speed

$$V_c = \frac{d \cdot \pi \cdot n}{1.000}$$

Rotation speed

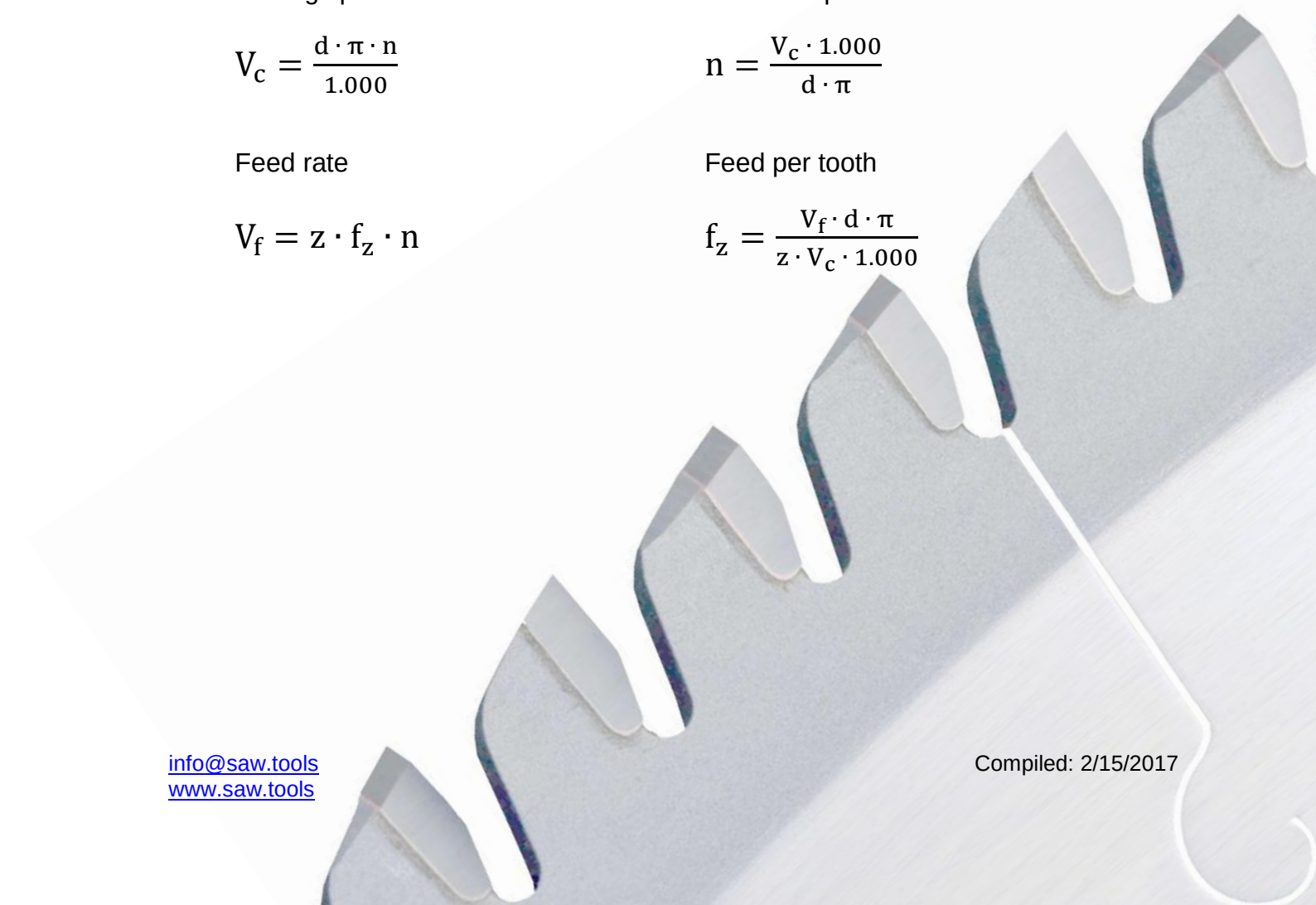
$$n = \frac{V_c \cdot 1.000}{d \cdot \pi}$$

Feed rate

$$V_f = z \cdot f_z \cdot n$$

Feed per tooth

$$f_z = \frac{V_f \cdot d \cdot \pi}{z \cdot V_c \cdot 1.000}$$



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