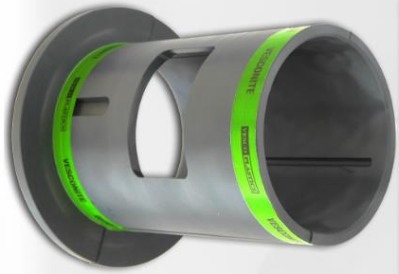
PROFESSIONAL PLASTICS

VESCONITE

SELF-LUBRICATING BEARINGS AND BUSHINGS



VESCONITE

A specialised hard-wearing thermopolymer designed for challenging operating conditions, Vesconite gives up to 10 times the life of traditional bronze or nylon bushings. Combining internal lubrication, a low friction coefficient and low wear rates, Vesconite does not require external lubrication, even where conditions are dry and dirty.

VESCONITE HILUBE

Vesconite Hilube is a highly advanced thermopolymer in the Vesconite range, particularly suited to operating in wet conditions, including pump and marine applications. Combining low friction and low wear properties, Vesconite Hilube performs exceptionally well under high loads in difficult operating environments.

Order Standard Vesconite® (Black)
https://www.professionalplastics.com/Vesconite

Order Vesconite HiLube (White)
https://www.professionalplastics.com/Vesconite_Hilube

VESCONITE TYPICAL PROPERTIES

	METRIC	IMPERIAL
Density	1.38 $g.ml^{-1}$	1.38
Melting point	260°C	500°F
Hardness (Shore D)	84	84
Tensile strength at yield (ASTM D-638)	65 MPa	9,400 psi
Tensile strength at break	62 MPa	9,000 psi
Tangent modulus of elasticity (ASTM D-790)	3400 MPa	493,000 psi
Flexural yield strength	120 MPa	17,400 psi
Deflection temperature at 1.85MPa / 268 psi	93°C	200°F
Modulus of elasticity under compression	2290 MPa	332,000 psi
Compression strength at yield	92 MPa	13,300 psi
Shear strength	49 MPa	7,100 psi
Notched impact strength charpy (ASTM D-256)	33 $J.m^{-1}$	0.6 ft-lb/in
Notched impact strength IZOD	16 $J.m^{-1}$	0.3 ft-lb/in
Heat conductivity	0.3 $WK^{-1}.m^{-1}$	2 Btu-in/ft^{2}/$hr^{/0}$ F
Coefficient of linear thermal expansion	$6x10^{-5}$ $mm.mm^{-1.o}C^{-1}$	$3.3x10^{-5}$ in/in/ ^{0} F
Maximum moisture absorption in water at 20°C / 68°F	0.5%	0.5%
Equilibrium moisture absorption in air (50% RH, 23°C / 73°F)	0.2%	0.2%
Dynamic unlubricated friction coefficient on steel	0.12 - 0.20	0.12 -0.20
Dielectric strength	14kV.mm^{-1}	360kV.in^{-1}
Gamma ray resistance 50% loss of properties	100 Mrads	

The above data should be taken for indicative purposes. Physical properties may be altered to some extent by processing conditions.

Machining guidelines for Vesconite

Vesconite and Vesconite Hilube are easily machined to fine tolerances on standard metal working equipment.

Vesconite should not be clamped like a metal, but should be clamped carefully to avoid distortion.

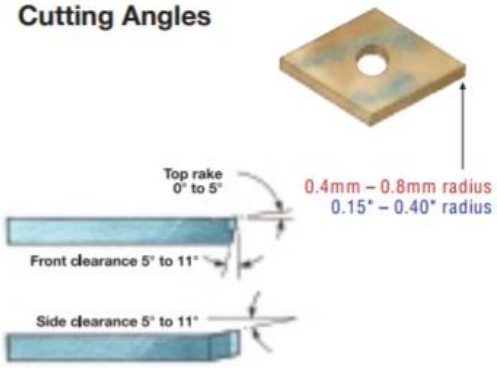
Cooling water should be used where possible to cool the cutting surface.

Take cuts no more than 2 mm (0.1") deep.

Allow the bush to cool before taking the final cut.

Cutting speeds - maximum of 300 m/min (1000 fpm)

Cutting Angles



Diameter mm	< 50	50-100	100-150	150-200	200-250	250-300	300-400	400-500
Diameter inches	< 2"	2-4"	4-6"	6-8"	8-10"	10-12"	12-16"	16-20"
RPM	600-2000	500-600	450	350	240	240	160	120

Cutting Feeds

Rough turning:	0,5 - 0,7 mm per revolution	0.020" - 0.030" per revolution
Finish turning:	0,3 - 0,4 mm per revolution	0.012" - 0.016" per revolution

Machining straight and flanged bushes in small quantities

STEP 1 Cut to length Allow extra length for chucking, parting and facing, usually 25 mm (1").

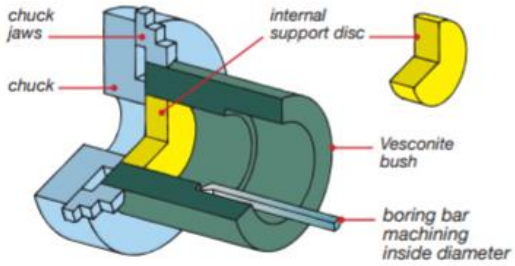
Cut bushing to length with a cut-off saw.

STEP 2 Chuck with internal support disc
Set the bush squarely in the chuck.

Use an internal support disc machined to size, made of any available material, approximately 10 to 25 mm thick ($1/2$" to 1").

Tighten the chuck lightly - only enough to support the bush. Vesconite should not be clamped like a metal.

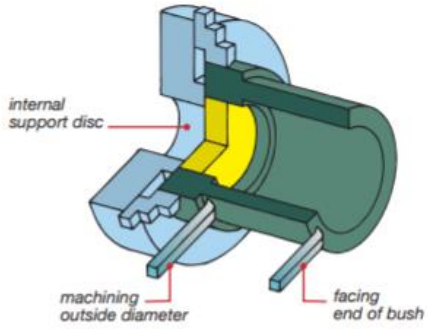
STEP 3 Machine inside diameter using a boring bar. Ensure that there is no excessive build-up of shavings inside the bush.



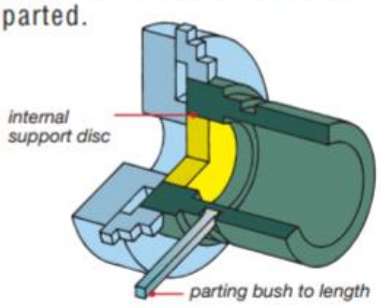
STEP 4 Machine outside diameter with an external turning tool.

Machine flange outside diameter if needed.

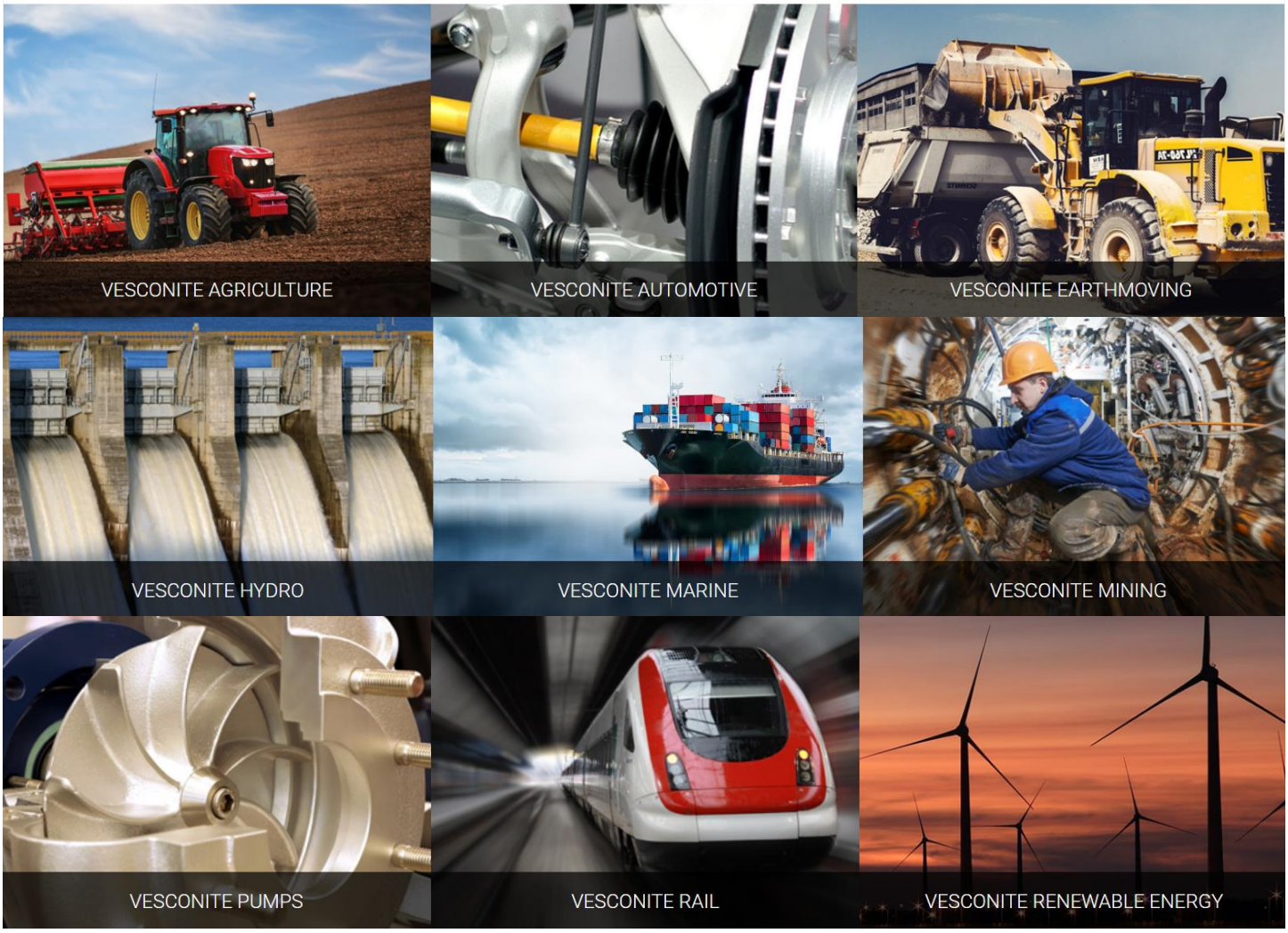
Face the end of the bush.



STEP 5 Part to length using a parting tool. Ensure that bush does not fall when parted.



OUR INDUSTRIES



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