



# PROFESSIONAL PLASTICS

## Vesconite self lubricating bearings and bushes solve wear problems

Vesconite is a specialised thermoplastic made from internally lubricated polymers. Proved since the 1960's as an exceptional bearing material in demanding conditions, Vesconite gives low wear even in dirty or unlubricated conditions.

Up to 10 times the life of [bronze](#) in [dirty conditions](#).

Vesconite has high [dimensional stability](#) and does not swell in water, in contrast to most synthetic materials which swell in water. For example, [nylon](#) swells up to 3% water and softens.



### Use Vesconite when

- [Long life](#) is required
- [High loads](#) must be carried with small clearances
- Conditions are [dirty](#)
- [Greasing](#) is irregular or not possible
- Moist, or [under water](#) conditions
- [Health or the environment](#) is a concern
- [Long shaft or pin life](#) is required
- [Chemical attack](#) is a problem
- [Cost savings](#) are desired

**Vesconite gives excellent savings over its installed life cycle.** Vesconite offers many advantages over traditional bearing materials. [More](#).

### [Internally lubricated](#)

Vesconite has built in lubricants which give a [low friction](#) and long life even when [greasing](#) does not frequently occur.

### [Wear resistance](#)

Vesconite provides outstanding wear resistance, resulting in many times longer service life when compared with [bronze](#). It is also less affected by poor lubrication and dirty conditions.

### [High load bearing strength](#)

Vesconite has very low creep rates and is suited to design loadings up to 30 MPa (4275 psi). It has a much higher load capacity than [nylon](#), and its compressive strength and clearances are not affected by [water absorption](#).

### [Dimensional stability](#)

Vesconite [does not swell](#) when exposed to water or humid conditions, while [nylon](#) can swell up to 3% when immersed.

The thermal expansion factor of Vesconite is only 2.5 times that of bronze. Nylon is 5 times greater and UHMWPE is 10 times greater than Vesconite.

Vesconite therefore needs only slightly more clearance than the corresponding metal parts. No allowance needs to be made for moisture changes in most applications.

### [Low friction](#)

Vesconite has outstanding dynamic friction, with a friction coefficient of less than half that of bronze or nylon. This allows for higher combinations of loads and speeds.

Greasing of Vesconite bushes on assembly further decreases friction, allowing higher speeds to be used and generally improving performance.

Water is an excellent lubricant for Vesconite, making Vesconite ideal for many [immersed applications](#).

## Vesconite - Specifications

Physical properties may be altered to some extent by processing conditions

	Metric	Imperial
Density	1.38 g.cm <sup>-3</sup>	1.38
Melting point	280°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	93i 1/2°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 <sup>-1</sup>	0.8 ft-lb/in
Notched impact strength IZOD	16 J.m <sup>-1</sup>	0.3 ft-lb/in
Heat conductivity	0.3 W.K <sup>-1</sup> .m <sup>-1</sup>	2 Btu-in/ft <sup>2</sup> .hr. <sup>2</sup> F
Coefficient of linear thermal expansion	8x10 <sup>-5</sup> mm.mm <sup>-1</sup> .°C <sup>-1</sup>	3.3x10 <sup>-5</sup> in/in. <sup>2</sup> F
Maximum moisture absorption in water at 20i 1/2°C / 68i 1/2°F	0.5%	0.5%
Equilibrium moisture absorption in air (50% RH, 23i 1/2°C / 73i 1/2°F)	0.2%	0.2%
Dynamic unlubricated friction coefficient on steel	0.12-0.20	0.12-0.20
Dielectric strength	14 kV.mm <sup>-1</sup>	360 kV.in <sup>-1</sup>
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.

[Vesconite Hilube](#) offers even further reduced friction (down by 50%), making it an ideal material for unlubricated applications.

#### **Temperature limits**

Vesconite is suitable for continuous use at 100° to 120°C (212° to 248°F) in dry conditions and 60° to 70°C (140° to 158°F) in wet conditions.

#### **Longer life of shafts and pins**

The wear of metal pins and shafts is reduced by as much as 90% when Vesconite bushes are used. The high cost of replacing expensive shafts and pins can often be saved. This valuable benefit alone justifies the change over to Vesconite in many applications.

#### **Chemical resistance**

Vesconite is resistant to dilute and moderate acids, organic solvents, oils and petroleum. It has limited resistance to strong acids and alkalis. Lengthy immersion in boiling water should be avoided. See the [Vesconite Chemical Resistance Chart](#) for details.

#### **Easy to machine**

Vesconite machines easily on wood working and metal working equipment, such as lathes, milling machines, bandsaws, drilling machines, planers, spindle moulders and routers.

#### **Stock sizes**

The Vesconite stock range includes hundreds of sizes of machineable rods, bushings, plates, finished bushes, discs, washers and ready to use parts.

If you need to know a stock size visit [Stock Finder](#)

#### **The Vesconite stock range includes:**

Rods from 8 to 135 mm diameter (0.32" to 5.5").

Bushings available up to 730 mm (26") diameter.

Plates standard from 3 to 50 mm thick (0.12" to 1.97").

[Custom components](#) made at request.

#### **Applications**

Vesconite bushes are ideal for many demanding applications.

These include

- High load, low speed applications in earthmoving, construction, materials handling, mining, cranes and hoists, transport and much more.
- Wet or immersed applications in pumps, marine, hydro, valves and water processing plants.



[www.professionalplastics.com](http://www.professionalplastics.com)

[sales@proplas.com](mailto:sales@proplas.com)

**USA (888) 995-7767 – Singapore +65 6266-6193 – 台灣 Taiwan +886 (3) 5357850**