



## Extrusion



The effectiveness of Technox® 500 extrusion dies can be attributed to a unique combination of properties, including:

- High strength
- Refractoriness
- High sintered density
- High temperature stability and low thermal conductivity
- Wear and corrosion resistance
- Extreme hardness

Through these properties, Technox® 500 has demonstrated its ability to withstand the severe thermomechanical stresses associated with high speed extrusion, as well as providing an excellent surface finish to the extruded product.

### Process Conditions

The simplest and most commonly extruded geometries are rods or tubes, which are extruded at speeds up to 20m/s, at temperatures approaching 1250°C and extrusion pressures of approximately 1000MPa.

### Conventional Materials

Conventionally, dies are made from Tool-Steels or super alloys such as Stellites and Inconels. However, the major shortcoming of these materials is that they often become deformed during use, resulting in poor dimensional stability of the extruded product and indifferent surface finish quality, despite the use of lubricant.

### Technox® 500

Technox® 500 has proved to be a very successful extrusion die material because it is strong, tough and (unlike conventional materials) not susceptible to creep at extrusion temperatures, maintaining product size for the life of the die.

Technox® 500 extrusion dies typically provide a 10-fold lifetime increase compared with Stellite, and the fine microstructure of Technox® 500 allows excellent surface finishes to be achieved on the die, leading to improved extruded product quality. In addition, the low thermal conductivity of Technox® 500 significantly reduces the heat transfer from the extruded product into the die body and holder (which is a problem associated with many conventional die materials).

Technox® 500 dies can be shrink-fitted into steel cases and our sales engineers can recommend the amount of interference required.

### Customer Support

Dynamic-Ceramic manufactures both finished, custom-made dies and blanks that can be completed in your tool room. Understanding the difference between metal and ceramic dies is key to the successful application of ceramic dies, and our technical support is unequalled in the ceramics industry.

For more details of our products and services or to discuss your specific requirements, please contact one of our Sales Engineers.

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