



### Lubricant as interlayer

One tends to associate lubricants with oil or grease, but at ZWEZ, all lubricants are free of oil and all products are aqueous, making them more eco-friendly. ZWEZ-Lubricants are interlayers for the sliding friction of metals, and no classic oil lubricants. They are only applied in chipless metal forming processes with extreme surface pressures and shearing forces at temperatures, that can exceed 1000°C, involving surfaces of greatly varied topographies/ textures and compositions.

Just a few microns of these ZWEZ lubricants are perfectly suitable for the extrusion of complex forms and the drawing of wire and tubes – made of steel, stainless steel and aluminium.

The lubricant is applied to bare, blasted or non-blasted surfaces, by of dipping, flooding and, for wires, also in the draw box, in various process sequences. Inline application is possible, too.

Previous activation or application of a conversion coating is still customary today for top requirements and a broad spectrum of parts. The coated parts are dry, exhibit good grip properties and can be and stored temporarily. Any residues adhering after the forming are easily removable with alkaline cleaners.

	Pre-treatment			Lubricant application				Forming temp.
	Blasting	Conversion coating	Chemical activation instead of conversion coating	Dipping	Flooding	Inline application possible	Draw box	
■ = obligatory ○ = recommended □ = alternative ◆ = if required								
<b>Soap lubricant</b>								
ZWEZ-Lube Z-range	○	■		■				RT-250°C
<b>Polymer lubricant</b>								
ZWEZ-Lube PD 377	○	○		○		✓	□	RT-250°C
ZWEZ-Lube PD 385	○	◆	□	○	□	✓		RT-250°C
ZWEZ-Lube PD 395	○						■	RT-250°C
ZWEZ-Lube PD 415	○			■				RT-250°C
ZWEZ-Lube PD 470	○			○	□	✓		RT-250°C
<b>MoS<sub>2</sub> lubricant</b>								
ZWEZ-Lube MD 210	○	■		○	□	✓		RT-500°C
ZWEZ-Lube MD 230	○	◆	□	○	□	✓	□	RT-700°C
ZWEZ-Lube MP 3	○						■	RT-500°C
<b>Graphite lubricant</b>								
ZWEZ-Lube GD-range	○	◆	□	○	□	✓		400-800°C