






Technical properties

CHROMIUM(VI)-FREE
REACH COMPLIANT

Designation	Breakdown of Würth Surface Systems		Nominal size	Reference coating thickness (µm) ⁽¹⁾	Test according to DIN EN ISO 9227-NSS (h) ⁽²⁾	Friction coefficient window (µ) according to DIN EN ISO 16047 ⁽³⁾	Maximum operating temperature ⁽⁴⁾	Property class			
ZSML 	Z	Zinc (Zinc plated)	from M2	min. 3	72 WR 120 RR	0.09 – 0.14	120°C	up to 10.9			
	S	Silver (Glossy silver colour) ⁽⁵⁾	from M4	min. 5	120 WR 192 RR						
	M	Medium (Medium corrosion protection)	from M10	min. 8	120 WR 264 RR						
	L	Lubricated									
ZNSHL 	ZN	Zinc nickel (Galvanic zinc nickel coating)	from M2	min. 3	120 WR 360 RR		120°C	up to 10.9			
	S	Silver (Glossy silver colour)	from M4	min. 5	168 WR 600 RR						
	H	High (High corrosion protection)	from M10	min. 8	168 WR 720 RR ⁽⁶⁾						
	L	Lubricated									
ZNBHL 	ZN	Zinc nickel (Galvanic zinc nickel coating)	from M2	min. 3	120 WR 360 RR		120°C	up to 10.9			
	B	Black (Glossy black colour)	from M4	min. 5	168 WR 480 RR						
	H	High (High corrosion protection)	from M10	min. 8	168 WR 720 RR ⁽⁶⁾						
	L	Lubricated									
ZFSHL 	ZF	Zinc flake	from M6	min. 5	480 RR		200°C	up to 12.9			
	S	Silver (Matte silver colour)	from M10	min. 8	720 RR						
	H	High (High corrosion protection)									
	L	Lubricated									
ZFBHL 	ZF	Zinc flake	from M6	min. 5	480 RR		200°C	up to 12.9			
	B	Black (Matte black colour)	from M10	min. 8	720 RR						
	H	High (High corrosion protection)									
	L	Lubricated									

⁽¹⁾ Reference coating thicknesses: The result of the corrosion test is decisive for the assumed value.
⁽²⁾ WR=Coating corrosion (white rust), RR=Base metal corrosion (red rust).
⁽³⁾ The range of the coefficient of friction is adjusted by additionally applied lubricants or lubricants integrated in the sealing systems.
The friction coefficient window was determined under laboratory conditions according to DIN EN ISO 16047 and can slightly vary for individual applications.

⁽⁴⁾ Up to this temperature the systems have proven successful in practical applications.
⁽⁵⁾ Iridescent colouring possible.
⁽⁶⁾ To limit the testing efforts the requirements are restricted to 720 h.