

Metal die casting with **BALINIT**

More endurance, more productivity,
more reliable production



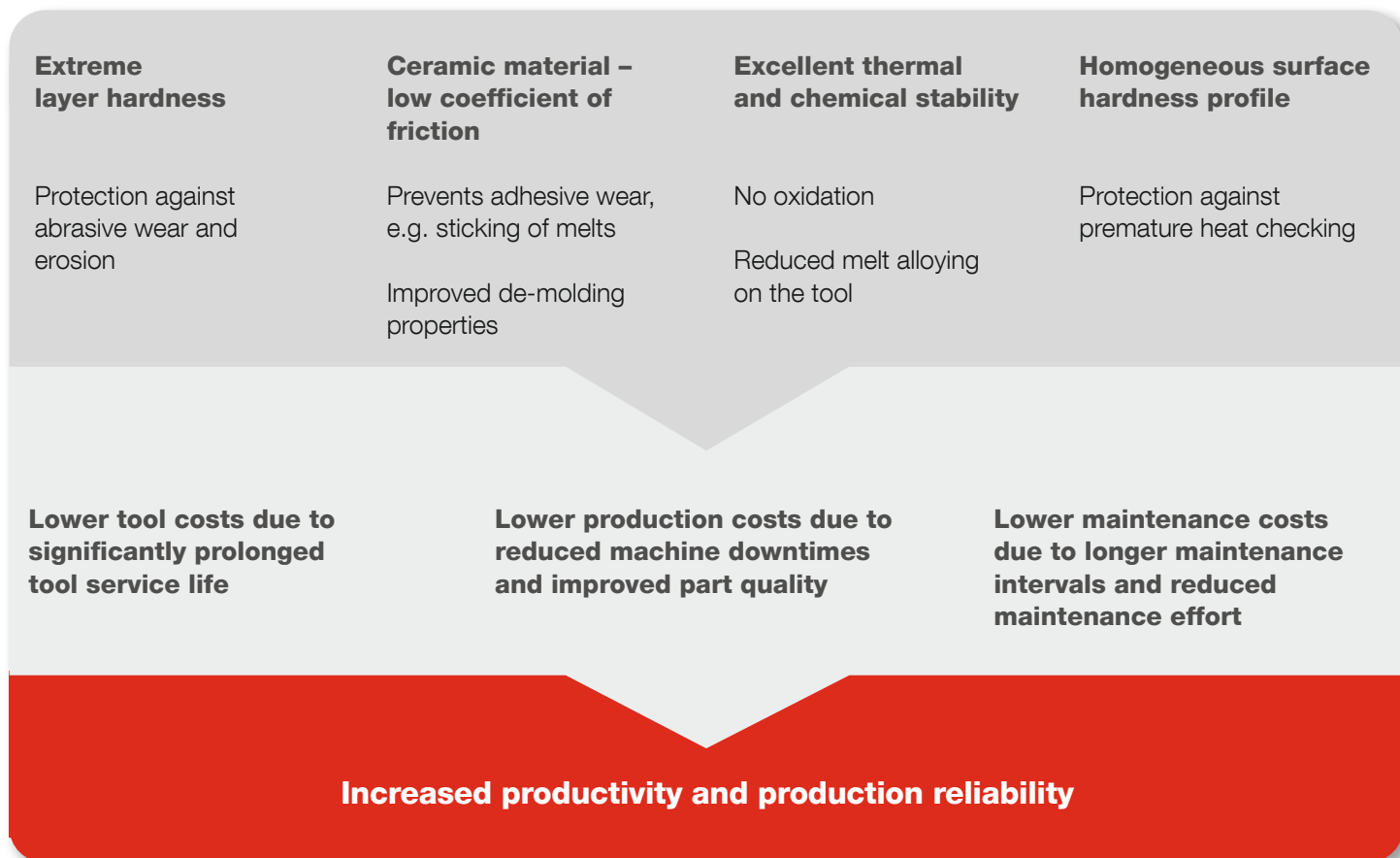
Die Casting



Successful molding – Oerlikon Balzers is your strong partner

When it comes to metal die casting, the quality of the coating on the mold surface is crucial for success. BALINIT® coatings from Oerlikon Balzers, the leader in advanced PVD coating solutions, are ideal.

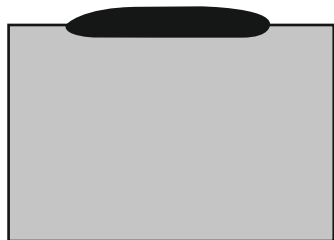
BALINIT® coatings are multi-functional, have unique properties and increase the long-term cost-effectiveness and productivity of the production process.



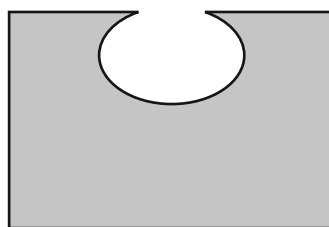
BALINIT protects against wear in die casting



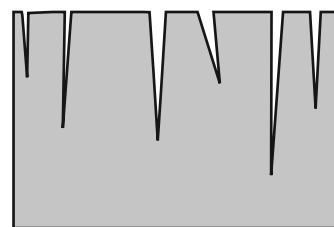
Against erosion and abrasion



Against melt sticking



Against oxidation and alloying

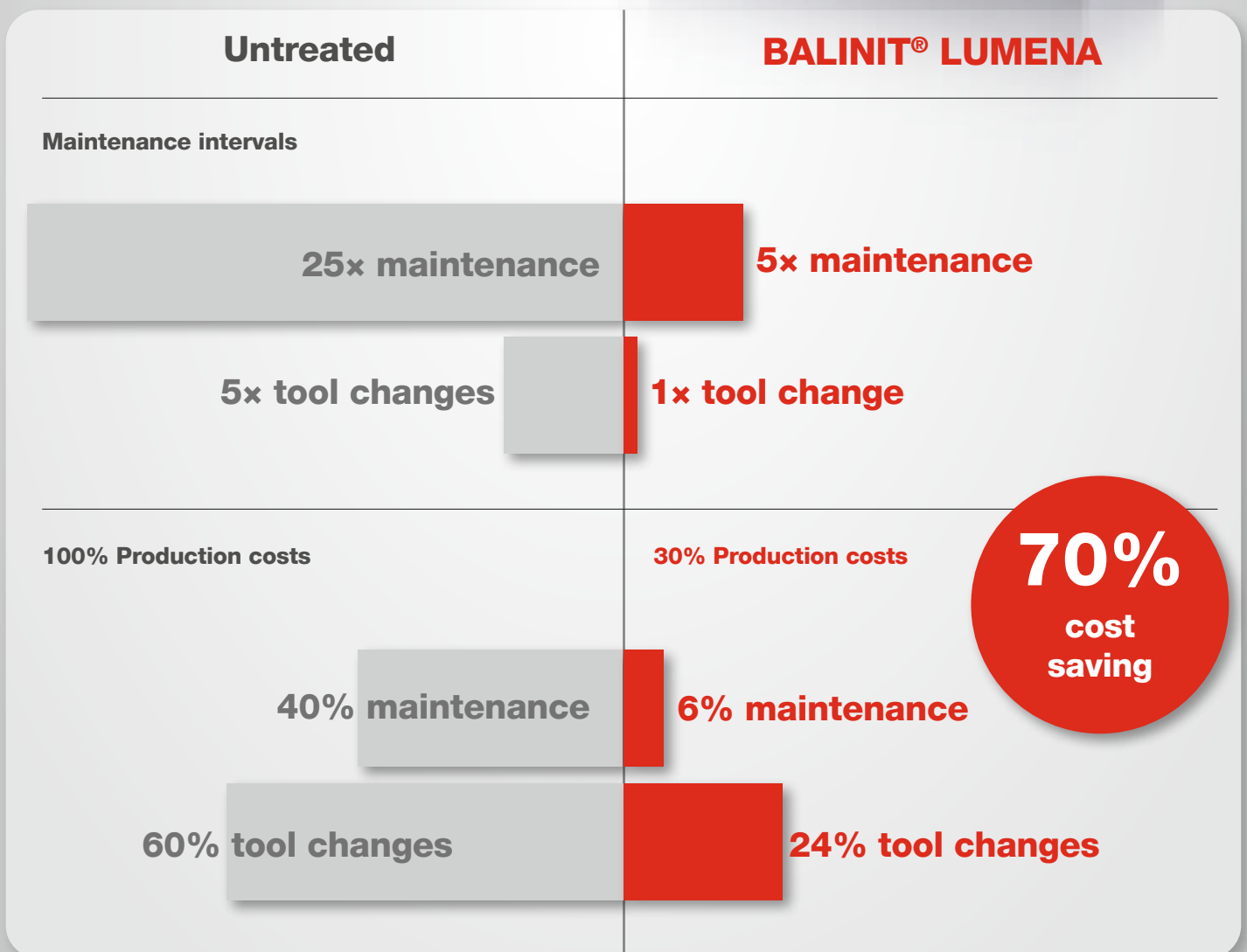


Against premature heat checking

BALINIT allows you to achieve maximum yield: 100% performance – 70% cost saving



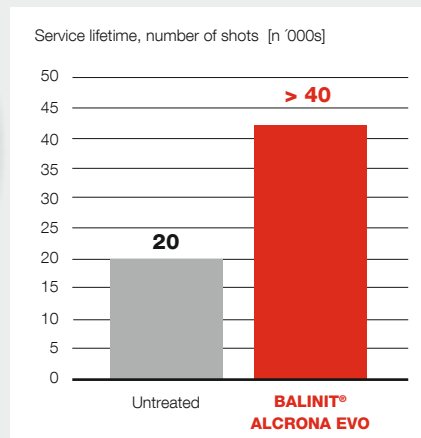
Maintenance intervals and resulting maintenance and production costs for 30,000 shots



Impressive proof of performance for our BALINIT coatings



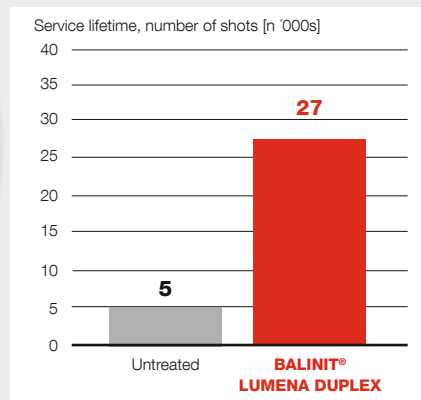
In best form: BALINIT® ALCRONA EVO for mold cores



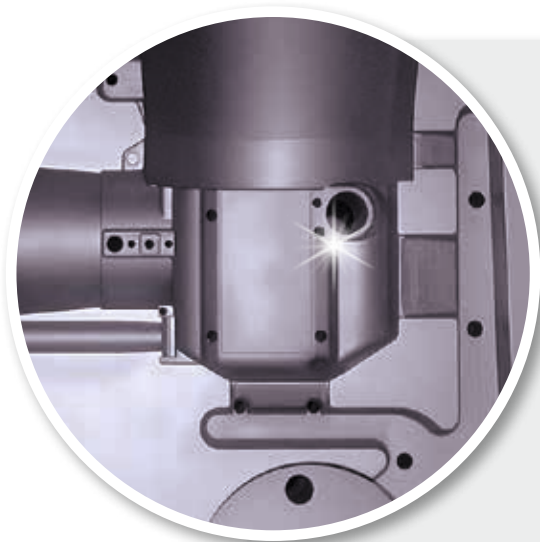
Tool	Mold cores, Steel 1.2343 (AISI H11, ~SKD 61)
Workpiece	Gear box for automotive industry
Cutting data	Tool length: 150 mm Diameter: 30 mm
Challenge	Untreated: Damage to the mold core primarily caused by adhesive wear
Solution: BALINIT® ALCRONA EVO	- Significantly less adhesive wear - Over 50% longer tool service life



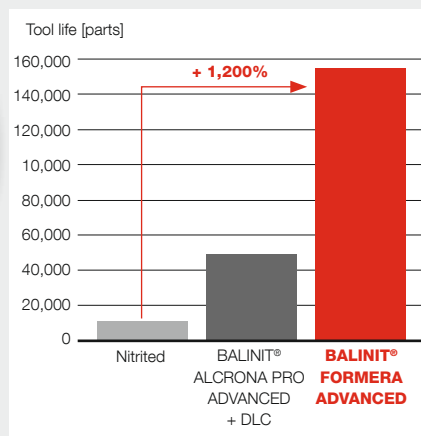
In peak form: BALINIT® LUMENA DUPLEX for mold inserts



Tool	Water jacket, Steel 1.2344 (AISI H13, SKD 61)
Workpiece	Cylinder block made from 380 aluminium alloy
Machine	4,000 t
Challenge	Untreated: Heat checking, alloying, sticking
Solution BALINIT® LUMENA DUPLEX	- Reduction of alloying - Higher component quality - Less maintenance work - Significantly delayed heat checking formation



Core Pins die casting: BALINIT® FORMERA ADVANCED



Tool	1.2343 46±2 HRC
Workpiece	Valve body Aluminium 9% Si (226 Alloy)
Challenge	Pins in direct shot area at the sprue
Solution BALINIT® FORMERA ADVANCED	- No cleaning - No maintenance - Less machine downtime - No core pin change

Rely on first-class coating properties for your metal die casting

	BALINIT® ALCRONA EVO*	BALINIT® LUMENA*	BALINIT® FORMERA*
Recommendations for use	Core pins, small parts	Cavities, water jackets, molds	Core pins, molds, water jackets
Coating material	AlCrN-based	TiAlN	CrAlN-based
Coating hardness H _r [GPa]	44 +/- 4	33 +/- 3	28 +/- 2
Coefficient of friction (dry) vs. steel	0.35	0.30 – 0.35	0.35 +/- 0.1
Coating thickness [µm]	depends on application	depends on application	depends on application
Abrasive wear	high	medium	high
Coating temperature [°C]	< 500	450	480
Coating colour	Bright grey	Violet-grey	Silver-light grey
Max. service temp. [°C]	1,100	900	> 900

*Also available as ADVANCED or DUPLEX versions. All given data are approximate values, they depend on application, environment and test condition.

Recommendations for use

	BALINIT® ALCRONA EVO	BALINIT® LUMENA	BALINIT® FORMERA
Core	+++	++	+++
Water jacket	++	+++	+++
Mold	++	+++	+++
Si-content in casting material			



Also interested in high-performing die casting molds? Contact us today!

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