CARBON-X®

Low friction even under tough conditions

CARBON-X® is the new low-friction a-C:H based DLC coating from voestalpine eifeler. Thanks to its high hardness, this coating is the right choice for applications where high abrasive wear occurs and softer low-friction coatings reach their limits.

The use of CARBON-X® also efficiently reduces adhesions on tools. The systematic build-up of layers combines multiple advantages of an a-C:H coating to ensure trouble-free tool performance, even under tough conditions.

COATING PROPERTIES

Hardness	2,400 ±400 HV
Coating thickness	1.5 – 2.5 µm
Maximum operating temperature	325 °C / 617 °F
Coefficient of friction against steel	0.05 – 0.15
Colour	Grey

COATING ADVANTAGES

» Maximum wear resistance due to high coating hardness

» Low friction coefficients and reduced adhesions

» High tool performance and long service life

» With CARBON-X® up to 2.5 times longer wearing compared to an alternative a:C-Cr layer

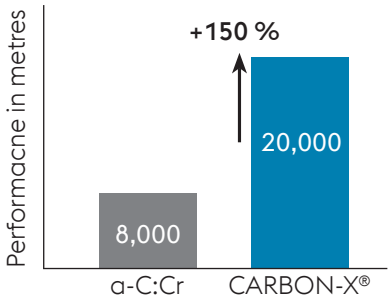
APPLICATIONS

» Cutting – Non-ferrous metals

» Cutting / forming – Non-ferrous metals, cold forming

» Others – Plastic injection moulding, components

FORMING CORES: INCREASED PERFORMANCE +150 %



Source: Tool manufacturer in Germany

voestalpine eifeler Coating GmbH
www.eifeler.com

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COLD FORMING

	Aluminium	Aluminium sheets (Si <7 %)	Aluminium sheets (Si >7 %)	Galvanized sheets (≤2,0 mm)	Galvanized sheets (>2,0 mm)	Non-ferrous metals	Plastics
Punching	CARBON X® (AL), Duplex CrCN, CrN, ZrN	CrCN **, CrN **, ZrN CARBON X® (AL)	CrN, CrCN **, CARBON X®, CVD TiC, ZrN	Duplex VARIANTIC® *, TiCN , DUMATIC *, CARBON X® (AL), TiN	Duplex VARIANTIC® *, Duplex DUMATIC *, TiCN, CARBON X®, CVD TiC *	CrCN **, CrN **, CARBON X® (AL), ZrN	CrN, CrCN, CARBON X®
Press	CARBON X® (AL), Duplex CrCN, CrN	(Duplex) CrCN **, CARBON X® (AL), CrN **	CrN, (Duplex) CrCN **, CVD TiC, CARBON X®	Duplex VARIANTIC® (1000)*, Duplex CrCN, TiCN, DUMATIC *, CARBON X® (AL)	Duplex VARIANTIC® (1000)*, CrCN, TiCN, Duplex DUMATIC *, CVD TiC/TiN *, CVD TiC *	(Duplex) CrCN **, CARBON X® (AL), CrN **	CrN
Bend	CARBON X® (AL), Duplex CrCN, CrN, ZrN	(Duplex) CrCN */**, CARBON X® (AL), CrN**, ZrN	CrN, (Duplex) CrCN **, CVD TiC, CARBON X®, ZrN	Duplex VARIANTIC® (1000)*, Duplex CrCN, TiCN, DUMATIC *, ZrN, CARBON X® (AL)	Duplex VARIANTIC® (1000)*, CARBON X® Duplex DUMATIC *, CVD TiC/TiN *, CrCN, CVD TiC *	(Duplex) CrCN **, CrN **, ZrN, CARBON X® (AL)	CrN, CrCN, CARBON X®
Deep drawing	Duplex CrCN , CARBON X® (AL), CrN	CrN **, (Duplex) CrCN **, CARBON X® (AL)	CrN, CVD TiC, (Duplex) CrCN **, CARBON X®, EXXTRAL Silber	Duplex VARIANTIC® (1000)*, Duplex CrCN, TiCN, CARBON X® (AL)	Duplex VARIANTIC® (1000)*, CVD TiC *, Duplex DUMATIC *, CVD TiC/TiN *, TiCN	(Duplex) CrCN **, CARBON X® (AL), CrN **	CrN
Stamp	Duplex CrCN , CARBON X® (AL)	CrN **, (Duplex) CrCN **, CARBON X®	CrN , CVD TiC, (Duplex) CrCN **, CARBON X®,	Duplex VARIANTIC® (1000)*, Duplex CrCN, CARBON X® (AL)	Duplex VARIANTIC® (1000)*, CVD TiC/TiN *, CVD TiC *, Duplex DUMATIC *	(Duplex) CrCN **, CARBON X® (AL), CrN **	
Roll	CrCN	CARBON X®	EXXTRAL Silber	TiCN	DUMATIC	CrN	
Fine blanking	CrCN, ZrN *, CARBON X®	CrCN *, ZrN *, CARBON X®	CrCN */**, CARBON X®, ZrN	VARIANTIC®, DUMATIC	TiCN, CrCN *, VARIANTIC®	CrCN *, CrN, ZrN, CARBON X®,	CrCN, CARBON X®
Forge		CARBON X®				CARBON X®	
Extrusion	CARBON X® (AL), Duplex CrCN						

* additionally MO2X® possible ** additionally SUCASLIDE® possible

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PLASTIC INJECTION MOULDING

	Polyolefine	Polyamide	Lieare Polyester
Plastic injection moulding	CARBON X®	CARBON X®	CARBON X®

MACHINING

	Drilling	Turning	Milling	Sawblades	Thread cutting	Reaming	Gear cutting
Aluminium Si <9 %	ZrN / ZrCN CARBON-X®	ZrN / ZrCN CARBON-X®	ZrN / ZrCN CARBON-X®	CARBON-X®	ZrN / ZrCN CARBON-X®	ZrN / ZrCN CARBON-X®	EXXTRAL® Silber
Brass / Copper	EXXTRAL® Silber CARBON-X®	EXXTRAL® Silber CARBON-X®	EXXTRAL® Silber CARBON-X®	EXXTRAL® Silber CARBON-X®	EXXTRAL® Silber CARBON-X®	EXXTRAL® Silber CARBON-X®	EXXTRAL® Silber

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