

BUMAX® is Bufab's registered trademark, known as the strongest stainless steel fastener in the world.

BUMAX® is manufactured in Sweden and meets the highest customer demands in terms of quality, corrosion resistance, high strength, fatigue strength, traceability and heat resistance. We deliver safety and reliability.

Some of the products in the BUMAX® range are completely unique and cannot be found elsewhere on the market. All our products have full traceability (3.1 or 3.2 certificates available for each item upon request) with raw materials only sourced from premium European stainless steel manufacturers according to our rigid specifications.

INTRODUCING BUMAX® DX 129 EPK FASTENERS

BUMAX® DX 129 EPK fastener range is based on BUMAX's original high-performance DX 129 duplex stainless-steel grade.

Duplex stainless-steel material is an Austenitic-Ferritic stainless-steel, a family of stainless-steel materials that have a two-phase microstructure containing both Ferrite and Austenite.

Figure 1 shows the austenitic grains embedded in a ferritic phase. It is important that the mix of ferritic and austenitic phase is roughly 50/50 as an excessive proportion of either structure can lead to reduced corrosion resistance and poor mechanical properties. Duplex stainless-steel offers many beneficial properties.

BUMAX® DX 129 duplex grade is produced through cold working.

BUMAX® duplex grades can be used at service temperatures between -50 to 300°C.

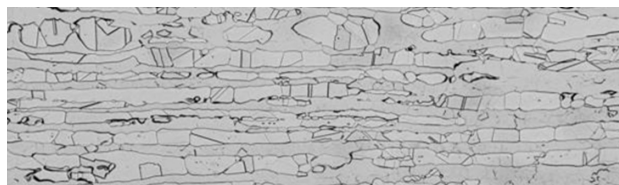


Figure 1: Duplex stainless steels have a two-phase microstructure of austenite and ferrite grains.

PRODUCT FEATURES

EPK stands for Electro-Polished & Kolsterised.

Electropolishing is an electro-chemical process that removes a layer of material at the surface of the component, thereby also removing surface defects and any foreign particles.

Kolsterising is a diffusion-based surface hardening process that substantially increases the surface hardness of the fastener.

The combination of these two processes not only gives the fastener a better surface finish but also significantly increases surface hardness. As a result, the EPK version of DX 129 is significantly stronger than standard DX 129 fasteners and also that of generic 12.9 carbon steel fasteners.

Benefits of DX 129 EPK include:

- Anti-galling
- No risk of Hydrogen Embrittlement
- Higher corrosion resistance
- High strength
- Higher ductility compared to carbon steel
- Low particle emissions

NOTE: Duplex stainless-steel is magnetic (non-magnetic stainless-steel grades are available)



PRODUCT APPLICATION

BUMAX's DX 129 EPK has been designed for use within clean environments, where high mechanical performance, pre-load accuracy and installation consistency is important within the application.

For critical applications where outgassing needs to be avoided BUMAX® DX 129 EPK fasteners naturally benefit from low particle emissions. Initially designed for the Semi-Conductor industry, DX 129 EPK screws can offer similar advantages in a range of critical applications and industries.

Examples of potential applications include vacuum applications, space & aerospace, semi-conductor production, medical equipment, sensitive electronic/electrical equipment and instrumentation.

BUMAX® are also able to offer various levels of cleaning on DX 129 EPK fasteners, down to molecular level cleaning either according to ISO





CHEMICAL PROPERTIES

GRADE	Production Capability	EN	UNS	ISO 3506	Cr	Ni	Mo	N
BUMAX® DX 129 EPK M3 – M20	M3 – M20	1.4462	S32205 S31803	D6	22	5	3.2	0.18

Nominal values wt%

MECHANICAL PROPERTIES

BUMAX® DX 129 EPK fasteners achieve their high strength from cold working, such as cold heading and thread rolling. BUMAX® duplex grades can be provided in different strength classes depending on customer requirements, dimension and fastener type. Dimension range and mechanical properties of BUMAX® duplex grades are presented in the table below.

GRADE	Strength Class	Tensile strength R _m , min MPa ksi	Yield strength R _{p0.2} , min MPa ksi	Elongation, min (mm)
BUMAX® DX 129 EPK	12.9	1,200 174	1,080 156	0.2 d

MARKING

All BUMAX® duplex fasteners are marked with the BUMAX® brand, steel grade and strength class. Fasteners of M4 or smaller are marked with 3 dots. This allows easy identification of the correct fastener type during installation.



PACKAGING

BUMAX® products are packed in high quality sturdy boxes and are marked according to a color-coded system. We guarantee full traceability for all our products in sealed boxes and labels provide all the data for full traceability.



Disclaimer: The information contained in this data sheet is for guidance only and summarizes Bufab best knowledge and is considered accurate as of the version date. Since the use of BUMAX® products is not within the control of Bufab, the user has the obligation to determine the suitability of the product for its intended application and assumes all risk and liability for its safe use.