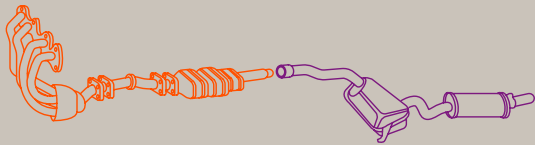


Stainless Steel

The Material of Choice for Manifolds & Catalytic Converters



Did you know?

Driven by a need to increase durability and decrease emission levels, automotive exhaust systems have designated stainless steel as their material of choice. That's because only stainless steel can withstand the severe conditions that exhaust manifolds are already subjected to. They can even resist the peak temperatures of 1,000 °C seen in the downsized gasoline engines now coming onto the market.

The Advantages of Stainless Steel



- > Thermo-mechanical properties
- > Creep resistance
- > Formability and easy to weld

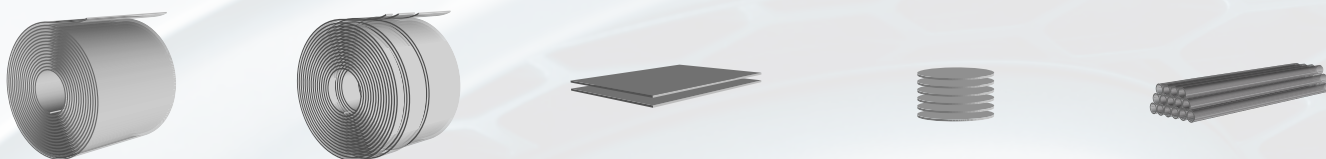
Which Grade to Choose?

- > Our **K44X** grade is a ferritic solution developed for use with high temperature applications (up to 1,025 °C). Because the grade is monostabilised with Niobium, it offers excellent creep resistance and can be used at high temperatures. Its very high corrosion resistance is ensured by its Molybdenum (1.9%) and Chromium (19%) content. It's the best ferritic alternative to austenitic materials.
- > To meet the required characteristics of manifold applications with temperatures lower than 1,000 °C, Aperam recommends either the classic **K41X** (1.4509) or our **304D** (1.4301) grades.

Our Grades

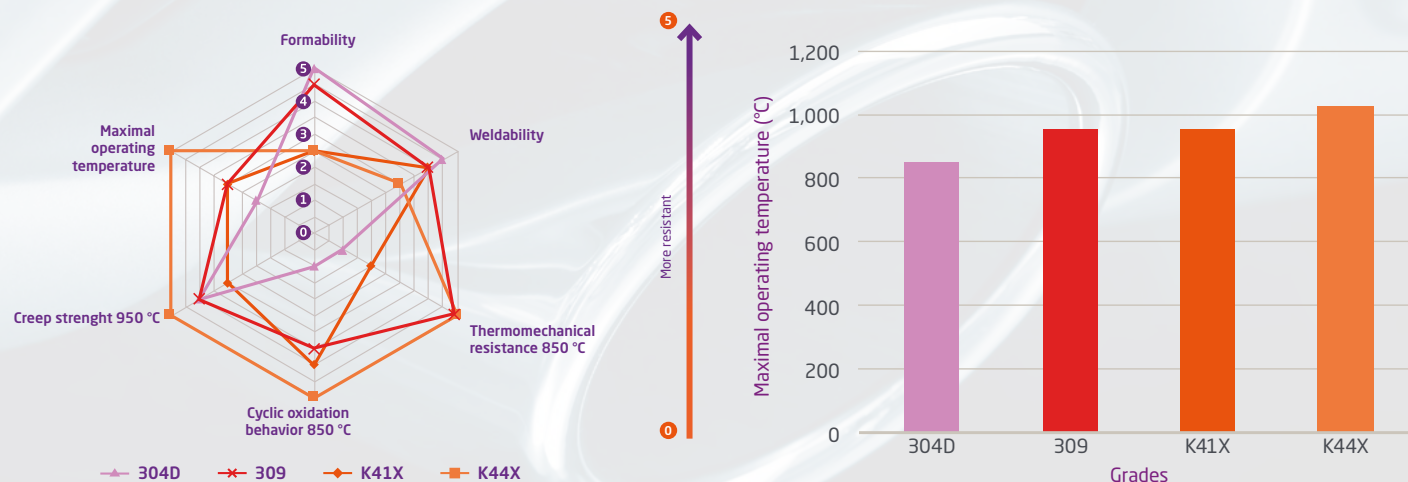
		Standards		
Grades		ASTM	UNS	EN
Ferritic stainless steels 	K44X	444	S44400	1.4521
	K41X	441	S43932/S43940	1.4509
Austenitic stainless steels	304D	304	S30400	1.4301
Heat resisting stainless steel	309	—	—	1.4828

Product Range



- > **Forms:** coils, strips, sheets, blanks, discs and tubes
- > **Width:** up to 2,000 mm according to thickness and grade
- > **Thicknesses:** from 0.4 up to 13 mm
- > **Finish:** cold-rolled or hot-rolled, according to thickness

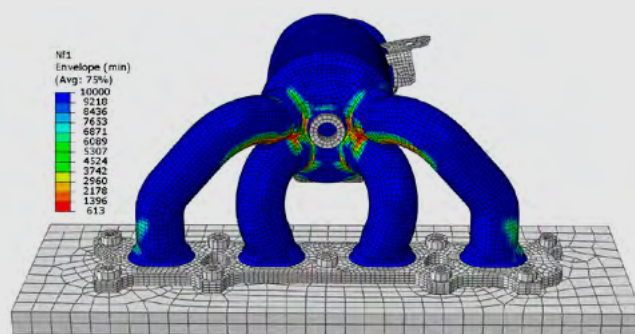
Technical Information



Xhaust_Life®

Xhaust_Life® is a programme developed by Aperam. It assesses the durability of high temperature exhaust parts, and the effect that design, thickness, and grade has on thermo-mechanical fatigue resistance. Critical zones are directly highlighted on the component. This post-processing tool is compatible with Abaqus finite element software.

The package includes: programme, material database and manual.



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