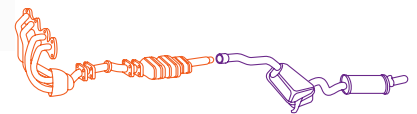


# Manifold & Catalytic Converter

Stainless steel grades are widely used for automotive exhaust systems, driven by the need to increase their durability and to reduce their weight. Exhaust Manifolds are already subjected to severe conditions, and peak gas temperatures of 1000 °C could be reached in new downsized gasoline engines. Also, longer guarantees are now required. This evolution is the direct result of the automotive industry's efforts to decrease emission levels in accordance with global environmental regulations.



## Our offer

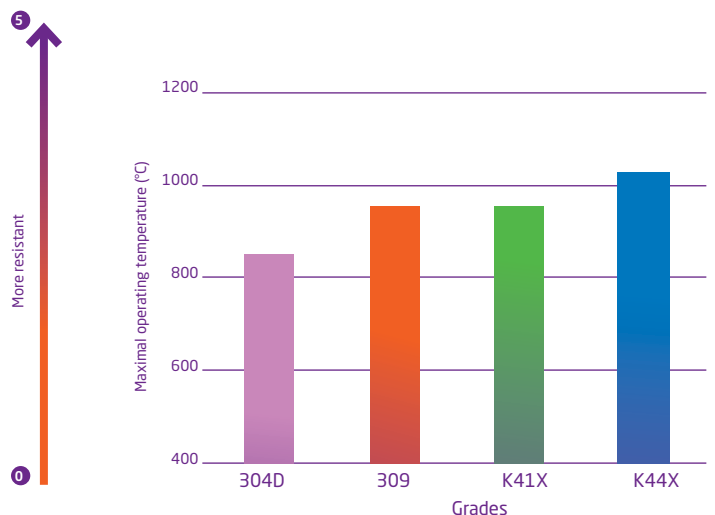
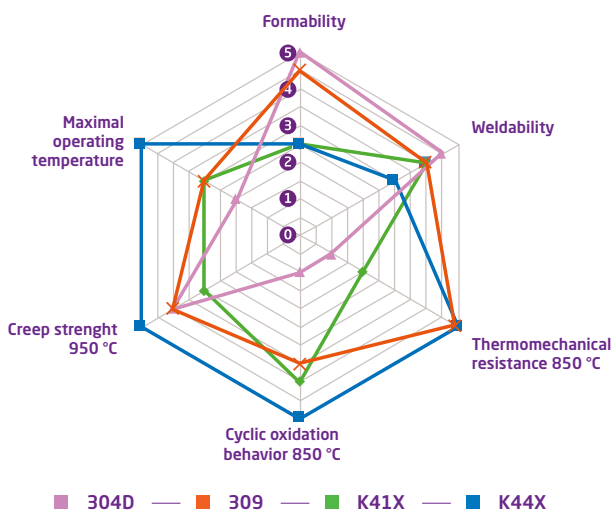
		Standards		
Grades		ASTM	UNS	EN
<b>Ferritic stainless steels</b> 	K44X	444	S44400	1.4521
	K41X	441	S43932/S43940	1.4509
<b>Austenitic stainless steel</b>	304D	304	S30400	1.4301
<b>Heat resisting stainless steel</b>	309	—	—	1.4828

## Thicknesses

Aperam Stainless Europe

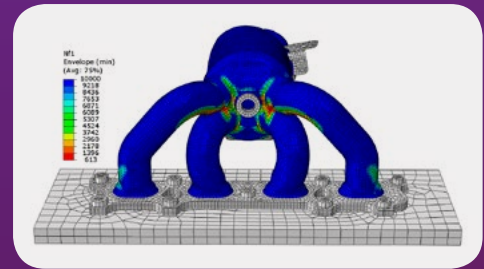
from 0.80 to 2.50 mm

## Technical information



## Xhaust\_Life®

Xhaust\_Life® is a programme developed by Aperam in the 2000s. It assesses the durability of high temperature exhaust parts, and the effect design, thickness, and grade has on thermo-mechanical fatigue resistance. Critical zones are directly highlighted on the component. This post processor is compatible with Abaqus finite element software.



The package includes:

- Programme
- Material database
- Manual

## Which grade is best for which usage?

The main material properties of Manifold applications are:

- Thermo-mechanical properties
- Creep resistance
- Formability and welding

Our offer responds to these requirements:

- **K44X**: a ferritic solution developed for high temperatures up to 1025 °C. Its monostabilisation with Niobium allows the material to be used at high temperatures (creep resistance). Its very high corrosion resistance is ensured by its Molybdenum content (1.9%) and its 19% Chromium content. It's the best ferritic alternative to austenitic material.
- In order to meet the required characteristics of manifold application with temperatures lower than 1000 °C, Aperam also proposes the classic K41X (1.4509) and our 304D (1.4301).

## Contact

Nicolas Dujardin

T +33 321 63 28 68

nicolas.dujardin@aperam.com

[www.aperam.com](http://www.aperam.com)

Email: [contact@aperam.com](mailto:contact@aperam.com)



aperam

