

“Now you have a choice; SuperExpanite hardening with nitro-carburizing (N/C) or with carburizing (C)” SuperExpanite C, the newest from Expanite®

Until now, Expanite® hardening of stainless steel has been associated with nitrogen and carbon as hardening molecules, often referred to as nitro-carburizing or SuperExpanite N/C. Now there is an alternative, where only carbon is applied; and the name is **SuperExpanite C**.

Why is this needed?

The “C” in **SuperExpanite C** stands for Carbon. This means it is a carburizing process, as opposed to a nitrocarburizing process, such as the SuperExpanite N/C, which includes nitrogen. Nitrogen is eminent for hardening, due to its ability to achieve a high hardness and superior corrosion properties, even after the hardening process. When introducing nitrogen the part will become slightly magnetic, which may be an unwished property in some applications. More severe however, is the fact that it may be difficult to weld on a material hardened with the use of nitrogen.

Welding post/pre

Often welding is a central joining process for stainless steels. For applications where welding is needed, surface hardening could cause challenges with both insufficient hardening and poor corrosion resistance. But surface hardening of components that needs either post/pre welding is now possible with the **SuperExpanite C** process!

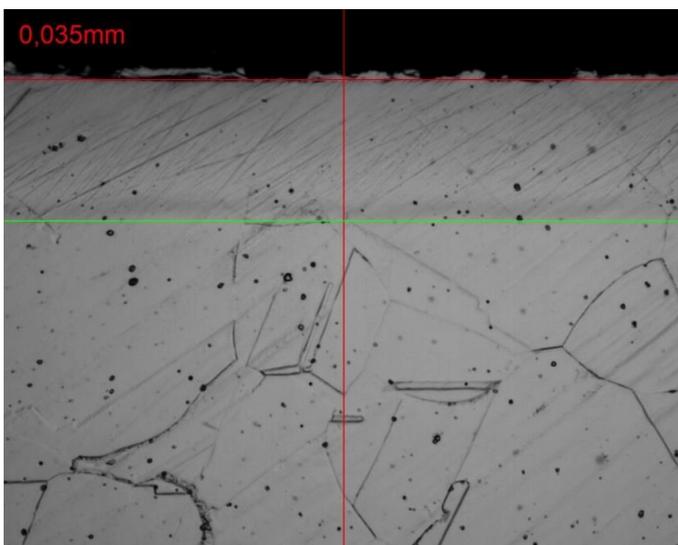
The process

This special hardening process is suitable for a variety of alloys: Austenitic, Duplex, Martensitic, Ferritic, etc. The low energy input reduces warpage even with high welding penetration depths. The process is suited for mass production, and is a preferred choice for a range of products in the automotive industry.

SuperExpanite C is a gas based diffusion process, with all the associated benefits known from the original SuperExpanite process.

SuperExpanite C

- ⊗ High temperature vacuum process: 1000-1200°C with fast quench in nitrogen or argon.
- ⊗ Surface hardness: 300-850HV
- ⊗ Low-temperature gas process: <500C
- ⊗ Case depth: 5-35µm
- ⊗ Surface hardness: 900-1200 HV



Case Depth: 35µm - Surface hardness: 1089 HV0.1

Advantages of SuperExpanite C

- ⊗ Pre- or post-welding operations possible
- ⊗ Reduces warpage
- ⊗ Less magnetic influence on parts
- ⊗ Fast lead times