



# BorFusion<sup>®</sup> Thermally Diffused Coating

## INTRODUCTION

**BorFusion<sup>®</sup>** is Giant Coatings' proprietary boronizing process – during the **BorFusion<sup>®</sup>** process, boron molecules react with iron in the steel and create an extremely hard surface layer known as Iron Boride (Fe<sub>2</sub>B). The diffused layer of Iron Boride penetrates the metal substrate in a tooth-like fashion creating an extremely tight bond that cannot flake, spall or chip away. Approximately 80% of the hardened layer will grow into the steel, leaving a mere 20% of surface growth. Depending on the type of material subject to the **BorFusion<sup>®</sup>** process, the surface growth will vary – see the chart for the approximate case layer thicknesses for various materials. Keep in mind the chart represents case thickness, not surface growth.

## BENEFITS

The **BorFusion<sup>®</sup>** process results in a very hard surface that will minimize wear due to abrasion, corrosion, and erosion, not to mention the hardened surface has a low coefficient of friction allowing higher flow rates in many applications.

**BorFusion<sup>®</sup>** is ideal on tools with minimum tolerances for surface growth which require excellent protection. As well it can be selectively applied to specific areas of tools including parts that have a complex geometry.

**BorFusion<sup>®</sup>** can be applied on various different metals, including:

- Carbon Steels
- Alloy Steels
- Stainless Steels
- Tool Steels
- Ni-Resist

## APPLICATIONS

- ESP & HSP Stages
- Rod Guides
- Valve Components
- Isolation Sleeves
- Profile Nipples
- Centrifugal Pumps
- Frac Subs
- Profile Slick Joints
- And Much More!

