

## TECHNICAL COMPARISON OF MATERIALS FOR ADAPTER SLEEVES

**CONTROL ID**  
003 2025 REV01

### TECHNICAL INTRODUCTION

BGL manufactures adapter **Sleeves and Lock Nuts for bearing mounting** in a variety of materials, according to customer requirements. However, over nearly 70 years in the sector, we have continuously improved the material composition until we reached our current **BGLFN 50 ductile alloy**, established as our technical excellence standard.

This material offers **superior mechanical properties** compared to rolled steel or mechanical tubing and is widely used in Sleeves from **17 mm to 1,400 mm in bore diameter**, with complete safety, efficiency, and reliability. Parts manufactured with **BGLFN 50 ductile alloy** represent more than 98% of our entire production and are **exported to over 70 countries**.



COMPARATIVE TABLE				
STANDARD	MECHANICAL PROPERTIES			
	Tensile Strength N/mm <sup>2</sup>	Yield Strength N/mm <sup>2</sup>	Elongation %	Brinell Hardness (HB)
DIN 5415 STANDARD FOR SLEEVES	Minimum 430	Not Specified	Not Specified	Not Specified
<b>BGLFN 50 DUCTILE ALLOY</b>	Minimum 460 (Average 520)	Minimum 290	Minimum 7.0	Minimum 156
SAE 1020 STEEL / ASTM-A36	Minimum 400	Minimum 250	Minimum 20.0	Minimum 121

Source: Material Specification Table - T4.09-06

### IMPORTANT TECHNICAL NOTES

- **Versatility of Ductile Alloy:** BGLFN 50 can be adjusted to reach tensile strength above **600 N/mm<sup>2</sup>**, surpassing the limit of around **550 N/mm<sup>2</sup>** found in commercially available steels.
- **Stability of Ductile Alloy:** unlike steel, which loses strength after heat treatments (stress relief or annealing), ductile iron retains its **original mechanical properties**, eliminating the need for such treatments.

### TECHNICAL BENEFITS OF BGLFN 50 DUCTILE ALLOY

- **High tensile strength**, ensuring safety even in heavy-duty applications.
- **Presence of graphite** in the microstructure, providing:
  - Lubricating effect: reduces friction during nut tightening.
  - Lower risk of seizing or galling of the assembly.
  - Easier disassembly, even after long periods of operation.

### CONCLUSION

Although BGL manufactures components in ductile iron, steel, or any other material specified by the customer, **BGLFN 50 ductile alloy** remains the **most technical, economical, and safe choice**. Its superior performance justifies its widespread acceptance both in Brazil and abroad.

### FINAL REMARKS

If you have any questions, please contact BGL's Application Engineering department.

