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## Key Similarities & Differences

### Similarities:

- **Medium-carbon steels** Good balance of strength and formability.
- **Manganese & Silicon ranges** Comparable across all three grades.
- **General applications** Used in gears, shafts, bolts, and structural components.

### Differences:

- **EN 10083-2 C18E** Stricter **P & S limits** ( $\leq 0.025\%$ ), optimized for **quenching & tempering**.
- **EN 10277 C18** Designed for **bright steel products** (cold-finished bars).
- **EN 10278 C15E** Lower carbon (0.12-0.18%) and may contain **lead** for **free-cutting applications**.

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## Equivalences & Alternative Grades

- **EN 10083-2 C18E** EN 10277 C18 (chemically similar, different processing standards).
- **EN 10278 C15E** is similar to **AISI 1117 (lead-free)** or **12L14 (lead)** for machining.

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## Which Steel Grade Should You Choose?

- **Need high strength after heat treatment?** EN 10083-2 C18E
- **Precision bright steel components?** EN 10277 C18
- **Superior machinability?** EN 10278 C15E

At SteelMet Industries, we supply these steel grades in:

- Round bars, flat bars, hex bars
- Cold-drawn, turned, or precision-ground
- Custom sizes & conditions (annealed, hardened, etc.)

• **Contact us today** for a quote tailored to your project requirements!

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## Conclusion

Understanding the differences between **EN 10083-2 C18E**, **EN 10277 C18**, and **EN 10278 C15E** helps in selecting the right material for durability, machinability, or heat treatment.

**SteelMet Industries** stocks these grades in **multiple forms and conditions** ensuring you get the exact steel solution for your application.

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1. Posts

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**Date**

08/05/2026

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admin

Steelmet Industries - Bright Bars, Alloy Steels, Cutting Steels, Stainless Steels