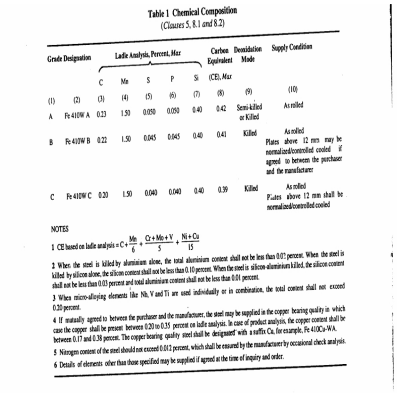

Table 1 Chemical Composition
(Clauses 5, 8.1 and 8.2)

Grade Designation		Ladle Analysis, Percent, Max					Carbon Equivalent (CE), Max	Deoxidation Mode	Supply Condition
		C	Mn	S	P	Si			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
A	Fe 410W A	0.23	1.50	0.050	0.050	0.40	0.42	Semi-Killed or Killed	As rolled
B	Fe 410W B	0.22	1.50	0.045	0.045	0.40	0.41	Killed	As rolled Plates above 12 mm may be normalized/controlled cooled if agreed to between the purchaser and the manufacturer
C	Fe 410W C	0.20	1.50	0.040	0.040	0.40	0.39	Killed	As rolled Plates above 12 mm shall be normalized/controlled cooled

NOTES

1 CE based on ladle analysis $= C + \frac{Mn}{6} + \frac{Cr + Mo + V}{5} + \frac{Ni + Cu}{15}$

2 When the steel is killed by aluminium alone, the total aluminium content shall not be less than 0.07 percent. When the steel is killed by silicon alone, the silicon content shall not be less than 0.10 percent. When the steel is silicon-aluminium killed, the silicon content shall not be less than 0.03 percent and total aluminium content shall not be less than 0.04 percent.

3 When micro-alloying elements like Nb, V and Ti are used individually or in combination, the total content shall not exceed 0.20 percent.

4 If mutually agreed to between the purchaser and the manufacturer, the steel may be supplied in the copper bearing quality in which case the copper shall be present between 0.20 to 0.35 percent on ladle analysis. In case of product analysis, the copper content shall be between 0.17 and 0.38 percent. The copper bearing quality steel shall be designated with a suffix Cu, for example, Fe 410Cu-WA.

5 Nitrogen content of the steel should not exceed 0.012 percent, which shall be ensured by the manufacturer by occasional check analysis.

6 Details of elements other than those specified may be supplied if agreed at the time of inquiry and order.

IS 2062:1999 Steel Grades â?? Complete Comparison Guide

Description

IS 2062:1999 specifies requirements for **hot-rolled structural steel** used in general engineering and construction. This guide compares the three grades (A, B, C) and their variants:

- **Chemical composition** limits
- **Mechanical properties**
- **Impact test requirements**
- **Recommended applications**

Steelmet Industries supplies all IS 2062:1999 grades as:
â? Steel plates (3-100mm thickness)
â? Structural sections (beams, channels, angles)
â? Round/square/flat bars

Grade Classification System

Grade	Designation	Key Characteristics	End Marking Color
A	Fe 410W A	Basic structural grade, no impact test	Green
B	Fe 410W B	Improved purity, room temp impact test	Grey
C	Fe 410W C	Low-temp applications (-20Â°C impact)	Orange

Copper-bearing variants (e.g., Fe 410Cu-WA) are marked with additional white band.

Key Comparison Tables

1. Chemical Composition

Element	Grade A	Grade B	Grade C
C (max)	0.23	0.22	0.20
Mn (max)	1.50	1.50	1.50
S (max)	0.050	0.045	0.040
P (max)	0.050	0.045	0.040
CE (max)	0.42	0.41	0.39

Note: Grade C has strictest impurity controls

2. Mechanical Properties

Property	Grade A	Grade B	Grade C
Tensile (MPa)	410	410	410
Yield (MPa)	250	250	250
Elongation (%)	23	23	23
Impact Test	Not required	27J @ RT	27J @ -20Â°C

Applications Guide

Grade	Best For	Not Recommended For
A	Non-critical structures, roofing	Low-temperature/welded critical parts
B	Bridges, general construction	Sub-zero environments
C	Offshore platforms, cryogenic	Cost-sensitive projects

Special Notes:

- Grade C plates >12mm **must** be normalized/controlled cooled
- Copper-bearing grades (Cu suffix) offer better corrosion resistance

Why Choose Steelmet Industries?

We provide:
â?? All three grades (A/B/C) with MTC certification
â?? Custom processing (cutting, drilling, bending)

â?? Just-in-time delivery across India
â?? Technical support for grade selection

Request samples of any IS 2062:1999 grade for testing!

FAQ Section

Q: Can Grade A be used for welded structures?
A: Yes, but Grade C is recommended for critical welds due to its guaranteed -20Â°C impact toughness.

Q: Difference between Fe 410W B and Fe 410Cu-WB?
A: The Cu variant contains 0.20-0.35% copper for improved atmospheric corrosion resistance.

Conclusion

Understanding IS 2062:1999 grade differences ensures optimal material selection for structural integrity. **Steelmet Industries** stocks all grades with proper color-coding as per standard â?? contact us today for project-specific recommendations.

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