

Section 1: Product Profile & Application

Engineered for primary coarse grinding in rod mills. Manufactured via high-temperature hot rolling and precision straightening. Rods grind via parallel line contact, which minimizes the production of extreme fines (over-grinding). A highly controlled heat treatment process ensures a high-hardness surface for maximum wear resistance, combined with a tough, resilient core to absorb heavy impact and strictly prevent in-mill snapping or bending.

- **Primary Applications:** Cement Mills (Fine Grinding Chambers), Coal Mills, and highly abrasive mineral processing.
- **Manufacturing Process:** Induction Melting, Permanent Mold Casting, Quenching, and Tempering.

Section 2: Technical Specifications

- **Dimensional & Mass Specifications**

Diameter (mm)	Length (m)	Diameter Tolerance (mm)	Length Tolerance (mm)	Straightness
25	3.00 - 6.00	+1.00 / -1.50	± 50mm	≤ 3.0 mm/m
30	3.00 - 6.00	+1.00 / -1.50	± 50mm	≤ 3.0 mm/m
40	3.00 - 6.00	+1.00 / -1.50	± 50mm	≤ 3.0 mm/m
50	3.00 - 6.00	+1.00 / -1.50	± 50mm	≤ 3.0 mm/m
60	3.00 - 6.00	+1.00 / -1.50	± 50mm	≤ 3.0 mm/m
70	3.00 - 6.00	+1.00 / -1.50	± 50mm	≤ 3.0 mm/m
80	3.00 - 6.00	+1.00 / -1.50	± 50mm	≤ 3.0 mm/m
90	3.00 - 6.00	+1.00 / -1.50	± 50mm	≤ 3.0 mm/m
100	3.00 - 6.00	+1.00 / -1.50	± 50mm	≤ 3.0 mm/m

Note: Custom lengths available

- **Chemical Composition (% Weight)**

Dia (mm)	C	Mn	Cr	Si	P & S
20	0.60 - 1.00	0.75 - 1.00	0.40 - 0.90	0.20 - 0.35	≤ 0.04
30	0.60 - 1.00	0.75 - 1.00	0.40 - 0.90	0.20 - 0.35	≤ 0.04
40	0.60 - 1.00	0.75 - 1.00	0.40 - 0.90	0.20 - 0.35	≤ 0.04
50	0.60 - 1.00	0.75 - 1.00	0.40 - 0.90	0.20 - 0.35	≤ 0.04
60	0.60 - 1.00	0.75 - 1.00	0.40 - 0.90	0.20 - 0.35	≤ 0.04
70	0.60 - 1.00	0.75 - 1.00	0.40 - 0.90	0.20 - 0.35	≤ 0.04
80	0.60 - 1.00	0.75 - 1.00	0.40 - 0.90	0.20 - 0.35	≤ 0.04
90	0.60 - 1.00	0.75 - 1.00	0.40 - 0.90	0.20 - 0.35	≤ 0.04

Note: Chemical compositions listed reflect standard parameters. Custom alloy profiles can be engineered upon request to optimize wear rates for specific mill conditions and ore hardness.

- **Mechanical Properties & Performance**

Property	Testing Standard	Metric / Performance
Surface Hardness	Rockwell (HRC)	45 - 55
Volumetric Hardness	Rockwell (HRC)	40 - 50
Impact Toughness	Charpy V-Notch	≥ 12.0 J/cm²
Breakage Rate	10-Meter Drop Test	≤ 1.0%
Microstructure	Metallurgical Phase	Fine Pearlite / Ferrite Network

High Carbon Steel Grinding Rods

Engineered to Endure



Section 3: Manufacturing

Our high-carbon grinding rods are manufactured using advanced rotary heating furnaces and heavy-duty hot rolling mills. Premium steel billets are uniformly heated and rolled to exact diametric tolerances. Following the rolling process, the rods undergo a specialized quenching and tempering treatment to create a hardened wear-surface while maintaining a ductile core. Finally, every rod passes through a multi-roll straightening machine to ensure strict linear tolerances, preventing mill-tangling and ensuring parallel grinding action.



Section 4: Packaging & Delivery Configurations



Heavy-Duty Bundling for Ocean Freight

- **Configuration:** 2.0 to 3.0 Metric Ton bundles.
- **Design:** Secured with high-tensile steel strapping (minimum 6-8 bands per bundle) to prevent shifting during transit.
- **Advantage:** Designed for safe crane-lifting, rapid vessel offloading, and secure staging at the mine site. Ends can be color-coded for rapid diameter identification.



Ready to Optimize your Milling Operations

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