



# Xuzhou H&G Wear-resistant Material Co., Ltd.

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## High Chrome Alloyed Grinding Balls



### Products Description:

Grinding ball is widely used in cement, metal mining, power plant and chemical industry etc. The hardness reaches up to 64HRC(the surface and inner hardness tolerance with in 3HRC unit), which makes the wear-resisting property much better than forged ball, in addition the distribution of the hardness gradient is average. The property- low wear rate, good toughness and less breakage, prolongs its life, improves the productivity of the ball mill, and lowers user's cost. Our quality is accord with GBT17445-2009 China national standard.

### Processing Technique

Intermediate frequency furnace smelting high-quality steel scraps and mix chromium based on requirement.

Constant temperature casting process ensuring the quality, no solid nonmetallic impurity, no pore, no mal-roundness etc..

Oil-immersed quench harden treatment enhance the hardness, annealing process changing the internal organizational structure, lowering the breakage, and improving the performance.

After the Pre-furnace test, semi-finished products and finished products inspection was done by advanced spectrometer and durometer imported from Germany.

### Chemical Elements

Name	Chemical Elements (%)							
	C	Si	Mn	Cr	Mo	Cu	P	S
Normal High Cr	2.0-3.3	≤1.2	0.3-1.5	10-13	0-3.0	0-1.2	≤0.1	≤0.06
Special High Cr	2.0-3.3	≤1.2	0.3-1.5	15-23	0-3.0	0-1.2	≤0.1	≤0.06

### Physical Property & Microstructure

Name	HRC	Ak(J/cm <sup>2</sup> )	Microstructure	Times of Falling Balls	
				≤Φ80	≥15000
Normal High Cr	≥60	≥4	M+C+A	≥Φ80	≥10000
M-Martensite      C-Carbide      A-Austenite					

### Size & Weight

Size(mm)	Weight(kg/pc)	Quantity(pc/t)	Size(mm)	Weight(kg/pc)	Quantity(pc/t)
Φ30	0.11	9091	Φ90	2.90	345
Φ40	0.25	3891	Φ100	4.00	250
Φ50	0.50	2000	Φ110	5.30	188
Φ60	0.86	1153	Φ120	6.80	147
Φ70	1.37	729	Φ130	7.70	129
Φ80	2.05	487	Φ140	8.74	114



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## Medium Chrome Alloyed Grinding Balls



### Products Description:

Grinding ball is widely used in cement, metal mining, power plant and chemical industry etc.. The hardness reaches up to 50HRC(the surface and inner hardness tolerance within 2HRC unit), which makes the wear-resisting property much better than forged ball, in addition, the distribution of the hardness gradient is average. The property- low wear rate, good toughness and less breakage, prolongs its life, improves the productivity of the ball mill, and lowers user's cost. Our quality is accord with GBT17445-2009 China national standard.

### Processing Technique

Intermediate frequency furnace smelting high-quality steel scraps and mix chromium based on requirement. Constant temperature casting process ensuring the quality, no solid nonmetallic impurity, no pore, no mal-roundness etc. Annealing process changing the internal organizational structure, lowering the breakage, and improving the performance. After the Pre-furnace test, semi-finished products and finished products inspection was done by advanced spectrometer and durometer imported from Germany.

### Chemical Elements

Name	Chemical Elements (%)							
	C	Si	Mn	Cr	Mo	Cu	P	S
Medium Cr Balls	2.0-3.3	≤1.2	0.3-1.5	3-6	0-1.0	0-1.2	≤0.1	≤0.06

### Physical Property & Microstructure

Name	HRC	Ak(J/cm <sup>2</sup> )	Microstructure	Times of Falling Balls	
				≤Φ80	≥15000
Medium Cr Balls	≥47	≥3.0	P+C	≥Φ80	≥10000
P-Pearlite			C-Carbide		

### Size & Weight

Size(mm)	Weight(kg/pc)	Quantity(pc/t)		Size(mm)	Weight(kg/pc)	Quantity(pc/t)
Φ30	0.11	9091		Φ90	2.90	345
Φ40	0.25	3891		Φ100	4.00	250
Φ50	0.50	2000		Φ110	5.30	188
Φ60	0.86	1153		Φ120	6.80	147
Φ70	1.37	729		Φ130	7.70	129
Φ80	2.05	487		Φ140	8.74	114

**Note: Any need to adjust the chemical elements, or add alloying element, it would be agreed with contract.**



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## Low Chrome Alloyed Grinding Balls



### Products Description:

Grinding ball is widely used in cement, metal mining, power plant and chemical industry etc.. The hardness reaches up to 45HRC(the surface and inner hardness tolerance with in 2HRC unit), which makes the wear-resisting property much better than forged ball, in addition, the distribution of the hardness gradient is average. The property- low wear rate, good toughness and less breakage, prolongs its life, improves the productivity of the ball mill, and lowers user's cost. Our quality is accord with GBT17445-2009 China national standard.

### Processing Technique

Intermediate frequency furnace smelting high-quality steel scrap and mix chromium based on requirement. Constant temperature casting process ensuring the quality, no solid nonmetallic impurity, no pore, no mal-roundness etc. Annealing process changing the internal organizational structure, lowering the breakage, and improving the performance. After the Pre-furnace test, semi-finished products and finished products inspection was done by advanced spectrometer and durometer imported from Germany.

### Chemical Elements

Name	Chemical Elements (%)							
	C	Si	Mn	Cr	Mo	Cu	P	S
Low Cr Balls	2.1-3.6	≤1.5	0.3-1.5	1-3	0-1.0	0-0.8	≤0.1	≤0.1

### Physical Property & Microstructure

Name	HRC	Ak(J/cm <sup>2</sup> )	Microstructure	Times of Falling Balls
Low Cr Balls	≥45	≥2.5	P+C	≥10000
P-Pearlite C-Carbide				

### Size & Weight

Size(mm)	Weight(kg/pc)	Quantity(pc/t)	Size(mm)	Weight(kg/pc)	Quantity(pc/t)
Φ30	0.11	9091	Φ90	2.90	345
Φ40	0.25	3891	Φ100	4.00	250
Φ50	0.50	2000	Φ110	5.30	188
Φ60	0.86	1153	Φ120	6.80	147
Φ70	1.37	729	Φ130	7.70	129
Φ80	2.05	487	Φ140	8.74	114

**Note: Any need to adjust the chemical elements, or add alloying element, it would be agreed with contract.**