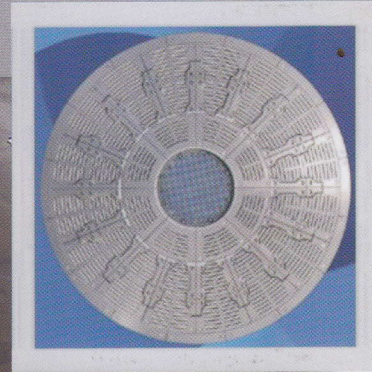
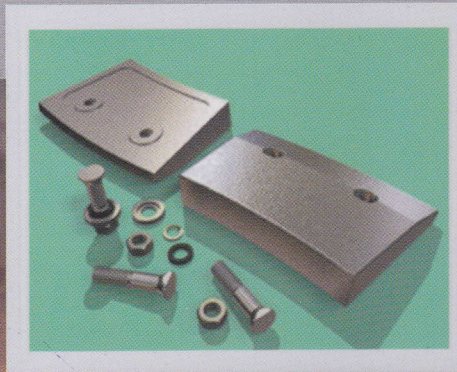


SEW

SHREE ENGINEERING WORKS

PRODUCT CATALOG





COMPANY PROFILE

SHREE ENGINEERING WORKS

Shree Engineering Works 'SEW' was incorporated in 1988 by Mr. L. C. Sharma with a vision to manufacture quality castings especially grinding media balls. With a very humble start, today SEW has become a leading producer of Hyper Steel Grinding Media Balls and progressing well in manufacturing High Chrome Grinding Media Balls and other castings too.

The Company is ISO 9001:2008 certified and is in the process of obtaining registration and approvals in various Government bodies. A world class manufacturing and testing facilities with a dedicated professional team is in place to ensure superior quality through innovative technologies.

The high chrome grinding media balls produce has been well accepted in International & Domestic markets and SEW has established itself as a preferred vendor for various international as well as domestic clients. The superior performance of SEW products is giving extra benefits like consistent mill performance, reduced wear rate, increased output and reduced operating cost to the end user industries.

The continuous research & development, well qualified and experienced team and convenient customer communication ensure the Company to assure Quality, Delivery, Service & Economy.

Mr. L. C. SHARMA, Chairman, Shree Engineering Works

Mr. L. C. Sharma, the key person behind Shree Engineering Works, is an eminent personality in Casting Foundry Industry. Grinding Media manufacturing and technology has mixed in his blood as he had been manufacturing the same product from last 30 years and this makes him to understand the integrity of this product to the core.

He graduated as a bachelor in science in 1971 and started his career as a plant in-charge with Maxworth Steel Co., Kolkata, which was the leading manufacturer of grinding media balls of its time. They used to do job work for Electrosteel Castings too for same product.

In the year 1979, he shifted his base to Jaipur and joined R.G. Ispat as Works Manager and served till 1991. Here his farsightedness and inclination towards manufacturing quality material compelled him to start his own manufacturing facility under the brand name Shree Engineering Works in the year 1988.

Mr. Sharma, being a technical person always tried to make a 'technically graded product' rather than a 'commercially viable product' and has established a very dignified repute of its own in the industry circle and among his clientele. His able guidance is taking the Company in achieving newer heights and progressing at its best.

Our Values

- Respect
- Team Work
- Innovation
- Development

Our Commitment

- Quality
- Economy
- Delivery
- Service

RANGE OF MANUFACTURING

Industries Catered

- ▶ Cement Plants
- ▶ Iron & Steel Plants
- ▶ Thermal / Power Plants
- ▶ Mining Industries
- ▶ Refractory Units
- ▶ Crushing Units
- ▶ Earth Moving Equipment Inds.
- ▶ Cement Mill Manufacturers
- ▶ Crusher Machine Manufacturers
- ▶ Railways

Grades of Castings :

- ▶ Hyper Steel
- ▶ High Chrome
- ▶ Manganese Steel
- ▶ Cast Steel
- ▶ Chrome-moly
- ▶ Ni-hard
- ▶ SG Iron

Production Capacity:

High chrome grinding media

- ▶ 700 MT per month

Other castings

- ▶ 300 MT per month

Size Range of Castings :

High chrome grinding media

- ▶ 17 mm to 125 mm

Other castings

- ▶ Up to 3300 mm x 3300 mm

Weight Range of Castings :

High chrome grinding media

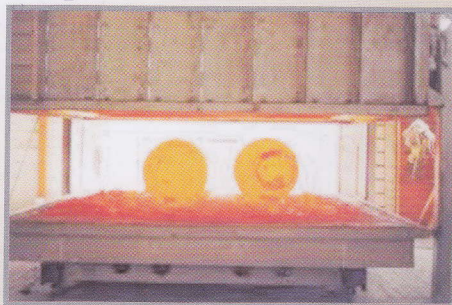
- ▶ 21gms to 8.2 kgs

Other castings (Single pc. weight)

- ▶ upto 500 kgs

Sand Moulding Techniques:

- ▶ Green sand
- ▶ No-bake
- ▶ CO₂/Silica sand





GRINDING MEDIA BALLS & CYLPEBS

Benefits to SEW customers

- High productivity/Increase output
- Consistent mill performance
- Lower inventory
- Less maintenance
- Reduced top-up frequency
- Reduced operating cost
- No-damage to Liners
- Span between re-grading increases

Advantages of SEW Media

- Increase output of mill
- Consistent mill performance
- Lowest wear rates
- Lesser breakage
- Lesser de-shaping rate

Quality Control at SEW

- Lot wise continuous quality check
- Specifications of high standard as per IS
- Complete cycle of heat treatment process
- Uniform hardness throughout



Size & Weight Parameters

Size	Weight (in kgs)	Size	Weight (in kgs)
Ball Ø 17	0.021	Ball Ø 60	0.904
Ball Ø 20	0.033	Ball Ø 70	1.436
Ball Ø 25	0.065	Ball Ø 80	2.144
Ball Ø 30	0.113	Ball Ø 90	3.050
Ball Ø 40	0.268	Ball Ø 100	4.189
Ball Ø 50	0.523	Ball Ø 125	8.179

Alloy Composition for Hyper Steel Media as per IS 6079 / 1989

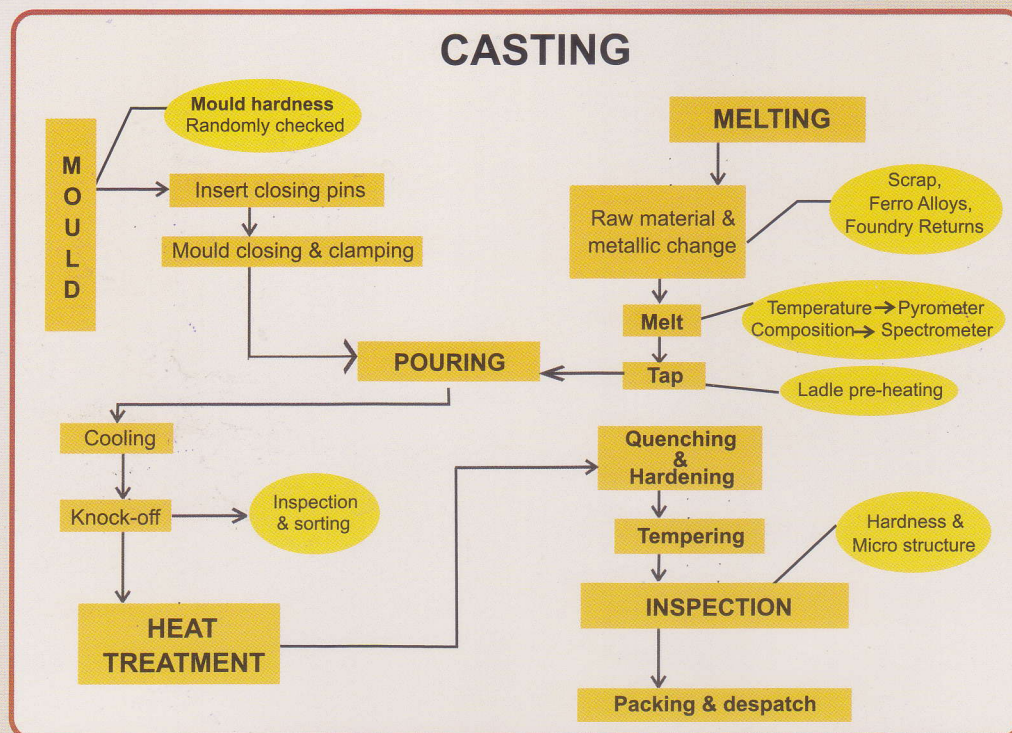
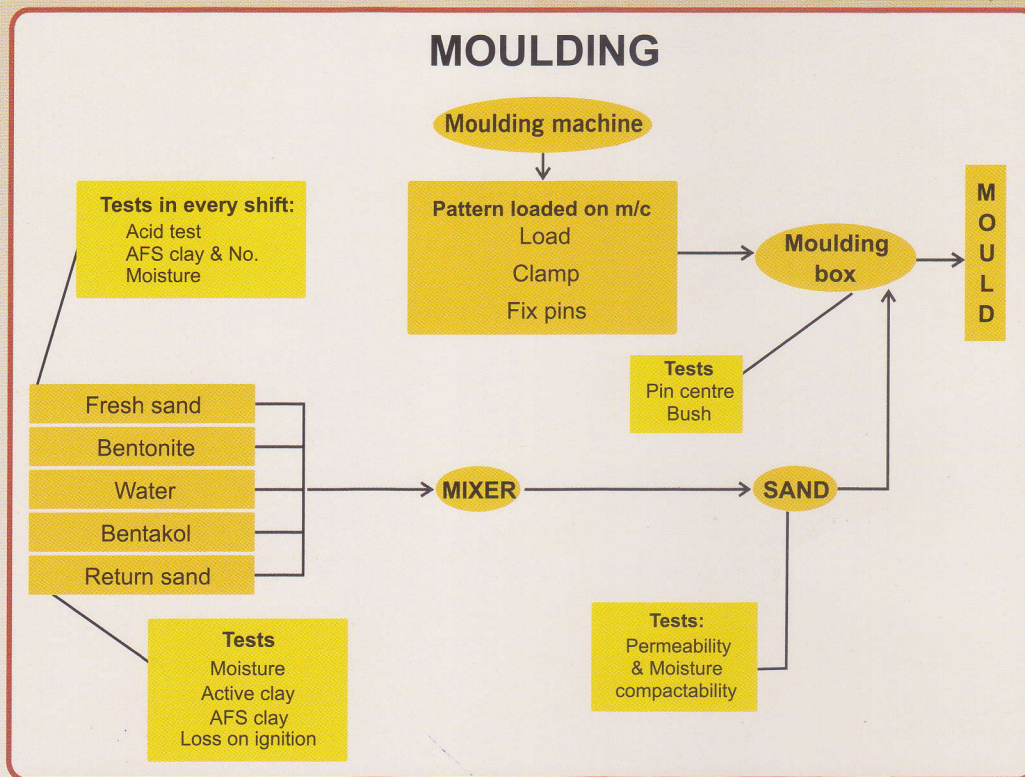
Alloys	100-60 mm	50-20 mm
Carbon	1.25 - 1.50%	1.60 - 1.90%
Silicon	1.00 % max.	
Manganese	1.25 - 1.50 %	
Chromium	1.50 - 2.00 %	
Sulphur	0.06 % max.	
Phosphorus	0.06 % max.	
Nickel	-	
Molybdenum	-	
Hardness	375-415 BHN	

Alloy Composition for High Chrome Media

Alloys	SEW Hard 12 (50 mm Ø & below)	SEW Hard 15	SEW Tough 17 (60 mm Ø & above)	SEW Tough 21
Carbon	2.1% to 3.5%	2.5% to 3.5%	2.1% to 2.6%	2.5% to 3.5%
Silicon	0.8% max.	0.8% max.	0.8% max.	0.8% max.
Manganese	1.0% max.	1.0% max.	1.0% max.	1.0% max.
Chromium	11.0% to 14.0%	14.0% to 16.0%	15.5% to 18%	20% to 22%
Sulphur & Phos	0.06% max.	0.06% max.	0.06% max.	0.06% max.
Nickel	0.5% max.	0.5% max.	0.5% max.	0.5% max.
Molybdenum	0.4% max.	0.4% max.	0.4% max.	0.4% max.
Hardness	62 HRC min.	63 HRC min.	60 HRC min.	60 HRC min.
Heat treatment	Oil quenched	Oil quenched	Oil quenched & tempered	Oil quenched & tempered

For wet grinding application, grinding balls with 22% - 30% chromium also made.

HIGH CHROME GRINDING MEDIA PROCESS





SEW has in place a very qualified team of personnel to design and deliver high quality Liners and Diaphragms with innovative technologies for superior performance of the mill.



- Lower cost
- Longer lifetime
- Easy to install or fit
- Reduced maintenance cost
- Optimum grinding efficiency
- Consistently higher production
- Optimum wear life due to improved metallurgy

Grades of high & low Chrome (Cr) Alloys Steel Castings

Chrome hard - 15	Recommended for first chamber shell liners, head wall liners & partition diaphragm grate plates								
Alloys	C	Si	Mn	Cr	P	S	Ni	Mo	Hardness
Minimum%	0.90%	0.30%	0.70%	12.00%	-	-	-	-	55.0 HRc
Maximum%	1.40%	0.80%	1.20%	15.00%	0.05%	0.05%	0.01%	0.50%	58.0 HRc
Hardness	Hardness is in the range of 55.0 to 58.0 HRC (561 to 615 BHN)								
Retained austenite	RA is restricted to 7.00% max								
Micro structure	Micro structure is predominantly discontinuous chromium carbides in matrix of tempered martensite. Free graphite - Nil, Pearlite 1.00% max, Retained austenite - 7.00% max								

Chrome hard - 25	Recommended for second chamber shell liners, back wall liners & discharge diaphragm grate plates								
Alloys	C	Si	Mn	Cr	P	S	Ni	Mo	Hardness
Minimum%	2.00%	0.30%	0.70%	22.00%	-	-	-	-	57.0 HRc
Maximum%	3.30%	0.80%	1.20%	28.00%	0.05%	0.05%	0.50%	0.50%	62.0 HRc
Hardness	Hardness is in the range of 57.0 to 62.0 HRc (595 to 690 BHN)								
Retained austenite	RA is restricted to 10.00% max								
Micro structure	Micro structure is predominantly discontinuous chromium carbides in matrix of tempered martensite. Free graphite - Nil, Pearlite 1.00% max, Retained austenite - 10.00% max								

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CRUSHER PARTS

SEW has wide range of patterns for popular crusher parts. We have in-house expert team with well equipped pattern shop to develop crusher parts for taking measurements, preparing drawings and producing patterns which becomes key for quality castings.

Types of Crusher Parts offered by SEW

- Jaw plates
- Side plates
- Cone & Mantle
- Bowl liner
- Tooth points
- Adopters
- Crusher hammer (Beater head type)
- Crusher hammer (Ring type - plain and toothed)

Benefits of SEW Crusher Parts

- Longer lifetime
- Lower operating cost
- Easy & safe installation
- Saving in labour & downtime
- Reduced wear rate
- Safety against breakage
- Reduced maintenance cost
- Consistently higher production

Grades & Specifications for manufacturing Crusher Parts, Liners & Diaphragms (Mg Steel) by SEW

Alloys	Grade I	Grade II	Grade III	Grade IV	Grade V
Carbon (C)	1.05% - 1.35%	0.90% - 1.05%	1.05% - 1.35%	0.70% - 1.30%	1.05% - 1.45%
Silicon (Si)	1.0% max	1.0% max	1.0% max	1.0% max	1.0% max
Manganese (Mn)	11.0% - 14.0%	11.5% - 14.0%	11.5% - 14.0%	11.5% - 14.0%	11.5% - 14.0%
Chromium (Cr)	-	-	1.5% - 2.5%	-	-
Phosphorus (P)	0.08% max	0.08% max	0.08% max	0.08% max	0.08% max
Sulphur (S)	0.025% max.	0.025% max	0.025% max	0.025% max	0.025% max
Nickel (Ni)	-	-	-	3.0% - 5.0%	-
Molybdenum (Mo)	-	-	-	-	1.8% - 2.1%
Hardness	229 BHN max	229 BHN max	229 BHN max	229 BHN max	229 BHN max





Certificate of Registration

This is to certify that

SHREE ENGINEERING WORKS.

Has been assessed by Elite Certifications Pvt. Ltd. and has been found to operate as a quality management system conforming to:

Standard: ISO 9001:2008 (QMS)

Address: G-552-C, ROAD NO. - 6, V.K.I AREA, JAIPUR - 302013, RAJASTHAN (INDIA)

Scope: MANUFACTURER OF HYPER STEEL GRINDING MEDIA, HI-CHROME GRINDING MEDIA, MANGANESE STEEL CASTING, & HI-CHROME CASTINGS.

Certificate Number: JAS/0313H/3236

Date of Issue: 01.03.2013

Date of Expiry: 28.02.2016

Director

JAS-ANZ



Acc. No. M4420210IU
www.jas-anz.org/register

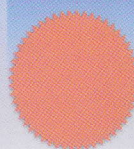
This Certificate is issued in accordance with the standard procedure for certification registration and is valid only until the date of expiry or earlier if so advised in writing to the certified organization by Elite Certifications Pvt. Ltd. It is issued subject to the continued availability of access at any time and without notice to the above named organization's premises for the purpose of assessment and surveillance related to the standard specified above and Elite terms & conditions. This certificate is property of Elite Certifications Pvt. Ltd. and whenever required can be recalled.

ELITE CERTIFICATIONS PVT. LTD.

H.O. - C-53, Sector - 2, Noida - 201 301 (U.P.)
E-mail : admin@elitecertification.com
Web : www.elitecertification.com



Quality Control



SEW

SHREE ENGINEERING WORKS

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E-mail : shreeengineeringworks.jpr@gmail.com, electrocast@in.com

Website : www.shreeengineeringworks.in

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