



# PRODUCT **PROFILE**

**FOR MICRO & SMALL ENTERPRISES**

**नालको**  **NALCO**  
**National Aluminium Company Limited**  
(A Government of India Enterprise)



## **PREFACE**

The booklet “PRODUCT PROFILE FOR MICRO & SMALL ENTERPRISES” provides ready made information in brief on different spares/materials used at S&P and M&R Complexes, which can be developed and supplied by Micro and Small Entrepreneurs. Though the information available in the booklet are not exhaustive but may be of interest to the entrepreneurs to start with.

This booklet contains the following information on each item:

1. Colour Photograph
2. Specification
3. Annual requirement with an approximate unit basic price

If desired, the MSEs can see these items in the Plants and further discussions with the Users / Technical Departments can be arranged.

The booklet is also informative in brief on downstream industries & service providing units those can be established by interested entrepreneurs in and around Angul and Damanjodi for mutual benefit of the entrepreneurs and NALCO.

It has been the endeavor of NALCO, since inception, to expand its vendor base and preference is always given to the entrepreneurs within the state. With the various policies enforced by Government of India for development of MSEs and the facilities extended by Nalco, it is felt that this booklet shall be of help to the MSEs to be the business partners of this Company.





## **NALCO: AN OVERVIEW**

National Aluminium Company Limited (NALCO) is a Schedule 'A' Navratna CPSE established on 7th January, 1981 having its registered office at Bhubaneswar. It is one of the largest integrated Bauxite-Alumina-Aluminium-Power Complex in the Country. At present, Government of India holds 51.28% of paid up equity capital. The Company has been operating its captive Panchpatmali Bauxite Mines for the pit head Alumina refinery at Damanjodi, in the District of Koraput in Odisha and Aluminium Smelter & Captive Power Plant at Angul. As a part of green initiative, NALCO has installed 198 MW Wind Power Plants at various locations in India and 800kW proof top Solar Power Plants at its premises to join hands for carbon neutrality. From the day so first commercial operation since 1987 the Company has continuously earned profits for last 35 years. Despite the Global COVID-19 pandemic, NALCO has posted Highest ever sales revenue of Rs.14,181 Crore and Highest ever PAT of Rs. 2,952 Crore in FY2021-22. The Company achieved full capacity production of 4.6 lakh tonne, with all 960 POTs in operation in its Aluminium Smelter for the first time since inception in FY2021-22. The Company has also achieved highest ever Bauxite production of 75.11 lakh tonne in FY2021-22.

## **VISION**

To be a premier and Integrated company in the Aluminium value chain with strategic presence in Mining both domestic & global, Metal sand Energy sectors.

## **MISSION**

To sustainably grow multi-fold in Mining, Alumina and Aluminium business along with select diversification in Minerals, Metal sand Energy sectors, while continuously improving on efficiency and business practices thus enhancing value for all stake holders.

## **CORE VALUES: 'BEST'**

- ❖ **Benefitting Stake holders**  
We provide our customers, supplier sand other stake holders with utmost level of value, service and satisfaction.
- ❖ **Excellence and quality**  
We ensure that our products, manufacturing & business processes adhere to the highest quality levels and standards.



❖ **Sustainability**

We relentlessly pursue sustainable practices and create a positive impact on the communities we engage with.

❖ **Trust & Integrity**

We conduct our selves with dignity, integrity, equity, transparency and accountability to build trust.

## NEW CORPORATE PLANS

The new plan envisages NALCO to reach a turnover of Rs.18,171 crore with PAT of Rs.1,693 crore by 2024 with enhancement of the smelting capacity to 1.1 million tons & refining capacity to 3.27 million tons. The long term strategy foresees the company to reach a turn over of Rs.31,248 crore and a PAT of Rs.3,010 crore by 2032.

The corporate plan also envisages backward integration to CT Pitch & Caustic Soda; forward integration to Extrusion, Foils & Castings; expanding value addition capacities in Wirerods & Rolled Products; diversifying into commercial mining in Bauxite & Chromite, Conductors & Lithium-Ionbatteries.

It may be noted that the Corporate Plan has been developed as per the guidelines of NITI Aayog, envisaging 3 years action plan, 7 years strategy and 15 years vision to have progressive growth of the company. This also includes a forward looking new vision, mission and values of the company which will give a direction to the company assuring steady growth, minimizing the price volatility of commodities while ensuring profitability.

## OPERATIONS

### BAUXITE MINES:

On Panchpatmali hills of Koraput district in Odisha, a fully mechanized open cast mine is in operation since November, 1985, serving feedstock to Alumina Refinery at Damanjodi located on the foothills. Present capacity of Mines is 74.5 lakh TPA. Panchpatmali plateau stands at elevation of 1154m to 1366m above mean sea level. Bauxite occurs over the full length of the Panchpatmali plateau, which spans over 18kms.







### **ALUMINA REFINERY:**

The Alumina Refinery is located at Damanjodi, Odisha, approximately 14KM from the bauxite mine at Panchpatmali. The mined-out bauxite is transported from captive mine to refinery by a 14.6KM long single-light multi-curve 1800 tonnes per hour (TPH) capacity cable belt conveyor. The alumina produced is transported to aluminium smelter at Angul (Odisha) and to Vizag (Andhra Pradesh) port by rail.

The present capacity of Alumina Refinery is 22.75 lakh TPA. Alumina produced is used to meet Company's requirements for production of primary aluminium at smelter. The surplus alumina is sold to third parties in the export markets.



### **SMELTER PLANT:**

The present capacity of smelter is 4.60 lakh TPA. Alumina is converted into primary aluminium through a smelting process by using electrolytic reduction. From the pot-line, the molten aluminium is routed to either the casting units, where the aluminium can be cast into ingots, sow ingots, tee ingots, billets, wire rods, cast strips and alloy ingots, or to RPU where the molten aluminium is rolled into various cold-rolled products or cast into aluminium strips.



Nalco acquired and subsequent merged International Aluminium Products Limited (IAPL), the 50,000 tpa export-oriented Rolled Products Unit with Nalco. The RPU is integrated with the Smelter Plant at Angul for production of aluminium cold rolled sheets and coils from continuous caster route based on the advanced technology of FATA Hunter, Italy. It has also started production of another variety of rolled product named as chequered sheet with thickness ranging from 0.60mm to 3.0mm.

# MSE PRODUCT PROFILE

## INDEX PAGE (SMELTER PLANT)

SL. NO.	DESCRIPTION OF ITEM	UNIT	PAGE NO.
1	CHIESEL FOR CRUST BREAKER(PTM)	SMELTER	1
2	STUFFING BOX	SMELTER	1
3	STUD FOR CUST BREAKER CHIESEL	SMELTER	2
4	M.S. FLAT WASHER	SMELTER	2
5	ANODE LOCKING CLAMP	SMELTER	3
6	POT HOOD HANDLE	SMELTER	3
7	U-HOOK	SMELTER	4
8	COTTON HAND GLOVES	SMELTER	4
9	SCRAPER FOR RODDING SHOP	SMELTER	5
10	METAL MEASUREMENT ROD	SMELTER	5
11	GREY COLOR MARKIN CLOTH	SMELTER	6
12	CIRCULAR DISC	SMELTER	6
13	C.I. SAMPLE LADLE	SMELTER	7
14	SKIMMER	SMELTER	7
15	PINE WOOD RUNNER	SMELTER	8
16	PLASTIC FOIL (LDPE SHEET)	SMELTER	8
17	PNEUMATIC HOSE	SMELTER	9
18	PNEUMATIC TOOL HOSE	SMELTER	9
19	METAL MEASUREMENT ROD	SMELTER	10
20	SMALL SPOON	SMELTER	10
21	PEEP HOLE RING	SMELTER	11
22	PEEP HOLE COVER	SMELTER	11
23	BLEACHING POWER	SMELTER	12
24	ALUM (NON FERRIC)	SMELTER	12
25	MACHINE TEASED WHITE COTTON WASTE	SMELTER	13
26	WOODEN WEDGE	SMELTER	13
27	SKIMMING TOOL	SMELTER	14
28	PEEP HOLE COVER (BOTTOM)	SMELTER	14
29	SOW MOULD INGOT SKIMMING TOOL	SMELTER	15
30	INGOT SKIMMING TOOL	SMELTER	15



# MSE PRODUCT PROFILE

SL. NO.	DESCRIPTION OF ITEM	UNIT	PAGE NO.
31	ALUMINIUM SCRAPER	SMELTER	16
32	SCRAPER FOR CRUST BREAKER	SMELTER	16
33	TAPPING SPOUT END TUBE	SMELTER	17
34	TAPPING SPOUT INTERMEDIATE TUBE	SMELTER	17
35	SINTERING CYLINDER	SMELTER	18
36	ALUMINIUM HOOK	SMELTER	18
37	THERMOCOUPLE OUTER SEATH	SMELTER	19
38	M.S. SOW MOULD	SMELTER	19
39	EAR MUF	SMELTER	20
40	FACE MASK	SMELTER	20
41	SAFETY GOOGLES	SMELTER	21
42	ANTI DUST MASK RESPIRATOR	SMELTER	21
43	INDUSTRIAL LEATHER SAFETY SHOE (GENTS)	SMELTER	22
44	INDUSTRIAL LEATHER SAFETY SHOE (LADIES)	SMELTER	22
45	INDUSTRIAL SAFETY HELMET	SMELTER	23
46	EAR PLUG	SMELTER	23

:  
:

# MSE PRODUCT PROFILE

## INDEX PAGE (CAPTIVE POWER PLANT)

SL.NO	DESCRIPTION OF ITEM	UNIT	PAGE NO.
1	COLLAR TYPE JOURNAL SHAFT SLEEVE	CPP	24
2	TROUGHING IDLER	CPP	25
3	MILD STEEL LINERS FOR PENDROL CLIPS	CPP	25
4	END CUT MS LINER	CPP	26
5	ELASTIC RAIL CLIPS	CPP	26
6	BRACKET FOR RETURN IDLER	CPP	27
7	TOOTH RING HAMMER	CPP	27
8	BOWL EXTENSION RING	CPP	28
9	SEPARATOR TOP LINER	CPP	28
10	SCREEN BAR CLAMP BOLT	CPP	29
11	TROUGHING IDLER FRAME	CPP	29
12	SLEEVE FOR SOOT BLOWER GEAR BOX	CPP	30
13	OUTER ARM FOR EMITTING ELECTRODE	CPP	30
14	OUTER ARM FOR COLLECTING ELECTRODE	CPP	31
15	INNER ARM FOR	CPP	31
16	SHOCK RECEIVING PAD	CPP	32
17	SET RING	CPP	32
18	PLAIN BEARING	CPP	33
19	IMPACT IDLER	CPP	33
20	SCRAPER BAR	CPP	34
21	FLUSHING APPARATUS	CPP	34



**ITEMS  
IDENTIFIED  
FOR DEVELOPMENT  
BY MSE**

---

**SMELTER PLANT  
NALCO, ANGUL**

MSE  
PRODUCT  
PROFILE

1. CHIESEL FOR CRUST BREAKER(PTM)

MATERIAL CODE	: 20120019050
MATERIAL SPECIFICATION	: X20Cr25Ni20 AS PER IS:1570(V)-1985 (EQUIVALENT OF SS 310)
APPLICATION	: IT IS AN ATTACHMENT FOR PTM CRUST BREAKER, USED TO BREAK THE SOLID CRUST DURING ANODE CHANGING.
ANNUAL REQUIREMENT	: 500 Nos



2. STUFFING BOX

MATERIAL CODE	: 20180000520
MATERIAL SPECIFICATION	: MS SHEET FE410WA, 2mm Thick AS PER IS: 2062-2006
a) ITEM SHALL BE FORMED BY COLD DRAWING PROCESS b) PAINTED WITH TWO COATS OF RED-OXIDE PRIMER	
APPLICATION	: TO SEAL END PORTIONS OF CATHODE BARS PROTRUDING FROM POTS
ANNUAL REQUIREMENT	: 6000 Nos





**MSE**  
**PRODUCT**  
**PROFILE****3. STUD FOR CRUST BREAKER CHIESEL**

MATERIAL CODE	: 20120019120
MATERIAL SPECIFICATION	: ASTM 1038 (BLACKENED)
APPLICATION	: SPARE FOR CRUST BREAKER USED IN POT TWIN HOPPER IN POT LINE.
ANNUAL REQUIREMENT	: 500 Nos

**4. MS FLAT WASHER**

MATERIAL CODE	: 90905052000
SIZE	: 50x50x10 WITH HOLE DIA 21mm AT CENTER FOR M20 BOLT SIZE
MATERIAL SPECIFICATION	: FE 410WA, AS PER IS 2062-2006
APPLICATION	: FOR FASTENING PURPOSE.
ANNUAL REQUIREMENT	: 300 Nos



MSE  
PRODUCT  
PROFILE

5. ANODE LOCKING CLAMP

MATERIAL CODE	: 24650976180
MATERIAL SPECIFICATION	: AS PER DRAWING
APPLICATION	: CLAMPING OF THE ANODE STEM IN THE POTS IN POTLINE.
ANNUAL REQUIREMENT	: 2000 Nos



6. POT HOOD HANDLE

MATERIAL CODE	: 20124030110
MATERIAL SPECIFICATION	: AS PER DRAWING
APPLICATION	: IT IS AN ATTACHMENT TO POT HOOD.
ANNUAL REQUIREMENT	: 25000 Nos





## MSE PRODUCT PROFILE

### 7. U-HOOK

MATERIAL CODE : 24650982590  
MATERIAL OF SPECIFICATION : FE 410WA, AS PER IS 2062-2006

APPLICATION : EXTRACTION OF SOLIDIFIED POURING MATERIAL FROM MOULD & CHARGING OF THE SAME INTO THE INDUCTION FURNACE.

ANNUAL REQUIREMENT : 3000 Nos



### 8. COTTON HAND GLOVES

MATERIAL CODE : 94605005500  
SIZE : 16"  
MATERIAL SPECIFICATION : :COTTON CANVAS CLOTHES WIGHT 330 Gm/SQ.mt WITH FLANNEL CLOTH MATERIAL INSIDE PORTION OF THE HAND GLOVES INCLUDING FINGERS. A SUITABLE SOFT PADDING OF SIZE 90x90 MUST BE PROVIDED ON PALM REGION COVERING MINIMUM 95% OF PALM REGION TO GIVE MAXIMUM PROTECTION AGAINST HEAT.

APPLICATION : SAFETY PURPOSE  
ANNUAL REQUIREMENT : 60,000 PAIRS



## MSE PRODUCT PROFILE

### 9. SCRAPER FOR RODDING SHOP

MATERIAL CODE	: 24650981090
MATERIAL SPECIFICATION	: 40C8, AS PER IS:1570(II)/1979
APPLICATION	HELPS IN REMOVAL OF SOLIDIFIED SPILLED OFF POURING MATERIAL USED FOR SEALING OF STEM BRACKET WITH ANODE.
ANNUAL REQUIREMENT	: 5000 Nos



### 10. METAL MEASUREMENT ROD

MATERIAL CODE	: 24650977200
MATERIAL SPECIFICATION	: FE 410WA, AS PER IS 2062-2006
APPLICATION	FOR MEASURING METAL /BATH LEVEL IN POTS IN POT LINE 1 & 2.
ANNUAL REQUIREMENT	: 1000 Nos



## MSE PRODUCT PROFILE

### 11. GREY COLOR MARKIN CLOTH

MATERIAL CODE	: 88106014190
SIZE	: 1 METER LENGTH X 1 METER WIDTH IN CUT PIECE
MATERIAL SPECIFICATION	: FABRIC
APPLICATION	: SUPPLIED TO EACH WORKER FOR HIS USE IN COVERING HIS FACE, NECK ETC.
ANNUAL REQUIREMENT	: 10,000 NOS



### 12. CIRCULAR DISC

MATERIAL CODE	: 22970908380
MATERIAL SPECIFICATION	: FE 410WA, AS PER IS 2062-2006
APPLICATION	: DISC FOR SKIMMER AT RODDING SHOP
ANNUAL REQUIREMENT	: 6300 Nos

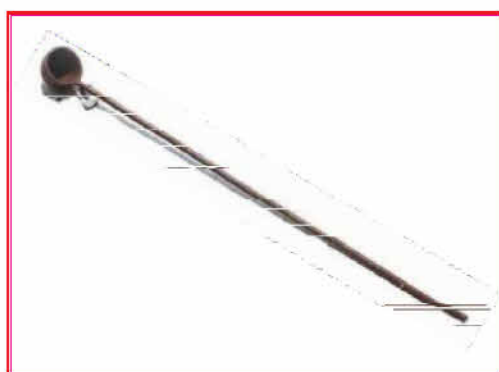




## MSE PRODUCT PROFILE

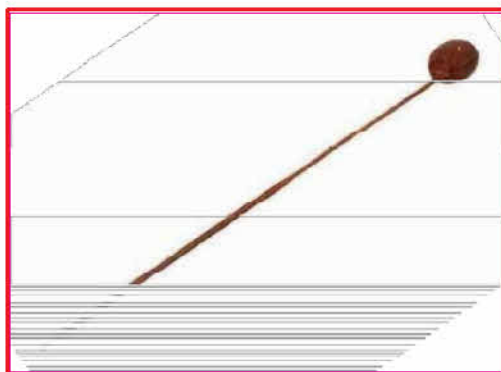
### 13. C.I. SAMPLE LADLE

MATERIAL CODE	: 24650985090
MATERIAL SPECIFICATION	: FE 410WA, AS PER IS 2062-2006
APPLICATION	: FOR SAMPLING CAST IRON IN RODDING SHOP.
ANNUAL REQUIREMENT	: 400 Nos



### 14. SKIMMER

MATERIAL CODE	: 24650980110
MATERIAL SPECIFICATION	: FE 410WA, AS PER IS 2062-2006
APPLICATION	: SKIMMING MOLTEN CAST IRON IN RODDING SHOP
ANNUAL REQUIREMENT	: 9000 Nos



15. PINE WOOD RUNNER

MATERIAL CODE	: 26315050100
MATERIAL SPECIFICATION	: WOOD
APPLICATION	: PACKAGING OF BILLETS IN BCF, CH-A
ANNUAL REQUIREMENT	: 25000 Nos



16. PLASTIC FOIL (LDPE SHEET)

MATERIAL CODE	: 88020006350
SIZE	: 7000 mm X 8500 mm X 0.10 mm
MATERIAL SPECIFICATION	: LOW DENSITY POLYTHYLENE FILM, IS :2508-1984
APPLICATION	: FOR SEALING PURPOSE IN HEAT REGULATING SYSTEM OF BAKING FURNACE.
ANNUAL REQUIREMENT	: 11,000 KG



## MSE PRODUCT PROFILE

### 17. PNEUMATIC HOSE

MATERIAL CODE	: 87602414640
SIZE	: 1" (ID 25 mm) TO WITHSTAND PRESSURE 10.2 KGF/SQ.CM
MATERIAL SPECIFICATION	: GR-II, AS PER IS : 446-1987
APPLICATION	: USED IN DIFFERENT PNEUMATIC EQUIPMENTS FOR AIR SUPPLY, AIR BLOWING IN DIFFERENT LOCATIONS.
ANNUAL REQUIREMENT	: 9000 METER



### 18. PNEUMATIC TOOL HOSE

MATERIAL CODE	: 87602414710
SIZE	: 3/4" (ID 20 mm) TO WITHSTAND PRESSURE 7-14 KGF/sQ.CM
MATERIAL SPECIFICATION	: GR-II, AS PER IS : 446-1987
APPLICATION	: USED IN DIFFERENT PNEUMATIC EQUIPMENTS FOR AIR SUPPLY, AIR BLOWING IN DIFFERENT LOCATIONS
ANNUAL REQUIREMENT	: 4000 METER





19. METAL MEASUREMENT ROD

MATERIAL CODE	: 24650901980
MATERIAL SPECIFICATION	: AS PER DRAWING
APPLICATION	: FOR MEASURING METAL /BATH LEVEL IN POTS IN POT LINE 3 & 4.
ANNUAL REQUIREMENT	: 1000 Nos



20. SMALL SPOON

MATERIAL CODE	: 24650650020
MATERIAL SPECIFICATION	: FE 410WA, AS PER IS 2062-2006
APPLICATION	: USED FOR COLLECTING LIQUID METAL FROM POT FOR SAMPLING PURPOSE.
ANNUAL REQUIREMENT	: 150 Nos



## MSE PRODUCT PROFILE

### 21. PEEP HOLE RING

MATERIAL CODE	: 22705902490	
MATERIAL SPECIFICATION	: CAST IRON	
	% C : 2-2.5	%Mn : 0.7-1.2
	% Ni: 1-2	% Si : 0.4-0.6
	% Cr : 26-30	% Cu : 0.7-1.3
APPLICATION	: SUPPORTING RING PLATE FOR BURNER BASE & LID COVER FOR FLUE WALLIN BAKE OVEN	
ANNUAL REQUIREMENT	: 300 Nos	



### 22. PEEP HOLE COVER

MATERIAL CODE	: 22705902320
MATERIAL SPECIFICATION	: AS PER DRAWING
APPLICATION	: COVER PLATE FOR PEEP HOLE FOR FLUE WALLIN BAKING FURNACE
ANNUAL REQUIREMENT	: 1800 Nos



**MSE**  
**PRODUCT**  
PROFILE**23. BLEACHING POWDER**

MATERIAL CODE	: 81190017340
MATERIAL SPECIFICATION	: % CHLORINE BY MASS — 32, AS PER IS:1065-1989
APPLICATION	: SANITARY
ANNUAL REQUIREMENT	: 100 MT

**24. ALUM (NON FERRIC)**

MATERIAL CODE	: 94102004040
MATERIAL SPECIFICATION	: GRADE :TECH AS PER IS:260-2001
INSOLUABLE MATTER % BY MASS	: 0.3
PH ( OF 5% SOLUTION ) MINIMUM	: 2.8
IRON (AS Fe) % BY MASS MAXIMUM	: 0.01
ALUMINIUM (AL <sub>2</sub> O <sub>3</sub> ) %BY MASS MINIMUM	: 1.7
APPLICATION	: SEWAGE WATER TREATMENT FOR COAGULATION OF DIRT PARTICLES.
ANNUAL REQUIREMENT	: 1000 MT





## MSE PRODUCT PROFILE

### 25. MACHINE TEASED WHITE COTTON WASTE

MATERIAL CODE	: 88100012550
MATERIAL SPECIFICATION	: GR-I, AS PER IS:5485-1980
APPLICATION	: FOR CLEANING PURPOSE.
ANNUAL REQUIREMENT	: 20,000 KG



### 26. WOODEN WEDGE

MATERIAL CODE	: 95305010120
MATERIAL SPECIFICATION	: WOOD- GAMBHARI, ASANA, CHAKUNDA, KURUMA ETC
APPLICATION	: SUPPORTING WEDGE FOR GREEN ANODE IN THE PIT OF BAKING FURNACE
ANNUAL REQUIREMENT	: 7000 Nos



# MSE PRODUCT PROFILE

## 27. SKIMMING TOOL

MATERIAL CODE  
MATERIAL SPECIFICATION

26502730360  
FE 410WA, AS PER IS 2062-2006

APPLICATION  
ANNUAL REQUIREMENT

TO SKIM DROSS FROM METAL SURFACE IN CH-B  
500 Nos



## 28. PEEP HOLE COVER (BOTTOM)

MATERIAL CODE  
MATERIAL SPECIFICATION

: 22705902700  
: X20Cr25Ni20 AS PER IS:1570(V)-1985  
(EQUIVALENT OF SS 310)

APPLICATION

: PART OF PEEP HOLE COVER FOR FLUE WALL IN BAKING  
FURNACE

ANNUAL REQUIREMENT

: 300 Nos



## MSE PRODUCT PROFILE

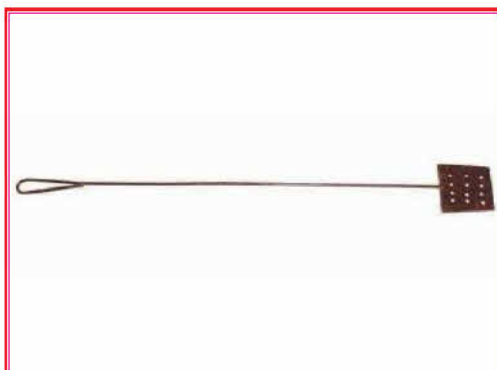
### 29. SOW MOULD INGOT SKIMMING TOOL

MATERIAL CODE	: 21705006560
MATERIAL SPECIFICATION	: FE 410WA, AS PER IS 2062-2006
APPLICATION	: TO SKIM DROSS FROM METAL SURFACE IN CH-A
ANNUAL REQUIREMENT	: 150 Nos



### 30. INGOT SKIMMING TOOL

MATERIAL CODE	: 21711050270
MATERIAL SPECIFICATION	: FE 410WA, AS PER IS 2062-2006
APPLICATION	: TO SKIM DROSS FROM METAL SURFACE IN CH-A & B
ANNUAL REQUIREMENT	: 3000 Nos





## MSE PRODUCT PROFILE

### 31. ALUMINIUM SCRAPER

MATERIAL CODE	: 24650982040
MATERIAL SPECIFICATION	: MATERIAL OF REFER DRAWING
APPLICATION	: FOR ANODE DRESSING IN POT LINE
ANNUAL REQUIREMENT	: 500 Nos



### 32. SCRAPER FOR CRUST BREAKER

MATERIAL CODE	: 20120021080
MATERIAL SPECIFICATION	: CAST STEEL, GR-9 AS PER IS:4522-1986
APPLICATION	: USED IN TWIN HOPPER AS BREAKER CHISEL ATTACHMENT IN POT LINE
ANNUAL REQUIREMENT	: 300 Nos



MSE  
PRODUCT  
PROFILE

33. TAPPING SPOUT END TUBE

MATERIAL CODE	: 20525002590
MATERIAL SPECIFICATION	: HEAT RESISTANT GREY CAST IRON GR-II, TYPE-C AS PER IS:3355-1974
APPLICATION	: USED IN TAPPING LADLE SPOUT AS LOWER PORTION IN POT LINE
ANNUAL REQUIREMENT	: 400 Nos



34. TAPPING SPOUT INTERMEDIATE TUBE

MATERIAL CODE	: 20525001090	
MATERIAL SPECIFICATION	: GREY CAST IRON	
	% P : 0.025 (MAX)	% Si : 1.8-2.1
	% S : 0.025-0.03	% Cr : 0.5-0.7
	% C : 3.6-3.8	% Mn: 0.7-1.0
HARDNESS	: 120-170 BHN	
APPLICATION	: USED IN TAPPING LADLE SPOUT AS INTERMEDIATE PORTION IN POT LINE	
ANNUAL REQUIREMENT	: 300 Nos	



## MSE PRODUCT PROFILE

### 35. ALUMINIUM HOOK

MATERIAL CODE  
SPECIFICATION

: 81418103990

MATERIAL SPECIFICATION  
APPLICATION  
ANNUAL REQUIREMENT

: SIZE: 330X85MM, ROD DIA:

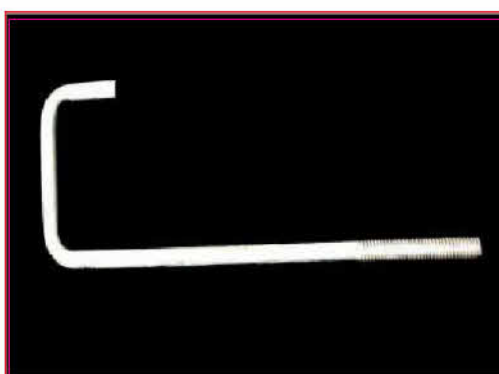
8MM. NUT:15X15X12MM (1 NO.).

WASHER: 25MM DIA x 1.5 MM THICK(1 NO).

: ALUMINIUM ALLOY (IS: 64430)

: CONSTRUCTION OF ROOF

: 5000 Nos



### 36. SINTERING CYLINDER

MATERIAL CODE

: 94031003110

MATERIAL SPECIFICATION  
APPLICATION

: FE 410WA, AS PER IS 2062-2006

ANNUAL REQUIREMENT

: USED AS MAIN FRAME FOR INDUCTION FURNACES

: 120 Nos



## MSE PRODUCT PROFILE

### 37. THERMOCOUPLE OUTER SEATH

MATERIAL CODE	: 86006994550
MATERIAL SPECIFICATION	: FE 410WA, AS PER IS 2062-2006
APPLICATION	: PROTECTIVE TUBE FOR THERMOCOUPLE IN BAKING FURNACE
ANNUAL REQUIREMENT	: 2000 Nos



### 38. M.S. SOW MOULD

MATERIAL CODE	: 21705853780
MATERIAL SPECIFICATION	: FE 410WA, AS PER IS 2062-2006
APPLICATION	: FOR CASTING OF SOW INGOTS 600 Kg IN CAST HOUSE-A
ANNUAL REQUIREMENT	: 6 Nos





## MSE PRODUCT PROFILE

### 39. EAR MUFF

MATERIAL CODE	: 94650005050
MATERIAL SPECIFICATION	: a) SUITABLE FOR PERSONAL HEARING PROTECTION AND TO PREVENT OR REDUCE MOST CASES OF HEARING IMPAIRMENT. b) ATTACHMENT SHALL BE AUTOMATIC HEAD EIZE. c) EAR CUSHIONS SHALL BE WIDE, SOFT, COMFORTABLE & EASILY REPLACABLE d) FLEXIBLE HEAD BAND WITH ADDED CUSHION PAD FOR COMFORT. e) THE ITEM SHOULD CONFIRM TO IS/CE/EN/ANSI STANDARD. f) QUICK-CLICK ADJUSTMENT FACILITY PERMITS RAPID & EASY ADJUSTMENT. g) NOISE REDUCTION RATING SHALL BE MINIMUM 21 DB.
APPLICATION	: SAFETY APPLIANCE USED AS PPE
ANNUAL REQUIREMENT	: 100 NOS



### 40. FACE MASK

MATERIAL CODE	: 94608006630
SPECIFICATION	: DISPOSABLE FACE MASK FOR PROTECTION AGAINST HYDROGEN FLUORIDE WITH FILTERING EFFICIENCY OF ATLEAST 95% AGAISNT 0.3 MICRON PARTICULATE, VALVE/NON-VALVE TYPE MOLDED CUP SHAPE DESIGN RESPIRATOR SUITABLE FOR ROOM WORK ENVIRONMENT WITH SPECIAL STIFFENED INNER SHELL AND TWIN STAPLED/WELDED/STITCHED HEAD BAND TO ALLOW RETENTION OF SHAPE AFTER REPEATED USE.
APPLICATION	: SAFETY APPLIANCE USED AS PPE
ANNUAL REQUIREMENT	: 9000 NOS



# MSE PRODUCT PROFILE

## 41. SAFETY GOGGLES

MATERIAL CODE : 94606001190

MATERIAL SPECIFICATION : PROTECTIVE EYE WEAR WITH '0" POWER NON REMOVABLE ANTI SCRATCH, SINGLE MOULDED OPTICAL LENSE HAVING THICKNESS 2.5MM 100% POLYCARBONATE WRAP AROUND DESIGN WITH ONLY SIDE SHIELDS COLOURLESS FOR INDUSTRIAL USE. THE SPECTACLE MUST BE WORN EASILY OVER NORMAL GLASSES WITH GOOD FINISH. THE OFFER MUST ACCOMPANY WITH A SAMPLE AND DURING BULK SUPPLY NALCO LOGO WILL BE IMPRINTED ON THE FRAME. A THICK BLACK COTTON GOOD QUALITY THREAD TO BE ATTACHED WITH THE FRAME BY MAKING HOLE ON FREE END OF THE FRAME SO THAT THIS CAN BE HANGED ON THE NECK WHILE NOT IN USE.

APPLICATION : SAFETY APPLIANCE USED AS PPE

ANNUAL REQUIREMENT : 3000 NOS



## 42. ANTI DUST MASK RESPIRATOR

MATERIAL CODE : 94608025190

MATERIAL SPECIFICATION : (1) VALVE/ NON VALVE TYPE MOULDED CUP SHAPE DESIGN RESPIRATOR SUITABLE FOR NALCO, SMELTER PLANT IN CARBON AREA, CAST HOUSE, ROLLING PLANT WORK ENVIRONMENT WITH SPECIAL STIFFENED INNER SHELL AND WELDED ( METAL FREE ) / STITCHED HEAD BAND TO ALLOW RETENTION OF SHAPE AFTER REPEATED USE. HIGH FILTERING EFFICIENCY OF AT LEAST 95% AGAINST 0.3 MICRON PARTICULATE SOLID AND LIQUID AEROSOLS FREE OF OIL WITH FLOW RATE OF 85 LTRS. PER MINUTE (LPM). THE RESPIRATOR SHALL BE DESIGNED FOR MORE THAN A SINGLE SHIFT AND NO ALTERNATION OF SHAPE AFTER REPEATED USE.  
(2) THE RESPIRATOR SHALL BE FFP2 CLASS AS CLASSIFIED IN CLAUSE 4 OF IS:9473-2002 AND CONFIRMING TO IS:9473-2002 OR ITS EQUIVALENT INTERNATIONAL STANDARD AND SHALL BE MARKED WITH RELEVANT BIS / NIOSH / CE/ AS / NZS.  
(3) RESPIRATOR SHALL BE MADE UP OF ELECTROSTATICALLY CHARGED MICRO FIBRES CAPABLE OF FILTERING 0.3 MICRON PARTICLE SIZE AND TO MAKE BREATHING EASIER AND COOLER.  
(4) THE RESPIRATOR SHALL BE SUITABLE FOR USE AGAINST CARBON DUST, AND PARTICLES AGAINST GRINDING, SANDING, SWEEPING, SAWING, BAGGING, METAL, WOOD ETC.  
(5) THE NOSE CLIP SHALL BE MADE OF SPECIAL ALUMINIUM / PLASTIC ATTACHED WITH A HIGH QUALITY ACRYLIC ADHESIVE TO ENSURE UNIFORM ADHESION AND RUST FREE LIFE. THE CLIP SHOULD ADJUST EASILY AND SECURE RIGHT FIT ACROSS A VARIETY OF FACE SIZES.  
(6) THE HEAD BAND SHALL BE NON ALLERGIC POLYPROPYLENE MATERIAL AND SHALL PROVIDE GOOD ELASTIC STRENGTH THROUGH OUT THE LIFE OF THE MASK.  
(7) THE NOSE FOAM SHALL BE MADE OF NON ALLERGIC POLYURETHANE MATERIAL OR EQUIVALENT SHOULD SUPPORT THE NOSE CLIP FOR SECURE AND COMFORT FACE FIT.

APPLICATION : SAFETY APPLIANCE USED AS PPE

ANNUAL REQUIREMENT : 34000NOS





## MSE PRODUCT PROFILE

### 43. INDUSTRIAL LEATHER SAFETY SHOE(GENTS)

MATERIAL CODE	: 94602015460
MATERIAL SPECIFICATION	: SAFETIX KARTIX LOW- INDUSTRIAL LEATHER SAFETY SHOE KARTIX-LOW BLACK FULL GRAIN LEATHER DERBY SHOE WITH PADDED COLLAR AND TONGUE, IMPORTED STEEL TOE CAP AND ANTI-SKID, ANTI-STATIC IN L03 MOULD HAVING RESISTANT TO ACID, ALKALI, OIL AND WATER. HIGH QUALITY CAMBRELLE LINING, AS PER EN 345:1993 AND NEW IS:15298-2002.
APPLICATION	: SAFETY APPLIANCE USED AS PPE
ANNUAL REQUIREMENT	: 60 NOS



### 44. INDUSTRIAL LEATHER SAFETY SHOE(LADIES)

MATERIAL CODE	: 9460201950
MATERIAL SPECIFICATION	

BATA SAFEMASTER DERBY LOW CUT PU DUAL,DENSITY ISI MARKED SAFETY SHOES CONFORMING TO IS 15298 PART -2 BIS MARK NO.CM/L-5428669 WITH FOLLOWING SPECIFICATIONS:-  
SAFETY FOOTWEAR OF DESIGN-A(DERBY),OIL RESISTANT,ANTISTATIC,  
POLYURETHANE(PU) DOUBLE DENSITY,OUTSOLE WITH SHOE UPPER MADE OF CORRECTED GRAIN(CG) LEATHER IN BLACK COLOUR(200+/-4)JOULE STEEL TOE CAP FOR TOE PROTECTION,RUST RESISTANT FOUR METAL EYELETS ON THE FACING AND BLACK COLOUR NYLON FLAT LACES,SOFT PADDED COLLAR,CUSHIONED TONGUE AND SOCKS,ENTIRE CAMBRELLE (BREATHABLE) LINING IN BLACK COLOUR.EACH PAIR SHALL BE PACKED IN A CARDBOARD BOX WEIGHT OF SHOE PAIR SHOULD BE IN THE RANGE OF 1000+/-50 GRAM. THE SHOES SHALL BE CLEARLY AND PERMANENTLY MARKED AS PRESCRIBED IN THE STANDARD.ARTICLE NO. 825-6281 AS PER SAMPLE SUBMITTED BY YOU. THE PARTY SHOULD SUBMIT THE BIS APPROVAL CERTIFICATE,SOLE PERFORMANCE i.e FOR TONGUE, INSOLE OUT SOLE SHALL BE STRICTLY AS PER TABLE 2 OF IS 15298 PART-2.A) STEEL A TOE CAP PROTECTION, B) OIL RESISTANT, C) ANTISTATIC,D) ELECTRICAL RESISTANT, DIRECT INJECTION PROCESS CERTIFICATE TO BE SUBMITTED FROM (FDDI) FOOTWEAR DESIGN & DEVELOPMENT INSTITUTE, GOVT.OF INDIA, THE MARKING & PACKING SHALL BE STRICTLY AS PER CLAUSE OF IS 15298 PART-2.

APPLICATION	: APPLIANCE USED AS PPE
ANNUAL REQUIREMENT	: 3000 NOS



## MSE PRODUCT PROFILE

### 45. INDUSTRIAL SAFETY HELMET

MATERIAL CODE

: 94607000040

MATERIAL SPECIFICATION

: SAFETY HELMET WITH NALCO LOGO IN MAROON COLOUR, DGMS APPROVED AND ISI MARKED. LOGO SIZE- 4.5 CM DIA AT THE FRONT OF THE HELMET AND FLUORESCENT RED COLOUR MARK ON ALL SIDES OF THE HELMET.

SHREARC BRAND HIGH DENSITY POLY PROPELENE SAFETY HELMET WITH 5 CORRUGATED SHELL AND CHINSTRAP APPROVED, FOAM SWEAT BAND, SIZE: 51 TO 62 CM.

APPLICATION

: SAFETY APPLIANCE USED AS PPE

ANNUAL REQUIREMENT

: 3000 NOS



### 46. EAR PLUG

MATERIAL CODE

: 94690005290

MATERIAL SPECIFICATION

: DISPOSABLE TYPE EAR PLUG. UVEX x-fi1 DISPOSABLE FOAM EAR PLUGS LIGHT WEIGHT CORDED EAR PLUG CAPABLE OF ATTENUATING NOISE LEVEL BY 35-40 dB APRX AT 4000 Hz. MADE OF NON-TOXIC, NON-ALLERGENIC AND SOFT SYNTHETIC MATERIAL ON INSERTION SAFE DISTANCE BETWEEN EAR PLUG AND EAR DRUM TO BE MAINTAINED INDIVIDUAL AND REUSABLE PACKING FOR PRESERVATION, SIZE : UNIVERSAL TO FIT ALL EMPLOYEES.

NOTE : (1) PARTY HAS TO PROVIDE GUARANTEE AND MANUFACTURER TEST CERTIFICATE.:

APPLICATION

SAFETY APPLIANCE USED AS PPE

ANNUAL REQUIREMENT

1200 NOS





ITEMS  
IDENTIFIED  
FOR DEVELOPMENT  
BY MSE

CAPTIVE POWER PLANT  
NALCO, ANGUL

1. COLLAR TYPE JOURNAL SHAFT SLEEVE

MATERIAL CODE	:31408724650
APPLICATION	:BOWL MILL
ANNUAL REQUIREMENT	:200 NOS.



## MSE PRODUCT PROFILE

### 2. TROUGHING IDLER

MATERIAL CODE :31216005000  
APPLICATION :CHP CONVEYOR BELT  
ANNUAL REQUIREMENT :1200 NOS.



DESCRIPTION :TROUGHING IDLER FOR 1000  
MM BELT(L-352MM)

ROLLER FOR TROUGHING IDLER HAVING ROLL LENGTH OF 352 MM FOR 1000 MM WIDTH BELT.  
DETAILED SPECIFICATION:-

1. OUTER DIA OF ROLL :139.7 MM
  2. THICKNESS OF ROLL :4.5 MM
  3. MATERIAL OF ROLL :ERW PIPE AS PERIS: 9295/1983.
  4. SHAFT DIA :25MM MADE OUT OF MS BRIGHT BAR/EN8 AS PER BS: 970/ STEEL OF C-40 AS PERIS-1570.
  5. BEARING :SKF/ ABL MAKE SEIZE RESISTANCE
  6. HOUSING :BEARING. PRESSED STEEL/ CRCA SHEET.
  7. LUBRICATION :MULTISTAGE NYLON LABYRINTH SEALED FORLIFE.
  8. DUST COVER :CRCAAS PER IS513.
  9. ROLL MOUNTING :DROP IN SLOT TYPE
  10. QUALITY ASSURANCE PLAN :THE IDLERS SHALL BE MANUFACTURED AS PERIS-8598
- THE FOLLOWING CHECKS WILL BE CARRIED OUT DURING PRE-DESPATCH INSPECTION:
1. VISUAL CHECK :THE OUTER SURFACE SHOULD BE VISUALLY SATISFACTORY.
  2. DIMENSION ACCURACY :AS PER DRAWING NO:4-01-3-02716-00SENTTOYOUALONG WITH THE NIT.
  3. WATER TEST :WATER JET WILL BE IMPINGED FROM BOTH SIDES OF IDLERS FOR 4 HOURS AND THE ROLLER WILL BE CHECKED FOR FREE OF WATER ON THE BEARING.
  4. DUST TEST :THE IDLER WILL BE ROTATED INSIDE AN ENCLOSED PRESSURED COLD DUST CHAMBER FOR 2 HR & THEN ROLLER WILL BE CHECKED TO FIND OUTANY PRESENCE OF DUST IN THE VICINITY OF BEARING.

### 3. MILD STEEL LINERS FOR PENDROL CLIPS

MATERIAL CODE :76908003340  
APPLICATION :CIVIL MAINTENANCE (CRS)  
ANNUAL REQUIREMENT :8800 NOS.  
DESCRIPTION :MILD STEEL LINERS FOR PENDROL  
CLIPS IN PCS-12 SLEEPERS FOR 52 KG  
RAIL



**MSE**  
**PRODUCT**  
PROFILE**4. END CUT MS LINER**

MATERIAL CODE	: 76908003341
APPLICATION	: CIVIL MAINTENANCE (CRS)
ANNUAL REQUIREMENT	: 1000 NOS.
DESCRIPTION	: END CUT MS LINER FOR 52 KG PSC SLEEPER AND TO BE USED AT FISH PLATED RAIL JOINTS.

**5. ELASTIC RAIL CLIPS**

MATERIAL CODE	: 76908000230
APPLICATION	: CIVIL MAINTENANCE (CRS)
ANNUAL REQUIREMENT	: 500 NOS.
DESCRIPTION	: ELASTIC RAIL CLIPS TYPE "J" CONFIRMING TO IRS SPECIFICATION NO-T-31-92 WITH LATEST CORRIGENDUM AS PER RDSO DRG.NO. T-4158 WITH LATEST ALTERATION FOR 52 KG RAIL AND SLEEPER.





## MSE PRODUCT PROFILE

### 6. BRACKET FOR RETURN IDLER

MATERIAL CODE	:	31216013030
MATERIAL SPECIFICATION	:	MILD STEEL
APPLICATION	:	CHP
ANNUAL REQUIREMENT	:	400 NOS.
DESCRIPTION	:	BRACKET FOR RETURN IDLER



### 7. TOOTH RING HAMMER

MATERIAL CODE	:	31221103010
MATERIAL SPECIFICATION	:	AUSTENITIC MANGANESE STEEL
APPLICATION	:	CHP CRUSHER
ANNUAL REQUIREMENT	:	700 NOS.
DESCRIPTION	:	TOOTH RING HAMMER



#### HAMMER SPECIFICATIONS:-

MATERIAL:IS-276(LATEST),GRADE-1. HARDNESS : 200-229 BHN. WEIGHT : 30KG EACH.

THICKNESS:105MM. TOLARENCES SHALL BE AS PER IS-4897. QUALITY PLAN FOR TOOTHED RING HAMMER

- I. WEIGHT VARIATION :- THE MAXIMUM WT.VARIATION BETWEEN THE STANDARD SPECIFIED HAMMER AND THE FINISHED HAMMER SHOULD NOT EXCEED 900 GMS I.E. THE WEIGHT OF EACH INDIVIDUAL HAMMER SHOULD BE WITHIN THE RANGE OF 29.1 KG TO 30.9 KG ONLY. FOR THIS VENDOR SHALL FURNISH THE WEIGHT LIST OF ALL HAMMERS. NALCO SHALL RANDOMLY CHECK THE WEIGHT OF THE HAMMER FOR ACCEPTANCE.
  - II. BEND TEST :- THE BEND TEST WILL BE CARRIED OUTAS PERIS:276(LATEST)ON TEST BARS FROM EACH POUR.
  - III. DROP TEST :- FOR EVERY LOT OF HAMMERS OFFERED FOR INSPECTION, 5 NOS. WILL BE RANDOMLY SELECTED FOR DROP TEST. DURING THE DROP TEST A WT. OF 50 KG SHALL BE DROPPED ON THE MANUFACTURED HAMMER. (WHICH SHALL BE RESTING ON ITS 105 MM WIDE FACE) FROM A HEIGHT OF 5 MTRS. DURING THE TEST, THE HAMMER UNDER TEST SHALL BE SECUREDLY HELD ON A HARD SURFACE SO THAT IT IS NOT ABLE TO RUN OFF.  
ACCEPTANCE CRITERIA :- APPEARANCE OF ANY CRACK ON THE HAMMER SHALL BE THE CRITERIA FOR REJECTION. SURFACE INDENTATION WILL NOT BE A CRITERIA FOR REJECTION. IN CASE OF ANY OF THE FIVE HAMMERS THUS TESTED SHOWS A CRACK, THE SAME TEST SHALL BE REPEATED ON ADDITIONAL 10 NOS. HAMMERS FROM THE LOT OF 70 NOS. IN CASE OF ANY HAMMER FAILS IN THIS BATCH ALSO, THE ENTIRE LOT OF 70NOS HAMMERS WILL BE REJECTED.
  - IV. REPAIR AND PAINTING NO WELDING REPAIR AND PAINTING SHALL BE ALLOWED ON THE CASTINGS.
  - V. CHEMICAL ANALYSIS :- DETAIL CHEMICAL ANALYSIS OF EACH POUR (LADDLE WISE) HAS TO BE FURNISHED AT THE TIME OF INSPECTION.
  - VI. HEAT TREATMENT :- HEAT TREATMENT CHART I.E. TIME VRS. TEMP. CHART OF ALL HAMMERS HAS TO BE FURNISHED ALONG WITH VENDOR HTPROCEDURE.
  - VII. BHN TEST:- 10 NOS. HAMMERS WILL BE SELECTED FROM A LOT OF 70 NOS. HAMMERS FOR BHN TEST. HAMMERS HAVING BHN NO IN THE RANGE OF 200-229 WILL ONLY BE ACCEPTED BY NALCO.
  - VIII. INSPECTION :- ONCE THE HAMMERS ARE READY FOR INSPECTION THE VENDOR SHOULD GIVE A CALL FOR INSPECTION WELLIN ADVANCE.
- GENERAL CONDITIONS : -THE CASTINGS SHOULD BEAR THE TRADE MARK OF THE MANUFACTURER DISTINCTLY.



8. BOWL EXTENSION RING

MATERIAL CODE	:	31408027560
MATERIAL SPECIFICATION	:	AS PER DRAWING
APPLICATION	:	SPARE FOR BOWL MILL XRP 763
ANNUAL REQUIREMENT	:	60 Nos



9. SEPARATOR TOP LINER

MATERIAL CODE	:	31408746090
APPLICATION	:	BOWL MILL
ANNUAL REQUIREMENT	:	80 NOS.
DESCRIPTION	:	SEPARATOR TOP LINER PART NO. VA613



## MSE PRODUCT PROFILE

### 10. SCREEN BAR CLAMP BOLT

MATERIAL CODE	: 31221302530
APPLICATION	: CHP
DESCRIPTION	: SCREEN BAR CLAMP BOLT WITH ONE HEXAGONAL NUT, ONE LOCK NUT AND TWO WASHERS .
ANNUAL REQUIREMENT	: 100 NOS.



### 11. TROUGHING IDLER FRAME

MATERIAL CODE	: 31216024560
MATERIAL SPECIFICATION	: AS PER DRAWING
APPLICATION	: SUPPORT FOR 1000 MM BELT WIDTH IDLER (CHP)
ANNUAL REQUIREMENT	: 700 Nos



## 12. SLEEVE FOR SOOT BLOWER GEAR BOX

MATERIAL CODE	: 30804038020
MATERIAL SPECIFICATION	: X04Cr19Ni9,AS PERIS:1570(V)-1985 ( EQUIVALENT OF SS 304)
APPLICATION	: SPARE FOR SOOT BLOWER GEAR BOX, BOILER
ANNUAL REQUIREMENT	: 80 Nos
SPECIFICATION	: OD 102 mm, ID 90 mm & L 136 mm



## 13. OUTER ARM FOR EMITTING ELECTRODE

MATERIAL CODE	: 31601012000
MATERIAL SPECIFICATION	: AS PER DRAWING
APPLICATION	: OUTER ARM FOR EMITTING ELECTRODE IN ESP
ANNUAL REQUIREMENT	: 250 Nos



# MSE PRODUCT PROFILE

## 14. OUTER ARM FOR COLLECTING ELECTRODE

MATERIAL CODE	:	31601012550
MATERIAL SPECIFICATION	:	AS PER DRAWING
APPLICATION	:	OUTER ARM FOR COLLECTING RAPPING SYSTEM IN ESP
ANNUAL REQUIREMENT	:	300 Nos



## 15. INNER ARM FOR

MATERIAL CODE	:	31601011500
MATERIAL SPECIFICATION	:	AS PER DRAWING
APPLICATION	:	USED AS SPARE IN ESP
ANNUAL REQUIREMENT	:	400 Nos





**MSE**  
**PRODUCT**  
PROFILE**16. SHOCK RECEIVING PAD**

MATERIAL CODE : 31601014310  
MATERIAL SPECIFICATION : Gr. 280-520W ,IS:1030  
APPLICATION : UNIT #6 ESP  
ANNUAL REQUIREMENT : 220 Nos.

**17. SET RING**

MATERIAL CODE : 31601028030  
MATERIAL SPECIFICATION : 30C8, AS PER IS:1570(II)-1979, HARDNESS 179 BHN(MIN.)  
APPLICATION : SPARE FOR RAPPING SYSTEM, ESP  
ANNUAL REQUIREMENT : 100 Nos



## MSE PRODUCT PROFILE

### 18. PLAIN BEARING

MATERIAL CODE	: 31601013050
MATERIAL SPECIFICATION	: AS PER DRAWING
APPLICATION	: SPARE FOR RAPPING SYSTEM, ESP
ANNUAL REQUIREMENT	: 300 Nos



### 19. IMPACT IDLER

MATERIAL CODE	: 31216702950
MATERIAL SPECIFICATION	: AS PER DRAWING
APPLICATION	: IMPACT IDLER FOR 1000 MM BELT WIDTH
ANNUAL REQUIREMENT	: 200 Nos



**MSE**  
**PRODUCT**  
PROFILE**20. SCRAPER BAR**

MATERIAL CODE	: 31707114060
MATERIAL SPECIFICATION	: AS PER DRAWING
APPLICATION	: SPARE FOR SCRAPER CONVEYOR FOR UNIT#1 TO 6,9,10(AHP)
ANNUAL REQUIREMENT	: 100 Nos

**21. FLUSHING APPARATUS**

MATERIAL CODE	: 31708001040
MATERIAL SPECIFICATION	: AS PER DRAWING
APPLICATION	: IN ESP
ANNUAL REQUIREMENT	: 12 Nos



## INDEX PAGE

### M & R COMPLEX

SI	Description
1	Hyper Steel Grinding Media Balls
2	High Chrome Grinding Media Balls
3	Silpauline
4	HDPE Laminated Woven Bags
5	Hand Gloves
6	Nose Mask
7	Polythene Sheets
8	Refractory Bricks
9	ECW Nozzle Assembly - Bottom
10	Inner Shaft for Air Classifying Mill
11	ECW Nozzle Assembly - Middle
12	Calciner A/B Furnace Bubble Cap Nozzle
13	Ring Plate Calciner-C Furnace Bubble Cap
14	Screw Conveyor Grease Ring
15	Bubble Cap for Calciner- A/B
16	Furnace Bubble Cap for Calciner-C
17	Kelly Filter Carriage Wheel Assembly
18	Chute Guide Wheel Assembly
19	Tie Rod For Disc Filter
20	Disc Filter Segment Clamp
21	Filter Element for Un-filling Equipment
22	Calciner-C Top ECW Nozzle Assembly
23	Half Link for Screw Conveyor
24	Plain Hammer Ring
25	Full Links for Screw Feeder
26	Bar with Both Sides Liners for Scraper Conveyor
27	Forged Chain Link for RC Feeders
28	Guide Roller
29	Guide Roller Assembly
30	Distributor for Evaporator
31	Evaporator Tube Plug - Small
32	Evaporator Tube Plug
33	Bush for PDS Tank Agitator
34	Carrying Idler
35	Return Idler
36	Impact Idlers for 650mm Conveyor
37	Impact Idlers for 650mm Conveyor – Type B
38	Shear Pin for Raw Coal Feeder
39	Pump Shaft for LC 65/310



SI	Description
40	Link for Kelly Filter Umbrella
41	Guide Pulley for Raw Coal Feeder
42	Raw Coal Feeder Chain Link
43	Impeller Hub Cap for LC 125/405
44	Impeller Hub Screw Cap for LC 65/310 Pump
45	Idler Bracket
46	Return Idler Bracket
47	Skirt Board
48	Hammer for Crusher
49	Mouth Piece
50	Vibrating Screen Bar
51	Aluback Liner
52	Kelly Filter Head Gasket
53	Hanging Bearing
54	Head Pulley Bushing
55	Coal Nozzle Tip
56	Riffle Distributor Assembly
57	U-Link Shackle With Chain
58	ESP Bearing
59	Impact Pad
60	Guide Roller Assembly
61	Return Idler 1000mm Width
62	Return Idler 800mm Width
63	Carrying Idler 1000mm Width
64	Cotton Waste
65	Markin Cloth
66	Bar Connector with Bolt
67	PTFE Inserts
68	Disc Assembly
69	Stem for Tank Bottom Valve 14"
70	Stem for Tank Bottom Valve 12"
71	Seat Ring 12"
72	Seat Ring
73	Knuckle Pin
74	Cable Gland
75	Hack Saw Frame
76	Hand Grease Gun GB-2759
77	Safety Helmet
78	Rubber Pad for Side Bearer
79	Elastomer Pad

SI	Description
80	575mm Groove Dia Pulley Assembly
81	Poly Pulley Hub
82	Rockers
83	Rocker Pin
84	Safety Pin for Crusher - II
85	Safety Pin for Crusher-I
86	305mm Groove Dia Pulleys
87	L- Plate for Line Stand
88	Shaft for Poly Pulley Hub
89	Top Cross Tube – Plain
90	Purlin 2600mm (L21)
91	Purlin 4700mm (L6)
92	Poly-rim with Polyurethane Liner
93	Short side plate to support cross tube line stand
94	Bracket for 264 MM Pulley for BTC
95	Carrying Idler assembly for 1200 MM width belt conveyor
96	MS-Floor grating size 2000 MM X 730 MM

## REFINERY and MINES ITEMS OF INTEREST TO MSEs



## **HYPER STEEL GRINDING MEDIA BALLS**

Size- 75mm/90mm/100mm

Annual requirement - 200 MT

Approximate Unit Price: Rs. 66,000.00 Per MT

### **Specification:**

Hyper Steel Grinding Media Ball  
as per IS: 6079/1989 Grade 2.

### **Chemical Composition**

Carbon 1.60 % - 1.90%

Silicon 1.0 %Max.

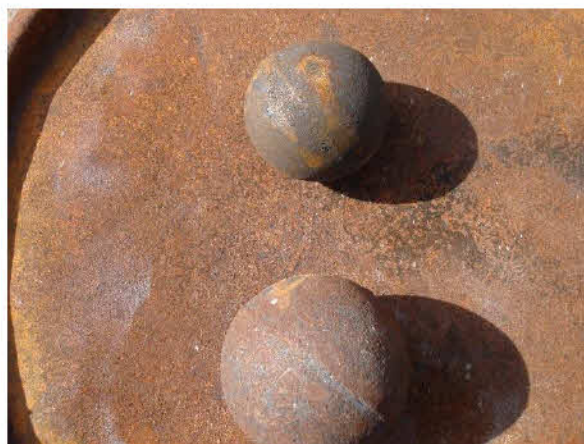
Manganese 1.20% – 1.50%

Chromium 1.50% - 2.00%

Sulphur 0.06% Max

Phosphorus 0.06% Max

Hardness (Tested in accordance with  
IS 1500:1983) 375 BHN (Minimum)



## **HIGH CHROME GRINDING MEDIA BALLS**

High Chrome Grinding media 50 mm dia, 90 mm dia

### **Chemical composition:**

Element	Min(%)	Max(%)
Carbon-	1.8	3.5
Manganese-	0.5	1.5
Chromium	11	18
Nickel		2
Molybdenum	2.5	
Copper	2	
Silicon	1	
Sulphur	0.1	
Phosphorous	0.1	

Hardness- 57 HRC minimum

Retained austenite 15% maximum

Annual requirement - 250 MT

Approximate Unit Price: Rs. 85,000.00 Per MT





**SILPAULINE**

Material Code: 87507060290

**Specification**

Silpaulin 150 gsm with Aluminium Eyelets  
Size: 24' x 21'

Annual requirement : 20 Nos  
Approximate Unit Price : Rs. 2500/-

**HDPE LAMINATED WOVEN BAGS**

Material Code : 88101007310

**Specification:**

Bag Size : 24 x 36 Inch  
Mesh : 10 X10 (Uniform)  
Linear density of tapes :111 Tex (1000 Denier)  
Av. Breaking strength of fabric :69 Kgf(Min)  
Length wise 87 Kgf (Min)-Width wise  
Average weight of bag :150 grams  
Stitching : As per IS 10789  
Printing : Printing matter legible

Annual requirements: 3,60,000 Nos  
Approximate Unit Price : Rs.17.54



## **HAND GLOVES**

Material Code: 94605005050

Size: 12", 14" & 16"

### **Specifications:**

Leather canvas hand gloves made out of 140z heavy drill cotton with palm and front facing fingers made of natural soft split single palm type leather hand gloves in 1.5mm thickness confirming to is 6994

Annual requirements: 15,000 Nos.

Approximate Unit Price: Rs.36.58



## **NOSE MASK**

Material Code: 94608025190

### **Specification:**

Anti-dust respirator

3m 8710 in dust/mist respirator, filtration capacity 0.03 microns.

Annual requirement: 1800 Nos

Approximate Unit Price : Rs. 50.84/-



## **POLYTHENE SHEET**

Material Code:87507004140

### **Specification:**

Polythene sheet 250 gauge. width 10 ft.

Annual requirements: 2000 Kg

Approximate Unit Price: Rs. 133/-



## **REFRACTORY BRICKS**

The Annual requirement of Refractory Bricks is about 3600 Numbers of different variety bricks. The approximate unit cost on average is about Rs. 180/-.



### **EMERGENCY COOLING WATER NOZZLE ASSY. BOTTOM**

Material Code: 13900341210  
Drawing No. NALCO/MECH/MISC/2456, Rev-1

Annual Requirement: 06 Nos.  
Approximate Unit Price: Rs.6,500/-



### **INNER SHAFT FOR AIR CLASSIFYING MILL**

Material Code:166021070220  
Drawing No.NALCO/MECH/3648

Annual Requirement: 02 Nos.  
Approximate Unit Price: Rs. 3,150/-





**ECW NOZZLE ASSEMBLY (MIDDLE)**

Material Code: 13900341140  
Drawing No.NALCO/MECH/MISC/2457,  
Rev-1

Annual Requirement: 06 Nos.  
Approximate Unit Price: Rs.6,500/-

**CALCINER- A/B FURNACE BUBBLE CAP NOZZLE**

Material Code: 13900292440  
Drawing No.NALCO/MECH/MISC-1300

Annual Requirement: 55 Nos.  
Approximate Unit Price: Rs. 3,400/-



**RING PLATE**

Mat code: 13900296370

Ring Plate Calciner-C Furnace Bubble Cap

Drawing Reference: NALCO/MECH/3170,  
Rev-01, Item no.4

Annual Requirement: 55 Nos.

Approximate Unit Price: Rs.2,600/-

**SCREW CONVEYOR GREASE RING:**

Material Code:13900277740

Drawing No.NALCO/MECH/MISC-299

Annual Requirement: 40 Nos.

Approximate Unit Price: Rs. 500/-



**CALCINER A/B BUBBLE CAP:**

Material code:13900401060

Drawing no.NALCO/MECH/MISC-1609

Annual Requirement: 40 Nos

Approximate Unit Price: Rs. 4,800/-

**CALCINER-C FURNACE BUBBLE CAP**

Material code:13900296130

Drawing No. NALCO/MECH/3170, Rev-01,  
Item no.1

Annual Requirement: 55 Nos.

Approximate Unit Price: Rs. 14,560/-



### **KELLY FILTER CARRIAGE WHEEL ASSEMBLY**

Material code:13101023010  
Drawing No.NALCO/P&D/M-256

Annual Requirement: 40 Nos.  
Approximate Unit Price:Rs. 5,300/-



### **CHUTE GUIDE WHEEL ASSEMBLY**

Material code: 13310009160  
Drawing No. NALCO/MECH/2976

Annual Requirement: 10 Nos.  
Approximate Unit Price :Rs.4018/-





### **TIE ROD FOR DISC FILTER**

Material code:13310008590  
Drawing No. NALCO/MECH/DF0313, R-4

Annual Requirement: 100 Nos.  
Approximate Unit Price : Rs.1,248/-



### **DISC FILTER SEGMENT CLAMP**

Material code:13310000280  
Drawing No. NALCO/MECH/TB-1271,REV-01.

Annual Requirement: 100 Nos.  
Approximate Unit Price: Rs.529/-



### **FILTER ELEMENT FOR UNFILLING EQUIPMENT**

Material code: 25010075930

Installed quantity: 64

Annual Requirement: 128 Nos.

Approximate Unit Price : Rs.2,800/-



### **CALCINER-C TOP EMERGENCY COOLING WATER NOZZLE ASSEMBLY**

Material code:13900293870

Drawing No.NALCO/MECH/3287

Annual Requirement: 03 Nos.

Approximate Unit Price : Rs.65,441/-



**HALF LINK FOR SCREW CONVEYOR**

Material code:14602045790

Drawing No.NALCO/MECH/SPP/1703, Sh.  
3 of 4

Annual Requirement : 100 Nos.

Approximate Unit Price : Rs. 175/-

**PLAIN HAMMER RING**

Material code:14925001080

Drawing No.NALCO/P&D/SGP/M/005

Annual Requirement:150 Nos.

Approximate Unit Price: Rs.1620/-





**FULL LINKS FOR SCREW FEEDER**

Material code:14602045620  
Drawing No. NALCO/MECH/SPP/1703,  
Sheet 3 of 4, Item 20  
MOC: SAE 950 Low alloy high tensile  
steel

Installation quantity : 32 Nos.  
Annual Requirement :100  
Approximate Unit Price : Rs.112/-

**BAR WITH BOTH SIDES LINERS FOR SCRAPER CONVEYOR**

Material code:10103914720  
Drawing No. NALCO/MECH/Misc/463  
MOC: IS-2062 Gr.A

Annual Requirement: 22 Nos.  
Approximate Unit Price : Rs. 6,500 /-





### **FORGED CHAIN LINK FOR RC FEEDERS**

Material code:14601054870  
Drawing No.  
NALCO/MECH/SGP/079,Rev.3  
MOC: 20 Mn Cr.5 (links) C-45/50  
(Flights)

Annual Requirement : 500 Nos.  
Approximate Unit Price :  
Rs.1,228/-



### **GUIDE ROLLER**

Material code:16603551210  
Drawing No.NALCO:MECH/3813

Installed quantity: 32 Nos.  
Annual Requirement: 04 Nos.  
Approximate Unit Price: Rs.2,450/-



**GUIDE ROLLER ASSEMBLY**

Material code: 16603502900  
Drawing No.NALCO/MECH/3742,  
Assembly-2

Annual Requirement : 4 Nos.  
Approximate Unit Price: Rs.1980/-

**DISTRIBUTOR FOR EVAPORATOR**

Material code : 72985008650  
Drawing No.  
NALCO/MECH/MISC-862,  
Rev.0  
Annual Requirement: 500 Nos.  
Approximate Unit Price : Rs.245/-



**EVAPORATOR TUBE PLUG, SMALL**

Material code:13500917640

Specification: Evaporator Tube Plug – Small

Of shape – Truncated Cone

MOC: MS

Size: D-54 mm,Length 50 MM.

Annual Requirement : 500 nos.

Approximate Unit Price : Rs.110/-

**EVAPORATOR TUBE PLUG**

Material code:13500917710

Specification: Evaporator Tube Plug

Shape: Truncated Cone

MOC : M.S. Size: D-60 mm, D-50 mm , Length- 50 MM.

Annual Requirement : 500 Nos.

Approximate Unit Price : Rs. 186/-



**BUSH FOR PDS TANK AGITATOR**

Material code:15622151500  
Drawing No.NALCO/MECH/3080, Rev-1  
Item No. 2 of Drawing

Annual Requirement : 8 Nos.  
Approximate Unit Price : Rs.6564/-

**CARRYING IDLER**

Material Code: 14107000100  
Size : 251mm Dia x 114.3mm  
Item No.1 of Drawing  
No.NALCO/MECH/MISC-2244

Annual Requirement : 50 Nos.  
Approximate Unit Price : Rs.478/-





### **RETURN IDLER**

Material code : 14107005080  
Size : 750mm x114.3mm Dia  
Item No.2 of  
DrawingNo.NALCO/MECH/MISC-2244

Annual Requirement : 60 Nos.  
Approximate Unit Price : Rs.918/-



### **IMPACT IDLERS FOR 650MM CONVEYORS**

Material Code : 14107010060  
Drawing No.NALCO/MECH/1263

Annual Requirement : 100 Nos.  
Approximate Unit Price : Rs.510/-



**IMPACT IDLERS FOR 650MM WIDTH CONVEYORS (TYPE-B)**

Material code:14107010060

Drawing No.NALCO/MECH/1263

Annual Requirement : 100 Nos.

Approximate Unit Price : Rs. 510/-

**SHEAR PIN FOR RAW COAL FEEDER**

Material code:90805011310

MOC: IS C-40

Drawing No.NALCO/MECH/SGP/376,Rev.2

Annual Requirement : 5000 Nos.

Approximate Unit Price : Rs. 22/-



### **PUMP SHAFT FOR LC 65/310**

Material Code: 72945001600  
Nalco Drawing Ref: NALCO/MECH/P/006/  
Rev.4  
MOC: EN 24/40 NI2 Cr1 Mo 28  
Tolerance: As per IS 2102  
Test Certificate to be submitted from Govt.  
Approved Test House with supply.

Annual requirement : 06 Nos.  
Approximate Unit Price : Rs. 12,724/-



### **LINK FOR KELLY FILTER UMBRELLA**

Material Code: 13101017150  
Nalco Drawing Ref:  
NALCO/MECH/MISC/493 Rev.0  
Total Length: 200mm  
Hole to Hole Length: 150mm  
Inclination : 450  
Hole Dia: 25.10mm  
Thickness: 19.5mm  
All tolerance as per IS 2102  
Annual requirement : 60 Nos.  
Approximate Unit Price : Rs. 275/-



### **GUIDE PULLEY FOR RAW COAL FEEDER CHAIN LINK**

Material Code : 14601055060

Nalco Drawing Ref:

NALCO/MECH/SGP/1916

MOC: EN 36

Sprocket tooth surface and guide pulley groove surface to be hardened to 45 to 50 HRC to depth of 2.5mm

Teeth Width:

Max – 50mm

Min – 30mm

Core Dia – 110 mm

Inner Radius – 153mm

Test Certificate to be submitted from Govt.

Approved Test House with supply.

Annual Requirement : 6 Nos.

Approximate Unit Price : Rs. 36991/-



### **RAW COAL FEEDER CHAIN LINK**

Material Code : 14601041580

Nalco Drawing Ref : NALCO/MECH/SGP/079

MOC: ABRO 32 / Equivalent

Tolerance: As per IS 2102 (Fine)

Annual Requirement: 800 Nos.

Approximate Unit Price : Rs. 459.00





### **IMPELLER HUB CAP FOR LC 125/405**

Material Code: 72946002310

Nalco Drawing Ref: NALCO/MECH/MISC/TB-1596

MOC: High Grade Alloy Steel

40 Ni 2 Cr 1 Mo 28 or

31 Ni 3 Cr 65 Mo 55 or

40 Ni 3 Cr 65 Mo 55

Min IZOD Impact Value: 3.5 Kgf M

Tensile Strength : 120-135 Kgf / mm Sq.

Tolerance : As per IS 2102 (Fine)

Annual requirement: 40 Nos.

Approximate Unit Price : Rs. 2488/-



### **IMPELLER HUB SCREW CAP FOR 65/310 PUMP**

Material Code: 72945002650

Nalco Drawing Ref: NALCO/MECH/MISC-TB-1596/REV-1

Annual requirement : 116 Nos.

Approximate Unit Price : Rs. 585/-



### **IDLER BRACKET**

Material Code: 14110016190  
Idler Bracket for 650mm Width Conveyor

Annual requirement : 30 Nos.  
Approximate Unit Price : Rs. 1000/-



### **RETURN IDLER BRACKET**

Material Code: 10103045530  
'J' Type Return Idler Bracket for 1400mm Wide Conveyor  
Nalco Drawing Ref: NALCO/P&D/M-111,Rev.0

Annual requirement : 200 Nos.  
Approximate Unit Price : Rs. 120/-



### **SKIRT BOARDS**

Material Code: 10103995400

Rubber Modular Side Skirt Boards

Hardness of Rubber 60 +/- 5 Shore A

Size: 200 W x 200mm H x 15mm Th

Annual requirement : 300 Nos.

Approximate Unit Price : Rs. 300/-



### **HAMMER FOR CRUSHER**

Material Code: 12502000150

Hammers for Secondary Crusher

Set consisting of 36 Nos. Hammers

Nalco Drawing: NALCO/MECH/MISC-090,Rev.2

Annual requirement : 81 Nos.

Approximate Unit Price : Rs. 20,720/-





### **MOUTH PIECE**

Material Code : 12501021880  
Mouth Piece for 30mm spacing for Vibrating  
Screen  
As per Table Sl.No.2 of Drawing :  
NALCO/MECH/3167, Rev.1

Annual Requirement: 250 Nos.  
Approximate Unit Price : Rs. 310.00



### **VIBRATING SCREEN BAR**

Material Code: 12501000560  
Vibrating Screen Bar Dia 24mm  
MOC: Alloy Steel,  
Hardness : 460-480 BHN  
Nalco Drawing Ref: NALCO/MECH/1454,R-0

Annual requirement : 350 Nos.  
Approximate Unit Price : Rs. 2050/-





### **ALUBACK LINER**

Material Code: 12501000700  
Aluback Scraper Rubber Liner Pre-cut  
Size: 200mm W x 12mm L x 30mm Th

Annual requirement : 22 Nos.  
Approximate Unit Price : Rs. 3245/-



### **KELLY FILTER HEAD GASKET**

Material Code: 13101101200  
Kelly Filter Head Gasket  
MOC: Neoprene Rubber  
Nalco Drawing Ref. NALCO/MECH/MISC-1160,Rev.2

Annual requirement : 45 Nos.  
Approximate Unit Price : Rs. 6,740/-



**HANGING BEARING**

Material Code: 16602170210

Hanging Bearing for ACM Screw Conveyor  
Nalco Drawing Ref. NALCO/MECH/3560/SGH

Annual requirement : 4 Nos.

Approximate Unit Price : Rs. 1,280/-

**HEAD PULLEY BUSHING**

Material Code: 14603201760

Head Pulley bushing for Head Pulley Drive  
assembly

ID:22mm x OD:44.5mm, 40.2mm Length

Inside the bush shall be brass lined having  
thickness of 4mm

Buryle Rubber with Hardness : 65 +/- Shore A

Annual requirement : 40 Nos.

Approximate Unit Price : Rs. 162/-



**COAL NOZZLE TIP**

Material Code: 14602101160

Coal Nozzle Assembly Type A (A-1,A-2,A-3,A-4)

Drawing Ref: NALCO/MECH/SPP/1466

Annual requirement : 4 Nos.

Approximate Unit Price : Rs. 11,500/-

**RIFFLE DISTRIBUTOR ASSEMBLY**

Material Code: 14602110830

Riffle Distributor Assembly (Small 10 Plates)

Drawing Ref: NALCO/MECH/SGP/1133

Consists of Item No. 1 to 9 of Drawing

MOC:

C : 0.23-0.27%,

Mn : 1.95-2.05%

Si : 1.4-1.6%

Cr : 24-26%

Ni : 19-22%

Hardness: 84-90 RC

Tensile Strength: 92-98

Annual requirement : 40 Nos.

Approximate Unit Price : Rs. 25,423/-





**U-LINK SHACKLE WITH CHAIN**

Material Code: 10103915080  
U Link Shackle with Locking Plate and  
Nuts for Scraper Conveyor  
1600mm Wide, 22x86mm  
Drawing Ref: SK/NG/04/Rev.0

Annual requirement : 45 Nos.  
Approximate Unit Price : Rs. 1,095/-

**ESP BEARING**

Material Code: 14700042280  
Plain Bearing for Emitting Rapping  
Mechanism  
As per BHEL 1-78-716-00238, Item No. 2  
ESP Model : FAA-7x 36-60100-2

Annual requirement : 300 Nos.  
Approximate Unit Price : Rs. 350/-





### **IMPACT PAD**

Material Code: 10103220710

Impact Pad with mountings and fastners for 1000mm width Conveyor Belt to Absord shock and to arrest spillage. Specification of belt – Belt speed 2.3M/Sec. capacity 600 TPH. Usually runs at 10% over load.

Material Handled: Raw Coal with free fall of 2 Mtrs.

Annual requirement : 30 Nos.

Approximate Unit Price : Rs. 38,000/-



### **GUIDE ROLLER ASSEMBLY**

Material Code: 13311075380

Guide Roller Complete Assembly fitted with shaft, Bearing etc. (Total 11 items)

Drawing Reference: NALCO/MECH/3268

Annual requirement : 24 Nos.

Approximate Unit Price : Rs. 2,885/-



**RETURN IDLER 1000 MM WIDTH**

Material Code: 10103028140  
Return Idler for 1000mm Belt  
Drawing Reference: NALCO/SPP/3077, Item No. 1

Annual requirement : 50 Nos.  
Approximate Unit Price : Rs. 1470/-

**RETURN IDLER 800 MM WIDTH**

Material Code: 10103026830  
Return Idler for 800mm Wide Conveyor Belt  
Drawing Reference: NALCO/SPP/CHP/3077, Item No. 1A

Annual requirement : 80 Nos.  
Approximate Unit Price : Rs. 1,280/-



### **CARRYING IDLER 1000 MM WIDTH**

Material Code: 10103207080

Carrying Idler Roller for 1000mm Coal Conveyor Belt

Dia: 139.7mm, Length: 352mm

Drawing Reference: NALCO/SPP/3569,Rev.0

Annual requirement : 200 Nos.

Approximate Unit Price : Rs. 732/-



### **COTTON WASTE**

Material Code: 88100012550

Cotton Waste as per IS:5485/1980, Type 1

Annual requirement : 5250 Kg

Approximate Unit Price : Rs. 70/-



### **MARKIN CLOTH**

Material Code: 88106014020

Size: 1 Mtr x 1 Mtr

Annual requirement : 4800 Mtr.

Approximate Unit Price : Rs. 45/-



### **BAR CONNECTOR WITH BOLT**

Material Code: 10103914890

Bar Connector with bolts for scrapper conveyor

1600mm Wide, 22x86mm

Drawing Ref: SK/NG/04

Annual requirement : 70 Nos.

Approximate Unit Price : Rs. 1524/-





### PTFE INSERTS



PTFE Inserts of different sizes for different types of Valves.

Annual requirement : 150 Nos.

Approximate Unit Price : Rs. 650/-

### DISC ASSEMBLY

Material Code: 95590466620

Disc Assembly for Klein Valve of , Including SS Seat Ring (Stellited), insert.

Annual requirement : 10 Nos.

Approximate Unit Price : Rs. 8,00



**STEM FOR TANK BOTTOM VALVE**

Material Code: 95590822641

Stem for 14" Klein make Tank  
Bottom Valve

Annual requirement : 03 Nos.  
Approximate Unit Price : Rs. 32,047/-

**STEM FOR TANK BOTTOM VALVE**

Material Code: 9557461090

Stem for 12" Klein make Tank  
Bottom Valve

Annual requirement : 07 Nos.  
Approximate Unit Price : Rs. 14,500/-



**SEAT RING**

Material Code: 95507166560

Seat Ring for 12" Poyam Valve

Annual requirement : 03 Nos.

Approximate Unit Price : Rs. 8,700/-

**SEAT RING**

Material Code: 95514005010

Seat Ring Size 12"

Drawing Reference: NALCO/INST/3605, Item 3

Annual requirement : 10 Nos.

Approximate Unit Price : Rs. 13,500/-



## **KNUCKLE PIN**

Material Code: 77505006060  
Knuckle Pivot Pin with Washer  
CBC SK62724 Item 4

Annual requirement : 500 Nos.  
Approximate Unit Price : Rs. 377/-



## **CABLE GLAND**

Material Code: 82065031060

### Specification:

Cable glands model no: CBW 08

Annual requirement : 50 Nos  
Approximate Unit Price : Rs. 728/-





### **HACK SAW FRAME**

Material Code: 85318009370

Specification:

Die cast hack saw frame  
size-12"x1/2"

Annual requirement : 10 Nos

Approximate Unit Price : Rs. 345/-



### **HAND GREASE GUN GB-2759**

Material Code: 93490061680

Specification:

Hand grease gun with nozzle of capacity:  
400 CC,  
Output/stock: 1 CC  
working pressure: 350kg/ cm<sup>2</sup>

Annual requirement : 10 Nos

Approximate Unit Price : Rs. 345/-



**SAFETY HELMET:**

Material Code: 94607000040

**Specification:**

ISI safety helmet.

Annual requirement : 1000 Nos

Approximate Unit Price: Rs. 194/-



## **RUBBER PAD FOR SIDE BEARER**

Material Code: 77505053370

### **Specification:**

Rubber pad for side bearer arrangement  
Metal bonded rubber pad to latest RDSO  
Approved  
Drawing PI/SBP/001 or latest RDSO specification  
to  
STR/03/Misc/86 Rev.3 of Nov 2001.

Annual requirement : 2000 Nos.  
Approximate Unit Price : Rs.1000/-



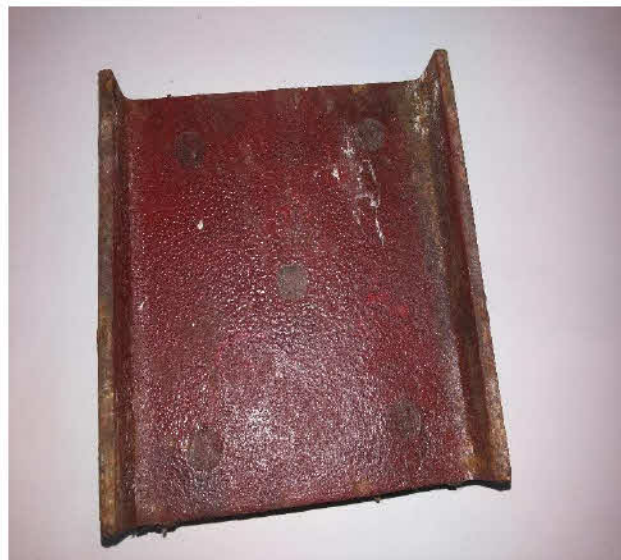
## **ELASTOMER PAD**

Material Code: 77505047270

### **Specification:**

Elastomeric Pad Modified Elastomeric Pad to  
Latest RDSO approved Drawing PI/MEP-001.  
STR No. 20-Misc-95 Rev(@) Amdt.4 of Nov 2001

Annual requirement : 2500 Nos.  
Approximate Unit Price : Rs. 800/-



### **575MM GROOVE DIA PULLEY ASSEMBLY**

Mat Code: 89302002390

Nalco Drawing No. NALCO/M/MECH/101 Rev-03

Annual requirement : 50 nos.

Approximate Unit Price : Rs.55,000/-



### **POLLY PULLEY HUB**

Material code:10101180260

Nalco Drawing No.

NALCO/MINES/MECH/C&C/170, Rev-01

Annual requirement :2000 Nos.

Approximate Unit Price : Rs.5600/-





## **ROCKERS**

Material code:10101281460

Nalco drawing No.

NALCO/MECH/C&C/MINES/149, Item no.1

Annual requirement :974 Nos.

Approximate Unit Price : Rs.2078/-



## **ROCKER PIN**

Material code:10101281770

Nalco Drawing No. Item No.2,3 &4 of  
NALCO/MECH/C&C/MINES/149

Annual requirement: 1800 Nos.

Approximate Unit Price : Rs.525/-



**SAFETY PIN FOR CRUSHER –II**

Material code:10350000490

Nalco drawing No.NALCO/MINE/MECH/C&C/126

Annuual requirement:500 Nos.

Approximate Unit Price : Rs.130/-



### **SAFETY PIN FOR CRUSHER-I**

Material code:10301000410

Nalco Drawing No.

NAL/MINE/MECH/C&C/023

Annual Requirement: 1095 Nos.

Approximate Unit Price : Rs.138



### **PULLEYS (305MM GROOVE DIA)**

Material code:89302000220

Nalco Drawing No.

NALCO/MECH/C&C/MINES/019, Rev-1

Annual Requirement: 50 Nos.

Approximate Unit Price : Rs.19125/-



**L- PLATE FOR LINE STAND**

Material code:10101336300  
Nalco Drawing No.  
NALCO/MECH/C&C/MINES/144, ITEM  
NO.3  
MOC: HOT As per IS2629:1966

Annual Requirement: 500Nos.  
Approximate Unit Price : Rs.150/-

**SHAFT FOR POLLY PULLEY HUB**

Material code:10101040160  
Nalco Drawing No.  
NALCO/MECH/C&C/MINES/164

Annual Requirement: 1250 Nos.  
Approximate Unit Price : Rs.115/-





### **TOP CROSS TUBE (PLAIN)**

Material code: 10101024960  
Nalco Drawing No.  
NALCO/MECH/MINES/C&C/TB/085

Annual Requirement: 308 Nos.  
Approximate Unit Price : Rs.2072/-



### **PURLIN, SIZE:2600MM (L21)**

Material code:10101294060  
Nalco Drawing No. NALCO/MINES/C&C/049 (L21)

Annual Requirement: 10 Nos.  
Approximate Unit Price : Rs.852/-



**PURLIN, SIZE:4700MM (L6)**

Material code: 10101292510

Nalco Drawing No.

NALCO/MINES/C&C/049 (L6)

Annual Requirement: 150 Nos.

Approximate Unit Price : Rs.1540/-

**POLYRIM WITH POLYURETHANE LINER**

Material code: 10101040470

Nalco Drawing No.

NALCO/MINES/C&C/055, Rev-1

Annual Requirement: 5000 Nos.

Approximate Unit Price : Rs.1700/-



**SHORT SIDE PLATE TO SUPPORT CROSS TUBE LINE STAND:**

Material Code:10101282650

**Specification:**

Short side plate to support cross tube.  
line stand side plate(short) hot dip  
galvanized as per is 2629:1966 Drgno  
:NALCO/MINES/C&C/MECH/025 item no:2

All specifications as per gem contract

Annual requirement : 220 Nos  
Approximate Unit Price : Rs. 260/-

**BRACKET FOR 264 MM PULLEY FOR BTC:**

Material Code: 10101004120

**Specification:**

bracket of 264 mm pulley for  
btc

Drawing no.

NALCO/MECH/C&C/MINES/108

Note:

1. Material to be zinc galvanized as mentioned in the drawing above.
2. Material test certificate should be submitted along with the material.



Annual requirement : 20 Nos



**CARRYING IDLER ASSEMBLY FOR 1200 MM WIDTH BELT CONVEYOR:**

Material Code: 87612010650

Specification:

carrying idler (1200mm belt)  
carrying idler assembly for 1200mm  
width belt conveyor size 152.4 x 465  
x 25 mm as per sl.no.1 of dimension  
table of drawing no.  
NALCO/MECH/C&C/MINES/134(TB)



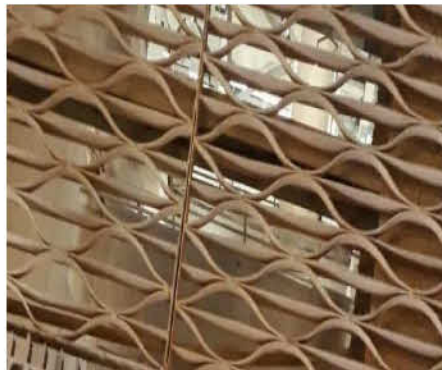
Annual requirement : 20 Nos

Approximate Unit Price:Rs. 1,770/-



### **MS FLOOR GRATING SIZE 2000 MM X 730 MM:**

Material Code: 92416000580



Specification:

Mild steel floor grating of size 2000 mm X 730 mm for Cable belt Conveyor Bridge.  
As per drawing no. NALCO/MECH/C&C/MINES/173

I electro forged grating  
730 mm x 2000 mm  
size: 730 mm x 2000 mm  
frame bar: 25 x 5 mm  
bearing bar: 25 x 3 mm c/c 40 mm

zig-zag: 12 x 3 mm c/c 135 mm / 140 mm  
finish: hot dip galvanised

Material used as per is 2062 GRA  
finish hot dip galvanizing as per IS 2629:1985

Thickness (as per is 4759:1996): upto 86 micron(610gsm)averagely

Tolerance: as per bs-4592

Weld pattern: each load bar single line Weld to frame. Secondary zig-zag bar crimp line weld with load bar, frame end corners continuous welded.

Test Certificate: As per IS 13229:1991 the supplier shall provide test certificate for the consignment giving information like cast / lot number and corresponding chemical composition from NABL certified laboratory.

Annual requirement : 50 Nos

Approximate Unit Price : Rs. 6,133/-

**LIST OF OTHER ITEMS OF M&R COMPLEX WHICH CAN BE SUPPLIED BY MICRO & SMALL INDUSTRIES**

Sl No	Products	Specification	Annual requirement	Approximate value (₹)
1	Soda ash	Soda Ash light Tech. Grade conforming to IS: 251/1998	325 MT	50 Lakhs
2	Alum	Alum (Ferric) as per IS 299/1989 (Fourth revision) Gr-II, Type-II specification : AL <sub>2</sub> O <sub>3</sub> = 15.0 (min)% FE <sub>2</sub> O <sub>3</sub> = 0.7 (max) % Insoluble Matter=0.50(max) PH (5% Aquous Solution) = 2.30 (min)	100 MT	15 Lakhs
3	HDPE bags	HDPE Laminated woven Bag as per IS: 9755-2003 Size : 610x920 mm	10,00,000	1.5 Crore
	Liner bags	Polythene Liner Bags Size : 66cm x 100cm Thickness: 150 gauge Weight: 50+/- 5 gram	8,00,000	40 Lakhs
4	Safety items like hand gloves, ear plugs, helmet & nose mask etc		Gloves- 18000 nos Helmet- 400 nos Ear plugs- 1500 nos Nose mask- 800 nos	15 Lakhs
5	Refractory materials like Castables, Bricks,		Castables-50 MT Bricks- 1000 nos	15 Lakhs
6	Industrial gas like O <sub>2</sub> , DA, Nitrogen, ammonia etc		6000 CM	20 Lakhs
7	Polythene sheet for plant, packets & pouches of different sizes for preservation of small size spares		2000 Kg	3 Lakhs

## **SCOPE FOR MSEs IN DOWNSTREAM INDUSTRIES USING NALCO'S PRODUCTS AND BY-PRODUCTS**

Brief profiles of some of the possible downstream projects, utilizing Alumina, Fly ash and Red Mud are given below;

### **1. Fused Alumina**

Fused Alumina is used in the manufacture of abrasive, high Alumina Refractory bricks.

(i)	Capacity	5000 MT of Fused Alumina per annum
(ii)	Project cost	` 4 Crores
(iii)	Location	In and around Damanjodi
(iv)	Raw materials	Alumina, bauxite etc.
(v)	Employment potential	100

### **2. Fly ash based Products:**

Fly ash bricks (Details shown separately in this booklet)

Fly ash based tiles

### **3. Red Mud Based Products:**

Red mud Bricks can be produced using red mud as the major raw material at Damanjodi

(i)	Capacity	1 million bricks per annum
(ii)	Investment	` 3 Crores
(iii)	Location	In and around Damanjodi
(iv)	Turnover	` 0.6- 0.7 Crores
(v)	Raw material	Red Mud, Clay, Talc Powder
(vi)	Major equipment & fuel	Kiln & Coal
(vii)	Employment potential	50

### **4. Lime Grit based products:**

Fly ash bricks, Tiles & Other cement based products

### **5. Alumina hydrate, Spl. Grade Hydrate,SGA Based products:**

Alumina Hydrate: For making Insulator, Alum

SGA: For making refractory bricks, Castables, Ceramic balls, synthetic marbles, paints and pigments.

Spl Grade Hydrate: For making fire retardant builder materials.

Zeolite: Used as builder material for detergents. Brand like Tide and Henkel use our product.

**Note:**

**Nalco supplies Fly ash & red mud free of cost to the MSEs. Lime grit can be supplied at a cost to MSEs for their Brick Plants.**

**SCOPE FOR MSEs IN SERVICE SECTOR**

- (i) Fabrication, machining and repair workshops in the vicinity of Damanjodi meeting requisite quality standards for attending to emergent repair jobs.
- (ii) Motor winding shops
- (iii) Tyre Retreading workshops in the vicinity of Mines & Alumina Plant.
- (iv) Pump repair shop
- (v) Pulley, Roller, Idlers & Polyrim manufacturing unit for belt conveyor
- (vi) Automobile and Earth moving equipment repair shop.
- (vii) Repair of Air-conditioning equipments, maintenance and supply of spares.



### **SCOPE FOR MSES FOR PRODUCTION OF FLY ASH BRICKS**

Fly Ash Bricks can be produced by utilizing the ash generated in Steam & Power Plant (SPP) at Alumina Refinery, Damanjodi. This is an economically viable project.

(i)	Capacity	5 million bricks per annum
(ii)	Investment	`30 lakhs
(iii)	Location	In and around Damanjodi
(iv)	Raw materials	Fly ash (60%), Sand(30%), Lime grit(5%), Cement (5%)
(v)	Electrical Energy	50 KWH (For 1000 bricks)
(vi)	Employment potential	20 to 25

**For the above plant, Fly Ash can be supplied by Alumina Refinery Free Of Cost.**

### **Features**

Some of the attributes of fly ash bricks are as follows:

- » Eco friendly
- » Low water absorption
- » Dimensional accuracy
- » High compressive strength

### **Advantages of Fly Ash Bricks:**

**Less Energy Consumption:** Much energy is consumed in firing clay bricks in kilns. By using fly ash bricks instead of clay bricks, much energy is saved in brick manufacturing.

**Reduces air pollution** - Fossil fuel is used in heating clay bricks in kilns. Burning such fuel generates air pollution and greenhouse gas (CO<sub>2</sub>), contributing to global warming. Fly ash bricks are manufactured at room temperature and there is no fossil fuel burning and emission of greenhouse gas (CO<sub>2</sub>).

**High Strength:** Due to high strength, there is practically no breakage during transport & use. Due to uniform size of bricks mortar required for joints and plaster reduces almost by 50%.

**Less Water Consumption:** Due to lower water penetration seepage of water through bricks is considerably reduced. Gypsum plaster (plaster of Paris) can be directly applied on these bricks without a backing coat of lime plaster. These bricks do not require soaking in water for 24 hours. Sprinkling of water before use is enough.

**Usage of Fly Ash Bricks:** Because of above advantages, Fly Ash Bricks are getting preference in construction works over the conventional clay bricks.





नालको  **NALCO**

नेशनल एल्यूमिनियम कम्पनी लिमिटेड  
(भारत सरकार का एक उद्यम)  
निगम कार्यालय  
नालको भवन, नयापल्ली, भुवनेश्वर - 751 013, भारत

**National Aluminium Company Limited**  
(A Government of India Enterprise)  
**CORPORATE OFFICE**  
Nalco Bhawan, Nayapalli, Bhubaneswar - 751 013, India  
[www.nalcoindia.com](http://www.nalcoindia.com)