

Reducing Wear and Tear Loss

Adopting Chromium Carbide Hard Faced
Wear Plates

Adopting Chromium Carbide Hard Faced Wear Plates

This document is a collective of case studies wherein adoption of Composite Chromium Carbide Wear Plates wear plates has reduced losses and operating costs, increased lifetime savings and plant productivity.

TABLE OF CONTENTS

Introduction to Tribology	1
Thought behind the Document	2
How to read the Document	3
Use Cases	
Bucket Lip	5
Jig Water Tank	6
Loader Bucket	7
Discharge Chute	8
Ash Liner Elbow	9
Plates for Silo	10
Deck Panel	11
Liner Facing with CSK Grip Lock	12
Shot Blasting Machine	13
Muller Machine	14
Clinker Chutes	15
Grit Funnel	16
Classifier Chutes	17
Chutes	18
Scraper Plate	19
Armour Ring	20
Chutes Plates	21
Turntable	22
Summary of Observations	23

Introduction to Tribology

Tribology is a multi-disciplinary subject dealing with science and technology of interacting surfaces in relative motion.

The term has been derived from the Greek word “**Tribos**” (meaning “**Rubbing**”) and in general it denotes the subject of Friction, Wear and Lubrication.

Over the years, Tribology has been recognized as a very important aspect in all industrial operations. Application of correct Tribological practices is helpful to the industries in protecting and enhancing life of plants and machinery, preventing expensive breakdowns, improving efficiency of operations and reducing energy consumption.

India has a large network of steel, mining and allied heavy industries. Besides working under tremendous load of heat, dust and severity, these industries are highly energy intensive. These conditions pose big challenge to Tribology and therefore it is required to develop and apply advanced tribological concepts for improving equipment reliability, reducing energy consumption, and providing healthy working environment to the operating personnel and other habitants.

It is need of the hour to evolve suitable tribological approach especially for reduction in energy consumption in these industries.

Adoption Chromium Carbide Wear Plates can help drastically reduce wear and tear replacement costs, improve equipment reliability, reduce energy consumption and provide a healthy working environment.

Organisations which have adopted a strategy to address tribological losses have an edge against their competition and experience the following benefits.



Improved Reliability



Reduced energy consumption



Increased Savings



Reduced downtime for replacements

What is a Wear Plate?

Wear plates are expendable items that are used to prevent excessive wear or damage to expensive equipment.

Wear plate is commonly a type of abrasion resistant steel plate that is considered extremely durable, especially under harsh conditions.



Chromium Carbide Composite Hard Faced Wear Plate?

A CCCHFWP is a base plate with a hard overlay with a specific chemical composition designed to resist erosion, abrasion and impact under harsh environmental conditions and specific applications.

ULTRAPLATE is a range of Chromium Carbide & Complex Carbide Composite Hard Faced Wear Resistant Plates manufactured by Tecknoweld in India which is supported by over 25 Years of Research and Development.

The technology is a unique in-house-developed open arc process that ensures minimum dilution level and uniform distribution of rich carbides up to interface, offering significant improved wear life.

Hard Overlay

Consists of Rich Primary M7C3 Carbide + Additive base elements like Boron/ Nb/ Mo/ V/ Ni/ W/ Si Matrix as per customer requirement

Base Plate

Base Plate consists of Mild Steel or Stainless Steel as per customer requirement



Inlet and Discharge Chutes, fabricated from ULTRAPLATE 5000, in Coal Handling Plant of Thermal Power Station resulted in massive reduction in maintenance costs



ULTRAPLATE SUPER used in Hot Coal Coke Handling in Coke Oven in Steel Plant resulted in tremendous reduction in downtime for maintenance

Thought behind this Document

To help create awareness of use cases brought about by adoption in the core industrial sectors.

Should you read this?

This document will assist Purchase Managers, Maintenance and Production Managers, Operations Managers, Technical O&M Supervisors with identifying use cases for their use based on the collectives herein.



Iron & Steel



Mining



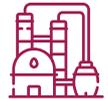
Cement



Coal Fired Power



Bulk Handling & Dredging



Glass, Refinery, Pulp & Paper



Input in Manufacturing



Safety & Security



Customised Requirements

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How to read the document?

This page will help you to read the document accurately.

Information about the product

Bucket Lip

 Bucket Lip, a part of mining loaders buckets; is the main part to drag minerals and metals drawn from under ground mines. It has to withstand impact & abrasion at the time of operations.

Adoption of Chromium Carbide Wear Plates as the Material of Construction (MOC) instead of Manganese Steel on a bucket lip has provided more than double the life for Maheshwari Mining Pvt. Ltd., Mining Contractor in India.

 Maheshwari Mining Pvt. Ltd. have established themselves as specialists in Coal and Mineral (hard & soft rock) industry. After functioning for almost three decades, they have been able to secure the place of one of the best under-ground mining service providers across India. Their customers include L & T, IMFA, TATA Steel, CMPDIL etc.



Raw Material being Handled
Copper Ore Lumps
Mines for copper and zinc in Kshetri & Udaipur Rajasthan, India

 A comparison of both Manganese Steel and Chromium Carbide Wear Plates is enumerated below capturing usage, writeup of Material of Construction, Hardness, Thickness, Life and Cost.

	Manganese Steel	ULTRAPLATE 3000
Writeup	They are using Manganese Steel Liners. This is a form of tempered steel. Hardening (quenching) and tempering sheets and plates produces the wear and tear properties, which can be lost if incorrectly processed. This material has impact resistant characteristics, however abrasion resistance is less due to higher percentage of Mn than other alloys.	UP 3000 consists of Chromium, Carbon, Manganese & Boron as combination alloys. This material is impact & abrasion resistant.
Hardness	450 BHN/ 45 HRC	600 BHN/ 60 HRC
Thickness	10 mm	8 mm
Life	2000 RPH	4000 RPH
Cost of Material	INR 90 Per KG	Rs 110 per KG

 Summary of findings

- Against an increase of 20% Upfront Price Running Hours increases by 100%
- 50% Reduction in Down Time to replace and install bucket lip
- Savings of more than 50% over a period of 1 Year



About the customer



Location



Comparitive

A comparison of existing material of construction with Ultraplate as material of construction.



Key findings

Abbreviations

MOC - Material of Construction
BHN - Brinell Hardness Number
HRC - Hardness Rockwell C
HRB - Hardness Rockwell B
MS - Mild Steel

SS - Stainless Steel
Nb - Niobium
B - Boron
Mo - Molybdenum
V - Vanadium

Ni - Nickel
Mn - Manganese
W - Tungsten/ Wolfram
Si - Silicon
UP - Ultraplate



ULTRAPLATE being used as a Liner in a Coal Silo which can help with impact and abrasion

Bucket Lip

 Bucket Lip, a part of mining loaders buckets; is the main part to drag minerals and metals drawn from under ground mines. It has to withstand impact & abrasion at the time of operations.

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Raw Material being Handled
Copper Ore Lumps
 Mines for copper and zinc in Kshetri & Udaipur Rajasthan, India

 Comparative

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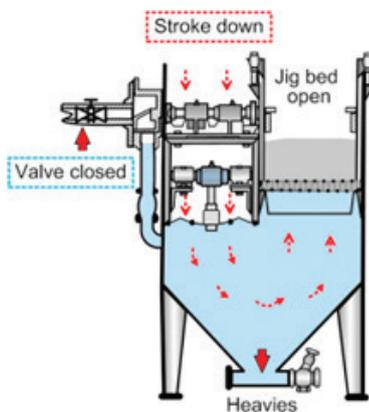
 Summary of findings

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- 50% Reduction in Down Time to replace and install bucket lip
- Savings of more than 50% over a period of 1 Year

Jig Water Tank

i Jig Water Tank is the most important item for washing of coal. Jigging is a process of ore concentration carried out in any fluid whose effectiveness depends on differences in specific gravity of granular mineral particles. It consists of separation of the particles into layers of different specific gravities followed by the removal of the separated layers.

o Central Coalfields Limited - Rajrappa Washery was commissioned in 1987 and constructed by MAMC. It's installed capacity is 3.0 MTY of raw coal feed and highest in India for Coking coal washery. The washed coal produced is despatched to steel plants like SAIL, RINL etc. and also despatched to different power plants.



Raw Material being Handled
Raw Coal
Sewai, Jharkhand

o Comparative

	Mild Steel	UP3000
Writeup	<p>There is a continuous impact and abrasive effect of raw coal in jig tank.</p> <p>Using a Mild Steel constructed jig tank results in high downtime due to continuous repairs required. Wear and tear from handling of coal is high.</p>	<p>Adoption of UP3000 has resulted in impact & abrasion resistance capability in the jig water tank.</p> <p>Chromium, Carbon, Manganese & Boron allows for impact and abrasion resistance.</p>
Hardness	18 HRC	60 HRC
Thickness	10 mm	8 mm
Life	4 - 6 Months	18 Months
Cost of Material	INR 100 per KG	INR 120 per KG

o Summary of findings

- Increase in life of Jig Water Tank upto 300%
- Tremendous Increase in Production due to low downtime
- Drastic reduction in shut down time and repetitive maintenance cost.

Loader Bucket

i Loader buckets can allow for improved digging and bucket filling. They can load, carry and dump granular materials, grab irregularly shaped objects, and doze in a place where the materials are to be used.

Adoption of ULTRAPLATE Liners in Loader Bucket has increased production and reduced equipment downtime.

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Raw Material being Handled
Raw Coal
Sewai, Jharkhand



Comparative

	Mild Steel	UP3000
Writeup	<p>Mild Steel walls deshape over time. Cracks appear which hamper production cycle.</p> <p>The two walls, left & right, and base of the buckets should be protected by liners.</p>	<p>UP3000 consists of Chromium, Carbon, Manganese & Boron as combination alloys. This material is impact & abrasion resistant.</p> <p>UP3000 Liners help provide robustness and strength to a bucket to withstand strong impact and abrasion while handling minerals.</p>
Hardness	18 HRC	60 HRC
Thickness	8 mm	8 mm
Life	2 - 3 Months	10 - 12 Months
Cost of Material	INR 100 per KG	INR 120 per KG



Summary of findings

Drastic reduction in downtime due to reduced damage of bucket walls.

Continuous operations and increase in production.

Against an increase of 25% Upfront Price Running Hours increases by 300%

Discharge Chutes

i Chutes are transfer points in a materials handling plant. They often demand more attention and can be the source of more downtime than the conveyors or equipment that precede or follow them. Ideally the chutes are designed first, and then the plant equipment and structures are placed around them. Discharge Chutes generally feed coals from discharge points to washery section by conveyors. These chutes are subject to impact & abrasion all times when in operation.

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Raw Material being Handled
Raw Coal
Sewai, Jharkhand

g Comparative

	Mild Steel	UP3000
Writeup	<p>Liner plates are not being used in this type of chutes from beginning.</p> <p>Due to this there was a severe problem for the functioning of the chute properly and workers do the spot repairs time to time as and when required which hampered the production.</p>	<p>We are offering UP3000 which will protect the chutes from any defects and will give 3 to 4 times life from next onwards.</p>
Hardness	18 HRC	600 BHN/ 60 HRC
Thickness	8 mm	8 mm
Life	6 Months	18 Months
Cost of Material	INR 120 per KG	INR 150 per KG

d Summary of findings

- Liners are imperative to be used to increase life of the chute.
- Liner Plates should be stocked at site for immediate repair of damaged chutes.
- Drastic reduction in downtime and increased productivity.

Ash Liner Elbow

i Ash handling pipes refer to the method of collection, conveying, interim storage and load out of various types of ash residue left over from solid fuel combustion processes. The most common types of ash resulting from the combustion of coal, wood and other solid fuels.

o Calcutta Electric Supply Corporation Ltd. - The Calcutta Electric Supply Corporation or CESC is an Indian electricity generation and the sole distribution company serving 3 Million+ customers to the city of Kolkata, as well as parts of Howrah, Hooghly, 24 Parganas (North) and 24 Parganas (South) districts in the state of West Bengal.



Raw Material being Handled
Ash Slurry
Budge Budge Plant, West Bengal



Comparative

	Manganese Steel	UP2000
Writeup	They are using Manganese Steel Liners. This is a form of tempered steel. Hardening (quenching) and tempering sheets and plates produces the wear and tear properties, which can be lost if incorrectly processed. This material has impact resistant characteristics, however abrasion resistance is less due to higher percentage of Mn than other alloys.	We offered them UP2000 which is Abrasion & Erosion resistant specially used for these type of pipelines used in coal handling units in power plants. The speciality of UP2000 is, in this product with Cr & C, Nb is mixed to prevent erosion & abrasion. And Hardness is around 58-60 HRC.
Hardness	45 HRC	58 - 60 HRC
Thickness	8 mm	8 mm
Life	2 Months	8 Months
Cost of Material	INR 90 per KG	INR 120 per KG



Summary of findings

- Drastic increase in life, upto 300%
- Reduced safety risk as more robust and stable product
- Reduction in downtime to replace elbow joint, increase in production

Plates for Silo



Plates are procured for coal silos wherein mined coal is stacked for future use.



Eastern Coalfields Ltd. - Sonapur Bazari Area - Eastern Coal Fields Ltd (ECL) is one of the leading subsidiaries of Coal India Ltd. Amongst ECL Sonapur Bazari is one of the coal mines. Sonpur and Bazari are two villages that have lent their name to the Sonpur-Bazari open cast coal mines project in Pandabeswar CD Block in Durgapur subdivision of Paschim Bardhaman district in the state of West Bengal, India. They supply Coal to different Captive Steel Plants, Power Plants, NSPCL etc.



Raw Material being Handled
Coal
Sonapur, West Bengal



Comparative

	Mild Steel	UP3000
Writeup	Mild steel is used as a liner to coal silos and go through mild abrasion and impact.	UP3000 consists of Chromium, Carbon, Manganese & Boron as combination alloys. This material is impact & abrasion resistant. Liner Plates are available in standard cut sizes or can easily be fabricated at site with a Plasma Cutting Machine.
Hardness	18 HRC	58 - 60 HRC
Thickness	14 mm	14 mm
Life	12 Months	36 - 42 Months
Cost of Material	INR 100 per KG	INR 110 per KG



Summary of findings

UP3000 provides satisfactory performance with impact and erosion resistance properties

Increase in Life of Spares

300% Increase in lifetime savings over a 4 Year Period

Deck Panel

 The simplest Vibrating Screen Working Principle can be explained using the single deck panel and put it onto an inclined frame. The frame is mounted on springs. The vibration is generated from an unbalanced flywheel. A very erratic motion is developed when this wheel is rotated.

 International Combustion (India) Ltd. - International Combustion commenced operations in the year 1936 based in Calcutta as a trading house representing the interests of International Combustion, U.K. In 1974 the Company changed its status from Private to Public Limited Company. In 1961, the company started its manufacturing activities in different parts of the country. They sell their products to NTPC, JSW, JSPL, State Power Plants, TSL, BSL etc.



Raw Material being Handled
Iron ore, coal, other ores
Baidyabati, West Bengal

 Comparative

	Chromium Carbide Wearplate with Si	UP2000
Writeup	Chromium Carbide Wearplates with Silicon are being used, however, it is observed that life is upto 2 Months. Replacement is required thereafter.	UP2000 with traces of Nb as part of the alloy is used which increases minimum life and strength. Nb is suitable to prevent wear & tear due to abrasion and erosion.
Hardness	50 HRC	60 HRC
Thickness	10 - 26 mm	10 - 26 mm
Life	2 Months	6 Months
Cost of Material	INR 160 per KG	INR 150 per KG

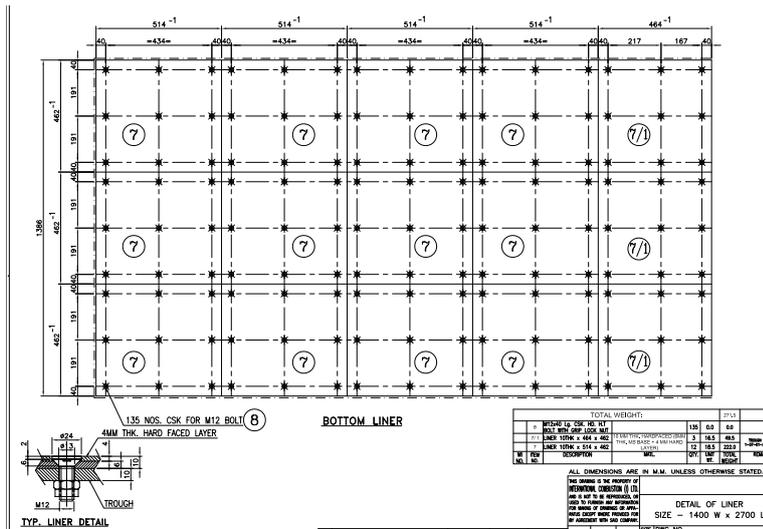
 Summary of findings

- Adoption of Nb as a trace element drastically helps in increasing life of the product
- Mapping problem statement and assessing exact use case of wear plate is essential
- Reduction in cost and improvement in quality

Liner facing with CSK grip lock

These sets of liners are being used in vibro feeder equipment having bolted with master frame of vibrating feeder. A vibratory feeder is an instrument that uses vibration to feed material through a process or a machine. Vibratory feeders utilize both vibration and gravity, to move material forward. The force of gravity influences material to shift direction, such as down or laterally.

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Raw Material being Handled
Raw ore
Baidyabati, West Bengal

Comparitive

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Hardness	50 HRC	60 HRC
Thickness	14 mm	14 mm
Life	2 Months	8 Months
Cost of Material	INR 160 per KG	INR 150 per KG

Summary of findings

- Adoption of Nb as a trace element drastically helps in increasing life of the product
- Mapping problem statement and assessing exact use case of wear plate is essential
- Reduction in cost and improvement in quality

Shot Blasting Plates

i Shot blasting is an effective method to clean up the surface of cast iron mold. Once the molded product has been taken out from the sand mold, it must be removed free of grit and dirt. For removal of those sands the shot blasting machine requires few plates by which grits & dirt are blown to clear the surfaces.

u Kiswok Industries Pvt. Ltd. - Founded as Kejriwal Iron and Steel Works in 1957 at Howrah was one of the first organized and dedicated foundries in the Iron and Steel sector at the time. In 1997 KISW was renamed as KISWOK Industries Pvt. Ltd. which has today grown into a force to be reckoned within the global castings industry. Their clients are L & T, IVRCL, TSL, Ramky Infra, Agri Cast etc.



Raw Material being Handled

Foundry Products

Manufacturing Plant, Jalan Industrial Complex, West Bengal



Comparative

	Mild Steel with Mild Manganese	UP2000
Writeup	They have taken liners for shot blasting plates from a company from Mumbai but didn't performed suitably as the plates have been cracked after using those liners. It has been understood that those liners are mainly made of only MS with mild Mn mixed with. But it is not the right material to be used in shot blasting purpose.	We have offered them UP2000 for this purpose which will give them a long duty to save the blasting plates from abrasion & erosion effect. This UP2000 is diffused with Cr & C with Nb mixed as other main alloy.
Hardness	45 HRC	60 HRC
Thickness	8 mm	8 mm
Life	1 Month	3 Month
Cost of Material	INR 160 per KG	INR 150 per KG



Summary of findings

Increase in life of Shot Blasting Plates by adoption of UP2000 Liners

It will be more effective in casting process to get the output of much better inished products.

Muller Machine

 A machine for mixing sand and binders by a kneading and squeezing action for use in sand molds. The mixture is usually sand, clay, and water, but synthetic chemical binders may be used.

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Raw Material being Handled
Synthetic Sand
 Manufacturing Plant, Jalan Industrial Complex, West Bengal

 Comparative

	Manganese Steel	UP2000
Writeup	Manganese Steel liners were being used.	We have offered them for UP2000 as it is totally abrasive oriented operation.
Hardness	40 HRC	58 HRC
Thickness	8 mm	8 mm
Life	6 to 8 Months	18 to 24 Months
Cost of Material	Unknown	INR 120 per KG

 Summary of findings

It will be highly cost effective and will give good productivity as well.
 The life of the master muller blades will be extended for long time.
 Increased lifetime savings

Clinker Chutes

i Cement clinker is a dark grey nodular material made by heating ground limestone and clay at a temperature of about 1400 °C - 1500 °C. The nodules are ground up to a fine powder to produce cement, with a small amount of gypsum added to control the setting properties. The chutes used to move this clinker thru hopper to conveyor is called clinker chutes.

@ Ramco Cements Ltd. - The Ramco Cements Limited (formerly Madras Cements Limited) is a company of the Ramco Group, a business group based in Chennai, India. The company also produces ready mix concrete and dry mortar products and operates wind farms. The main product of the company is Portland cement, manufactured in eight production facilities that includes Integrated Cement plants and Grinding units with a current total production capacity of 16.45 MTPA (out of which Satellite Grinding units capacity alone is 4 MTPA). Their clients are McNally Bharat, HCC, Gamon, Exide Indusgtries etc.



Raw Material being Handled
Raw Clinker
Plant at Kolaghat, West Bengal

📊 Comparitive

	Chromium Carbide Wearplate	UP2000
Writeup	They use Wear Resist liner plates. But the liners are not giving long life as per expectations due to some lack of technological process compared to Ultraplate. These chutes are giving a life of 5000 to max 6000 hrs.	We offered them UP2000 which will give them at least 8000 hrs. productivity.
Hardness	55 HRC	58 HRC
Thickness	10 mm	10 mm
Life	6000 RPH	8000 RPH
Cost of Material	INR 110 per KG	INR 140 per KG

💰 Summary of findings

Cost wise UP2000 is much more cost-effective than others.
Return of investment will be more realistic.

Grit Funnel

 Grit Funnel are used industrial dry kiln cement production plants to heat the raw mix and drive off carbon dioxide and water before it is fed into the kiln.

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Raw Material being Handled
Dry hot cement with raw mix
 Plant at Kolaghat, West Bengal

 Comparative

	Chromium Carbide Wearplate	UP2000
Writeup	They use Wear Resist liner plates. But the liners are not giving long life as per expectations due to some lack of technological process compared to Ultraplate. Mostly these cones are giving life of 5000 to max 6000 hrs.	We offered them UP2000 which will give them at least 8000 hrs. productivity.
Hardness	55 HRC	58 - 60 HRC
Thickness	10 mm	10 mm
Life	6000 RPH	8000 RPH
Cost of Material	INR 110 per KG	INR 140 per KG

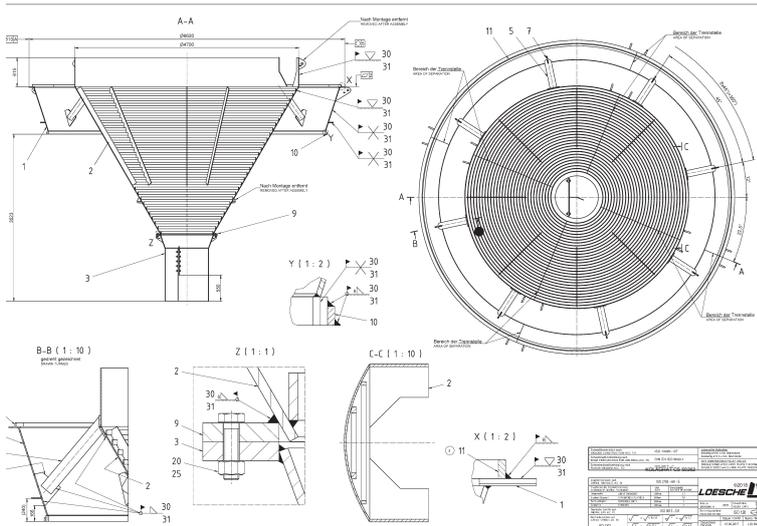
 Summary of findings

- Increased Life
- Superior Quality as compared to earlier vendor
- Quality turn around time

Classifier Chutes

 A classifier chute is a vertical or inclined plane, channel, or passage through which objects are moved by means of gravity.

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Raw Material being Handled
Lime Stone, Gypsum, Coal
Plant at Kolaghat, West Bengal

Comparative

	Chromium Carbide Wearplate	UP2000
Writeup	They are taking liners for classifier chutes from which gives them 2 years life.	We offered them UP2000 which will give at least 6 years life. We have technologically upgraded to design and making of chutes liners with actual percentage of actual alloy mixing.
Hardness	55 HRC	58 HRC
Thickness	25 mm	25 mm
Life	2 Years	6 Years
Cost of Material	INR 120 per KG	INR 150 per KG

Summary of findings

Cost effective while getting 3 times more life than others.

Chutes

 Chutes are used for guiding the flow of bulk materials and connecting conveying and processing equipment together.

 Metal Engineering & Treatment Co. Pvt. Ltd. better known as METCO was formed in 1962. The strength of METCO Industries lie in its technical excellence and process design abilities, manufacturing quality and prompt service. Their Clients are Bridge & Roof, BBJ, BHEL, HAL, Mecon, HEC etc.



Raw Material being Handled
Raw coal
Kolkata, West Bengal

 Comparative

	Mild Steel	UP3000
Writeup	Mild Steel chutes are being used which offer little resistance to abrasion, impact or erosion.	We have offered them UP300 for impact abrasion resistant chutes liners which will give a better life to prevent the wear & tear activities.
Hardness	18 HRC	60 HRC
Thickness	25 mm	25 mm
Life	1 Year	3 Years
Cost of Material	INR 110 per KG	INR 130 per KG

 Summary of findings

- Increased life of chutes
- Reduction in maintenance costs and downtime
- Higher productivity

Scraper Plate

 A scraper is a machine used for moving or removing dirt, gravel and any other unnecessary material from the surface. There are many earth-moving machines on the market, but the scraper is specialized for scraping and it is the most efficient machine for that task.

 Star Cement Limited is the largest cement manufacturer in north east India. Their brand “Star Cement” has established itself as the most accredited brand of the region on grounds of both quality and fair pricing. Star Cement Limited is listed on National Stock Exchange (NSE) and Bombay Stock Exchange (BSE).



Raw Material being Handled
Clinker
Lumshnong, Meghalaya



Comparative

	Chromium Carbide Wearplate	UP2000
Writeup	Till time they took liners for scrapers from an alternative manufacturer. However, they were not able to make the right design mix to satisfy the customer. The problem was mainly in fixing of bolting with the scraper plate. Also the life of plates were not up to the level.	We have offered them UP2000 which will be made as per customer’s requiremet perfectly and also will give the satisfactory life of the scraper plates.
Hardness	55 HRC	58 - 60 HRC
Thickness	8 mm	8 mm
Life	6 Months	18 Months
Cost of Material	INR 110 Per KG	INR 140 per KG



Summary of findings

- Increase in life by 200%
- Increase in Production
- Tremedous increase in lifetime savings

Armour Ring

 Armour Ring in Wet Grid ball mill is mainly used for mixing and grinding materials in two types: dry grinding and wet grinding .It has advantages of fineness uniformity and power saving. The machine uses different types of liner to meet different customer needs. The grinding fineness of material can be controlled by grinding time. It generates a abrasion & erosion in elevated temperature

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Raw Material being Handled
Gypsum
Lumshnong, Meghalaya

 Comparative

	Manganese Steel	UP4000
Writeup	They are using Manganese Steel Liners. This is a form of tempered steel. Hardening (quenching) and tempering sheets and plates produces the wear and tear properties, which can be lost if incorrectly processed. This material has impact resistant characteristics, however abrasion resistance is less due to higher percentage of Mn than other alloys.	We Offered them UP4000 which consists Cr-C with Nb, Mo, B. It will serve the life of armour ring for a long time and the cost of liners is at per with Hardox.
Hardness	45 HRC	60 HRC
Thickness	10 mm	10 mm
Life	2 Years	6 Years
Cost of Material	INR 120 per KG	INR 140 per KG

 Summary of findings

As per cost UP4000 is more profitable as per the quality and lif of product in comparison with others. Mill can be run without frequent shut down taken for. So there will be more return on production. UP4000 will give at least 4 times life than any other products.

Chutes Plates

 Chutes are used for guiding the flow of bulk materials and connecting conveying and processing equipment together.

 Rashmi Ispat is a pioneer in manufacturing of integrated Iron & Steel Products, Cement, Power and Ferro Alloys. Their products and services range from DI Pipes, TMT Bars, Pig Iron, Wire Rods, MS Billets, Sponge Iron, Sinter, Ferro Alloys, Pellet Plant and Cement. It exports 4 billion TPA Iron Ore Fines to China & South East Asian countries, and mineral based products to other parts of the world.



Raw Material being Handled
Coal
Kharagpur, West Bengal

 Comparative

	Mild Steel	UP2000
Writeup	1st time liner user. They use MS chutes. And getting recurrent damages at the time of operation.	We have offered them UP2000 which will be made as per customer's requiremet perfectly and also will give the satisfactory life.
Hardness	18 HRC	60 HRC
Thickness	12 mm	12 mm
Life	1 Year	3 Years
Cost of Material	INR 90 per KG	INR 120 per KG

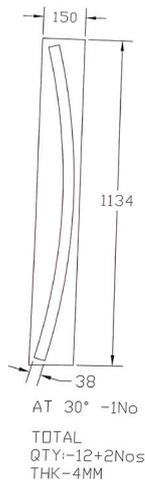
 Summary of findings

We offered them UP2000 which will give them a continuous duty with better life. It will be more feasible and also viable to get more productivity.

Turntable

 Turntable which is one of the most useful Welding positioners greatly enhance productivity when welding pipe, shafts, wheels, elbows and other round fittings. Along with welding turntables, pipe turning positioners are particularly useful when rotating or positioning workpieces with large offset loads.

 Utkarsh India Limited - An ISO 9001:2015 certified manufacturing organization, Utkarsh builds and innovates across seven major verticals - Steel Tubes, PVC Pipes, HDPE Pipes, Railway electrification, Poles, Towers and Crash barriers. Established as a preferred manufacturer in infra-structural segments across India, Utkarsh caters to a global customer base, exporting to numerous countries etc. to meet the necessary demands.



Raw Material being Handled
Steel Wire
Howrah, West Bengal



Comparitive

	Mild Steel	UP3000
Writeup	They are using OEM made equipment based on MS.	we have offered them UP3000 liner. It will resist Impact & abrasion for the chutes used for raw materials handling. It will give them a lomng term life performance and should not think any repetitive change and can concentrate only on production activities.
Hardness	18 HRC	60 HRC
Thickness	10 mm	10 mm
Life	1 Year	3 Years
Cost of Material	INR 90 per KG	INR 120 per KG



Summary of findings

It is very much cost effectiveness and will work in a rough & tough environment efficiently. There should not be any shut down taken for maintenance purpose frequently.

Summary of Observations

25% to 300%

Enhancement of life of product

Upto 30%

Reduction in shut down time for repairs and maintenance

Upto 400%

Enhanced lifetime savings



Standard and custom made alloy chemistries to meet client's application requirements

Upto 25%

Reduce inventory cost and scrap wastage by adopting ready to install wear parts in different forms and shapes

Upto 120%

Cost effective by performance when compared to Manganese Steel, Stainless Steel, Hi Chrome, Ni Hard and quenched and tempered steel

ABOUT **FEDERAL SYNERGIES**



Aerial Inspections using Drones in Dooars, West Bengal

Born in 2012, Federal Synergies possesses a unique balance of international technology implementation experience, industry experience and proven local business capabilities with requisite technical, operational and business expertise. Leveraging sovereign capabilities along with innovative collaboration with global supply chain, FS envisions to practice technology and revolution to everyone and co create next best practices for its customers and partners.

At FS, we believe in bringing innovation to solve traditional business problems using emerging technology. We specialize in designing, developing, deploying and delivering customizable end to end solutions.



Smart Metering at Pilkhana, Howrah, West Bengal

ABOUT **TECKNOWELD**



World's largest composite wear plate manufacturing at Oragadam, Chennai, India

Catering to the wear protection requirements of core sector industries like coal-fired Power, Cement, Mining, Iron & Steel and their OEMs in India and overseas, Tecknoweld products are being exported across the World.

Tecknoweld products cover an entire spectrum of hard facing including simple Chromium Carbides, complex Carbides, Titanium Carbides, Tungsten Carbides, Chrome Tungsten Carbides and PTA applied Tungsten Carbides.



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