



AIA Engineering Limited



MILLART

Mill Grinding and Advanced Recovery Technology

Taking your mineral processing performance to the next level



AIA Engineering Limited



Always ready to serve you

"Expertise in Mill Lining System design is meant to improve life, output & efficiency. High Chrome Grinding Media with selected metallurgy improves mineral recovery and reduces wear cost."

These are produced using the most modern technology and under strict quality control.

Cooperation with customers and being available to offer assistance & services are essential success elements.

We offer regional expertise centers, research facilities devoted to technology advancement and local assistance near you.





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Our Structural Pillars



Safety and Environment

All Vega wear products are designed and manufactured with safety and environment as the top priority.



Grinding Optimization Capabilities

Maximize mill availability, output and efficiency minimizing TCO .



Expertise in Mineral Processing

Optimize pulp electrochemistry to improve mineral recovery.



Leading Innovations

Through continuous improvement program, we provide customers with innovative solutions.



Local Support and Global Expertise

Cooperation with our customers and being accessible to provide assistance and service is crucial.





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How Vega delivers results

Our cutting edge Grinding Solutions are created with one objective: to boost the availability of mills while reducing maintenance and energy costs.

Maximize mineral recovery using metallurgy specific high chromium grinding media which improves electrochemistry. We also assist in downstream process optimization.

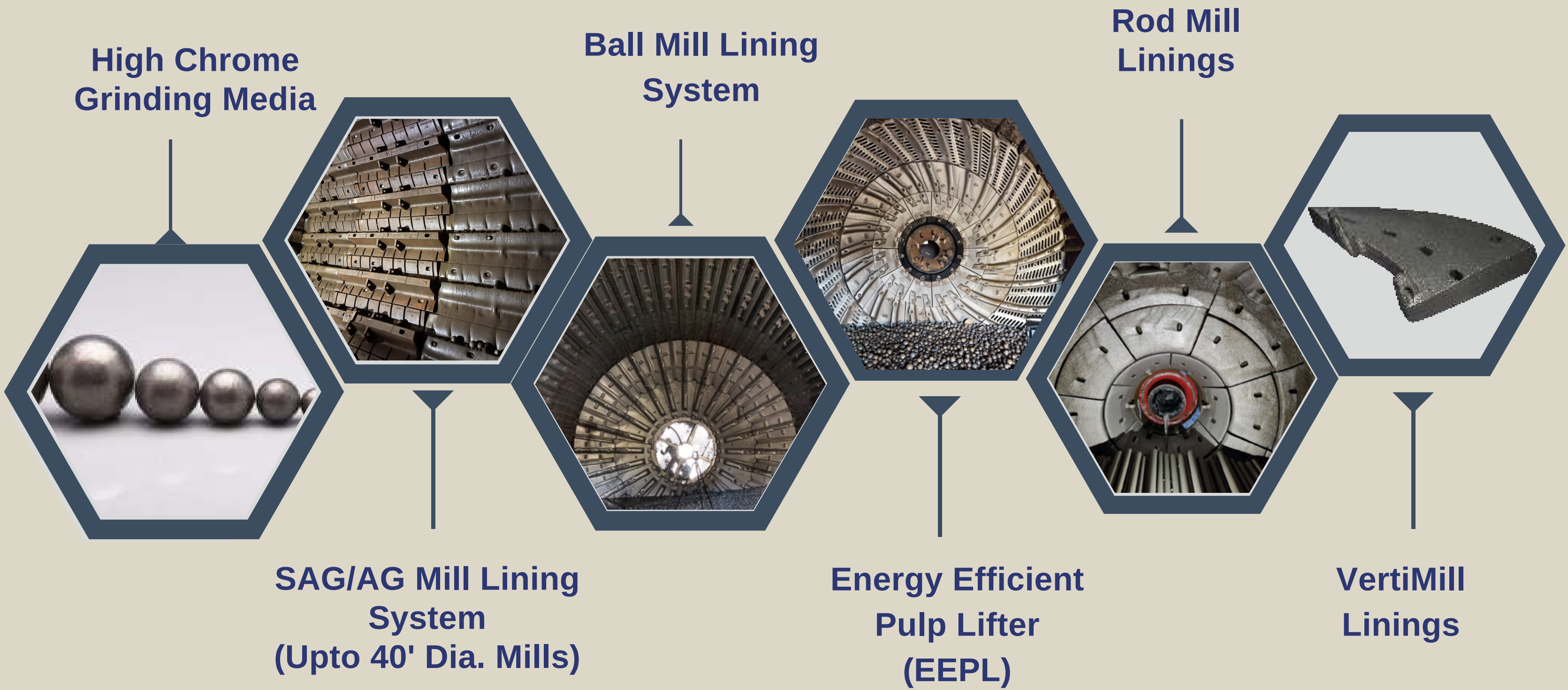
Support mining industry globally as a leading manufacturer of High Chrome Grinding Media, Liners and Service Solutions with excellent Supply Chain Management.



Vega Product Portfolio



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High Chrome Grinding Media

Ball Mill Lining System

Rod Mill Linings

**SAG/AG Mill Lining System
(Upto 40' Dia. Mills)**

**Energy Efficient Pulp Lifter
(EEPL)**

VertiMill Linings

Annual Manufacturing Capacity
Mill Liners: 70,000 MT
High Chromium Grinding Media: 412,000 MT

MillART - Mill Grinding & Advanced Recovery Technology

Solution from Grinding to Flotation

VEGA is the only company globally that offers MillART which is an innovative and holistic solution resulting into improved liner life, better mill output, energy savings and mineral recovery benefits.

Leverage MillART to your advantage



Improved Lifecycle -
Optimized design of
Liners



Increased
Throughput -
EEPL



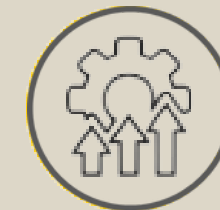
Grind Circuit
Optimization



Liner Wear
Monitoring



Guaranteed
Fitment and
Installation Support



Selection of
Grinding Media
Alloy for superior
wear performance



Selection of Grinding
Media to Improve
Mineral Recoveries



Ball Size Optimization
Test Work and Ore
Grindability Test to
Optimize Grind

Guaranteed results with testimonials from our customers

Mill Liner Life
Improvement

Upto 50%

Mill Throughput
Improvement

5 – 20%

Mill Energy
Reduction

25 -40%

Mineral Recovery
Benefits

2 – 4%

Contact VEGA specialists for a Mill Audit of your plant today!

Optimized Design of Liners Improved Lifecycle

Products

- Liners
- Pulp Lifters
- Alloy Steel, White Iron, Rubber and Composite

Services

- Scanning for wear analysis
- Design modelling using Discrete Element Method (DEM)
- Redesigning for life improvement
- Magma Simulation to eliminate breakage and stress concentration
- Installation support

Key Benefits

- Breakage Elimination
- Extended Life/Reduced Downtime
- Improved Grinding Efficiency
- Consistent Output through lifecycle



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Reduced Downtime

Reducing maintenance and replacement stoppages without premature breakage results in increased productivity and significant cost savings. Additionally this leads to fewer man hours and reduced hazards for workforce.

Guaranteed fitment and interchangeability.

Our specialists need to understand your grinding operations which are unique to each Mill. We closely examine wear phenomenon, operational bottlenecks like life, output, particle liberation/transfer size and recommend potential to increase efficiency.





Energy Efficient Pulp Lifter (EEPL) Increased Output and Reduced Energy



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Products

- Energy Efficient Pulp Lifter EEPL
- Alloy Steel, White Iron, Rubber and Composite

Services

- Grinding Survey
- Process and Design Modelling (DEM)
- Scanning for Wear Analysis
- Magma Simulation to eliminate breakage and stress concentration
- Installation Support
- Mill Operation Support

Key Benefits

- Throughput Improvement and Energy Saving:
 - SAG: 5 to 20%
 - Overflow Ball Mill: 10 to 40%
- Reduction in Transfer Size: Improved Liberation in Downstream

High Chrome Grinding Media: Ball Mills/Verti Mills

Products

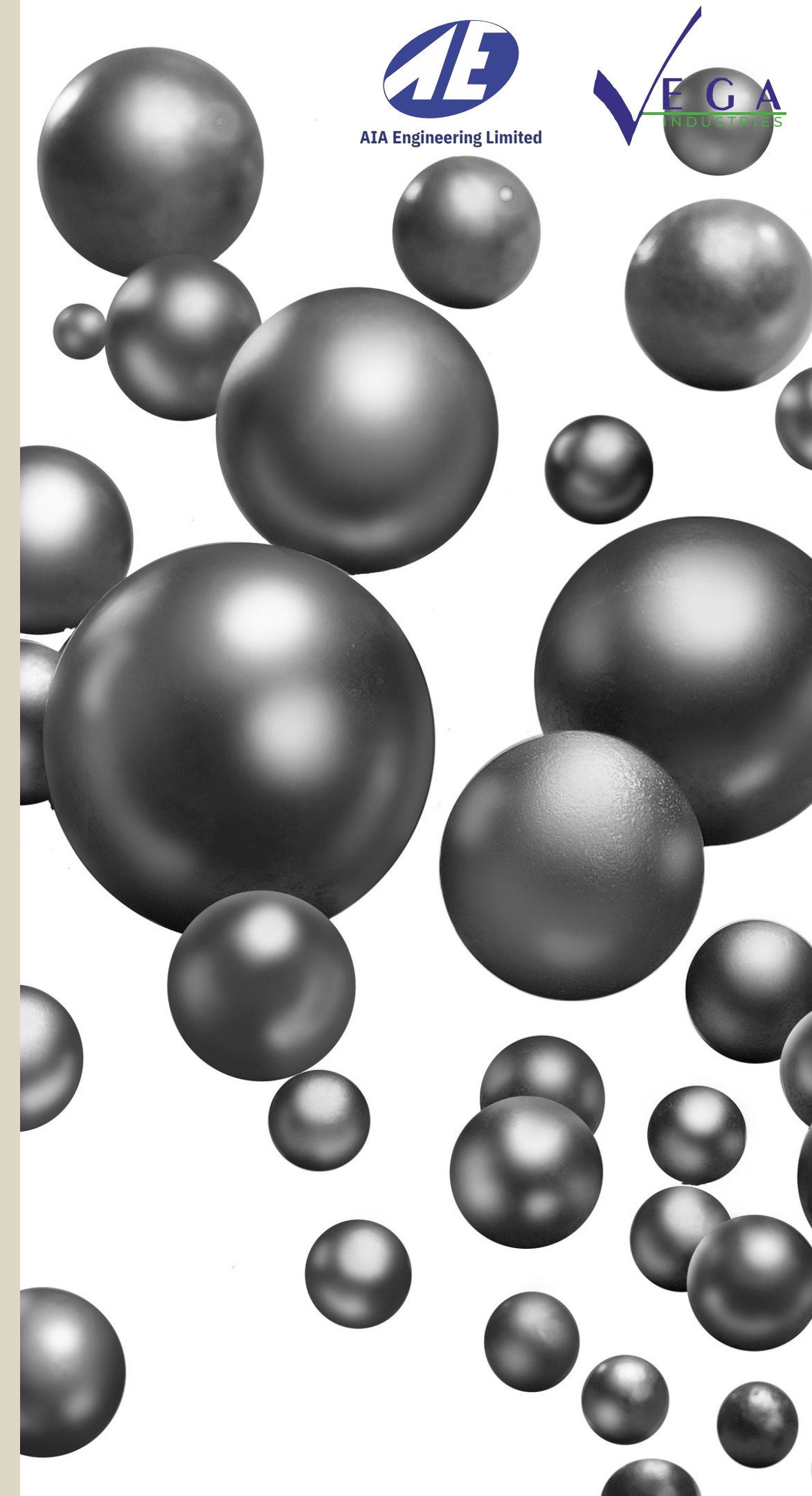
- Optimized Metallurgy with 10 to 33% chromium content suitable for improved mineral recovery and optimum wear cost
- Size: 12.5 to 100 mm
- 80+ high chromium alloys available commensurate with ore characteristics.

Services

- Marked Ball Test (MBT) for cost effective alloy to reduce wear cost
- Bench Test to select an alloy to provide right electrochemistry and cleaner surface chemistry leading to improved mineral recovery.
- Improved Electrochemistry through Selective Reagent System
- Fine Tuning of Flotation Cell Hydrodynamics
- Onsite/offsite VEGA Mineral Processing Labs.
- Ball Size optimization for better grind (Particle Size Distribution) leading to efficient mill operation and higher recovery.
- Capacity for efficient supply chain management

Key Benefits

- Reduction in wear cost: 10 to 20%
- Improvement in mineral recovery: 2 to 4%



Improved Electrochemistry and Recovery

Vega's Engagement for Continuous Metallurgical Improvements

A Proprietary solution of Vega for down stream process improvement with High Chrome media



The proper selection of High Chrome media to minimize mineral surfaces contamination

Avoid iron hydroxides contamination of mineral surfaces during grinding.



Identify the right electrochemistry and reagent suite for your ore types

Selective reagent system with the right electrochemistry for faster kinetics with better pyrite depressant.



Fine-tuning of flotation cell hydrodynamics to maximize capacity utilization

Bank operating Jg profiling along with a dual-frother system to maximize flotation of fines & coarse.

Vega's Engagement for Continuous Metallurgical Improvements

A Proprietary solution of Vega for down stream process improvement with High Chrome media

1

Grind Efficiency

- Monitor plant feed stability, mineralogy & metal input variability
- Milling / Cyclone parameters grind size monitoring
- Grind Modelling and Optimization

2

Reagents & ElectroChemistry

- Electrochemistry (Eh, pH, DO)/lime addition & control
- Frother dosage monitoring and control at CCC
- Collectors/Depressants dosage monitoring and control based on electrochemistry/Ore type

3

Cell Hydrodynamics & Flotation Control

- Monitoring air flow and froth level stability
- Gas velocity profile monitoring (w.r.t. frother & concentrate mass pull)
- Regrind monitoring and cleaner chemistry
- Flotation modeling and process control optimization

Marquee Customers

GLENCORE

KINROSS



BHP

RioTinto

