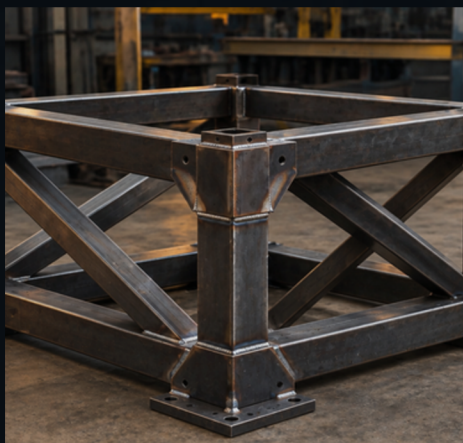


# BHAVVYA ROLLING MILLS LIMITED

INTEGRATED METALLURGY / CNC FABRICATION / SURFACE ENGINEERING



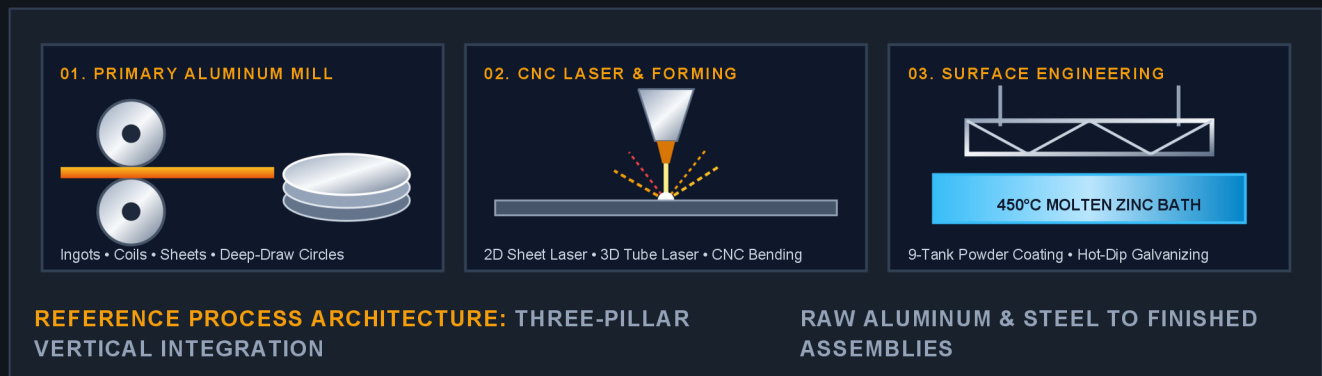
INDUSTRIAL CAPABILITY CATALOGUE

2026 — 2027

TIER-1 INTEGRATED METALLURGY, CNC FABRICATION & SURFACE ENGINEERING

# ENGINEERED METAL. INTEGRATED EXCELLENCE.

From primary aluminum melting, cold rolling, and circle blanking to high-speed 2D/3D CNC fiber laser processing, multi-axis press brake forming, 9-tank powder coating, and hot-dip galvanizing—delivered under unified management across our twin manufacturing hubs in Palghar & Vasai, Maharashtra.



## 01. PRIMARY ALUMINUM METALLURGY

**Ingots, Cold-Rolled Sheets & Deep-Draw Circles:** Reverberatory melting with degassing and filtration, high-precision 4-Hi cold rolling mills, and controlled-atmosphere annealing for zero-earing cookware and industrial applications.

## 02. 2D SHEET & 3D TUBE FIBER LASER

**High-Speed CNC Laser Cutting:** Solid-state fiber lasers processing flat sheets (MS, SS, Al, Brass, Copper) and structural hollow sections (Round, Square, Rectangular, Channels, Beams) with  $\pm 0.03$  mm positional repeatability.

## 03. CNC BENDING & HEAVY FABRICATION

**Multi-Axis Forming & Certified Welding:** Synchro CNC press brakes with optical crowning paired with modular MIG, TIG, and Fiber Laser welding bays for turnkey industrial enclosures, skids, and OEM weldments.

## 04. 9-TANK COATING & GALVANIZING

**Architectural & Heavy Corrosion Armor:** Tricationic zinc-phosphate 9-tank pre-treatment with electrostatic powder curing (1,000+ hr salt-spray resistance) alongside 450°C SHG Zinc Hot-Dip Galvanizing (IS:2629 / ASTM A123).

## PALGHAR MANUFACTURING UNIT (UNIT I)

### BHAVVYA ROLLING MILLS LIMITED

Ground Floor, Survey No. 39/2, 39/4, 41/2, Industrial Unit No. 7, Alyali Prabhav Kshetra, Alyali, Palipada, Palghar - 401404, Maharashtra, India.

## VASAI EAST MANUFACTURING UNIT (UNIT II)

### BHAVVYA ROLLING MILLS LIMITED

Shah Estate, Plot No. 7, Survey No. 7, Off Western Express Highway, Vasai East, Sativali Road, Palghar - 401208, Maharashtra, India.

CORPORATE PROFILE & INFRASTRUCTURE FOOTPRINT

# THE POWER OF VERTICAL INTEGRATION

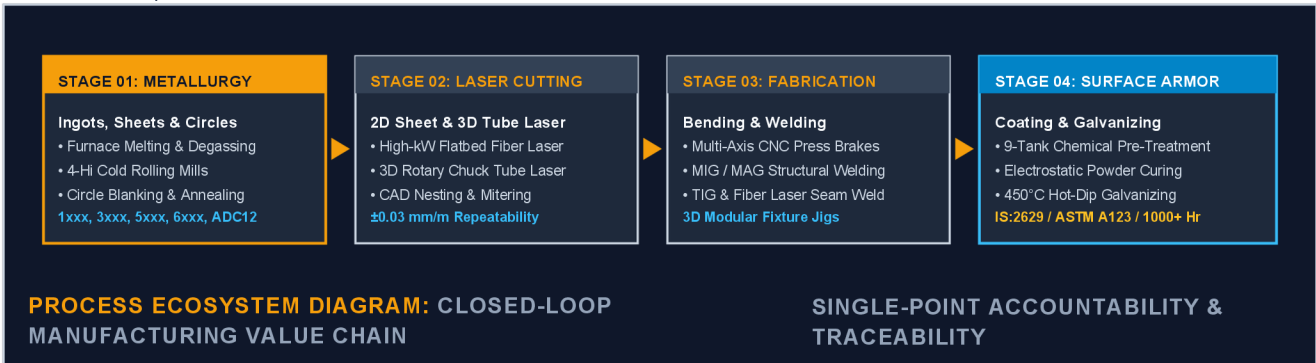
From Molten Metal to Finished Structural Assemblies—Engineered Across Two Strategic Industrial Units

## ELIMINATING SUPPLY CHAIN FRICTION

In conventional manufacturing, sourcing raw metal, laser cutting, sheet bending, welding, powder coating, and hot-dip galvanizing across five separate vendors leads to compounding logistics costs, transit damage, and scheduling bottlenecks. **Bhavvy Rolling Mills Limited** eliminates this fragmentation by uniting non-ferrous rolling, CNC sheet/tube fabrication, and industrial surface coatings under one corporate umbrella.

## TWIN-PLANT STRATEGIC ADVANTAGE

Strategically positioned along the Mumbai–Ahmedabad industrial corridor in Maharashtra, our **Palghar Unit (Alyali Prabhav Kshetra)** and **Vasai East Unit (Off Western Express Highway, Sativali Road)** provide rapid connectivity to JNPT Port, Mumbai, Gujarat, and pan-India industrial corridors—ensuring zero-delay dispatches for both bulk metal coils and finished OEM assemblies.



| MANUFACTURING DIVISION         | CORE MACHINERY & PROCESS INFRASTRUCTURE                                                                     | PRIMARY INDUSTRIAL OUTPUT                                                                              |
|--------------------------------|-------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| 01. Aluminum Melting & Casting | Temperature-controlled reverberatory/tilting furnaces, rotary nitrogen degassing, ceramic foam filtration.  | Commercial purity ingots (IE-07/EC), die-casting alloy ingots (ADC12, LM6, LM24), rolling slabs.       |
| 02. Aluminum Sheet Rolling     | 2-Hi / 4-Hi cold rolling mills, tension leveling lines, slitting lines, stucco & checkered embossing rolls. | Mill-finish sheets, coils, tread plates, roofing sheets, cladding strips (0.30 mm to 6.00 mm).         |
| 03. Aluminum Circle Blanking   | Automatic eccentric blanking presses, controlled-atmosphere batch annealing furnaces.                       | Deep-drawing grade circles (100 mm to 1200 mm dia) for cookware, utensils, pressure cookers, lighting. |
| 04. CNC Sheet & Tube Laser     | 2D dual-pallet flatbed fiber lasers & 3D rotary chuck tube/profile lasers with automatic bundle loaders.    | Precision cut sheet blanks, mitered structural tubes, slotted channels, beams, chassis profiles.       |
| 05. CNC Bending & Fabrication  | Multi-axis servo-hydraulic CNC press brakes, 3D modular welding tables, MIG/TIG/Laser welding cells.        | Formed panels, electrical enclosures, machine frames, structural skids, custom OEM assemblies.         |
| 06. Surface Treatment Plants   | Automated 9-Tank chemical pre-treatment + electrostatic powder booth; 7-Stage 450°C HDG zinc kettle line.   | RAL powder-coated architectural/industrial parts & hot-dip galvanized infrastructure steel.            |

|                                              |                                                        |                                              |                                                |
|----------------------------------------------|--------------------------------------------------------|----------------------------------------------|------------------------------------------------|
| <b>2 UNITS</b><br>PALGHAR&VASAI EAST<br>HUBS | <b>8 PROCESSES</b><br>UNDER UNIFIED QUALITY<br>CONTROL | <b>±0.03 mm</b><br>CNC LASER CUT<br>ACCURACY | <b>1,000+ HRS</b><br>SALT-SPRAYCOATING<br>LIFE |
|----------------------------------------------|--------------------------------------------------------|----------------------------------------------|------------------------------------------------|

PILLAR I: NON-FERROUS METALLURGY DIVISION

# ALUMINUM INGOTS, SHEETS & CIRCLE MANUFACTURING

MetallurgicalPurity,IsotropicGrainStructure&Micron-LevelGaugeControlforOEMs



## 01. ALUMINUM INGOTS

Manufactured in automated reverberatory and tilting furnaces using high-grade primary metal and carefully segregated alloy returns. Every heat undergoes rotary nitrogen/argon degassing, flux treatment, and 30–50 PPI ceramic foam filtration to eliminate hydrogen gas porosity and non-metallic oxide inclusions. Ideal for high-pressure die-casting, gravity casting, and rolling mill feedstock.

## 02. ALUMINUM SHEETS & COILS

Cold-rolled on high-rigidity 4-Hi rolling mills equipped with Automated Gauge Control (AGC) and tension-leveling lines. Our sheets exhibit exceptional flatness, uniform mechanical properties, and zero surface oil-staining. Supplied in Mill Finish, Stucco Embossed, and 5-Bar Checkered / Tread Plate profiles with optional PVC protective laser film.

## 03. ALUMINUM CIRCLES

Blanked directly from cold-rolled coils on high-speed eccentric presses and batch-annealed in programmable inert-atmosphere ovens. This produces a fine, equiaxed grain structure (ASTM Grain Size 6–8) that guarantees smooth metal flow during deep drawing and high-speed spinning—completely preventing "earring," orange-peel texture, or wall cracking.

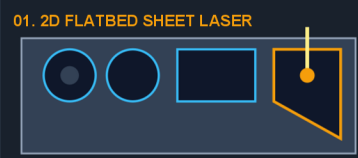
| PRODUCT CATEGORY               | ALLOY GRADES OFFERED                        | TEMPER RANGE                   | DIMENSIONAL CAPABILITIES                                   | KEY INDUSTRIAL APPLICATIONS                                           |
|--------------------------------|---------------------------------------------|--------------------------------|------------------------------------------------------------|-----------------------------------------------------------------------|
| Commercial Purity Ingots       | IE-07, EC Grade (99.5% to 99.7% Min Al)     | As-Cast                        | Weight: 5 kg, 7.5 kg, 15 kg, 25 kg standard notched ingots | Electrical conductors, rolling slabs, deoxidizing steel, utensils     |
| Foundry & Die-Cast Ingots      | ADC12, LM6, LM24, LM4, LM25, AlSi10Mg       | As-Cast / Grain Refined        | Weight: 6 kg – 10 kg bundles; OES certificate per heat     | Automotive engine housings, EV motor casings, pump bodies             |
| Plain Aluminum Sheets & Coils  | AA 1050, 1060, 1100, 3003, 3105, 5052, 6061 | O, H12, H14, H16, H18, H24, T6 | Thickness: 0.30 mm – 6.00 mm<br>Width: 500 mm – 1500 mm    | Facade cladding, bus bodies, control panels, HVAC insulation, signage |
| Embossed & Checkered Sheets    | AA 1100, 3003, 5052 (Marine Grade)          | H14, H24, H32                  | Thickness: 0.50 mm – 5.00 mm<br>Length: Up to 6000 mm      | Cold storage flooring, commercial vehicle ramps, industrial walkways  |
| Cookware Grade Circles         | AA 1050, 1060, 1100 (99.0%+ Purity)         | O (Soft), H12, H14             | Thickness: 0.40 mm – 5.00 mm<br>Diameter: 100 mm – 1200 mm | Pressure cookers, hard-anodized cookware, non-stick pans, Kadai       |
| Industrial & Reflector Circles | AA 1050, 3003 (Al-Mn Alloy)                 | O, H12, H14, H18               | Thickness: 0.50 mm – 4.00 mm<br>Blanking Tol: ±0.15 mm     | LED bay reflectors, spun chemical vessels, gas cylinder domes         |

PILLAR II: PRECISION CNC PROCESSING & FABRICATION

SHEET & TUBE FIBER LASER CUTTING, CNC BENDING & WELDING

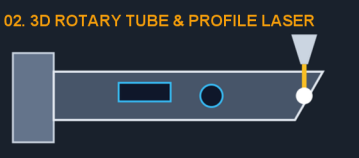
High-Speed 2D Flatbed Laser, 3D Multi-Axis Rotary Tube Laser, Servo Press Brakes & Turnkey Weldments

01. 2D FLATBED SHEET LASER



CAD Auto-Nesting • N<sub>2</sub> / O<sub>2</sub> Clean Cut

02. 3D ROTARY TUBE & PROFILE LASER



Round, SHS, RHS, C-Channel, Angle & Beam

03. MULTI-AXIS CNC SHEET BENDING



Servo Backgauge • Dynamic Crowning

WORKING PROCESS REFERENCE: 2D FLATBED LASER → 3D  
ROTARY TUBE LASER → CNC V-DIE FORMING

DIRECT CAD-TO-PART DIGITAL  
EXECUTION (.DXF / .STEP / .IGES)

2D FLATBED & 3D ROTARY TUBE FIBER LASER

Our CNC Fiber Laser division eliminates traditional multi-machine bottlenecks. On flat sheets, high-density solid-state laser beams cut Mild Steel, Stainless Steel, Aluminum, Brass, and Copper with mirror-smooth vertical edges and minimal Heat-Affected Zones (HAZ). Our **3D Rotary Tube Laser** replaces sawing, milling, drilling, and deburring in a single setup—executing fish-mouth miters, self-locking tab-and-slot joints, and bolt-hole patterns across structural pipes and open profiles up to 6000 mm long.

CNC PRESS BRAKE BENDING & HEAVY FABRICATION

Laser-cut blanks flow directly to our multi-axis CNC Press Brakes featuring motorized hydraulic crowning and precision European tooling for mark-free forming of deep enclosures, hemmed edges, and complex architectural profiles. In our adjacent welding bays, certified fabricators utilize 3D modular fixture tables alongside **Synergic Pulse MIG, TIG, and Hand-Held Fiber Laser Welding** to deliver distortion-free structural skids, machine beds, and IP65 cabinets.

| MACHINERY / WORKCELL         | WORKING ENVELOPE / SIZE CAPACITY                                                    | THICKNESS / TONNAGE RATING                                        | KEY TECHNICAL FEATURES                                                                    |
|------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| 2D Flatbed Fiber Laser       | Bed Area: 3000 × 1500 mm & 6000 × 2000 mm dual shuttle tables                       | MS: Up to 25 mm<br>SS / Al: Up to 16 mm<br>Brass / Cu: Up to 8 mm | Positioning accuracy ±0.03 mm/m; high-pressure Nitrogen oxide-free clean cutting          |
| 3D CNC Tube & Profile Laser  | Tube Length: Up to 6000 mm<br>Round: Ø20 mm – Ø220 mm<br>Square: 20×20 – 150×150 mm | Wall Thickness: Up to 12 mm (MS) / 8 mm (SS & Aluminum)           | Processes Round, Square (SHS), Rectangular (RHS), C-Channel, Angle & H-Beam profiles      |
| CNC Synchro Press Brakes     | Bending Length: 3200 mm to 4000 mm per tandem setup                                 | Press Force: 160 Ton to 320 Ton hydraulic servo control           | Multi-axis CNC backgauge (X, R, Z1, Z2); polyurethane film for scratch-free SS/Al bending |
| MIG / MAG Structural Welding | Heavy fabrication bays with overhead crane handling                                 | Structural Plates & Hollow Sections from 2.0 mm to 40 mm+         | Low-spatter pulse synergic power sources; Siegmund-style 3D modular clamping fixtures     |
| TIG & Fiber Laser Welding    | Precision sheet metal enclosures, tanks, and clean-room frames                      | Thin-gauge Sheet: 0.8 mm to 6.0 mm (SS304, SS316L, Aluminum)      | Ultra-narrow weld seam with minimal thermal distortion and zero post-weld grinding        |
| Value-Added Assembly         | PEM nut/stud insertion, spot welding, surface brushing,                             | M3 to M16 hardware clinching & countersinking                     | Ready-to-coat or ready-to-assemble sub-systems                                            |

PILLAR III: ADVANCED SURFACE ENGINEERING

9-TANK POWDER COATING & HOT-DIP GALVANIZING PROCESSES

Architectural Electrostatic Polymer Finishes & Metallurgical 450°C Molten Zinc Corrosion Defense



- Tank 1: Hot Alkaline Degreasing**  
Saponifies and strips heavy rolling oils, press lubricants, and organic shop contaminants at 55°C–65°C.

**Tank 5: Ti-Salt Surface Activation**  
Creates millions of microscopic nucleation sites so the subsequent phosphate crystal layer grows fine and dense.

**Tank 2 & 4: Overflow Water Rinses**  
Pressurized fresh-water cascades prevent chemical carryover between alkaline and acid stages.

**Tank 6: Tricationic Zinc Phosphating**  
Chemically converts the metal surface into an insoluble micro-crystalline phosphate/chromate bond layer.

**Tank 3: Acid Derusting & Descaling**  
Removes mill scale, laser edge oxide, and weld heat-tint down to clean, reactive base metal.

**Tank 7, 8 & 9: Passivation, DI Rinse & Cure**  
Seals micro-pores, rinses with zero-mineral Deionized Water, sprays electrostatic RAL powder, and cures at 200°C.

HOT-DIP GALVANIZING (HDG) METALLURGICAL PROCESS

Total Immersion in 450°C Molten Special High Grade (99.995% Pure) Zinc Compliant with IS:2629, IS:4759 & ASTM A123

INTERMETALLIC ZINC-IRON ALLOY PROTECTION

Unlike organic paints that act purely as a surface barrier, Hot-Dip Galvanizing forms an inseparable metallurgical bond. When chemically cleaned steel is immersed into molten zinc at **450°C**, diffusion reactions create intermetallic Zinc-Iron alloy layers (**Gamma, Delta, and Zeta phases**) capped by an outer impact-absorbing **Eta pure zinc layer**. Because the inner alloy layers (170–250 DPN hardness) are harder than base mild steel (159 DPN), galvanized steel withstands harsh transit, crane rigging, and site erection without flaking.

360° HOLLOW COVERAGE & CATHODIC DEFENSE

Because HDG is a liquid total-immersion process, molten zinc flows completely inside tubular frames, pipe interiors, weld corners, and bolt holes where spray systems cannot reach. Furthermore, zinc provides **sacrificial cathodic protection**: even if a structure is deeply gouged down to bare steel during installation, the surrounding zinc anodically corrodes first to shield the exposed steel from rust for 25 to 50+ years.

| HDG STAGE | PROCESS BATH / OPERATION        | CHEMICAL & THERMAL PARAMETERS                                         | METALLURGICAL PURPOSE                                                        |
|-----------|---------------------------------|-----------------------------------------------------------------------|------------------------------------------------------------------------------|
| Stage 01  | Alkaline Caustic Degreasing     | Heated alkaline bath (60°C–75°C)                                      | Strips cutting fluids, oil, grease, and shop markings from fabricated steel. |
| Stage 02  | Acid Pickling (HCl + Inhibitor) | Dilute Hydrochloric Acid at ambient temperature with fume suppression | Dissolves mill scale, iron oxides, and rust without over-etching base steel. |
| Stage 03  | Dual Agitated Water Rinse       | Two-stage counter-current water bath                                  | Flushes dissolved iron salts and residual acid prior to pre-fluxing.         |
| Stage 04  | Pre-Fluxing (ZAC Solution)      | Zinc Ammonium Chloride                                                | Deposits protective salt film that                                           |

QUALITY METROLOGY & INDUSTRIAL APPLICATIONS

Documented Inspection Protocols From Raw Alloy Chemistry to Final Coating Micron Verification

METALLURGICAL & DIMENSIONAL LAB

Every production lot at Bhavvy Rolling Mills Limited is governed by strict stage-gate inspection: **Optical Emission Spectroscopy (OES)** verifies exact aluminum alloy chemistry per heat; digital micrometers, ultrasonic gauges, and Webster/Brinell hardness testers verify cold-rolled sheets and circles; and coordinate laser checks ensure first-article accuracy on all 2D/3D laser-cut and CNC-bent components.

SURFACE COATING & ADHESION TESTING

Our surface treatment laboratories perform continuous bath titration across all 9 powder-coating tanks and 7 galvanizing stages. Finished coatings are tested for **Dry Film Thickness (DFT via Digital Elcometer)**, **Cross-Hatch Adhesion (ASTM D3359 — 5B Rating)**, impact flexibility, pencil hardness, and **Preece / Hammer uniformity testing (IS:2633)**, with Mill Test Certificates (MTC) supplied with every dispatch.

| INDUSTRY VERTICAL                      | PRODUCTS & FABRICATED ASSEMBLIES SUPPLIED                                                                                                               | DIVISIONS UTILIZED                                                     |
|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|
| Cookware, Utensils & Home Appliances   | Deep-drawing O-temper Aluminum Circles (100–1200 mm), hard-anodized blanks, pressure cooker discs, washing machine & microwave enclosures.              | Aluminum Melting, 4-Hi Rolling, Circle Blanking, CNC Sheet Laser       |
| Solar, Power & Telecom Infrastructure  | Hot-dip galvanized solar module mounting structures (MMS), transmission tower members, substation gantries, perforated cable trays, earthing strips.    | 3D Tube/Profile Laser, CNC Bending, Hot-Dip Galvanizing (IS:4759)      |
| Electrical, Switchgear & Automation    | LT/HT electrical control panels, PCC/MCC cabinets, server racks, battery energy storage enclosures (BESS), IP65 outdoor junction boxes.                 | 2D Sheet Laser, CNC Press Brake, TIG/Laser Welding, 9-Tank Powder Coat |
| Automotive, EV & Commercial Transport  | ADC12/LM6 die-cast ingots, bus body aluminum coils, 5-bar checkered floor plates, tube-laser cut chassis sub-frames, battery trays, mounting brackets.  | Ingot Casting, Sheet Rolling, 3D Tube Laser, MIG Welding, Powder Coat  |
| Architecture, Facades & Urban Infra    | CNC laser-perforated aluminum facade panels, HVAC cladding, duplex-coated (Galvanized + Powder Coated) streetlight poles, highway guardrails, bollards. | Aluminum Sheets, 2D Laser, CNC Bending, HDG + 9-Tank Powder Coat       |
| Heavy Machinery, Textile & Pharma OEMs | Heavy welded machine frames, hydraulic skids, conveyor chassis, stainless steel cleanroom tables, textile machinery covers, material handling pallets.  | 2D/3D Laser, CNC Bending, Heavy MIG/TIG Fabrication, Surface Coating   |

MANUFACTURING FOOTPRINT & DIRECT ENQUIRIES

PARTNER WITH BHAVVYA ROLLING MILLS LIMITED

Send Us Your Raw Material Schedules or CAD Files (.DXF, .DWG, .STEP, .IGES) for Rapid Techno-Commercial Quoting

PALGHAR MANUFACTURING UNIT (UNIT I)  
BHAVVYA ROLLING MILLS LIMITED

Ground Floor, Survey No. 39/2,39/4, 41/2,  
Industrial Unit No. 7, Alyali Prabhav Kshetra,  
Alyali, Palipada, Palghar - 401404,  
Maharashtra, India.

VASAI EAST MANUFACTURING UNIT (UNIT II)  
BHAVVYA ROLLING MILLS LIMITED

ShahEstate, PlotNo. 7, Survey No. 7,  
Off Western Express Highway, Vasai East,  
Sativali Road, Palghar - 401208,  
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Corporate & Strategic Leadership

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QUALITY & STATUTORY

GSTIN: 27AALCB1874B1ZS  
CIN: U13100MH2022PLC393249