



APEXIND INNOVATIVE INDUSTRY LLP

STEEL - METAL INDUSTRY

**BUILT RIGHT. BUILT TO LAST. ENGINEERING
YOU CAN RELY ON..!**



**DESIGN | MANUFACTURING & FABRICATION | SUPPLY | INSTALLATION & COMMISSIONING
| ELECTRICAL, INSTRUMENTATION, CONTROL & AUTOMATION INTEGRATION**

**ENGINEERED SOLUTIONS COVERING RAW MATERIAL
HANDLING, SCRAP HANDLING, ORE, COAL, COKE,
FLUX, SLAG, SCALE, FINISHED MATERIAL AND
AUXILIARY PLANT HANDLING SYSTEMS, EXECUTED
UNDER SINGLE-POINT RESPONSIBILITY.**

**SINGLE-POINT
RESPONSIBILITY**

HONEST ENGINEERING

CONTINUOUS-DUTY DESIGN

INTRODUCTION TO CHEMICAL PLANT EQUIPMENT

Steel and metal manufacturing plants depend on heavy-duty material handling systems for continuous movement of raw materials, intermediate products, process rejects, slag, scale, and finished goods. The operating environment is demanding, with high temperatures, abrasive materials, heavy loads, dust, vibration, and continuous production schedules.

Handling systems in steel and metal plants must be rugged, accessible, and reliable. Equipment failure can interrupt furnace charging, rolling mill operation, raw material feeding, slag handling, or dispatch activity. The design must therefore consider heavy-duty construction, thermal effects, abrasive wear, impact loading, dust control, and safe maintenance access.

A well-designed steel and metal industry handling system must fulfil four fundamental requirements: reliable transfer of heavy and abrasive materials, safe handling near process areas, controlled feeding to production equipment, and robust construction suitable for harsh industrial duty.

TYPICAL MATERIALS HANDLED

Typical materials handled include iron ore, coal, coke, limestone, dolomite, pellets, sinter, sponge iron, scrap, ferro alloys, slag, mill scale, dust, ash, metal chips, castings, billets, blooms, slabs, plates, coils, bars, rods, structural sections, foundry sand, refractory materials, and process rejects.

PROCESS OVERVIEW

Raw materials are received by trucks, wagons, stockyards, or storage yards. Bulk materials such as ore, coal, coke, limestone, and fluxes are transferred through belt conveyors, feeders, elevators, screens, and storage bins. Controlled feeding systems deliver materials to furnaces, mixers, kilns, or process equipment.

In metal processing and fabrication areas, scrap, chips, scale, slag, and finished products are handled through conveyors, bins, trolleys, lifting systems, and custom transfer equipment. The plant layout may require heavy-duty structures, long conveyors, dust-controlled transfer points, and special wear protection.

The actual configuration depends on production process, material form, capacity, operating temperature, equipment interface, site constraints, and level of automation required.

EQUIPMENT SUPPLIED FOR STEEL & METAL INDUSTRY

Apexind can design and supply material handling equipment, fabricated structures, storage systems, and auxiliary handling arrangements for steel and metal industry applications.

- ❑ **Belt Conveyors:** Used for handling ore, coal, coke, fluxes, limestone, pellets, sinter, slag, scale, and other bulk materials. Conveyors are designed for heavy-duty service with suitable belt rating, idlers, pulleys, take-up systems, chutes, scrapers, skirts, safety switches, walkways, and support structures.
- ❑ **Belt Feeders:** Installed below hoppers, bunkers, stockpiles, and storage bins for controlled extraction of bulk materials. Heavy-duty belt feeders can be designed for high impact loading and abrasive service.



- ❑ **Bucket Elevators:** Used for vertical handling of pellets, fluxes, coal, coke, scale, granules, and other bulk materials. Chain or belt type elevators are selected depending on temperature, duty, capacity, and material characteristics.
- ❑ **Screw Conveyors:** Used for enclosed handling of fines, dust, additives, ash, scale, and smaller bulk materials. Screw conveyors can be supplied in U-trough or tubular construction depending on dust-control and layout requirements.
- ❑ **Drag Chain Conveyors:** Suitable for abrasive, hot, dusty, or heavy-duty enclosed conveying applications. Drag chain conveyors are useful for slag-related materials, scale, ash, dust, and selected bulk solids where belt conveyors may not be preferred.
- ❑ **Vibratory Conveyors and Screens:** Used for transfer, separation, de-lumping, and screening of bulk materials, scrap, sand, scale, and process rejects. Screening systems help remove oversize, fines, and unwanted material before downstream processing.
- ❑ **Storage Hoppers, Bins and Bunkers:** Designed for ore, coal, coke, fluxes, ferro alloys, scale, scrap, and process materials. Hopper design considers flowability, bridging, impact loading, liners, discharge control, and maintenance access.
- ❑ **Transfer Chutes and Wear-Lined Chutes:** Chutes are designed for controlled material flow, impact management, dust reduction, and reduced wear. Wear liners such as rubber, ceramic, manganese steel, or replaceable liners may be provided depending on material and duty.
- ❑ **Custom Trolleys, Skids and Handling Fixtures:** Apexind can design and fabricate custom trolleys, lifting frames, handling fixtures, maintenance skids, and shop-floor transfer equipment for metal plants, fabrication shops, and process areas.
- ❑ **Technological Structures and Heavy Fabrication:** Equipment support structures, conveyor galleries, access platforms, walkways, pipe supports, maintenance decks, frames, trestles, and industrial structures can be supplied as part of the integrated package.
- ❑ **Dust-Control and Enclosed Handling Arrangements:** Dust-controlled transfer points, covered conveyors, enclosed screw conveyors, chute sealing, and ducting support can be provided to improve working conditions and reduce material loss.
- ❑ **Dust Collector System / Bag Filter with Reverse Pulse Jet Cleaning:** Designed for collection and control of process dust generated during material handling, conveying, screening, mixing, feeding, batching, and transfer operations. The system includes dust extraction ducting, bag filter housing, filter bags, compressed air pulse cleaning arrangement, hopper, rotary airlock valve, exhaust fan, dampers, access doors, and control panel as required. Reverse pulse jet cleaning ensures periodic cleaning of filter bags and helps maintain suction efficiency during continuous plant operation.



THE APEXIND TURNKEY SCOPE

Apexind undertakes steel and metal industry material handling packages on a single-point responsibility basis. Clients engage with one team for design, fabrication, supply, installation, and commissioning of the agreed equipment package.

- ❑ **Concept and Detailed Engineering:** Each project begins with understanding material type, plant layout, process interface, capacity, duty cycle, temperature, dust condition, and maintenance requirements. Apexind develops equipment sizing, conveyor routing, chute design, support structures, access systems, and installation methodology.
- ❑ **Manufacturing and Fabrication:** Conveyors, feeders, elevators, hoppers, bins, bunkers, chutes, trolleys, skids, structures, platforms, and fabricated assemblies are manufactured as per project requirements. Equipment is designed for rugged operation, abrasive service, and industrial maintainability.
- ❑ **Supply, Installation and Commissioning:** Apexind can execute site erection, alignment, mechanical installation, trial runs, load testing, and commissioning support. Brownfield modifications and integration with existing plant systems can also be undertaken after site assessment.
- ❑ **Electrical, Instrumentation, Control and Automation:** Apexind can integrate motor control panels, VFDs, safety switches, zero-speed switches, belt sway switches, pull cord switches, level instruments, load cells, PLC, HMI, alarms, interlocks, and sequence controls.
- ❑ **Equipment Outside Our Manufacturing Scope:** Certain items such as furnaces, rolling mills, crushers, magnetic cranes, EOT cranes, bag filters, compressors, PLC hardware, drives, belt scales, specialty valves, and proprietary process equipment may fall outside our direct manufacturing range. These can be sourced from approved vendors and integrated into the system, or supplied by the client.

WHY APEXIND

More than 2 decades of engineering experience • Strong understanding of bulk material handling • In-house design and fabrication capability • Practical solutions for dusty and abrasive applications • Strong vendor network • Honest timelines • Honest costing • Single-point accountability.



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