APEXIND INNOVATIVE INDUSTRY LLP

FOOD 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 INGREDIENT HANDLING, STORAGE, CONVEYING, MIXING, BLENDING, DOSING, PROCESS EQUIPMENT AND HYGIENIC FABRICATION, EXECUTED UNDER SINGLE-POINT RESPONSIBILITY.

SINGLE-POINT RESPONSIBILITY

HONEST ENGINEERING

CONTINUOUS-DUTY DESIGN

INTRODUCTION TO FOOD INDUSTRY PROCESS EQUIPMENT

Food processing requires equipment that is hygienic, cleanable, reliable, and suitable for continuous or batch production. Whether the application involves grains, powders, spices, sugar, flour, pulses, snacks, oils, liquids, pastes, or processed food ingredients, the equipment must preserve product quality while supporting safe and efficient operation.

Food industry equipment must be designed with attention to hygiene, material compatibility, ease of cleaning, dust control, contamination prevention, corrosion resistance, and operator safety. Poorly designed equipment can result in product loss, contamination risk, inconsistent mixing, material degradation, and difficult maintenance.

A well-designed food processing and material handling system must fulfil four fundamental requirements: hygienic handling of ingredients, reliable and gentle conveying, accurate dosing and mixing, and easy cleaning with proper access for inspection and maintenance.

TYPICAL MATERIALS HANDLED

Typical materials handled in food plants include grains, pulses, rice, wheat, flour, sugar, salt, spices, tea, coffee, cocoa, starch, milk powder, edible powders, seeds, dry fruits, snacks, flakes, granules, oils, syrups, pastes, sauces, liquid ingredients, and finished food products. Depending on the application, materials may be fragile, hygroscopic, sticky, dusty, abrasive, oily, or temperature-sensitive.

PROCESS OVERVIEW

Raw materials are received in bags, drums, containers, tankers, silos, or bulk handling systems. Dry ingredients are transferred to storage bins, hoppers, blenders, mixers, or processing machines through belt conveyors, screw conveyors, bucket elevators, pneumatic conveying systems, or manual charging arrangements.

Ingredients are dosed, mixed, blended, heated, cooled, dried, packed, or transferred to downstream equipment depending on the process. Liquids and semi-solids are stored in tanks and transferred through pumps, pipelines, valves, and dosing systems.

The actual configuration depends on food product type, batch size, capacity, hygiene requirement, cleaning method, space availability, process sequence, and automation level.

EQUIPMENT SUPPLIED FOR STEEL & METAL INDUSTRY

Apexind can design, manufacture, fabricate, supply, install, and commission selected process equipment and material handling systems for food industry applications. The principal equipment categories are outlined below.

- **Stainless Steel Hoppers, Bins and Silos:** Used for storage and intermediate holding of grains, powders, flour, sugar, spices, food ingredients, and finished products. Hoppers and bins can be designed with hygienic construction, smooth internal surfaces, proper discharge geometry, inspection openings, level indication, and access provisions.
- **Screw Conveyors:** Used for enclosed transfer of flour, sugar, spices, powders, grains, and food ingredients. Screw conveyors can be supplied in stainless steel construction with removable covers, inspection ports, cleanable design, and controlled discharge arrangements.

- Belt Conveyors: Used for gentle transfer of packaged food, raw ingredients, grains, snacks, boxes, crates, and finished products. Flat belt, troughed belt, cleated belt, and modular belt conveyors can be supplied depending on product type and handling requirement.
- **Bucket Elevators:** Used for vertical lifting of grains, pulses, sugar, snacks, dry ingredients, and granular food products. Bucket elevators are selected based on product fragility, capacity, hygiene requirement, and discharge method.
- **Ribbon Blenders and Food Mixers:** Used for dry powder blending, spice mixing, flour blending, premix preparation, and ingredient homogenization. Blenders can be supplied in stainless steel construction with inspection covers, bottom discharge valves, lump breakers, and cleanable arrangements.
- **Storage Tanks and Liquid Handling Systems:** Used for oils, syrups, water, liquid ingredients, sauces, and process liquids. Tanks can be supplied in stainless steel construction with nozzles, manholes, vents, drains, level indication, heating or cooling jackets, and access systems where required.
- **Pneumatic Conveying and Vacuum Transfer Systems:** Used for enclosed and dust-controlled transfer of powders and granular food materials. These systems reduce manual handling, improve hygiene, and support controlled transfer from storage to processing points.
- **Feeders and Dosing Systems:** Screw feeders, belt feeders, vibratory feeders, and rotary feeders are used for controlled addition of ingredients into mixers, blenders, packing machines, or process lines. Dosing systems can be integrated with load cells or weighing systems where accuracy is required.
- **Vibratory Screens and Sieves:** Used for removal of lumps, oversize particles, impurities, and foreign matter from powders, flour, spices, sugar, and granular materials. Screening equipment helps improve product quality and protects downstream equipment.
- **Process Vessels and Mixing Tanks:** Stainless steel vessels and mixing tanks can be supplied for sauces, syrups, liquids, slurries, and semi-solid food products. Designs can include agitators, jackets, insulation, nozzles, manholes, level instruments, and hygienic discharge arrangements.
- **Transfer Chutes and Packing Support Equipment:** Chutes, diverters, discharge hoppers, filling support frames, packing line supports, and custom product transfer arrangements can be supplied as per plant layout and process flow.
- **Technological Structures and Access Platforms:** Equipment support structures, stainless steel platforms, walkways, ladders, access decks, and maintenance structures can be supplied to suit food plant layout and hygiene expectations.

- **Dust Collector System/ Bag Filter with Reverse Pulse Jet Cleaning:** Designed for collection & control of process dust generated during material handling 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.

THE APEXIND TURNKEY SCOPE

Apexind undertakes food industry process equipment and material handling packages on a single-point responsibility basis. Clients work with one team for engineering, manufacturing, fabrication, supply, installation, and integration of the agreed equipment scope.

- **Concept and Detailed Engineering:** Each project begins with understanding product type, material characteristics, hygiene requirement, batch size, production capacity, cleaning method, layout constraints, and automation requirement. Apexind develops equipment sizing, plant layout, conveyor routing, support structures, fabrication drawings, and integration details.
- **Manufacturing and Fabrication:** Equipment is manufactured with attention to material selection, fabrication quality, surface finish, cleanability, ease of maintenance, and hygiene. Stainless steel equipment can be fabricated as per food handling application requirements.
- **Supply, Installation and Commissioning:** Apexind can execute equipment supply, site erection, alignment, installation, dry trials, product trials, and commissioning support. Integration with client process machines, packing lines, utilities, and automation systems can be undertaken as per project scope.
- **Electrical, Instrumentation, Control and Automation:** Apexind can integrate motor control panels, VFDs, field sensors, level instruments, weighing systems, load cells, PLC, HMI, recipe control, batch reporting, alarms, and interlocks depending on the process and automation requirement.
- **Equipment Outside Our Manufacturing Scope:** Certain items such as specialized food processing machines, ovens, fryers, pasteurizers, chillers, packing machines, high-end hygienic valves, PLC hardware, drives, food-grade sensors, and certified proprietary equipment may fall outside our direct manufacturing range. These items can be procured from approved vendors and integrated into the system, or supplied by the client on a free-issue basis.

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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