Make Your Product Impeccable

SEW
Surface Coating Pvt. Ltd.

An ISO Certified Company

Manufacturers and Specialists

- Powder Coating Plant
- Painting Plant
- Pre – Treatment Plant
- Varnishing Plant
- CED Coating Plant
- Automated Transporter System
- Pressurization Zone
- Conveyor System
- Special Purpose Oven

QR CODE

"Leaders in Surface Coating Technology."

ABOUT US

We SEW, commenced its activities for establishment of Surface Coating Plants in all over India. Using our vast engineering experiences & expertise, we started our own manufacturing facility in 1996. SEW now provides an array of services ranging from plant design to full functioning of the plant. We believe in one roof facilities which gives best quality & meets client requirement with team work and commitment.

VISION

SEW Surface Coating is committed to its customers for creating system driven solution with continuous growth to its all associates.

WHY SEW ?

Client satisfaction at reasonable price is our virtue. We focus on customer demands & believe that our high quality products and services will provide optimum payback to their investment.

We produce **Defect Free Products** using optimum resources with continuous improvement.

Economical Performance : In our plants the consumption of fuel is very low so you will save in running cost.

Services after sales : Services up to full satisfaction of customer. Customization: We can do customization as per requirement of the customers.

Expertise in **designing** the plant in **minimum space.**

Meet commitment through team work; our team is trained under School of Inspirational Leadership. (Corporate Training Center)

Strong foundation & world class technology in surface coating plant such as - SCADA, Heating with solar panels & Waste Heat Recovery System (WHRS)

Most trusted in surface coating technology is our identity in market.

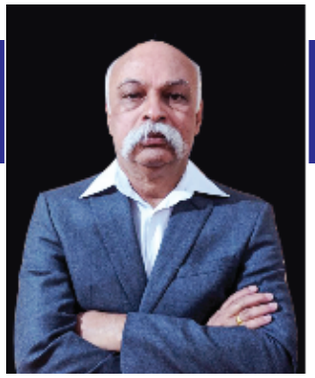
Designing and installation of plant up to conveyor **speed 12 mtr/min.**

Repeat customer base.

Aesthetically excellent **engineering quality.**

We provide **environmental friendly** solution with **proper safety.**

OUR FOUNDER



Mr. Ramesh Anant Bhise
Chairman and Managing Director

- Expert in surface coating technology.
- Personal touch in all activities of company.
- Vast engineering skills, process innovation, core process redesign & business process reengineering.
- Experience of 40+ years in this field.

Collaboration of the old generation expertise and new generation insight is leading the company for the growth.

Mr. Rohan Ramesh Bhise
Director

- Expert in design
- Innovative thought process.
- Advanced technologies.
- Analytical skills & decision making
- Aggression to meet customer requirements.
- Intent towards quality work.

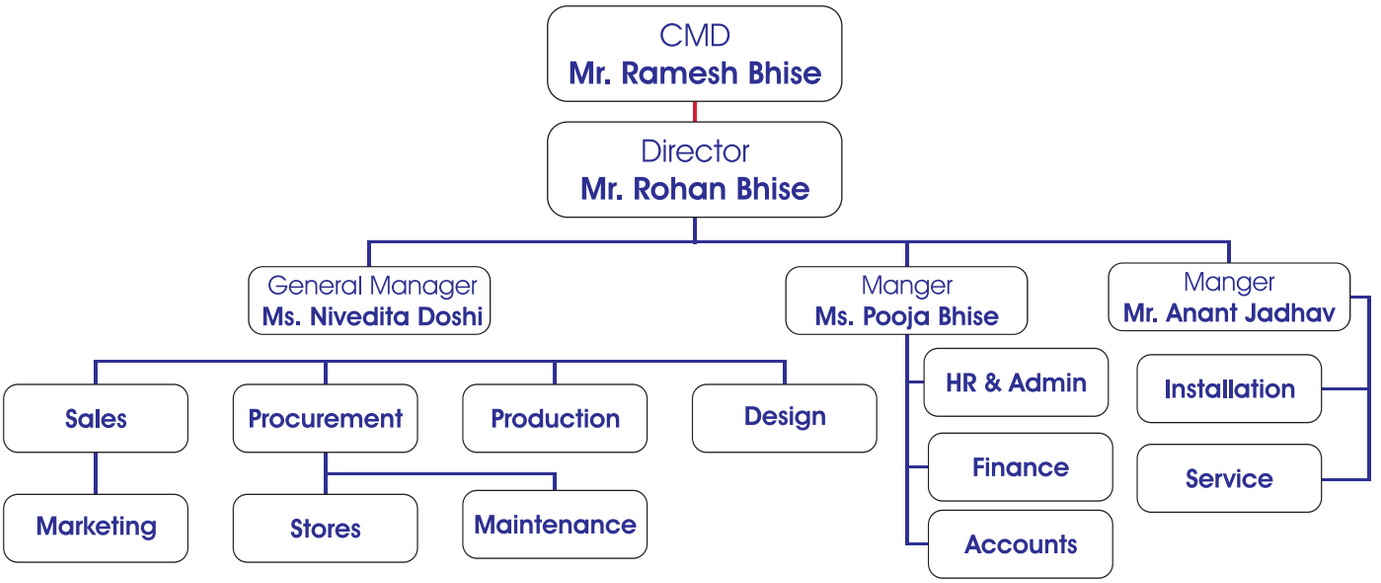
PROUD MEMBER OF

FEDERATION OF INDIAN EXPORT ORGANISATIONS · EEPC INDIA · RISE · Proud to say I am SME of India

TRAINING PARTNER

SCHOOL OF INSPIRATIONAL LEADERSHIP

ORGANISATION STRUCTURE



OUR CLIENTELE

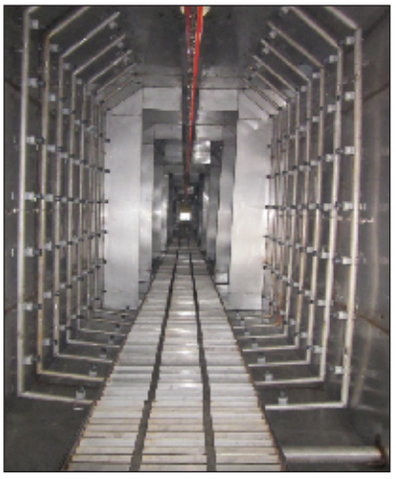
Being a client centric organization, Customer Satisfaction is the principle motto of SEW Surface coating! We constantly strive to offer our customers, the best in class services & facilities in the realm of a wide spectrum of surface coating plants, Since the very inception, we have been offering credible services that have helped us in gaining the trust & reliance of our esteemed clients all across the world.

PRETREATMENT PLANT

Pretreatment means surface preparation. Before powder coating/ painting it is necessary to treat surface of component with chemical to get better quality of coating. For this purpose, pretreatment plants are installed before powder coating/ painting plant. This is also known as cleaning or washing process. There are various pretreatment processes such as seven tanks (7 tanks or Phosphating), 11 tanks, NANO process, Chromatizing etc. The pretreatment process is decided on component material, intensity of oil, grease and rust on component. Pretreatment plant can be designed as per coating requirement such as salt spray test, impact test, scratch test, bending test etc. There are two types of pretreatment plant as following :

SPRAY PRETREATMENT PLANT

Spray Pretreatment Plant is also known as Conveyorised pretreatment plant, as components are hung on conveyor and they go through various chemical zones as per chemical process where nozzles spray the chemical on the component surface for surface preparation. Same conveyor goes inside water drying oven, powder coating booth and powder curing oven, hence operator have to only load components before pretreatment and unload after powder coating.



FEATURES AND BENEFITS :

- Spray pretreatment plant is suitable for flat surfaces.
- The spray density & pressure is controlled with the help of pumps & valves.
- Tanks with filters are provided below the zones for better circulation system.
- Material handling is less in spray pretreatment plant.

DIP PRETREATMENT PLANT

Dip Pretreatment Plant is also known as 7 tanks or 11 tanks process plant.

In this components are loaded in basket and the basket is dipped in various chemical tanks as per chemical process. For basket handling from one tank to another tank we can use hoist (manual) or automated transporter system. After pretreatment process is done same basket can be inserted inside inline water drying oven or we can unload components from basket and load them on conveyor, which will go inside of Conveyorised water drying oven for drying off the water from components before powder sprayed on components.

FEATURES AND BENEFITS :

- Dip pretreatment plant is suitable for flat surfaces and hollow surfaces.
- Air agitation is provided for proper mixing of chemical in tank.
- Dip pretreatment plant takes less space to install than spray pretreatment plant.



AUTOMATIC TRANSPORTER SYSTEM :

For loading and unloading of articles into various tanks in pretreatment process transporter system is mainly used with a programmed cycle. The cycle is based on the time required in particular tank as specified and also sequenced in such way that critical tanks (degrease, derust, Zn phosphate and WDO) are treated on priority, so articles are have been removed from this tanks with minimal time loss.

FEATURES/BENEFITS :

1. Precise Control with the help of PLC programming.
2. Robust system.
3. Flexible PLC Programmed.
4. Reduction in labour cost.
5. Effective control of production.

CAPACITY :

1. As per customer requirement.
2. Dependig upon job/components.
3. Geometrical sizes & weights & No. of stations.
4. Automatic timing & sequential programmed cycle.

APPLICATION :

1. Pretreatment plants.
2. Electroplating plants.
3. Anodising plants.

WATER DRYING OVEN :

Water drying oven is used for drying of article after pretreatment process. After this some moisture is on the object which has to be dry out because before powder coating, component should be clean and free from moisture. Followings are the types of oven-

A. INLINE TYPE WATER DRYING OVEN :

This type of oven is in line with the dip pretreatment process. This oven is also known as tank type oven. This oven has sliding doors which are pneumatically/hydraulically operated. The heater box for this oven is at the side of oven. The transporter/hoist is used for loading and unloading the basket in the oven from top side. It has pneumatic/ hydraulic opening doors.

B. BATCH TYPE WATER DRYING OVEN :

In this oven articles are loaded on the trolley and then trolley is pushed inside the oven after batch schedule time trolley is taken outside the oven. In this oven trolley arrangement and door are provided. In this oven manual push pull track are also provided for loading and unloading of components.

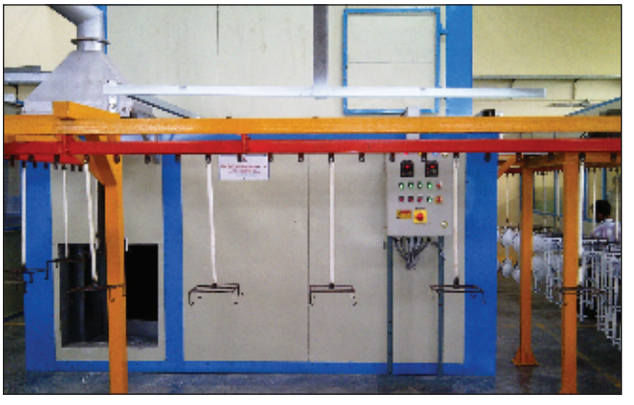
C. CONVEYORISED CONVENTIONAL WATER DRYING OVEN :

In this oven pretreatment articles are hung on the conveyor and then conveyor carries the article through oven. Articles travel for particular time to get water dried and conveyor brings the article outside. In this oven article entry and exit cut out is provided perpendicular to the ground.

D. CONVEYORISED CAMEL BACK WATER DRYING OVEN:

In this oven all working is same as Conveyorised conventional oven only the difference is the articles entry and exit cut out is provided parallel to the ground for reduction in heat loss. This oven is working on two principles –

A. Natural Airflow
B. Natural draft



POWDER COATING PLANT

Powder coating is a type of coating in which a spray gun spreads the powder electrostatically on the surface of article. The powder may be the thermoplastic or thermoset polymer.

- Powder coating contain no solvents and releases no amount of volatile organic solvents into the atmosphere.
- Powder coated articles have fewer appearance difference.
- A wide range of effects are easily accomplished using powder coating.
- Curing time is significantly faster than conventional paint.

POWDER COATING BOOTH

Fabricated enclosure of MS or SS is provided to spray powder through electro static gun on article surface. For the recovery of over sprayed powder the recovery unit is given to the booth. (mono cyclone /multi cyclone type recovery unit).

TYPES OF POWDER COATING BOOTH

- Back to back operator
- Single operator booth
- Automated booth

AFTER FILTER UNIT

According to PCB (Pollution Control Board), direct exhaust of powder to atmosphere via cyclone is harmful to human and to the environment. Hence, AFU (After Filter Unit) is suggested for further separation of powder particles which has exhausted from cyclone. The particle size of powder is 5 microns or less. Normally, powder manufacturer maintains the particle size of powder below 5 microns. This unit contains filters which arrest the powder particles and fresh air is exhausted in atmosphere.

POWDER CURING OVEN

After powder coating booth articles pass through the powder curing oven where powder coated component is cured under heat. In this hot air is circulated in the oven to increase and distribute even temperature in all over area.

- **Batch type oven :**
  In this oven powder coated articles are loaded on the trolley and then trolley is pushed inside the oven after curing schedule, trolley is taken outside the oven. In this oven trolley arrangement and door is provided.

- **Conveyorised conventional oven :**
  In which powder coated articles are hung on the conveyor and then conveyor carries the article through oven. Articles travel through the oven as per powder curing schedule. In this oven article entry and exit cut out is provided perpendicular to the ground.
- **Conveyorised camel back oven :**
  In this oven all working is same as Conveyorised conventional oven only difference is the articles entry and exit cut out is provided parallel to the ground for reduction in heat loss. This oven is working on two principles –

❖ **Natural air flow**
As the hot air has low density so hot air inside oven goes to upper side of oven due to which at article entry and exit cut out provided parallel to ground forms a layer of hot air.

❖ **Natural draft**
As the layer is formed on article entry exit cutout the hot air trapes their because of natural air pressure is high and hot air pressure is low and air always flows from high to low. And that helps to reduce heat loss from article entry exit cutout.

LIQUID PAINTING PLANT :

Paint is any pigmented liquid, liquefiable, or mastic composition that, after application to a substrate in a thin layer converts to a solid film. Painting involves the spreading of liquid paint over the article surface. Specialize gloss and metallic colours are available in liquid paint.

1. **Dip Painting Plant :**
   Conveyor carries the article through tank for a required time. Article get uniformly painted and then same track passed through the paint baking oven. In this tank we also provide churning system for separation of solvent in the paint.

2. **Spray Painting Booth :**

- **Dry booth :**
  This type of booth is used where work paint consumption is minimum. In this booth mechanical or paper filters are used. This type of booth is easy for cleaning and maintenance.

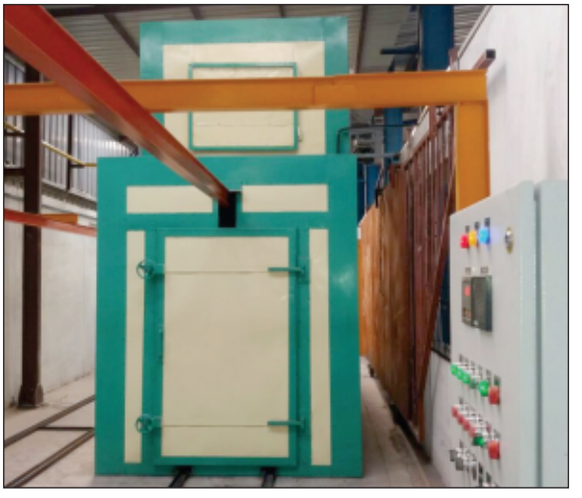
- **Side draft water wall type booth :**
  In this type of booth constant flow water wall is provided at back side of the article. The overspread paint flows downward with water then it goes through the whirl plate where whirling action takes place due to which thinner comes over the water and it suck through the blower where thinner pass through the baffle plate for removing of water droplets.
  Application of this booth is used where paint consumption is more.

- **Downdraft booth :**
  This type of booth is having suction draft from the top to the bottom of the booth. Constant flow water wall is provided at the bottom of the booth. The over spread paint flows with the water in washing chamber. Application of this booth is for heavy article.

3. **Flash off zone :**
   Flash off zone is given to evaporate solvent at room temp after painting. An enclosed chamber of fabricated sheet metal panels with window view glass and exhaust blower to throw solvent contaminated air out of shop floor.

PAINT BAKING OVEN

After painting, article passes through the paint baking oven as per baking schedule. In which air circulation blower and heating system is given. Before paint baking oven the flash off zone are given for solvent evaporation and this is preventive enclosure.



- **Batch type oven :**
  In which paint coated articles are loaded on the trolley and then trolley is pushed inside the oven, after baking scheduled trolley is taken outside the oven. For this oven trolley arrangement and doors are provided.

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- **Natural draft**
  As the layer is formed on article entry exit cutout the hot air trapes their because of natural air pressure is high and hot air pressure is low and air always flows from high to low. And that helps to reduce heat loss from article entry exit cutout.

PRESSURIZATION ZONE

Description :

It is controlled atmosphere enclosure provided around the painting/powder coating booth to avoid dust particles on component. In which a pre-filtered air is passed to secondary filters situated in plenum chamber. Air enters into working area through layer of ceiling filters at specific velocity with positive pressure.

Features/Benefits :

- Helps to control atmosphere around powder coating/painting booth, increasing quality of coating conditions.
- Also provides fresh air to operator inside the chamber.
- As powder/paint is coated in controlled atmosphere it gives better finish quality after baking in oven.

SPECIAL PURPOSE OVEN

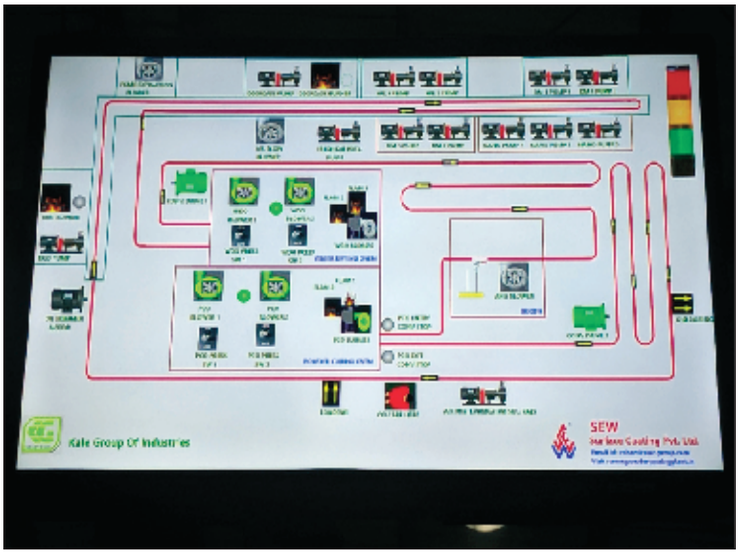
We are also into manufacturing of special purpose oven up to 800°C for processes as follows -

- Baking after flux.
- Bonding ovens.
- Stress releasing ovens.
- Annealing ovens.

ACCESSORIES OF SURFACE COATING PLANT

SCADA

- Programmable PLC Control for all blowers, Pumps, Burners etc.
- Panel consists of PLC based control system. Auto sequencing is synchronized movement to perform time based spray treatment of material. Sequence execution reliability is provided by PLC whereas precise control over transverse motion is achieved through variable frequency drive.
- PLC and SCADA based front end application. For various interlocks, time delays, sequence etc. logic is written in PLC program. SCADA based front end application i. e. software is developed and installed in a computer.
- This is used for display of various values and status.
- Commands are given through icons created on the computer screen.
- Changes can be done though SCADA program.
- Also HMI screen is provided on control panel
- MIMIC System of the total plant will be provided to see the total layout of the plant. LED indicators are provided which will indicate the running plant.



INDIRECT HEATING SYSTEM

Indirect heating system is provided for phosphate tank. It mainly consists of PHE, 3-way pneumatic valve and warm water tank. Water in warm water tank is heated using direct fired heating system. Heated water then circulated to PHE using 3-way pneumatic valve. Phosphate chemical is also circulated to PHE and heated chemical returns to chemical tank. Chemical gets heated due to heat transfer from warm water in PHE. Once desired temperature reached, 3-way pneumatic valve cut off the flow of warm water to PHE.

OIL SEPARATION SYSTEM

Oil separation system includes coalescer/oil separator, oil water collection tank with float assembly, electrical heaters and self-priming pump. Overflow connection of degrease 2 is connected to degrease 1 and overflow collection of degrease 1 is connected to oil water collection tank. The oil water mixture from collection tank is sucked by pump through float assembly and delivered to oil separation tank. Oil separation tank has 3 partitions as separation chamber, oil water chamber & oil chamber. From oil chamber we can collect oil separated from water and from oil water chamber separated water is collected in degrease 2 tank.

SLUDGE FILTRATION SYSTEM

This system is provided to remove sludge formed in phosphate tank. Chemical from phosphate tank is sucked by pump and supplied to filter vessels in filtration system. Semisolid mixture of sludge and clean solution trapped in filters and it is collected in sludge tank. Separate filter bag is provided in sludge tank to trap the sludge so clean solution is collected in main chemical tank via piping. Also, major amount of clean solution is present in filter vessel which we collect in main chemical tank. By using compressed air, filters get cleaned automatically which helps to remove debris and it is also get collected in sludge tank so that disposal is easy.

OTHER ACCESSORIES OF SURFACE COATING PLANT

- Air Agitator
- Bag Filters
- Lubrication Unit
- Waste heat recovery system (WHRS)
- Eductor
- Fume extractor



CED Coating Plant

Cathodic Electro-deposition (CED) is Water Based primer coating & mostly used in automotive paint shop. In this process, charged particles from the paint emulsion move to Cathode under electrical forces. The direct current established through the bath makes the pigment and resin base of the paint attract towards the component surfaces.

It can be done by

i) Batch Type (Dip Tanks)
ii) Conveyorised Dip

Reach of paint at every corner of component having intrinsic shape. Un-deposited material is rinsed. Ultra-filtrate (UF) equipment's are used for ED paint ingredients separation of those not forming film and recovery of Paints. Deposited film after baking becomes hard.

CED Painting has following mentioned process

Load - Degrease - Water Rinse -1 /2 - Activation - Phosphate - D.M. Water Rinse -1/2- CED - UF -1 UF-2 - D.M. Water Rinse -3 - Baking Oven - Unload

In above mention process four stages can be done in spray,

Advantages of electro-deposition over conventional primer :

i) Fully automatic operation requires less human efforts, film thickness can be controlled.
ii) Uniform coating
iii) Better coverage in interior/ complex surfaces & sharp corners
iv) There is no Runs, Sags or Solvent boils
v) Better corrosion resistance, & @ 100 % utilization of paint therefore cost effective
vi) As coating is done using aqueous process which has less risk of fire in comparison to solvent coatings, Better in anti-pollution, safety, health hazards.
vii) The surface salt spray resistance lasts for more than 1200 hours

SEW
Surface Coating Pvt. Ltd.

An ISO Certified Company

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