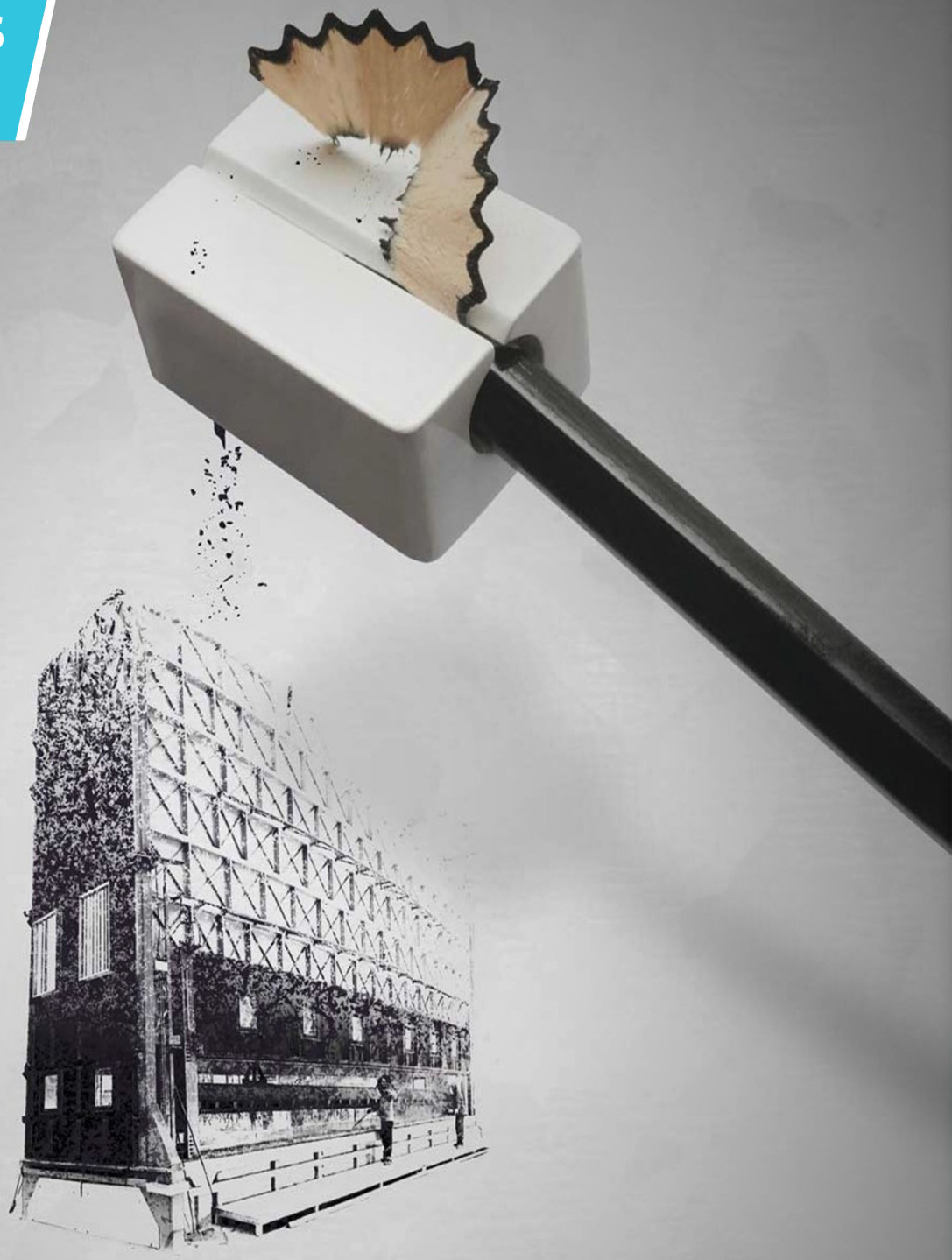
Project and Turnkey Galvanizing Plants



www.estgal.eu

Est Gal

Est Gal

Turnkey Hot Dip Galvanizing Plant

Design | Productions | Assembly

OUR COMPANY ....

- Eksas A.S. is the first founded company to design and contract surface treatment plants for South East Europe and Middle East in 1969.

- Eksas designs and constructs surface treatment plants and auxiliary equipments for technical, decorative, military & aeronautical purposes for the processes phosphating, anodizing, various electroplating, continuous galvanizing & hot dip galvanizing.

- Incresing demand on Hot Dip Galvanizing, Eksas decided to establish new facilities
  - In 2002 Est Metal Ltd. in Bursa Free Zone
  - In 2014 EstGal A.S. in Bursa Cali Industrial Zone

- Eksas started to be active in the sector by partial production and strengthen the position by present experiences and international technical litreature.

Our technology is the product of our experience since 1969. We have staff of 52 people comprising experienced engineers, production and assembly chiefs and skilled workmen.

With 2 mechanical, 2 chemical, 2 control engineers, 6 technical drawing specialists and 40 production personnel, we produce almost all of the project components ourselves and deliver as a turn key project.

Sanayi Bölgesi Geyveli Cad. No:38/1 Çalı / BURSA +90 224 482 28 12 +90 224 482 28 29
www.estgal.com.tr

DESING
PRODUCTION
ASSEMBLY
PROCESS CONSULTİNG

TurnKey

Hot Dip Galvanizing Plants Installation

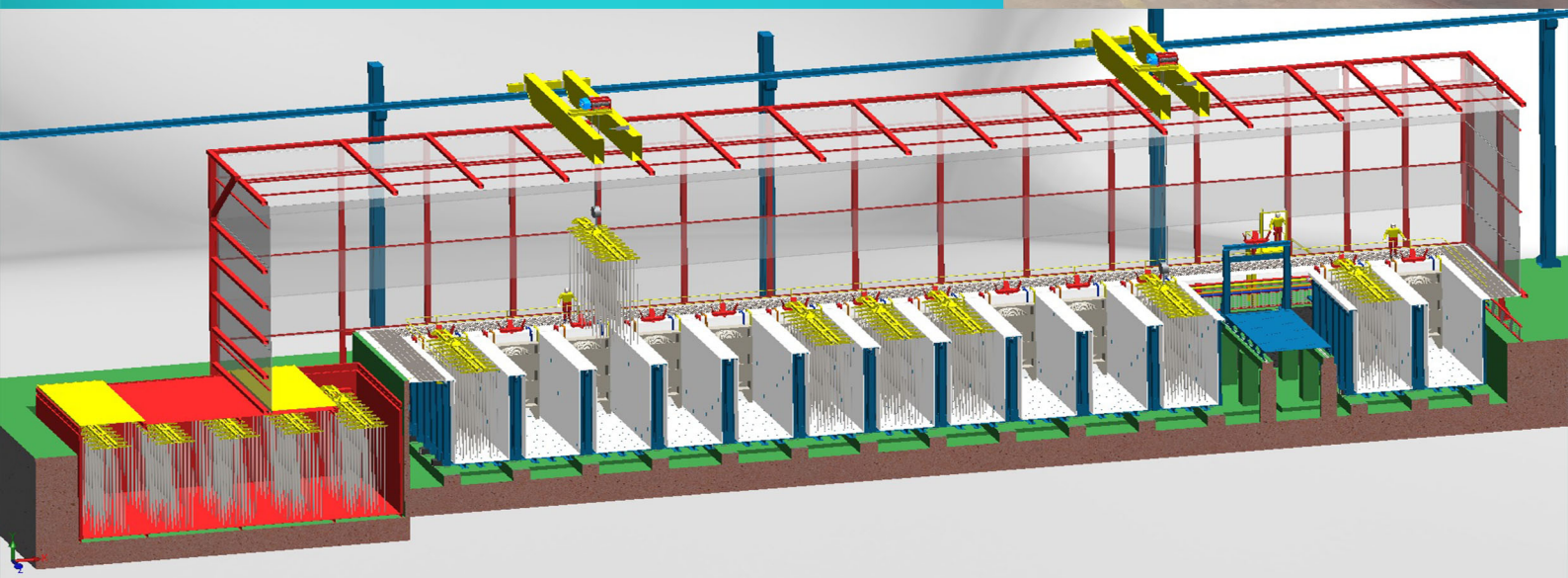
Est Gal

Turnkey Hot Dip Galvanizing Plant

Design | Productions | Assembly

Design and Project Criteria of Plants

- Data of the products to be coated
- Daily production capacity
- Transfer solutions between processes
- An effecient layout
- Energy efficieny and renewable energy
- Environmental awareness



Sanayi Bölgesi Geyveli Cad. No:38/1 Çalı / BURSA +90 224 482 28 12 +90 224 482 28 29
www.estgal.com.tr

Est Gal

Turnkey Hot Dip Galvanizing Plant

Design | Productions | Assembly

Pretreatment Process Tanks

The possibility of manufacturing process tanks in one piece by using Wegener Machines installed in both factories,

- Wegener machines provides the welding of the plastic sheets by forming molecular bond with Fusion Welding Technology,

Hydrostatic Load Calculations are supported by a special software taking into account the German DVS Standards.

Sanayi Bölgesi Geyveli Cad. No:38/1 Çalı / BURSA +90 224 482 28 12 +90 224 482 28 29
www.estgal.com.tr

Est Gal

Turnkey Hot Dip Galvanizing Plant

Design | Productions | Assembly

Pretreatment Process Tanks

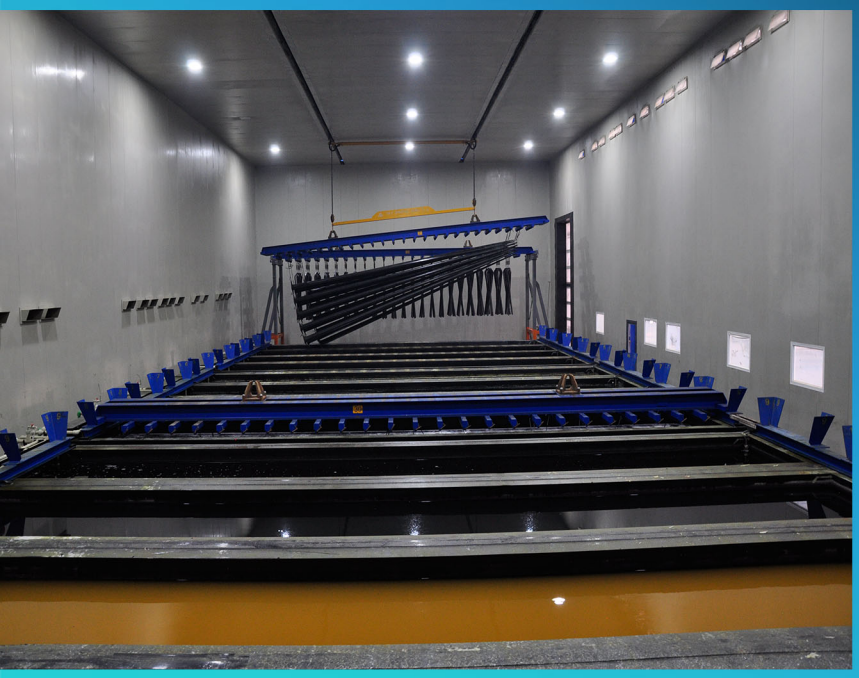
Sanayi Bölgesi Geyveli Cad. No:38/1 Çalı / BURSA +90 224 482 28 12 +90 224 482 28 29
www.estgal.com.tr

Est Gal

Turnkey Hot Dip Galvanizing Plant

Design | Productions | Assembly

Pretreatment Enclosure Rooms

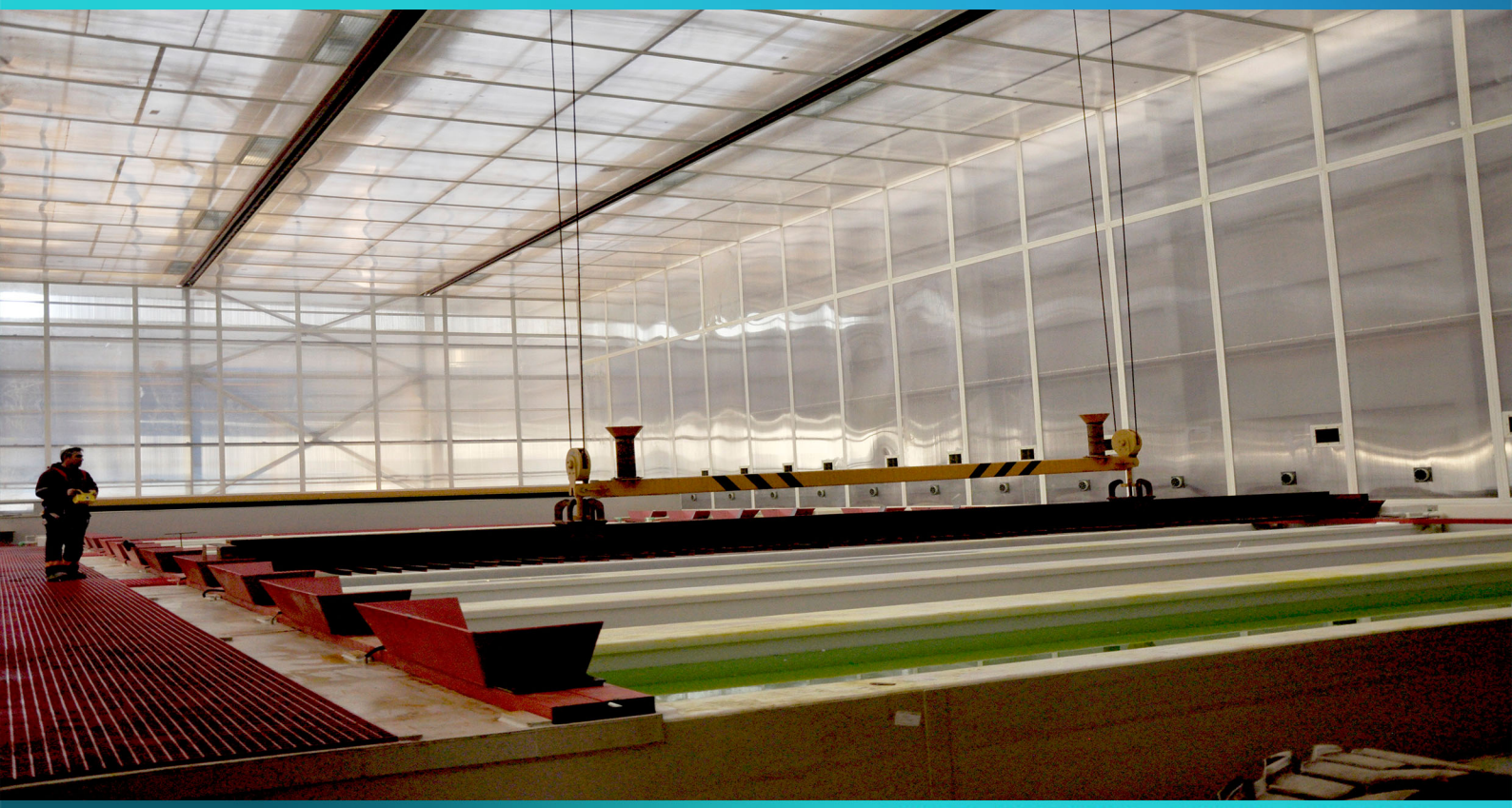


- The waste gases formed during the surface cleaning process are collected in a closed area and discharged by transferring to the waste gas scrubber.

- Protection of the building from acidic gases,
- Keeping away the machine and equipment operating in the factory from acidic environment and long-term working possibility,

EQUIPMENT

- Occupational health and safety of working personnel
- Sliding doors for material entrance/exit
- Personnel entrance/exit doors
- Inspection windows
- Sealing equipment,
- Fresh air flap and waste gas suction pipes



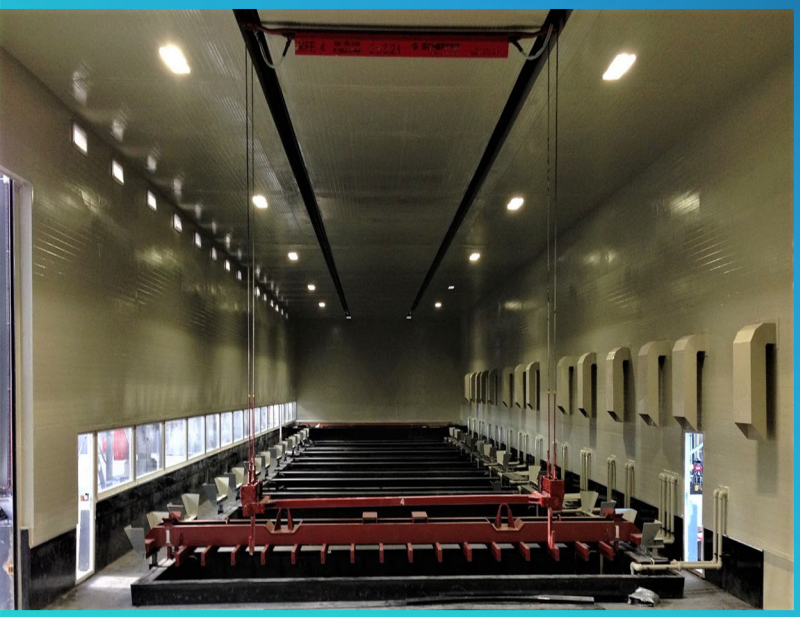
Sanayi Bölgesi Geyveli Cad. No:38/1 Çalı / BURSA +90 224 482 28 12 +90 224 482 28 29
www.estgal.com.tr

Est Gal

Turnkey Hot Dip Galvanizing Plant

Design | Productions | Assembly

Pretreatment Enclosure Rooms



Sanayi Bölgesi Geyveli Cad. No:38/1 Çalı / BURSA +90 224 482 28 12 +90 224 482 28 29
www.estgal.com.tr

Est Gal

Turnkey Hot Dip Galvanizing Plant

Design | Productions | Assembly

Waste Gas Scrubbing Systems

- Scrubber design calculations are made by taking into account the solution temperature and surface area of the process tanks.

- The Gas scrubber is a fully programmable unit.

- By taking into account the maximum capacity to be processed in the plant, special polipropylene aspirators are produced.

- The hydrogen that is released after the reaction of the Iron Oxide + Muriatric Acidand the HCl entrained with this hydrogen are also determined.

- The static and dynamic balances of these heavy duty aspirators are made by connecting to SCHENK Germany via internet and a certificate of result is obtained.

Sanayi Bölgesi Geyveli Cad. No:38/1 Çalı / BURSA +90 224 482 28 12 +90 224 482 28 29

www.estgal.com.tr

Est Gal

Turnkey Hot Dip Galvanizing Plant

Design | Productions | Assembly

Waste Gas Scrubbing Systems

Sanayi Bölgesi Geyveli Cad. No:38/1 Çalı / BURSA +90 224 482 28 12 +90 224 482 28 29
www.estgal.com.tr

Est Gal

Turnkey Hot Dip Galvanizing Plant

Design | Productions | Assembly

Heating Coils Of Pretreatment Tanks

- Hot water from the chimney heat recovery system or from the hot water source allows the surface treatment process solutions to be heated by means of the coils.

- Heating coils are made of both HDPE or PP material.
- Protection against impacts by plastic protection plate,
- Heating coils are manufactured as dismantable when necessary and annual maintenance can be made easily.

- The design calculations are done according to the size and temperature of the surface treatment baths.

Sanayi Bölgesi Geyveli Cad. No:38/1 Çalı / BURSA +90 224 482 28 12 +90 224 482 28 29

www.estgal.com.tr

Est Gal

Turnkey Hot Dip Galvanizing Plant

Design | Productions | Assembly

Chemical Transfer Systems

-It is used in the first chemical filling of the surface treatment tanks and in the subsequent processes.

- Fresh water filling process,
- Fresh acdi filling process,
- Transfer of the used acids to storage tanks,
- Transfer between Fresh and used Acid storage tanks,

Possibility to carry out the transfer of acid from the supplier or to be sent to the external supplier in the same line.

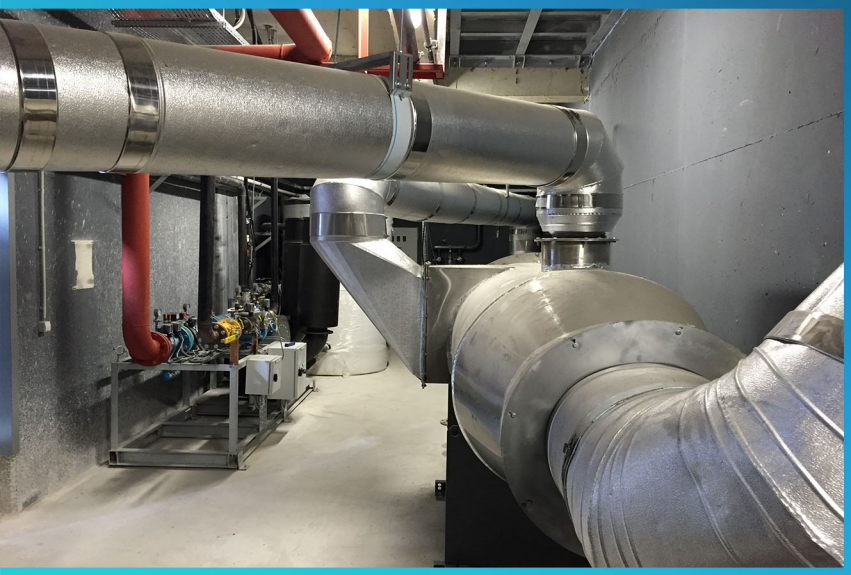
Sanayi Bölgesi Geyveli Cad. No:38/1 Çalı / BURSA +90 224 482 28 12 +90 224 482 28 29
www.estgal.com.tr

Est Gal

Turnkey Hot Dip Galvanizing Plant

Design | Productions | Assembly

Drying And Process Equipments

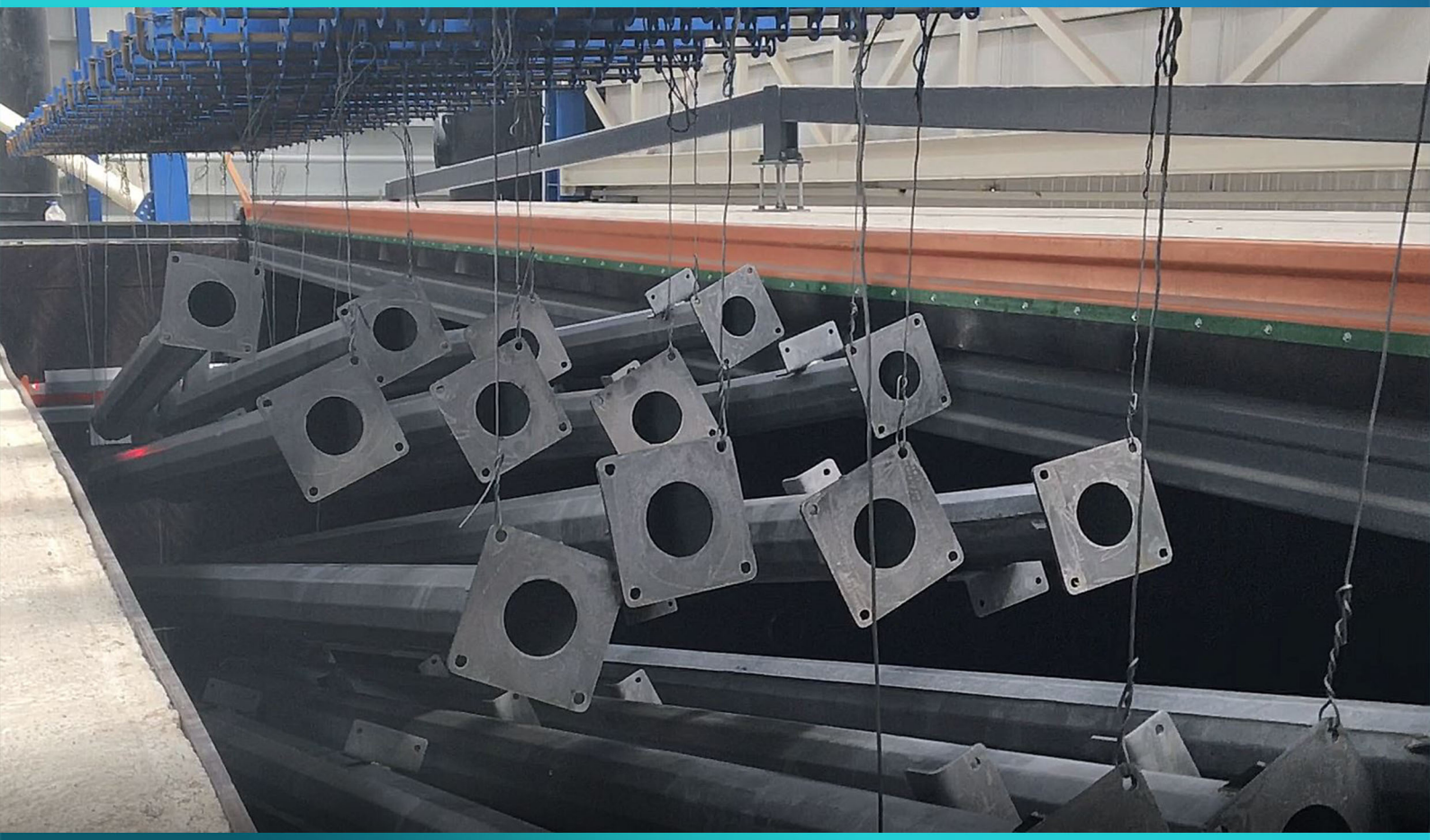


Drying of materials come from the surface cleaning process, before galvanizing in the kettle.

EQUIPMENT

- Material Inlet / Outlet Cover System,
- Drying stock / transfer chain conveyor system,
- Drying Heat Generator,
- Drying isolation
- Drying air ducts,

Drying system equipment, synchronized and programmable



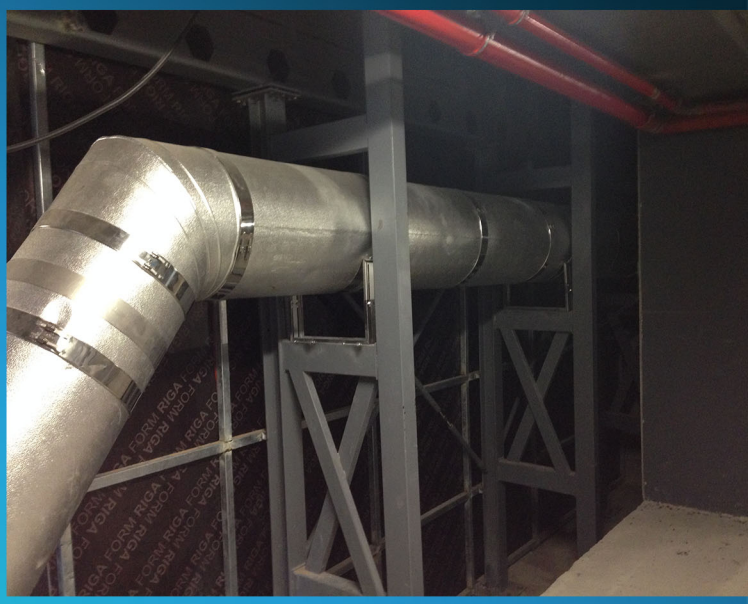
Sanayi Bölgesi Geyveli Cad. No:38/1 Çalı / BURSA +90 224 482 28 12 +90 224 482 28 29
www.estgal.com.tr

Est Gal

Turnkey Hot Dip Galvanizing Plant

Design | Productions | Assembly

Drying And Process Equipments



Sanayi Bölgesi Geyveli Cad. No:38/1 Çalı / BURSA +90 224 482 28 12 +90 224 482 28 29
www.estgal.com.tr

Est Gal

Turnkey Hot Dip Galvanizing Plant

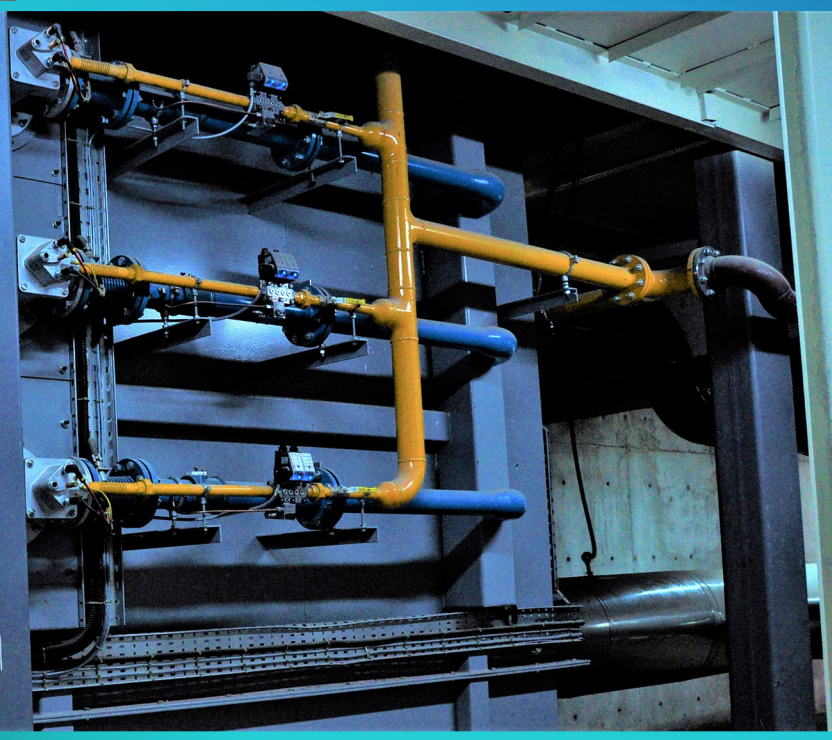
Design | Productions | Assembly

GALVANIZ FURNACE SYSTEMS

- Hasco have supplied over 170 high velocity systems of lengths up to 21m, widths up to 2.5m, depths up to 4m.

- Hasco ceased manufacture of flat flame systems in 1989

- Groups buying high velocity:
  - Coatinc Group (Germany)
  - Del Carlo (Italy)
  - El Sewedy Group (Middle East)
  - Galvapower Group (Belgium)
  - Galvaswiss Group (Switzerland)
  - Hill & Smith Group (UK)
  - Kopf Group (Germany)
  - Ersan Galvaniz (Turkey)
  - Marmara-Siegener Group (Turkey)
  - Mitas (Turkey)
  - Sa-Ra Enerji (Turkey)
  - Konkap Galvaniz (Turkey)
  - Weert Groep (Netherlands)
  - Wiegel Group (Germany)
  - Wiegel Group (Germany)



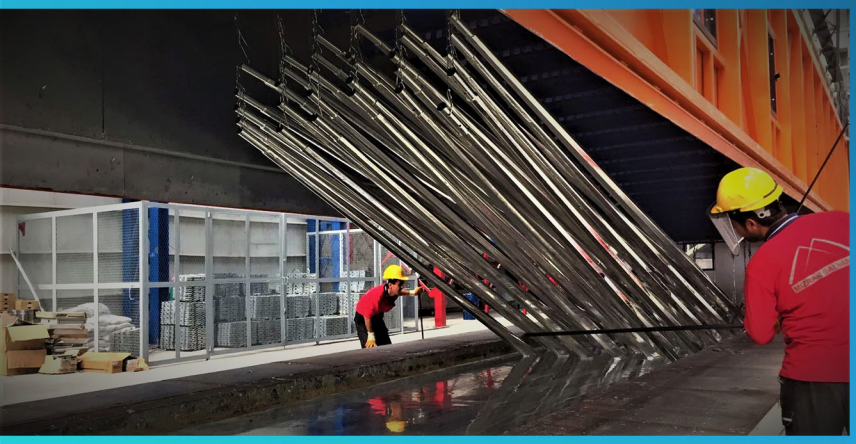
Sanayi Bölgesi Geyveli Cad. No:38/1 Çalı / BURSA +90 224 482 28 12 +90 224 482 28 29
www.estgal.com.tr

Est Gal

Turnkey Hot Dip Galvanizing Plant

Design | Productions | Assembly

Galvaniz Furnace Systems



TECHNİCAL DATA :

– Burner Type High Velocity
– Heating Medium Natural Gaz and Diesel
– Burner Configuration Diagonally Opposed
– Gas / Air Mixture Control
Ratio control by pressure regulation
via ratio regulator on individual burner trains

– Zinc Temperature Control 3 term - P.I.D. pulse firing
– Main Control Panel
Free standing floor-mounted fitted with the following facia mounted equpment.
3 term zinc temperature controller with high and low alarms

Siemens S7 PLC with additional high and low alarm and combustion air pressure gauge

SUPPLIERS OF HIGH QUALITY GALVANIZING PLANT AROUND THE WORLD

WORLD LEADERS IN HASCO THERMIC GALVANIZING PLANT

Sanayi Bölgesi Geyveli Cad. No:38/1 Çalı / BURSA +90 224 482 28 12 +90 224 482 28 29
www.estgal.com.tr

Est Gal

Turnkey Hot Dip Galvanizing Plant

Design | Productions | Assembly

Furnace Enclosure Systems

Keeping zinc fume generated during material dipping in a closed area

- Retention of zinc due to splashes,
- Minimizing the failures of operating machines due to zinc fume,

EQUIPMENT

- Two personnel inspection covers,
- Material Entrance / Exit doors,
- personnel inspection windows
- Lighting
- Sealing equipment,

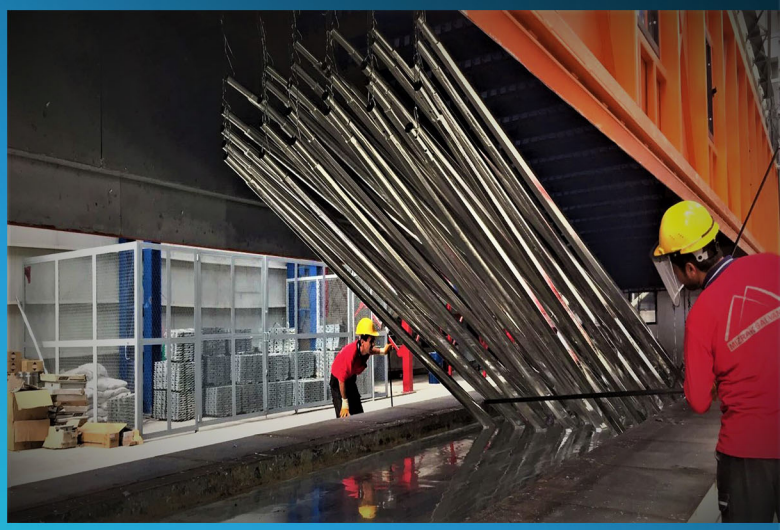
Sanayi Bölgesi Geyveli Cad. No:38/1 Çalı / BURSA +90 224 482 28 12 +90 224 482 28 29
www.estgal.com.tr

Est Gal

Turnkey Hot Dip Galvanizing Plant

Design | Productions | Assembly

Furnace Enclosure Systems



Sanayi Bölgesi Geyveli Cad. No:38/1 Çalı / BURSA +90 224 482 28 12 +90 224 482 28 29

www.estgal.com.tr

Est Gal

Turnkey Hot Dip Galvanizing Plant

Design | Productions | Assembly

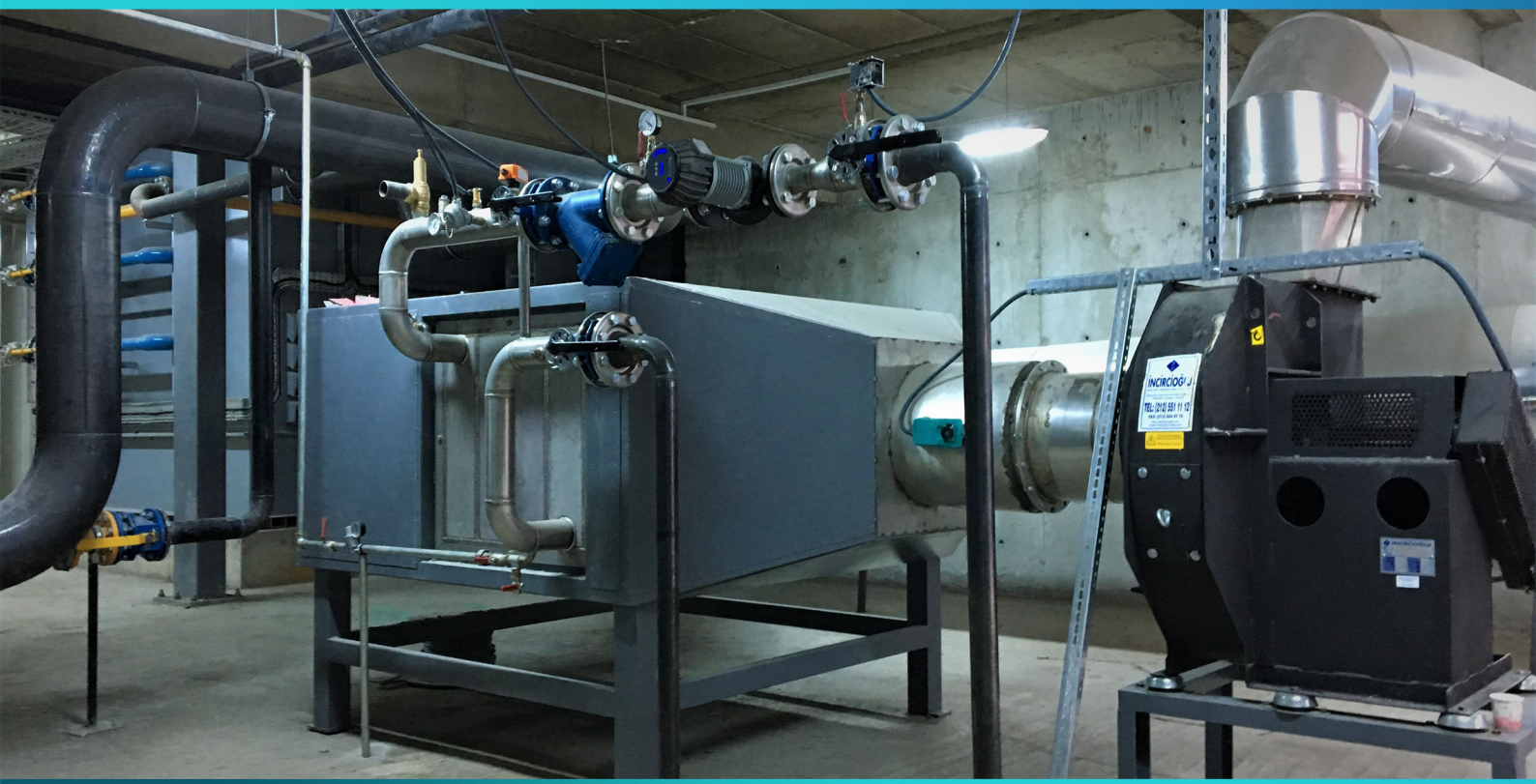
Chimney Heat Recovery Systems

Hot water is obtained with heat exchanger made from stainless steel by using hot stack gas comes from the furnace chimney.

- This hot water obtined from the hot stack gas is transferred to the heating coils in the surface treatment baths to reach the desired temperature. This system is a closed loop system.

EQUIPMENT

- Frequency controlled circulation pumps,
- Flow meters, motor valves, pressure gauges,
- Measurement and impression of the stack gas temperature from three different points,
- The possibility of working with the galvanized furnace,
- audible and light warning signal in case of a fault,
- Expansion and balancing system,
- System control board,



Sanayi Bölgesi Geyveli Cad. No:38/1 Çalı / BURSA +90 224 482 28 12 +90 224 482 28 29
www.estgal.com.tr

Est Gal

Turnkey Hot Dip Galvanizing Plant

Design | Productions | Assembly

Chimney Heat Recovery Systems

- From the air-to-air waste gases thrown from the galvanized furnace shaft the drying oven with the help of the economizer to the required temperature used to reach.

- The system operates in line with the data received from the galvanizing furnace system.

- Heat resistant consumables are used in economizer control.
- Economizer is manufactured using stainless steel.

- Design change according to the size of the drying chamber,
- Synchronized with another independent heat source as needed working possibility.

Sanayi Bölgesi Geyveli Cad. No:38/1 Çalı / BURSA +90 224 482 28 12 +90 224 482 28 29
www.estgal.com.tr

Est Gal

Turnkey Hot Dip Galvanizing Plant

Design | Productions | Assembly

Dust Collector Filter Systems

- Manufacturing according to the project and technical data,
- Installation and commissioning,

EQUIPMENT

- 3-4-5 mm body, 6-8-12 mm chimney steel construction
- Maintenance and inspection covers
- Compressed air blowing elements,
- diffuser at the filter inlet,
- Differential pressure control (pulse pulse) bag cleaning,
- Compressed air collector and explosion valve system,

Equipped with fuse and regulator in the supply line automatic cleaning with electronic timer.

Sanayi Bölgesi Geyveli Cad. No:38/1 Çalı / BURSA +90 224 482 28 12 +90 224 482 28 29
www.estgal.com.tr

Est Gal

Turnkey Hot Dip Galvanizing Plant

Design | Productions | Assembly

Dust Collector Filter Systems

Sanayi Bölgesi Geyveli Cad. No:38/1 Çalı / BURSA +90 224 482 28 12 +90 224 482 28 29

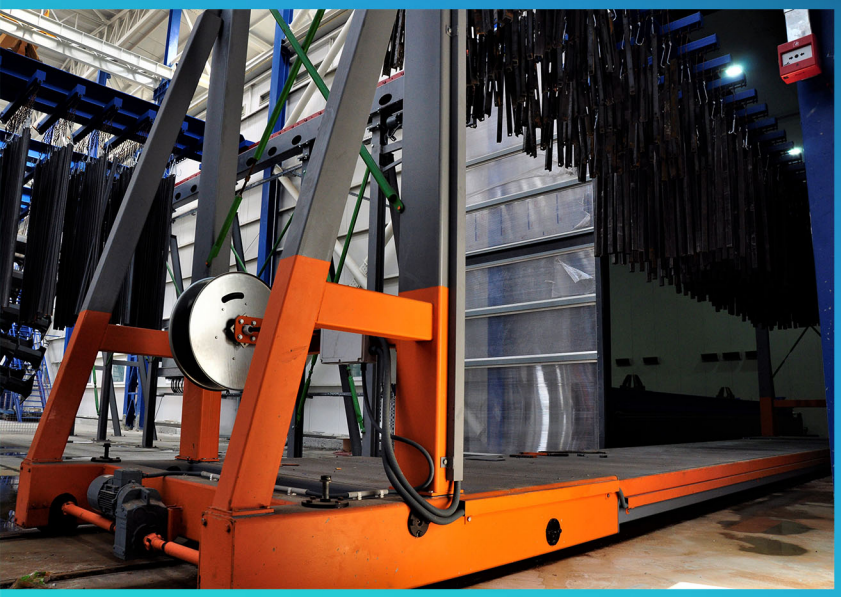
www.estgal.com.tr

Est Gal

Turnkey Hot Dip Galvanizing Plant

Design | Productions | Assembly

Transport / Transmission Systems



The Transport / carrying system provides efficient operation of the loaded jigs in the process.

- Design according to the size of the loads to be carried,

  - Trolleys,
  - Chain Conveyor Systems,
  - Process Cranes
  - Transfer Cranes

Sanayi Bölgesi Geyveli Cad. No:38/1 Çalı / BURSA +90 224 482 28 12 +90 224 482 28 29
www.estgal.com.tr

Est Gal

Turnkey Hot Dip Galvanizing Plant

Design | Productions | Assembly

Transport / Transmission Systems

Sanayi Bölgesi Geyveli Cad. No:38/1 Çalı / BURSA +90 224 482 28 12 +90 224 482 28 29
www.estgal.com.tr

Est Gal

Turnkey Hot Dip Galvanizing Plant

Design | Productions | Assembly

Loading / Unloading Systems

- It consists of hydraulic systems on two-sided steel construction feet.

- Equipment calculations appropriate to the foreseen capacity,
- Design according to the jigs,
- Synchronous / Asynchronous operation possibility,
- Heavy duty system calculated according to load selection,

- 24 volt control board

Sanayi Bölgesi Geyveli Cad. No:38/1 Çalı / BURSA +90 224 482 28 12 +90 224 482 28 29
www.estgal.com.tr

Est Gal

Turnkey Hot Dip Galvanizing Plant

Design | Productions | Assembly

Loading / Unloading Systems

Sanayi Bölgesi Geyveli Cad. No:38/1 Çalı / BURSA +90 224 482 28 12 +90 224 482 28 29
www.estgal.com.tr

Est Gal

Turnkey Hot Dip Galvanizing Plant

Design | Productions | Assembly

Chemical Storage Systems

- The possibility of manufacturing storage tanks in one piece by using Wegener Machines installed in both factories,

- Wegener machines provides the welding of the plastic sheets by forming molecular bond with Fusion Welding Technology,

EQUIPMENT

- Level indicator
- Flanged discharge outlet
- Chemical inlet
- Manhole

Sanayi Bölgesi Geyveli Cad. No:38/1 Çalı / BURSA +90 224 482 28 12 +90 224 482 28 29
www.estgal.com.tr

Est Gal

Turnkey Hot Dip Galvanizing Plant

Design | Productions | Assembly

Chemical Storage Systems

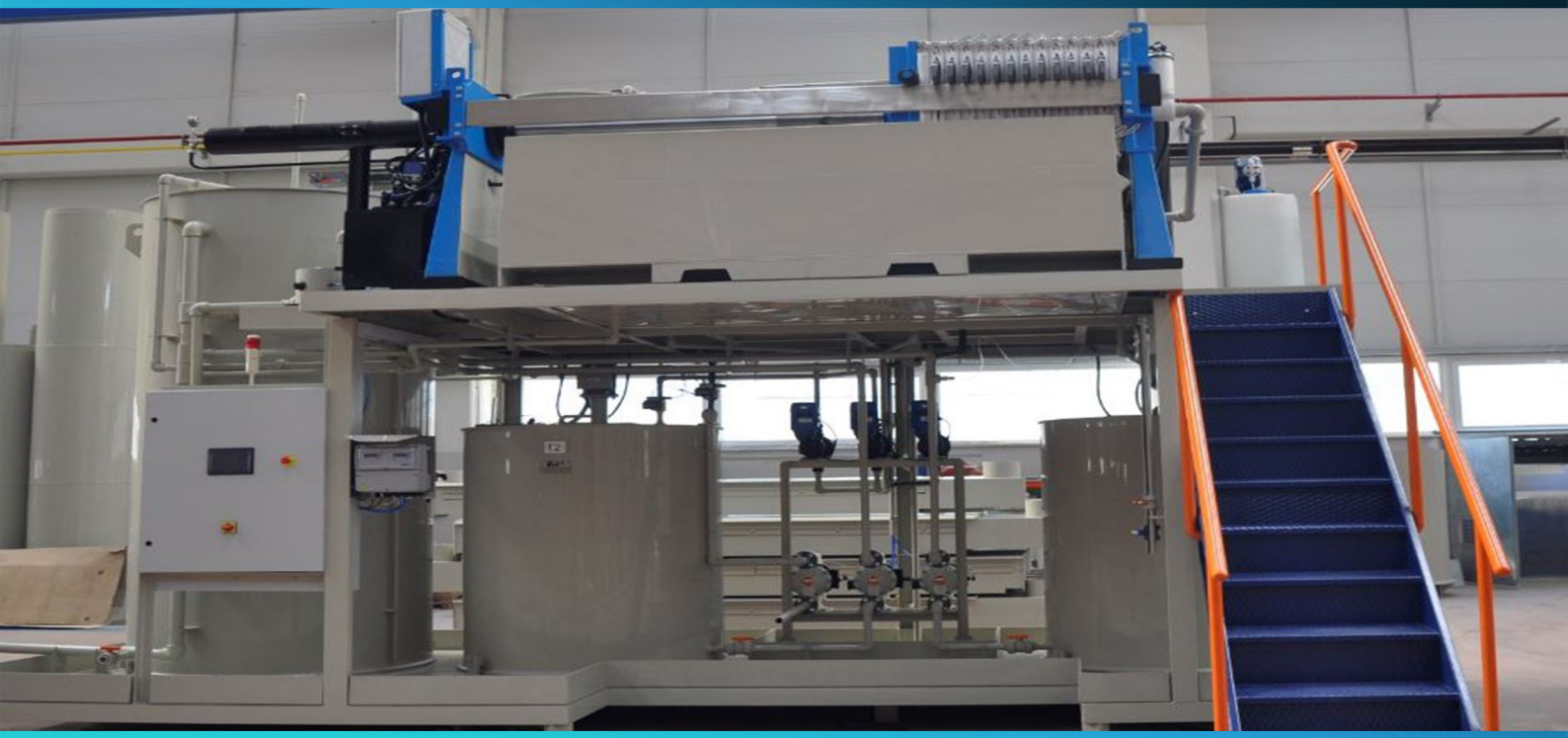
Sanayi Bölgesi Geyveli Cad. No:38/1 Çalı / BURSA +90 224 482 28 12 +90 224 482 28 29
www.estgal.com.tr

Est Gal

Turnkey Hot Dip Galvanizing Plant

Design | Productions | Assembly

Chemical Purification Systems



Sanayi Bölgesi Geyveli Cad. No:38/1 Çalı / BURSA +90 224 482 28 12 +90 224 482 28 29

www.estgal.com.tr

Est Gal

Turnkey Hot Dip Galvanizing Plant

Design | Productions | Assembly

Dros Grap / Zinc Pump

Dross Grab

- It is used for the cleaning of zinc-iron components (Dross) formed in the galvanization furnace during the production

Zinc Pump

- They are used in the process of zinc discharge in case of emergency.

- The dimensions of design and manufacturing vary according to the dimensions of the galvanizing pot.

Sanayi Bölgesi Geyveli Cad. No:38/1 Çalı / BURSA +90 224 482 28 12 +90 224 482 28 29

www.estgal.com.tr

Est Gal

Turnkey Hot Dip Galvanizing Plant

Design | Productions | Assembly

TurnKey Hot Dip Galvanizing Plants Installation

Sanayi Bölgesi Geyveli Cad. No:38/1 Çalı / BURSA +90 224 482 28 12 +90 224 482 28 29

www.estgal.com.tr

Sanayi Bölgesi Geyveli Cad. No:38/1 Çalı / BURSA
+90 224 482 28 12 +90 224 482 28 29
www.estgal.com.tr