SPANISH EGYPTIAN CEMENT FACTORY

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Company Name and Legal Entity:

- The Spanish Egyptian Cement Factory ("SPEGCO"), an Egyptian joint-stock company, established under the rules of Law No. (43) of 1974 and its Executive Regulations and Amendments pursuant to the Free Zones System, in accordance with the Law of Investment Guarantees and Incentives issued under Law No. (8) of 1997.
- SPEGCO holds the Commercial Register No. (21007), Tax Card No. (259511536), and Operation License No. (10) of 2007 issued by the General Authority for Investment and Free Zones ("GAFI").
- **Headquarters:**

  Plot 6, 7 Heavy Industries Zone (C8), South of Raswa Bridge, Port Said Public Free Zone

Factory Borders "External Street Widths":

- Northern Border: A 150-meter long and 15-meter wide street - light industries factories
- Southern Border: A 150-meter long and 15-meter wide street - KAPCI Coatings
- Eastern Border: A 280-meter long and 25-meter wide street - light industries factories
- Western Border: A 280-meter long and 25-meter wide street - marble factories

- **Company Purpose:**

Industrial Purpose: Importing, grinding, and transferring the raw material for the clinker into cement, and then packing it in bags and silo vehicles.

SPEGCO was established at Port Said Public Free Zone, specifically at the Heavy Industries Zone, South of Raswa Bridge.; and was established to grind the clinker. The factory's land area is 42,000 m^2 with a production capacity of 600 thousand tons of cement annually.

Objective:

- The main objective of establishing the Company is creating and finding new means for heavy industries in Port Said; thus, SPEGCO aims at producing a basic substance that contributes to the construction boom in the region.
  * The Company has consistently developed the factory by bringing the most advanced equipment and applying the latest technologies for cement manufacturing. Therefore, in July 2007, the factory's pilot production began, resulting in spectacular and promising results that encouraged the starting of actual production.

Overview and History of the Company's Establishment:

- Since its establishment, SPEGCO has realized that it is a part of the surrounding community and that it has to drive and yield benefit for this community not only by deploying the national capital in a profitable investment, but also by contributing to nationalizing the heavy industry through the transfer of advanced technical knowledge, on one hand, and the attraction, employment, and training of the national cadres, on the other hand (in fulfillment of the Company's Quality Policy). This will be beneficial to a wide range of the community's individuals, whether shareholders, employees, or other citizens benefiting from the availability of a strategic product.

- SPEGCO expresses its full commitment to maintaining the environment in accordance with local and global measures and standards through its relentless and continuous efforts to use the latest technologies and systems to maintain and control the environment. Thus, the factory's proximity to Port Said is considered a merit for the Company; however, such proximity imposes major obligations on it. The most significant obligation is to maintain the environment and control the emissions resulting from this industry, which SPEGCO considers the most significant duty to which it has committed itself. Out of its belief in the importance of environmental maintenance, the Company has invited the National Research Centre ("NRC") to measure the emission rates. The NRC's tests and analyses have proved that the efficiency of these filters has even gone beyond the target levels, which are almost unique and way less than those required according to Environmental Law No. (4) of (1994).

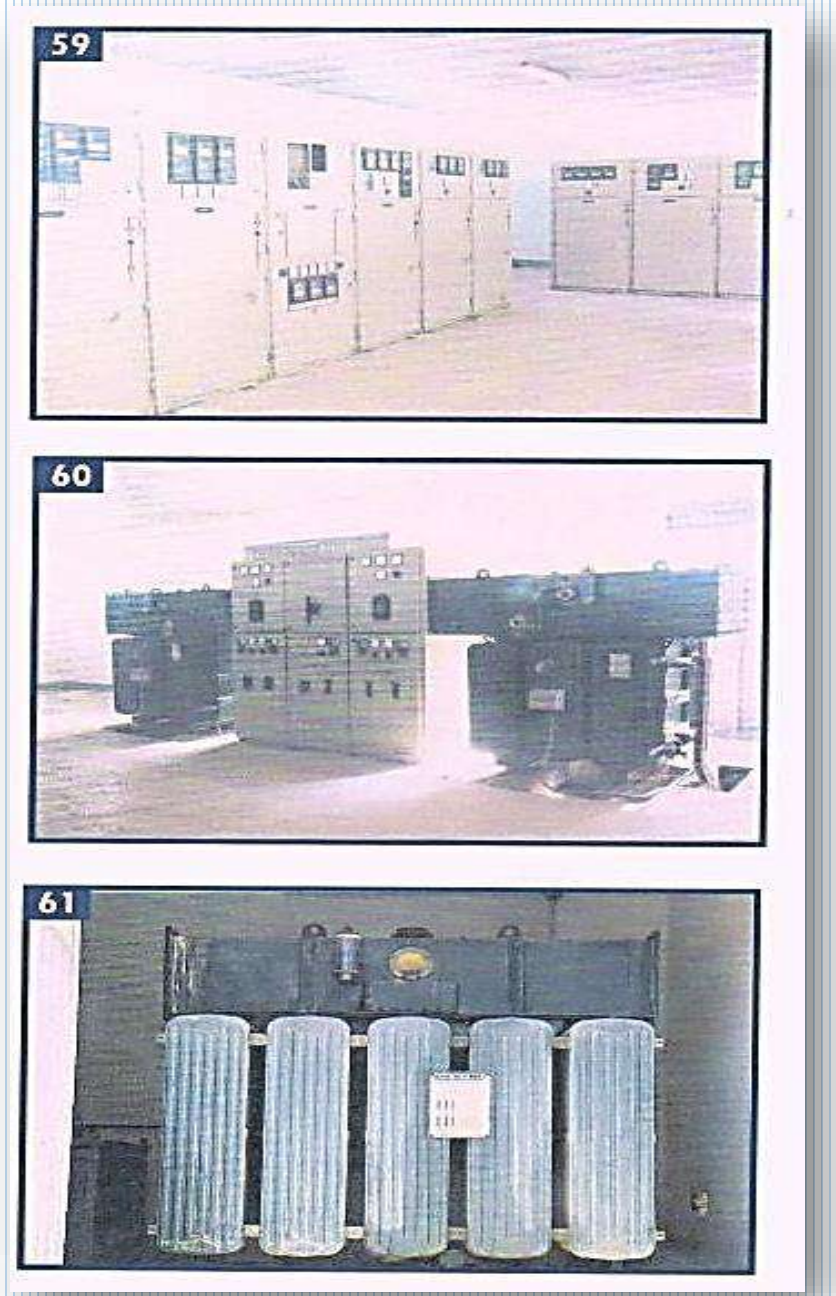
Factory Components:

Main Power Station:

* The major power station and its control panels.
* Panel body (6 cells).
* Laboratories that include all the measurement and analysis devices, the cement compressive strength measurement machine, and the chemical laboratory substances used to detect materials.

Electrical System
Electrical Rooms:

- Panel of 11/6 kV. distribution transformer to transform 11/0.4 kV.
- Low voltage distribution panels, control switchs, and lighting transformer… etc.



Electrical Rooms

Automatic Control (To Operate the Mill and Packaging)

- Automatic alarm panels, panels and electrical switches for the mill, packaging, and monitoring the grinding process and scale to fill the mill

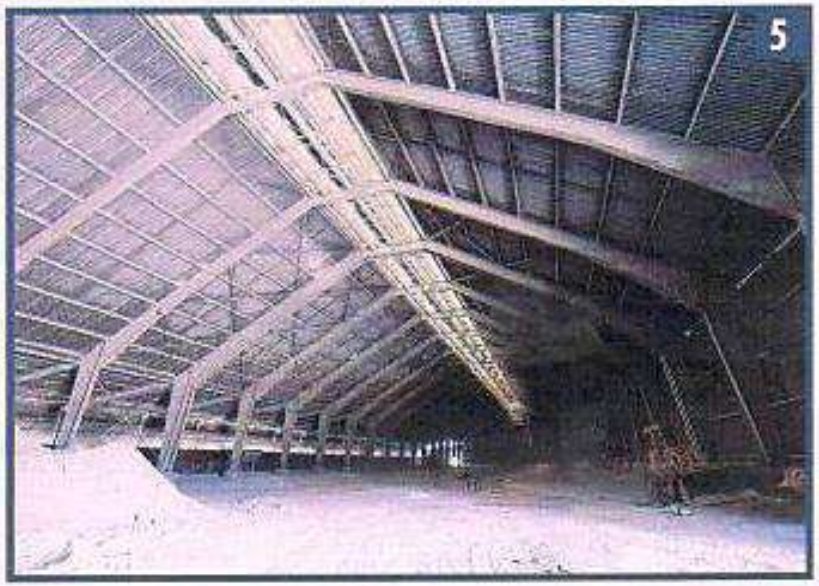
Automatic Control (To Operate the Mill and Packaging)

Factory Facilities and Buildings "Dimensions":

Facility Name	Facility Dimensions (Length – Width)
Clinker Warehouse	155.20 m - 50.70 m
Crusher	6.10 m - 4.90 m
Hopper Area	14.20 m - 9.90 m
Mill Area	33.80 m - 16.20 m
Packaging Area	22.20 m - 14.20 m
Two (2) silos (13 diameters x 18 height)	26m - 13 m

Clinker Warehouse

- The warehouse is equipped with a reclaimer to gat "stacks".
- Length: 155m
- Width (without the unloading space) : 49.5 m
- Height: 21m
- Capacity: Clinker of 60000 tons
- Total Warehouse Area: 45,000 m^3
- Total Area of the Sides and Roof:

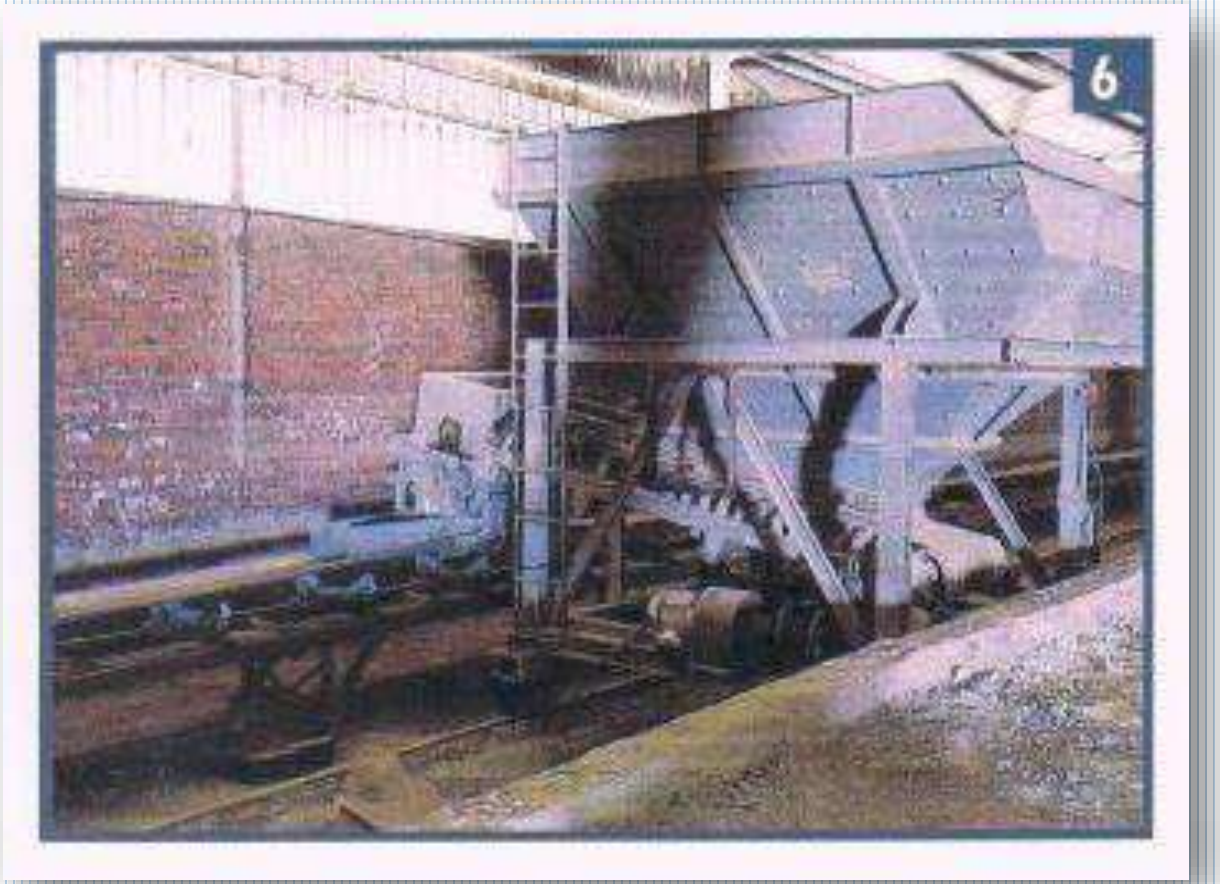


Clinker Warehouse

The clinker shall be handled through a loader, where the clinker is transferred inside a mobile hopper of 14 m^3 capacity and equipped with a conveyor belt for unloading.

- Capacity: 160tons/hour
- Speed: 15m/m
- Distance: 140m
- Power: 2X1.1 kW/h

- Conveyor Belt:
- Length: 4m/ 10 inclination angle
- Width: 80cm
- Speed: 10to 20 m/m
- Capacity: 5.5 kW



Handling of Materials

Gypsum Crusher:

- It consists of: Metal hopper, reciprocating motion feeder, and impact crusher.
- Electrical Capacity: 11kW
- Crushing: 4000mm
- Capacity: 30tons/hour
- Unloading Belt:
- Width: 650mm
- Length: 12m
- Capacity: 40tons
- Motor: 5.5 kW

Conveyor Belt (B6):

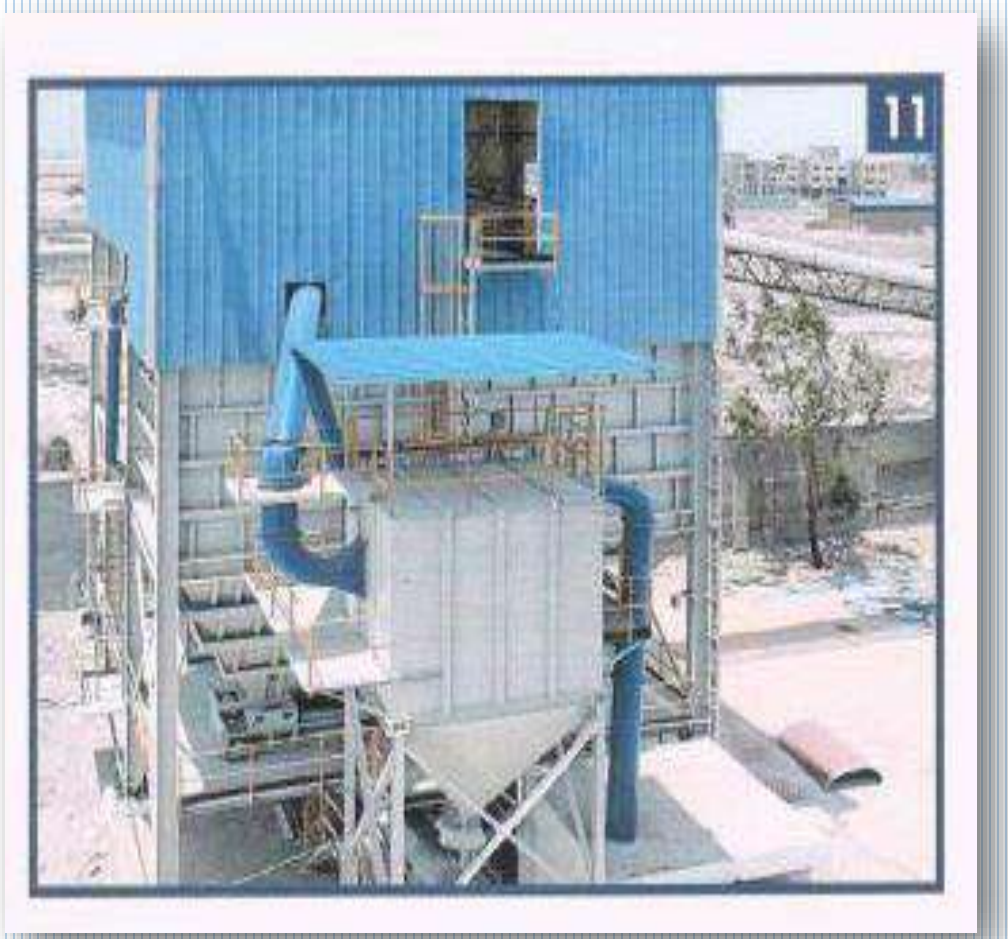
- Clinker, gypsum, and additives are transferred to the feed hopper of the mill. (Each type of material is transferred separately)
- Capacity: 160tons/hour
- Length: 223m
- Width: 650mm
- Speed: 75m/m
- Escalation: 16.5 m
- Electrical Capacity: 22kW (equipped with hydraulic coupling)

Conveyor Belt (B7)

- **The materials transferred from the Conveyor Belt (B6) are unloaded using the Conveyor Belt (B7) as it works in two directions to unload each material separately inside the hopper 0.**
- Capacity: 160tons/hour
- Width: 650mm
- Length: 6.25 m
- Speed: 75m/m
- Motor: 5.5 kW

Dust Filter for Feed Hoppers of the Mills

- Filter Bags: 96 bags
- Air valve
- Control circuit
- Air compressor
- Filter fan



Material Hopper:

- **It includes 3 hoppers made of steel and equipped with corrosion-resistant boards in the lower conical part.**
- Capacity:
- Clinker Hopper: $400m^3$
- Gypsum Hopper: $100m^3$
- Additives Hopper: $100m^3$
- Total weight: 129 tons
- Hoppers are equipped with devices to measure the material quality and the operation and stop control systems.

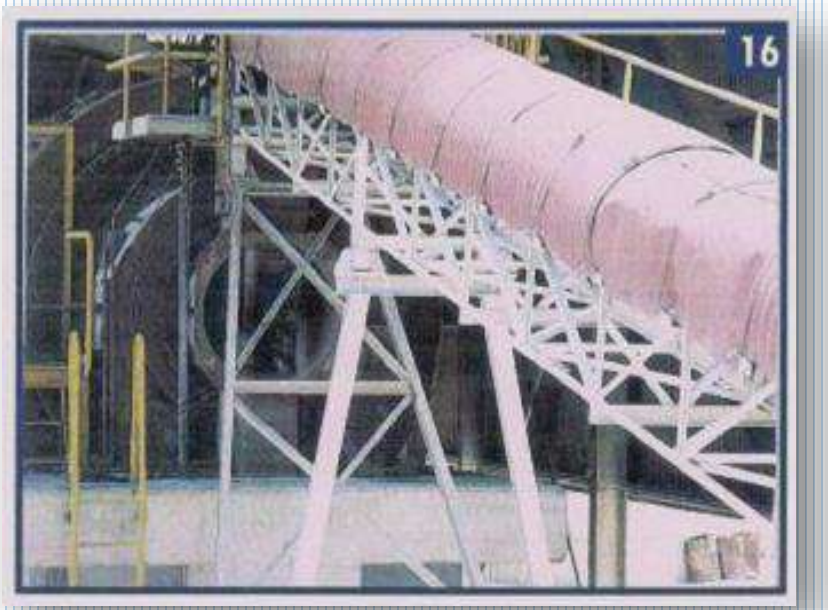
Material Hoppers

Clinker, Gypsum, and Additives Scales:

- This is done through HASLER 3.
- Electronic conveyor to weigh the materials.
- 7-70 tons/hour for clinker.
- 1-10 tons/hour for gypsum and additives, which are located under the feed hopper of the mill.
- Two electronic control panels to weigh the materials.

Conveyor Belt (C3)

- **Located under the scales of material storage; and the clinker, gypsum, and additives are transferred, if any, to the mill:**
- **Manufacturer: URBASA**
- Capacity: 85tons/hour
- Length: 32.4 m
- Width: 500mm
- Escalation: 6m
- Electrical Capacity: 10kW
- Total Weight: 8.4 tons



Cement Mill

Grinding cement using closed-circuit grinding balls

- Manufacturer: BUHLER – MLGA
- Productivity: 68 75tons/hour
- Diameter: 3.6 m
- Length: 13.35 m
- Panels Thickness: 38/48 mm
- Speed: 17.1 rpm
- Grinding Balls Weight: 161tons (sizes: 60, 70, 80, and 90 mm for the first room; and 20, 25, 30, 40, and 60 mm for the second room)
- Drive: Pinion and Gear (Girth Gear)
- Motor: 2500kW/ 6000 volt
- Ball Bearing Diameter: 1400mm
- Ball Bearing Width: 500mm
- Ball Bearing Weight: 9400kg

- **Mill Plates**
- **First Room Plates (MAGOTTEAUX)**
- Slab Measurement: 250x 314.6 mm
- Material: FMU – 10N
- Weight: 24tons
- **Diaphragm Plate**
- From the side of the first room: plates with open channels (Width: 6 mm +- 1mm)
- Material: ACO – 4013
- Weight: 2.23 tons
- From the side of the second room: blind plates
- **Second Room**
- Plate Measurements: 250x 314.6 mm
- Material: FMU – 10S
- Weight: 38.5 tons
- **Diaphragm for Mill Warehouse**
- Plates with open channels (Width: 8 mm +- 1mm)
- Material: ACO – 4013
- Weight: 2.22 tons

Mill Ball Bearing:

- Made from iron alloys of 500x1400 mm

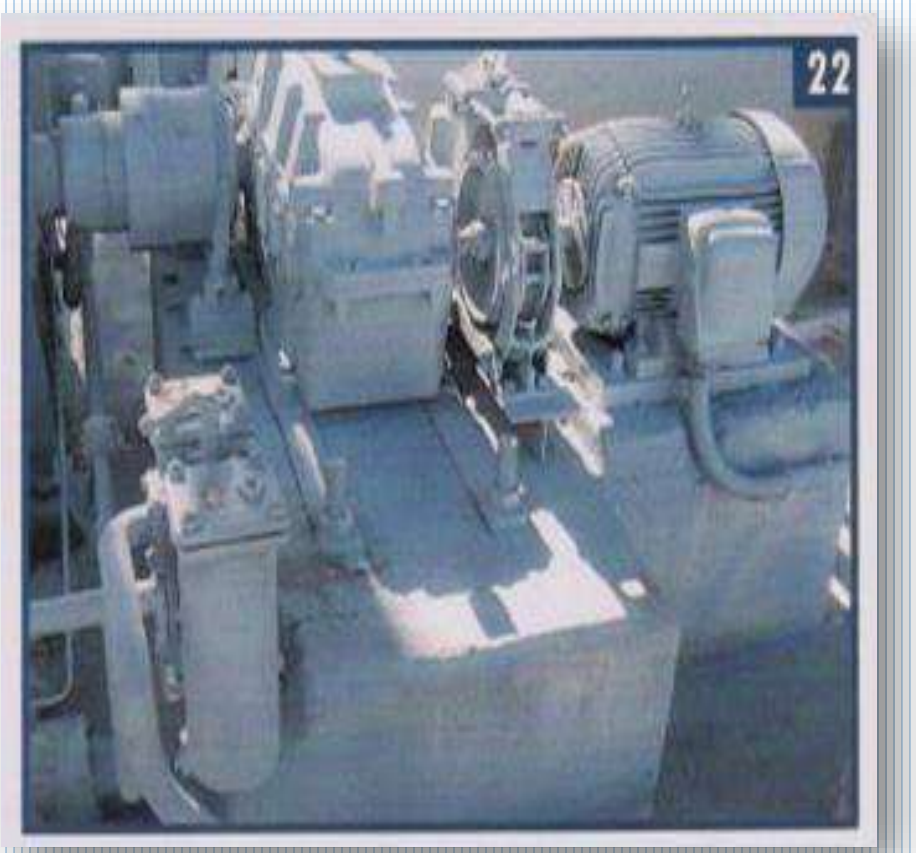
- Equipped with a high-pressure lubrication system, at commissioning, followed by a low-pressure lubrication system, with continued operation, and temperature sensors and devices for protection, alarming, and stopping the mill in case of any malfunction in the oil circuit.

Mill Pinion:

* Diameter: 864mm
- Number of Teeth: 34
- Weight: 24000kg
- Module: 25.4
- **Mill Gearbox**
- Manufacturer: TACKE OLALDE
- Type: NH -2 – 710
- Equipped with a lubrication system and cooling cycle.
- First Speed: 985rpm
- Second Speed: 120rpm
- Reduction Ratio: 8.3
- Parameter: 2.2 Weight: 7800 kg Coupling: Flexible coupling (WB – 9)

Major Motor for the Mill:

- Capacity: 2500kW (3400 hp)
- Speed: 1000 rpm
- Force: 6000v - 50 Hz
- Equipped with MAR 630L slip rings.



Mill Lubrication System:

- There are two lubrication units for the entrance/ exit ball bearing and one lubrication unit for the pinion and girth gear.
- Lubrication system for the ball bearing that includes two low-pressure oil pumps and one high-pressure oil pump
- Lubrication system for the pinion and girth gear that includes two oil spiral pumps.

Wheel:

- Capacity: 210tons/hour
- Motor: 50hp
- Height (from the lower center to the higher center): 25m
- Reducer's Type: worm and gear

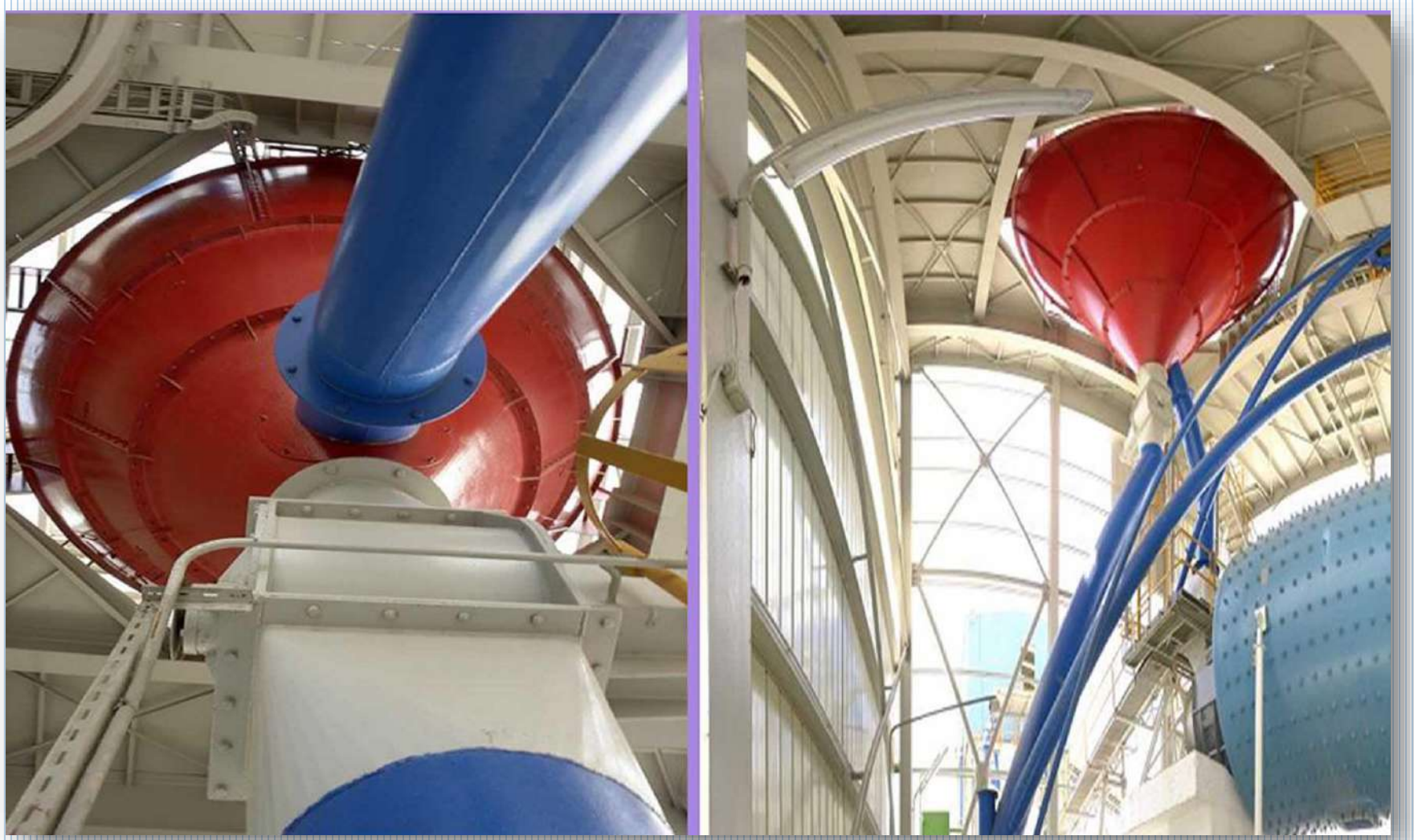
Air Slide

- Transferring the material from the wheel to the dynamic cement separator
  Length: 20m
- Inclination: 12degrees

Dynamic Cement Separator:

- Diameter: 20feet
- Electrical Capacity: 400hp
- Motor Revolutions: 1500rpm
- Force: 6000v
- Equipped with rotor liquid starter system
- Gearbox: TACKE OLALDE
- Final Speed: 160revolutions, equipped with a lubrication pump and protection systems

Dynamic Cement Separator



Cement Pump:

- Brand: FULLER – KINYON
- Type: 250– M
- Motor: 60hp/ 1500 rpm
- Equipped with an air slide conveyor system with a capacity of 1800 m^3/h

Dust Filter System in Mill Section:

- Type of Mill filter fan: SOLIVENT – VENTEC
- LM 100 MR3 S1
- Capacity: 50m^3/h
- Pressure: 422-373 mm
- Static: 400-350 mm
- Diameter: 1000mm
- Motor: 120hp/ 1500 rpm

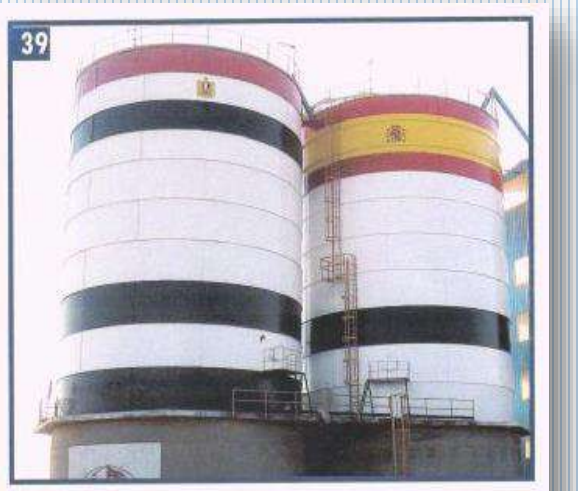
- **Filter**
- Type: 9MW-80 Ray – JET with pulse system
- Number of Covers: 384
- Area: 535m^2
- Dust Containment: 90gm/m^3
- Pressure: 7bar

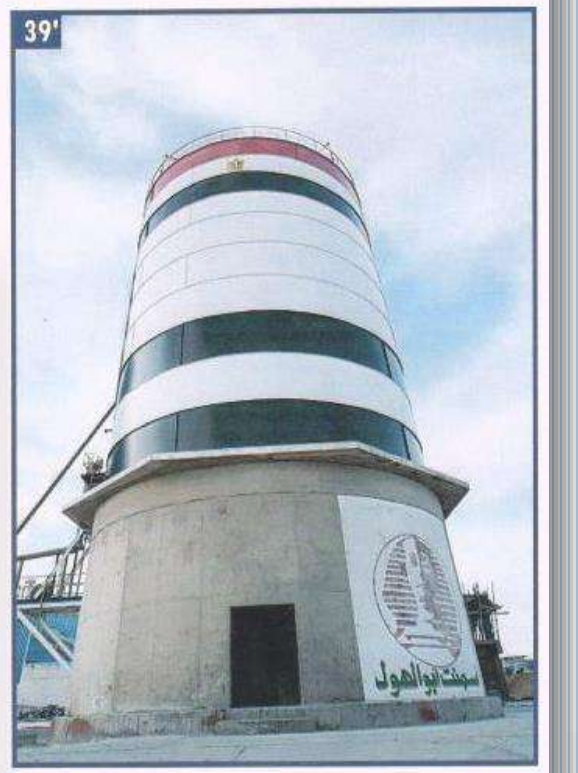
Cement Silos

Two Steel Silos

Brand: UNISTAHL , Type: Y – 12 – 18

- Capacity: 3036tons of cement - 2036 m^3
- Diameter: 12m
- Height of Storage Part: 18m
- Total Height: 27m



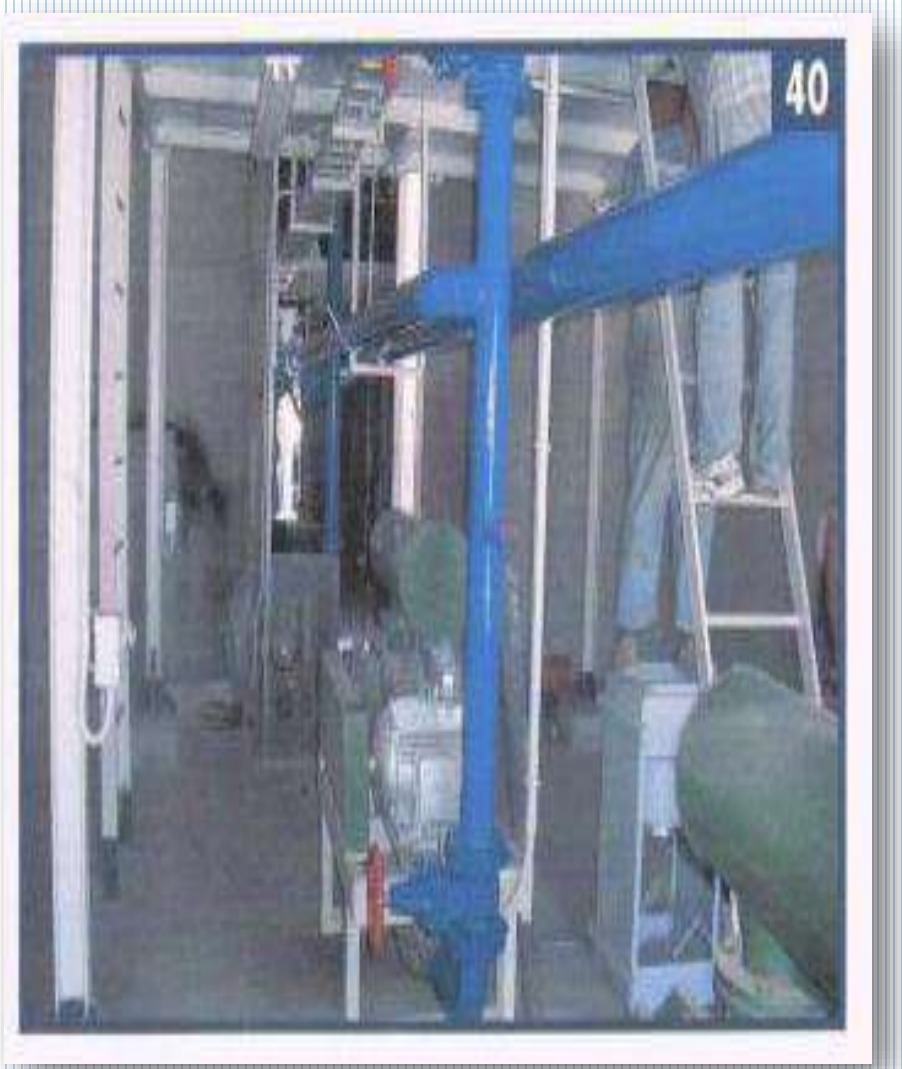


Cement Silos and Packaging Section

Cement Silos

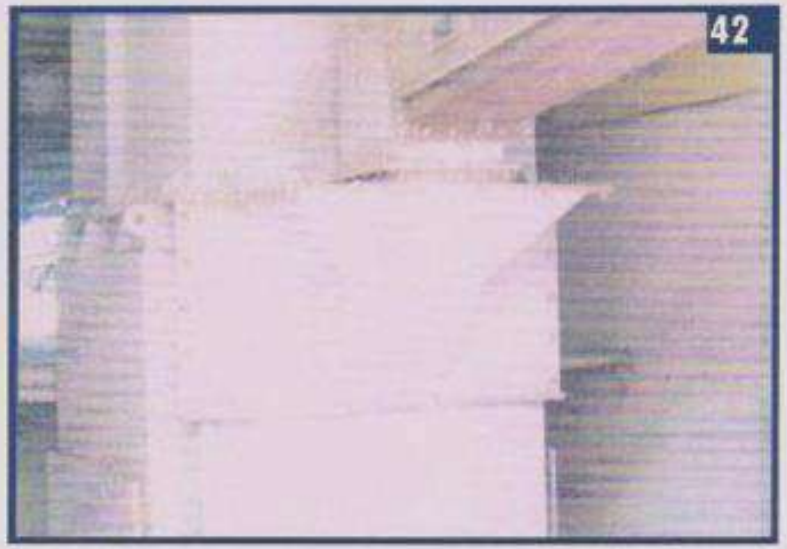
Air Slide of Cement Silos:

- Type: MBR
- Capacity: 500m^3/h
- Pressure: 500mm bar



Packaging Wheel:

- Capacity: 200tons/hour
- Height (from the lower center to the higher center):
  18m
- Packages Measurement: 800x 320 mm
- Electrical Capacity: 40hp
- Reducer Type: worm and gear



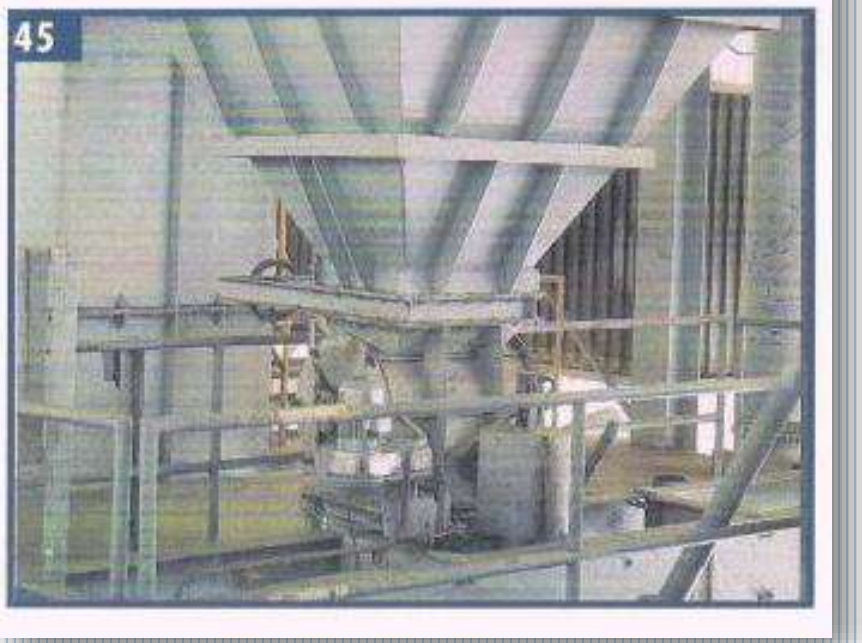
Packaging Vibrator:

Brand: NIAGARA 1000 * 2500

Hopper of the Packaging Machine:

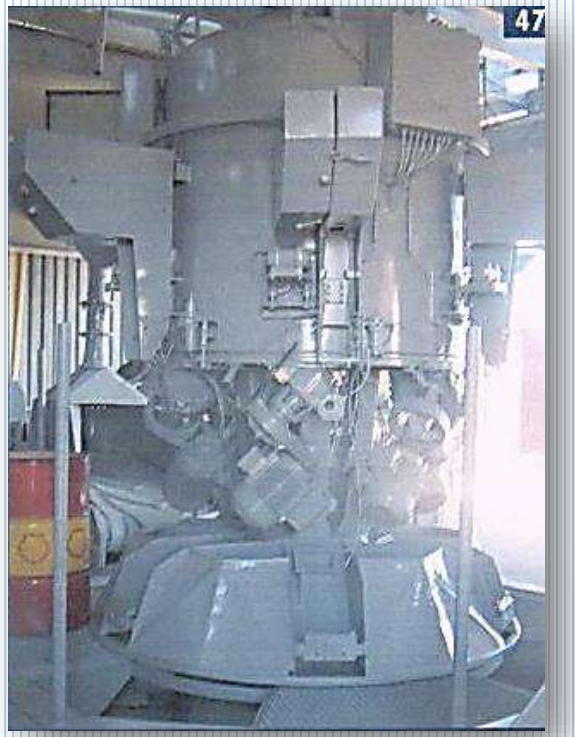
- Two hoppers
  Capacity: 25m^3

- Feed regulator for the Packaging Machine:



Packaging Machine:

- Two machines
- Brand: HAVER-ROTO
- Type: 6023-6 RC
- Capacity: 110 tons/h - 220 sacks/h
- Number of Gutters: Six gutters
- Cement Softness: can reach 4000 cm^2/g
- Operating Air Pressure: 5bar



Packaging Machine (2)

Sack Conveyor Belt:

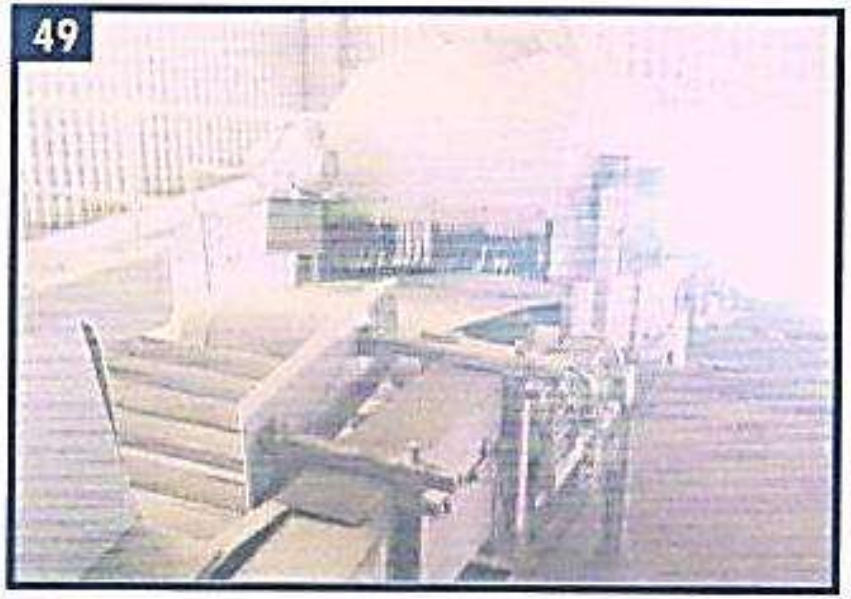
- Width: 650mm
- Brand: HAVER

Sack Conveyor Belt:

- **Width: 650mm**
- **Motor Capacity: 3hp**
- **Reducer: worm and gear**
- **Length: 4.5 m**

Reverse Conveyor:
(Works in two directions depending on the vehicle loading direction)

- **Width: 650mm**
- **Motor Capacity: 3hp**
- **Reducer: worm and gear**
- **Length: 5m**



Three Vehicle Loading Conveyors
Brand: URBASA

- Width: 650mm
- Speed: 60m/m
- Reducer: worm and gear

Dust Filter for Packaging Section
Brand: SOLEVENT

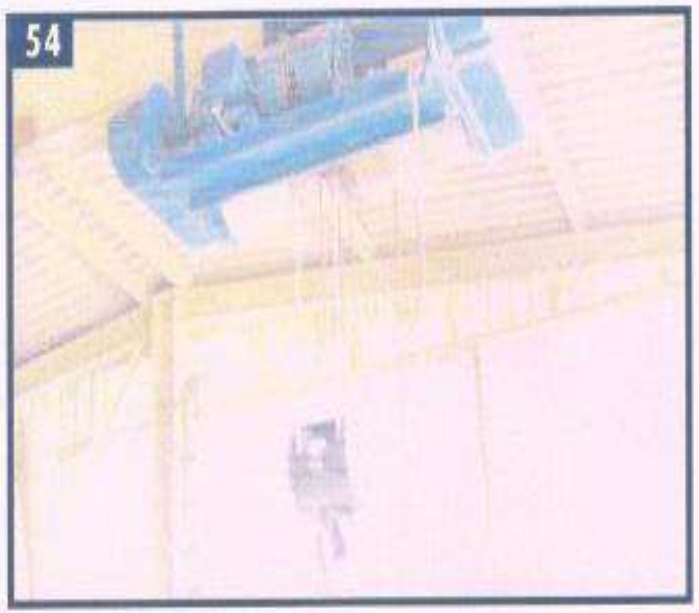
- Type: 9MW – 50
- Capacity: 32000m^3/h
- Dynamic Pressure: 500mm bar
- Dynamic Pressure: 500mm bar
- Speed: 1586rpm
- Motor: 37kW- 1500 rpm
- Filter Area: 334m^2
- Number of bags: 240 bags

Vehicle Loading Conveyors

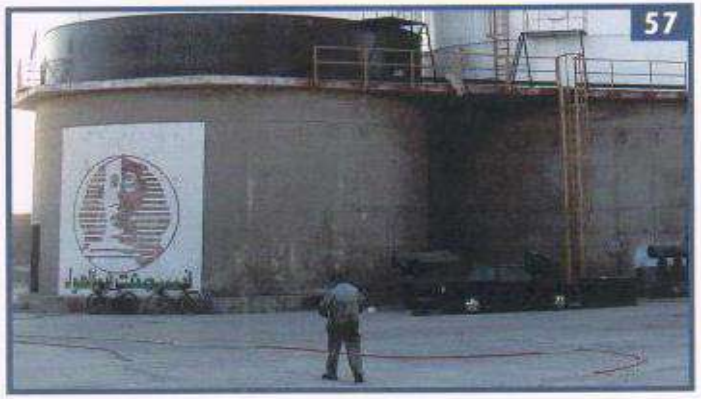
Vehicle Loading Conveyors

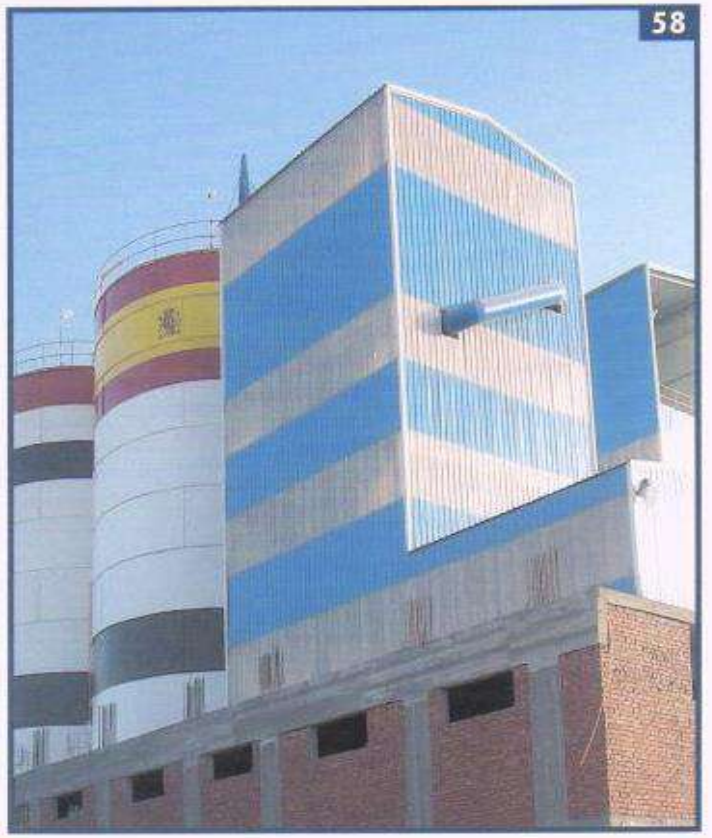
- **Five-ton overhead crane for the Packaging Wheel**

Cargo: 5tons



Station for Loading Liquid Cement from Silos to Two Packaging Areas





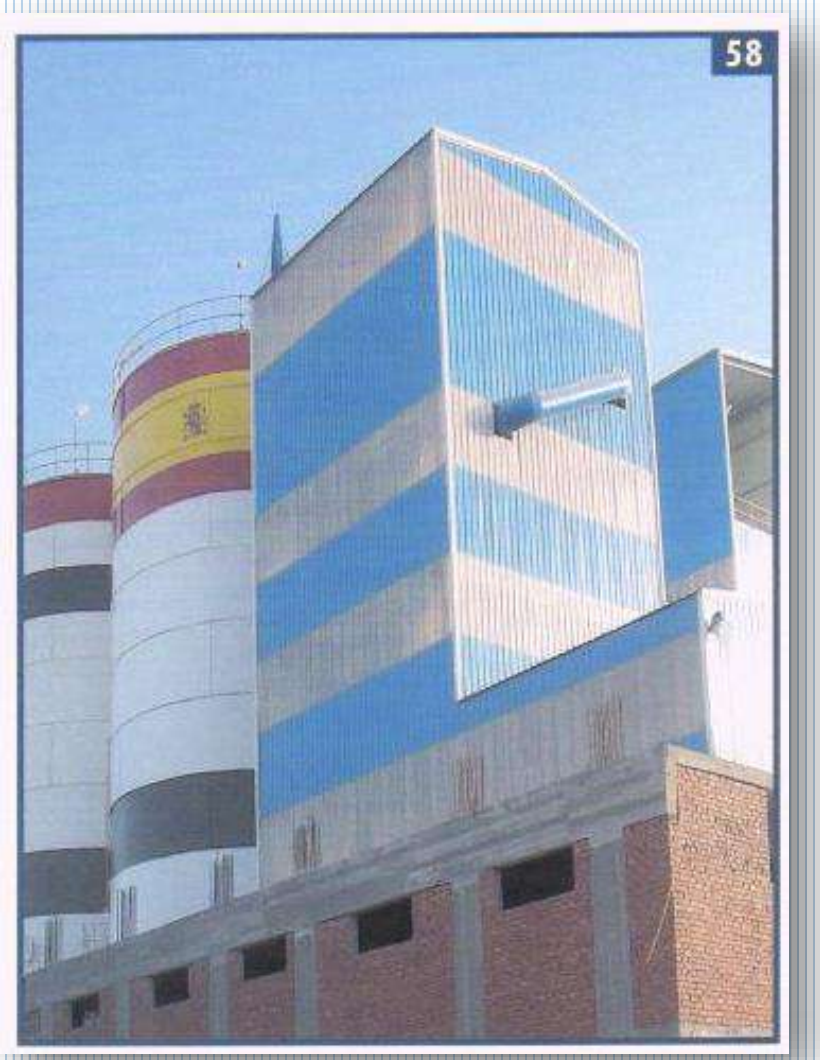
Loading Liquid Cement from Silos

Packaging Section:

- It consists of 102-ton metal parts without panels.

Coverage for the ceiling and sides.

- Area: 1280m^2



Packaging Section

Laboratories:

- Control and Assurance of
  the Physical and Chemical Laboratory Quality

Measurement Devices in Laboratories

Laboratory Devices

Laboratory Devices

Entrance Gate and Security Room

140-Ton Truck Scale

140-Ton Truck Scale

Entrance of Clinker Vehicles

Outdoor Gathering of Clinker after the Warehouse is Filled

Outdoor Gathering of Clinker after the Warehouse is Filled

Outdoor Gathering of Clinker after the Warehouse is Filled

Outdoor Gathering of Clinker after the Warehouse is Filled

Outdoor Gathering of Limestone

Material Mixing and Grinding Building

Gathering and Preparing to Load Ready Cement

Packaging Finished Cement Product into Sling Bags and Preparing them for Export

Packaging Finished Cement Product into Sling Bags and Preparing them for Export

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Packaging Finished Cement Product into Sling Bags and Preparing them for Export

Entrance of Cement-Loaded Vehicles (Sacks)

Export Trucks Locked Up in the Factory

Export Trucks Locked Up in the Factory

AIR VIEW

An overhead satellite image from a height of 320 m

Building Name	Length	Width
Bag and Paper Storage Building	21.90 m	8.10 m
Warehouse Complex	25.30 m	6.80 m
Machine and Spare Part Storage Building	17.10 m	70.10 m
Truck Scale Unit	4m	30m
Nine-Ton Scale Metal Structure (Pallet)	5m	4m
Roads and Floors	2500flat meter	1250m^3
Air Compressor Station	8.80 m	8.30 m
Vehicle Entrance and Exit Gate	33.40 m	3.35 m
Administrative Building inside the Work Site	4m	10m
Equipment Garage Building	24.20 m	11.10 m
Building for Material Unloading from Road Transport Means	40m	20m
Laboratory Building (Natural - Chemical)	15m	10m
New Packaging Building	75m	6m

Production Areas:

- "Sack and Material Warehouse; Clinker and its Accessories Warehouse; Crusher and its Accessories; Hoppers and its Accessories; Mill and its Accessories; Packaging and its Accessories; Silos and its Accessories"

Air Compressor Components:

- (3 spiral compressors, 1 piston compressor, dryer)

Equipment and Transporters inside the Factory:

CAT loader, Clark Toyota, Generator

Industrial Security Tasks:

Full alarm device, fire extinguishers (40 fire extinguishers and fire hoses)

The following are parts of the maintenance, restoration, and renewal works at the factory.