

ENGINEERING • PROCUREMENT • CONSTRUCTION
DELIVERING EXCELLENCE

MALEIC ANHYDRIDE / MALEIC ACID

PRODUCTION PLANT PROJECT
FOR TN MALEIK PETROKIMYA



CLIENT

TN MALEIK PETROKIMYA



LOCATION

KOCAELI, TURKIYE



COMPLETION

2023



PROJECT PROFILE

MALEIC ANHYDRIDE
(MALEIC ACID)

PRODUCTION PLANT PROJECT
FOR TN MALEIK PETROKIMYA

A completed EPC project delivered for TN Maleik Petrokimya, covering the engineering, procurement and construction of a maleic anhydride / maleic acid production plant.

CLIENT TN MALEIK PETROKIMYA

LOCATION KOCAELI, TURKIYE

COMPLETION 2023

STATUS COMPLETED

EPC SCOPE

- ENGINEERING
- PROCUREMENT
- CONSTRUCTION



TURNKEY INDUSTRIAL PROJECT DELIVERY

From engineering and procurement to on-site construction and project completion.

Sphere Tanks / Tank Farm



Main Process Area / Power Utilities



Pipe Rack Spine / Logistics Zone



Project Overview

Integrated plant scope rather than a single equipment package, delivered for TN Maleik Petrokimya in Kocaeli, Turkiye.

- EPC execution completed in 2023
- TN Maleik Petrokimya, Kocaeli, Turkiye
- Plant-wide mechanical, civil, electrical works
- Process units, tank farm, storage, utilities & piping
- Testing, pre-commissioning and completion readiness

Project delivery

Turnkey delivery integrating multidisciplinary engineering, vendor coordination, site execution, QA/QC, testing, pre-commissioning and handover activities.



Plant Masterplan Area Breakdown

The model is organized around a dense process core, storage systems and utility corridors.

- Main process area
- Power / utilities
- Sphere tanks
- Tank farm
- Pipe rack spine
- Logistics zone



Turnkey Technical Project Information Layout

01

PROCESS CORE

Production block with towers and package equipment

02

STORAGE

Sphere tanks and tank farm as primary packages

03

BACKBONE

Pipe racks connect storage, process and utilities

04

LOGISTICS

Truck/service circulation and laydown zones

EPC Delivery Logic

One integrated turnkey responsibility from engineering to handover.



Integrated engineering

Design, analysis and planning aligned for performance and constructability.



Controlled procurement

Strategic sourcing, expediting and logistics for quality and on-time delivery.



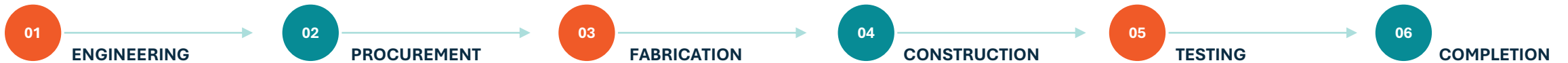
Disciplined fabrication & construction

Precision fabrication and safe construction to approved standards.



Verified testing & handover

Rigorous testing, documentation and smooth handover for reliable operations.



Site Development Progression



Early civil works



Tank and steel erection



Integrated plant view

Aerial construction images show the project evolving from foundations and equipment laydown into a dense, integrated process facility with vessels, stacks, columns and pipe racks in place.

Main Process Units

Production core with towers, vessels, heat-transfer equipment and dense piping networks.

Equipment setting on prepared foundations

Steel access & maintenance platforms

Process columns & vertical vessels

Heat-transfer and package equipment



AREA
MAIN PROCESS

SCOPE
UNITS & INTERCONNECTING PIPING

WORKS
MECHANICAL + STRUCTURAL + E&I

STATUS
INSTALLATION / PRE-COMMISSIONING

Storage Systems

Sphere Tanks

Two 2,500 m³ N-Butane spherical vessels are a visible proof point of mechanical erection capability.

- Two 2,500 m³ N-Butane spherical tanks: V-2012 and V-2020
- Sphere tank assembly and erection interfaces
- Tank support legs, access platforms and surrounding pipe-rack connections
- Storage/transfer piping, valves and manifolds
- Testing, coating/painting and final completion activities
- Integration with tank farm and loading routes



Tank Farm Transfer Networks

Storage, pumps, pipe racks and logistics routes form the interface between process and material handling.

ROAD ACCESS, LAYDOWN, UNLOADING AND MAINTENANCE CLEARANCES

Road access, laydown, unloading and maintenance clearances



INTEGRATION WITH SERVICE WATER AND UTILITY ROUTES

Integration with service water and utility routes



01

VERTICAL TANKS AND ASSOCIATED ACCESS STRUCTURES



- Vertical tanks for storage
- Access platforms, ladders and stairs
- Safe access for operation and maintenance



02

TRANSFER PUMPS, MANIFOLDS AND ISOLATION VALVES



- Transfer pumps for reliable movement
- Manifolds for distribution and control
- Isolation valves for safe operation & maintenance



03

PIPE BRIDGES CROSSING SERVICE ROADS AND PROCESS CORRIDORS



- Pipe bridges for safe crossing of roads & corridors
- Organized routing for efficiency and accessibility
- Supports operational continuity



SAFE & RELIABLE

Designed for safe, reliable and continuous operations



INTEGRATED DESIGN

Seamless integration between storage, transfer and utilities



EFFICIENCY

Optimized layouts for operational efficiency and maintainability



ACCESS & MAINTENANCE

Planned access and clearances for safe operations and maintenance



SUSTAINABILITY

Built with sustainability and environmental responsibility in mind

Plant-Wide Pipe Rack Interconnecting Piping

Pipe racks connect process equipment, storage systems, utilities and transfer areas into one operating plant.



01

B.O.P. STEAM, DRAINS, CONDENSATE AND UTILITY PIPING

Integrated piping solutions for reliable plant utility and condensate systems

02

PROCESS AND STORAGE TRANSFER INTERCONNECTIONS

Engineered connections ensuring safe and efficient process fluid transfer

03

SUPPORTS, GUIDES, ANCHORS AND STEEL SUPPORT FRAMES

Structural support solutions designed for stability, alignment and long-term performance

04

PREFABRICATED SPOOLS PLUS SITE-FIT FABRICATION

Precision-fabricated piping assemblies optimized for fast & accurate site installation

Fabrication, Supports Site Assembly

A controlled execution chain protects schedule and quality by reducing field rework.

- Pipe spools, supports, platforms, ladders and steel frames
- Small-bore site fabrication and large-bore prefabricated sections
- Weld maps, WPS/WPQR, welder traceability and inspection records
- Temporary supports and access for erection sequence
- Final reinstatement after testing and punch closure



Major Equipment Works

Installation and mechanical completion of process, utility and packaged units.

01 PROCESS COLUMNS AND VERTICAL VESSELS

02 HEAT TRANSFER EQUIPMENT AND PACKAGE SKIDS

03 PUMPS, VALVES, MANIFOLDS AND LOCAL EQUIPMENT ASSEMBLIES



PLATFORMS, LADDERS, WALKWAYS AND SAFETY ACCESS

EQUIPMENT MARKING, PRESERVATION AND COMPLETION RECORDS

INTERFACE CHECKS BEFORE PIPING, ELECTRICAL AND INSTRUMENT HANDOVER

Scope focus Heavy equipment transport, positioning and mechanical readiness control
Integrated delivery, inspection and handover workflow

Heavy Erection Structural Steel

From foundations and civil works to a dense process facility with steel, vessels and storage systems.

CIVIL FOUNDATIONS AND EQUIPMENT BASES

Engineered foundations designed for stability, load transfer and long-term durability

STEEL STRUCTURE ERECTION AND ACCESS PLATFORMS

Safe and efficient structural assembly with integrated access solutions

HIGH-LEVEL EQUIPMENT AND PIPE-RACK INSTALLATION

Precision installation for elevated equipment and complex pipe-rack systems

CRANAGE PLANNING AND LIFTING INTERFACES

Coordinated lifting strategies for safe handling, positioning and site execution



Power Generation Utilities Package

The STG package is an integrated utility/power island within the production complex.

- Steam turbine: MST 040 / 110VR, max. 15,600 kW
- Steam turbine package weight: 50.5 t
- Generator: TC 172, 19,000 kVA / 38.5 t
- Generator air cooler package: 3.0 t
- Lube oil tank/coolers and gland steam condenser
- Electrical/control cabinets and E&I system



STG Installation Precision Alignment

Precision alignment turns the STG package into a strong technical proof point.

GROUTING AND FINAL TIGHTENING

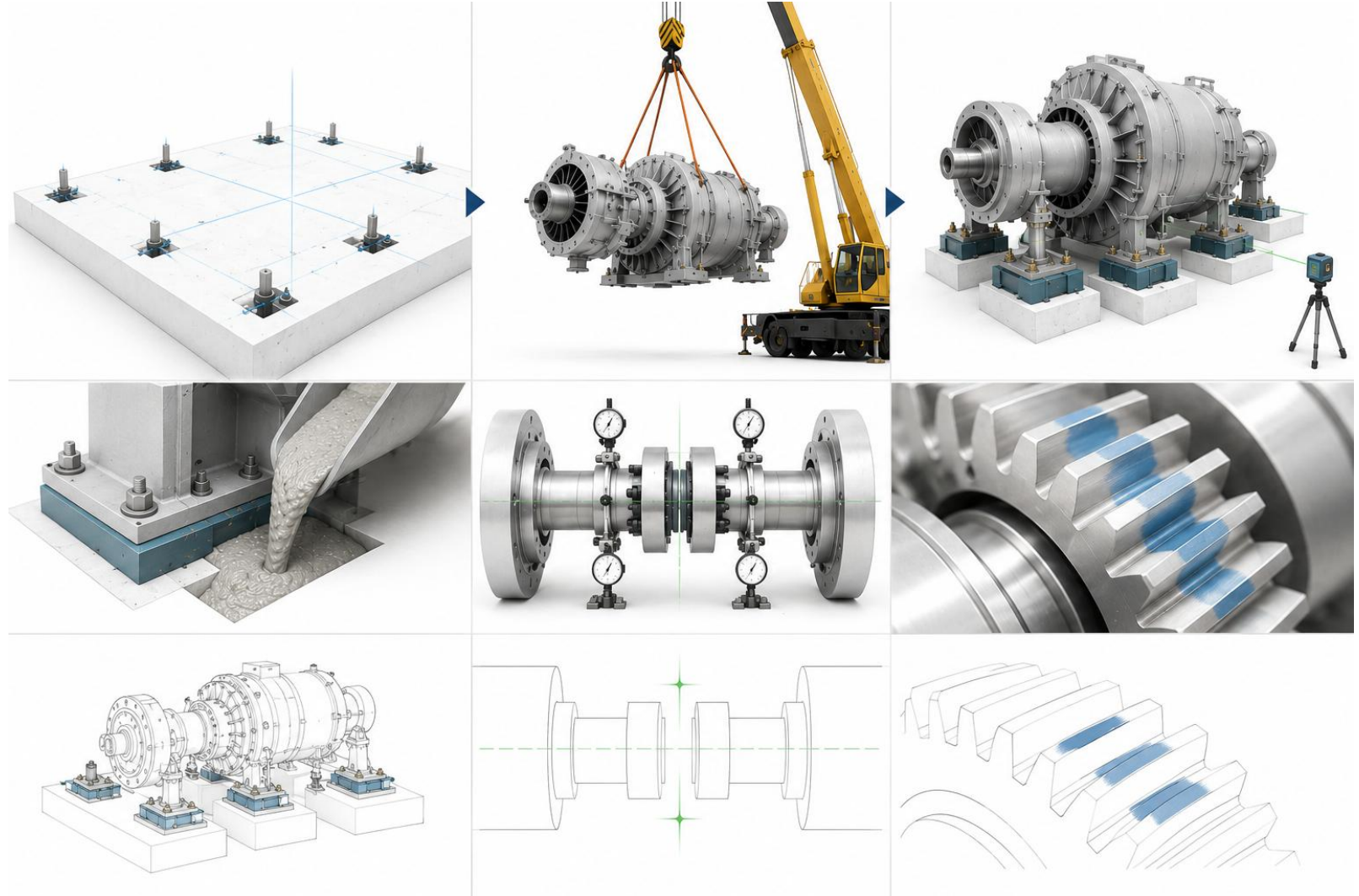
Final grouting and bolt tightening to secure the equipment.

FINAL AXIAL/RADIAL ALIGNMENT AND COUPLING INSTALLATION

Alignment tolerance: ± 0.02 mm axial / ± 0.05 mm radial.

GEARBOX TOOTH CONTACT CHECK

Minimum 80% tooth contact across the gear face.



01

FOUNDATION AXIS MARKING, POCKETS AND LEVELING POINTS

Establishing reference lines and preparation points for accurate equipment positioning.

02

OFFLOADING BY MOBILE CRANE THROUGH TURBINE HALL ROOF

Controlled lifting and placement of turbine components into the installation area.

03

LEVELLING WITH KS-JACKSCREWS AND SOLE PLATES

Precision height adjustment and levelling prior to final alignment.

Procurement Material Management

Integrated procurement and logistics management supports uninterrupted EPC workforce execution.

OUR PROCUREMENT PROCESS



01

SUBCONTRACT AWARD AND VENDOR COORDINATION

Subcontract award and vendor coordination



02

PURCHASE ORDERS, EXPEDITING AND DELIVERY SEQUENCING

Purchase orders, expediting and delivery sequencing



03

RECEPTION INSPECTION AGAINST PACKING NOTES

Reception inspection against packing notes



SHORTAGE / DEMURRAGE REPORT ISSUED WITHIN 24 HOURS OF DELIVERY

Shortage / demurrage report issued within 24 hours of delivery



ALLOCATED STORAGE AND LAY-DOWN MANAGEMENT

Allocated storage and lay-down management



TRACEABILITY THROUGH INSPECTION RECORDS AND HANDOVER DOCUMENTATION

Traceability through inspection records and handover documentation.



QA/QC, Documentation Traceability

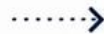
Quality is framed as a controlled documentation system, not only as field inspection.



01

MANUAL USED WITH LATEST ASSEMBLY AND DIRECTION

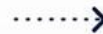
Manual used with latest assembly and construction drawings.



02

ST-6 ALIGNMENT, GROUTING PROCEDURE AND SITE INSTALLATION

ST-6 alignment, grouting procedures and site installation.



03

WPS / WPQRs / WQCs REVIEW BEFORE WELDING

WPS / WPQRs / WQCs review before welding.



04

DOCUMENT INSPECTION, IF/IR-3, ALIGNMENT AND WELDING BOOKS

Document inspection, IF/IR-3, alignment and welding books.

Integrated Turnkey Closeout

From masterplan development through mechanical completion, **Deha Tech delivers a fully integrated EPC execution approach**, ensuring seamless coordination across all disciplines, plant-wide systems and supporting facilities through to final project closeout.

Engineering. Procurement. Construction. Installation. Insulation & Painting. Testing & Commissioning. Mechanical Completion. Project Closeout.

COMPLETION WORKS

Thermal insulation, removable turbine blankets, coating repair/touch-up and final painting were carried as maintainable closeout activities.



Masterplan → Mechanical Completion → Final Completion

Single connected EPC execution view

01

MAIN PROCESS PLANT AND PRODUCTION CORE

Integrated process units engineered for reliable, continuous and efficient plant operation.

02

SPHERE TANKS, TANK FARM AND TRANSFER SYSTEMS

Complete storage and transfer infrastructure supporting safe and controlled product handling.

03

PIPE RACK NETWORK AND PLANT-WIDE INTERCONNECTIONS

Plant-wide piping and utility networks ensuring seamless connection between all process areas.

04

POWER GENERATION, UTILITIES AND PACKAGE UNITS

Essential power, utility and packaged systems providing dependable support to overall plant operations.

Field execution views • process core • storage systems • heavy erection

Construction • Process plant • Storage systems • Piping • Utilities • Completion



PROJECT PHOTO GALLERY 2

Field execution views • process core • storage systems • heavy erection

Construction • Process plant • Storage systems • Piping • Utilities • Completion







ENGINEERING • MANUFACTURING • CONSTRUCTION

ENGINEERING THE FUTURE TOGETHER

We appreciate your time and attention.
Let's build the future together.

