

TRANSPORT EQUIPMENTS MANUFACTURING CO.



- *Established in 1974 in Istanbul, TURKEY.*
- *Since 2000, TTI is located in modern production facilities in GOSB.*
- *In 2004, PAK R&D is established to increase the national and international competing power and market share of TTI.*
- *PAK R&D continues its operations in TUBITAK MAM Technopark.*
- *7 MSc. thesis and 3 international publications have been published.*
- *4 patents about crane design.*
- *ISO 9001:2008 certification.*
- *Product Certifications:*
 - *American Bureau of Shipping (ABS)*
 - *Bureau Veritas (BV)*
 - *Istanbul Technical University Mechanical Engineering Faculty (ITU)*
 - *Turkish Loyd (TL)*
- *Kocaeli Chamber of Commerce “Environmental Product Award”*
- *Istanbul Metropolitan Municipality “Environmental Product Award”*
- *TUBITAK “Best Industrial R&D Project Award”*



Transport Tesisleri

Activities & Products

- **Turnkey Facilities**
 - Tube Plants
 - Galvanizing Plants
 - Palisade Plants
 - Copper Plants
 - Coal Plants
- **Customer Specific Productions**
 - Hydraulic Winches
 - Mill Recuparators
 - Concrete Block Handling Devices
 - Cyclindrical Liquid Tanks
 - Grabs
 - Polips
 - Liquid Metal Distribution Systems
 - Coil Handling Devices
 - Block Handling Devices
 - Power Cable Winder Drums
- **Steel Constructions**
- **Ship Hatch Covers**
- **Conveyors**
- **Ski Chair Lifts**
- **Multifold Construction Systems**
- **Pile Driving Equipments**
- **Cranes**
 - JIB Cranes
 - Derrick Cranes
 - Overhead Ganrty Cranes
 - Climbing Tower Cranes
 - Ship Deck Cranes
 - Quay-Side Loading Cranes
 - Floating Cranes
 - Monobox Cranes
 - Mill Cranes
 - Portal Cranes
 - Floating Dock Cranes
 - Offshore Exproof Cranes
- **Project**
- **Shipyard Layout**
- **3D Modelling**
- **Finite Element Analysis**
- **Software Development**
- **R&D**
- **Earthquake Analysis**
- **Consultancy**



Facilities



Tube¹



Galvanize



Coal²



Steel Construction



Chair Lift³



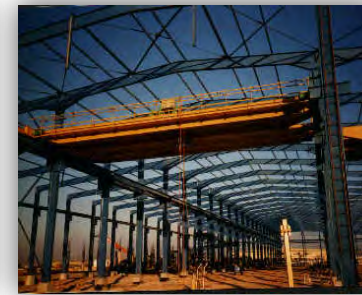
Copper



Palisade



Bridge⁴



Workshop



Platform

1. 1991: TTI has supplied a tube plant for AL Jazera Co. Ltd. in Jeddah - SAUDI ARABIA. TTI has developed and designed the plant and supplied all of the staff and labors from Türkiye.
2. 1993: TTI has won the Kocaeli Chamber of Industry and Istanbul Metropolitan Municipality "Environmental Product Award" in 1995 with the Coal Briquetting Facility and Coal Briquettes.
3. 1990: Kuşaklıkaya and Belvü chair lifts operated between 1990 and 2009 in Bursa, Uludağ. Turkey's longest chair lift (1624m) operated till 2009.
4. 1984: In Saudi Arabia, 8500 Tons steel bridge was dismantled, new bridge and platform were designed using the existing materials, foundation constructions were carried out and 5500 Tons new steel bridge was delivered in just 90 days to get ready for the coming pilgrimage.



Transport Tesisleri

Customer Specific Productions



Grab¹



Coil Handling Device²



Inclined Block Handling³



Ship Hatch Covers⁴



Liquid Metal Distrubution⁵



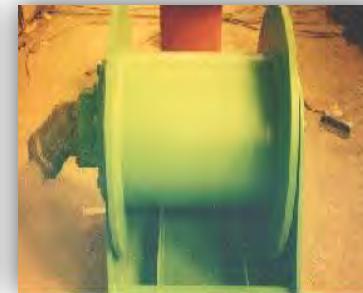
Conveyor⁶



Pile Driving Equipments⁷



Polip⁸



Hydraulic Winch⁹



Block Handling¹⁰

1. Four rope 10 m³ grab. Liman vincinde kepçeyle 14T olan kaldırma kapasitesi, yaklaşık 350 T/saat taşıma kapasitesi temin eder.
2. 20T coil handling device.
3. 50T inclined block handling device.
4. Wire operated single pull, folding type or quick lifting system actuated by a hand operated hydraulic jack hatch covers.
5. Electrically or manually operated liquid metal pots.
6. 300 T/h capacity belt, screw, bucket conveyors and elevators.
7. Hydraulic, diesel or free-fall hammer mountable inclined pile driving equipments
8. 15T polip.
9. Hydraulic winches for derrick cranes.
10. Special block handling devices for ship engines.



Transport Tesisleri

Multifold Residence Construction Systems



- *Multifold construction system, which is developed by TTI, achieves the following advantages:*
 - + *Precast elements are prepared in the construction area rather than a production facility*
 - + *Zero transfer cost of the precast materials from the production field to the construction field.*
 - + *Lowest concrete mold and mold labor cost.*
 - + *Shortest time for assembling the form works, placing reinforcement and pouring the concrete.*
 - + *Superior quality of the concrete as a result of the horizontal pouring of the concrete walls.*
 - + *All weather operation by covering a tent.*
 - + *High-grade strength against earthquake by the reinforced wall construction.*
 - + *Ten story building precast elements have a total height of 3 meters with this system.*
 - + *5 stories building precast work can be completed less than 20 days.*
 - + *Building assembly can be finalized in less than 3 days.*
- *This system is widely used in Turkey and Israel for residential building constructions.*



Transport Tesisleri

Cranes



Derrick¹



Overhead Gantry²



Climbing Tower³



JIB⁴



Ship Deck⁵



Quay-Side Loader⁶



Floating⁷



Monobox⁸



Mill⁹



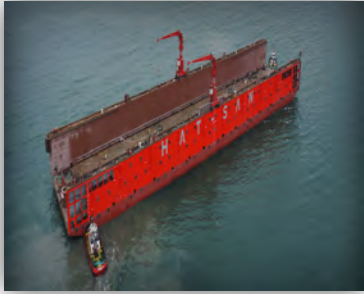
Portal¹⁰

1. 1986: Turkey's highest capacity derrick crane (600Txm). Used for Galata Bridge construction by ST-FA.
2. 2008: Overhead gantry crane (150T).
3. 1982: World's first elevator opening self-climbing crane. More than 30 climbing cranes were manufactured.
4. 2010: 82m lifting height, 3T lifting capacity at 59m radius, 20T capacity JIB Crane.
5. Ship Deck cranes with hydraulically actuated cantilevers that can be turned on the main beam quickly.
6. 1989: Turkey's first full domestic designed quay-side loader/unloader crane
7. 1992: Turkey's highest capacity floating crane (1000T)
8. These cranes can be supplied as gantry with or without cantilever over head types.
9. 1999: 120m/min travelling speed 65 °C ambient temperature rotating trolley mill crane.
10. Between 1974-2010 , TTI has supplied more than 100 portal cranes. TTI is the Turkey's biggest supplier of portal cranes.



Transport Tesisleri

Floating Dock Cranes



Hatsan¹



Sedef²



Gisan³



Sedef⁴



Sedef⁵

-
1. Abu Dabi (dock built by HATSAN SHIPYARD)
 2. Saudi Arabia (dock built by SEDEF SHIPYARD)
 3. Egypt (dock built by GISAN SHIPYARD)
 4. USA (dock built by SEDEF SHIPYARD)
 5. Saudi Arabia (dock built by SEDEF SHIPYARD)



Transport Tesisleri

Portal Crane Types



Crippled



Full Frame



Single Cantileaver



No Cantileaver



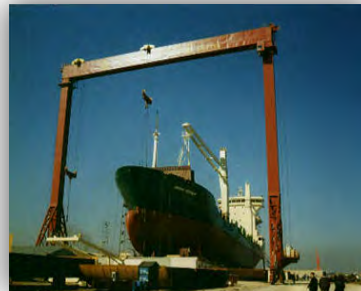
Double Cantileaver



Box Girder



Frame Girder



Double Rigid Legs



Top Trolley



Bottom Trolley



TTI's Portal Crane History



SEDEF-1982¹



SELAH-1984²



PKM-2001³



TURKTER-2004⁴



SEDEF-2007⁵



SEDEF-2008⁶



SEDEF-2008⁷



SEDEF-2009⁸



SEDEF-2009⁹



HATSAN-2010¹⁰

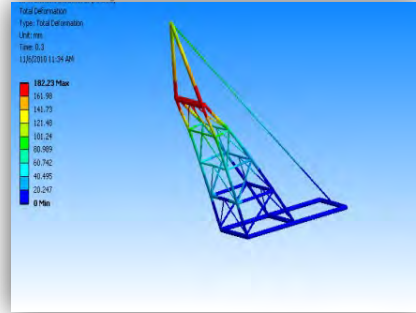
1. Turkey's highest capacity frame girder portal crane (100T).
2. Turkey's highest capacity frame girder portal crane (150T).
3. Full frame portal crane that can lift more than its own weight (60T).
4. World's highest capacity frame girder portal crane. Investors claimed that this cannot be done, ABS Greece office certified the project without a single remark.
5. Turkey's highest (70m), widest (98m) portal crane with 400T capacity.
6. Turkey's highest (70m), widest (100m) and highest capacity (500T) portal crane.
7. Zero assembly cost. Capable of synchronous operation with crane #3 and lifts 820Tons.
8. World's highest capacity frame girder portal crane (550T). Tested with 780T. Zero assembly cost. Capable of synchronous operation with crane #3 and lifts 1050T.
9. World's lowest weight trolley design. 125Tons weight is lifted with a 8.5Tons trolley. Competitors lift the same weight with a 85Tons trolley.
10. World's first fully computer aided designed (less than 1 hour) portal crane. Software is developed by PAK R&D. Crane was delivered in 5.5 months to the the customer.



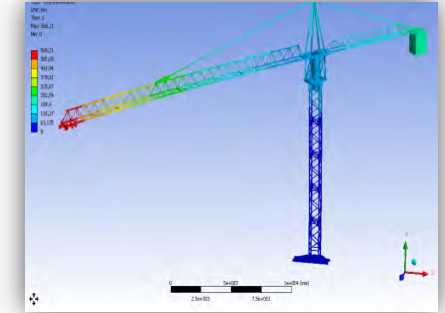
Transport Tesisleri

TTI's Technology

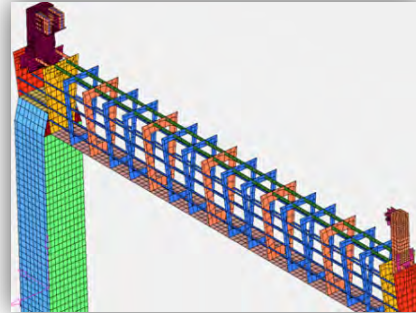
Wave-Wind Analysis



Modal Analysis



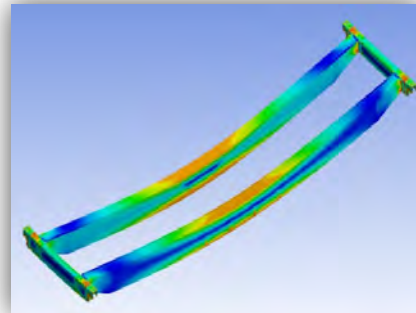
Parametric Mesh



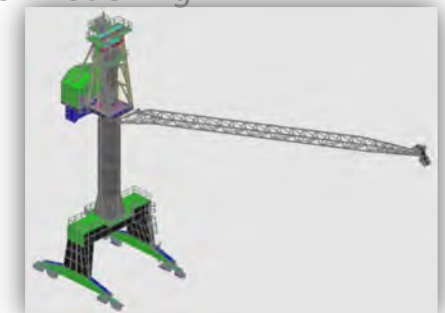
Kinematic Analysis



FEA

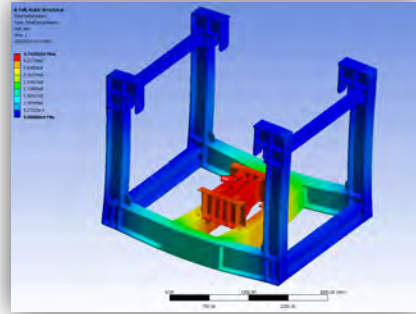


Parametric Modelling

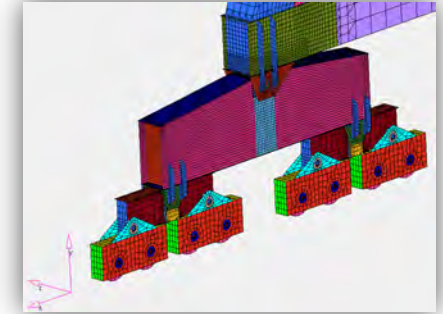


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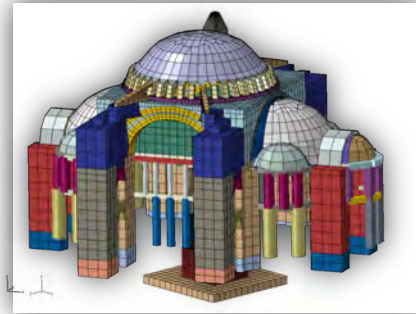
Trolley Designs



Travelling Groups



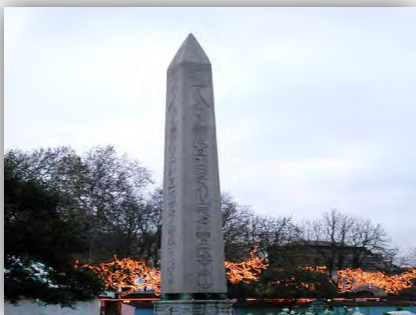
Hagia Sofia Earthquake Analysis



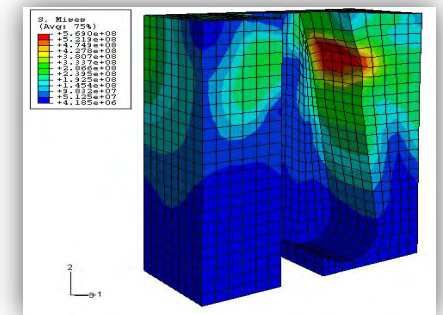
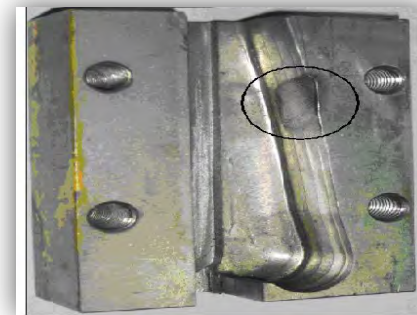
Portal Crane Software



Obeliks Earthquake Analysis



Elevator Brakes



References



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