More than good ideas.
KAEFER is the largest independent integrated supplier for heat, cold, sound insulation and fire protection, interior solutions and related technologies worldwide

KAEFER: Expertise since 1918
Our Vision

To eliminate the energy waste
Our Mission

To support our clients’ success, we deliver the most professional complete solutions worldwide.
Corporate Competence Centres

- CCC (Corporate Competence Centers)
  - CCCN (Competence Center Nuclear)
  - CCCM (Competence Center Mattresses)
  - CCCL (Competence Center LIQUID GASES)
  - CCCR (Competence Center Renewable Energies)
  - CCCL(O) (Competence Center LG-Shipbuilding)
  - CCCL(S) (Competence Center LNG-Onshore)

- KAEFER total

- Corporate Service
- Profit Centre
## Reference pictures of projects executed by KAEFER worldwide

<table>
<thead>
<tr>
<th>Project Description</th>
<th>Image</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inserting a pre-insulated upper tank section</td>
<td><img src="image1.png" alt="Image of LNG deck cargo pipes on the &quot;INIGO TAPIAS&quot;" /></td>
</tr>
<tr>
<td>LNG deck cargo pipes on the &quot;INIGO TAPIAS&quot;</td>
<td><img src="image2.png" alt="Image of insulation work on the LNG tanker &quot;PIONEER KNUTSEN&quot;" /></td>
</tr>
<tr>
<td>Insulation work on the LNG tanker &quot;PIONEER KNUTSEN&quot;</td>
<td><img src="image3.png" alt="Image of one of a series from five gas carriers" /></td>
</tr>
<tr>
<td>One of a series from five gas carriers</td>
<td><img src="image4.png" alt="Image of one of the largest 135,000 m³ LNG tankers insulated with the KAEFER panel system" /></td>
</tr>
<tr>
<td>One of the largest 135,000 m³ LNG tankers insulated with the KAEFER panel system</td>
<td><img src="image5.png" alt="Image of attachment of the prefabricated insulating panels at the calculated positions" /></td>
</tr>
<tr>
<td>Attachment of the prefabricated insulating panels at the calculated positions</td>
<td><img src="image6.png" alt="Image of application of multilayer insulation adjacent to high density pipe support, South Hook" /></td>
</tr>
<tr>
<td>Application of multilayer insulation adjacent to high density pipe support, South Hook</td>
<td><img src="image7.png" alt="Image of insulation of vessel heads and shell with PIR, Karatha Australia" /></td>
</tr>
<tr>
<td>Insulation of vessel heads and shell with PIR, Karatha Australia</td>
<td><img src="image8.png" alt="Image of insulation of vessel heads and shell with PIR, Karatha Australia" /></td>
</tr>
<tr>
<td>Insulation of vessel heads and shell with PIR, Karatha Australia</td>
<td><img src="image9.png" alt="Image of insulation of vessel heads and shell with PIR, Karatha Australia" /></td>
</tr>
<tr>
<td>Insulation of vessel heads and shell with PIR, Karatha Australia</td>
<td><img src="image10.png" alt="Image of jetty lines to tank, South Hook" /></td>
</tr>
<tr>
<td>Jetty lines to tank, South Hook</td>
<td><img src="image11.png" alt="Image of jetty lines to tank, South Hook" /></td>
</tr>
</tbody>
</table>
Punj Lloyd Limited is a global turnkey projects company, handling pipelines, tankages, industrial civil construction telecom and EPC projects in infrastructure and oil & gas sectors. PLL is currently active in 16 countries across 5 continents and has a group turnover of 2000 Million USD. PLL group employee strength is 14500.
KAEFER Punj Lloyd Ltd. (KPLL) is part of the KAEFER Group with its operations based out of Gurgaon, Mumbai, Chennai, Bhubaneswar and Vadodara in India.

KPLL was founded in 2006. KAEFER acquired majority stake in Punj Lloyd Insulations Limited, a major player in thermal insulation since 1997.

KPLL enhanced areas of operations to include Refractory jobs in 2007.

KPLL is a leading company in areas of Insulation and Refractory.
## KAEFER Punj Lloyd Limited

### KAEFER Punj Lloyd Limited performance for 3 years:

<table>
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<tr>
<th>Particulars</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
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<tr>
<td>Net Sales</td>
<td>832</td>
<td>1055</td>
<td>1103</td>
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<tr>
<td>Total Assets</td>
<td>547</td>
<td>703</td>
<td>679</td>
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<tr>
<td>Net Worth</td>
<td>101</td>
<td>278</td>
<td>176</td>
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<tr>
<td>Employees (Nos.)</td>
<td>178</td>
<td>228</td>
<td>258</td>
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</table>

Sales Budget 2011 - 1600
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<tr>
<th>Competence</th>
<th>Description</th>
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<tbody>
<tr>
<td>Heat insulation</td>
<td>Thermal insulation</td>
</tr>
<tr>
<td>Cold insulation</td>
<td>Cold insulation and cryotechnology</td>
</tr>
<tr>
<td>Sound insulation</td>
<td>Acoustic insulation</td>
</tr>
<tr>
<td>Refractory</td>
<td>Refractory Lining of Reformers, Heaters, Furnaces, Boilers, Ducts and Equipment</td>
</tr>
<tr>
<td>Fire protection</td>
<td>Fire protection technology for all construction elements</td>
</tr>
<tr>
<td>Special techniques</td>
<td>Scaffolding &amp; Corrosion Protection</td>
</tr>
</tbody>
</table>
KPLL areas of competence Power Plants

- Insulation of Boilers
- Refractory Lining in Boilers
- Turbine Mattresses
- Insulation Systems for Nuclear Power Plants
- Noise Protection
- Fire Protection
- Corrosion Protection
- Scaffolding
KAEFER Punj Lloyd Limited - Certifications
KPLL – Insulation Services

KPLL specializes in services and solutions for industrial insulation including critical applications such as LNG and Power Plants including Nuclear Power Plants which demand expert technical know-how and high quality of goods and services.

KAEFER’s global expertise and competence helps develop innovative solutions for construction of plants, expansions, renovations, shut downs and maintenance.

KPLL expertise include:

- Design and engineering
- Development of specifications
- Detailed method statements and drawings
- Bills of material calculation
- Heat loss and thickness calculations
- Global material sourcing
- On-site management and supervision
- Insulation audits
KPLL - Refractory services

KPLL has the know-how and experience in Refractory services from undertaking feasibility studies to final project management

KPLL expertise include:

> Lining design as per process specifications
> Selection and global procurement of material
> Detailed drawings and thermal profile calculations
> Failure analysis of existing lines and line up-gradation
> Site supervision and installation
> Refractory dry-out and supervision of heating during commissioning
### KPLL Projects – Insulation
**Power Plants – Thermal, Nuclear & CCPP**

<table>
<thead>
<tr>
<th>Company</th>
<th>Project Description</th>
<th>Cost (INR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nuclear Power Corporation of India Ltd.</td>
<td>Hot thermal insulation on piping, equipments etc. of secondary systems in Turbine building KKNPP 1 &amp; 2</td>
<td>92 Million</td>
</tr>
<tr>
<td>SIEMENS – Torrent Power Plant</td>
<td>Supply &amp; Application of Insulation for 1100 MW Sujen Project at Surat, Gujarat</td>
<td>55 Million</td>
</tr>
<tr>
<td>SEPCO Electric Power Construction Corporation</td>
<td>Supply &amp; Installation of Thermal Insulation for 4 x 300 MW Power Plant at BALCO, Korba, Chattisgarh</td>
<td>53 Million</td>
</tr>
<tr>
<td>Lanco Infratech Limited</td>
<td>Application of Refractory &amp; Insulation for Boiler Unit # 1 &amp; 2 2x600 MW Anpara-C Thermal Power Project at Anpara, Sonebada, U.P.</td>
<td>30 Million</td>
</tr>
<tr>
<td>Larsen &amp; Toubro Ltd.</td>
<td>Insulation work of PHRS in M2 Package, M4 Package and M5 Package at 2 x 1000 MW Nuclear Power Plant at NPCIL Kudankulam</td>
<td>30 Million</td>
</tr>
</tbody>
</table>
KPLL Projects – Insulation
Power Plants – Thermal, Nuclear & CCPP

- Gujarat Anjan Cement Ltd. (Jaypee Group)
  Supply & Installation of Thermal Insulation for 1 x 35 MW Sardar-1 at Bhuj, Kutch, Gujarat INR 15 Million

- Alstom Projects India Ltd.
  Supply of Stack Insulation, Cladding & Accessories for Fujairah II Project INR 15 Million

- Larsen & Toubro Limited
  Manufacturing, Testing, Packing, Supply of Mineral Wool Blankets, Aluminium Cladding Sheets and Ancillaries and Supervisory Services for Erection of External Insulation Pkg for Two HRSGs of 2 x 384MW GREL CCPP at Vemagiri, AP INR 14.7 Million
## KPLL Projects – Insulation Cement Plants

<table>
<thead>
<tr>
<th>Company</th>
<th>Project Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Madras Cement</td>
<td>Thermal Insulation of their Salem Polycom Project, Ariyalur Line 2 &amp; Ariyalur Polycom Project</td>
<td>INR 50 Million</td>
</tr>
<tr>
<td>Jaiprakash Associated Ltd.</td>
<td>Thermal Insulation of their Balaji Project, Jaggayyapet, AP</td>
<td>INR 42 Million</td>
</tr>
<tr>
<td>Prism Cements Ltd.</td>
<td>Thermal Insulation of their Satna Expansion Project, MP</td>
<td>INR 28 Million</td>
</tr>
<tr>
<td>Madras Cements Ltd.</td>
<td>Thermal Insulation of Ariyalur Cement Plant at Ariyalur, Tamil Nadu</td>
<td>INR 13 Million</td>
</tr>
<tr>
<td>Gujarat Anjan Cement Ltd.</td>
<td>Supply and Application of Thermal Insulation at Cement Project GIRI, Wanakbori, Kheda, Gujarat</td>
<td>INR 11 Million</td>
</tr>
<tr>
<td>Gujarat Anjan Cement Ltd.</td>
<td>Supply and Application of Thermal Insulation at Gujrat Anjan Cement Ltd./ Anjan Alfa Cement Mill Section, Anjan, Gujarat</td>
<td>INR 10 Million</td>
</tr>
<tr>
<td>Trumboo Industries Pvt. Ltd.</td>
<td>Supply &amp; Installation of Thermal Insulation for 1000 TPD Cement Plant at Srinagar (J &amp; K)</td>
<td>INR 10 Million</td>
</tr>
</tbody>
</table>
## KPLL Projects – Insulation
### Oil & Gas Processing Plants

<table>
<thead>
<tr>
<th>Company</th>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Punj Lloyd Abu Dhabi U.A.E.</td>
<td>Hot, Cold and Acoustic Insulation U &amp; E Yemen LNG, Yemen</td>
<td>INR 300 Million</td>
</tr>
<tr>
<td>Reliance Petroleum Limited</td>
<td>Hot &amp; Cold Insulation for Alkylation at JERP Jamnagar</td>
<td>INR 163 Million</td>
</tr>
<tr>
<td>IOT Infrastructure &amp; Energy Services Ltd.</td>
<td>Supply &amp; Application of Insulation for EHT &amp; Cold Insulation of Piping and pipe supports at Naphtha Cracker Project</td>
<td>INR 93 Million</td>
</tr>
<tr>
<td>Punj Lloyd Limited</td>
<td>Hot Insulation for HGU &amp; HCU Plants at IOCL Haldia</td>
<td>INR 86 Million</td>
</tr>
<tr>
<td>Toyo Engineering India Pvt. Ltd.</td>
<td>Hot, Cold &amp; Duel Insulation for Equipment &amp; Piping at Naphtha Cracker Project IOCL Panipat</td>
<td>INR 74 Million</td>
</tr>
<tr>
<td>Reliance Petroleum Limited</td>
<td>Application of Hot Insulation for Coker, OSBL &amp; CFU at JERP Jamnagar</td>
<td>INR 73 Million</td>
</tr>
<tr>
<td>Bharat Oman Refineries Ltd.</td>
<td>Insulation for MS Block and DCU for Bina Refinery Bina Madhya Pradesh</td>
<td>INR 59 Million</td>
</tr>
</tbody>
</table>
KPLL Projects – Insulation Tanks, Terminals & Pipelines

- Mangalore Refinery & Petrochemicals Ltd./ Engineers India Ltd.
  Electrical heat tracing & insulation works for offsite for phase-III refinery project of M/s Mangalore Refinery & Petrochemicals Ltd at Mangalore, Karnataka.

  INR 185 Million

- Punj Lloyd Limited
  Supply & Installation of Insulation for 2 Nos. Ethylene Tanks, 2 Nos. Propylene Tanks, 1 No. Ethylene Sphere, 4 Nos. Butadiene Spheres and associated piping at Naphtha Cracker Project IOCL Panipat

  INR 171 Million

- Samsung Engineering Company Limited
  Supply & Installation of Insulation material for Equipment (Pkg 2) and Piping (Pkg 2) Insulation Work at the OPAL FEED CRACKER and associated units in the DAHEJ PETRO CHEMICAL COMPLEX

  INR 164 Million

- Punj Lloyd Limited
  Supply & Application of Insulation for 3 Nos. LNG Tanks and Piping at Dabhol LNG Re-gasification Project at Ratnagiri, Maharashtra

  INR 107 Million
## KPLL Projects – Insulation Tanks, Terminals & Pipelines

- **Punj Lloyd Limited**
  - Supply & Installation of Insulation materials for 2 Nos. LNG Tanks at Petronet LNG Dahej, Gujarat
  - INR 56 Million

- **Punj Lloyd Limited**
  - Supply & Application of Cold Insulation for CSTP Cryogenic Tank No. 2 and Associated Piping for Reliance Industries Jamnagar
  - INR 33 Million

- **Reliance Industries Ltd.**
  - Application of Hot Insulation for Tank Shells in Sulphur Grind Unit at RIL Jamnagar
  - INR 29 Million

- **Punj Lloyd Limited**
  - Insulation works for 2 Nos. 160,000 cum full containment type LNG Storage Tanks at Shell LNG Hazira, Gujarat
  - INR 22 Million
KPLL Projects – Insulation Tanks, Terminals & Pipelines

- KPLL, Gurgaon has successfully completed the Foam Glass Insulation Job of 5 Nos. Horton Spheres (4 Nos. Butadiene and 1 No. Ethylene) for IOCL EPCC-8 Naptha Cracker Project at Panipat Refinery, Haryana.

- Job Specifications:

  A) Butadiene Spheres – 4 Nos.
     Diameter – 17.5 meter
     Operating Temperature - +0.8 Degree C (Design Temp -32 deg C)
     Insulation Thickness – 165 mm (2 Layers 3 inch + 3.5 inch)

  B) Ethylene Sphere – 1 No.
     Diameter – 17.5 meter
     Operating Temperature - -34 Degree C (Design Temp -43 deg C)
     Insulation Thickness – 225 mm (2 Layers 4 inch + 5 inch)
     Passive fire protection is with 38mm cementatious fire proofing.

- This kind of Insulation Job has been carried out first time in India.
KPLL Projects – Anti-corrosive Coating U/G Piping

- Punj Lloyd Limited
  Supply & Application of Wrapping & Coating Material for CW and ACW Piping at Jindal Power Limited, Tamnar, Raigarh, Chattisgarh
  INR 14 Million

- Reliance Industries Ltd.
  Wrapping & Coating of Pipes Spools at JERP Jamnagar
  INR 4 Million
ROXUL-ROCKWOOL INSULATION INDIA PVT. LTD

Promoters
- Rockwool International A/s, Denmark
- KAEFER Punj Lloyd Limited, India

Project Cost
- Euro 18.5 million = INR 1184 million

Equity
- Euro 4.625 million = INR 296 million
- Rockwool A/s: Euro 3.469 million = INR 222 million
- KPLL: Euro 1.156 million = INR 74 million

Location
- Dahej SEZ Ltd., Dahej, Gujarat, India

Plant Capacity
- 30,000 Tons p.a. Stonewool
KPLL Projects – Refractory Oil & Gas Processing Plants

- Punj Lloyd Ltd.
  Design, Engineering, Procurement of Refractory Materials, Application, Inspection, Testing at SRU BORL Project, Bina, MP INR 39 Million
- Petron Engineering Construction Ltd.
  Application of Refractory Materials of Heaters for CFU and Aromatic Unit at RIL Jamnagar INR 26 Million
- Punj Lloyd Khazkhastan LLC
  Refractory Lining of SRU Plant at TCO, Tengis, Khazakhastan INR 22 Million
- Reliance Jamnagar Infrastructure Ltd.
  Refractory works for FCC Unit JERP Project at Jamnagar INR 20 Million
- Larsen & Toubro Ltd. Hazira
  Refractory Lining for Reactor & Regenerator Package at HPCL Mahul, Mumbai INR 15 Million
- IOT Engineering Projects Private Ltd.
  Supply & Application of Refractory & Insulation Materials for Incinerator Package at IOCL Panipat INR 11 Million
- Larsen & Toubro Ltd.
  Refractory Lining of RX Cat & Regenerator for FCCU JERP of RIL at Surat, Gujarat INR 7 Million
KPLL Projects – Refractory Aluminium Smelters

- Vedanta Aluminium Ltd.
  Refractory Lining of 336 Pots for 1.25 MTPA Al. Smelter Expansion Project at Jharsuguda INR 72 Million
- Vedanta Aluminium Ltd.
  Anode Baking Furnace INR 67 Million
- Vedanta Aluminium Ltd.
  Installation of Mechanical Items for Bake Oven & Fume treatment Plant INR 29 Million
  INR 85 Million
KPLL Projects – Refractory Cement Plants

- Jaiprakash Associates Ltd.
  Installation of Refractory & Anciliaries Items in Pre-heater, Kiln etc. for JayPee Himachal Cement Plant, Baga  INR 23 Million

- Jaiprakash Associates Ltd.
  Installation of refractory and ancillary items in pre-heater/Kiln etc. for Jaypee Balaji Cement Plant Dist. Krishna, A.P.  INR 25 Million
KPLL Projects – Refractory Glass Plants

- Gujarat Guardian Ltd.
  Supply & Installation of Refractories & Steel Structure for Glass Furnace, Piping, Cooling Unit & Tin Bath  INR 160 Million

- AGI Glass Pac
  Fabrication & Erection of Batch House Silos & Related Structures at Bhongir Project Site  INR 35 Million

- HNG Float Glass Ltd.
  Furnace Construction 600 TPD Capacity Float Glass at Hallol, Gujarat  INR 35 Million

- Compagnie Themique Europeenne, France
  Installation of Refractory at Emirate Float Glass, Abu Dhabi, UAE  INR 23 Million

- Fives Stein India Projects Pvt. Ltd.
  Steel & Refractory Erection for 550 TPD Float Glass Furnace part at Sejal Glass Project, Jhagadia, Gujarat  INR 17 Million

- Haldyn Glass Gujarat Ltd.
  Rebuilding of Furnace to 220 TPD  INR 10 Million
KPLL Projects – Refractory Fertilizer Plants

- Chambal Fertilizers & Chemicals Ltd.
  Supply & Instalation of Refractory Ammonia 1, Secondary Reformer for Gadepan Revamp, Kota, Rajasthan
  INR 39 Million
<table>
<thead>
<tr>
<th>Company</th>
<th>Project Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sesa Goa Limited</td>
<td>Refractory for Construction of new 72 oven Greenfield Coke Plant</td>
<td>INR 25 Million</td>
</tr>
<tr>
<td>Electrothurm (India) Ltd.</td>
<td>Refractory Lining for 128 cum Blast Furnace</td>
<td>INR 5 Million</td>
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</table>
KAEFER Punj Lloyd - Contacts

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THANK YOU!