

**Minutes of exposure visit - Kerala brick cluster
(Calicut, Kannur and Thrissur)
8th to 10th October 2009**

Date: 9th & 10th October 2009

Place: Calicut, Kannur and Thrissur

Members involved:

TERI : Mr.Y.Nagaraju, Teri, Bangalore

Brick Manufacturers:

Bangalore:

Mr R Raghava Reddy, Anjaneya Brick Works, Devangundi, Bangalore

Mr Dasarath Reddy, Anjaneya Bricks & Tiles PVT limited, Devangundi, Bangalore

Malur:

Mr M N Jayashankar, S V Brick works, Lakkur cross, Hosur Road, Malur – 563130

Mr B G Raja, Raja Bricks, Hanumanayakana Halli, Malur

Mr C Venkatesh, Sri Surya Bricks, Kadadenahalli Road, Malur

Mr P M Venkatesh, Sri Byreshwara Clay Bricks, Pichaguntra Halli, Malur

Mr M Venkateshan, Sri Venkateshwara Bricks, Malur

Mr B Somshekhar, Bhaghavathi Bricks, Khadadenahalli Road, Yeswanthpur post, Malur

Mr C E Ravi, Tirupathi Brick Works, Channakalvim, Maski road, Malur

Mr K V Jayabal, Sri Raghavendra Brick Works, Dyapasandra Road, Malur

Mr R S Gopinath, Srinivasa Brick Works, Arohalli, Malur

Mr N Paramesh, Byraveshwara Brick Works, Kadadenahalli, Malur

Mr Gopinath S M, Suryadaya Brick Works, Malur

Mr C Srinivasa, Srinivasa Brick Works, Harohalli, Malur

Mr Venkatesh, Vivekanada Brick Works, Malur

Mr Srinivasa Murthy, Sri Marikanba Tile Works, Malur

Mr N Ramesh, Manjunatha Brick Works, Narasapur

Mr H R Venugopal, Venkateshwara Bricks & Tiles Industry, Hongenahalli, Malur.

Kolar

Mr V Nagaraju, S L V Bricks, Kolar

Mr Somnath Gowda, Vinayaka Brick Works, Kolar

First day visit

Meeting with Mr R K Ramesh, Architects, Calicut

Before visiting Calicut tiles & Co, in Calicut, team had a meeting with Mr R K Ramesh, Architects, Calicut. He briefed the team about his experience on construction of houses by using hollow bricks. He said from 40 years people in Kerala are using hollow bricks/terracotta bricks for construction of houses. Hollow bricks can be used for construction single floor buildings. He also explained about the day care centres constructed in Mysore,

workers quarters construction in Tirupur-etc. Mr R K Ramesh said plastering is not necessary for terracotta brick walls, because of this construction cost will reduce up to 25% than the normal brick walls.

Mr R K Ramesh mentioned, masons should be trained properly for construction of walls by using hollow bricks and cement mortar should be in the ratio of 1:3 or 1:4 and some times only cement can be used. Finally he mentioned some of the important points towards hollow bricks, such as,

1. Masons should be trained properly
2. After construction of walls, watering should be proper
3. Before using of hollow bricks for construction, it should be immersed in water
4. Thickness of cement mixture between bricks should be very thin - from 1/6 to 1/5 similar like tile plastering

After the meeting team visited a house constructed by hollow bricks and discussed various points with house owner like- investment, life of the building, maintenance of the building,-etc. .

Calicut tiles & Co, Calicut

Team visited “Calicut Bricks and Tiles Industry” situated at Calicut. The team observed the operation of industry and discussed various issues with machine operators. Brief process of brick & tile production is as follows:

1. E.I – Excavator: This machinery used for removing of clay from clay stock and transporting of clay from clay stock to pan mill. .
2. Pan mill (heavy duty rollers): Clay is fed in to the pan mill to mix the clay and form a homogeneous mass of clay.
3. High speed roller –1: The homogenous mass is then fed into the roller -1 for further mixing
4. High speed roller –2: The homogenous mass is then fed into the roller-2 for further mixing
5. Dearing pug mill: This is the final step, where the finely mixed clay is fed into the pug mill to remove excess moisture and mould the clay into block form.
6. Hydraulic press: Further clay block will be pressed in hydraulic press to form the shape of tile or brick.

Baliapatam Tile Works Ltd, Pappinisseri, Kannur (district), Kerala.

After completion of the visit, the team visited other industry Baliapatam Tile Works Ltd located in Pappinisseri, Kannur (district).

Brief process of brick & tile production in the industry is as follows:

1. Box feeder: Clay mixture is fed into the box feeder to form a homogenous mass of clay.
2. Double shaft clay mixture: Clay is fed in to the clay mixture to mix the clay and form a homogeneous mass of clay.
3. Course grinding roller –1: The homogenous mass is then fed into the roller -1 for further mixing
4. High speed fine grinding roller –2: The homogenous mass is then fed into the roller-2 for further mixing
5. Dearing pug mill: This is the final step, where the finely mixed clay is fed into the pug mill to remove excess moisture and mould the clay into block form.
6. Hydraulic press: Further clay block will be pressed in hydraulic press to form the shape of tile or brick.

Second day visit -

Before visiting the other brick industries team visited **Vijayaprakash Industrials, Kolathara, Calicut**. Here team observed the fabrication of pug mills, heavy-duty rollers –etc and discussed various points with industry owner Mr Vijayaprakash.

Thomson Tile Factory, Annallur P.O, Chalakudy, Trichur (District), Kerala

Team visited “**Thomson Tile Factory**” situated at Annallur P.O, Chalakudy, Trichur (District). The team observed the operations of tunnel kilns used for green brick drying and brick burning and discussed various issues with supervisors. Brief process of brick production is as follows:

1. Production of green tile or brick is same as all industries
2. **Tunnel kiln –1 (Green brick/tile drying):** Hot air will be generated by using waste heat from Tunnel kiln –2, and supplied in to Tunnel kiln –1 to dry the green bricks/tiles. Temperature of the hot air is 120°C. For drying 5 to 10% of dried green bricks will be fed in to the dryer.
3. **Tunnel kiln –2 (Green brick/tile burning):** Total length of the kiln is 72 metres, it accommodates 24 trolleys, each trolley carries 2000kg of material (brick/tile) and total 48000kg of material can be burnt in one batch. Saw dust is used as fuel to burn the brick/tile. The kiln has three zones preheating zone (36 metres), firing zone (11 metres) and cooling zone (25 metres). In firing zone bricks will be burnt at the temperature of 850 to 900 °C.

Star Clays, Mala, Thrissur Dist, Kerala

Finally Team visited Star Clays, situated at Vadam P O, Mala, Thrissur District, Kerala. The team observed the operations of dryer, kiln, and clay processing and conversion of clay in to granular form –etc. LPG is used as fuel to burn the brick/tile. The consumption of LPG is about 2000 kg per day. Production is about 2000 tiles / hour. Operating time 20 hours/day. Entire set up was purchased from M/s Modena, China.

Brief process of tile production is as follows:

1. **Ball mill:** Clay and white stone powder (brought from Kadapa, Andhra Pradesh) will mix with water to convert in to paste.
2. **Silo:** clay mixture will be pumped in to the silo to convert water paste in to granular form. A saw dust fired furnace is used to create heat for evaporating water in clay mixture in silo.
3. **Pressing:** Granular clay will be pressed in hydraulic press to produce green tiles
4. **Dryer:** Green tiles will feed in to the dryer for drying
5. **Kiln:** Further dried tiles will feed in to the kiln for firing.
6. **Packing:** Immediately after coming out from the kiln tiles will be packed and send it storing section.

Minutes prepared by: Y Nagaraju

Date: 16th October 2009