COAL BOTTOM ASH LIGHTWEIGHT BRICK

PROJECT LEADER

UMP

UMP TEAM

- DR. NUR FARHAYU ARIFFIN (PROJECT LEADER)
- ASSOC PROF. DR. KHAIRUNISA MUTHUSAMY
- IR. DR. FADZIL MAT YAHAYA
- DR. SHARIFAH MASZURA SYED MOHSIN
- DR. KHAIRUL ANUAR SHAHID
- IR. DR. SAFFUAN WAN AHMAD
- ABDUL MUIZ HASIM
- MUHAMMAD NOR SYAHRUL ZAIMI
- NURUL NATASHA NASRUDIN
- MUHAMMAD RAFIE ASHAARI

UTM

PTP

UTHM

COLLABORATOR:

- DR. NOR HASANAH ABDUL SHUKOR LIM
- PROF. IR. DR. MOHD WARID HUSSIN
- DR. HAMIDUN MOHD NOH

PROBLEMS

INNOVATION

5mm-10 mm

Up to 2.36mm

PRODUCTION

PRODUCT FEATURES

- 100% and 50% replacement with coal ash.
- Reduce 40% of production cost.
- 20% less dense compare conventional brick.

BENEFITS

- Environmental friendly – Reduce consumption of natural resources.
- Green product – Reuse of coal waste as mix ingredients.
- Affordable price – Reduce the project cost.

APPROACH

- Innovation in replacing waste materials without reducing the strength of the brick.
- Engaged a challenge for consuming “sustainable, green and recycled products” in manufacturing brick.

ENVIRONMENTAL FRIENDLINESS

- Reduce industrial waste volume-landed in landfill.
- Alternative ways in reuse and recycling waste materials.

NEEDS

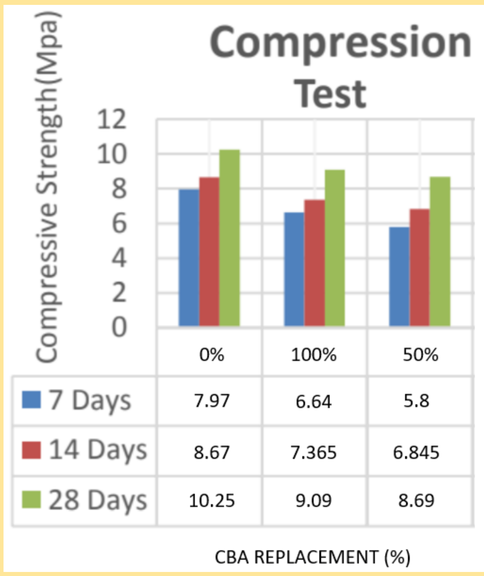
- Reduce the usage of raw materials and the abundance of waste materials.
- Reduce environmental pollution.
- Reduce product cost.

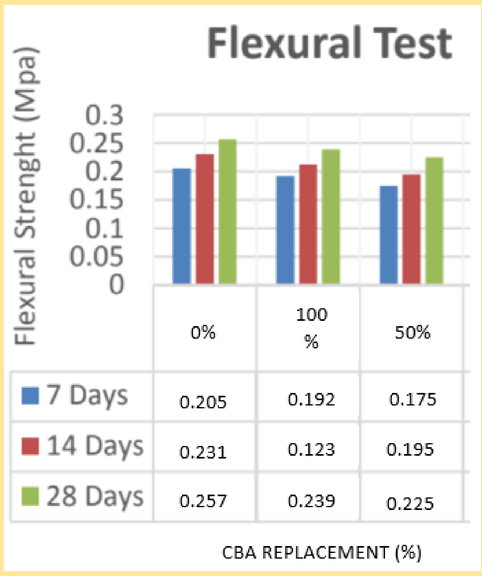
APPLICATIONS

Brick Pavement

Building construction

EXPERIMENTAL RESULTS





NOVELTY

- Reuse and recycle large amount of wastes from coal fired electric power plant.
- Improvement strength of brick inclusion of 100% coal ash replacement compare to the conventional mix design.

POTENTIAL MARKET

- Construction Industry (JKR/ CIDB/ Local authorities).
- House developers.

MARKET PRICE

- Conventional brick = 0.25 sen/unit
- Coal bottom ash brick = 0.10 sen/unit

COST REDUCTION

Up to 40%

COLLABORATION

UMP

UTM

UTHM

PERUNDING TEKNIK PADU