



UNIVERSITI
TEKNOLOGI
MARA

Cawangan Perak



BUILDCON2023

**COMPILATION OF PROJECT INNOVATION IDEAS
SEMESTER MARCH – AUGUST 2023**

EMBRACING SMART CONSTRUCTION TRANSFORMATION

BUILDERS' CONVENTION DAY 2023

**Department of Built Environment Studies and Technology
College of Built Environment
Universiti Teknologi MARA Perak Branch**

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COMPILATION OF PROJECT INNOVATION IDEAS
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Organised by
Department of Built Environment Studies and Technology
College of Built Environment
Universiti Teknologi MARA Perak Branch
Malaysia

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EPOXY BASED INTUMESCENT COATING FOR INTERLOCKING COMPRESSED EARTH BRICK (ICEB)

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Epoxy Based Intumescent Coating For Interlocking Compressed Earth Brick (ICEB)

Innovation Idea:

Over the past decade, wildfires have caused unprecedented damage and property losses due to the increase of construction of houses on hillsides, in mountainous regions, and other areas prone to wildfires. From the problem statement, it can be concluded that fires in buildings can be fatal. Some residents have lost their lives due to lack of knowledge on what to do in the event of a fire, in addition to having their possessions and property damaged. The objectives of this research are to create epoxy-based intumescent coating for ICEB design ideas, apply the prototype based on the improvised design of epoxy-based intumescent coating for ICEB, demonstrate the performance of epoxy-based intumescent coating for ICEB prototype, and evaluate the marketability potential of epoxy-based intumescent coating for ICEB prototype. The methodology of this research includes a systematic and organised approach involving the collection of secondary data, prototype development, and lab testing to address specific research questions and objectives. The results are based on MS76:1972. While the standard does not specify a water absorption rate, the Malaysian construction industry commonly adopts water absorption rate less than 15%. Bricks undergo a water absorption test to verify their quality and the suitability for various uses. The test determines how much water a brick will absorb over a predetermined period of time while submerged. The test's findings reveal the brick's density, porosity, and durability. This work evaluated the water absorption capabilities of various types of epoxy-coated and uncoated bricks. It is essential to select a coating that has been carefully tested and certified for use on compressed earth materials. In addition, the coating must exhibit exceptional adherence to the special surface of ICEBs to ensure that it expands and produces a protective char during a fire event.

Surat kami : 700-KPK (PRP.UP.1/20/1)

Tarikh : 20 Januari 2023

Prof. Madya Dr. Nur Hisham Ibrahim
Rektor
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Cawangan Perak



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Sekian, terima kasih.

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Saya yang menjalankan amanah,

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