



**UNSW**  
SYDNEY



## Construction Materials Testing

**CIES laboratories are well equipped to conduct any type of experiments and tests, including mechanical and durability tests, and characterisation of materials – on a wide range of construction materials, such as concrete, asphalt, steel, timber and any components - including aggregates, supplementary cementitious materials, emulsion, industrial by-wastes, etc.**

### Competitive advantage

- We have the depth of knowledge, expertise and resources to take on projects from the nano- to macro-scale
- State of the art equipment and facilities, and 70 years of experience

### Impact

The Centre has played a large role in the development of a number of major Australian construction standards. The Centre has investigated feasible applications to turn various waste materials to construction materials for Circular Economy and Waste recycling. We are world experts in concrete, steel, timber and composite structures.

### Successful applications

- World-first green concrete trial with City of Sydney using low-CO2 geopolymer concrete on a busy city road
- Developed concrete mix design approach to reduce early-age cracking of concrete
- Developed concrete mix designs to maximize the usage of glass waste
- Undertaken long-term sustained load tests on a wide variety of reinforced and prestressed concrete structures
- Our experimental research has led to design methodologies that have been incorporated directly into the Australian Standard for Concrete Structures, AS3600

### Capabilities and facilities

- Our Heavy Structures Laboratories are equipped with state-of-the-art servo-controlled hydraulic actuators and universal testing machines to maintain a capacity for high load testing, ranging from 10 kN to 5000 kN
- Cementitious Materials Laboratory is equipped with cutting-edge facilities for measuring cement and concrete materials characterisation and for durability testing

### More Information

Dr Taehwan Kim

Centre for Infrastructure, Engineering & Safety, UNSW School of Civil & Environmental Engineering

T: CIES Manager +61 2 9385 6853

E: [taehwan.kim@unsw.edu.au](mailto:taehwan.kim@unsw.edu.au)

UNSW Knowledge Exchange

[knowledge.exchange@unsw.edu.au](mailto:knowledge.exchange@unsw.edu.au)

[www.capabilities.unsw.edu.au](http://www.capabilities.unsw.edu.au)

+61(2) 9385 5008