

COST

CURRENT POSITION

TC 294 MPA MEMBER 650 EURO

RILEM MEMBER/PHD-, MSC-STUDENTS,

POSTDOCS (PROOF REQUIRED) 850 EURO

PROFESSORS / ACADEMIC PROFESSIONALS 1200 EURO

PROFESSIONALS FROM INDUSTRY 2000 EURO

THE COST INCLUDES:

- COURSE MATERIAL -> HANDOUTS
- LUNCH, COFFEE AND REFRESHMENTS DURING THE DAY
- THE ONE-DAY WORKSHOP ON MAY 13TH, 2025 AND EVENING DINNER
- THE THURSDAY AFTERNOON "BORREL" (DRINKS & BITES)



REGISTRATION AND ADDITIONAL INFORMATION:

FURTHER DETAILS REGARDING REGISTRATION ON THE WEBSITE SOON:

WWW.TUDELFT.NL/CITG/EVENTS-ME

FOR ANY INQUIRIES, PLEASE CONTACT IRIS BATTERHAM (I.BATTERHAM@TUDELFT.NL)



RILEM PHD TRAINING COURSE

ALKALI-ACTIVATED CONCRETE: FROM DESIGN AND MATERIAL PROPERTIES TO STRUCTURAL BEHAVIOR AND ENGINEERING APPLICATIONS

DATE: MAY 12 – 16, 2025

PLACE: TU DELFT, THE NETHERLANDS



AIM: TO PROVIDE FUNDAMENTAL KNOWLEDGE OF ALKALI-ACTIVATED CONCRETE (AAC), INCLUDING AAC RAW MATERIALS, DESIGN PRINCIPLES, MATERIAL AND STRUCTURAL BEHAVIOR, STRUCTURAL DESIGN, RELEVANT STANDARDS, AND CASE STUDIES OF REAL-WORLD APPLICATIONS. ADDITIONALLY, TO DISSEMINATE THE RESULTS OF TC 294-MPA AND PROMOTE THE BROADER APPLICATION OF AAC IN ENGINEERING PRACTICES.

AUDIENCE: PHD STUDENTS AND PRACTITIONERS, INCLUDING MEMBERS OF TC 294-MPA.



INTRODUCTION

DISCOVER THE FUTURE OF SUSTAINABLE INFRASTRUCTURES WITH ALKALI-ACTIVATED CONCRETE (AAC), AN ECO-FRIENDLY MATERIAL WHICH IS READY TO REVOLUTIONIZE THE CONSTRUCTION INDUSTRY.

THANKS TO ITS UNIQUE CHEMICAL COMPOSITION – TAILORED BY THE CHOICE OF PRECURSORS AND ALKALINE SOLUTIONS – AAC OFFERS A RANGE OF PERFORMANCE BENEFITS THAT SET IT APART FROM TRADITIONAL CONCRETE. NAMELY, IT EXHIBITS SIGNIFICANT DIFFERENCES IN TERMS OF FRESH PROPERTIES, STRENGTH DEVELOPMENT, VOLUME STABILITY, STRUCTURAL BEHAVIOR, DURABILITY AND TIME-DEPENDENT PROPERTIES. CONSEQUENTLY, CONVENTIONAL DESIGN CODES FOR TRADITIONAL CONCRETE STRUCTURES MAY NOT BE FULLY COMPATIBLE WITH AAC, NECESSITATING ADJUSTMENTS TO ACCOUNT FOR ITS UNIQUE PROPERTIES AND ALERTING THE NEED FOR NEW STANDARDS IN THE CONSTRUCTION INDUSTRY.

TO ADDRESS THESE CHALLENGES, RILEM TC 294-MPA (MECHANICAL PROPERTIES OF ALKALI-ACTIVATED MATERIALS) HAS BROUGHT TOGETHER LEADING EXPERTS FROM AROUND THE WORLD TO DEVELOP CUTTING-EDGE INSIGHTS AND INNOVATIVE SOLUTIONS.

THE OUTCOMES OF THIS TECHNICAL COMMITTEE'S WORK WILL FORM THE FOUNDATION OF THIS EXCLUSIVE, ONE-WEEK PHD TRAINING COURSE.

THIS COURSE INTENDS TO OFFER TO THE PARTICIPANTS AN IN-DEPTH UNDERSTANDING OF AAC, COVERING BOTH FUNDAMENTAL PRINCIPLES AND REAL-WORLD ENGINEERING APPLICATIONS. THE GOAL IS TO BRIDGE THE GAP BETWEEN RESEARCH AND PRACTICAL IMPLEMENTATION.

THE KEY TOPICS INCLUDE:

- RAW MATERIALS, INCLUDING CONVENTIONAL AND NON-CONVENTIONAL PRECURSORS,
- DESIGN PRINCIPLES, WITH A FOCUS ON PERFORMANCE-BASED MIX DESIGN,
- FRESH AND MECHANICAL PROPERTIES,
- MATERIAL AND STRUCTURAL BEHAVIOR,
- STRUCTURAL DESIGN METHODOLOGIES,
- RELEVANT STANDARDS AND RECOMMENDATIONS,
- CASE STUDIES DEMONSTRATING REAL-WORLD APPLICATIONS OF AAC.

THE COURSE IS IDEAL FOR PHD STUDENTS AND INDUSTRY PRACTITIONERS INTERESTED IN SUSTAINABLE CONSTRUCTION MATERIALS AND PRACTICES. PARTICIPANTS WILL GAIN HANDS-ON EXPERIENCE IN PRODUCING AND WORKING WITH AAC IN THE LABORATORY.

PROGRAM

MONDAY 12 MAY 2025

- 08:45 - 10:30 WELCOME
- 10:45 - 12:30 CONVENTIONAL PRECURSORS AND ACTIVATORS
- 13:45 - 15:30 NOVEL PRECURSORS AND ACTIVATORS
- 15:45 - 17:30 AAC MIX DESIGN METHODOLOGY

TUESDAY 13 MAY 2025

AAM RILEM SYMPOSIUM

WEDNESDAY 14 MAY 2025

- 08:45 - 10:30 FRESH PROPERTIES AND CONTROL OF WORKABILITY
- 10:45 - 12:30 MECHANICAL PROPERTIES AND INFLUENCE OF CURING
- 13:45 - 15:30 AUTOGENOUS/DRY SHRINKAGE: MECHANISM AND CONTROL
- 15:45 - 17:30 PRACTICE: CASTING AAC

THURSDAY 15 MAY 2025

- 08:45 - 10:30 CREEP
- 10:45 - 12:30 RESTRAINT SHRINKAGE
- 13:45 - 15:30 REINFORCED AAM AND BONDING - FIBER - REINFORCED AAM
- 15:45 - 17:30 STRUCTURAL BEHAVIOUR AND DESIGN OF AAC

FRIDAY 16 MAY 2025

- 08:45 - 10:30 CODE AND STANDARD: MATERIALS AND STRUCTURE
- 10:45 - 12:30 REAL-WORLD APPLICATIONS
- 13:45 - 15:30 PRACTICE: MECHANICAL PROPERTIES TESTING

KEY BENEFITS:

- LEARN FROM LEADING INTERNATIONAL EXPERTS IN THE FIELD;
- ACCESS THE LATEST RESEARCH FINDINGS AND CASE STUDIES;
- ENGAGE WITH FELLOW PHD STUDENTS, RESEARCHERS, AND INDUSTRY PROFESSIONALS;
- RILEM OFFERS A THREE-YEAR FREE RILEM MEMBERSHIP TO ALL COURSE PARTICIPANTS.

