International Union
of Laboratories and Experts
in Construction Materials,
Systems and Structures

2024 ANNUAL REPORT

rilem

About RILEM

The International Union of Laboratories and Experts in Construction Materials, Systems and Structures (RILEM, from the name in French – Réunion Internationale des Laboratoires et Experts des Matériaux, systèmes de construction et ouvrages) was founded in June 1947 in Paris, France, with the aim of promoting scientific cooperation and to stimulate new directions for research and applications, thus promoting excellence in construction worldwide.

This mission is achieved through the collaboration of leading experts in construction science and practice, including academics, researchers, industrialists, testing laboratories, and authorities.

Become a member

If you are interested in joining RILEM, please consult our website www.rilem.net to become a member.

Membership benefits include

- Participation in RILEM Technical Committees
- Access to the private Web directories restricted to RILEM Members and online version of the RILEM Directory of Members.
- Personal access after login online to the journal *Materials and Structures*, RILEM Proceedings and Springer/ Nature proceedings
- Reduced fees for RILEM events
- 20% discount on all Springer/Nature e-books
- Opportunity to publish selected articles as free OA paper in *Materials and Structures* and in *RILEM Technical Letters*

Individual fees in 2025

Young Member	€ 27	Retired Member	€ 80
Senior Member	€ 395		

Corporate fees in 2025

Associate Member	€1,340	Institutional Member	€2,540
Institutional-Plus Member	€4,660	Industrial Member	€4,660

Note that special discounts from 40% up to 90% on the membership fees may apply depending on your country of residence. Please consult the website membership.rilem.net for all details.

Editorial

by RILEM President

I had the pleasure of writing the editorials of the RILEM Technical Reports as TAC chair for three years in a row, from 2019 – the year in which the report was established – to 2021. In 2022, upon becoming RILEM Vice-President, I had to step down as TAC Chair, and handed over the responsibility for the RILEM Technical Reports to the new TAC Chair, Enrico Sassoni. Now, in my role as the new RILEM President, it is my pleasure to introduce the yearly RILEM Annual Reports.

The Annual Report is a very essential document for the association. Not only is it a channel to communicate to its members the important numbers and data about the association (evolution of membership, budget, organised events, etc.), but also an opportunity to cast in our memories some very important moments of 2024... and this is exactly where I would like to start: the 78th RILEM Annual Week! It was such a very well-organized event in Toulouse last year! It was a great pleasure to meet again all my predecessor-presidents and talk about the realisations during their presidency. You can read more about this event on page 8 with more details and nice pictures of the tribute to the former RILEM Presidents on page 11.

Continuing with the vitality of the association, it is adamant to mention the success of the RILEM Technical Committees, the heart of RILEM: not only does their number keep following an increasing trend (see graph on page 32), but also some of them have attracted huge interest, so large that we had to start distinguishing between observers and active members.

The booming interest in the association is also clear from the number of viewers and views of the new RILEM website (page 7): the figure of 2023 almost doubled in 2024. The new look of website is working well! The scientific community is kept well-informed also through the RILEM LinkedIn channel, with almost 33% more followers compared to 2023.

And continuing with figures... allow me to bring to your attention the graph “RILEM MEMBERS BY MEMBERSHIP CATEGORIES” on page 27 The association keeps growing, despite the increase of the membership fees at the beginning of 2024. The growth rate is quite comparable for senior and young members. It is great to see

that young minds around the world choose RILEM as a platform to interact with their peers and strengthen their network. Maybe this is why the first edition of the RILEM Youth Symposium has all the right cards to be a very successful event. You can read more about this on page 22. It is mainly to young researchers and PhD students that the RILEM educational activities are addressed. You can have further details about these activities in 2024 from page 40 onward.

For those who still think that RILEM is predominantly an European association, please have a look at the pictures in RILEM Worldwide, highlighting the 2024 RILEM President Nicolas Roussel in Madras, India, me as 2024 Vice President at the 10th Conference of the Asian Concrete Federation in Ulaanbaatar, Mongolia, and Wolfram Schmidt, RILEM DAC Chair and co-organiser of the 80th Annual RILEM week in Kenya. The goals of RILEM have been exhaustively promoted in 2024! I also invite you to view the "COUNTRIES WITH 50 OR MORE INDIVIDUAL AND STAFF MEMBERS" graph on page 29: 6 out of those 15 countries are from outside the European area. One last comment on the multinational and multigeographic features of RILEM is that although RILEM "lost" its first "Asian" President (Ravindra Gettu's mandate terminated at the end of 2024), the recently elected Vice-President (though German-born) is from South Africa: Hans Beushausen, University of Cape Town.

My last words go to the commitment that RILEM has taken to work towards a better, cleaner, and healthier environment: since 1947, one of the missions of RILEM is *"to promote **sustainable** and safe construction, and improved performance and cost benefit for society"*. This mission has gained importance over the last years, with the rising concerns related to the carbon footprint of the construction industry, and its social and economic consequences. On this matter, GLOBE (see page 62) plays a key role in the tangible actions implemented by RILEM; other actions are 1) the contributions of the RILEM Technical Committees, as the Chairs of new TCs are now requested to state the expected scientific, social, economic, and environmental impacts of the TC results, and 2) the 2024 Strategic Workshop RILEM and Climate change at the 78th RILEM Annual Week, in Toulouse, France; RILEM is currently implementing many of the ideas that were proposed at the workshop, and you will soon hear more about this... but not in this report!

Contents

2024 Key Numbers

Membership

3,292 members
(3,171 individual
and 121 corporate)

94 countries

Activities

48 Technical Committees

Co-sponsorship & events

16 courses

46 events

19 webinars

Publications

1 Recommendation

10 Proceedings

Website

281,539 viewers

339,649 views

Social media

Facebook
@rilemassociation

1,661 followers
↗ +4,99 %

Top 3 countries
- India
- Mexico
- Brazil

LinkedIn
RILEM Association

11,885 followers
↗ +32,94 %

Top 3 countries followers
- France
- India
- United Kingdom

Top 3 countries visitors
- France
- South Korea
- Brazil

YouTube
RILEM Association

3,782 subscribers
↗ +14,85%

Top 3 countries
- India
- Italy
- USA

X
@RILEM1947

978 subscribers
↗ +8,31 %

78th RILEM Annual Week

& Conference on Sustainable Materials & Structures - Meeting the major challenges of the 21st century (SMS 2024), 24-28 August 2024, Toulouse, France

The 78th RILEM Annual Week took place in Toulouse, France, this year, jointly with the Conference on Sustainable Materials & Structures: Meeting the major challenges of the 21st century - SMS 2024.

Prof. Alexandra Bertron, RILEM Honorary President 2024, and her team from the Laboratory for Materials and Durability of Constructions (LMDC), a university research laboratory in the field of materials science and civil engineering structures, in collaboration with INSA Toulouse and Toulouse III University, worked hard to plan every single detail of this event.

Key figures:

- 560 participants in the 78th RILEM Week & SMS Conference, including 480 in the Conference.
- 225 Young Researchers, including 8 PhD travel grant awardees.
- 474 submitted papers & abstracts including 95 posters.

Pre-congress courses were held from 21 to 23 August, at INSA Toulouse. 220 PhD students participated in five EAC doctoral courses on the following topics:

- Cement hydration and Supplementary Cementitious Materials, by Prof. Karen Scrivener.
- Rheology and processing of fresh cement-based materials, by Dr Nicolas Roussel.
- Durability of concrete, by Prof. Alexandra Bertron and Prof. Karen Scrivener

Workshop Imagine - RILEM and Climate change participants ©Judith Hardy

- Corrosion, anti-corrosion of reinforced concrete, by Prof. Ueli Angst, Prof. Deepak Kamde, Prof. Gabriel Samson.
- Earthen materials & construction, by Prof. Céline Perlot, Dr Emmanuel Keita, Prof. Arnaud Perrot, Prof. Antonin Fabbri and Prof. Florent Vieux-Champagne.

The RILEM Annual Week started with the **Workshop Imagine - RILEM and Climate change.** Expanding upon the success of the Brussels and Paris workshops,, this in-person event took place on Saturday 24 August. The main questions asked to the participants were:

- "Imagine the RILEM community with a reduced climate change impact."
- "What is your vision for a sustainable RILEM in the future?"
- "How can RILEM work in ten years from now?"

Prof. Nele De Belie, RILEM Vice-President, presented the workshop outcomes to RILEM Bureau members. It was decided that most proposals would undergo review by the standing committees.

General Council

Following the standing committee meetings, several RILEM officers were nominated.

- New President: Prof. Nele De Belie, Ghent University, Belgium (2024-2027)
- New Vice-President: Prof. Hans Beushausen, University of Cape Town, South Africa (2024-2027)
- Outgoing President: Dr Nicolas Roussel, Gustave Eiffel University, France (2024-2027)
- 2025 Honorary President: Prof. Dr Hoang Tung, Hanoi University of Civil Engineering, Vietnam
- New Bureau members:
  - Prof. Sylvia Kessler, University of the Federal Armed Forces Hamburg, Germany (2024-2028)
  - Prof. Kei Ichi Imamoto, Tokyo University of Science, Japan (2024-2028)
- New DAC Chair: Dr Wolfram Schmidt, BAM, Germany (2024-2026)
- New DAC Deputy Chair: Prof. Romildo D. Toledo Filho, COPPE/UFRJ, Brazil (2024-2026)
- New Regional Convener – Sub-Saharan Africa: Prof. Kolawole A. Olonade, University of Lagos, Nigeria (2024-2026)
- New Regional Convener – Latin America: Dr Daniela Martinez Lopez, Universidad del Norte, Colombia (2024-2026)
- New TAC Deputy Chair: Prof. Daman K. Panesar, University of Toronto, Canada. (2024-2026)
- New TAC Cluster A Convener: Prof. Susan Bernal Lopez, University of Bath, United Kingdom (2024-2026)

- New TAC experts:
  - Prof. José Alvarez Galindo, University of Navarra, Spain (2024-2026)
  - Dr Fragkoulis Kanavaris, ARUP Group Ltd., United Kingdom (2024-2026)
- New EAC member: Dr Marie Joshua Tapas, GHD, Australia (2024-2026)

SMS 2024 INTERNATIONAL CONFERENCE

SMS 2024 International conference was held from 26 to 29 August, at the Pierre Baudis Congress Center.

It aimed to present and discuss the recent advances in materials and structures research to meet the great challenges of the 21st century and beyond to:

- enable sustainable, safe, and durable construction (new and existing buildings and strategic infrastructures),
- promote the circular construction / economy,
- improve the energy efficiency of construction,
- favour the quality and comfort of building (indoor air quality and comfort).

All these topics were considered from the material's perspective, but also from the structure's perspective. And a special focus was put on the worldwide practices and rationale to meet these goals.

The official opening of SMS 2024 took place in the morning of Tuesday 27 August.

The event began with welcome remarks from Prof. Bertrand Raquet (Director of INSA Toulouse), Dr Nicolas Roussel (RILEM President), and Prof. Alexandra Bertron (Conference Chair and 2024 RILEM Honorary President).

This was followed by a panel discussion on major research avenues to address the challenges of the 21st century, chaired by Prof. Ravindra Gettu and with the participation of Prof. Karen Scrivener, Dr Nicolas Roussel, Prof. Susan Bernal Lopez and Prof. Jason Weiss.

The session continued with a keynote presentation on "Advances in self-healing bituminous materials for more sustainable and resilient roads", by 2024 RILEM Robert L'Hermite Medallist, Dr José Norambuena-Contreras, and chaired by Prof. Enrico Sassoni, RILEM TAC Chair.

Opening session, Nicolas Roussel, Susan Bernal Lopez, Ravindra Gettu, Karen Scrivener, Jason Weiss ©anaisbertrand.photographe

Workshop and special sessions

A Workshop on Moisture-Related Durability Issues for Low-Carbon Binder - TC 313-MMS took place at INSA Toulouse. Several special sessions were organized at the Congress Center on the following topics:

- Materials for energy storage (Sensible-Heat, Latent-Heat, and Thermochemical)
- Characterisation and modelling on small scales
- Non-destructive inspection of concrete materials and structures
- Data-driven concrete science (AI for concrete material and civil infrastructures)
- Earth-based materials and construction
- Bio-based materials and construction
- Cultural Heritage
- Wood in structures
- Bituminous materials
- Corrosion of engineering materials – with a Session for young scientists which took place on Thursday 29 August, and was hosted by Dr Meeke van Ede and Dr Lucas Michel.
  More information on this group.

Several **TC presentations** were held:

1. TC 281-CCC Carbonation of Concrete with SCMs by Nele De Belie
2. TC 282-CCL Calcined Clays as Supplementary Cementitious Materials by Fernando Martirena
3. TC 289-DCM Long-term durability of structural concretes in marine exposure conditions by Kefei Li
4. TC 293-CCH Stress Corrosion Cracking and Hydrogen Embrittlement of Concrete-Reinforcing Steels by Alvaro Ridruejo
5. TC 283-CAM Chloride Transport in Alkali-activated Materials by Shishir Mundra
6. TC 291-AMC Use of Agro-based Materials as Cementitious Additions in Concrete and Cement-based Materials by Wolfram Schmidt

The recorded presentations are available for free on the RILEM YouTube channel.

Alexandra Bertron, RILEM Honorary President 2024 ©anaisbertrand.photographe

RILEM Banquet was a tribute to the RILEM past presidents ©anaisbertrand.photographe

Past presidents, Carmen Andrade, Peter Richner, Mark Alexander, Johan Vyncke and Ravindra Gettu were present ©anaisbertrand.photographe

Raphaël Steenbergen, representing Jochen Köhler, new Joint Committee of Structural Safety Chair, was invited to present JCSS activities. Mr. Steenbergen strongly invited delegates to join the JCSS activities, and RILEM to strengthen the collaboration with JCSS. Contact: jochen.kohler@ntnu.no & raphael.steenbergen@tno.nl

An **Innovation Day** was organized on Friday 29 August 2024. It targeted the research and innovation for fast-track environmental transition in civil engineering materials and infrastructures, with a focus on Concrete and Asphalt Constructions and Infrastructures. It was chaired by Lionel Linger, Vinci Construction Grands Projets, and Ivan Drouadaine, Eurovia/Vinci Construction.

A Technical Visit of the Toulouse metro Line C construction site was organised on 30 August 2024, with the support of Tisséo Ingénierie. The 60 participants attended a plenary presentation at INSA Toulouse, which covered the environmental, societal, and technical challenges of constructing Toulouse's 3rd metro line and its integration with existing lines and networks. This was followed by visits to three project construction sites.

Social events

The delegates were treated to an extraordinary series of social events, each designed to enhance their conference experience.

- The Conference Welcome Reception, on Monday 26 August, was held at the Brasserie Le Florida (Typical French Brasserie, facing Toulouse City Hall and Capitol Square).
- The RILEM Banquet, held on Tuesday 27 August, was an exclusive dinner for RILEM Officers at the Restaurant Hotel Plaza.

  The event included a tribute to former RILEM presidents. Two representatives from the RILEM Youth Council, Magda Posani and Niki Trochoutsou, under the guidance of Prof. Alexandra Bertron and Dr Daniela Cancio, RILEM Implementation Manager, delivered a heartfelt tribute, highlighting the key achievements of the past presidents and of key personalities of the association.

  RILEM Honorary Member and Fellows in attendance were proudly awarded their diplomas by Dr Nicolas Roussel, RILEM President. Read more here.
- The RILEM conference dinner took place on Wednesday 28 August, on the rooftop of Toulouse's main library, offering a stunning 360° view of the city and the Pyrenees. Special thanks to Prof. Alexandra Bertron for organizing this remarkable event.

You can read the full report on the website.

Conference dinner
©anaisbertrand.photographe



Technical visit of the new subway line in Toulouse ©Alexandra Bertron

RILEM Worldwide

As part of its activities, the Development Advisory Committee (DAC) implements new initiatives and activities for continuously improving the promotion of RILEM worldwide, in cooperation with the Technical Activities Committee (TAC) and the Educational Activities Committee (EAC). The conveners of RILEM Regional and National Groups are steering these activities in their regions and assist with initiating and organizing events, facilitating the exchange of information, and giving RILEM a general presence in the local and regional research and industry landscapes.

According to the region and the objectives to be achieved, their assignments may consist of:

- establishing link with scientists, institutes, or corporate entities of their region,
- identifying the needs of their region, which RILEM can meet,
- identifying and proposing experts in the respective region for participation in RILEM Technical Committees or possibly in RILEM bodies,
- identifying subjects for the setting up of Technical Committees on specific matters of particular relevance for their region,
- disseminating information concerning RILEM publications, symposia, courses and RILEM news,
- if applicable, creating local RILEM websites for keeping up-to-date information, after explicit approval by RILEM Bureau,
- promoting RILEM at selected regional scientific events by organizing a scientific session and a RILEM exhibition stand,
- recruiting new members and keeping existing members active,
- organizing RILEM courses (with the support of EAC), or “RILEM days” (with the support of TAC) or Symposia,
- supporting regional sections in the RILEM Newsletters (as needed),
- establishing contacts with international partners of RILEM active in the region and developing new joint activities,
- identifying existing and new industrial partners that would benefit from getting involved in RILEM TC work and supporting a more active cooperation between RILEM and industry.

2024 has been a very active year, with many successful activities reported from around the world.

LATIN AMERICA REGION

2024 has been an important year for Latin America region, with the election of a new presidium for Lat-RILEM composed of several very active RILEM members.

Lat-RILEM Regional Presidium (2024-2026):
President: Prof. Fernando Martirena (Cuba)
Vice President: Prof. Romildo Toledo Filho (Brazil)
Past President: Prof. Ruby Mejía (Colombia)
Members: Dr Daniela Martínez (Colombia), and Dr Jose Norambuena-Contreras, who due to relocation was replaced by Dr José Luis Concha Fuentealba (Chile)
Treasurer: Prof. Margareth Dugarte (Colombia)
Secretary: Dr José Manuel Mendoza Rangel

Prof. Fernando Martirena, Lat-RILEM President participated to various RILEM co-sponsored events, such as the Congreso Técnico FICEM 2024, XI Congreso Internacional y 25° Reunión Técnica de la Asociación Argentina de Tecnología del Hormigón, 2nd International workshop on Biomaterials in Pavements. He also presented RILEM at the FICEM Congreso C2 Cemento y Concreto Verde 2050 attended by the cement and concrete industry, academia, multilateral organizations, standardization organizations, etc.

A new partnership was established with the PROTERRA Ibero-American Network, marked by reciprocal online presentations introducing PROTERRA to RILEM members and RILEM to PROTERRA members.

RILEM news in Spanish continues to be shared through the recently launched Lat-RILEM LinkedIn page, which has already garnered over 200 followers. These updates are also featured in the bulletins of the Argentine Association of Concrete Technology (AATH) and the Latin-American Association of Quality Control, Pathology, and Construction Recovery (Alconpat International). Additionally, RILEM news is now available in Portuguese through the PROTERRA bulletin.

Young Researchers' Symposium (YRS) on Technologies for Low-Carbon & Lean Construction, Chennai, India, 28 January 2024 ©YRS

CONSEC, 10th International Conference on Concrete Under Severe Conditions - Environment & Loading, Chennai, India, 25-27 September 2024 ©CONSEC

CHINA AND EAST ASIA REGION

In 2024, China and South Asia have been particularly active regions. A highlight event was the webinar "An Introduction to RILEM for China and the East Asian Region," co-organized by Prof. Yamei Zhang, the newly appointed Convener for RILEM China, and Assist. Prof. Guoqing Geng, the East Asia Convener. The presentation covered notably RILEM Technical Committees (TCs) and awards, attracting 180 participants from universities, government agencies, and private companies across several countries in this region including China, Singapore, and Malaysia. Several industry professionals expressed interest in RILEM-TC testing standards and were eager to join TCs focused on carbonation, corrosion, and durability in marine environments. As a direct outcome, individual RILEM memberships in China increased by over 30.

A new International Partnership Agreement (IPA) between RILEM and CCPA was officially established on 26 March 2024, with both organizations announcing the collaboration on their websites. CCPA further highlighted the partnership at the annual Concrete Exhibition in Nanjing in May 2024, where Convener Prof. Yamei Zhang introduced RILEM to attendees. At the International Conference on Advanced High-Performance Building Materials: Development and Applications, held at Macau University of Science and Technology on 19-23 April 2024, Prof. Li Zongjin provided a brief introduction to RILEM for attendees and reviewed the recent work and achievements of RILEM China. This successful conference, co-organized by RILEM China, the American Concrete Institute (ACI), and the Jiangsu Civil Engineering and Architectural Society, brought together experts and leaders in the field. NB: these two events were not co-sponsored by RILEM.

The inaugural RILEM co-sponsored 2024 International Conference on Atomistic Simulation of Cementitious Materials (ICASCM) was held in

Chairing committee of the RILEM Annual Week 2026, Joseph Mwiti Marangu, Silvester Abuodha Ochieng, and Wolfram Schmidt ©Wolfram Schmidt

RILEM President, Nele De Belie, signing the partnership with ACF President, Caijun Shi ©ACF

July at the National University of Singapore. This event, anticipated to be the first in a series, aims to lay the groundwork for a new Technical Committee focused on the molecular modelling of cementitious materials.

In August 2024, RILEM Vice-President Prof. Nele De Belie delivered a keynote speech at the Asian Concrete Federation conference in Ulaanbaatar, Mongolia. This occasion also marked the signing of a new International Partnership Agreement with the Asian Concrete Federation, headquartered in Bangkok, Thailand, further strengthening RILEM's ties with the Asia region.

NORTH AMERICA AND THE CARIBBEAN REGION

At the end of 2023, the longstanding partnership between RILEM and ACI was renewed with a stronger emphasis on collaborative efforts, particularly in the areas of technical committees and knowledge dissemination. The renewed agreement was formally signed by RILEM President Dr Nicolas Roussel and ACI President Antonio Nanni, witnessed by RILEM Regional Convener Dr Dimitri Feys, ACI Executive Vice-President Fred Grubbe, and ACI Director for International Affairs Bernie Pekor.

In 2024, continuing the progress of the previous year, the ongoing efforts of regional convener Dr Dimitri Feys have led to significant advancements in the collaboration between RILEM and ACI. This included the “Textile reinforced concrete” parallel session co-sponsored by NEx, at the 2024 RILEM Spring Convention in April. And Dr Feys’s participation in the fourth 24 Hours of Concrete Knowledge on Wednesday, 10 July, 2024, during which Prof. Nele De Belie, current RILEM President, also presented RILEM TC 281-CCC. In November 2024, Dr Dimitri Feys presented RILEM at the ACI Concrete Convention in Philadelphia.

RILEM events continue being promoted through Concrete International, the ACI magazine, and the ACI events website.

Furthermore, on June 6th, 2024, a new partnership agreement was signed between RILEM and the Canadian Society of Civil Engineers, during the annual meeting of the CSCE in Niagara Falls, Ontario, Canada.

International Conference on Atomistic Simulation of Cementitious Materials (ICASCM), 22-24 July 2024, National University of Singapore
©Department of Civil and Environmental Engineering at National University of Singapore

EAST-EUROPE AND CENTRAL ASIA

In East-Europe and Central Asia, the activity focused on Russia, thanks to National Convener, Prof. Vyatcheslav R. Falikman, who actively participated in several prominent conferences, including the IV International Kosygin Forum "Modern Problems of Engineering" held in February 2024 in Moscow. This forum, organized jointly with the International Academy of Engineering, featured a special youth program that attracted over 5,000 young scientists and students from more than two dozen countries. Prof. Falikman also attended the VII Conference “Low-rise Russia-2024” in February, part of the Russian Construction Week 2024. While these events did not benefit from RILEM co-sponsorship, they provided valuable opportunities to highlight RILEM's expertise and the work of its Technical Committees. Additionally, Prof. Falikman engaged with the Innovation Center in Moscow to encourage youth involvement in RILEM Technical Committees.

SOUTH-ASIA REGION

In 2024, Prof. K.V.L. Subramaniam actively represented RILEM at major conferences across the South Asia region, reaching a wide audience. The year kicked off with the 3rd International Workshop on Technologies for Low-Carbon & Lean Construction (TLC2), held in January at IIT Madras in Chennai, India. Later, in September, IIT Madras also hosted the CONSEC 24 conference, focusing on Concrete Under Severe Conditions.

December saw the 14th Structural Engineering Convention (SEC-2024) at the National Institute of Technology (NITT) in Tiruchirappalli, India, organized under the aegis of the Indian Association for Structural Engineering (IASE) and NITT.

These events attracted several hundred delegates, including a significant number of RILEM members, with many invited speakers from RILEM's global network, including the USA, UK, and Europe.

Additionally, to the promotion of RILEM at conferences, RILEM news continue being shared regularly in the Indian Concrete Journal.

3rd International Workshop on Technologies for Low-Carbon & Lean Construction (TLC2), Chennai, India, 29-31 January 2024 ©TLC2

Through these activities, RILEM gained numerous new members in South Asia, keeping it the organization's second-largest membership region base with 263 members in June 2024 (225 in June 2023).

SUB-SAHARAN AFRICA REGION

In 2024, Regional Convener Dr Wolfram Schmidt held several meetings focused on the preparation of RILEM Annual Week 2026 which will take place in Nairobi, Kenya, including a conference venue visit to ensure the location meets the event's needs. He established a collaboration agreement with the University of Nairobi and Meru University of Science and Technology. This partnership is aimed at organizing RILEM 2026 Annual Week, with potential co-funding options currently being explored in collaboration with PTB (Physikalisch-Technische Bundesanstalt) and the German Ministry of Education and Research.

The 7th International Conference on Concrete Repair, Rehabilitation, and Retrofitting held in November 2024 in Cape Town, South Africa, was an opportunity to present RILEM in a plenary session.

RILEM concluded an International Partnership Agreement (IPA) with the Society of Cement and Concrete Researchers in Nigeria (SCCRiN), strengthening ties and future collaboration.

EUROPE REGION

Europe is the region with the highest representation in terms of RILEM members, and it also hosts the largest number of RILEM co-sponsored conferences—over 20 in 2024 alone. This year, Prof. Maria Stefanidou, the Regional Convener, introduced RILEM and RYC activities to students in the Erasmus Mundus Joint Master's program in Archaeological Materials Science (ARCHMAT) at Aristotle University in Thessaloniki, Greece. Additionally, on November 11th, 2024, RILEM President Prof. Nele De Belie presented RILEM at the opening session of the SUBLime Conference, a RILEM co-sponsored event, held in Madeira, Portugal.

PACIFIC REGION

In October 2024, RILEM renewed its International Partnership Agreement with the Concrete Institute of Australia (CIA) and began discussions on collaborating for CIA's flagship event, the Concrete 2025 conference, scheduled for 7–10 September 2025 at the Adelaide Convention Centre.

RILEM Youth Council

In 2020, the RILEM Youth Council (RYC) was established to attract more young members to RILEM and enhance their active participation in RILEM activities. After four years of successful operations and due to the effectiveness of the RYC, DAC suggested to Bureau to transform it into a new standing committee. This proposal was approved by the Bureau and validated at the General Council held in August during the RILEM Annual Week in Toulouse, France.
A one-year trial period will allow for assessing the new structure, after which the bylaws and website will be updated to reflect the new status. During this time, the RYC Chair will report to the Development Advisory and Bureau Committees and serve as an ex-officio member of the DAC. RYC representatives will continue to be invited to all standing committees, including DAC, TAC, and EAC.

The main mission of the youth council is to develop and implement youth-focused policies and activities with the aims of:

- Encouraging participation of young members in RILEM TACs and EAC activities. TC chairs will be encouraged to consider young members and target them for invitation to join TCs, independent of their supervisors.
- Increasing awareness of RILEM EAC-sponsored courses and seminars. This can be done by filtering out relevant events from the RILEM event list and sending the info to young members.
- Incentivising postgraduate students to participate in RILEM activities i.e. by awarding scholarships/financial assistance to attend RILEM events. These incentives should be made explicitly known and advertised on the website and newsletters.
- Creating local networks between emerging researchers to increase visibility of and access to RILEM.
- Encouraging and preparing young RILEM members to participate in the organisation at a high level.
- Showcasing and celebrating the achievements of the RILEM youth.

The Peer-to-Peer (P2P) Webinar series was launched by the RILEM Youth Council in 2022. This series was started to showcase exemplary young researchers from all the regional groups of RILEM, foster knowledge sharing, and build a strong network of young researchers globally. The table below is a summary of the webinars hosted in 2024.

Host region	Theme	Event date	Attendees*
North America (in collaboration with ACI)	Cementitious Materials for Advanced Construction	02 February 2024	97
Europe	Bio-composites in structural applications for new and existing buildings: potential, challenges, and perspectives	25 March 2024	39
China	Revitalizing earth construction in China: from techniques exploration to new scientific insights	21 May 2024	48
Sub-Saharan Africa	Advancement in Sustainable Constructions: Activated Clays in LC3 and Recycling demolition waste for building materials	23 July 2024	102
Pacific	3D Printed Concrete and Carbon Sequestration in Construction Materials	17 September 2024	81
South Asia	Conservation of Heritage Structures	26 November 2024	102

*Indicated as unique views from the Zoom account

The RYC would like to sincerely thank the presenters of the P2P webinars namely: Robert J. Thomas, Shashank Gupta, Giuseppe Ferrara, Petrini Kampragkou, Shan Dai, Shenwei Yu, Jaziitha Simon, Tafadzwa Ronald Muzenda, Kirushnapillai Kopitha, Pshtiwan Shakor, Swathy Manohar, and Anupama V.A., for sharing their research work with the RILEM Youth Community and thereby contributing to the success of the webinar series.

To supplement the P2P webinar series objectives and to engage young emerging researchers across the globe, the RYC council members actively participated in various events. Surender Singh (RYC Chair) attended the 3rd International Young Researchers' Symposium held at IIT Madras, Chennai, and Seongmin Cho (East Asia) co-chaired the Young Researchers' Competition at the 1st Monash Symposium on Climate-Resilient infrastructure 2024 (M-CRInfra2024) held at Monash University, Malaysia in December 2024. Magda Posani (Europe) and Angela Tawiah (Sub-Sahara) had an unofficial interaction over dinner with young researchers attending the 78th RILEM Annual Week in Toulouse, France. The plan is to make these interactions more official from next year onwards; also increasing their frequency.

Liam Martin (Pacific) had a meeting on 10th October 2024 with the NEXGen, a sub-committee of the Concrete Institute of Australia (CIA), that aims to involve and promote young and early-career professionals in the CIA. The meeting was attended by David Millar (CIA), Nicolas Roussel (RILEM), Marie Joshua Tapas (CIA), Liam Martin, and Daniela Ciancio (RILEM). One of the main items of the meeting was to plan a joint event similar to the RYC P2P webinar series between CIA NEXGen and the RILEM Youth Council. This event is

planned to be conducted next year. In addition, it was decided to continue the RYC Pacific webinar series that was previously hosted by Marie Joshua Tapas (previous RYC Pacific representative) in 2023 — *The RYC Pacific webinar runs at least twice a year and features speakers from various institutions in the Pacific region. The series aims to bring together young researchers from different universities, promote RILEM to young researchers in the Pacific region and provide a platform for young researchers to communicate their work and build their network*. The list of presenters and event schedule for the 2025 series is to be decided in a future meeting between the CIA and RILEM, to be held early next year. Liam and Josh will be the primary organizers for the webinars.

The RYC has launched its first symposium series, RILEM Youth Symposium (RYS) and the first edition RYS2025 will be held next year on 20-21 October 2025. To foster inclusivity and global reach, registration and participation are free of charge (RILEM membership is required), and the symposium will be held fully online. This dynamic event is tailored for emerging researchers, PhD students, and professionals in the early stages of their careers. The target audience includes individuals under 35 years of age and those enrolled in a university degree program (Master's or Ph.D.), regardless of age. It offers a unique opportunity for early-career researchers to showcase their work related to building materials and construction. The symposium covers a diverse range of topics, including the processing, characterisation, and advanced manufacturing of building materials; deterioration and durability; structural performance; and environmental impact evaluations. The symposium encompasses both conventional and non-conventional building materials. These include concrete and cementitious materials, masonry, timber, bio- and earth-based composites, bamboo, polymers, and innovative low-carbon materials applied in construction. All topics related to the themes of RILEM Technical Committees are also included. This symposium provides a chance to connect with peers worldwide, interact with senior RILEM members who are world-wide renowned experts, and gain recognition for their work through the Best Paper Award, the Best Presentation Award, and the Best Poster Award. The accepted full papers will be published in Springer Nature proceedings (Scopus-indexed and EiCompendex-indexed).

The RILEM Youth Council established in 2020 finished its first tenure this year and the new council was formed in February 2024. The new RYC council would like to sincerely thank Joanitta Ndawala, the first RYC chair, for her exceptional leadership and dedication to the RYC community. Her hard work and vision played a pivotal role in making the RYC events a success. We thank the new council members for taking on the commitment to serve the RILEM Youth Community.

RYC members @ 1st International Conference on Net-Zero Built Environment: Innovations in Materials, Structures, and Management Practices (Net-Zero Future 2024), 19-21 June 2024, Oslo, Norway ©Daniela Ciancio

RYC members with Hans Beushausen, RILEM Vice-President during the RILEM Annual Week in Toulouse, August 2024 ©Judith Hardy

RYC representatives (Seongmin Cho and Surender Singh) had a communicative dinner with the young researchers in competition at the 1st Monash Symposium on Climate-Resilient Infrastructure 2024 (M-CRInfra2024) in Malaysia in December 2024 ©RYC

RILEM Membership and Fees

One of the goals of the RILEM regional and National Conveners, as well as the RILEM Youth Council, is to promote RILEM and attract new members. In 2024, as in recent years, RILEM membership has been steadily increasing, reflecting the dynamic development of the association.

RILEM is composed of corporate members and individual members, including researchers and engineers, research and testing laboratories, and companies.

Corporate Memberships

- **Associate Members** are smaller research, academic or building organisations or companies, providing 3 of their staff as RILEM members and one associate contact.
- **Institutional Members** are research and testing organisations of national renown, universities, international or national standards organisations, which can have less than 15 staff members of 35 yo and above + unlimited staff members under the age of 35.
- **Institutional-Plus Members** are research and testing organisations of national renown, universities, international or national standards organisations, with an unlimited number of their staff joining RILEM as members.
- **Industrial Members** are large firms or associations in the materials or construction sectors, with an unlimited number of their staff joining RILEM as members.

Staff members of corporates are welcome to actively participate in RILEM Technical Committees and are provided with full RILEM membership benefits.

Individual Memberships

- **A Senior Member** is an experienced scientist or engineer, having reached a position of responsibility and recognised expertise in a public or private organisation or company concerned with testing or research in the field of building materials and structures.
- **A Young Member** is a postgraduate student (including PhD students) or a young research scientist or engineer who is at the early stage of their career under the age of 35 during the membership year.
- **A Retired Member** is a member who has retired.
- **An Honorary member** is a member who has been distinguished

by RILEM officers, for having rendered exceptional services to the association.

- **A free membership** is offered to participants to RILEM EAC courses, Spring meetings and Annual weeks and awardees of co-sponsored events. (The graphs and numbers shown in the following sections do not include the current 227 free members.)

Evolution of the membership by categories

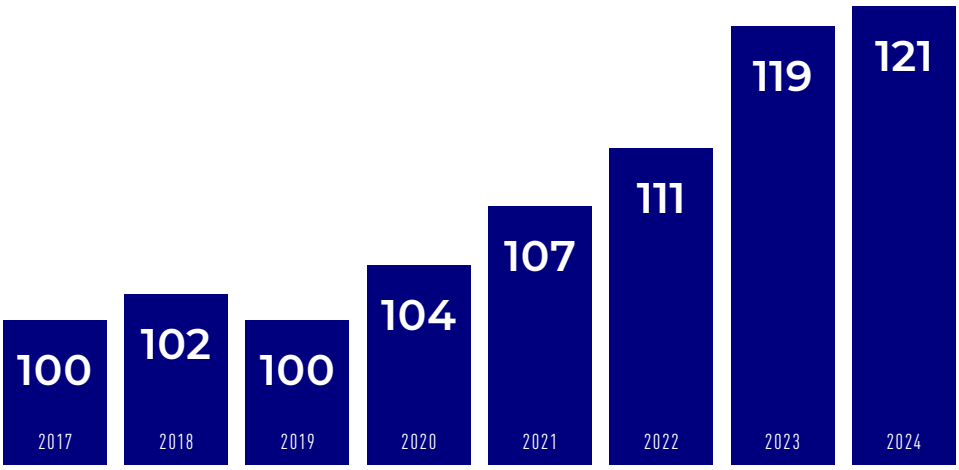
(The following figures reflect the midpoint of the years).

Coporate and staff members

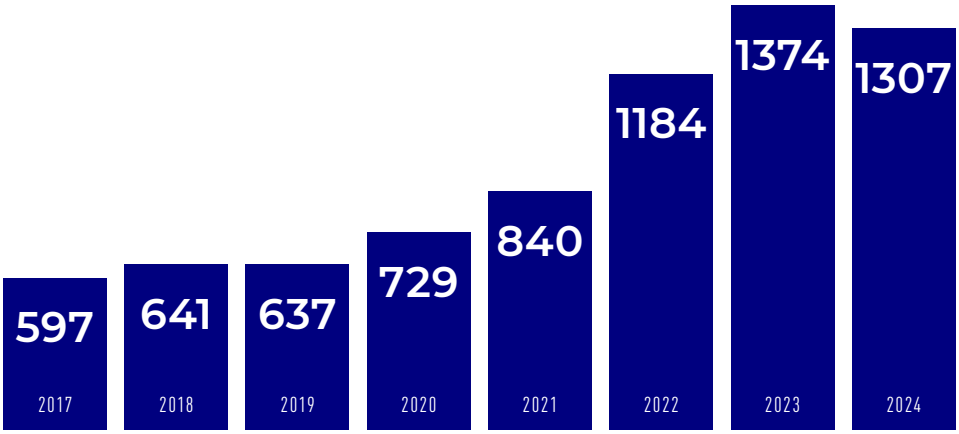
Corporate membership growth has been gradual over recent years. In 2024, the number of corporate staff members slightly decreased as a result of the Secretariat's update policy, aimed at maintaining a clean database, and thanks to the responsiveness of corporate members.

RILEM CORPORATE MEMBERS

**See Corporate members' list page 60*



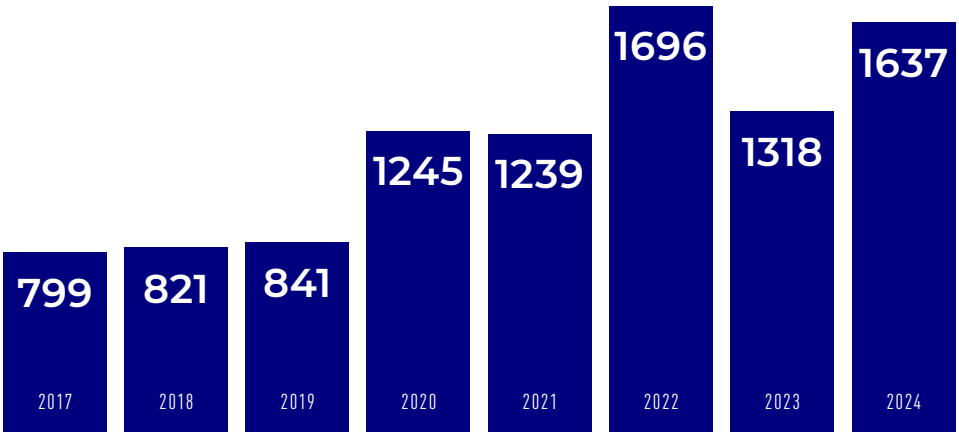
STAFF OF CORPORATE MEMBERS



RILEM individual members

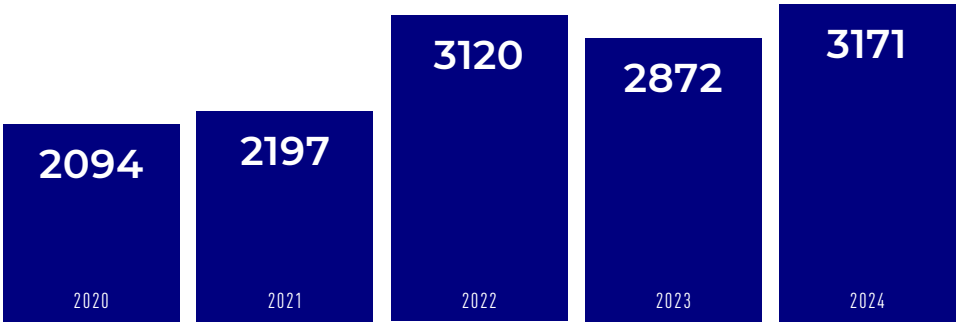
In 2023, overall membership saw a slight reduction due to database maintenance and stricter enforcement of fee payment regulations. In 2024, individual membership rebounded, with 319 new members bringing the total to 1,637.

RILEM INDIVIDUAL MEMBERS
(Numbers include individual members, exclude 227 free members and 1307 staff members)



RILEM's 3171 individual members, staff members and free members collectively embody the potentially active participants within the association. Non-RILEM members following an EAC course, or non-RILEM delegates of a RILEM annual week or Spring meeting are eligible for a three- or one-year free membership, respectively.

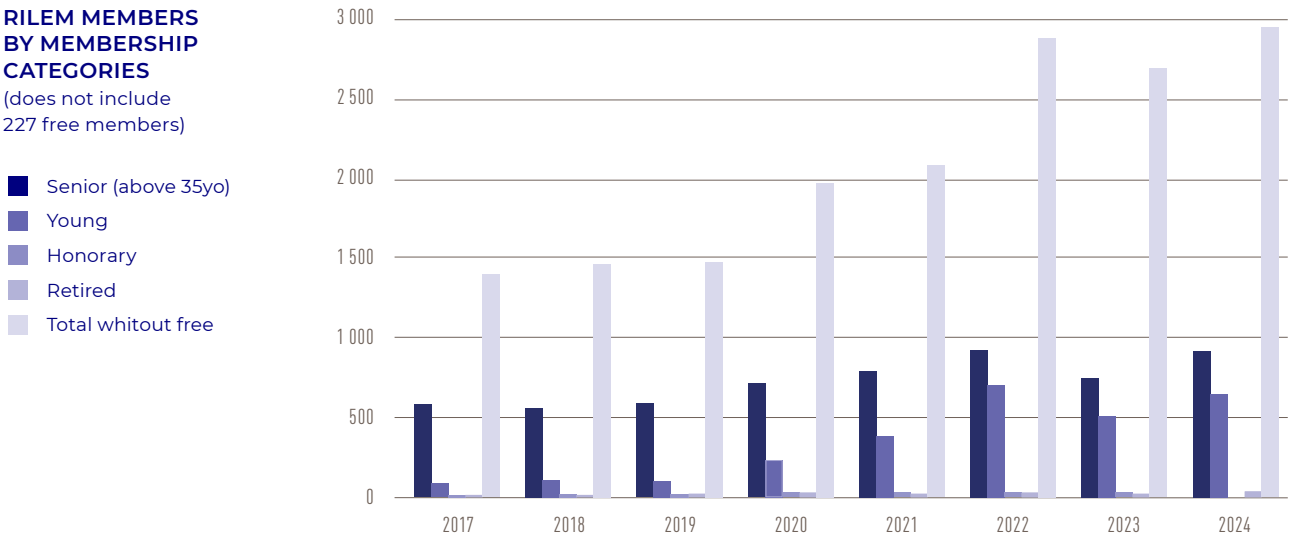
RILEM INDIVIDUAL, FREE AND STAFF MEMBERS
Numbers include individual, staff members and free members



RILEM individual members' categories

The examination of individual membership reveals a noteworthy rise in young members (below 35 years of age) over the past five years. This underscores the success of the policy aimed at fostering the integration of young members and their active involvement in RILEM's activities, showcasing the positive impact of the RILEM Youth Council's efforts to attract younger participants.

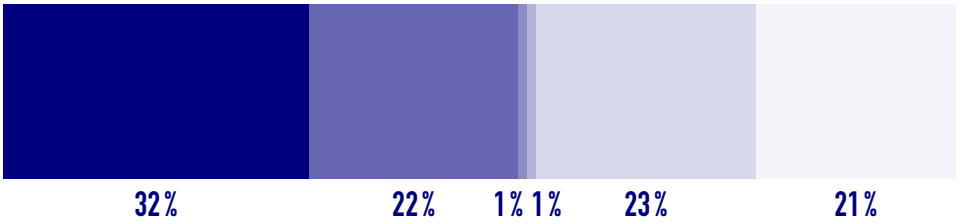
RILEM MEMBERS BY MEMBERSHIP CATEGORIES
(does not include 227 free members)



RILEM MEMBERS BY MEMBERSHIP CATEGORIES
(does not include 227 free members)

- Senior (above 35yo)
- Young
- Honorary
- Retired
- Staff above 35yo
- Staff below 35yo

In 2024 young members (below 35yo) and staff below 35yo represent 43% of RILEM members.



Gender ratio

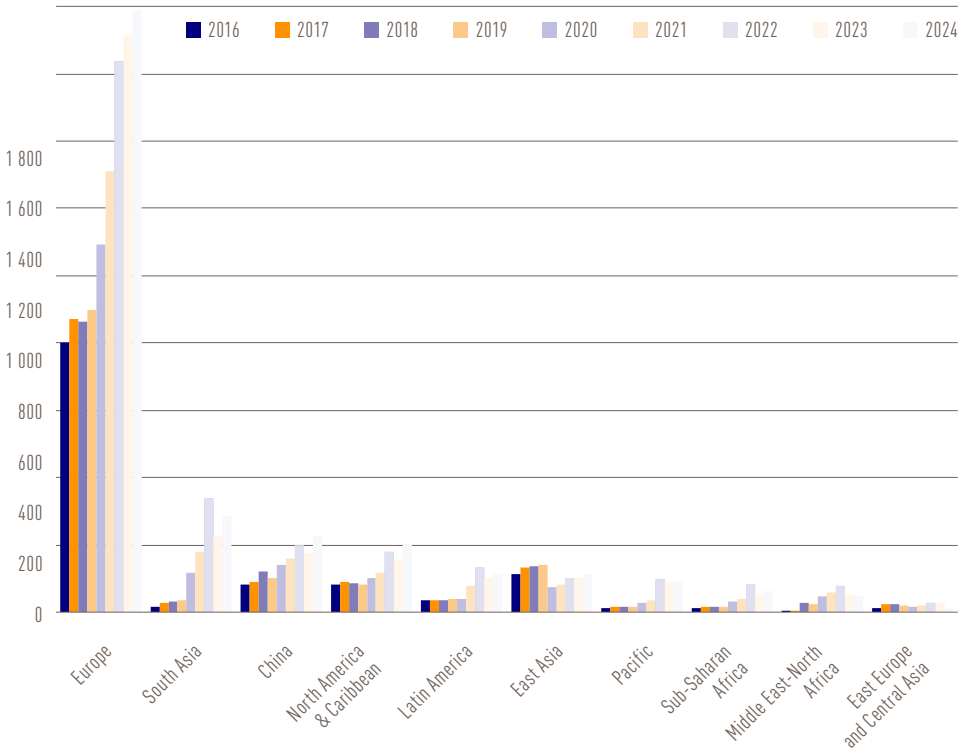
In 2024, as in the previous three years, women represent 30% of the total membership, up from 21% in 2018, reflecting broader trends in related fields such as civil engineering and construction. The non-binary category was introduced too recently to achieve a representative level.

GENDER BALANCE 2024

RILEM members dissemination per region

Among the ten established geographical areas within RILEM, Europe maintains the highest membership count with 1789 members. South Asia secures the second position for the fourth consecutive year, boasting 285 members, primarily fuelled by growth in India (refer to "10 countries most represented within RILEM"). China maintains the third position with 226 members in 2024, closely followed by North America with 204 members.

	2017	2018	2019	2020	2021	2022	2023	2024
Europe	871	862	898	1,093	1,311	1,639	1713	1789
South Asia	27	30	37	116	180	340	225	285
China	90	122	100	140	160	198	176	226
North America & Caribbean	91	85	84	100	116	181	157	204
Latin America	36	37	41	40	77	134	101	115
East Asia	131	136	140	74	81	103	100	113
Pacific	16	16	15	26	37	98	91	91
Sub-Saharan Africa	15	16	16	30	41	83	51	61
Middle East-North Africa	6	26	23	48	57	77	52	46
East Europe and Central Asia	22	22	20	16	19	27	26	14
TOTAL	**1,305**	**1,352**	**1,374**	**1,683**	**2,079**	**2,880**	**2,692**	**2,944**



-Numbers include individual and staff members. Do not include free members.
-In 2020, it was decided to reorganize the distribution of counties between South Asia and East Asia. This explains the sudden change in numbers in these two regions.

Countries most represented by number of RILEM members

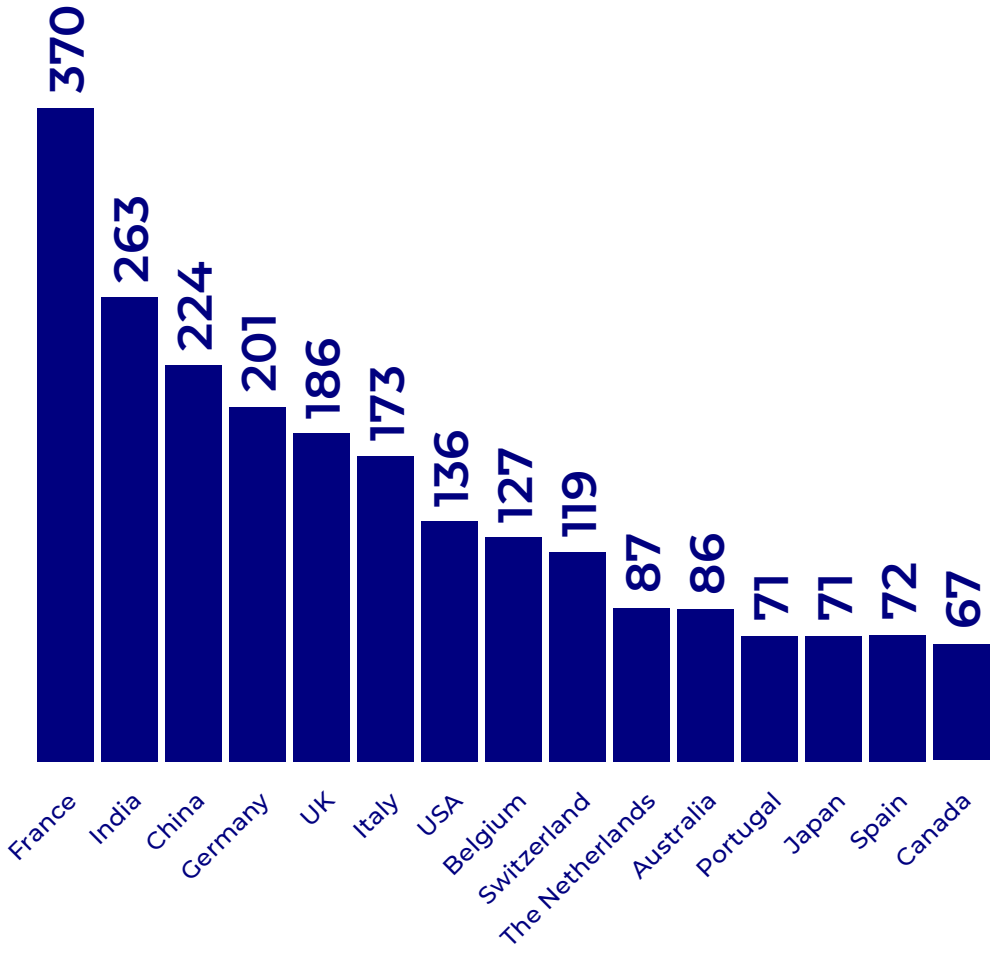
After India surpassed France in 2022, the latest data now positions France back in the top spot, closely followed by India. The overall ranking includes a consistent group of countries from previous years. Notably, Australia remains in the top 11 for the third consecutive year.

11 countries most represented within RILEM

	2017	2018	2019	2020	2021	2022	2023	2024
France	182	193	199	218	231	291	324	370
India	23	25	30	100	159	318	213	263
China	88	121	99	140	158	197	176	224
Germany	119	104	104	119	149	200	212	201
United Kingdom	52	56	60	91	100	164	176	186
Italy	82	75	75	101	130	160	157	173
USA	50	47	51	65	77	110	94	136
Belgium	75	82	91	102	114	129	139	127
Switzerland	65	69	80	65	77	92	106	119
The Netherlands	53	49	50	60	73	95	102	87
Australia	13	13	12	20	35	93	86	86

-Numbers include individual and staff members. Do not include free members.

COUNTRIES WITH 50 OR MORE INDIVIDUAL AND STAFF MEMBERS



Financial statement of the year 2023

From a financial point of view, RILEM consists of two distinct entities. The first one is an association under Swiss law, but established in France, non-profit, without VAT and non-taxable, named RILEM Association. The association manages members and scientific, educational and development activities.
The second is a private company with a single shareholder (i.e., the RILEM Association), for profit, subject to VAT and profit tax, named EURL RILEM Publications. The company manages the publication activities of RILEM, in particular its two scientific journals. *Materials and Structures*, the flagship journal of RILEM, is a hybrid international journal published by Springer Nature. *RILEM Technical Letters*, launched in 2016, is an open access journal published by RILEM.
The income for the RILEM Association comes from membership fees, including those from individual and corporate members. The net invoiced fees from membership income increased to €384,490 in 2023, up from €373,354 in 2022. Total income for 2023 amounted to €406,486, representing a slight increase of 5.17% compared to the previous year. Expenditure also rose significantly, by 12.98%, resulting in a negative net outcome of -€100,725 in 2023, compared to -€62,391 in 2022.

The net income for EURL RILEM Publications comes from royalties paid by Springer Nature on the revenue from the sale of *Materials and Structures*, mainly via consortia agreements. This revenue is reduced due to the cost of giving free access to *Materials and Structures* for all RILEM members. The royalties paid by Springer Nature decreased from €265,899 in 2022 to €228,879 in 2023.
The costs for RILEM Association are primarily the salary and expenses for running the General Secretariat. Additional costs are due to the outsourced management of the two journals (paid by RILEM Publications). The Association also pays the Article Processing Costs (APCs) for publishing a limited number of Open Access papers, selected by the Board of Editors, in the journal *Materials and Structures*. Since 2019, an external consultant (the RILEM Implementation Manager, RIM) has been hired to increase the visibility of RILEM.
Several initiatives to support young researchers in RILEM have also been sponsored, including the best poster award, the PhD travel grants enabling young researchers from low-GDP countries to

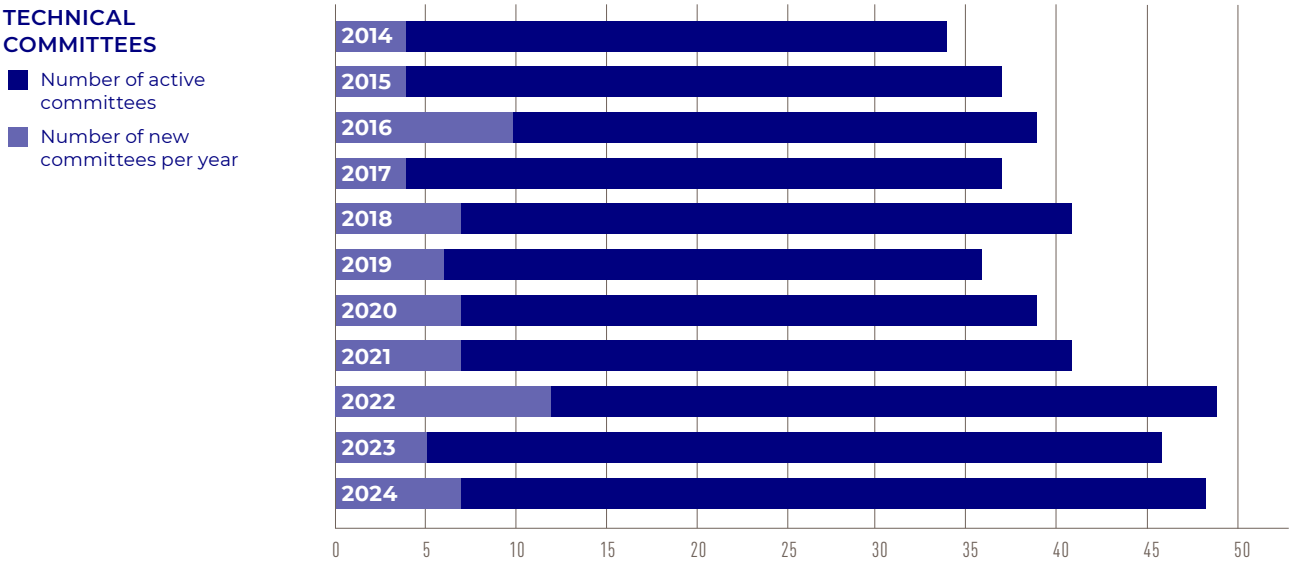
attend RILEM Annual Weeks and conferences, and the prestigious Colonnetti and L'Hermite medals, which specifically recognize outstanding achievements by young researchers.

In 2023, the financial result of the RILEM Association was negative, amounting to -€100,725. Meanwhile, the financial result of EURL RILEM Publications, while still positive at €56,023, showed a decline compared to the €95,074 positive result achieved in 2022.
The combined financial result for 2023 was -€44,702, compared to -€32,683 in 2022. While still negative, this outcome is significantly better than the -€86,000 initially projected at the 2023 General Council in Vancouver, Canada.
A positive result is expected in 2024, with an anticipated surplus of +€6,000 presented in Toulouse, France.
This forecast is primarily supported by the expected growth in income from membership fees. In 2023, the General Council approved an adjustment to the 2024 membership fees to better align with the rising costs of services and benefits provided by RILEM.

However, a negative result is projected for 2025 due to RILEM Management's decision to invest in several initiatives aimed at returning a portion of the association's equity to its members.
The equities of both the association and the company are currently large enough to compensate for a few years of negative results.

Technical Committees

In RILEM, the Technical Committees serve as the organization's core and driving force. These committees are highly dynamic and typically have a lifespan of five to seven years. Each year witnesses the successful completion and closure of some committees, followed by the introduction of new ones. Over the past ten years, the count of active Technical Committees varied between 35 and 40 peaking at 49 in 2022. By 2024, the number of active committees reached another high, with 48 in operation.



Each year, several new technical committees are created. For a comprehensive list of active TCs and information about their work, you can visit tc.rilem.net and have a look at the technical reports.

The following seven new committees were approved in 2024:

Cluster A. Material Processing and Characterization
(Convener: Susan Bernal Lopez)

- CSA: Calcium sulfoaluminate-based cement and concrete chaired by Eric Bescher

Cluster C. Structural Performance and Design
(Convener: Kei-ichi Imamoto)

- MBB: Mechanical behaviour of bio-aggregates based buildings materials chaired by Sofiane Amziane

▸ QPA: Quality and performance assurance of additively manufactured cementitious composites by advanced non-invasive techniques chaired by Tomoki Shiotani

Cluster D. Service Life and Environmental Impact Assessment (Convener: Anya Vollpracht)

▸ CUC: Carbon dioxide uptake by concrete during and after service life chaired by Gregor Gluth

▸ SDM: Scientific metadata management of construction materials chaired by Tanja Manninger

Cluster F. Masonry, Timber, and Cultural Heritage (Convener: Arun Menon)

▸ CTM: Testing methods for masonry cores chaired by Rita Esposito

Cluster F. Bituminous Materials and Polymers (Convener: Eshan Dave)

▸ MWP: Mechanical wave propagation to characterize bituminous mixtures chaired by Jean-Claude Carret

We closed five Technical Committees in 2024 and these TCs have successfully terminated their mission by publishing STARs or recommendations:

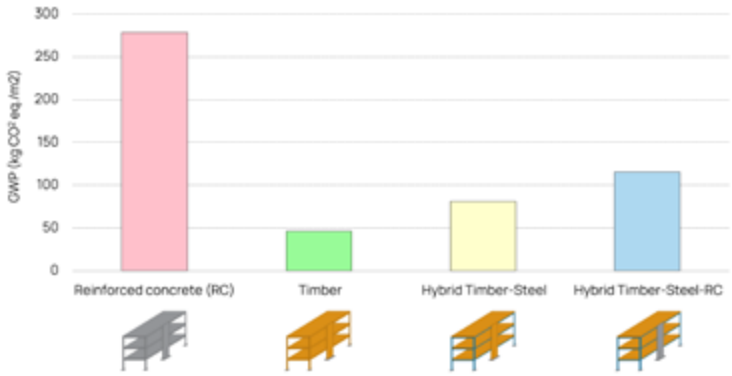
▸ **TC 277-LHS**
STAR to be published in 2025

▸ **TC 280-CBE**
Recommendation and Topical collection published in *Materials and Structures*

▸ **TC 281-CCC**
Topical collection published in *Materials and Structures*

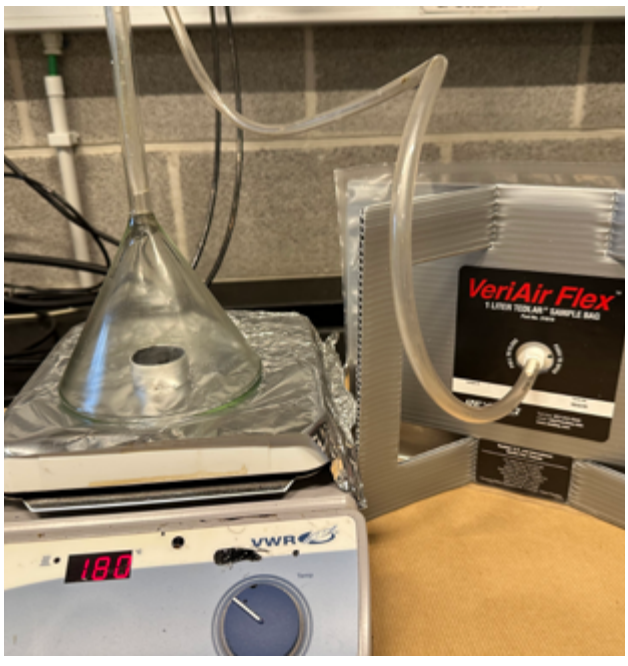
▸ **TC 282-CCL**
Topical collection published in *Materials and Structures*

▸ **TC 283-CAM**
Recommendation to be published in 2025 in *Materials and Structures*



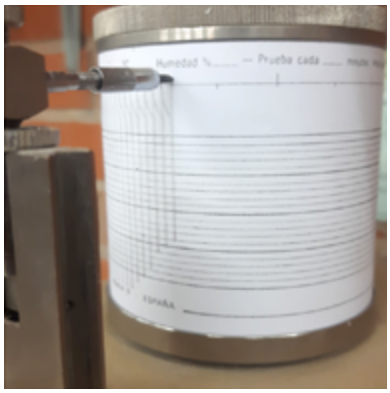
The figure represents a comparison among GWP normalised per functional unit (1 m2) of different solutions adopted for the structural system of an Italian multi-storey building. Four different alternatives were studied for the structural system: 1) Reinforced concrete (RC), where every structural member is in reinforced concrete; 2) Timber, where foundations are in RC and all remaining structural members are in timber; 3) Hybrid Timber-Steel, where foundations are in RC, beams and columns are in steel, slabs and shear walls are in timber; 4) Hybrid Timber-Steel-RC, where foundations and shear walls are in RC, beams and columns are in steel, slabs are in timber ©Laura Corti, Giovanni Muciaccia (Politecnico di Milano, Department of Civil and Environmental Engineering)

2nd International Workshop on Net Zero Carbon Buildings under the umbrella of RILEM TC 299-TES, 24–25 January 2024, University of Bath, Bath, UK ©Antonio Caggiano

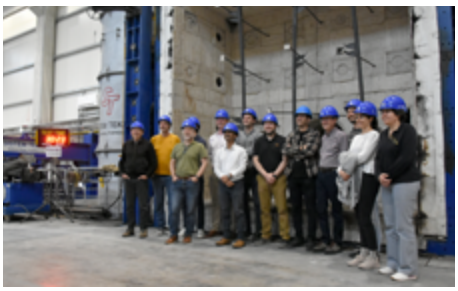


Fume measuring setup with sample bag ©Johan Blom

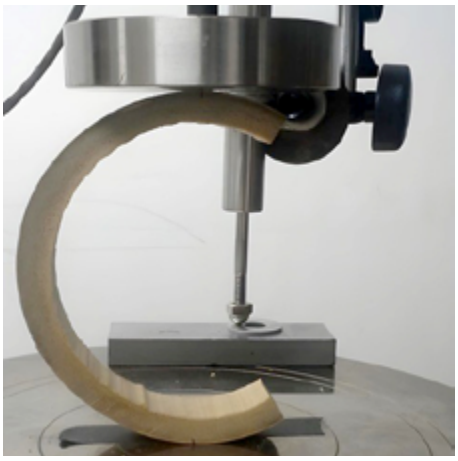
Meeting of TC 291-AMC, Accra, Ghana, April 2024 ©TC 291-AMC



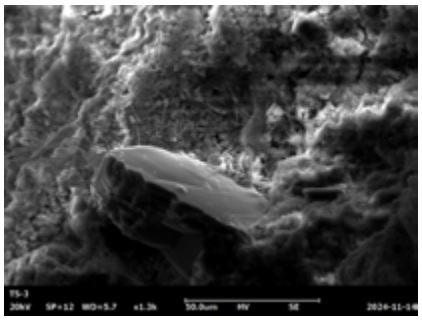
Investigation on setting time and workability of cement-red mud composites ©Materials and Cultural Heritage (MATCH) Research Group, Department of Chemistry, University of Navarra and European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 101034345



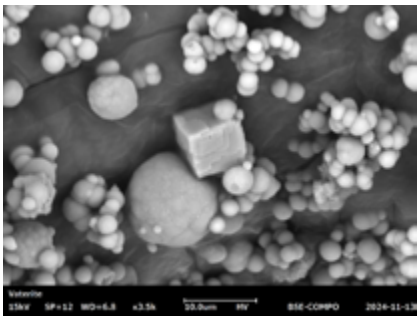
Meeting of TC 306-CFR, ZAG visit, Ljubljana, Slovenia, 16-17 September 2024 ©Pierre Pimienta



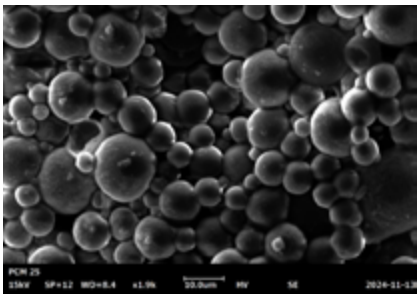
Bamboo transversal bending test ©J.J. Garcia



Scanning Electron Microscope (SEM) image of Vaterite Calcined Clay Cement (VC3) mortar ©Materials and Cultural Heritage (MATCH) Research Group, Department of Chemistry, University of Navarra

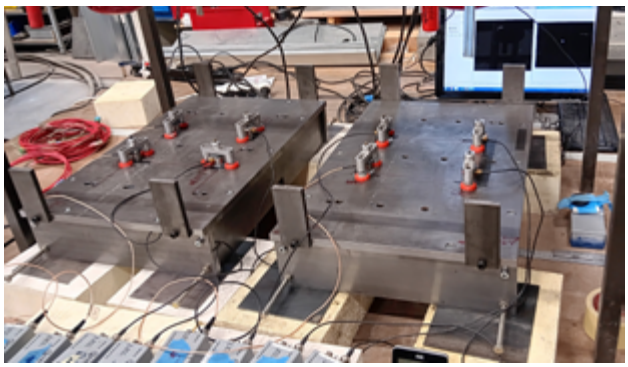


Calcite and Vaterite particles under the Scanning Electron Microscope (SEM) ©Materials and Cultural Heritage (MATCH) Research Group, Department of Chemistry, University of Navarra

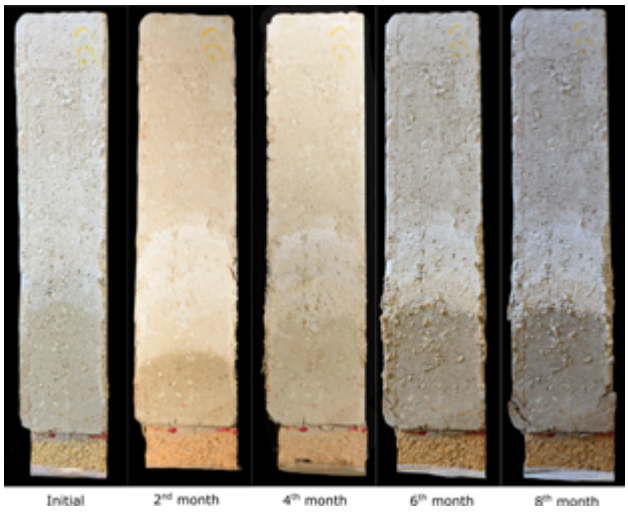


Microencapsulated Phase Change Material (PCM) under the Scanning Electron Microscope (SEM) ©Materials and Cultural Heritage (MATCH) Research Group, Department of Chemistry, University of Navarra

International Inorganic-Bonded Fiber Composite Conference (IIBCC), 19-22 November 2024, Colombo, Sri Lanka ©Hans Beushausen

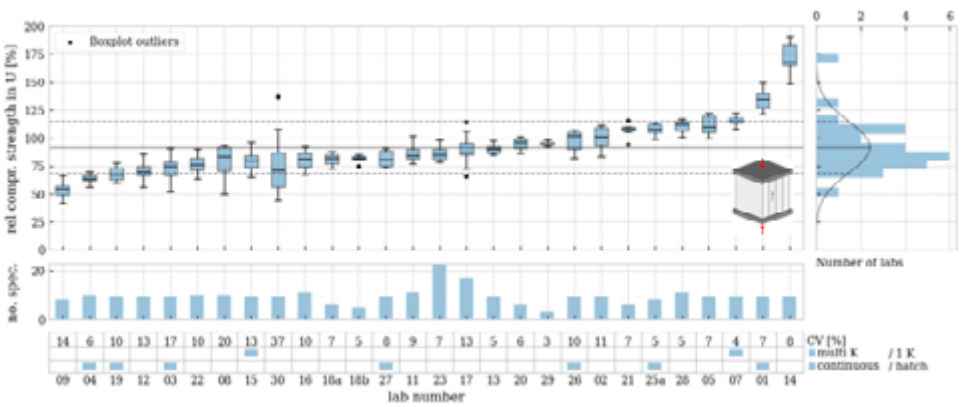


Acoustic Monitoring of Internal Curing of Fresh Concrete With Superabsorbent Polymers under Drying Conditions ©Mechanics of Materials and Constructions Department (MEMC) of Vrije Universiteit Brussel (VUB). Funding from Fonds Wetenschappelijk Onderzoek - Vlaanderen, FWO in cooperation with Magnel-Vandepitte Laboratory, Ghent University (UGent)

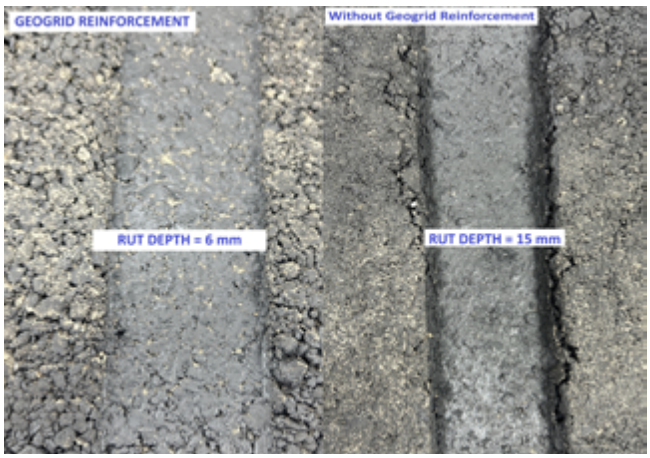


Deterioration of a 2-layer composite, comprising of natural stone and CEB, induced by continuous partial immersion in water ©Ledra & Building Materials Laboratory, University of Cyprus

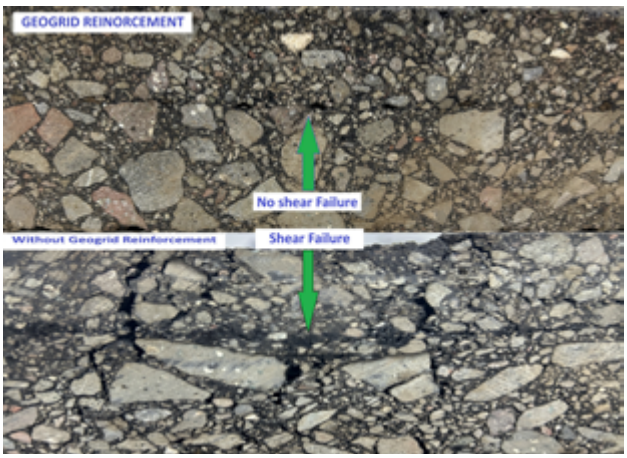
1st RILEM International Conference on Mineral Carbonation for Cement and Concrete, Aachen, Germany, 16-17 April 2024 ©TC 309-MCP



RILEM TC 304-ADC interlaboratory study on mechanical properties of 3D printed concrete: Relative compressive strength results (print over cast, in percentage) in the U direction in ascendent order for each laboratory; the table includes the number of specimens used to compute the average, coefficient of variation (CV as percentage), component system and material supply approach. The bar diagram on the right presents the histogram and normal distribution of laboratory averages ©TC 304-ADC



Top view geogrid-reinforced asphalt pavements and test results showed that the geogrid-reinforced pavements improved the rutting resistance by 50 % compared to unreinforced pavements ©Dr Lekhaz Devulapalli; Ms Sreelakshmi S; and Dr Sreekumar TV Funding Agency - National Technical Textile Mission (NTTM), Ministry of Textiles, India



Front view geogrid-reinforced asphalt pavements and test results showed that the geogrid-reinforced pavements improved the rutting resistance by 50 % compared to unreinforced pavements ©Dr Lekhaz Devulapalli; Ms Sreelakshmi S; and Dr Sreekumar TV Funding Agency - National Technical Textile Mission (NTTM), Ministry of Textiles, India

CONCREEP12, Delft, The Netherlands, 5-7 June 2024 ©Shan He

CONCREEP12, Delft, The Netherlands, 5-7 June 2024 ©Shan He

Technical and Educational Events

Multiple technical and educational events were again organised worldwide in 2024, including conferences, workshops, PhD courses, and the like.

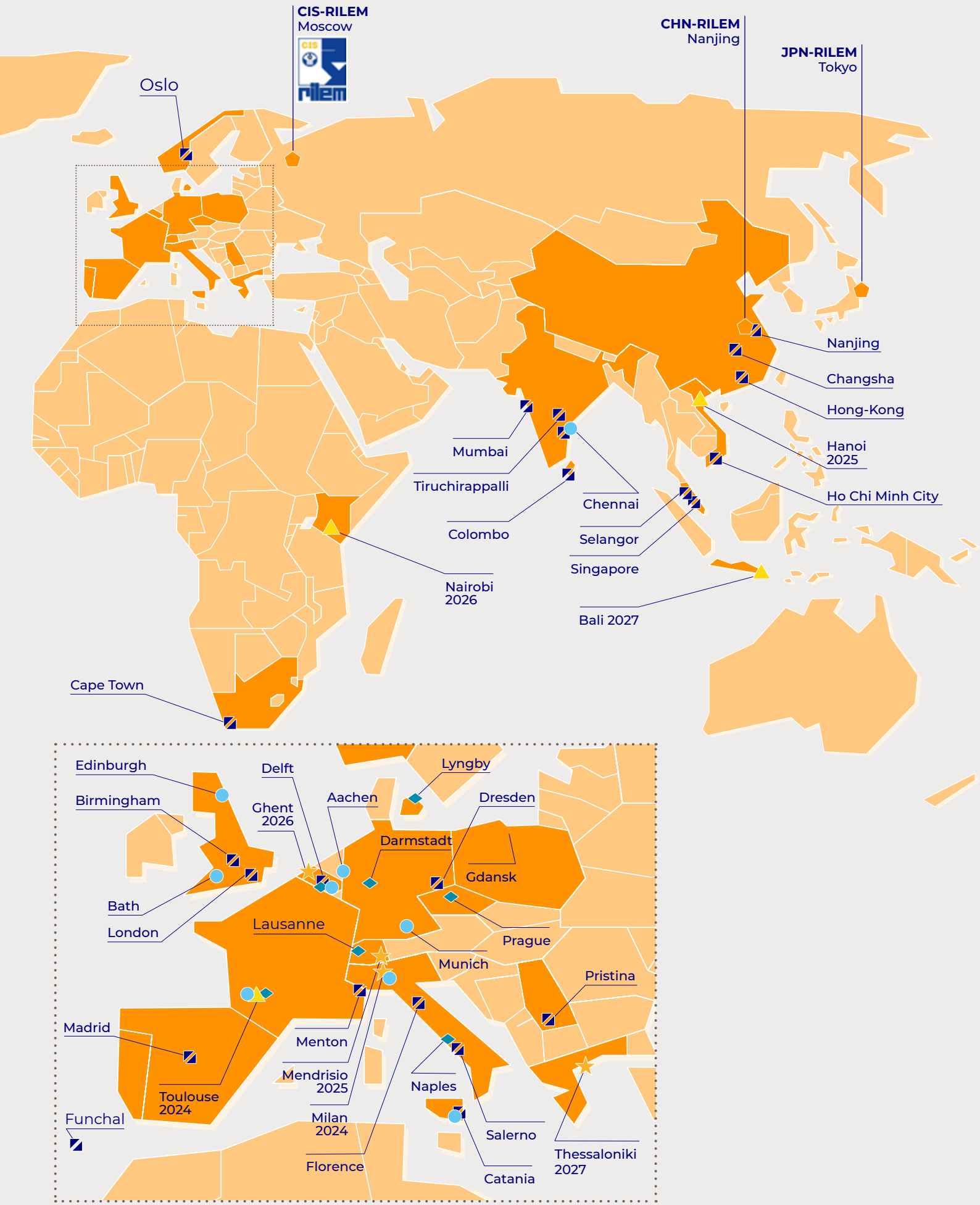
RILEM conferences and co-sponsored events continue to serve as valuable opportunities to introduce RILEM to the research community and extend complimentary memberships to competition winners, including recipients of prestigious awards such as the best paper awards, thereby welcoming eminent researchers into the RILEM community.

On this matter, RILEM welcomes active members participating in RILEM events or co-sponsored events to candidate to present RILEM during those events. Interested members can initiate the process by reaching out to the secretariat.

The following map shows the geographical spread of the activities. It can be concluded that RILEM is reaching out to all corners of the world bringing together thousands of people!

RILEM Events 2024

- Co-sponsored event
- Educational activity
- RILEM event
- Regional/National Group
- Spring Convention
- RILEM Annual Week


CIS-RILEM
Moscow
CHN-RILEM
Nanjing
JPN-RILEM
Tokyo
Oslo
Nanjing
Changsha
Hong-Kong
Hanoi
2025
Ho Chi Minh City
Mumbai
Tiruchirappalli
Chennai
Colombo
Selangor
Singapore
Nairobi
2026
Bali 2027
Cape Town
Edinburgh
Birmingham
Delft
Ghent
2026
Aachen
Lyngby
Dresden
Darmstadt
Gdansk
Bath
London
Lausanne
Prague
Munich
Pristina
Madrid
Menton
Mendrisio
2025
Toulouse
2024
Naples
Funchal
Milan
2024
Salerno
Thessaloniki
2027
Florence
Catania

Educational Activities

Marie Joshua Tapas was appointed in August 2024 as a new EAC member for a first mandate of two years. The main activities of the EAC this year remained the ROC&TOK webinars and the EAC PhD courses. Since their launch in November 2020, the ROC&TOK webinars have attracted more than 5500 attendees from 95 different countries covering topics such as carbonation of concrete, cement additives, earth as a construction material, and mineral carbonation. The final webinar was a presentation by Dr Martin Röck on the Myths of low carbon concrete. Participants of these webinars can acquire CPD credits from the Institute of Concrete Technology thanks to its partnership with RILEM.

ROC&TOK Webinars in 2024

DATE	NAME	SPEAKER(S)
February 2024	Concrete patch repairs – so simple and yet so difficult	**Hans Beushausen**
March 2024	Stone deterioration and conservation	**Enrico Sassoni**
May 2024	Wood is not the climate-friendly building material often claimed	**Tim Searchinger**
June 2024	Understanding cementitious system at the atomic level	**Aslam Kunhi**
July 2024	The intricate “art” of crack width control in concrete	**Fragkoulis Kanavaris & Miguel Azenha**
September 2024	A History of Calcareous Cements: Precursors to Portland cement, 1756-1824	**Edwin Trout**
October 2024	Standards and specifications for advancing low-carbon materials	**Larry Sutter**
November 2024	An overview of recycling concrete	**Mark Alexander**
December 2024	Assessing embodied CO_2 in buildings	**Martin Röck**

EAC Courses in 2024

The PhD courses continued to have great success throughout 2024. The traditional series of PhD courses before the RILEM Annual Week were held on-site in Toulouse, France this year.

On-site courses included the course series *Computational Methods for Building Physics and Construction Materials* in Darmstadt and two *LC3 Doctoral School* courses in Lausanne. The EAC is happy to co-sponsor a new PhD course series *"Hands on LC3 production"* that will be held in Cuba every year.

DATE	NAME	ATTENDANCE MODE	N° PARTICI-PANTS	CITY	COUNTRY	CONTACT NAME
05/02/2024	10th LC3 Doctoral School*	ON-SITE	51	Lausanne	Switzerland	**Karen Scrivener**
08/04/2024	Computational Methods for Building Physics and Construction Materials*	HYBRID	33	Darmstadt	Germany	**Eddie Koenders**
18/05/2024	Using the Multi-Level Assessment to Assess Condition of AAR-Affected Concrete	ON-SITE	13	Ottawa	Canada	**Cassandra Trottier**
15/07/2024	International Summer School: Additively Manufactured Concrete Structures	ON-SITE	27	Naples	Italy	**Freek Bos**
12/08/2024	Hydration and microstructure characterization of cementitious materials	ON-SITE	27	Lyngby	Denmark	**Malene Thostrup Pedersen**
21/08/2024	Earthen materials & construction	ON-SITE		Toulouse	France	**Alexandra Bertron**
21/08/2024	Corrosion, anti-corrosion of reinforced concrete	ON-SITE		Toulouse	France	**Alexandra Bertron**
21/08/2024	Cement hydration and Supplementary Cementitious Materials	ON-SITE		Toulouse	France	**Alexandra Bertron**
22/08/2024	Rheology and processing of fresh cement-based materials	ON-SITE		Toulouse	France	**Alexandra Bertron**
23/08/2024	Durability of concrete	ON-SITE		Toulouse	France	**Alexandra Bertron**
02/09/2024	LC3 Doctoral School 2024*	ON-SITE	39	Lausanne	Switzerland	**Karen Scrivener**
02/09/2024	Corrosion of reinforcing steel in concrete: theory, prevention, and repair	ONLINE	3	Merida	Mexico	**Carmen Andrade**
02/09/2024	Advanced courses on Modelling of Localized Inelastic Deformation	ON-SITE	21	Prague	Czech Republic	**Milan Jirasek**
06/10/2024	Hands on LC3 production	ON-SITE	26	Santa Clara	Cuba	**Fernando Martirena**
14/10/2024	Concrete Life Cycle – From cradle to grave	ON-SITE	8	San Nicoltás de los Garza	Mexico	**Alejandro Durán Herrera**
05/11/2024	Concrete Microscopy Course (CMC)*	ON-SITE	12	Delft	The Netherlands	**Iris Batterham**

*These courses will give to the participants CPD credits issued by ICT

RILEM Youth Council in EAC 2024

EAC continues to include RILEM Youth Council members during the Spring Convention and RILEM Annual Week meetings. RYC in collaboration with EAC will host an annual webinar similar to the ROC&TOK format to engage more young members in RILEM. The RILEM Youth Council peer-to-peer webinar series is on-going with five webinars in 2024 and the first RYC Symposium will be held in October 2025.

Educational Portal Online (EPON)

EAC launched the EPON project in October 2023 and the EPON page was revamped in August 2024.

Educational Portal ONline (EPON) can be considered a "shop window", or a web portal for educational resources on RILEM-relevant topics including chemistry, concrete, testing, etc. Links to the various educational resources are provided, which include webinars, talks, courses, etc. This list will include recorded EAC PhD seminars. This portal is aligned with the EAC objectives of broadening the education of PhD students and the professional community through promotion of interesting and informative webinars, talks, courses, and other relevant material.

Concrete life cycle – From cradle to grave, 14 October 2024, San Nicolás de los Garza, Mexico © Alejandro Durán Herrera

Concrete life cycle – From cradle to grave, 14 October 2024, San Nicolás de los Garza, Mexico ©Ole Mejlhede Jensen

LC3 Doctoral School, 2 September 2024, Lausanne, Switzerland ©Karen Scrivener

Hand on seminar on LC3, 6 October 2024, Santa Clara, Cuba ©Fernando Martirena

Publications

Of utmost importance for RILEM is the dissemination of information. This is facilitated through different channels such as the journal *Materials and Structures*, the Open Access journal *RILEM Technical Letters*, conference proceedings, STAR reports, technical reports, and RILEM Recommendations.

Materials and Structures

Materials and Structures: A Platform for Advancing Groundbreaking Research

Materials and Structures, RILEM's flagship journal, continues to provide a premier platform for innovative research that advances our understanding of materials and their roles in structural applications. The journal proudly supports work across RILEM's core themes: Material Processing and Characterization; Transport and Deterioration Mechanisms; Structural Performance and Design; Service Life and Environmental Impact Assessment; Masonry, Timber, and Cultural Heritage; and Bituminous Materials and Polymers.

Editorial Board Updates and Contributions

This year has brought exciting changes to our editorial board. We are thrilled to welcome 11 new associate editors: Akanshu Sharma, Anya Vollpracht, Branko Šavija, Didier Snoeck, José Norambuena-Contreras, Josée Duchesne, Katerina Varveri, Mirian Velay-Lizancos, Rob Wolfs, Terje Kanstad, and Wenqiang Zuo. At the same time, we bid farewell to Elisa Franzoni and Gaurav N. Sant, whose exceptional dedication and expertise have significantly enriched the journal.

We extend our gratitude to all past and current members of the editorial board, whose invaluable contributions have been instrumental in the journal's growth and success.

Enhanced Publication Processes

The editorial team has worked hard to streamline publication workflows, sharing a structured process with associate editors to address bottlenecks and ensure timely publication. This has led to significant improvements in efficiency:

- Desk rejection decisions now take an average of 24 days (down from 40 days), with a median of just 11 days.
- The average time to acceptance has been reduced to 150 days

(from 170), with a median of 90 days.

These advancements are a direct result of the dedicated efforts of our associate editors and the contributions of over 700 voluntary reviewers.

To address the challenge of finding qualified reviewers, we developed a shortlist of experts from RILEM Technical Committees and leveraged tools provided by Springer. These steps have streamlined the review process, ensuring timely evaluations by field experts.

Growing Our Reach

The journal's reach continues to grow, with over 824,929 full-text article downloads in 2024. This impressive figure reflects both the quality of the research published and the impact of targeted social media campaigns. We are deeply grateful to Springer and the RILEM community for their support in promoting the journal and expanding its audience.

Publication Metrics and Impact

This year, we have seen a significant rise in submissions, with 2,089 received by November 2024, compared to a total of 1,672 last year. This increase reflects the journal's growing reputation as a home for high-quality research aligned with RILEM's vision.

Our publication volume has grown too. With ten issues of Volume 57 (2024) released so far, we have published 223 articles compared to 180 in 2023. Our acceptance rate is now at 7%, highlighting our commitment to maintaining high standards.

Regarding impact, 2023 brought an ISI impact factor of 3.4, slightly down from last year's 3.8, but our rankings have improved across multiple fields. We have reached the 75th percentile in Construction and Building Technology and nearly the same in Civil Engineering. On Scopus, our progress is even more encouraging. Our CiteScore has risen to 6.4, with improved rankings across the board. We are now in the 82nd percentile for Building and Construction, the 79th percentile for Civil and Structural Engineering, and the 77th percentile for Mechanics of Materials. These metrics underscore that our work resonates with the field and reinforces *Materials and Structures* as a trusted source for impactful research. We are also proud to see a constant drop in uncited documents, a clear sign that our publications are making an impact.

Looking at the "Most Cited" articles of 2024, we observe a diverse mix of RILEM's core research areas: from Supplementary Cementitious Materials (SCM) and Alternative Binders to 3D Concrete Printing, Advanced Materials, Asphalt and Pavement Engineering, Concrete Durability, and Historic Preservation. Notably, 70% of

the "Most Cited" articles come from RILEM TC outputs—papers and recommendations—and these also dominate the "Most Downloaded" list, showcasing the impact of these contributions.

Spotlight on RILEM Technical Committees

Materials and Structures continues to be a vital platform for sharing the outcomes of RILEM Technical Committees. In 2024, the journal has published 16 TC reports: 3 from TC 281-CCC, 2 each from TC 299-TES and TC 282-CCL, and 1 each from TC 309-MCP, TC 283-CAM, TC 260-RSC, and TC 292-MCC. Additionally, one RILEM recommendation has been published from TC 289-DCM, and several others have been accepted for publication in early 2025.

This positive momentum is expected to continue, with 11 high-quality TC publications currently in the pipeline. We encourage all TC chairs and members to make *Materials and Structures* the home for their important contributions. The introduction of Topical Collections has made it even easier to showcase TC outputs. By grouping related papers together, regardless of when they were published, these collections have become a popular way for TCs to organize and present their work.

The journal hosts 12 active Topical Collections, including 6 launched this year. These new collections feature 4 newly published papers and 11 others currently under review. Additionally, 5 new papers have been added to pre-existing Topical Collections.

The following Topical Collections are open and actively contributing to the journal:

- **RILEM TC 266-MRP:** Round-Robin Rheological Tests on High-Performance Mortar and Concrete with Adapted Rheology (Bethune, France, 2018)
- **RILEM TC 267-TRM:** Development and Validation of Tests for Measuring the Reactivity of Supplementary Cementitious Materials
- **RILEM TC 275-HDB:** Testing Methods for Determining Hygrothermal and Capillary Properties of Vegetal Concrete (Opened in 2024)
- **RILEM TC 280-CBE:** Multiphase Characterization of Cold Bitumen Emulsion Materials (Opened in 2024)
- **RILEM TC 281-CCC:** Carbonation of Concrete with Supplementary Cementitious Materials (3 new papers in 2024)
- **RILEM TC 282-CCL:** Calcined Clays as Supplementary Cementitious Materials (2 new papers in 2024)
- **RILEM TC 295-FBB:** Fingerprinting bituminous binders using physico-chemical analysis (Opened in 2024)
- **RILEM TC 299-TES:** Thermal Energy Storage in Cementitious Composites (Opened in 2024)
- **RILEM TC 301-ASR:** Risk Assessment of Concrete Mixtures with ASR

Aggregates (Opened in 2024)

- **RILEM TC 303-PFC** and **TC 304-ADC:** Testing and Assessment of Printable and Printed Concrete (Opened in 2024)
- **RILEM TC 309-MCP:** Mineral Carbonation for the Production of Construction Materials (Opened in 2024)
- **RILEM TC 315-DCS:** Recent Advances in Data-Driven Concrete Science and Applications (Opened in 2024)

These collections, along with the exceptional research they contain, underscore *Materials and Structures'* commitment to innovation, collaboration, and impactful science within the RILEM community.

Outstanding Papers and Best Reviewer awards

As in previous years, the Editorial Board awarded the authors of the most scientifically interesting and innovative papers with ten Outstanding Paper Awards for the best papers published in 2024. Another important RILEM Award related to the journal is the Best Reviewer Award, granted annually by the Editorial Board to our best volunteer reviewers, who guarantee the high scientific quality of the published articles via a timely and rigorous review process.

Materials and Structures team: Luiza Miranda, Managing Editor, Arnaud Perrot, Deputy Editor in Chief, Giovanni Plizzari, Editor in Chief, Enrico Sassoni, Deputy Editor in Chief, at the RILEM Spring Convention, Milan, Italy, April 2024 ©Daniela Ciancio

Best Reviewers 2024

- **Konrad Mollenhauer,** University of Kassel, Germany
- **Nicola Baldo,** University of Udine, Italy
- **Pietro Giovanni Gambarova,** Politecnico di Milano, Italy
- **Sadegh Ghourchian,** University of Tehran College of Engineering, Iran
- **Junjie Wang,** Tsinghua University, China
- **Giovanni Muciaccia,** Politecnico di Milano, Italy
- **Johannes Mirwald,** TU Wien, Austria
- **Georgios Pipintakos,** University of Antwerp, Belgium
- **Andrea Graziani,** Università Politecnica delle Marche, Italy
- **Stefan Jacobsen,** Norwegian University of Science and Technology, Norway

List of the Outstanding Papers 2024

- **Characterisation, activation, and reactivity of heterogenous natural clays,** Amrita Hazarika, Liming Huang & Arezou Babaahmadi
- **Report of RILEM TC 281-CCC: A critical review of the standardised testing methods to determine carbonation resistance of concrete,** Susan A. Bernal et al.
- **Exploring physical hardening in bitumen based on 4 mm DSR measurements,** Haopeng Zhang et al.
- **Chloride-induced corrosion of steel in concrete—insights from bimodal neutron and X-ray microtomography combined with ex-situ microscopy,** Ueli M. Angst et al.
- **Water vapour permeability of inorganic construction materials,** Christopher Hall, Gloria J. Lo, Andrea Hamilton
- **Acid attack on hydrated cement: effect of organic acids on the degradation process,** H. Hilbig, T. Gutberlet & R. E. Beddoe
- **Parametric study on the decarbonization potential of structural system and concrete mix design choices for mid-rise concrete buildings,** Hisham Hafez et al.
- **Verification of the presence of superabsorbent polymers (SAP) in fresh concrete: results of an interlaboratory study of RILEM TC 260-RSC,** Mateusz Wyrzykowski et al.
- **Rehabilitating instead of rebuilding aged or damaged pre fabricated concrete buildings for reducing CO_2 emissions: the case of Ukraine,** Viacheslav Troian, Volodymyr Gots, Robert J. Flatt, Ueli Angst
- **Improving mechanical properties and sustainability of high strength engineered cementitious composites (ECC) using diatomite,** Xuezhen Zhu, Minghu Zhang, Jinyan Shi, Yiwei Weng, Çağlar Yalçınkaya, Branko Šavija

RILEM Technical Letters

The 9th volume of *RILEM Technical Letters* opened in 2024, and the journal continues to stand out as one of the top-ranked (Q1) journals in Engineering, Materials Science, and Building and Construction, according to the SCImago Journal Rank indicator. This recognition highlights the journal's growing impact and the value of its contributions to the field.

Citations and Impact

With over 3,600 citations to date (only from sources indexed in Scopus), articles in *RILEM Technical Letters* have been cited an average of 20 times per article. Citations have been steadily increasing every year, and in 2024 alone, the journal was cited around 820 times. In 2024, *RILEM Technical Letters* published 15 high-quality papers, reflecting the ongoing relevance and interest in the topics it addresses.

The most cited articles have focused on cutting-edge topics, including Digital and Advanced Technologies in Concrete, Alternative and Sustainable Cementitious Materials, Durability and Performance of Concrete, and Rheology and Material Properties.

High Visibility and Downloads

As an open-access journal, *RILEM Technical Letters* ensures that its content is freely available, enabling a broader audience to engage with its research. This accessibility is reflected in the number of downloads, which continues to grow. January 2024 set a record with almost 9,000 downloads in a single month. The most downloaded papers span diverse topics, including Alternative and Sustainable Cementitious Materials, Digital and Advanced Technologies in Concrete, Regional Perspectives and Sustainability Goals, Biotechnological and Nature-Inspired Innovations, and Specialized Concrete Applications.

A Platform for a Wide Range of Contributions

The journal continues to publish its flagship articles—short, high-quality papers by leading experts that provide insights into emerging trends, research needs, and pressing challenges.

Building on this foundation, *RILEM Technical Letters* has broadened its scope to include new contributions from RILEM Technical Committees (TCs). Highlights include mission statements and research needs from newly formed TCs, such as the opening letters from TC 320-PEM (Processing of earth-based materials: current situation and challenges ahead) and TC 317-ACP (Active Control of Properties of Fresh and Hardening Concrete) as well as synthesis papers from closing TCs, exemplified by the closing letter from TC 279-WMR (Summary of RILEM Technical Committee TC 279-WMR activities).

A new initiative also focuses on featuring work from RILEM-sponsored conferences. In addition to extending awarded conference papers into full journal articles, the journal now invites topical summaries from conference chairs and scientific committees. For example, the outstanding contributions from the 11th International Congress and the 25th Technical Meeting of the Argentine Association of Concrete Technology are currently under review.

Spotlight on RILEM Excellence

The journal continues its tradition of celebrating the work of RILEM Colonnetti Medallists. In 2024, *RILEM Technical Letters* proudly published Rob Wolfs' paper, "The status quo of 3D concrete printing: are we there yet?"

An Invitation to Contribute

RILEM members are warmly invited to propose papers. To get started, simply send a short abstract to the editor-in-chief, Alexandra Bertron, or any member of the editorial board. Once your topic is approved, you will be invited to submit your full paper.
We look forward to welcoming you to *RILEM Technical Letters*. Visit us at letters.rilem.net to learn more and explore the exciting research being published.

FYI

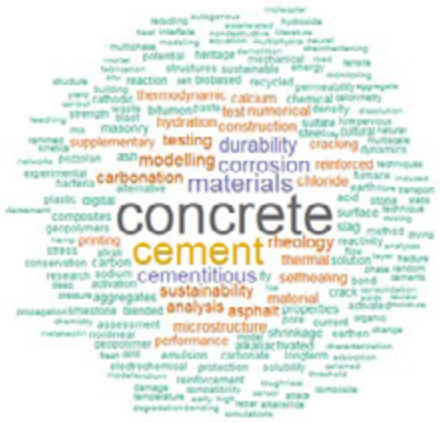
Most downloaded articles:

- Bernard et al. MgO-based cements – Current status and opportunities
- Wangler et al. Digital Concrete: Opportunities and Challenges
- Snellings Assessing, Understanding and Unlocking Supplementary Cementitious Materials
- Zajac et al. CO_2 mineralization of demolished concrete wastes into a supplementary cementitious material – a new CCU approach for the cement industry
- Perrot et al. Extrusion of cement-based materials - an overview
- Villagrán-Zaccardi et al. Overview of cement and concrete production in Latin America and the Caribbean with a focus on the goals of reaching carbon neutrality
- Dowdy et al. Biomineralization in cement and concrete research
- Sonebi et al. Pervious Concrete: Mix Design, Properties and Applications
- Kulik et al. CemGEMS – an easy-to-use web application for thermodynamic modelling of cementitious materials
- Amziane et al. Overview on Biobased Building Material made with plant aggregate

Most cited articles (Scopus):

- Digital concrete: Opportunities and challenges – 66

- Assessing, understanding and unlocking supplementary cementitious materials – 46
- Recent update on the environmental impact of geopolymers – 32
- Extrusion of cement-based materials - an overview – 25
- Corrosion of steel in carbonated concrete: Mechanisms, practical experience, and research priorities – A critical review by RILEM TC 281-CCC – 22
- CO_2 mineralization of demolished concrete wastes into a supplementary cementitious material – a new CCU approach for the cement industry – 21
- Measuring rheological properties of cement pastes: Most common techniques, procedures and challenges – 20
- Predicting salt damage in practice: a theoretical insight into laboratory tests – 20
- CemGEMS – An easy-to-use web application for thermodynamic modelling of cementitious materials – 16
- Overview on bio-based building material made with plant aggregate – 16



Word cloud of the topics published in *RILEM Technical Letters*

Proceedings, STARs & Recommendations

Besides the two journals, RILEM also publishes proceedings, state-of-the-art reports (STAR), and recommendations. 2024 has been a successful year in this respect, with ten proceedings, and one Recommendation.

Proceedings published by RILEM Publications in 2024

- PRO 136 – First RILEM Workshop on "Lime-based materials for repairing Historic Structures, 3-4 February 2022, Thessaloniki, Greece; Eds. Ioanna Papayianni & Jan Válek

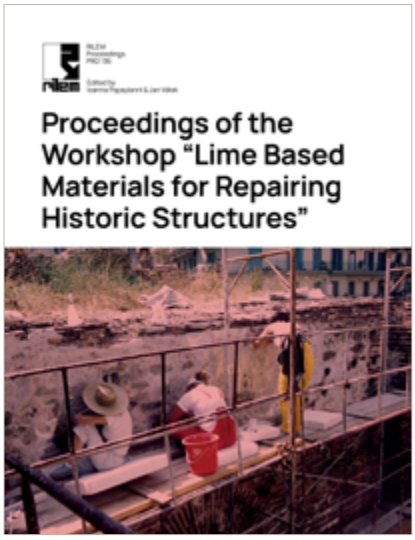
Proceedings published by Springer in 2024

- Smart & Sustainable Infrastructure: Building a Greener Tomorrow - Proceedings of the 1st Interdisciplinary Symposium on Smart & Sustainable Infrastructure (ISSSI 2023); Nemkumar Banthia, Salman Soleimani-Dashtaki, Sidney Mindess (Eds.); Vol. 48
- Proceedings of the 17th International Conference on Alkali-Aggregate Reaction in Concrete - ICAAR 2024 - Volume I; Leandro F.M. Sanchez, Cassandra Trottier (Eds.) 2024; Vol. 49
- Proceedings of the 17th International Conference on Alkali-Aggregate Reaction in Concrete - ICAAR 2024 - Volume II; Leandro F.M. Sanchez, Cassandra Trottier (Eds.); Vol. 50
- Pavement, Roadway, and Bridge Life Cycle Assessment, 2024; Gerardo W. Flintsch, Eugene A. Amarh, John Harvey, Imad L. Al-Qadi, Hasan Ozer, Davide Lo Presti (Eds.); Vol.51
- Second RILEM International Conference on Earthen Construction - ICEC 2024; Christopher Beckett, Ana Bras, Antonin Fabbri, Emmanuel Keita, Celine Perlot-Bascoules, Arnaud Perrot (Eds.); Vol.52
- Fourth RILEM International Conference on Concrete and Digital Fabrication - Digital Concrete 2024; Dirk Lowke, Niklas Freund, David Böhler, Friedrich Herding (Eds.); Vol. 53
- Transforming Construction: Advances in Fiber Reinforced Concrete - XI RILEM-fib International Symposium on Fiber Reinforced Concrete (BEFIB 2024); Viktor Mechtcherine, Cesare Signorini, Dominik Junger (Eds.); Vol. 54
- Proceedings of the RILEM Spring Convention and Conference 2024 - Volume I; Liberato Ferrara, Giovanni Muciaccia, Niki Trochoutsou (Eds.); Vol. 55
- Proceedings of the RILEM Spring Convention and Conference 2024 - Volume II; Liberato Ferrara, Giovanni Muciaccia, Davide di Summa; Vol. 56
- Second International Workshop on the Use of Biomaterials in Pavements - Workshop Biomaterials 2024; Kamilla Vasconcelos, Ana Jiménez del Barco Carrión, Emmanuel Chailleux, Davide Lo Presti (Eds.); Vol. 58
- Proceedings of the 7th International Conference on Concrete

Repair, Rehabilitation and Retrofitting - ICCRRR 2024; Hans Beushausen, Joanitta Ndawula, Mark Alexander, Frank Dehn, Pilate Moyo (Eds.); Vol. 59

Recommendation published in 2024

- Recommendation of RILEM TC 289-DCM: Guideline for designing and operating long-term marine exposure sites, March 2024



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RILEM Honours and Awards

RILEM annually awards the following recognised distinctions:

- **Robert L'Hermite Medal:**

The medal is awarded to a researcher under the age of 40, who has made an exceptional scientific contribution to the field of construction materials and structures.

- **Gustavo Colonnetti Medal:**

Gustavo Colonnetti Medal: Up to two Gustavo Colonnetti Medals are awarded to researchers under the age of 35, who have made an outstanding scientific contribution to the field of construction materials and structures.

Membership in the Association is not required to qualify for either medal.
The medal jury for 2024 was composed of Enrico Sassoni (University of Bologna, Italy) as TAC Chair, Alexandra Bertron (INSA Toulouse, France) as Editor-in-Chief of *RILEM Technical Letters,* Hassan Baaj (University of Waterloo, Canada) and Pagona-Noni Maravelaki (Technical University of Crete, Greece) as jury members appointed by TAC.

2024 Robert L'Hermite Medallist

Dr Jose Norambuena-Contreras,
Senior Lecturer in Civil Engineering at Swansea University, United Kingdom.

Dr Jose Norambuena-Contreras was formerly an Associate Professor at the University of Bio-Bio, Chile, where he was head of the Research Group LabMAT. He has been working at several prestigious universities and research centers in Spain, Switzerland, United Kingdom, The Netherlands, and China.
The Robert L'Hermite medal was awarded to Dr Norambuena-Contreras in recognition of his research activity on self-healing bituminous materials for more sustainable and resilient pavement infrastructure. His internationally recognized expertise and leadership are testified by a very strong publication record, his role as Principal Investigator in several publicly and privately funded research projects and his involvement in scientific committees and evaluation panels at the national and international levels. He has been highly active within RILEM, participating in multiple technical committees and contributing to the Latin America

Group, "Lat-RILEM." He also previously held the role of Regional Convener for Latin America.

Learn more about Dr Jose Norambuena-Contreras:

- Interview with Dr Jose Norambuena_ENGLISH
- Entrevista con Dr Jose Norambuena_SPANISH
- Lecture "Advances in self-healing bituminous materials for more sustainable and resilient roads"

2024 Gustavo Colonnetti Medallists

Rob Wolfs receiving his medal from Enrico Sassoni, TAC Chair, during the RILEM Spring Convention, Milan, Italy, April 2024 ©Daniela Ciancio

Dr Rob Wolfs,
Assistant Professor in the Built Environment department of the Eindhoven University of Technology (TU/e), The Netherlands.

After obtaining his PhD at TU/e, Dr Rob Wolfs spent visiting periods in France and Denmark, which helped him develop a strong international network of collaborations, which include research groups and industrial stakeholders.

Dr Wolfs research mainly aims to develop novel digital technologies to design structures with higher efficiency and lower environmental impact. In light of his expertise in robotics for construction and large-scale 3D printing, documented by several highly cited publications, he has been invited to join the scientific committee of international conferences and to give numerous invited talks and keynote talks in Europe, Asia, Africa, and the USA. Dr Wolfs also has a strong record of supervision and mentoring of undergraduate and graduate students and has been invited to communicate his research to the general public through news articles, TV, and radio programs. Dr Wolfs has also been very active in RILEM by taking part in several technical committees and contributing to state-of-the-art reports and review papers on concrete 3D printing and related digital fabrication technologies.

Learn more about Dr Rob Wolfs:

- Interview with Dr Rob Wolfs
- Lecture "The status quo of 3D concrete printing: are we there yet?" and article in RTL

Dr Zhenming Li,
Marie Skłodowska-Curie Postdoctoral Fellow of the University of Sheffield, United Kingdom.

Dr Zhenming Li received his PhD in China and worked for several years as a postdoc in the Netherlands and Switzerland. His research activity mainly focuses on understanding, predicting, and mitigating the autogenous shrinkage of alkali-activated materials by combining sophisticated experiments and numerical modelling. The impact of his research is documented by the high number of citations received by his numerous publications, as

well as by the fact that he has been invited to give lectures at several international events. His involvement in RILEM includes his participation in several technical committees, and his activity as a lecturer within a doctoral course organized during an annual RILEM week.

Learn more about Dr Zhenming Li:

- Interview with Dr Zhenming Li
- Lecture "Autogenous shrinkage of alkali-activated materials" and article in RTL

RILEM PhD Travel Grants

Implemented in 2018, this merit-based award is given every year at the RILEM Annual Week to PhD students under the age of 35 and residing in any of the countries where a special discount on the RILEM membership fee is applicable.

The PhD Travel Grant awards were granted to:

- V.A Anupama, Indian Institute of Technology Madras, India
- Ninan Chinnu Mariam, TKM College of Engineering, India
- Morwal Tarun, Delhi Technological University, India
- Gamieldien Areej, University of Cape Town, South Africa
- Ferreira Moreira de Souza Luiza, Federal University of Uberlandia, Brazil
- Salas Jesus López, Saltillo Unit, Mexico
- Delbianco Natalia, Universidad Nacional del Sur, Argentina

2024 PhD Travel grant awardees and 2023 awardee: Hao Yu, College of Civil Engineering Hunan University, China during the RILEM Annual Week, Toulouse, France, August 2024 ©anaisbertrand.photographe

2024 Fellows

Prof. Susan BERNAL LOPEZ. *University of Bath, United Kingdom*
Has been nominated as a RILEM Fellow, especially in recognition of her dedication to RILEM as Technical Activities Committee expert, her exemplary leadership as Deputy Chair of Technical Committees, Associate Editor of *RILEM Technical Letters*, as well as her active participation to several Technical Committees. She is also the 2016 Gustavo Colonnetti Medallist and 2022 Robert L'Hermite Medallist.

Prof. Klaartje DE WEERDT. *NTNU, Norway*
Has been nominated as a RILEM Fellow, especially in recognition of her dedication to RILEM as Technical Activities Committee expert, her exemplary leadership as Deputy Chair of a Technical Committee, Associate Editor of *RILEM Technical Letters*, as well as her active participation to several Technical Committees. She is also the 2021 Robert L'Hermite Medallist.

Prof. Daman K. PANESAR. *University of Toronto, Canada*
Has been nominated as a RILEM Fellow, especially in recognition of her dedication to RILEM as Technical Activities Committee Cluster Convener and Bureau member, her exemplary leadership as Associate Editor of *RILEM Technical Letters*, as well as her active participation to several Technical Committees.

Prof. Augusto CANNONE FALCHETTO. *University of Padua, Italy*
Has has been nominated as a RILEM Fellow, especially in recognition of his dedication to RILEM as Chair of a Technical Committee, his exemplary leadership as *Materials and Structures* best reviewer 2020 and 2023 as well as his active participation to several Technical Committees. He is also the 2019 Robert L'Hermite Medallist.

Dr Emmanuel CHAILLEUX. *University of Gustave Eiffel, France*
Has has been nominated as a RILEM Fellow, especially in recognition of his dedication to RILEM as Associate Editor of *RILEM Technical Letters*, his exemplary leadership as Chair and Deputy Chair of Technical Committees, as well as his active participation to several Technical Committees.

Prof. Eshan V. DAVE. *University of New Hampshire, United States*
Has been nominated as a RILEM Fellow, especially in recognition of his dedication to RILEM as Bureau member, Technical Activities Committee Cluster Convener, his exemplary leadership as Deputy Chair of Technical Committees, as well as his active participation to several Technical Committees.

Dr Miguel Ângelo DIAS AZENHA. *University of Minho, Portugal*
has been nominated as a RILEM Fellow, especially in recognition of his dedication to RILEM as Associate Editor of RILEM Technical Letters, his exemplary leadership as Chair and Deputy Chair of Technical Committees, as well as his active participation to several Technical Committees.

Prof. Enrico SASSONI. *University of Bologna, Italy*
has been nominated as a RILEM Fellow, especially in recognition of his dedication to RILEM as Chair of the Technical Activities Committee, Cluster Convener of the Technical Activities Committee, Deputy Editor in Chief of *Materials and Structures* Journal and Associate Editor of *RILEM Technical Letters*, as well as his active participation to several Technical Committees. He is also the 2017 Gustavo Colonnetti Medallist.

Prof. Erik SCHLANGEN. *Delft University of Technology, The Netherlands*
has been nominated as a RILEM Fellow, especially in recognition of his dedication to RILEM as Honorary President 2018, his exemplary leadership as Chair and Deputy Chair of Technical Committees, as well as his active participation to several Technical Committees.

Dr Guang YE. *Delft University of Technology, The Netherlands*
has been nominated as a RILEM Fellow, especially in recognition of his dedication to RILEM as Associate Editor of *Materials and Structures*, his exemplary leadership as Chair of a Technical Committee, as well as his active participation to several Technical Committees.

2024 RILEM Honorary Member

Prof. Ravindra GETTU. *Indian Institute of Technology Madras, India*
Has been nominated as a RILEM Honorary member in recognition of his exemplary leadership as RILEM President, Technical Activities Committee Chair and Cluster Convener, along with serving as the Deputy Chair of Technical Committees and in Bureau. He was nominated as RILEM Fellow in 2012 for his continuous and dedicated effort to research and RILEM, as well as his active participation to several Technical Committees.

International Partnerships

RILEM has established strategic partnership agreements with several national and international organizations, fostering valuable exchanges of organizational, technical, and educational insights. These collaborations facilitate the global dissemination of state-of-the-art knowledge in construction and building materials. Several partnerships lead to joint technical activities, webinars, and publications, as well as shared workshops and conferences, all of which RILEM greatly values.

New partnerships were signed in 2024 with:

1. International Bamboo and Rattan Organization (INBAR)
2. Global Cement and Concrete Association (GCCA)
3. China Concrete and Cement-based Products Association (CCPA)
4. European Mortar Industry Organisation (EMO)
5. Asian Concrete Federation (ACF)
6. Society of Cement and Concrete Researchers in Nigeria (SCCRiN)

Existing partnerships showed active involvement, in particular in Latin America (see detail page 15 (RILEM Worldwide / In Latin America region)) and with the Institute of Concrete Technology (ICT), UK. For several years, participants to RILEM ROC&TOK webinars have been offered CPD credits issued by ICT (CPD – Continuing Professional Development). This arrangement extended to several RILEM courses in 2024.

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GLOBE

The Global Consensus on Sustainability in the Built Environment - Recent news

The Joint Committee on the GLOBE Consensus (GLOBE) is a committee dedicated to reducing Green House Gas (GHG) emissions from construction. GLOBE has been brought to life by six leading international construction engineering associations, responsible for technical guidelines, standards, innovation, research, and education in construction at the international level for more than 50 years. They represent more than 150 nation states and 5000+ experts. Hence, the backbone of GLOBE is comprised by the knowledge represented by the associations with respect to the entire value chain of construction. This includes the expertise of material scientists, structural safety and resilience scientists, consulting engineers, contractors, owners and operators, experts in standards and codes, as well as policymakers.
The tenure of JCGC's inaugural Chair, Michael Havbro Faber, concluded on June 30, 2024. A solicitation for nominations to fill his position was distributed in January 2024. Following a series of interviews with selected candidates, the Liaison Committee appointed on June 3, 2024, two new leaders, for a three-year term: Prof. David Ruggiero as the Chairperson and Dr Edmundo de Werna as the Globe Senior Advisor.

- **David Ruggiero** is assistant Professor and Head of the Concrete Behaviour and Structural Design Laboratory (CONSTRUCT) at EPFL. He leads research projects and initiatives aimed at promoting sustainable construction practices, with activities including the structural-scale testing of low-carbon concretes, the development of methods for assessment of existing structures, and structural optimization.

"I am deeply honoured and excited to chair the Joint Committee on the GLOBE Consensus. Our mission to reduce greenhouse gas emissions in construction is both critical and achievable. Leveraging our collective expertise and global network, GLOBE can lead the green transition of the built environment, ensuring a sustainable future for generations to come." David Ruggiero

- **Edmundo de Werna** is part-time Associate Professor at the School of the Built Environment and Architecture, London South Bank University, and owner of own consultancy company. He possesses extensive experience at the United Nations, a vast network of connections, and proven fundraising expertise.

"I am very pleased and honoured to be appointed Senior Advisor for the Globe Consensus. The built environment is responsible for a large share of environmental problems in the planet. The Globe Consensus focuses on a specific and important element of the built environment: construction structures and their value chain, which include a significant amount of embedded CO_2. Therefore, the Consensus covers a specific and important niche in the battle for a better environment. I am sure that, together with the newly appointed Chairman, we shall be able to help the built environment sector to make considerable progress in the frame of our mandate."
Edmundo de Werna

Their roles officially started on 1st July 2024, with as objective the development of fundamental new knowledge in support of unbiased and science-based decision making on how to achieve sustainability in the built environment at global scale.

A first online meeting was organised in November 2024 to introduce the new Chair and Senior Advisor to GLOBE members, update on GLOBE actions, make some presentations from within the organization and prepare the in-person ordinary meeting, which was held on 13-14 January 2025, in Lausanne, Switzerland.

Membership in GLOBE is voluntary and free. To join this global network and support its mission, please complete the registration.

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Upcoming major events

in 2025 and beyond

8th RILEM Spring Convention

& Conference on durability of building materials and systems in the transportation infrastructure, 22-28 March 2025, Mendrisio, Switzerland

The objective of this conference is to bring together specialists of the transportation infrastructure, concrete, asphalt, steel, timber, stones / mortar and polymer systems, with the goal of highlighting the strengths and weaknesses of the materials and construction systems with respect to their durability and sustainability.

79th RILEM Annual Week

& ICONS 2025 International Conference on Advances in Engineering and Technology for Sustainable Development, 21- 29 August 2025, Hanoi, Vietnam

ICONS 2025 will aim to present and discuss the recent advances in materials and structures research to meet the great challenges of the 21st century and beyond to:

- Enable sustainable, safe, and durable construction (new and existing buildings and strategic infrastructures).
- Promote the circular construction / economy.
- Improve the energy efficiency of construction.
- Favour the quality and comfort of building (indoor air quality and comfort).

Future RILEM Events

YEAR	SPRING CONVENTIONS	ANNUAL WEEKS
2026	**Ghent, Belgium** *(Nele De Belie)*	**Nairobi, Kenya** *(Wolfram Schmidt)*
2027	**Thessaloniki, Greece** *(Maria Stefanidou)*	**Bali, Indonesia** *(Puput Risdanareni)*

RILEM would like to thank all contributors who made this 2024 Annual Report possible.

Secretariat General

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