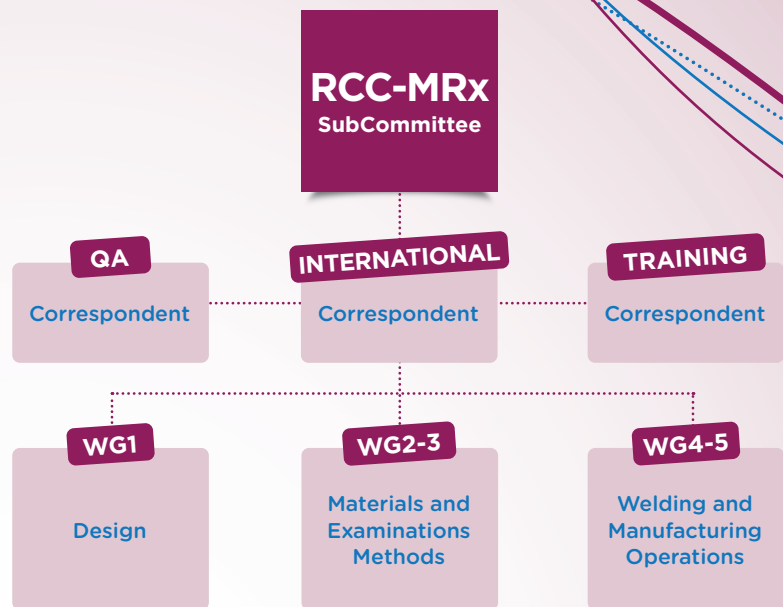


About AFCEN Subcommittee RCC-MRx

Design and Construction Rules for Mechanical Components of nuclear installations: high temperature, research and fusion reactors



Subcommittee organization

ABOUT 70 EXPERTS ARE PARTICIPATING TO THE SUBCOMMITTEE OR EITHER OF THE 3 WORKING GROUPS:

- WG Rx1 Design
- WG Rx2-3 Materials and examinations methods
- WG Rx4-5 Welding and manufacturing operations

Available Editions and publications

RCC-MRx 2012:

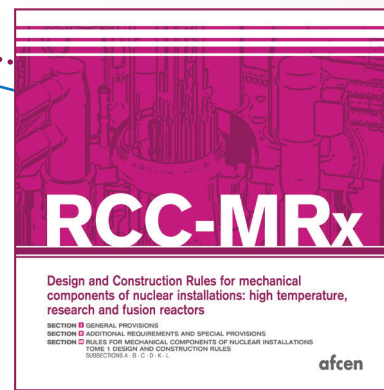
First edition since the merging of RCC-MR Code (devoted to high temperature reactors and Iter Vacuum Vessel) and RCC-MX Code (devoted to research reactors and related devices).

RCC-MRx 2015:

Second edition of RCC-MRx devoted to the integration of the feedback of the users with such as fabrication and examination of 6061-T6 parts, introduction of 800 alloy, work on Eurofer material or Harmonization actions (consistency with other sets of rules).

RCC-MRx 2018:

Third edition of RCC-MRx still with the aim to answer to users needs (introduction of 18 MND5, update of KV for 316L, completion of Eurofer properties with irradiated data) but also to evaluate to cover all GENIV type reactors (opening to innovative coolants).



RCC-MRx MECHANICAL COMPONENT

RCC-MRx 2022:

Fourth edition of RCC-MRx integrates the feedback of the use of the 2018 edition (and previous editions) especially the feedback coming from the construction (on-going) of the Jules Horowitz Reactor. The code also tries to answer to the needs of GENIV and fusion communities, and implements the results of the CEN Workshop 64 that ended in 2022.

Key issues

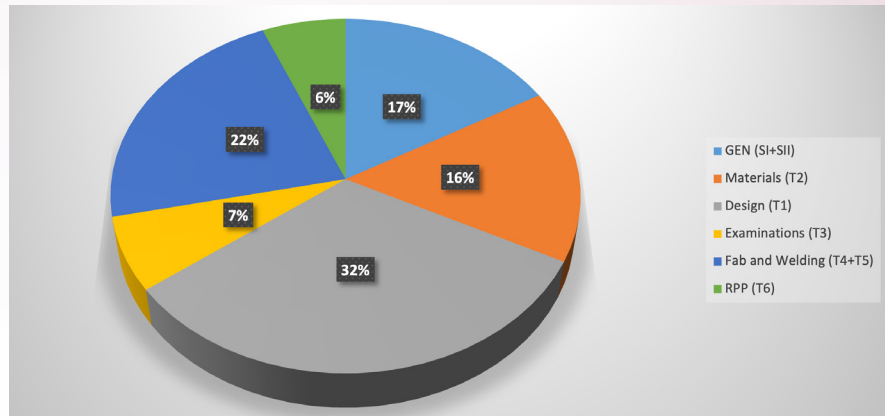
TO INTEGRATE THE DESIGN AND CONSTRUCTION FEEDBACK OF:

- Jules Horowitz Reactor (JHR)
- Sodium Fast Reactors feedback (PFBR, ASTRID...)
- MYRRHA and GEN IV community
- ITER and fusion community

Last Edition Outline

THE 2022 EDITION MAKES THE SYNTHESIS OF FOUR YEARS OF DEVELOPMENTS (MORE THAN 230 MODIFICATION FILES), ALL PARTS OF THE CODE ARE UPDATED:

REPARTITION OF CODE MODIFICATIONS



REC

- Opening to an alternative use of the code with a replacement of specific parts (for instance quality management) by other standard (NQA-1, ISO 19443)
- alignment with RCC-M for ESPN compliance

T1

- Improvements of creep-fatigue rules to minimize over-conservatism

T2

- Complete reorganization of the Tome 2 to clarify its use by gathering in a single place the procurements according to standards

T1

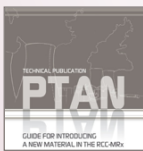
- Creation of a Subsection G dedicated to core internals

T4 & T5

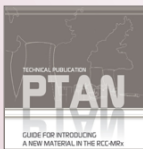
- Feedback from JRH is integrated in welding and fabrication parts

T6

- Introduction of the CuCrZr grade (RPS and A3) in RPP23
- Introduction of the small punch tests
- Creation of a Subsection E for metallic containment



RCC-MRx TECHNICAL PUBLICATION: guideline for introduction of new materials in RCC-MRx



RCC-MRx TECHNICAL PUBLICATION: supplements to the guide for seismic analysis of components - recommendations for the seismic design of the equipment according to appendix A1 of the RCC-MRx

>>> NEXT EDITION: 2025

Subcommittee Chair

Cécile PETESCH

CHAIRWOMAN

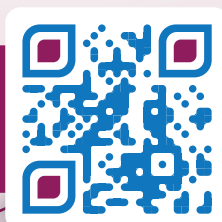
Thierry LEBARBE

DEPUTY CHAIR

RCC-MRx

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