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## Steps to codification of CuCrZr alloy for fusion need in RCC-MRx 2022 edition

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## **Steps to codification of CuCrZr alloy for fusion need in RCC-MRx 2022 edition**

The 2022 edition of the RCC-MRx (rules for the design of mechanical components for advanced, fusion and research reactors) was issued by the end of the 2022 by Afcen.

In this edition, for the second time, a material relevant for fusion applications was introduced into the code: CuCrZr alloy, considered in ITER for many applications, in particular for the ex-vessel power waveguides. First time was "Eurofer" (reduced activation ferritic martensitic steel) for blanket application in ITER and DEMO reactors introduced in RCC-MRx from 2012 edition.

The developed methodology of introduction of a material has been applied to the CuCrZr alloy. Are covered today in the code:

- The reference procurement specification of forgings of CuCrZr alloy based on standard EN 12420;
- the physical and mechanical properties associated to this procurement.

This paper describes the different steps of the introduction of the CuCrZr alloy in the RCC-MRx code as well as further needs the rule being today in a probationary status.