

VVER 1000 FUEL ASSEMBLY

Innovative 100% European own-design development

Framatome's VVER-1000 Fuel Assembly is a fully European sovereign solution for VVER operators, combining strict compliance with advanced technology. Designed for safety, reliability, and performance, it ensures secure fuel supply and long-term operability.

Challenge

VVER-1000 operators face growing pressure to secure fuel supply, comply with stricter European safety standards, and maintain long-term operability amid geopolitical and sustainability constraints—without adding technical risk. This calls for fuel solutions that are European-designed, sovereign, and optimized for safety, reliability, and lifecycle performance, ensuring operational continuity and independence from external uncertainties.

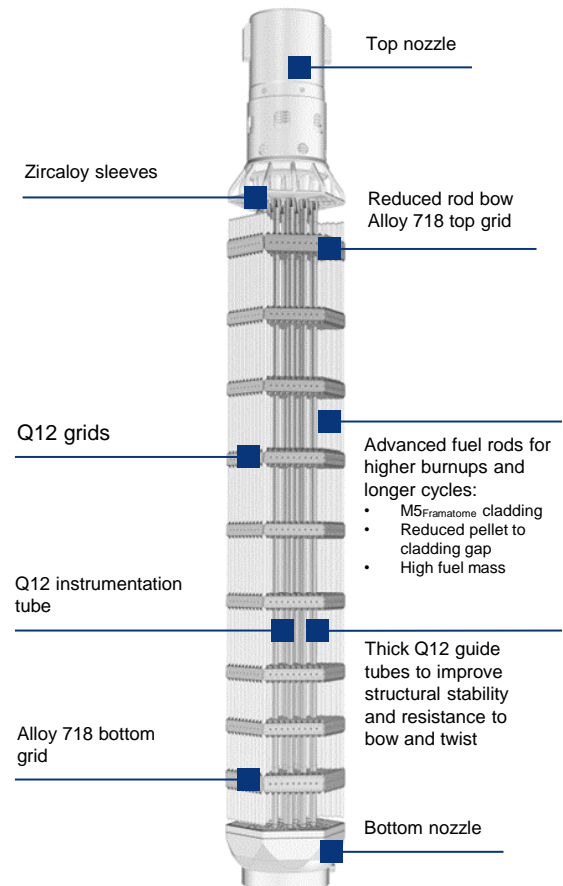
Solution

To meet the needs of European VVER operators, Framatome has developed its own-design fuel assembly for VVER-1000 reactors. The detailed design phase has been completed, and full-scale testing is now being prepared. The fuel assembly design complies with strict standards and incorporates cutting-edge technologies.

Customer benefits

Our 100% European sovereign solution provides customers with a diversified fuel supply, including reliable shipment services. We offer advanced debris filtering with superior efficiency to ensure optimal performance. Our **PROtect Enhanced Accident Tolerant Fuel (E-ATF) technology** increases safety margins in accident scenarios and ensures compliance with European Taxonomy requirements. PROtect E-ATF features an advanced and mature cladding solution consisting of a dense chromium layer on the surface of the cladding tube.

With enhanced reliability and robustness, our superior rod support protects against grid-to-rod fretting and ensures increased margins for rod insertion and fuel assembly integrity. Additionally, the well-balanced fuel assembly stiffness delivers excellent bow performance.



Technical Information

Advanced Fuel Assembly components

- Q12 spacer and mixing grids and Alloy 718 end grids
- Proven top nozzle
- Top & bottom nozzles with demountable connections
- Enhanced anti-debris filter

Fuel rod innovations

- M5_{Framatome} cladding with optional Cr-doped pellets / PROtect E-ATF technology for Taxonomy compliance

Unique spacer grid design

- Individual hexagonal cells with 6-line contact rod support (spring)
- Ensures performance in grid-to-rod fretting scenarios

Contact : sales-fuel@framatome.com
www.framatome.com

© 2025 Framatome. All rights reserved. This document is provided for informational purposes only and does not constitute a contractual offer or commitment. Product features, specifications, and availability are subject to change without notice. While every effort has been made to ensure the accuracy of this information, Framatome cannot be held liable for any errors or omissions. For the most current information, please contact Framatome.

**Your performance
is our everyday commitment**