

framatome



Framatome-Nukote

Liner Solutions

framatome

QuarTec

NUKOTE
COATING SYSTEMS

AEGIS™
LINING SYSTEMS



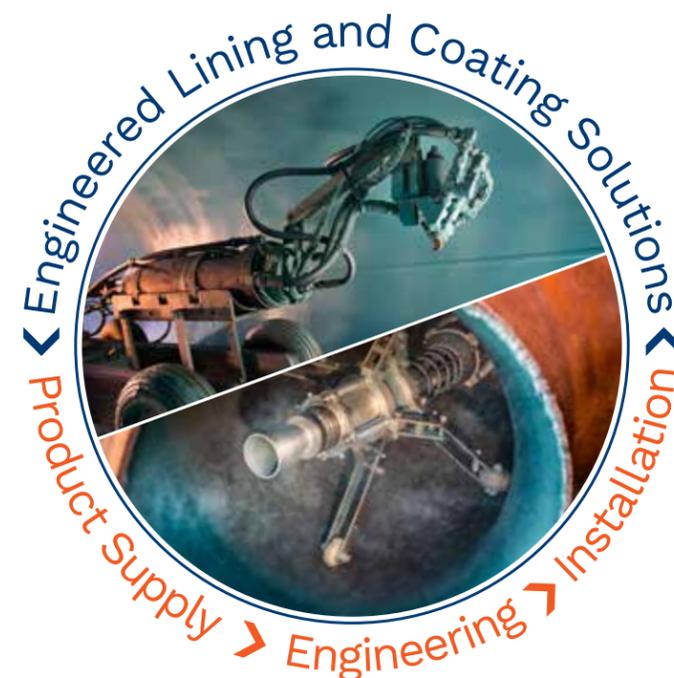
Innovative turnkey solutions for buried piping and component rehabilitation

The Framatome-Nukote liner solutions combine ultra-fast elastomeric product chemistries with our exclusive QuarTec molecular topcoat to bring a proven solution to the energy industry for buried piping rehabilitation. It provides a competitive alternative to CIPP, PVC, CFRP and other slip lining technologies. Our liner solutions are sprayed in place (SIP) with no loss of functionality, delivering a completely seamless system. Framatome's experience in modification and structural engineering, system design and hydraulic analysis comes together to support all aspects of your buried piping. Our liner solutions are suitable for all substrates common to collection, storage and delivery of liquid systems.

Framatome-Nukote liner solutions provide fast-track installations, without excavation and with minimal system outage durations. Remote use of our robotics delivers consistent liner thicknesses, expedited project delivery and significantly reduced confined-space manpower costs. Our liner solution formulations are interchangeable dependent on the effluent, providing versatility unmatched by conventional liners. No matter which elastomeric product is utilized, the robotic application process does not change, allowing for use in all possible effluent types.

Framatome's QuarTec molecular topcoat provides long-lasting durability and surface protection. The clear hydrophobic nanotechnology bonds with our elastomeric products to form a liner that will stand up to harsh environments. The molecular topcoat, a first-of-a-kind and proven solution with unique functional characteristics, is the product of radical breakthroughs in coatings technology. Our innovative chemical technologies multiply the inherent resistance of quartz, expanding the historical spectrum of protection. QuarTec protects against a comprehensive range of damaging environmental factors at the nanoscale level, filling microscopic pits and voids and offering superior profile coverage. Cross-linked chemical bonds give QuarTec unmatched adhesion, avoiding factors that cause common coating failures, to protect your most valuable assets.

Framatome-Nukote is your trusted full-service provider of engineered lining and coating solutions to mitigate your aging buried piping concerns.



A cutting-edge liner technology which:

- ↑ Increases plant reliability
- ↑ Increases performance longevity
- ↓ Reduces maintenance costs
- ↓ Reduces operational risks

Aegis-QuarTec liners are:

- Installed using high pressure, heated, plural component proportioning equipment. The applications are performed either manually or utilizing Framatome-Nukote's innovative in-pipe robotics.
- Widely used in North America and globally. Major project references are available on request.
- Installed to specifications which meet both the client's requirements and relevant government standards including all AWWA variations, ANSI NSF and ASTM. Qualification to ASME code and regulatory requirements supported by Framatome's vast engineering capabilities.
- Suitable for new construction and rehabilitation on all substrate types.
- Ideal for raw water systems and structures, such as service water systems, fire protection systems and intake bay/cooling tower structures.
- Can be designed to provide structural integrity with minimal hydraulic impact on the system.

Tank Foundations



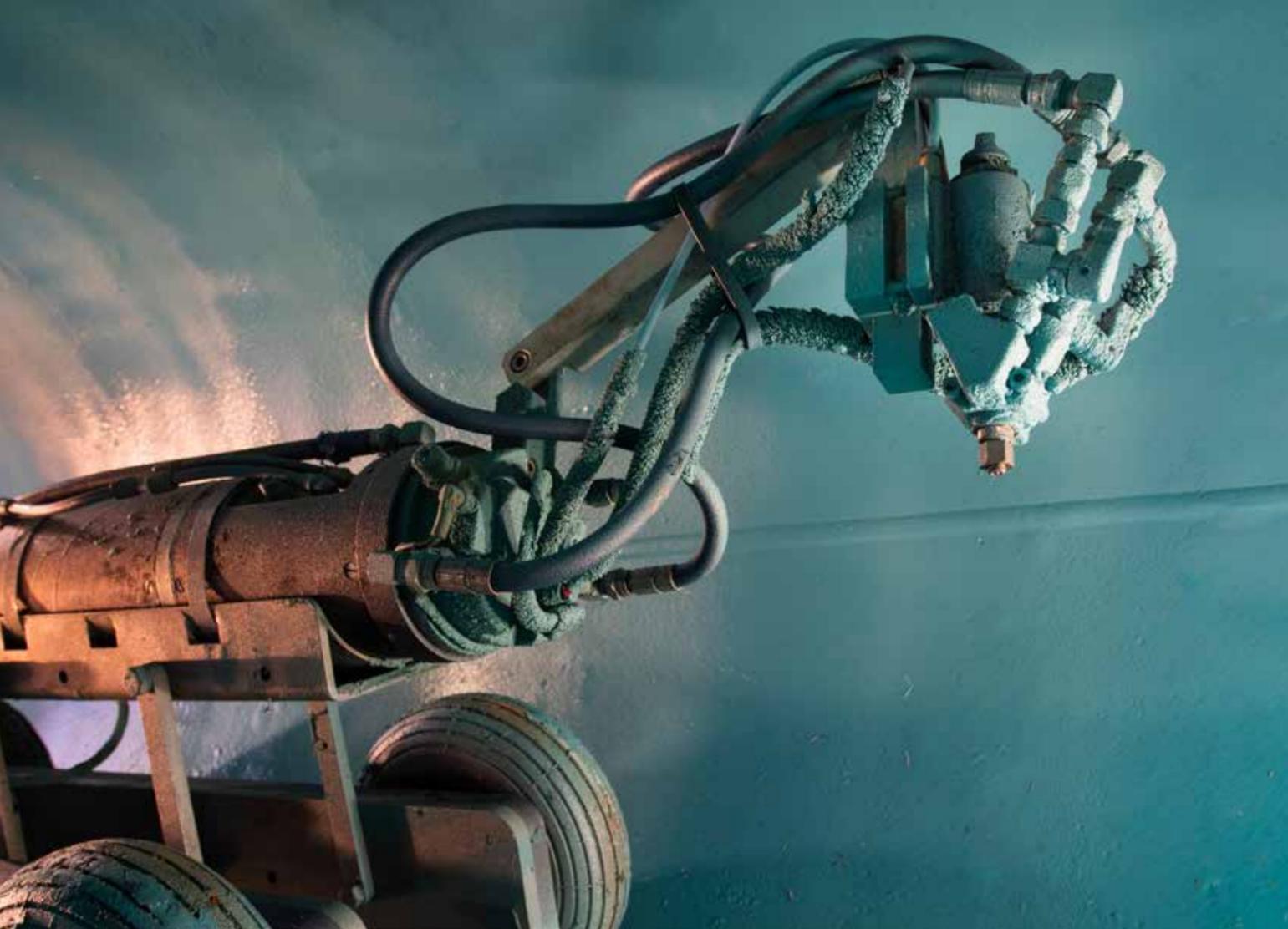
Buried Piping



Aegis-QuarTec Features and Benefits

- Suitable for all substrate types and conditions
- Designed as an engineering solution for buried pipe and component mitigation
- Solution can act as rehabilitation to full structural
- Applicable in pipe, vaults, tanks, basins and manholes
- Suitable for use with all effluent types/multiple liner variations
- Meets all AWWA requirements/ M28 class I, II, III, IV
- Direct to substrate, not grouted, minimizing flow reduction
- Capable for pipe diameters from 8"/0.203m to 168"/4.3m
- Specialized application (3" to 8") engineering solutions are possible
- Installs robotically, reducing excavation and safety risks
- Capable of reaching up to 1,000' from access point, depending on pipe size and configuration
- Adaptable to a wide range of existing pipe conditions
- Extremely durable, flexible and resilient
- QuarTec topcoat protects against future abrasion and wear
- Fast application process, minimizing downtime
- Lower costs compared to conventional liner technologies
- Design life of 50+ years
- Warranties available for up to 25 years
- Design engineering which supports plant engineering effort





Framatome-Nukote coating/lining solutions

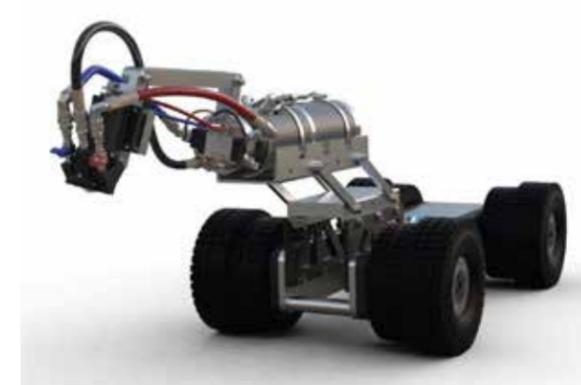
- ✓ **Flexible** — Liner allows movement of structures without cracking
 - ✓ **Durable** — Liner and coating is suitable for nuclear industry applications
 - ✓ **Engineered** — Liner and coating specifically designed for each application
 - ✓ **Proven** — Lining system in use for 15+ years
 - ✓ **Efficient** — Application process can be completed quickly
 - ✓ **Economical** — Cost-effective solution requiring minimal product, time, manpower
 - ✓ **Longevity** — Design life 50+ years and direct warranties up to 25 years
- ✓ **A solution that checks all the boxes**

Liner product technology

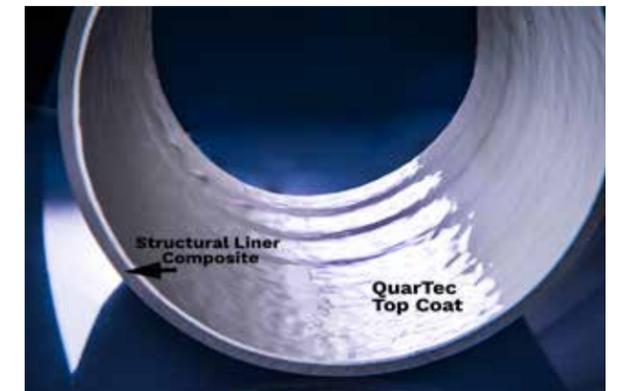
The Aegis liner system utilizes super-fast gel elastomeric products, spray-applied in a composite of two products, delivering the physical properties required in underground pipe and component rehabilitation.

These composites provide:

- The required high ring stress, derived from the structural portion of the composite
- High erosion/impact resistance, derived from the elastomeric portion of the composite
- 4-5 second gel/30 second tack-free allowing both forward and reverse application at high builds
- Fast cure, allowing for return to service within 24 hours
- No Volatile Organic Compounds (VOC)/100% solids
- Completely inert, waste can be disposed of in a common landfill
- Environmentally approved for use in potable water systems
- QuarTec nano topcoat for unbeatable wear resistance



 360RINGTECH



 **AEGIS**[™]
LINING SYSTEMS

Framatome is an international leader in nuclear energy recognized for its innovative solutions and value added technologies for the global nuclear fleet. With worldwide expertise and a proven track record for reliability and performance, the company designs, services and installs components, fuel, and instrumentation and control systems for nuclear power plants.

Its more than 15,000 employees work every day to help Framatome's customers supply ever cleaner, safer and more economical low-carbon energy.

Visit us at www.framatome.com, and follow us on Twitter: @Framatome_ and LinkedIn: Framatome.

Framatome is owned by the EDF Group (75.5%), Mitsubishi Heavy Industries (MHI – 19.5%) and Assystem (5%).



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Your performance
is **our** everyday **commitment**

Framatome

155 Mill Ridge Road
Lynchburg, VA 24502

outage@framatome.com

www.framatome.com

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