

**FOR IMMEDIATE RELEASE**

**Arlon® 3000XT Thermoplastic Achieves ISO 23936-1 and NORSOK M-710 Certification**

Houston (October 2015) – Greene, Tweed announces that it has achieved ISO 23936-1 and NORSOK M-710, Rev.3 compliance for its newest engineering thermoplastic, Arlon® 3000XT. This compliance marks a significant accomplishment for Greene, Tweed and confirms that the material properties of Arlon 3000XT make it an ideal choice for use in harsh, demanding oil and gas applications which are becoming more common throughout the oil and gas sector.



**ISO and NORSOK Certifications**

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies. ISO 23936-1 specifically addresses the resistance of thermoplastics to the deterioration in properties that can be caused by physical or chemical contact with media related to production in the petroleum, petrochemical and natural gas industries.

NORSOK is an internationally recognized standard developed by the Norwegian petroleum industry. It ensures safety, added value and cost effectiveness for petroleum industry operations and developments. The NORSOK M-710, Rev.3 specification standard went into effect in 2014 and outlines the requirements for critical non-metallic sealing, seat and backup materials for use in applications such as subsea, control systems and valves. The Rev.3 standard subjects tested materials to significantly harsher conditions than the previous Rev.2 standard.

**Testing Conditions**

Greene, Tweed enlisted the services of an independent, third-party lab to conduct the testing. Akron Rubber Development Laboratory, Inc. (ARDL), located in Akron, OH, performed all testing procedures according to the aggressive specifications of EN ISO 23936-1 and NORSOK M-710, Rev.3. Below are test conditions and results:

- Test Gas Classification:** Multi-Phase High Sour Gas Environment (10% H<sub>2</sub>S)
- Operational Service Temperature:** 180°C (356°F)
- Test Temperatures:** 195°C (383°F), 210°C (410°F), 225°C (437°F)
- Test Duration:** Up to 42 days (1,000 hours)

Per the testing specifications, Arlon 3000XT needed to pass the following four criteria based on change in properties from pre-test to post-test. At each temperature and each duration point that was tested, Arlon 3000XT passed:

Property	Measured	Allowable Change	Source	Comment
% Change Volume min/max	+3.0%/+5.0%	-1/ +5%	ISO 23936-1 NORSOK M-710	No failures during aging test
% Change Young's Modulus min/max	-31.6%/+20.5%	±50%	ISO 23936-1 NORSOK M-710	No failures during aging test
% Change Stress @ Break min/max	-10.0%/+0.1%	±50%	ISO 23936-1 NORSOK M-710	No failures during aging test
% Change Elongation min/max	-35.8%/+5.9%	±50%	ISO 23936-1 NORSOK M-710	No failures during aging test



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### Arlon® 1000

In addition to Arlon 3000XT achieving ISO and NORSOK qualification, Greene, Tweed's Arlon® 1000, recognized as the leading proprietary PEEK in terms of its physical properties, has also obtained ISO 23936-1 and NORSOK M-710, Rev.3 certification. Arlon 1000 has become a popular material choice for high-temperature applications and compatibility to a broad range of aggressive chemicals that are typical in oilfield applications. But as customers begin to require improved mechanical performance and reliability at extremely high temperatures surpassing 260°C (500°F), Arlon 3000XT has proven performance as the most reliable thermoplastic available on the market.

Burak Bekisli, PhD, Product Development, Testing & Simulation at Greene, Tweed, said:

*"As Greene, Tweed developed Arlon 3000XT, we targeted not only highly improved mechanical properties and reliability at temperatures that PEEK could not handle, but we also set the goal of not having to sacrifice chemical compatibility when exposing our material to harsh chemicals. Our ISO and NORSOK certifications are proof that we successfully achieved our targets and showed that Arlon 3000XT, as well as Arlon 1000, are stable under extremely aggressive test conditions. This new milestone paves the way for more customers to put their trust in Greene, Tweed products for their harshest oil and gas applications."*

### About Greene, Tweed

Greene, Tweed leverages expertise in a variety of markets and products to give customers the most innovative solutions to meet performance challenges and reduce total cost of operation. With fully qualified engineering, sales, and support personnel located throughout the Americas, Europe, and Asia, Greene, Tweed delivers solutions to individual customer applications on a global scope. Greene, Tweed products are sold and distributed worldwide.

For additional information, contact Greene, Tweed at +1.215.256.9521 or visit our website at [www.gtweed.com](http://www.gtweed.com).

*\*Arlon® 3000 XT by Greene, Tweed based on VESTAKEEP®, an Evonik product*