

Busak+Shamban Gain Certificates of Compliance to Norsok M-710 for a Range of Thermoplastic Sealing Materials

a report by

Busak+Shamban

Busak+Shamban, part of the Trelleborg group, have been a leading supplier of sealing solutions to the oil and gas industry for over 25 years. To support their customers supplying the Norwegian oil and gas industry in gaining Norsok approval for their assemblies, Busak+Shamban have had a number of sealing materials tested to Norsok standards. They can now offer the largest range of sealing materials with certificates of compliance to Norsok M-710, available from any seal developer and manufacturer.

Norsok standards cover all aspects of working practice, equipment and materials used within the Norwegian oil and gas industry. They are recognised throughout the industry, worldwide. One of the main differences from previous approvals is that all individual components within an assembly must meet and be approved to Norsok standards, rather than just the complete assembly.

Different grades of Busak+Shamban polymers were involved in rigorous independent tests, undertaken and supervised by Materials Engineering Research Laboratory (MERL), a respected independent laboratory in the UK. The main focus of the testing was to predict service life of the materials within an offshore working environment, as specified in Norsok M-710 standard, Annex C. Ideally materials should exceed expected well production lifetime of an oil and gas facility of 30 years.

Thermoplastic sealing compounds, polytetrafluoroethylene (PTFE)-based grades and polyetheretherketone (PEEK)-based materials, were immersed in a sour (2% H₂S) multi-phase fluid at 200–220°C (392–428°F), for periods of seven to 70 days. After saturation in this liquid, the mechanical properties were measured and used to predict ageing and estimated service life of the materials.

The thermoplastic materials tested met Norsok criteria, showing them to have good chemical stability. Changes in tensile strength remained well within the Norsok acceptance range for thermoplastics and all easily exceeded the 30-year

expected well production lifetime. Eleven Busak+Shamban materials are now certified by MERL as complying to Norsok standard, more than any seal developer and manufacturer.

Testing measured tensile strength, elongation, Young's modulus and volume changes, with detailed analysis supporting the laboratory findings. The sealing materials are available in a wide range of seal types. The PTFE-based and PEEK-based materials are commonly used in the industry in the form of Turcon[®] Variseal[®], back-up rings and support rings.

General Company Information

Busak+Shamban is a major international sealing force, uniquely placed to offer dedicated design and development from our market-leading product and material portfolio, a one-stop shop providing the best in elastomer, thermoplastic, PTFE and composite technologies for applications in aerospace, industrial and automotive industries.

With 50 years experience, Busak+Shamban engineers support customers with project management of design, prototyping, production, test and installation using state-of-the-art design tools, computer-aided design (CAD) and finite element analysis (FEA). An international network of over 70 facilities worldwide includes 30 manufacturing sites, strategically positioned materials and development laboratories and design and applications centers.

Developing and formulating materials in-house, we utilise the resource of our material database, including over 2,000 proprietary compounds and a range of unique product designs.

Busak+Shamban fulfill challenging service requirements, supplying standard parts in volume or a single custom-manufactured component, through our integrated logistical support, which effectively delivers over 40,000 sealing products to customers worldwide.

Facilities are certified to ISO 9001-2000, with many manufacturing sites also working to QS9000 and VDA 6.1. The global sales and marketing organisation of Trelleborg Sealing Solutions, which develop, manufacture and market safety-critical polymer-based precision seals and associated systems, Busak+Shamban have the backing of one of the world's foremost experts in polymer sealing technology. ■
