

## ENHANCED SAFETY. LOWER COSTS.

KERAVERIN® PTFE-M – YOUR BENEFITS COMPARED TO CONVENTIONAL MATERIALS

### FEWER FLANGE CONNECTIONS

- Reduced risk for employees and the environment from potential leaks
- Lower maintenance costs

### FLEXIBLE, MODIFIED DESIGN DUE TO THE WELDABILITY OF THE SYSTEM

- Special designs can be implemented to customer specifications
- No restrictions thanks to pipe components in a modular design

### AVAILABLE IN A CONDUCTIVE GRADE

### VACUUM RESISTANCE

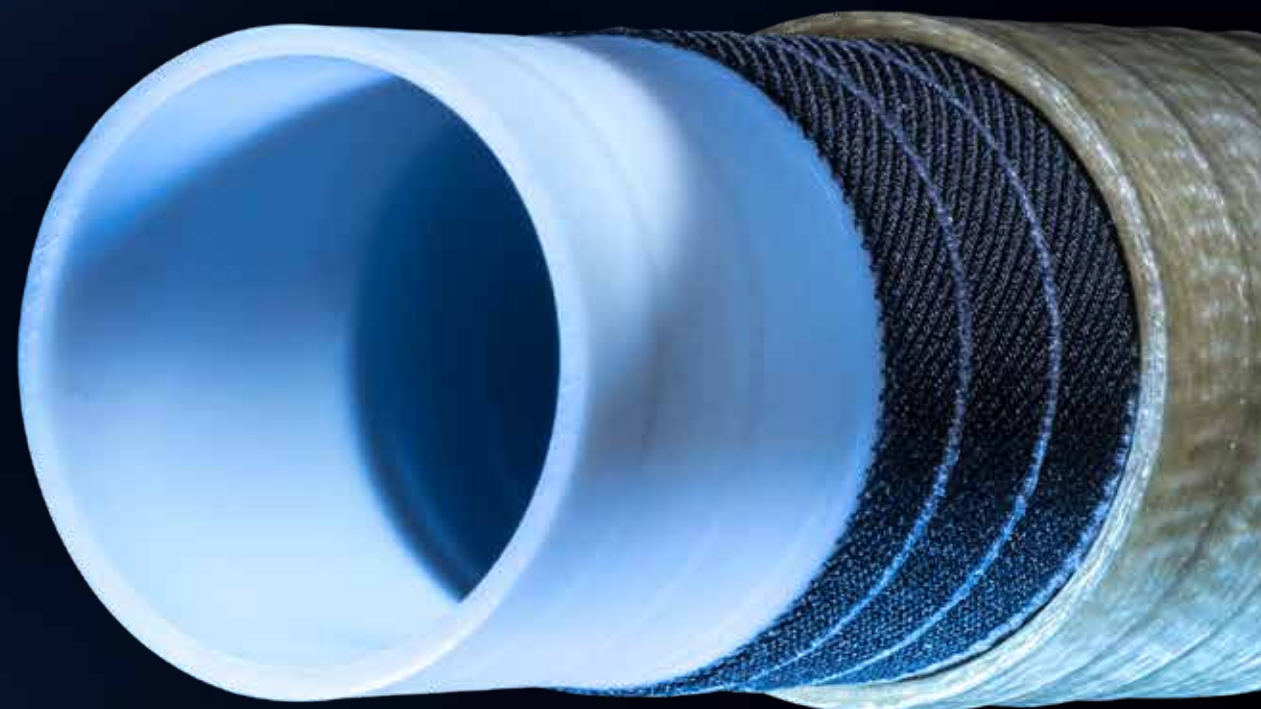
- Thanks to the full bond between the PTFE and the reinforcing laminate

### LIGHTWEIGHT PIPE MATERIAL AND THE SUPPORTING STRUCTURE

- Space savings and maintenance costs compared to steel constructions

### VERY GOOD EMERGENCY RUNNING PROPERTIES

### MUCH LONGER SERVICE LIFE



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Plastic Linings

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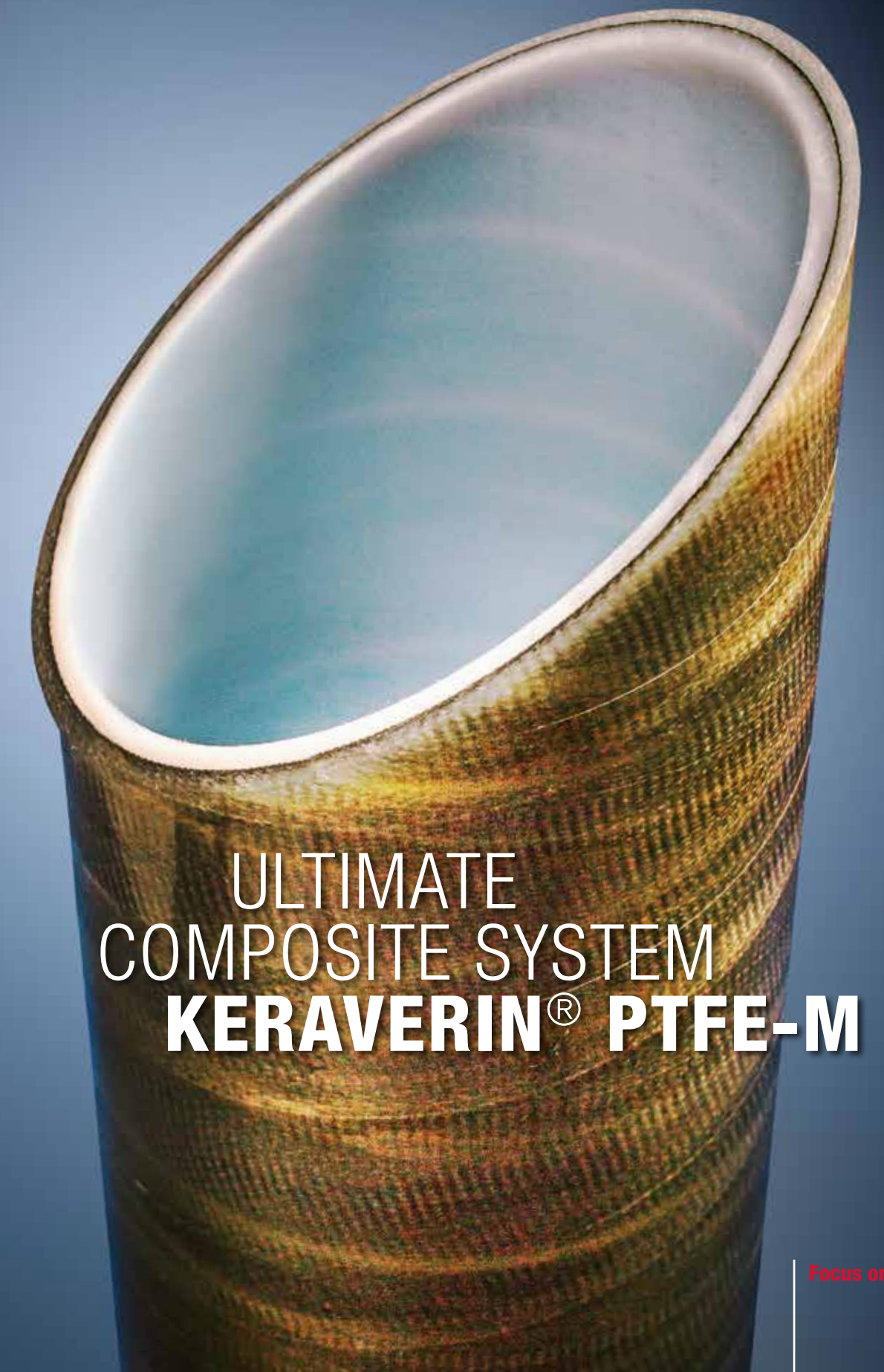
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**STEULER** Plastic Linings



ULTIMATE  
COMPOSITE SYSTEM  
**KERAVERIN® PTFE-M**

Focus on Progress

The KERAVERIN® PTFE-M material system supplied by Steuler Linings is a high-performance and future-orientated solution for pipes and process equipment that makes conventional metallic structures substitutable. Thanks to the worldwide unique and patented process, especially in the piping sector, Steuler Linings has been able to laminate pipes of modified PTFE with a carbon fiber fabric under specific production conditions. In combination with the applied GRP reinforcement, a unique high-performance composite tube system is created. The resulting bond strength (bond shear strengths of up to 9 N/mm<sup>2</sup>) is so high that failure due to thermally induced stresses – different thermal expansion behaviour of liner and reinforcement material – or vacuum loading cannot occur. This enables operation even under vacuum and leads to a long service life.

## UNIQUE HIGH-PERFORMANCE COMPOSITE

The use of various resin systems allows components to be created that can be used up to a temperature of 160 °C. A significantly improved weldability and lower permeability characterise the PTFE-M liner. The welding properties allow a noticeable reduction of flange connections and an individual pipe run – without having to meet for instance the modular dimensions of steel pipes. The leak risk is minimised and the repair and maintenance costs reduced which means improved safety for personnel and the environment, whilst also reducing operating costs.

KERAVERIN® PTFE-M stands out as the lightweight option among the tube systems: 70-80% lighter than steel tubes which reduces the need for supporting structures and assembly work.

KERAVERIN® PTFE-M has also earned itself a reputation in the process equipment engineering sector, especially for columns and reaction tanks – in almost any size or for any specifications.

### HIGHEST CHEMICAL DURABILITY

- High temperature resistance up to 160°C – no brittleness, no aging.
- Excellent chemical resistance; the dense polymer structure means low permeability
- Ideal for use with extremely corrosive media and at high temperatures

### EXTRAORDINARY MECHANICAL DURABILITY

- High mechanical strength as well as excellent deformation and stress crack resistance with a low Stretch Void Index (SVI) – low deformation under load
- Individual moulding – much better welding properties with realised welding factors at a high level

### FLEXIBILITY, SAFETY AND PROFITABILITY

The liners used are suitable for hot gas welding – ideal for the production of complex geometric forms. KERAVERIN® PTFE-M by Steuler Linings is a material system that offers a long service life and a low maintenance. This means a highly cost-efficient system with a high level of reliability and durability for sustainable and safe plant operation.

