

## **Water-induced ageing modification factor for PTFE-coated glass fibre fabric**

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#### **ABSTRACT**

The negative impact of water must be considered during the design of architectural coated woven fabrics which are sensitive to water attacks. It is known that the uniaxial tensile strength of glass-PTFE materials does degrade with water attack. This contribution quantifies the possible tensile strength reduction of different types of glass-PTFE materials under various water exposure conditions. This includes not only water exposure of unsealed cutting edges, as they, e. g., exist in weld seams, but also water exposure of the glass fibres through the PTFE coating. Experimental results show that both water exposure methods lead to similar degradation effects. From the acquired values of degradation, strength modification factors have been derived using the principles of the new European Technical Specification prCEN/TS 19102 “Design of tensioned membrane structures”.

**KEYWORD:** Tension fabric structure, glass-PTFE materials, water impacts, uniaxial tensile strength, and weathering-induced ageing modification factors