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HYDROPHOBIC PROTECTION OF FIBER REINFORCED CEMENT BOARDS WITH SILICON-BASED MATERIALS.

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Abstract.

Fiber reinforced cement-based boards are showing interesting physical properties but often require protection against water ingress as the latter is responsible for inducing physical changes (i.e. lack of dimensional stability) and chemical processes (i.e. efflorescence). Post application of silane or silicone-based water repellents is a proven way to protect cement-based boards. Perspective for new concept of post-applied hydrophobic additives will be shared.

An alternative way is also to develop a bulk hydrophobic treatment where the additives are blended with boards ingredients as it should provide a longer term protection without modifying the mechanical properties of the materials. A fundamental study was initiated to investigate the influence of the incorporation of silane and polydimethylsiloxane (conventional hydrophobing additives) on the hydration processes of Portland cement. Learning from the study and perspective on bulk treatment for board production will be shared.