

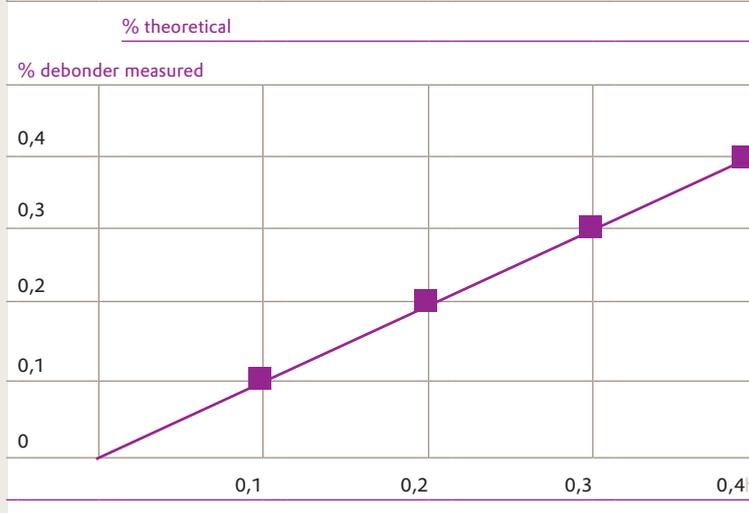
Test Results

Substantivity

Wet End Debonders

Handsheets were prepared from a softwood/hardwood (SW/HW) fiber blend treated with varying dosages of AROSURF® PA-842. As shown in Figure 1, the measurement of the debonder attached to the fiber matches the theoretical amount. This confirms that the debonder is completely exhausted onto the fibers.

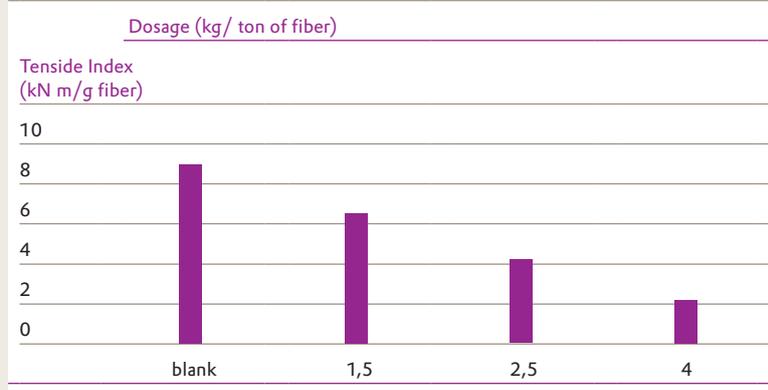
Figure 1 Substantivity of AROSURF® PA-842 debonder: measured retention vesus theoretical



Tensile Strength Reduction of a SW/HW Virgin Fiber Blend

As demonstrated by the progressive loss in tensile strength for the test sheets, AROSURF® PA-842 effectively debonds the fiber blend over the concentration range tested. The sustained disruption of the interfiber hydrogen bonds results in improved bulk softness.

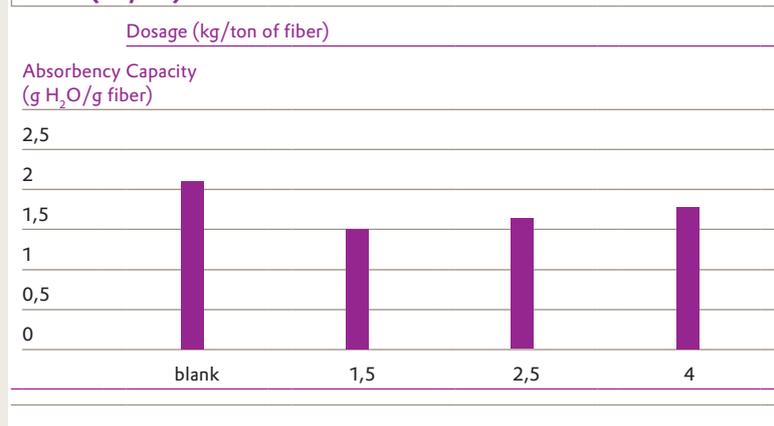
Figure 2 Tensile Index for a Softwood Kraft/ eucalyptus fiber blend (60/40) treated with AROSURF® PA-842



Absorbency for A SW/HW Virgin Fiber Blend

As presented in Figure 3, the absorbency performance is unaffected at higher application rates after the initial introduction of the debonder formulation. Typically, a progressive decline in absorbency due to the fatty moieties in the softener is evidenced with increased dosage.

Figure 3 Absorbency Capacity for a Softwood Kraft/eucalyptus fiber blend (60/40) treated with ADOSURF® PA-842



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