BRÜCKNER MASCHINENBAU

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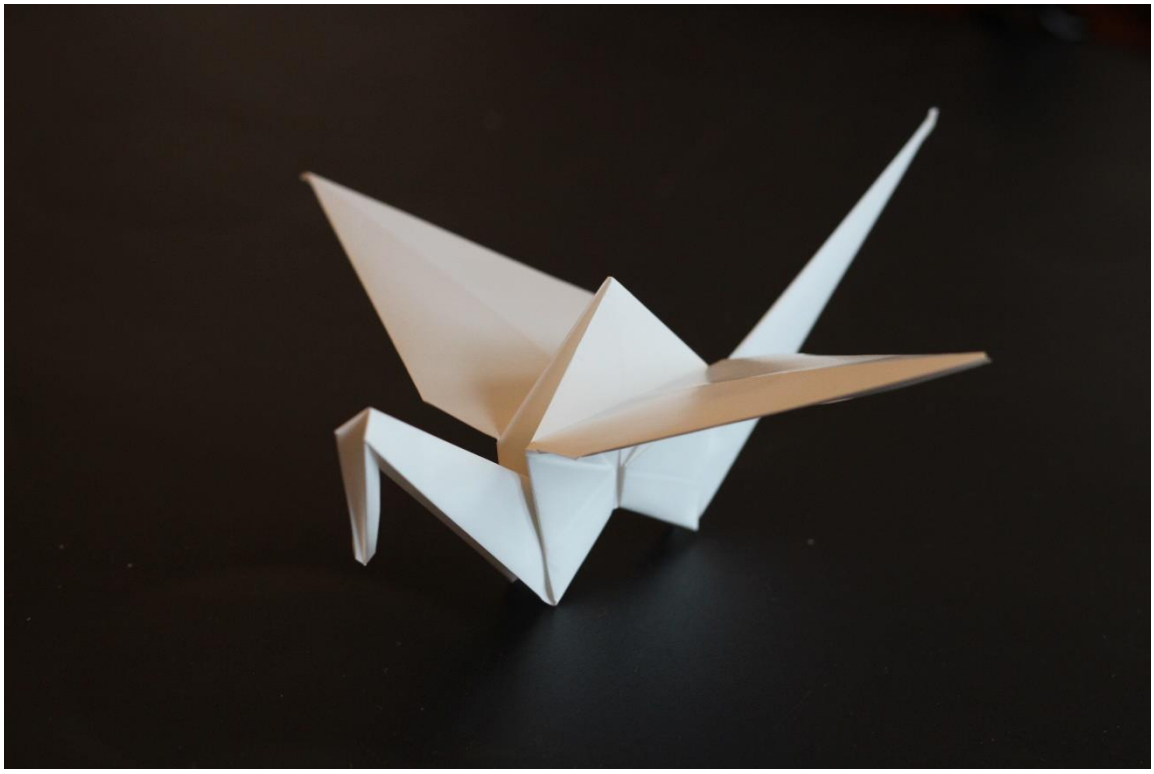
Stone paper: New benchmarks in sustainability and environmental protection

There is scarcely any other raw material sector where the demand has risen so sharply as in that of paper. Today, consumers are aware of the problems that come with such an enormous demand for paper, and an ever-growing awareness of the consequent environmental damage can be increasingly observed in our society. New benchmarks in sustainability and environmental protection can be set through the use of new technologies. Stone paper, produced with up to 80% calcium carbonate (chalk) and 20% polyolefin, is a very similar material to paper.

The trend for more sustainable packaging will increase through pressure from society, politics and legislation. Stone paper is not only an ecological and modern alternative to paper, but also to conventional plastic films, as it can be recycled by simply re-melting and reforming the material.

These products could be further enhanced in the future through biaxial stretching. This, along with productivity gains and increasing mechanical stability, will enable down-gauging and lead to a cost-efficient production.



Various stone paper films will be produced on the Brückner Pilot Line as part of an internal development project. Film has already been produced with good mechanical properties and a relatively low density. By adjusting the formula and the stretching conditions, dead-fold properties can be achieved with this highly filled film.

Table 1: Film Properties of Stone Paper

No.		0B1803271114	0B1803271242	0B1803271114
Remarks		- Goog dead-fold - High stiffness	- High stiffness - Minimum density - Good strength - High whiteness grade	- Good dead-fold - Special haptic
Recipe % CaCO3		57	57	58
Thickness [µm]		60	78	78
Density [g/cm³]		1.0	0.66	0.95
MD	**Tensile Strength [MPa]**	20	25	16.2
	Modulus [MPa]	1590	760	414
TD	**Tensile Strength [MPa]**	26	31	22.8
	Modulus [MPa]	1622	860	460
Shrinkage 5 min @ 120°C	**MD [%]**	0.4	0.5	1.0
	TD [%]	0.0	0.2	0.2
Opacity [%]		75	95	89
Whiteness [%]		81	86	83

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