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CHIRAL CURL IN THIN PAPERS

P H Viitaharju

P T Herdman, Arjo Wiggins R&D Limited, UK

Have you got, in your database, information about which side of the headbox manifold the stock was entering? That can quite often have an effect on the jet angle coming out of the slice and that in turn can affect the fibre orientation and diagonal curl. If you have that data, you might either get a better correlation or explain some of the outlying points.

P H Viitaharju

We have not got that information, but the orientation angle changes from positive to negative across the web or vice versa in these samples. Also the mean value of the orientation angle across the web gets both positive and negative values depending on the machine.

Dr G Baum, James River Corp, USA

I understand that you are using the ultrasonically measured elastic moduli to determine fibre orientation. Do you realise that MD/CD ratio is actually a combination of fibre orientation and any drying restraints in the system? Because of this, measurements of elastic moduli cannot give the fibre orientations.

P H Viitaharju

Yes, I realise that but the elastic modulus ratio used in this study was taken from the middle of the web where drying restraints don't

affect so much.

Prof C T J. Dodson, University of Toronto, Canada
If you have no orientation and no drying restraints one of the most striking things to illustrate this kind of geometry is to make in a standard handsheet machine a thick pad of 200-300 gsm. It dries into a beautiful saddle shape, preferring hyperbolic geometry to live in if there are no constraints and no orientation.

P H Viitaharju
Yes, the curling mechanisms in my case and in your case are different.

B Phillips, Shotton Paper Co plc, UK
Thank you very much indeed. That was one of the most illuminating instances of a paper I have certainly seen today, because it explains an awful lot of what happens in my business where we do suffer from curl in newsprint. Could you please recommend where I can get some trees with zero microfibrillar angle in the S2 layer?