

RECYCLABILITY TEST COLD FOIL

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SAMPLE DETAILS:

Folding carton with the addition of an estimated:

- 2,3 wt% coldfoil adhesive
- 1,5 wt% coldfoil
- 2,1 wt% water based coating
- 0,4 wt% CMYK ink



DATE:

23-09-2019

REFERENCE:

KCPK-RY-2019-005

USED METHOD:

KCPK repulpability method which simulates industrial processes on lab scale to determine process and product parameters.

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REPULPABILITY OF THE MATERIAL

A lab disintegrator was used to test how easily the fibres could be recovered from the folding carton. The base material (folding carton) disintegrated exceptionally well, which was not hindered by the addition of the coldfoil adhesive. The other additives (coldfoil, water based coating and CMYK ink) slightly hindered the disintegration, but thanks to the small percentage in weight of these components and one-sided application, the folding carton still disintegrated very well within the time available, as shown in Figure 1.



Figure 1: Disintegration of the material after the time available

REJECTED FRACTION OF THE MATERIAL

A screen was used to measure the amount of material that is not suitable for the production of new paper. Because of the excellent disintegration barely any material (0,4 percent) stayed on the screen. This rejected fraction consisted primarily of large fibres and a tiny amount of additives (originating from the coldfoil adhesive, coldfoil and CMYK ink), as shown in Figure 2. The major part of these additives however passed the screen, in the form of tiny specks. If the material will be used for the production of white paper, the specks, originating from the coldfoil and the CMYK ink can most likely be removed during the deinking process. If the specks, originating from the adhesive can be removed is less certain. The water based coating dispersed in the process water and could therefore pass the screen as well.



Figure 2: Rejected fraction of the repulped material: large fibres, grey, shiny and coloured specks

PRODUCTION OF NEW PAPER

A new sheet of paper was formed based on the disintegrated material, which is shown in Figure 3. The fibres are homogeneously distributed in the sheet, thanks to the high level of disintegration. The sheet does however contain a large amount of grey, shiny and coloured specks, originating from the coldfoil adhesive, coldfoil and CMYK ink respectively. The material is however most likely to be used for the production of coloured paper, for which removal of the specks is not necessary. The sheet did not contain any stickies (tacky particles), even though the coldfoil adhesive and water based coating were expected to be potential causers of stickies. Stickies are undesirable, since they potentially hamper the paper making process and negatively influence the quality of the newly produced paper.

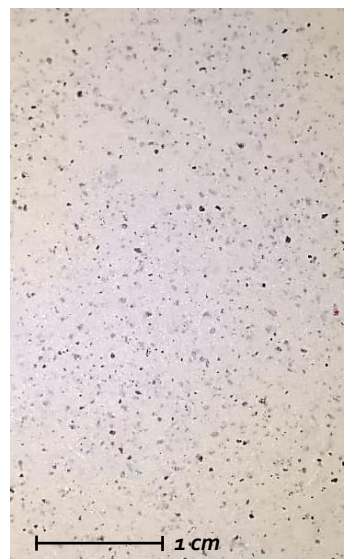


Figure 3: Produced sheet of paper based on the recycled material