High Solids MFC using a Plate and Frame Press

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Plate and Frame Press

800 mm W.M. Watermark

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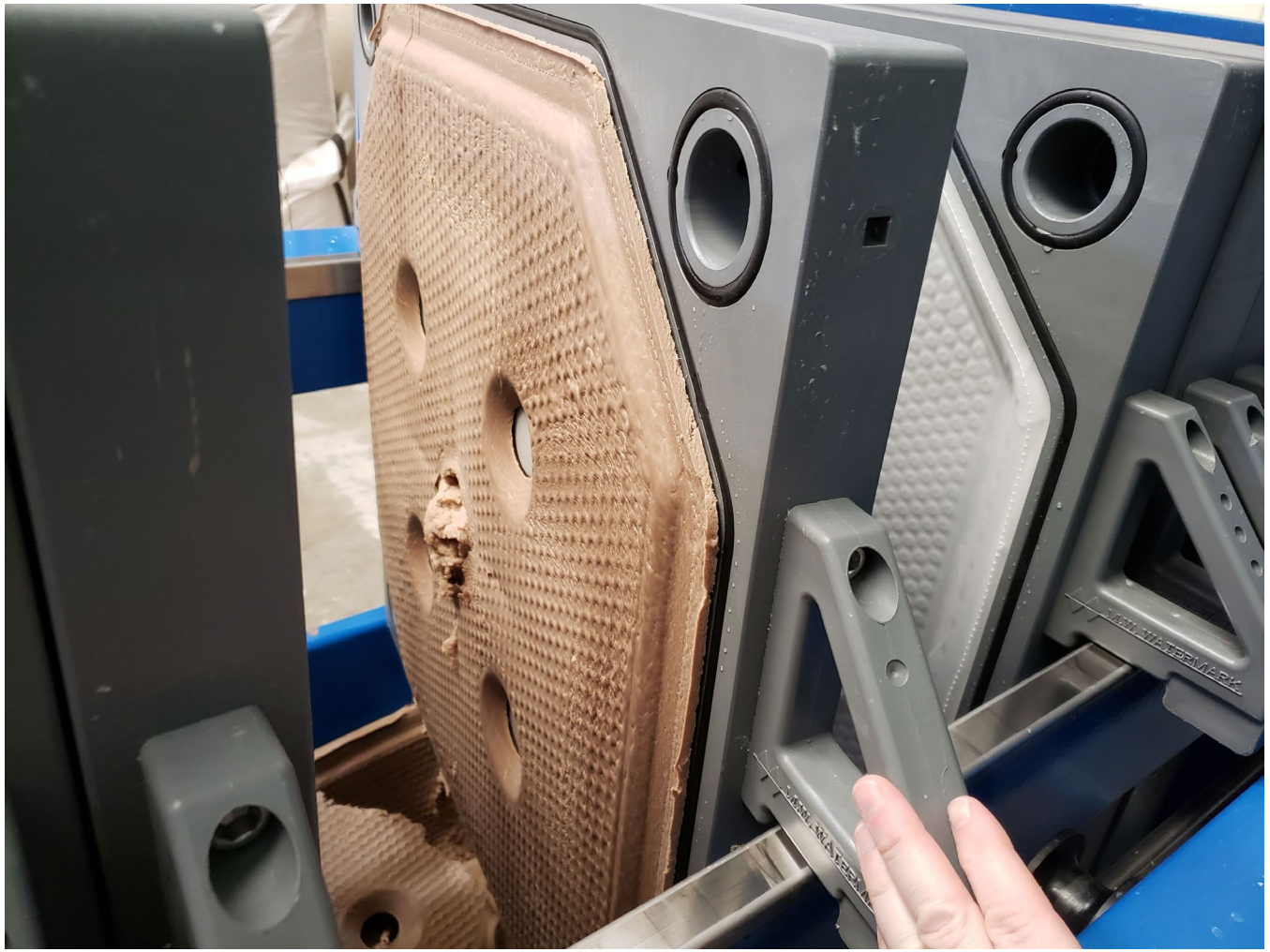
Pressed cake from MFC produced from unbleached softwood kraft pulp



MFC Pressing Study

Basic Test Conditions

MFC

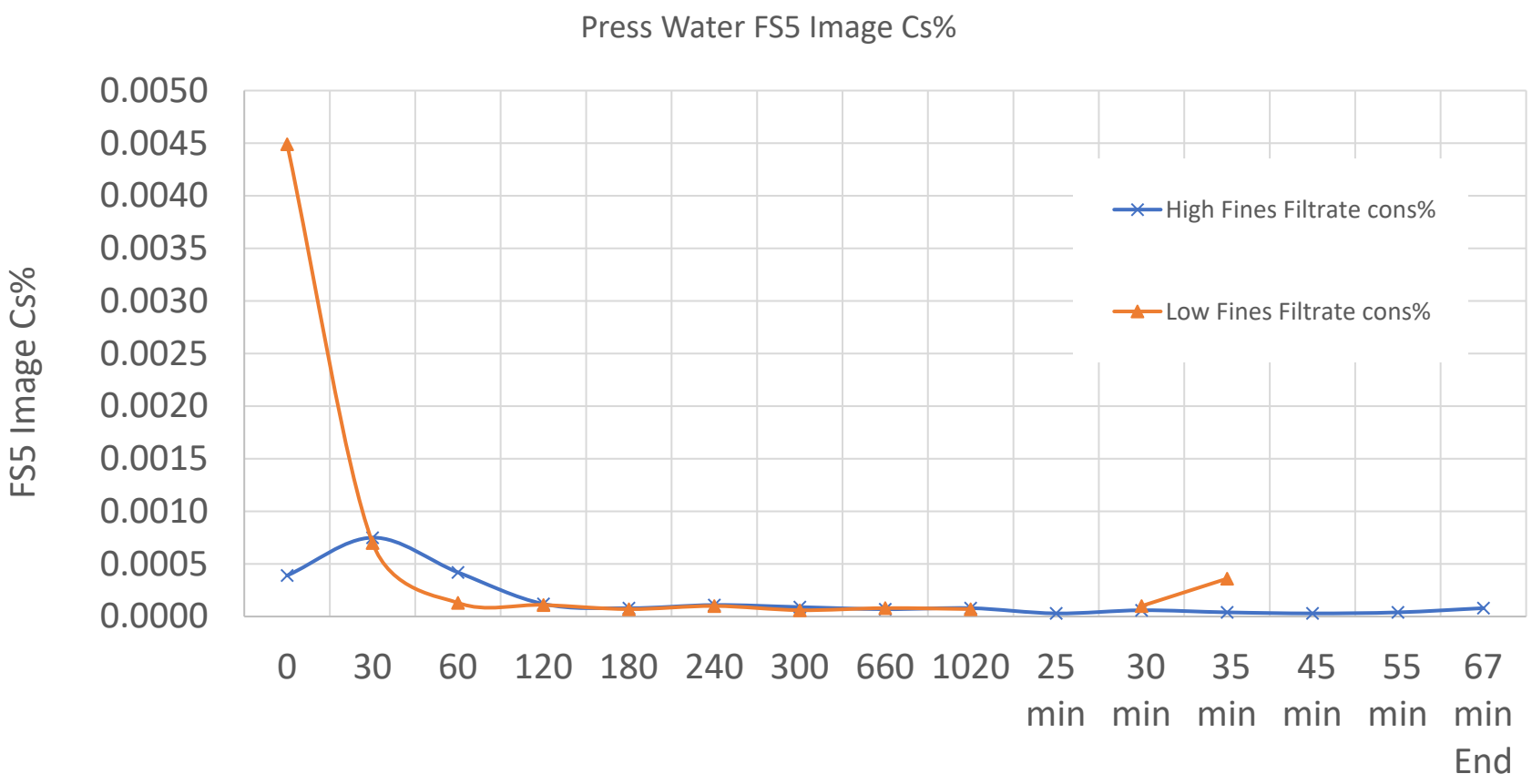
- Bleached SW (SCA ECF 90 Pure Pulp)
- Two different fines level pulp pressed:
  - Low Fines - Morfi 62.6% / FS5 79.32%
  - High Fines - Morfi 88.2% / FS5 88.31%

Sampling

- Filtrate during the press was collected along with cake samples covering the width of the cake in 6 positions
- Press time was determined by the press and when it remained constant for 1 minute, the pump stopped.

MFC Pressing Study

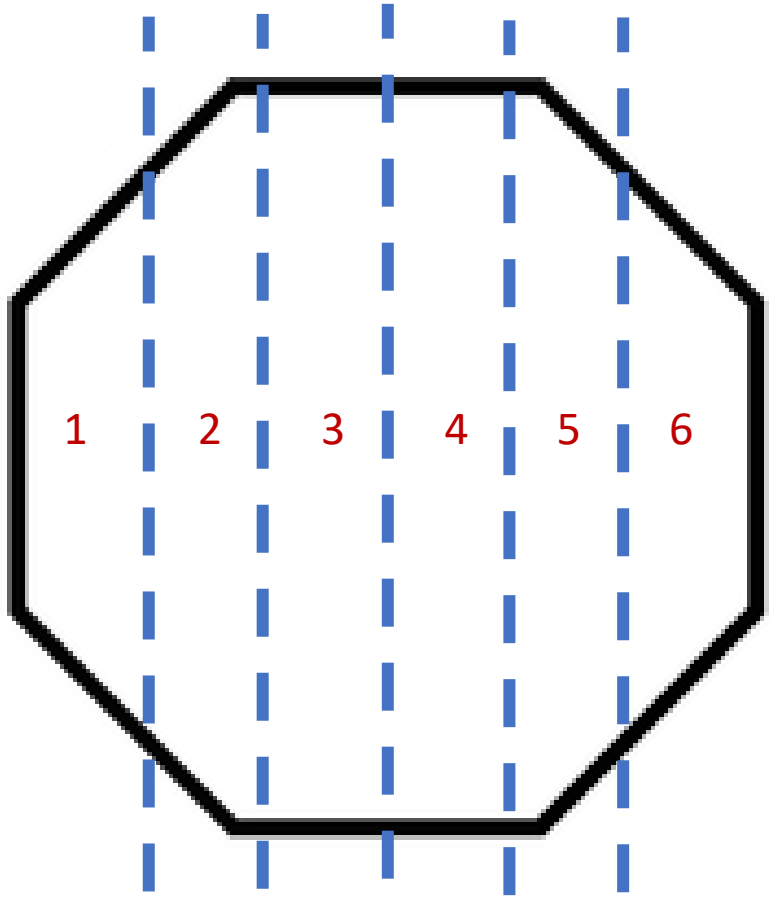
Filtrate Solids

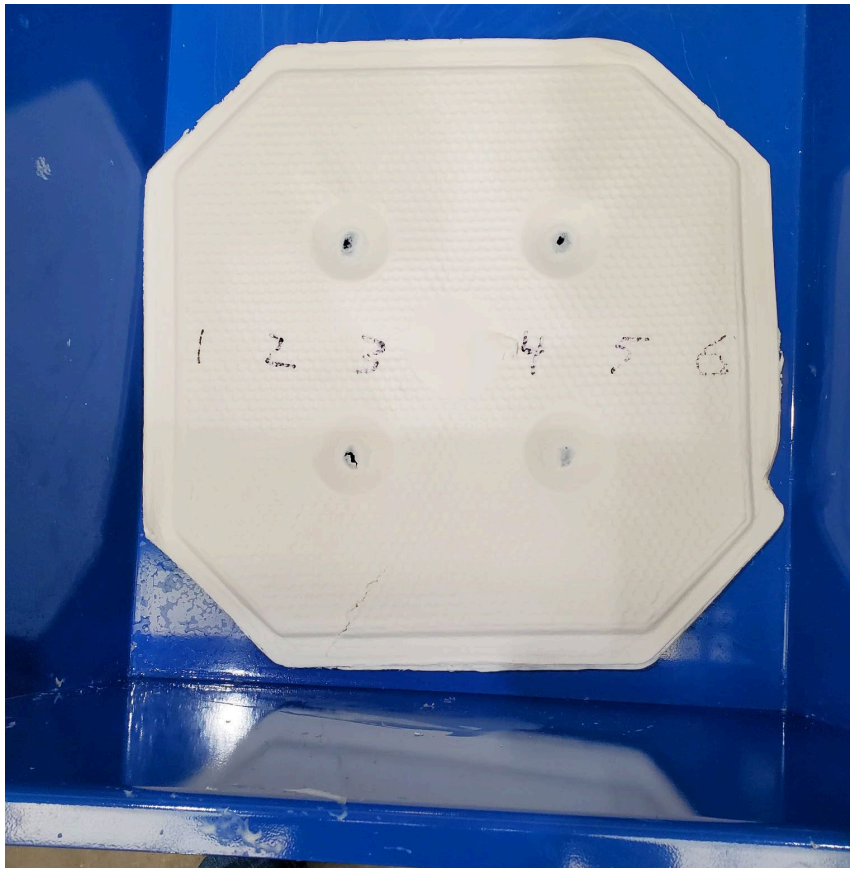


- Filtrate solids were so small they could only be measured using the FS5.
- Low fines gave a much faster press.
- Both filtrates were very clear with little to no MFC loss that could be detected.

MFC Pressing Study

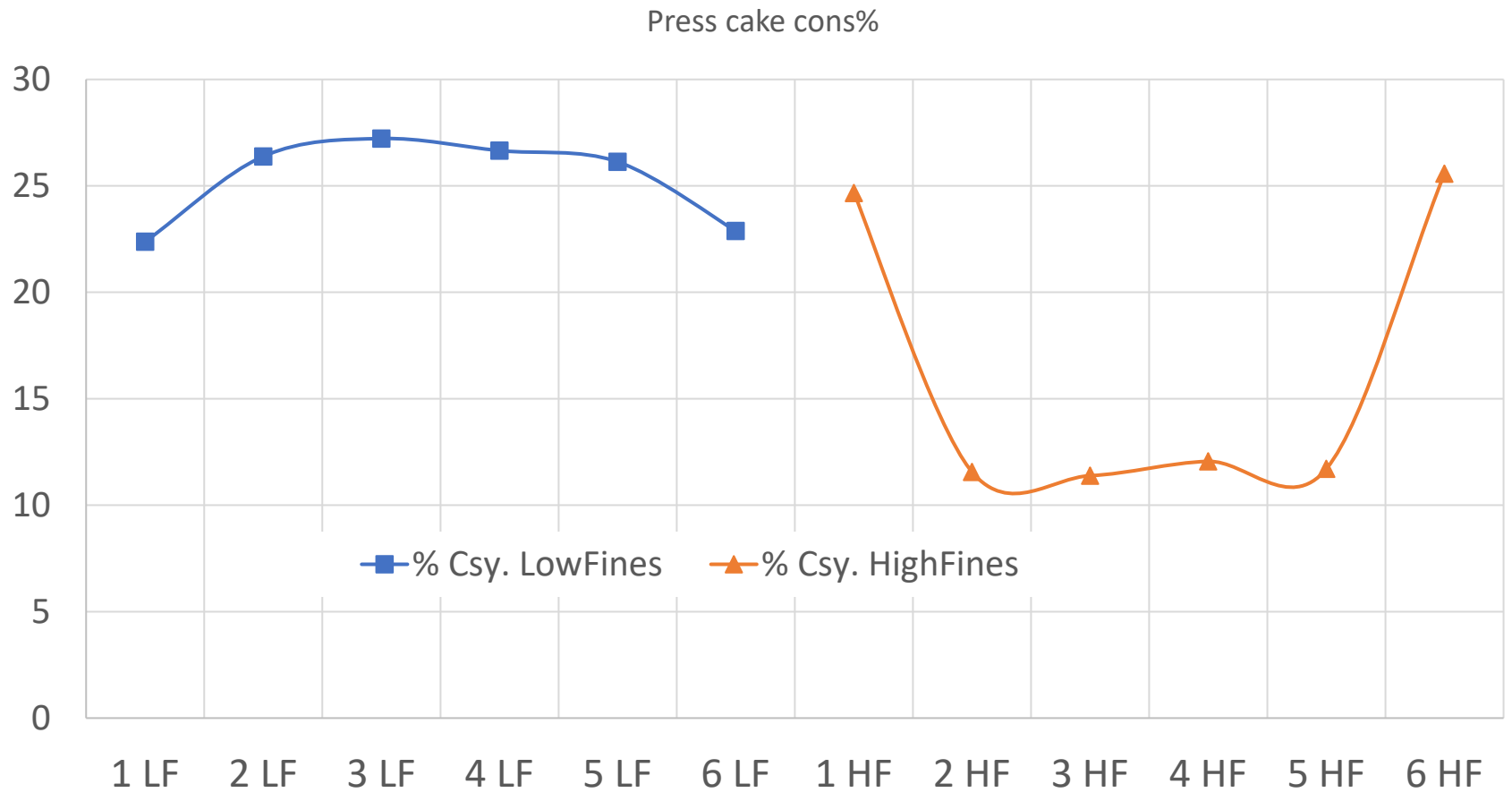
Cake Solids





MFC Pressing Study

Cake Solids



LOW FINES:

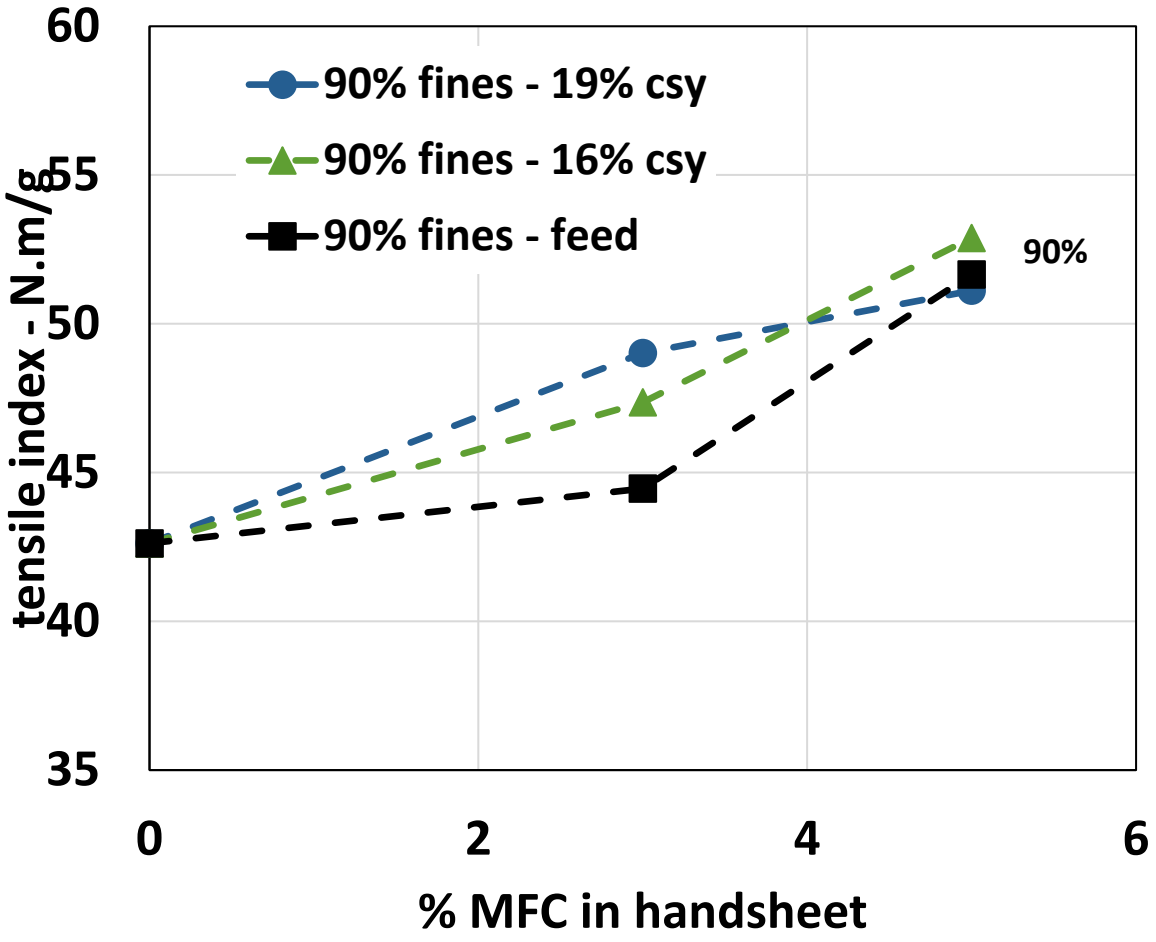
- Higher overall cake consistency
- Produced a nice solid cake.

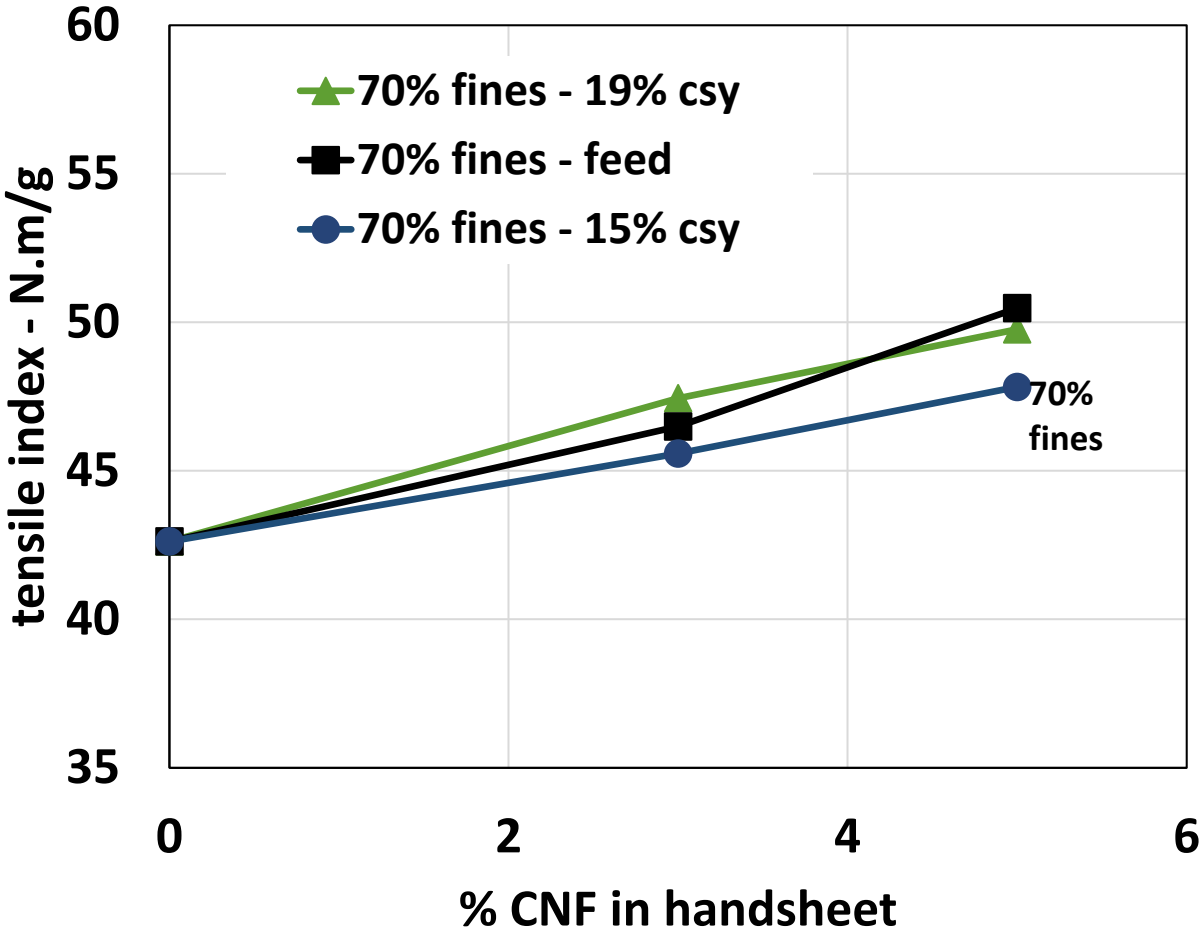
HIGH FINES

- Much softer in the center with variability across the cake.

Impact on Performance

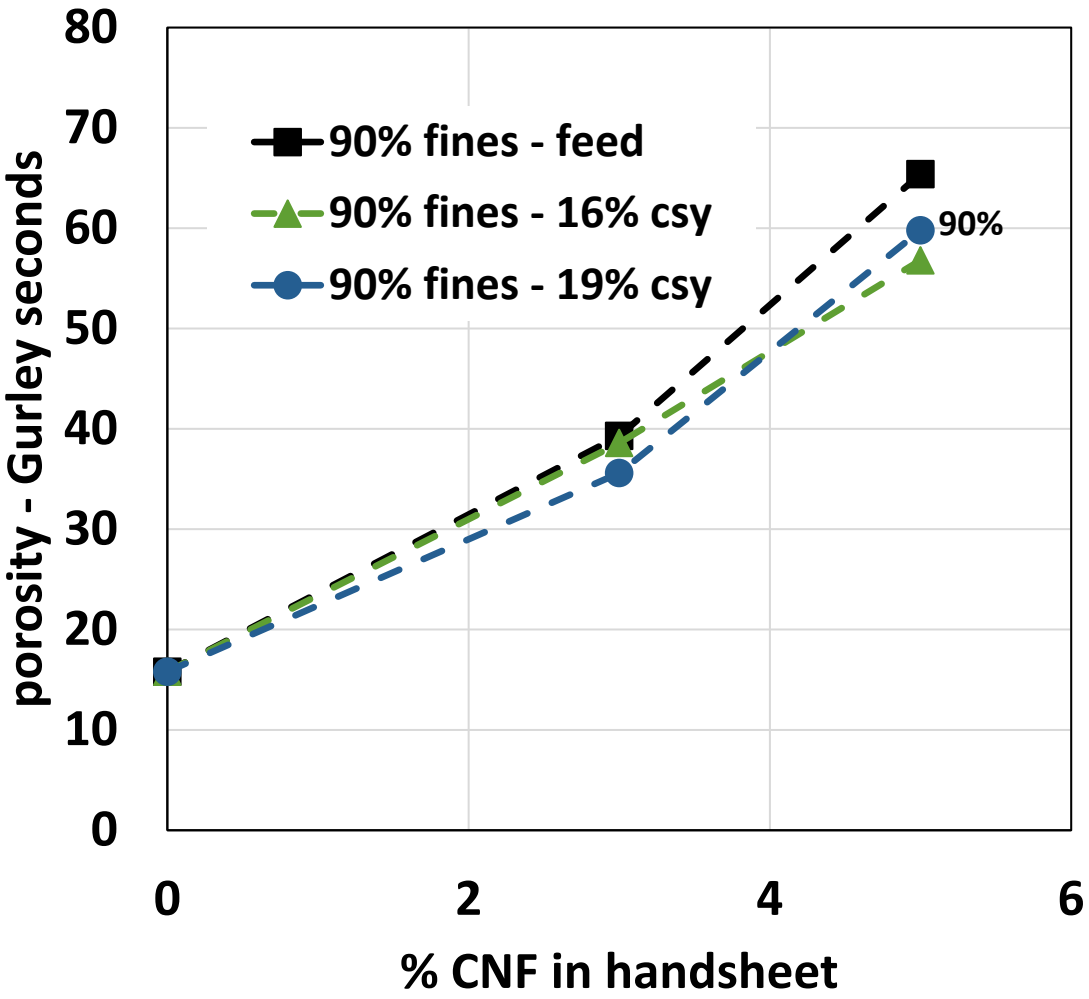
Tensile strength

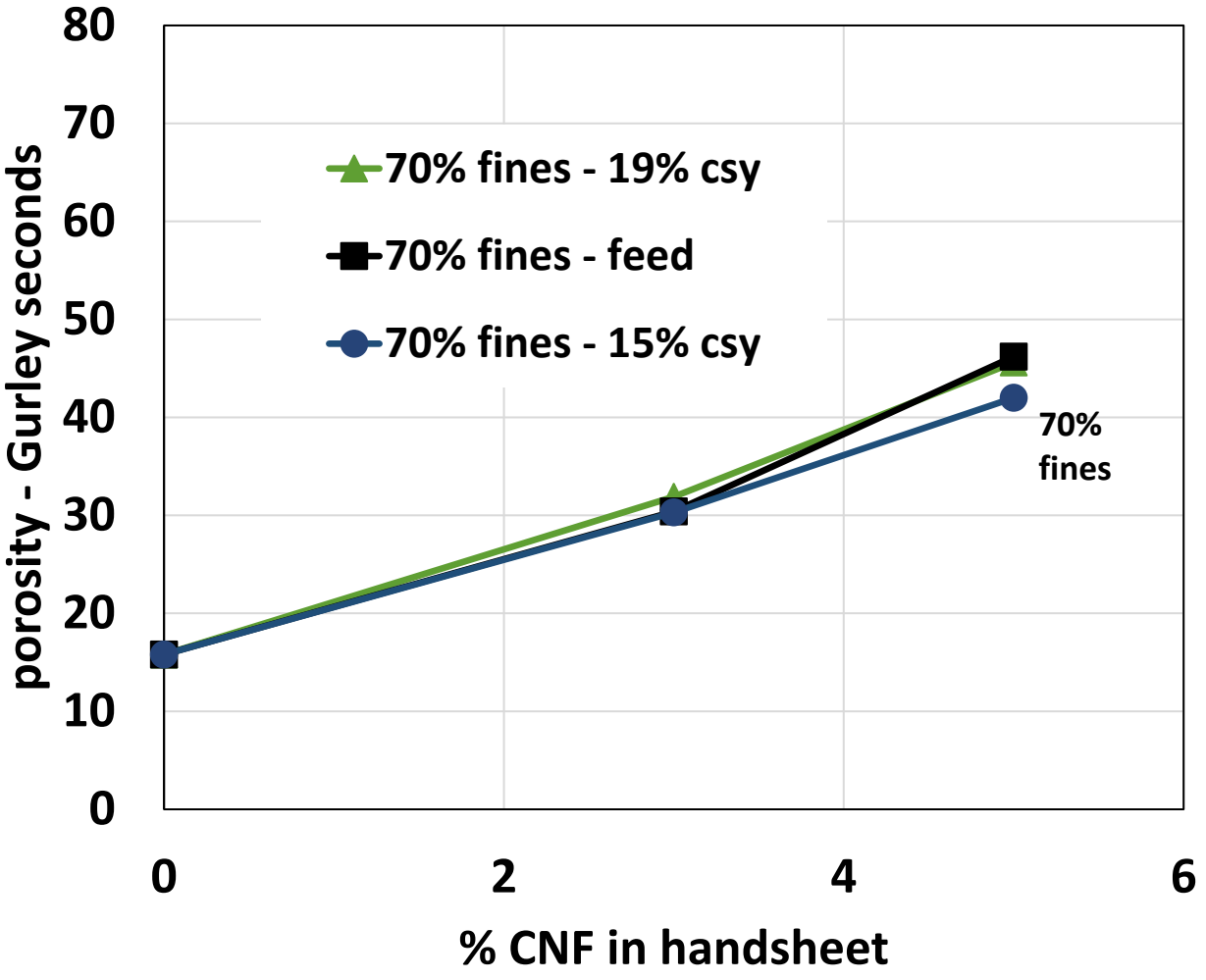




Impact on Performance

Porosity





MFC Pressing Study

Conclusions

- Negligible MFC loss in filtrate when pressing
- High fines MFC takes twice as long to press
- Pressing low fines MC produces a more uniform cake
  - No need for high pressure pressing
- For high fines MFC, good mixing after pressing would be required to obtain a more uniform material
- Key performance properties are preserved after pressing