

Press Felts: compressible or un-compressible?

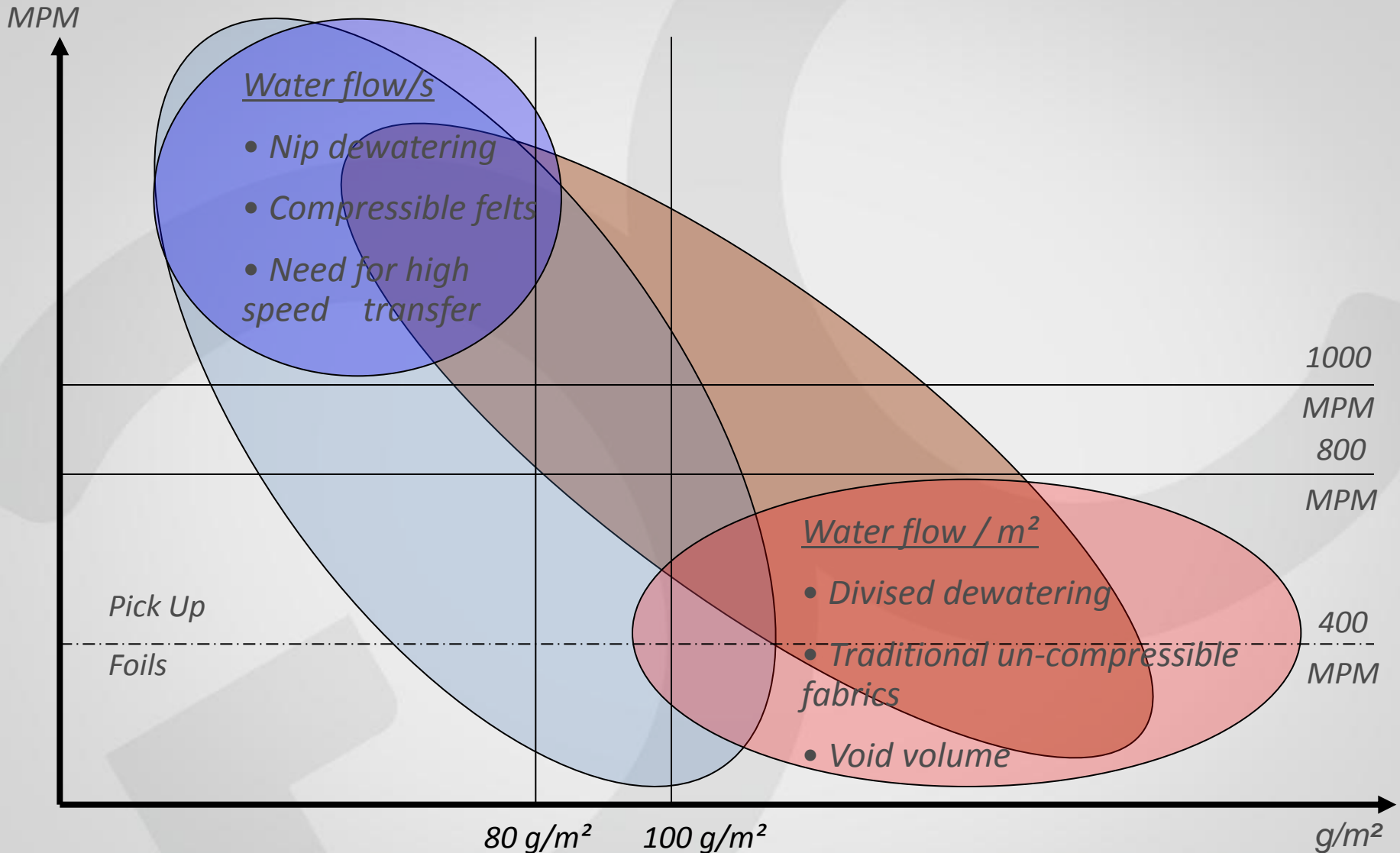
PMs' speed increase moved completely the requirements for press felt efficiency from un-compressible designs, with high void volume available, for traditional divided dewatering to compressible designs and maximum nip dewatering for high speed machines producing light grammages. In some cases, the efficiency can be such that suction box need disappears... and main felt wearing factor at the same time!

Just keep in mind that PMC is certainly a key factor in terms of dewatering efficiency, but do not forget the press designs, their load, the PM speed, the grade and g/m² produced...

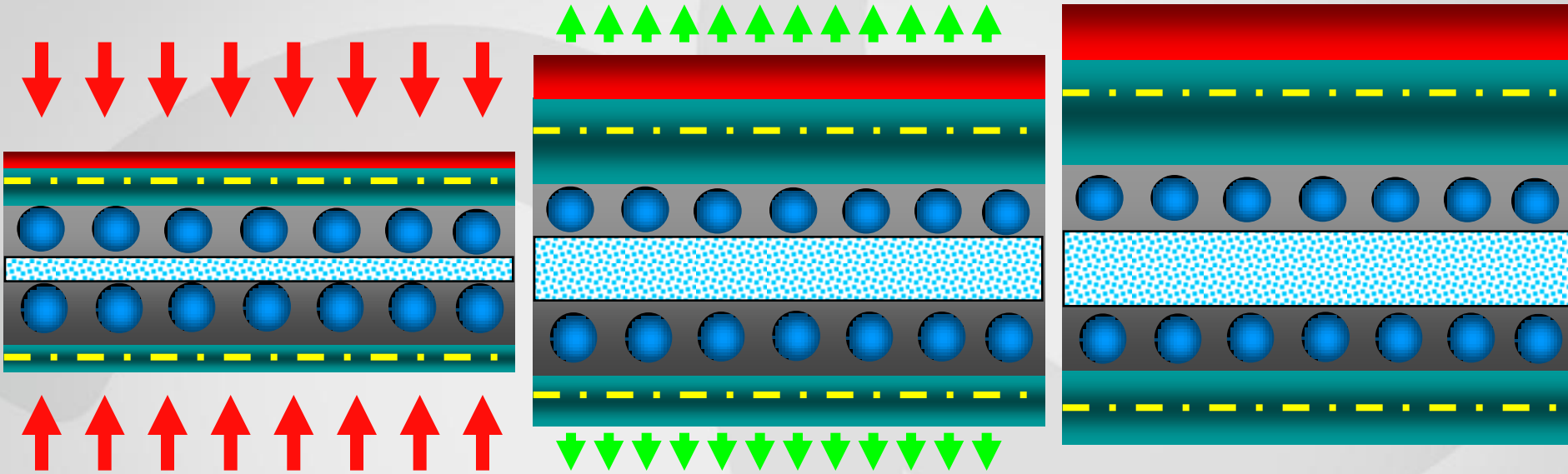
Dewatering Parameters

	<i>Classic nip</i>	<i>Shoe press</i>	<i>Suction box</i>
<i>Width (mm)</i>	<i>15 - 25</i>	<i>150 - 250</i>	<i>10 – 12 (1 or 2)</i>
<i>MPM</i>	↔	↔	↔
<i>Pressure (bar)</i>	<i>30 - 55</i>	<i>30 - 45</i>	<i>0,3 – 0,6</i>
<i>Felt thickness %</i>	<i>60 - 70</i>	<i>60 - 70</i>	<i>100</i>

Hydraulic Parameters



Felt dynamic behaviour



Nip – compression phase:

- void volume available
- flows controle
- marking surface controle

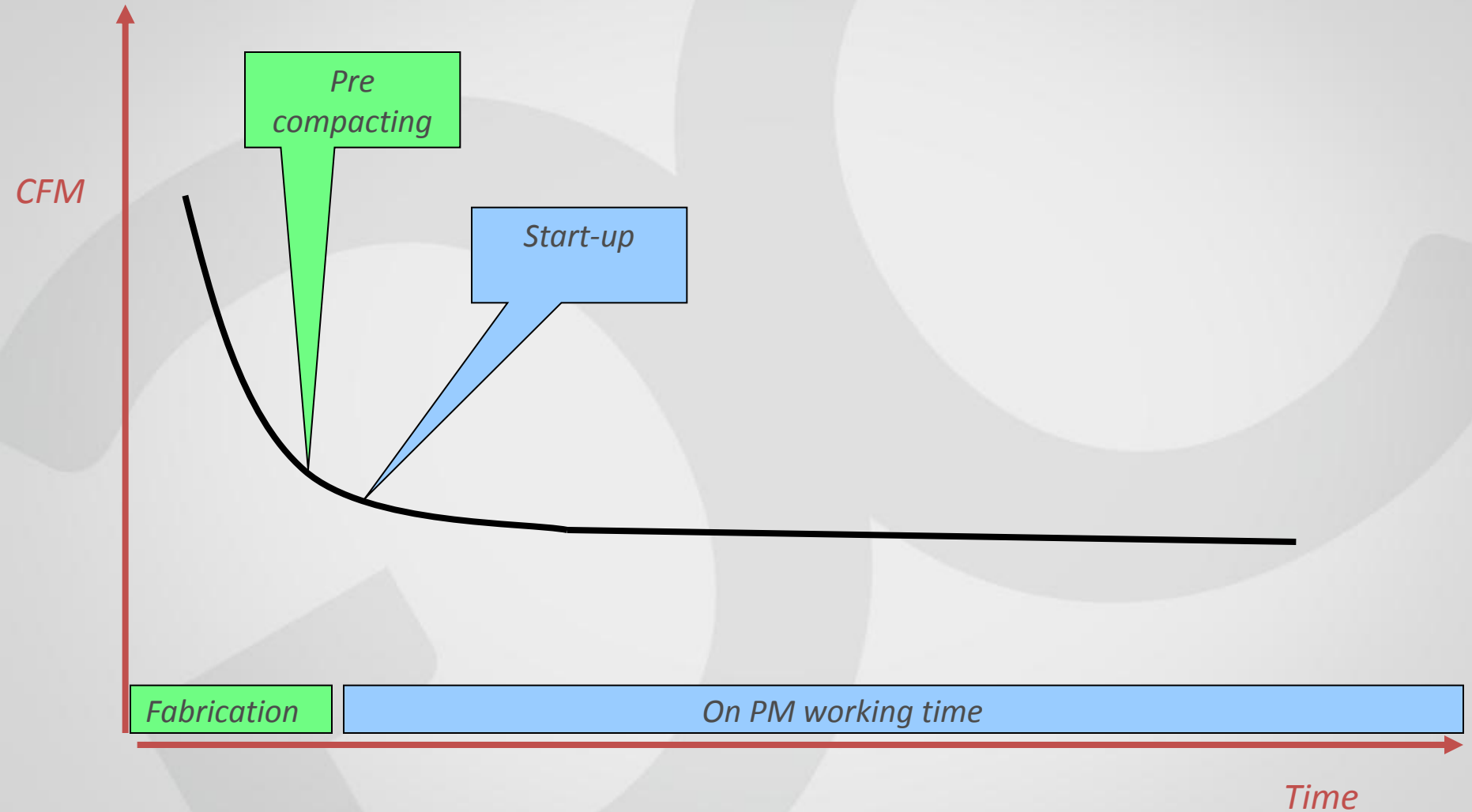
Nip - expansion phase:

- flows controle
- re-wetting controle
- sheet driving

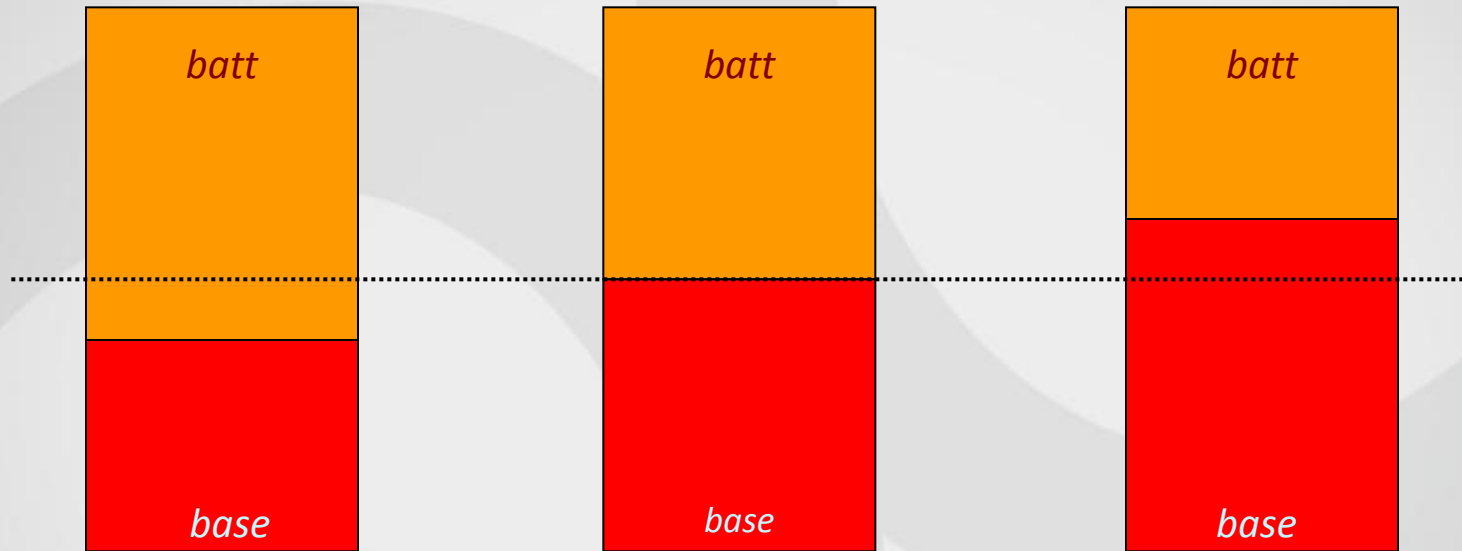
Circuit:

- restore void volume
- conditioning
- wear controle

Compaction



Compressibility



Compressible felt

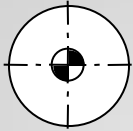
Standard felt

Un-compressible felt



Batt wear can move a compressible felt to be un-compressible

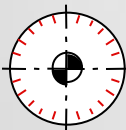
Nip dewatering / divided dewatering



Plain Press: normally used to avoid sheet marking. Limited dewatering capacities. Risks for crushing.



Grooved Press: allows important neep dewatering with MD flows which open the nip and avoid the most of blowing problems. Apart shoe press, this is the main technical solution used in the press section on high speed machine. Particularly in this case, the need for a **compressible** felt is high, the nip being often made of two hard rolls.

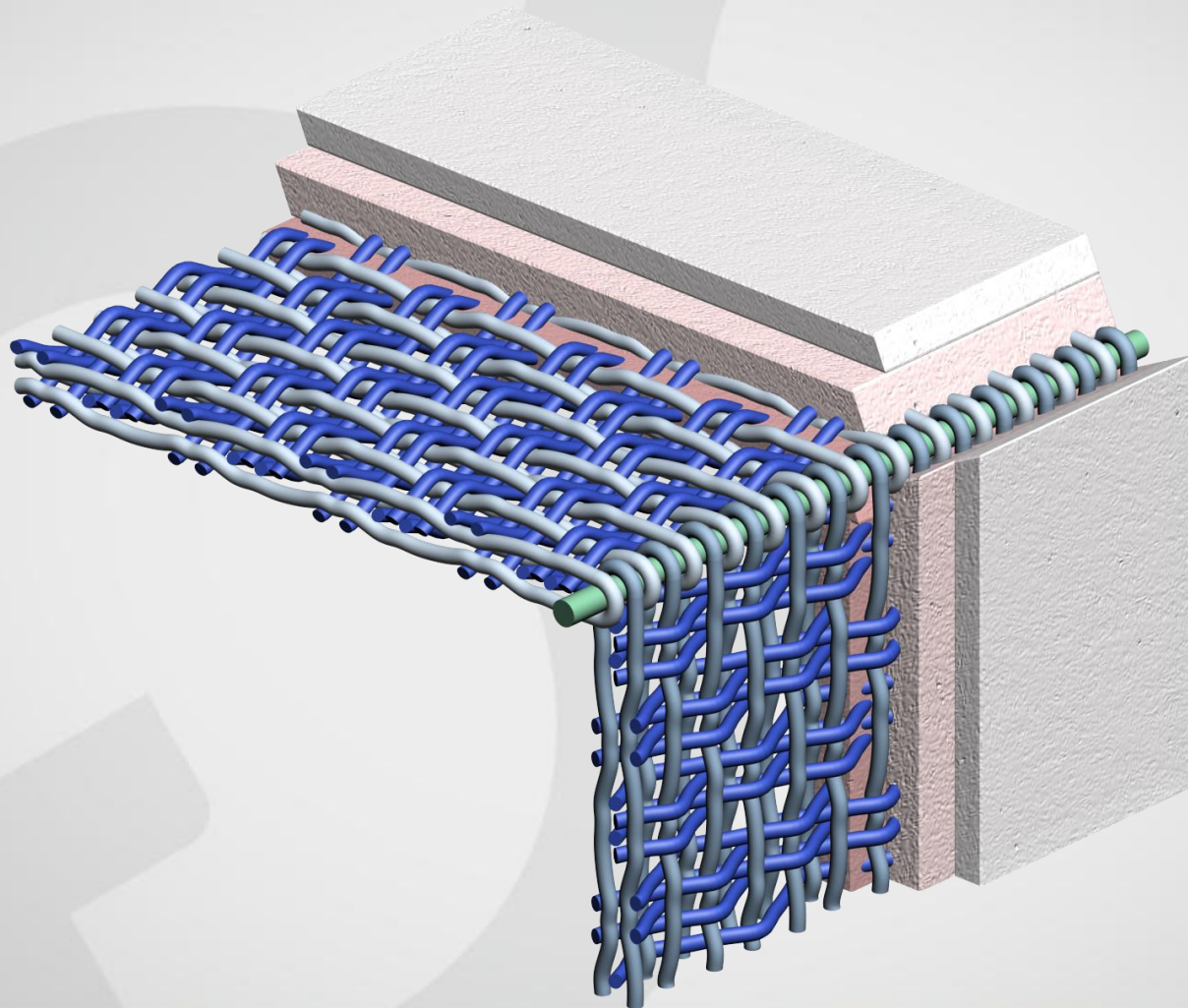


Blind drilled Press: allows divided dewatering thanks to their good void volume in the nip. As this solution needs rolls covering to be applied, it is not used on high speed machine where presses are metallic. On traditional PM, as the speed is not high enough to centrifugate the water out of the blind drilled holes, an **un-compressible** felt for water transportation to the suction boxes is needed.

Dewatering Optimization

- *design incidence*
 - *un compressible: DuraSeam™*
 - *compressible: VentaPlane™*
- *surface optimization*
 - *Polymeric Surface Press Fabrics: MicroPlast™*
 - *Engineered Surface Press Fabrics: InterFace™*

DuraSeam™: A Technological Leap in Seam Technology



Dewatering Optimization

- *design incidence*
 - *un compressible: DuraSeam™*
 - *compressible: VentaPlane™*
- *surface optimization*
 - *Polymeric Surface Press Fabrics: MicroPlast™*
 - *Engineered Surface Press Fabrics: InterFace™*

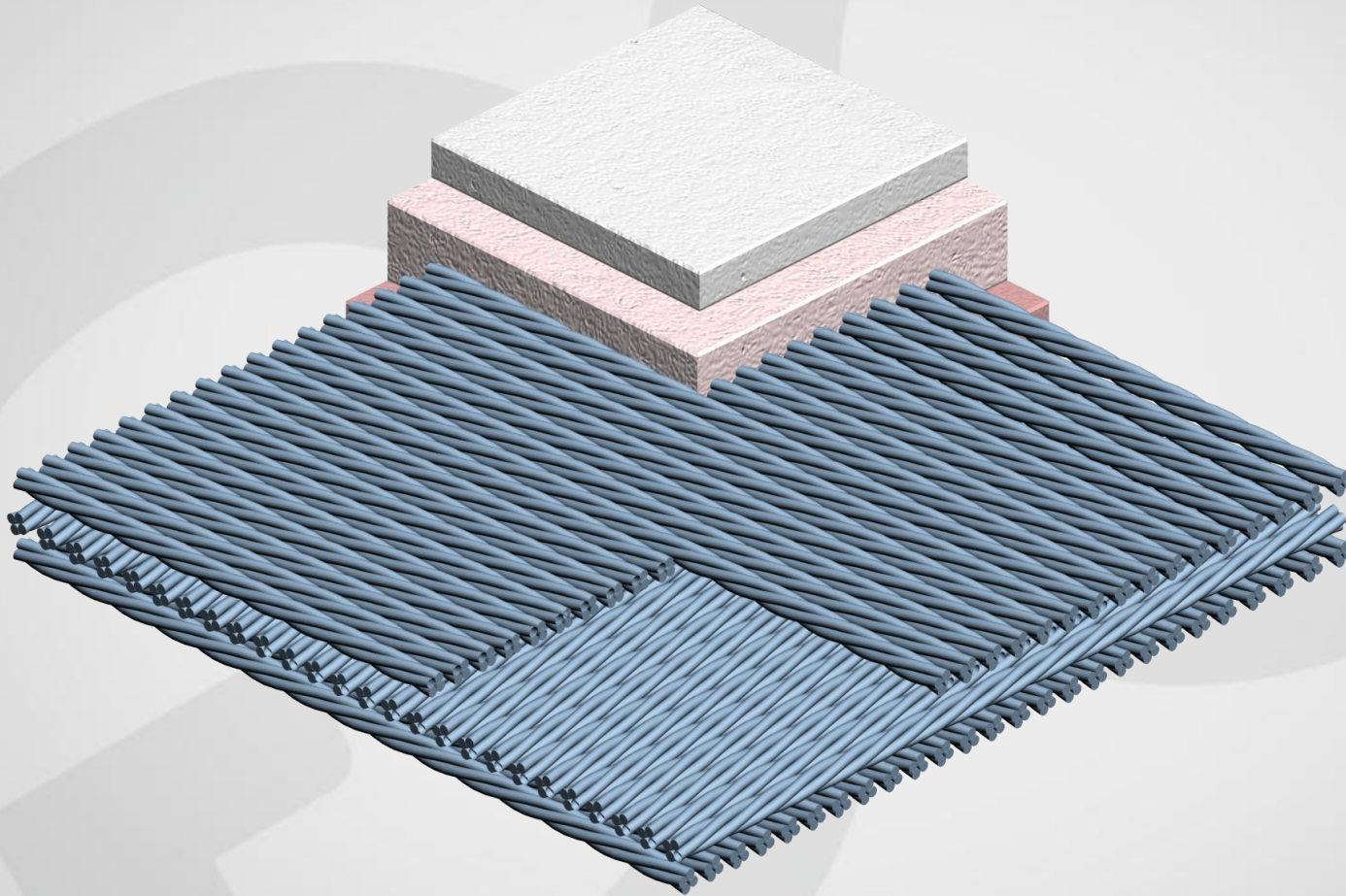
Compressible Press Felts

Using Prexx Felts family allows to reach excellent ratios of compressibility, thus of hydraulical efficiency.

Designs using KomprexTM are even more free of fast global compaction!

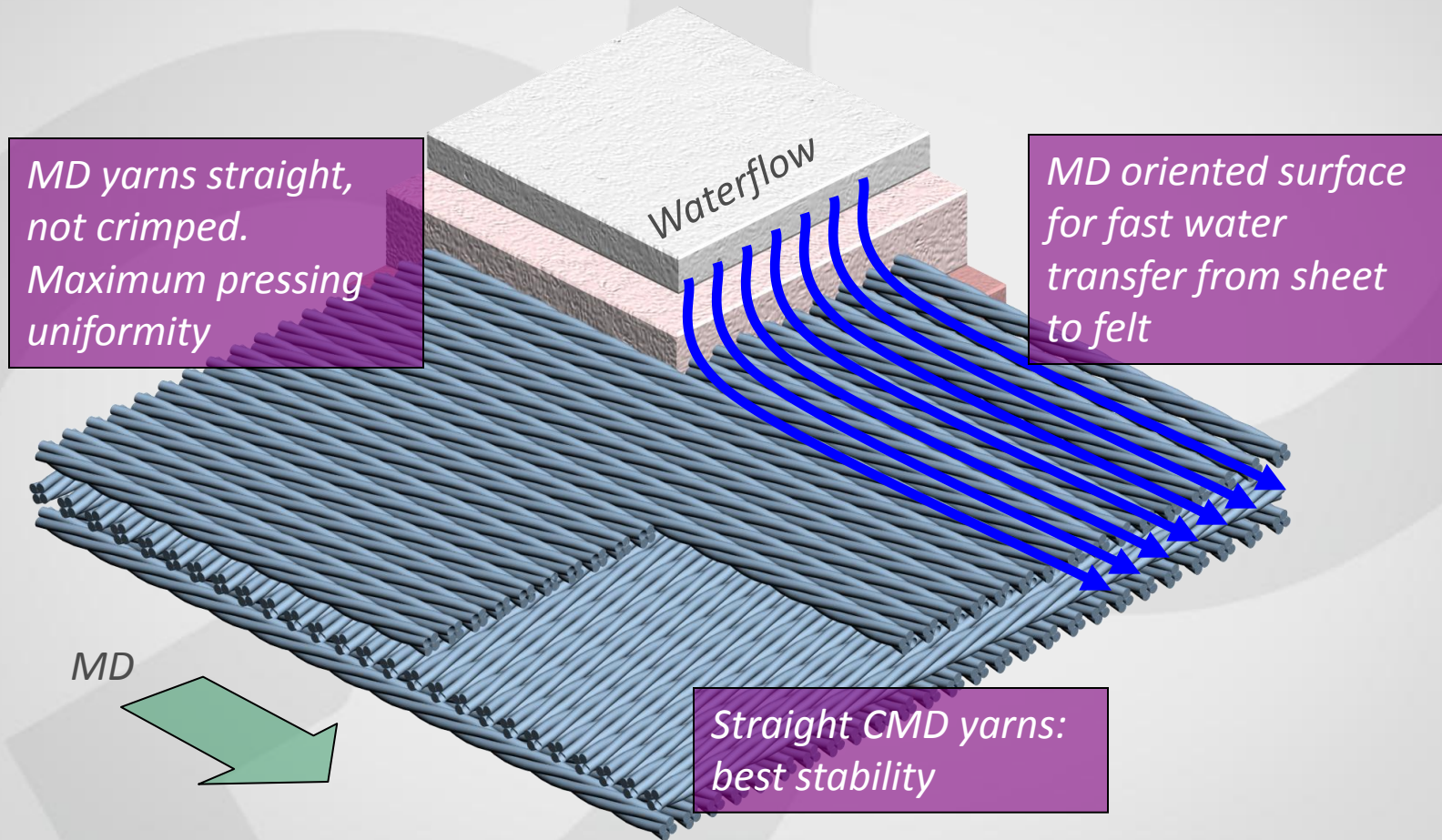
VentaPlane™

Non Woven High Contact Press Fabrics



VentaPlane™

Non Woven High Contact Press Fabrics

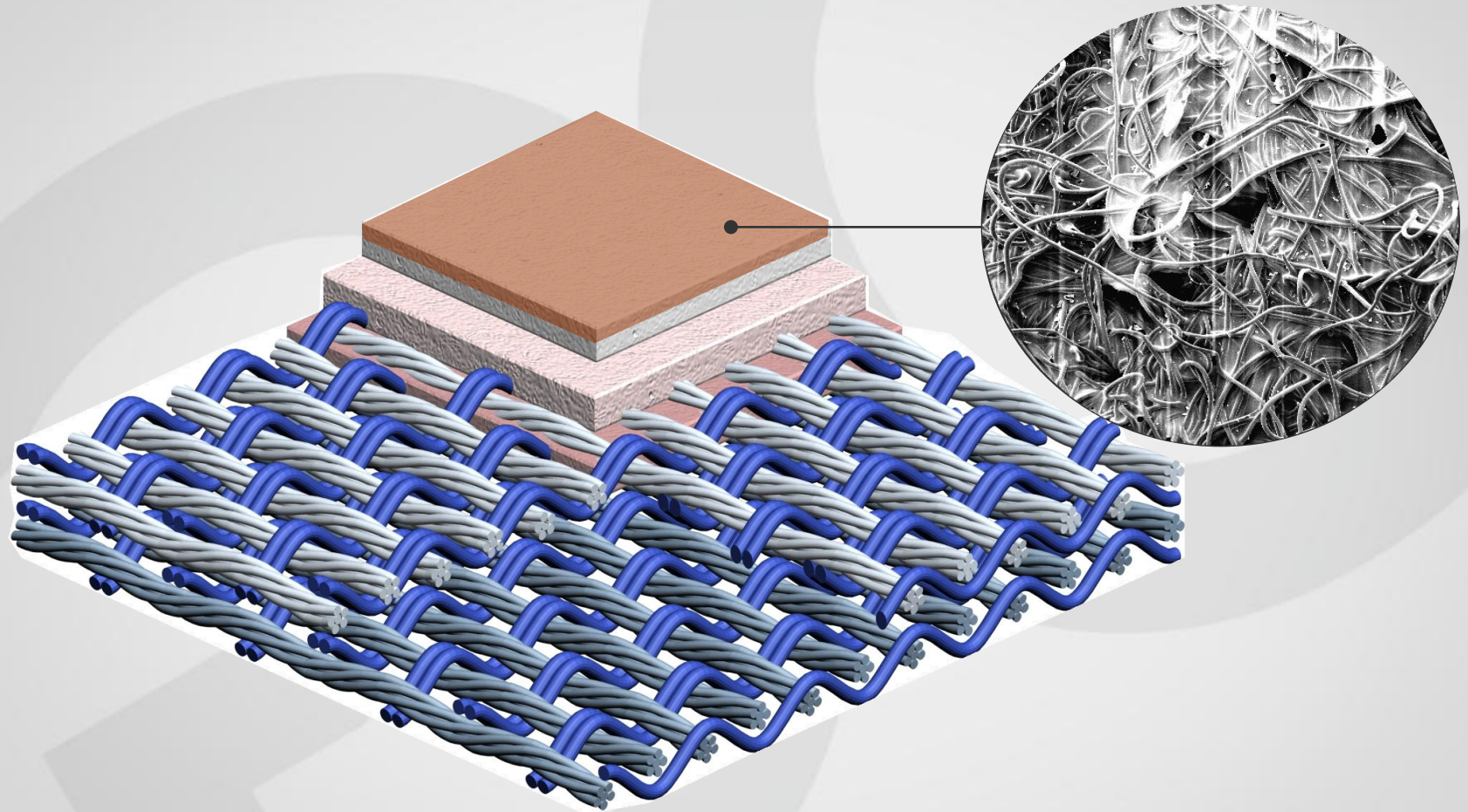


Dewatering Optimization

- *design incidence*
 - *un compressible: DuraSeam™*
 - *compressible: VentaPlane™*
- *surface optimization*
 - *Polymeric Surface Press Fabrics: MicroPlast™*
 - *Engineered Surface Press Fabrics: InterFace™*

MicroPlast™

Polymeric Surface Press Fabrics™



MicroPlast™

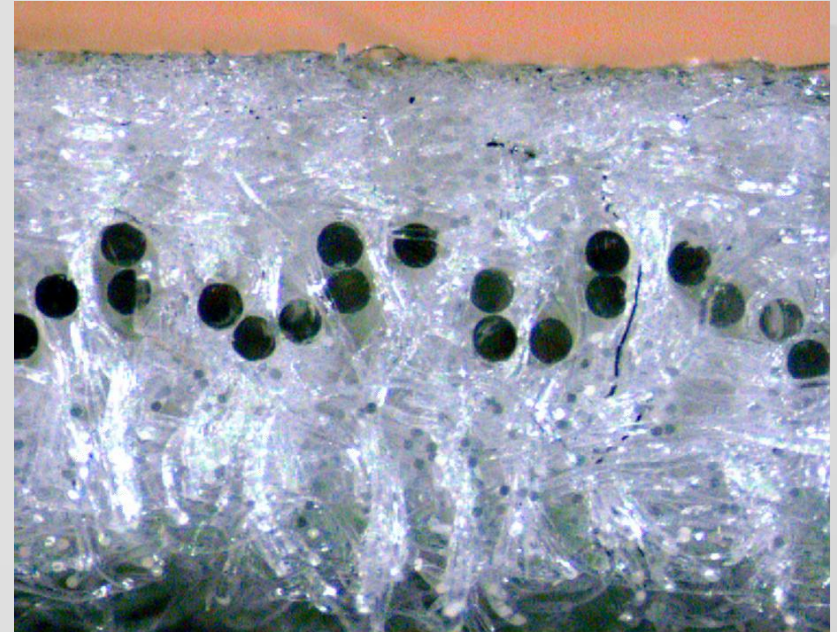
Cross Section Comparison

HydroSmooth™



Surface 6,7+3 dtex

MicroPlast™



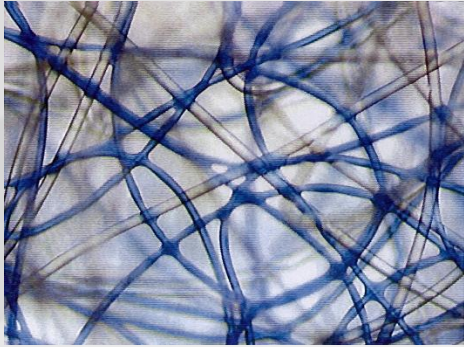
Surface 6,7+3 dtex

Dewatering Optimization

- *design incidence*
 - *un compressible: DuraSeam™*
 - *compressible: VentaPlane™*
- *surface optimization*
 - *Polymeric Surface Press Fabrics: MicroPlast™*
 - *Engineered Surface Press Fabrics: InterFace™*

InterFace™

Engineered Surface Press Fabrics™



InterFace™ Surface Press Fabrics is engineered to improve the felt start-up, as well as the interface between the press fabric and the paper sheet.

