

- Goal:

- to prove that both flowability and compactibility can be achieved with Pneumatic Dry Granulation
- To provide a PD-Granulated Paracetamol tablet with acceptable tablet profile

- Test candidates:

1. Avicel PH105: MCC's are well known for loss in tablet bondability after roller compaction
2. Paracetamol: known for very low flowability and elastic recovery, difficult to tablet, high dose
3. Ibuprofene: difficult to handle during roller compaction, difficult to tablet and sticks to punches at high dose



## Compression Simulator

- STYLCAM (MEDELPHARM)
- Single stroke press with adjustable cams
- Used for simulating the speed of a Fette 102i during all compaction experiments in this study
- Speed: 30% to 70% of a Fette 102i, EU-B
- Precompaction force level was set to 0% (PH105) or 50% (PCM) of main compaction level
- Manual die filling

# Avicel PH105: trial settings

Force level (kN/cm):	1	PDG
Force level (kN/cm):	5	RC only
Force level (kN/cm):	11	RC only
Roll gap (mm):	4	
Speed (rpm):	5	
Screen (mm):	1.25	

## Avicel PH105

# PDG granulated Avicel PH105



## Roller compaction:

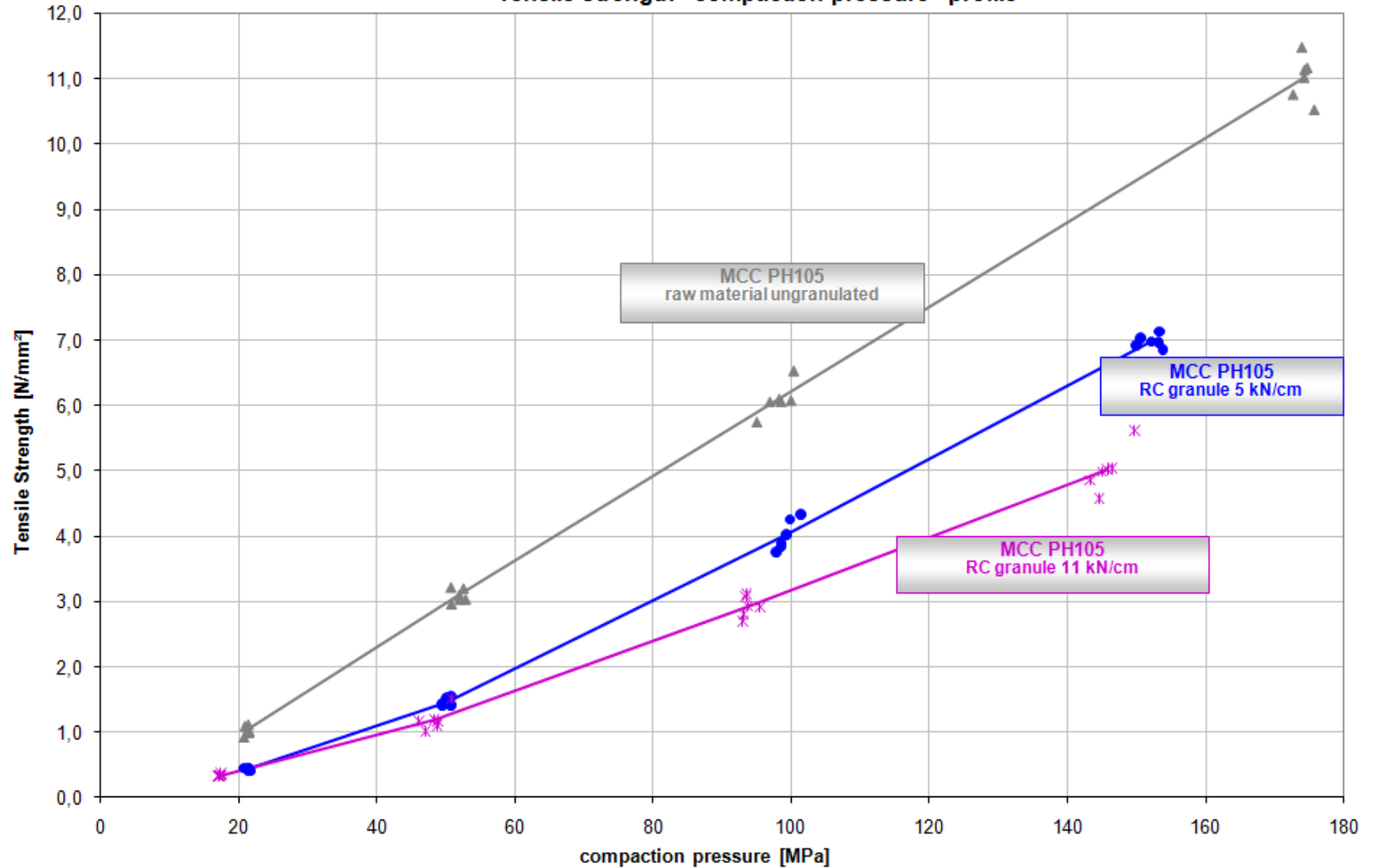
Force:	1 kN/cm
Gap:	4 mm
Speed:	5 rpm
Screen:	1.25 mm



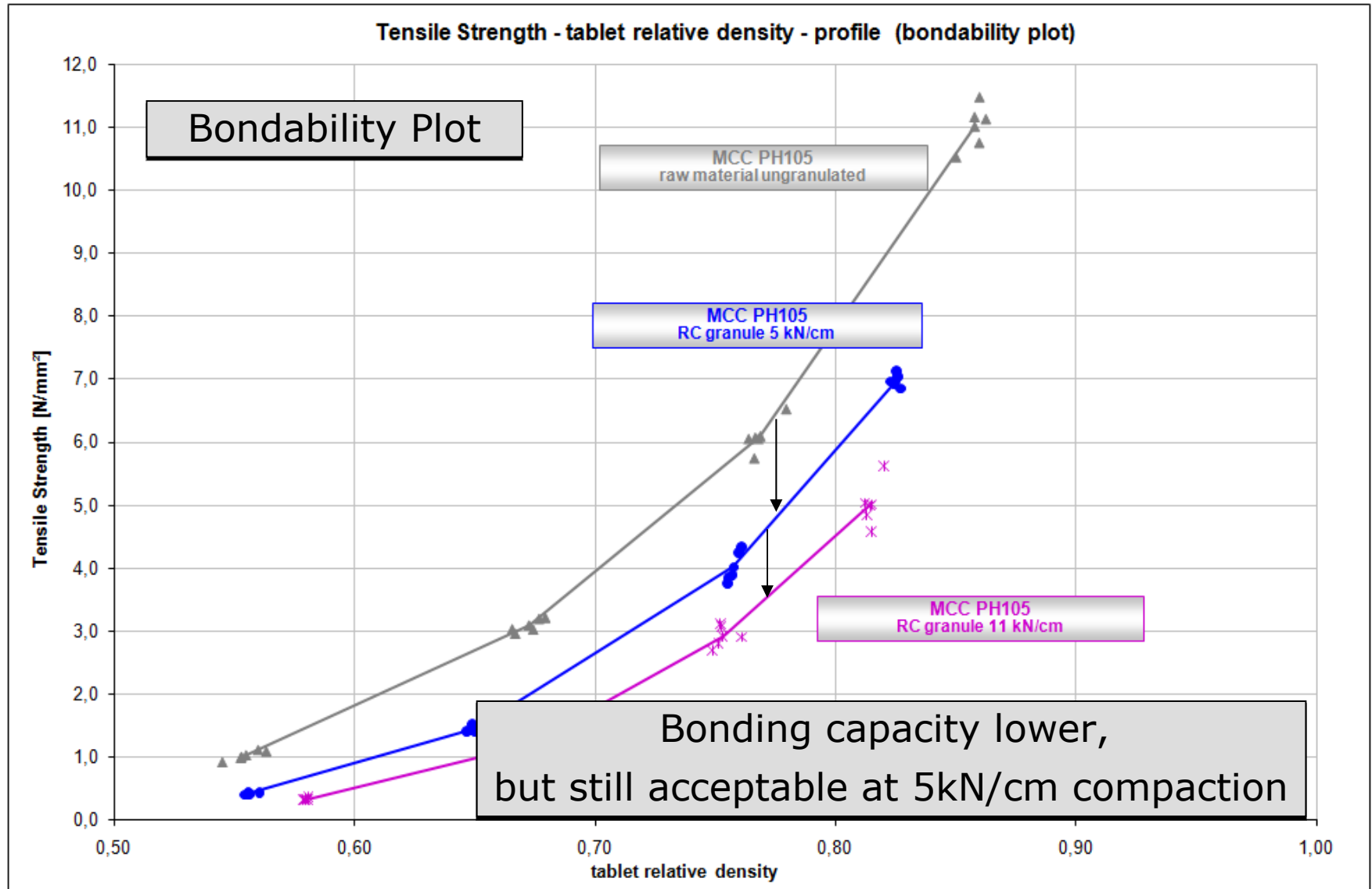
Avicel ph 105 4zu3.mov

# RECOMPACTIBILITY of RC granules

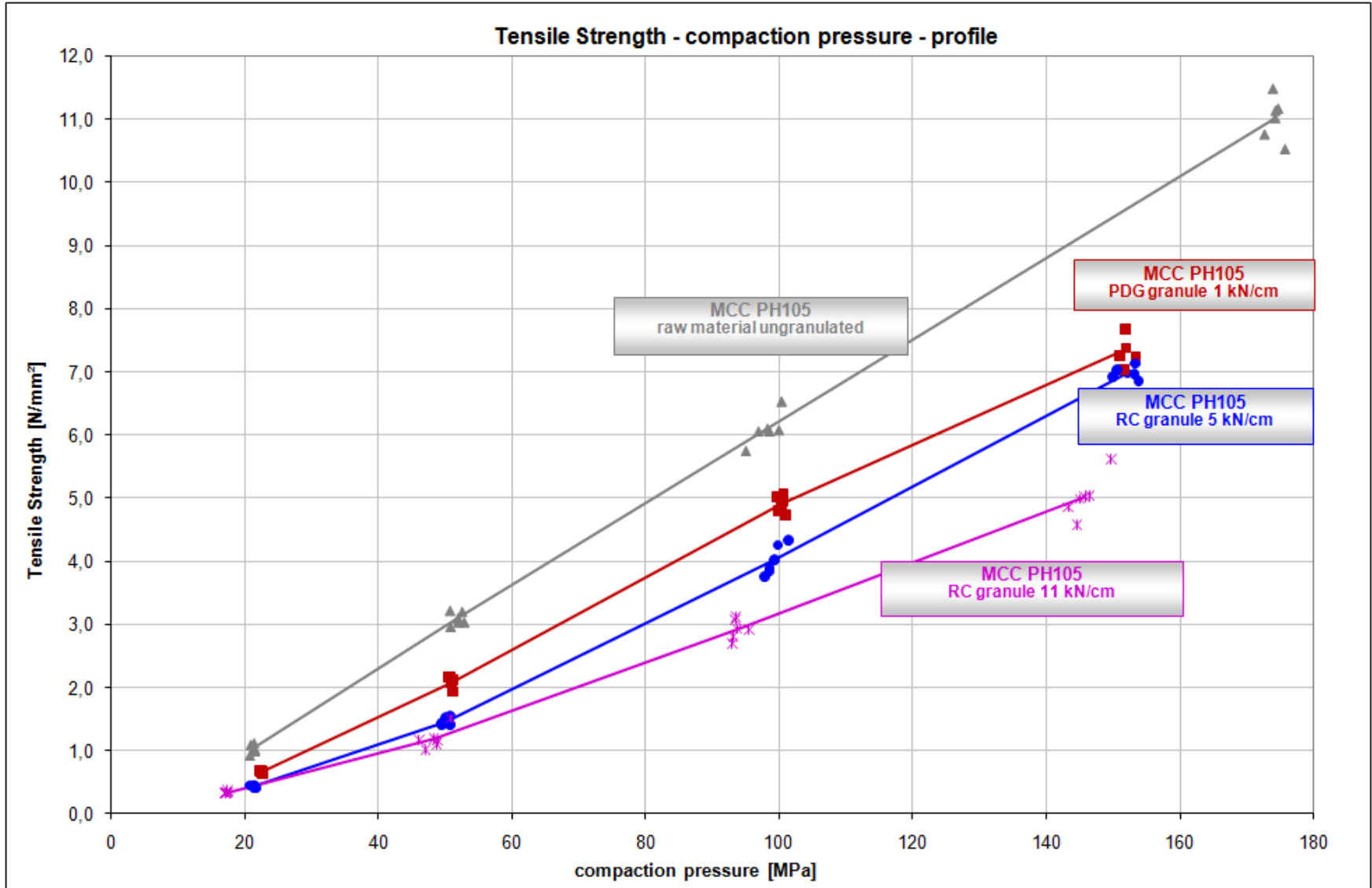
Tensile Strength - compaction pressure - profile



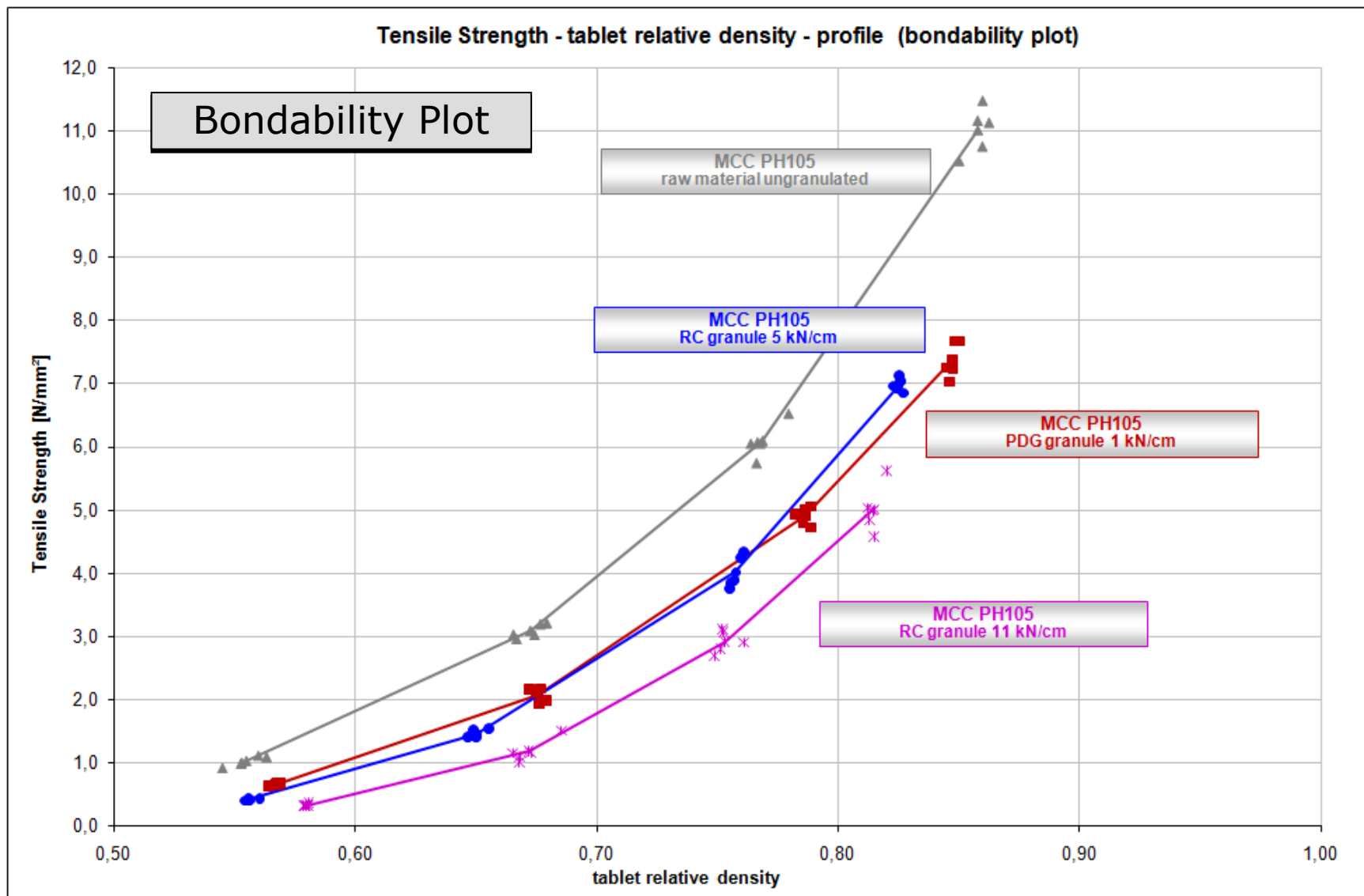
# Recompactibility of RC granules



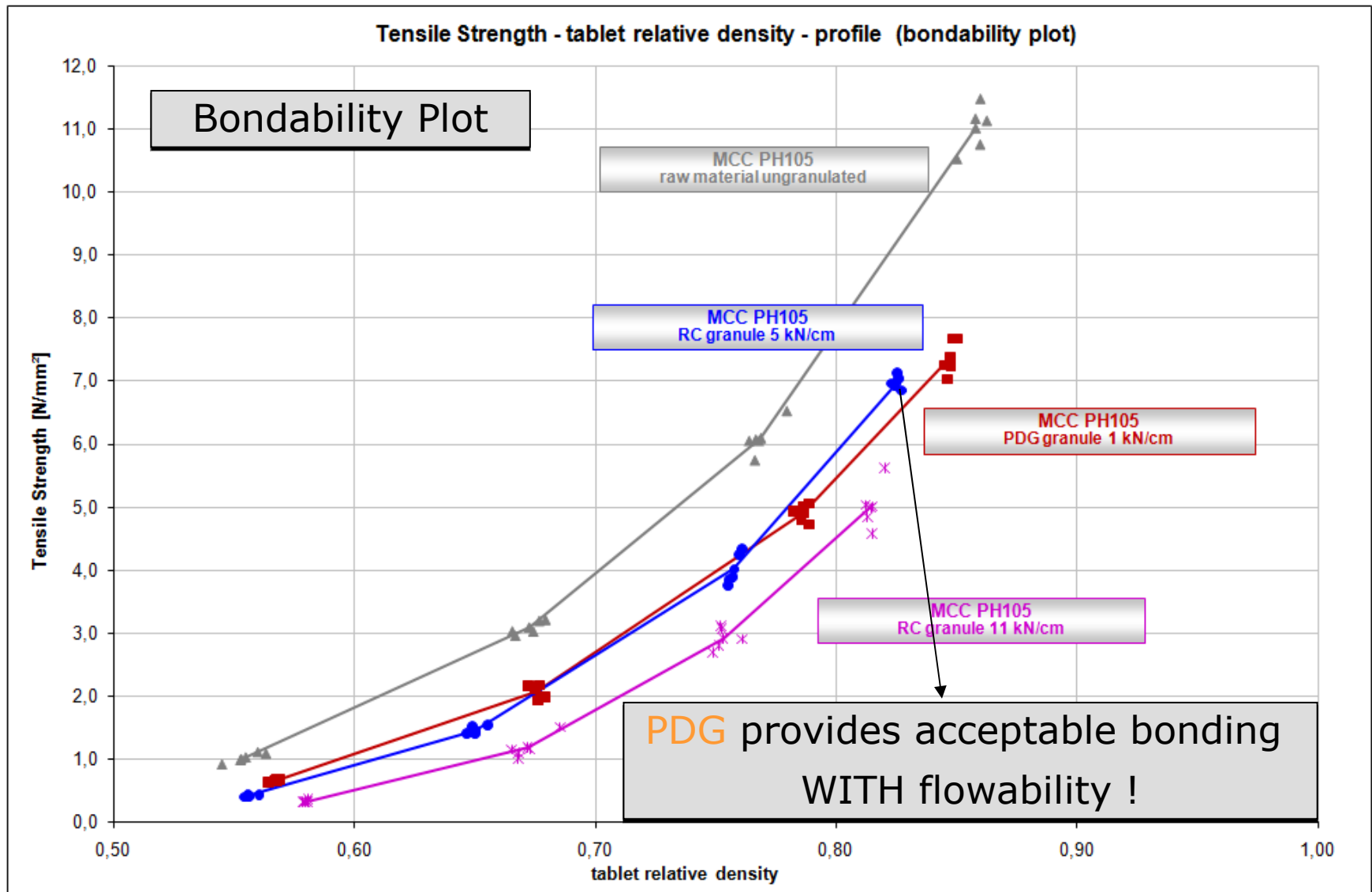
# RECOMPACTIBILITY of PDG granules



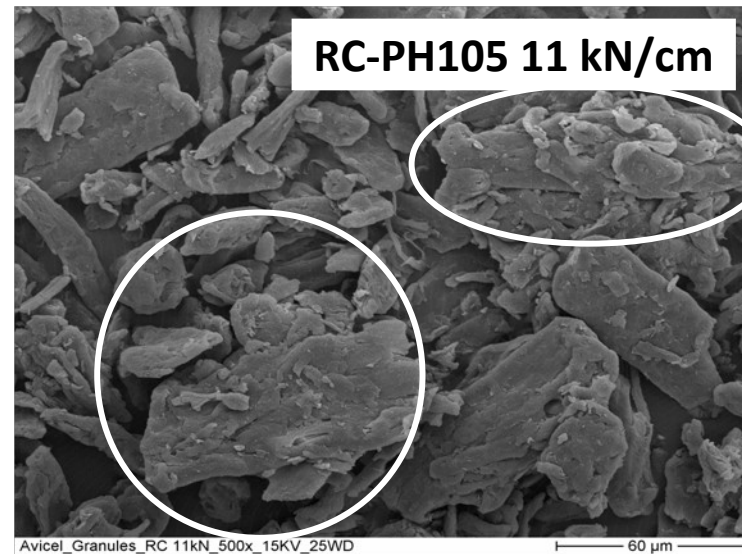
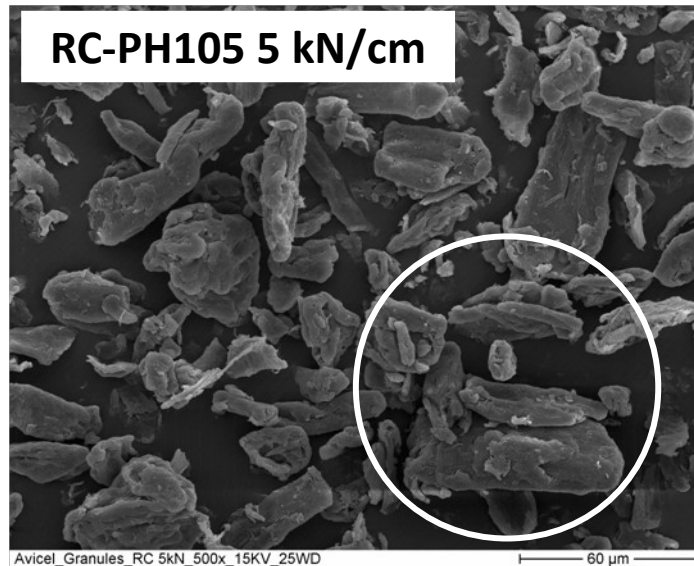
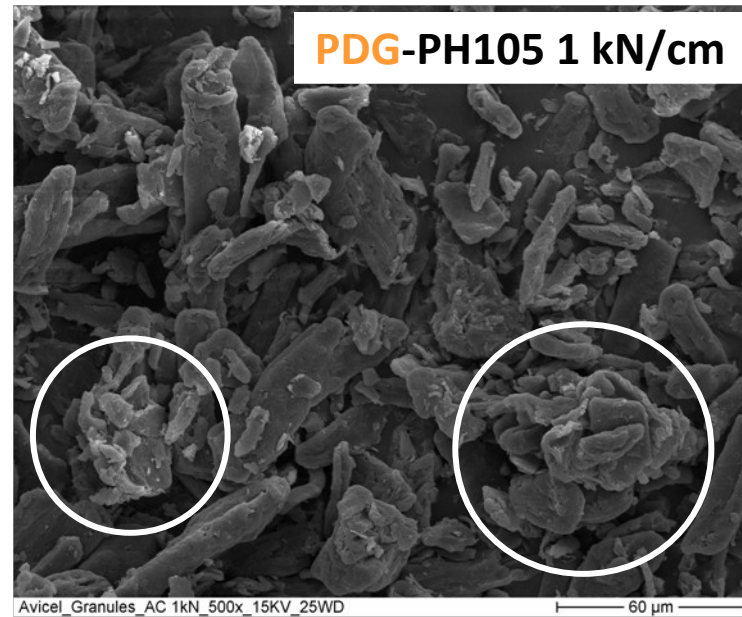
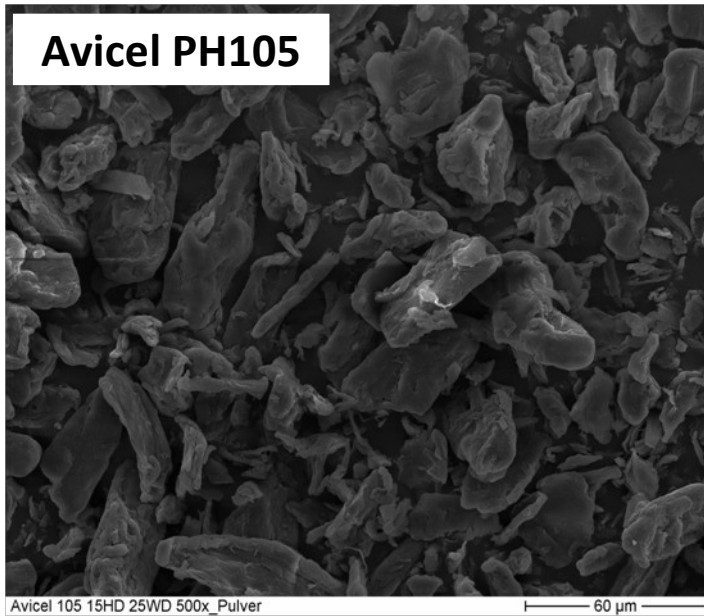
# Recompactibility of PDG granules **atacama** Labs



# Recompactibility of PDG granules



# SEM of PDG-Avicel PH105



# Conclusion Avicel PH105

## Roller compacted-Granulate

- Poor flowability
- Even at enlarged loss in compactibility

## PD-Granulate

- Excellent flowability
- Acceptable loss in compactibility