1. Test microfiber retention

- **Test setting:**
  - Washing machine load of 6 PES-Fleece jackets is washed with a standardized washing program at 40°C without detergent, dirt or other additives
  - 100ml unfiltered sample is taken as a reference form the washing sud, when pumped out of the machine (after first washing cycle)
  - Washing sud is pumped directly through externally installed PlanetCare filter filled with four “filter stripes”; 100ml sample is taken directly after the filter
  - Both samples are filtered separately over a 1,6μm glass fiber lab filter.
  - Digital images of both 1,6μm glass fiber lab filter are taken with the microscope with a optical magnitude of 50.

- **Evaluation process:**
  - Fibers on reference and filtered sample are counted manually and with image processing algorithm
  - Retention rate is calculated:
    \[
    \text{retention rate (in %)} = 100 - \frac{\text{(number of fibers in filtered sample)}}{\text{(number of fibers in reference sample)}} \times 100
    \]

2. Reference filter

- 100ml washing sud filtered through 1,6μm lab filter
- # fibers counted 1548 on filter
- \( 15480 \text{ fibers/l} \)
3. Planet care filter

- 100ml washing sud filtered PlanetCare filter and then through 1.6μm lab filter
- # fibers counted 304 on filter
- ≤ 3040 fibers/l

4. Retention rate

- Calculation:

  \[
  \text{retention rate (in %)} = 100 - \frac{\text{number of fibers in filtered sample}}{\text{number of fibers in reference sample}} \times 100
  \]

  \[
  \text{retention rate} = 100 - \frac{304 \times 100}{1548} \approx 80\%
  \]

- Around 80% of the fibers of released when washing 6 PES fleece jackets are retained by the PlanetCare filter (filled with four stripes)