

***Bacillus subtilis* Bacteria Generate an Internal Mechanical Force within a Biofilm**

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SUPPORTING MATERIAL

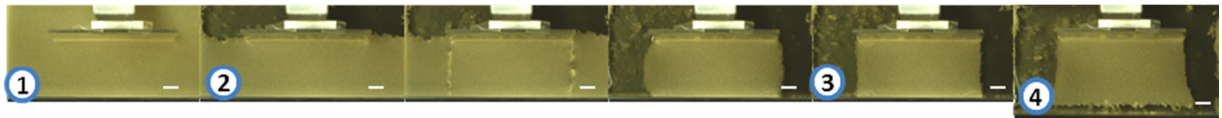


Figure S1. Detailed sequence of the cutting steps. Top views (scale bar = 20 mm). The four steps described in the main text are numbered on the pictures. Two additional pictures between steps 2 & 3 illustrate intermediate steps.

First intermediate step: two parallel straight cuts, separated by a distance W equal to the plate width, were performed using a scalpel between the plate and the opposite edge.

Second intermediate step: pellicle sides were removed. A curvature of the lateral surfaces is clearly visible. Once it appeared, we cut again the surfaces to make them straight as illustrated in the step 3 view.

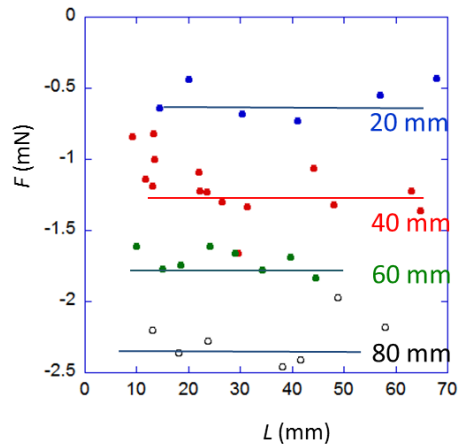


Figure S2. Force vs Length. The negative forces were measured on different rectangular bands of biofilm having different lengths (L the plate-edge distance, the horizontal axis) and different widths (W the plate lateral size). Each colour refers to a size W . We observed a constant force, independent of L and a compressive force, proportional to the lateral size W of the plate in contact with the biofilm, meaning that the mechanical stress was constant and local.

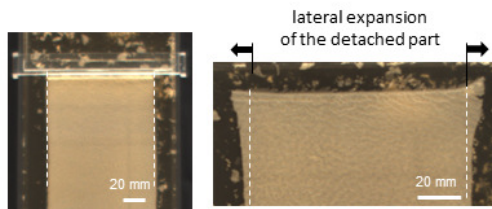


Figure S3. Shape of the pellicle once it was detached from the solid plate surface. Before detachment, we first partially released the pellicle band by increasing the distance between the two opposite borders in order to relax in part the stress due to the bulk confinement. Using rulers and a scalpel, we then adjusted the pellicle width to the plate size (marked here by the two dashed white lines; $W = 100$ mm) – left image. Once detached (right image), the pellicle spread laterally. Most of the expansion occurred at its detached side, leading to an inverse bottleneck-like shape.