



Figure S1. ABS ULTRAT measurement strap securely attached in a streamlined shape, printed using 3D technology.



Figure S2. View of the research setup during hydraulic load testing with water flow.

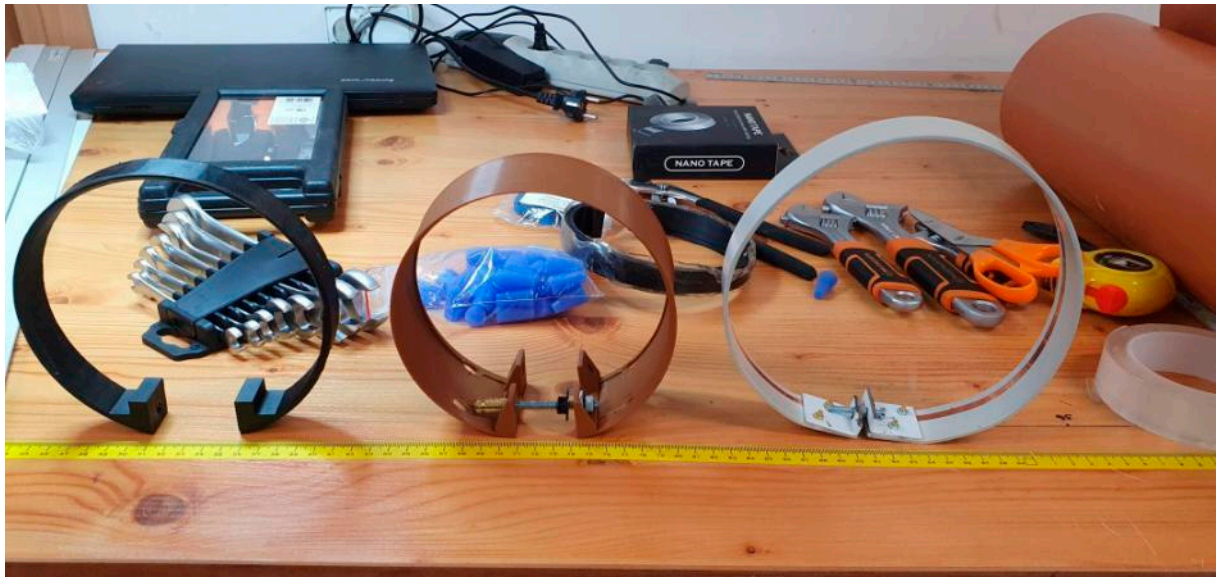


Figure S3. View of three example straps: on the left, a strap made of ABS ULTRAT; in the middle, a wider strap made of brown ABS; on the right, a strap made of PVC flat bar.



Figure S4. Examples of mounted straps on a 400 mm diameter sewage pipe: in the middle, a wide strap made of brown ABS; on the left, a narrow strap made of black ABS.