Deformation Behavior of Polyurethane Adhesive in the Single-Lap Joint Based on the Microbeam X-ray Scattering Method

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Supporting Information

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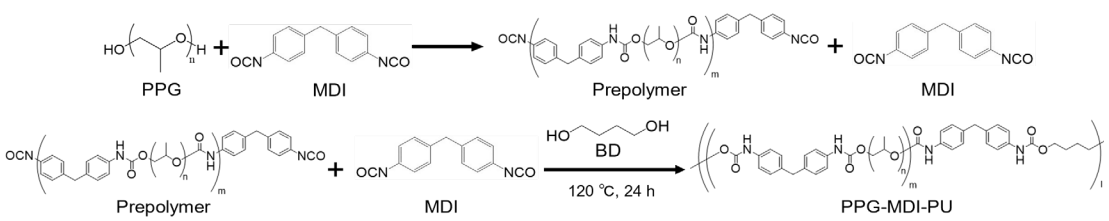

Figure S1. Synthesis scheme of the PPG-MDI-PU adhesive used in this study.

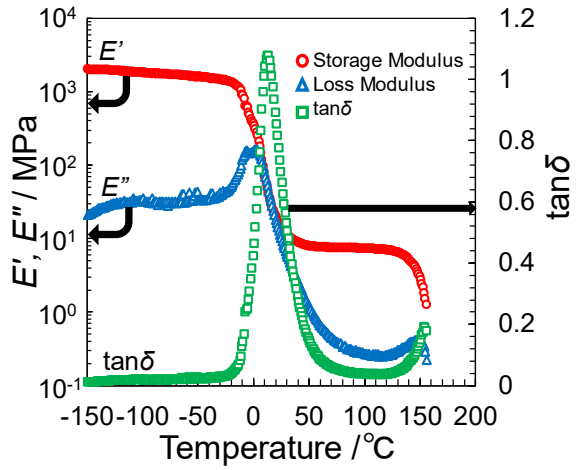

Figure S2. The dynamic viscoelastic properties of the PPG-MDI-PU adhesive used in this study.

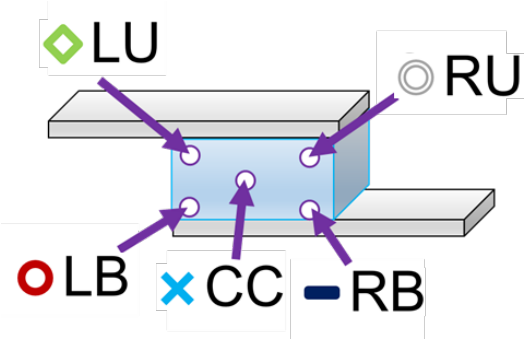

Figure S3. Measurement positions for SAXS of the PPG-MDI-PU adhesive during cyclic lap shear deformation.

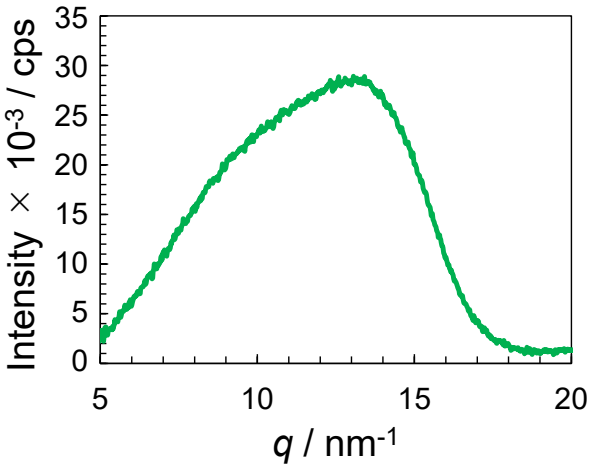

Figure S4. 1D WAXS profile of PPG 1000.

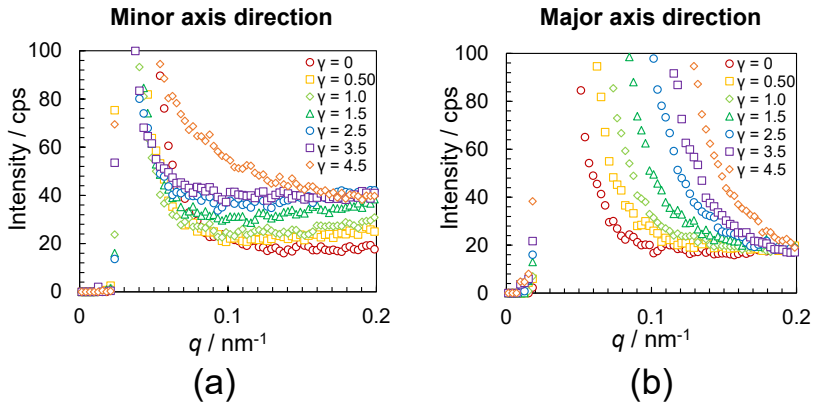

Figure S5. 1D SAXS profiles of the (a) minor axis and (b) major axis direction at q = 0–0.20 nm^{-1} for the PPG-MDI-PU adhesive at various strains.

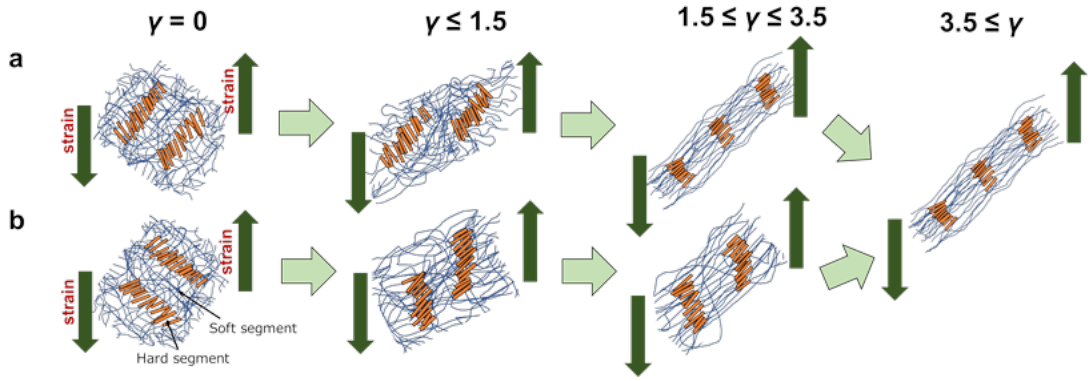

Figure S6. Schematic illustration of the deformation mechanism of the cylindrical hard segment domains in the microphase-separated structure of the PPG-MDI-PU adhesive during the shear deformation process. (a) and (b) indicates two representative orientation state of the cylindrical hard segment domains.

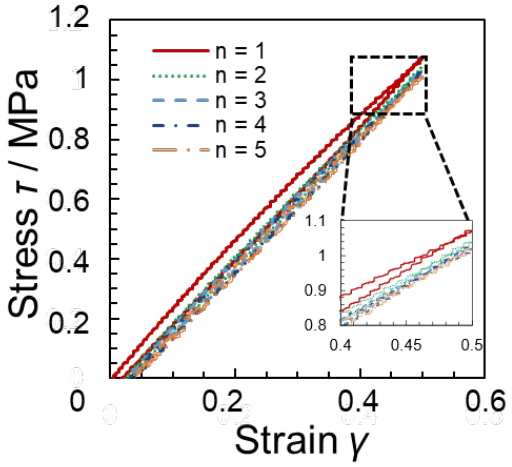

Figure S7. Cyclic stress–strain curves of the PPG-MDI-PU adhesive during cyclic lap shear deformation.

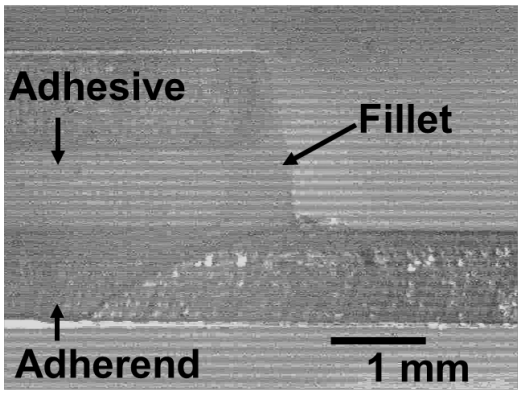

Figure S8. Image of the PPG-MDI-PU-SLJ sample in the initial state using cyclic test.

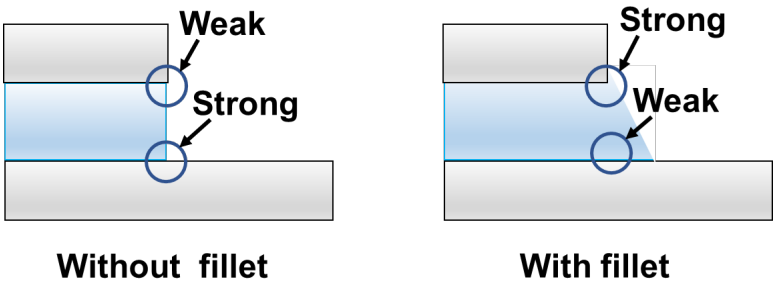

Figure S9. Strength of the singularities in SLJ.