The first movie Video-SCC-1 shows the temporal evolution of the suspension flow velocity and the volume fraction up to the stationary state. This movie complies with the parameters of Fig.7 and Fig.9 in the paper.

The second movie Video-SCC-2 shows the temporal evolution of the suspension flow velocity and the volume fraction for three initial states, up to $\tilde{t} = 700$: the same uniform initial state as before, and two initial states that are ad-randomly generated as follows. The initial concentration is taken equal to,

$$\phi(r) \ = \ \tilde{\phi} + \sum_{k=1}^{N} \delta\phi_k \cos\left\{ \frac{k\pi}{R_2 - R_1} (r - R_1) \right\} \ ,$$

where the amplitudes $\delta\phi_k$ are uniform-randomly generated within the interval $[-0.0001, +0.0001]$ (in order to avoid local volume fractions to exceed 0.64), where $N = 50$, and where the constant $\tilde{\phi}$ is chosen such that,

$$\phi_0 \ \equiv \ \frac{2}{R_2^2 - R_1^2} \int_{R_1}^{R_2} dr \ r\phi(r) \ ,$$

is equal to the required overall volume fraction. The choice of a cosine series is based on the requirement hat the derivatives of the volume fraction and the shear rate vanish at the boundaries. The initial velocity profile is computed, as before, from the flow equations discussed in the paper. The overall volume fraction and dimensionless applied stress are chosen equal to those in Figs.7 and 9 in the paper (0.60 and 50, respectively).