SU-8 Molding and PDMS Casting

The SU-8 mold fabrication process (prefer slower rather than faster):

1. The preparation of the wafer:
    a. Clean (Piranha or acetone/IPA/DI), dehydration, and optional wetting/adhesion enhancement
2. The spin coating of the negative SU-8 photoresist
    a. For thick layer, manually add and spread SU-8 onto the wafer, then let it sit quietly long enough before loading the wafer onto the spin coater
    b. Wipe and clean the edge and backside of the wafer by acetone after coating
3. The soft bake (1st baking)
4. The edge bead removal (optional)
    a. Wipe and clean the edge and backside of the wafer by acetone before exposing
5. The UV exposure
6. The Post exposure bake (2nd baking)
7. The development
8. The hard bake (3rd baking) (optional)
9. The checking measures
10. The silanization
    a. Holding (stop vacuum pump) for 1 hour before venting

The PDMS casting process:

1. The scaling and mixing of the PDMS and the curing agent
    a. Put first the PDMS and then the curing agent
2. The degassing to remove bubbles
3. The PDMS pouring on the mold
    a. Bottom: the mold wafer; side wall: tape
4. The PDMS baking
    a. Holding PDMS by above container
5. The PDMS peeling off the mold
    a. PDMS sticks: poor silanization
6. The PDMS cutting and piercing
7. The PDMS bonding