CLAIMS

1. A manufacturing method for a substrate wafer, comprising:

providing a wafer having a first main surface and a second main surface on an opposite side to the first main surface;

forming a flattening resin layer on the second main surface of the wafer;

adsorbing and holding the flattening resin layer as a reference surface, and, with this condition, grinding or polishing the first main surface of the wafer as a first processing;

removing the flattening resin layer from the wafer;

adsorbing and holding the first main surface of the wafer subjected to the first processing, and, with this condition, grinding or polishing the second main surface of the wafer as a second processing;

adsorbing and holding the second main surface subjected to the second processing of the wafer, and, with this condition, further grinding or polishing the first main surface of the wafer as a third processing;

adsorbing and holding the first main surface subjected to the third processing of the wafer, and, with this condition, further grinding or polishing the second main surface of the wafer as a fourth processing to obtain a substrate wafer,

wherein the first processing and/or the third processing is executed such that the wafer has a central concave or central convex thickness distribution.

2. The manufacturing method for a substrate wafer according to claim 1,

wherein the first processing is executed such that a thickness distribution α [μm] of the wafer obtained by the first processing is 50% or less of a warp value w [μm] of the substrate wafer obtained by the fourth processing.

3. The manufacturing method for a substrate wafer according to claim 2,

wherein the flattening resin layer is formed such that a variation in thickness of the flattening resin layer is 25% or less of the warp value w [μm] of the substrate wafer.

4. The manufacturing method for a substrate wafer according to claim 2 or 3,

wherein the first processing to the fourth processing are executed such that the warp value w [μm] of the substrate wafer is 40 μm or more.

5. The manufacturing method for a substrate wafer according to any of claims 1 to 4,

wherein the wafer is processed so as to have a central convex thickness distribution in the first processing and/or the third processing.

6. The manufacturing method for a substrate wafer according to any of claims 1 to 4,

wherein the wafer is processed so as to have a central concave thickness distribution in the first processing and/or the third processing.

7. The manufacturing method for a substrate wafer according to any of claims 1 to 6,

wherein resin which is a precursor of the flattening resin layer is applied to the second main surface of said wafer,

a load is applied to said resin, and

the resin applied with the load is cured to form the flattening resin layer.

~~8. A substrate wafer comprising a central convex or a central concave warp and wherein a nanotopography in 2 mm x 2 mm in SQMM is less than 10 nm.~~

~~9. The substrate wafer according to claim 8, wherein the nanotopography is less than 5 nm.~~

~~10. The substrate wafer according to claim 8 or 9, wherein a warp value w [μm] is 40 μm or more.~~