CLAIMS

1. A radically polymerizable resin composition, comprising

a radically polymerizable compound (A),

an expansive additive (B),

a radical polymerization initiator (C) and

an aggregate (I); and

not comprising free water,

wherein the aggregate (I) comprises bonding water, and

the expansive additive (B) is an expansive additive from which calcium hydroxide or ettringite may be formed by a hydration reaction.

2. The radically polymerizable resin composition according to claim 1,

wherein an amount of the aggregate (I) is 5 to 500 parts by mass with respect to 100 parts by mass of the radically polymerizable compound (A).

3. The radically polymerizable resin composition according to claim 1,

wherein the radically polymerizable compound (A) comprises a vinyl ester resin and a radically polymerizable monomer.

4. The radically polymerizable resin composition according to any one of claims 1 to 3,

wherein said expansive additive (B) comprises at least one selected from the group consisting of quicklime and calcium sulfo aluminate.

5. The radically polymerizable resin composition according to any one of claims 1 to 4, wherein the radical polymerization initiator (C) is a hydroperoxide (ROOH).

6. The radically polymerizable resin composition according to any one of claims 1 to 5, further comprising a metal-containing compound (D) and a thiol compound (E).

7. The radically polymerizable resin composition according to any one claims 1 to 6, wherein an amount of the expansive additive (B) is 0.3 to 30 parts by mass with respect to 100 parts by mass of the radically polymerizable compound (A).

8. The radically polymerizable resin composition according to any one of claims 1 to 7, wherein an amount of the radical polymerization initiator (C) is 0.1 to 10 parts by mass with respect to 100 parts by mass of the radically polymerizable compound (A).

9. A cured product of the radically polymerizable resin composition according to any one of claims 1 to 8.

10. The cured product according to claim 9, wherein the rate of change in the length of the cured product is 0 to 1000×10^{-6} after 3000 hours from curing.

11. A method of producing a radically polymerizable resin composition, the method comprises

a mixing step of mixing a radically polymerizable compound (A), an expansive additive (B), a radical polymerization initiator (C) and an aggregate (I),

wherein the aggregate (I) comprises bonding water, and

the expansive additive (B) is an expansive additive from which calcium hydroxide or ettringite may be formed by a hydration reaction.

12. The method of producing a radically polymerizable resin composition according to claim 11,

wherein the method does not comprise a step of adding water.

13. A radical polymerizable resin composition obtained by using the method of producing a radical polymerizable resin composition according to claim 11 or claim 12,

wherein the radically polymerizable resin composition comprises a radically polymerizable compound (A), an expansive additive (B), a radical polymerization initiator (C) and an aggregate (I).

14. The radically polymerizable resin composition according to any one of claims 1 to 3,

wherein the expansive additive (B) comprises at least one kind selected from the group consisting of

(1) a quicklime-based expansive additive,

(2) an ettringite-based expansive additive, and

(3) a quicklime-ettringite composite expansive additive;

the quicklime-based expansive additive is an expansive additive containing free quicklime as an active component; and

the ettringite-based expansive additive is an expansive additive containing calcium sulfoaluminate as an active component.