CLAIMS

1. A reinforced concrete structure, a surface of the concrete structure comprising at least a reinforcing layer and a protective layer in this order,

wherein the reinforcing layer has an integrated structure of at least one glass fiber sheet having a weight per area of from 500 to 1000 g/m^2 and at least one cured adhesive for concrete structures;

wherein the protective layer is a coated film of a protective coating containing at least one inorganic component; and

wherein a difference between refractive indices of the glass fiber sheet and the cured adhesive for concrete structures is less than 0.04.

2. The reinforced concrete structure according to claim 1, wherein glass fiber forming the glass fiber sheet comprises 12% by mass or more of ZrO_2 and 10% by mass or more of R_2O in which R is at least one selected from Li, Na, and K.

3. The reinforced concrete structure according to claim 1 or 2, wherein the glass fiber sheet is a biaxial woven fabric in which fibers in a warp direction and fibers in a weft direction are orthogonal to each other.

4. The reinforced concrete structure according to any one of claims 1 to 3, wherein the glass fiber sheet has a mesh opening of from 1 to 25 mm.

5. The reinforced concrete structure according to any one of claims 1 to 4, wherein the glass fiber sheet comprises fibers, the fibers in at least one direction being thermally fused fibers.

6. The reinforced concrete structure according to any one of claims 1 to 5, wherein the glass fiber sheet has a content of at least one component other than glass fiber of less than 50 g/m^2.

7. The reinforced concrete structure according to any one of claims 1 to 6, wherein the adhesive for concrete structures is a composition comprising at least one resin selected from the group consisting of (meth)acryl resins, vinyl ester resins, unsaturated polyester resins, urethane resins, urea resins, epoxy resins and silicone resins.

8. The reinforced concrete structure according to any one of claims 1 to 7, wherein the cured adhesive for concrete structures has a Gardner color scale of 8 or less.

9. The reinforced concrete structure according to any one of claims 1 to 8, wherein the reinforcing layer comprises two or more of the glass fiber sheets.

10. The reinforced concrete structure according to any one of claims 1 to 9, wherein the protective coating contains at least one inorganic component having a melting point of 1000 °C or lower and an organic binder in a solid content mass ratio of from 30:70 to 70:30, and wherein a content of SiO_2 in the inorganic component is 30% by mass or more.

11. The reinforced concrete structure according to any one of claims 1 to 10, wherein the protective layer has a Gardner color scale of 8 or less.

12. The reinforced concrete structure according to any one of claims 1 to 11, wherein a tensile strength per unit length of a type B specimen prepared in accordance

with JIS A 1191: 2004 using the glass fiber sheet and the adhesive for concrete structures is 150 kN/m or more.

13. The reinforced concrete structure according to any one of claims 1 to 12, wherein, in a gas toxicity test as defined in Fire Preventive and Fireproof Performance Test and Evaluation Procedure Manual under the Building Standards Law of Japan, an average time from a start of the test to mice stopping their behavior is 6.8 minutes or more.

14. The reinforced concrete structure according to any one of claims 1 to 13, wherein, in a fire spread test in NEXCO Test Method 738, a flame-out time is 30 seconds or less, and a lead of fire caused by combustion is less than 600 mm from an ignition point.

15. A method for reinforcing a concrete structure, comprising forming at least a reinforcing layer and a protective layer in this order, on a surface of the concrete structure,

wherein the reinforcing layer has an integrated structure of at least one glass fiber sheet having a weight per area of from 500 to 1000 g/m^2 and at least one cured adhesive for concrete structures;

wherein the protective layer is a coated film of a protective coating containing at least one inorganic component; and

wherein a difference between refractive indices of the glass fiber sheet and the cured adhesive for concrete structures is less than 0.04.

16. The method for reinforcing the concrete structure according to claim 15, wherein the reinforcing layer is formed by applying the adhesive for concrete structures to a surface of the concrete structure, arranging the glass fiber sheet onto the applied

surface, and then impregnating the glass fiber sheet with the adhesive for concrete structures to cure it.