CLAIMS

1. A fiber sheet for reinforcing a concrete structure, the sheet comprising:

a framework including a filament-based, multi-axial mesh sheet (A) and a matrix resin (B) impregnated into the multi-axial mesh sheet (A),

wherein the multi-axial mesh sheet (A) has a base weight amount in a range of 500 g/m^2 to 1000 g/m^2.

2. The fiber sheet according to claim 1, wherein the multi-axial mesh sheet (A) has a mesh opening of 1 to 25 mm.

3. The fiber sheet according to claim 1 or 2, wherein the multi-axial mesh sheet (A) comprises a thermoplastic resin in at least one of the axial directions.

4. The fiber sheet according to claim 3, wherein the multi-axial mesh sheet (A) comprises the thermoplastic resin in an amount of 50 g/m^2 or less.

5. The fiber sheet according to any one of claims 1 to 4, wherein the multi-axial mesh sheet (A) is a glass fiber sheet of two or more axes, and wherein the glass fiber sheet at least contains:

12% or more by mass of ZrO_2, and

10% or more by mass of R_2O, where R is one or more selected from the group consisting of Li, Na, and K.

6. The fiber sheet according to any one of claims 1 to 5, wherein the matrix resin (B) comprises 50% by mass or more of a component including one or more selected from the group consisting of (meth)acrylic resin, vinyl ester resin, unsaturated polyester resin, urethane resin, urea resin, epoxy resin, and silicone resin.

7. The fiber sheet according to any one of claims 1 to 6, wherein an amount of the matrix resin (B) is 20 g/m^2 to 400 g/m^2.

8. The fiber sheet according to any one of claims 1 to 7, wherein a difference between refractive indices of the multi-axial mesh sheet (A) and the matrix resin (B) is 0.04 or less, as measured by using a 589 nm-wavelength light source according to "Method A" defined in Section 4.1 of JIS K 7142: 2014.

9. The fiber sheet according to any one of claims 1 to 8, wherein the fiber sheet has a mesh opening of 1 to 25 mm.

10. A method for manufacturing a fiber sheet for reinforcing a concrete structure, the method comprising the steps of:

impregnating a matrix resin (B) into a filament-based, multi-axial mesh sheet (A), wherein the multi-axial mesh sheet (A) has a base weight amount in a range of 500 g/m^2 to 1000 g/m^2; and

curing and/or immobilizing the impregnated matrix resin (B) by heat treatment and/or active energy ray irradiation treatment such that the multi-axial mesh sheet (A) and the matrix resin (B) are integrated into a fiber sheet.

11. The method according to claim 10, wherein the matrix resin (B) is a non-polymerizable high molecular weight substance, the method further comprising the steps of:

diluting the high molecular matrix resin (B) with an organic solvent (C), wherein the organic solvent (C) is capable of dissolving the matrix resin (B); and

after the impregnating the matrix resin (B) into the multi-axial mesh sheet (A), volatilizing the organic solvent (C) by heat treatment.

12. The method according to claim 10, wherein the matrix resin (B) is a radical polymerizable resin, the method further comprising the steps of:

adding a thermal polymerization initiator (D-1) to the matrix resin (B), wherein the thermal polymerization initiator (D-1) is capable of generating a radical by heating; and

after the impregnating the matrix resin (B) into the multi-axial mesh sheet (A), radically polymerizing the matrix resin (B) by heat

treatment.

13. The method according to claim 10, wherein the matrix resin (B) is a radical polymerizable resin, the method further comprising the steps of:

adding a photopolymerization initiator (D-2) to the matrix resin (B) wherein the photopolymerization initiator (D-2) is capable of generating a radical by irradiating an active energy ray; and

after the impregnating the matrix resin (B) into the multi-axial mesh sheet (A), radically polymerizing the matrix resin (B) by active energy ray irradiation treatment.

14. The method according to any one of claims 10 to 13, further comprising:

winding the fiber sheet into a roll.

15. A method for reinforcing a concrete structure, the method comprising the steps of:

applying an adhesive (E) for concrete onto the fiber sheet according to any one of claims 1 to 9 or a fiber sheet obtained by the method according to any one of claims 10 to 14; and

installing the fiber sheet on a surface of a concrete structure, then curing the adhesive (E) to form a reinforcing layer on the surface, wherein the reinforcing layer has a tensile strength of 150 kN/m or more per unit length, as measured by using a "B-type specimen" prepared by a process based on JIS A 1191: 2004.

16. The method according to claim 15, wherein the reinforcing layer has a total light transmittance of 5% or more, as measured by a process defined in JIS K 7375: 2008.

17. The method according to claim 15 or 16, wherein a difference between refractive indices of the multi-axial mesh sheet (A) and the adhesive (E) is 0.04 or less, as measured by using a 589 nm-wavelength light source according to "Method A" defined in Section 4.1 of JIS K 7142: 2014.

18. The method according to any one of claims 15 to 17, wherein the adhesive (E) comprises 50% by mass or more of a component including one or more selected from the group consisting of (meth)acrylic resin, vinyl ester resin, unsaturated polyester resin, urethane resin, urea resin, epoxy resin, and silicone resin.