CLAIMS

[Claim 1] A reticulated tube comprising:

a plurality of openings that are reticulately formed;

peripheral parts that form the openings; and

a branch part that is formed in a boundary of three or more openings, the branch part including three or more peripheral parts extending from the branch part, wherein

the reticulated tube is configured to accommodate a plurality of optical fibers inserted through the reticulated tube, and

the peripheral parts are restricted by the branch part and are bendable.

[Claim 2] The reticulated tube according to claim 1, wherein

the reticulated tube is configured to fold in a longitudinal direction by bending the peripheral parts.

[Claim 3] The reticulated tube according to claim 2, wherein

a bent section of the peripheral parts is configured to deform plastically, and the peripheral parts are configured to hold in a bent shape.

[Claim 4] The reticulated tube according to any of claims 1 to 3, wherein

the reticulated tube comprises:

a plurality of first wires disposed in a spiral shape in a predetermined direction; and

a plurality of second wires disposed in a direction different from that of the first wires,

the first wires or the second wires constitutes the peripheral parts, and

a bonding part at an intersection point of the first wire and the second wire constitutes the branch part.

[Claim 5] The reticulated tube according to claim 4, wherein

the intersection point of the first wire and the second wire is fusion-bonded.

[Claim 6] The reticulated tube according to any of claims 1 to 5, wherein

in a cross section of the reticulated tube that intersects the branch part, two or more branch parts are present.

[Claim 7] The reticulated tube according to claim 6, wherein

in a cross section of the reticulated tube that intersects the branch part, three or more branch parts are present.

[Claim 8] The reticulated tube according to any of claims 1 to 7, wherein

a value of S1/(S1 + S2) is less than or equal to 0.555,

where S1 is an area occupied by the openings with the reticulated tube being developed,

S2 is an area occupied by the peripheral parts.

[Claim 9] The reticulated tube according to any of claims 1 to 8, wherein

L1/L0 is less than or equal to 0.13,

where L0 is a length of the reticulated tube before contraction in a longitudinal direction, and

L1 is a length of the reticulated tube after contraction in the longitudinal direction.

[Claim 10] The reticulated tube according to any of claims 1 to 9, wherein

the reticulated tube includes an end part from which the optical fibers can be inserted.

[Claim 11] An optical fiber protective unit, comprising:

a reticulated tube with openings that are reticulately formed, the reticulated tube being configured to accommodate a plurality

of optical fibers inserted through the reticulated tube; and

a tubular member that is inserted through the reticulated tube, the tubular member being configured to accommodate the plurality of optical fibers inserted through the tubular member, wherein

the reticulated tube includes

peripheral parts that form the openings, and

a branch part that is formed in a boundary of three or more openings, the branch part including three or more peripheral parts extending from the branch part, and

the peripheral parts are restricted by the branch part and are bendable.

[Claim 12] The optical fiber protective unit according to claim 11, wherein

the reticulated tube is disposed on an outer periphery of the tubular member while the reticulated tube is folded in a longitudinal direction with the peripheral parts bent.

[Claim 13] The optical fiber protective unit according to claim 12, wherein

the reticulated tube in a folded state is extendable in a longitudinal direction by pulling out an end part of the reticulated tube from the tubular member.

[Claim 14] The optical fiber protective unit according to claim 13, wherein

an opening of at least one end part of the tubular member is widened.

[Claim 15] The optical fiber protective unit according to claim 14, wherein

an outer diameter of the end part having a widened opening is greater than an inner diameter of the reticulated tube in the folded state.

[Claim 16] A method for protecting an optical fiber, the method comprising:

preparing a reticulated tube with openings that are reticulately formed, the reticulated tube including peripheral parts that form the openings, and a branch part that is formed in a boundary of three or more openings, the branch part including three or more peripheral parts extending from the branch part, the peripheral parts are restricted by the branch part and are bendable; and

inserting a plurality of optical fibers through the reticulated tube from an end part of the reticulated tube.

[Claim 17] The method for protecting an optical fiber according to claim 16, comprising:

preparing a folded state of the reticulated tube in a longitudinal direction by bending the peripheral parts;

inserting the plurality of optical fibers through the reticulated tube in the folded state from the end part of the reticulated tube; and

extending the reticulated tube, and inserting the plurality of optical fibers through the extended reticulated tube.

[Claim 18] The method for protecting an optical fiber according to claim 17, comprising:

preparing an optical fiber protective unit including the reticulated tube in the folded state and a tubular member inserted through the reticulated tube; and

inserting the plurality of optical fibers through the reticulated tube in the folded state from the end part of the reticulated tube by inserting the optical fibers into the tubular member.

[Claim 19] The method for protecting an optical fiber according to any of claims 16 to 18, wherein

the reticulated tube includes a plurality of first wires

disposed in a spiral shape in a predetermined direction, and a plurality of second wires disposed in a direction different from that of the first wires, and intersection points of the first wire and the second wire are bonded, and when a pitch of the intersection points in a longitudinal direction of the reticulated tube is P (mm), an inner diameter of the reticulated tube is D (mm), and a diameter of a unit constituted by the plurality of optical fibers is Y (mm),

the following equations are satisfied:

$0.6 \leq D/Y \leq 1.2$;

and

$6.0 \text{ (mm)} \leq P \times D/Y \leq 20.0 \text{ (mm)}$.

[Claim 20] A method for manufacturing a reticulated tube, the method comprising:

forming a reticulated tube with openings that are reticulately formed, and the reticulated tube being configured to accommodate a plurality of optical fibers inserted through the reticulated tube, the reticulated tube including peripheral parts that form the openings, and a branch part that is formed in a boundary of three or more openings, the branch part including three or more peripheral parts extending from the branch part, the peripheral parts are restricted by the branch part and are bendable; and

forming, in the reticulated tube, an end part configured to receive insertion of the optical fibers.

[Claim 21] The method for manufacturing a reticulated tube according to claim 20, further comprising

folding the reticulated tube in a longitudinal direction by bending the peripheral parts.

[Claim 22] The method for manufacturing a reticulated tube according to claim 20 or 21, comprising;

supplying a plurality of first wires to a heating section while twisting the plurality of first wires in a predetermined direction;

supplying a plurality of second wires to the heating section while twisting the plurality of second wires in a reverse direction to the first wires; and

fusing an intersection point of the first wire and the second wire in the heating section, wherein

the first wires or the second wires constitutes the peripheral parts, and the intersection point of the first wire and the second wire constitutes the branch part.