a fragment during processing. In order to suppress these inconveniences, studied are the type and the composition of resin and fibers (Patent Document 3). The fiber-reinforced plastic, however, has excessively high strength and rigidity to accelerate wear of a processing tool and thus decrease the life of the processing tool. Under the circumstances described above, an urgent need is to provide a processed product obtained by processing a structure that has excellent lightness and mechanical characteristics and also has excellent processability.

PRIOR ART DOCUMENTS

PATENT DOCUMENTS

[0004]

Patent Document 1: WO 2014/162873

Patent Document 2: Japanese Patent Laid-open Publication No. 2002-338722

Patent Document 3: Japanese Patent No. 5908188

SUMMARY

PROBLEMS TO BE SOLVED

[0005]

The present disclosure has been made in view of the above problems, and an object of the embodiments disclosed herein is to provide a processed product obtained by processing a

structure having excellent lightness and mechanical characteristics and having excellent processability, and a method for manufacturing the processed product.

SOLUTIONS TO THE PROBLEMS

[0006]

A method for manufacturing a processed product according to the present disclosure is the following (1) or (2). Hereinafter, the embodiment described in (1) is referred to as a first embodiment of the present disclosure, the embodiment described in (2) is referred to as a second embodiment of the present disclosure, and the first and second embodiments of the present disclosure are collectively referred to as the embodiment disclosed in the present disclosure.

[0006a]

In an aspect, there is provided a method for manufacturing a processed product, the method comprising processing a structure,

the structure containing reinforced fibers, resin, and voids,

the structure having a density in a range of 0.01 to 1 g/cm^3,

the structure having a compression modulus in a range

of 0.2 to 20 GPa, and

the processing being cutting processing performed by bringing the structure into contact with a processing tool.

[0006b]

In another aspect, there is provided a method for manufacturing a processed product, the method comprising processing a structure,

the structure containing reinforced fibers, resin, and voids,

the structure having a density in a range of 0.01 to 1 g/cm^3,

the structure having a specific heat in a range of 0.05 to 0.50 cal/(g·K), and

the processing being fusing processing performed by fusing the structure.

[0006c]

In another aspect, there is provided a structure comprising reinforced fibers, resin, and voids, the structure satisfying the following (1) and (2):

(1) a volume content of the reinforced fibers is 0.5 vol% or more and 55 vol% or less, and a volume content of the voids is 10 vol% or more and 97 vol% or less; and

(2) a processed end surface of a processed product of the structure has a surface roughness (Rz) in a range of 5 μm or more and 50 μm or less.

[0006d]

In another aspect, there is provided a processed product comprising a structure that contains reinforced fibers, resin, and voids, the processed product satisfying the following (1) and (2):

(1) the structure having a volume content of the reinforced fibers in a range of 0.5 vol% or more and 55 vol% or less and a volume content of the voids in a range of 10 vol% or more and 97 vol% or less; and

(2) a processed end surface of the processed product has a surface roughness (Rz) in a range of 5 μm or more and 50 μm or less.

(1) A method for manufacturing a processed product, the method including processing a structure,

the structure containing reinforced fibers, resin, and voids,

the structure having a density in a range of 0.01 to 1 g/cm^3,

the structure having a compression modulus in a range of 0.2 to 20 GPa, and

the processing being cutting processing performed by bringing the structure into contact with a processing tool.

(2) A method for manufacturing a processed product, the

method including processing a structure,

the structure containing reinforced fibers, resin, and voids,

the structure having a density in a range of 0.01 to 1 g/cm^3,

the structure having a specific heat in a range of 0.05 to 0.50 cal/(g·K), and

the processing being fusing processing performed by fusing the structure.

[0007]

A processed product according to the present disclosure is a processed product obtained by processing a structure,

the structure containing reinforced fibers, resin, and voids,

the structure having a volume content of the reinforced fibers in a range of 0.5 vol% or more and 55 vol% or less and a volume content of the voids in a range of 10 vol% or more and 97 vol% or less, and

the processed product including a processed end surface that contains the reinforced fibers and the resin and has a surface roughness (Rz) in a range of 5 μm or more and 50 μm or less.

EFFECTS

[0008]

According to the method for manufacturing a processed product according to the present disclosure, it is possible to provide a method for manufacture a processed product that enables manufacturing of a processed product having excellent rigidity and lightness by fine cutting or/and fusing processing and that is less likely to wear a tool.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009]

Fig. 1 is a schematic view showing a sectional configuration of a structure of the present invention.

Fig. 2 is schematic views showing one exemplary dispersion state of reinforced fibers in the structure of the present invention.

Fig. 3 is a schematic view showing one exemplary processed product according to the present invention.

Fig. 4 is a schematic view showing one exemplary device for manufacturing a fiber-reinforced mat of the present invention.

EMBODIMENTS OF THE INVENTION

[0010]

First described is a structure to be processed in the method for manufacturing a processed product according to