Claims

~~[1]~~1. A transfer sheet for forming a recessed and projecting shape, comprising:

a water-soluble resin layer that is formed of a water-soluble resin whose dissolving time in distilled water at 25°C is 0.2 s/μm or more and 1.0 s/μm or less and includes recesses and projections on a first surface thereof; and

a water-insoluble resin layer that is stacked on the first surface.

~~[2]~~2. The transfer sheet for forming a recessed and projecting shape according to claim 1, wherein

the water-soluble resin contains polyvinylalcohol and polyvinylpyrrolidone, and a total mass of polyvinylalcohol and polyvinylpyrrolidone is 40 mass% or more and less than 100 mass% with respect to a total amount of the water-soluble resin.

~~[3]~~3. The transfer sheet for forming a recessed and projecting shape according to claim 1 or 2, wherein

the water-soluble resin has a degree of polymerization of polyvinylalcohol of 250 or more and 1000 or less and a degree of polymerization of polyvinylpyrrolidone of 100 or more and 2000 or less.

~~[4]~~4. The transfer sheet for forming a recessed and projecting shape according to any one of claims 1 to 3, wherein

the water-soluble resin has a mass ratio of polyvinylalcohol to polyvinylpyrrolidone in a range of 80:20 to 20:80.

~~[5]~~5. The transfer sheet for forming a recessed and projecting shape according to any one of claims 2 to 4, wherein

the water-soluble resin has a degree of saponification of the polyvinylalcohol of 70% or more and 99% or less.

~~[6]~~6. The transfer sheet for forming a recessed and projecting shape according to any one of claims 1 to 5, wherein

the water-soluble resin layer contains a latex or a plasticizer.

~~[7]~~7. The transfer sheet for forming a recessed and projecting shape according to claim 6, wherein

the water-soluble resin layer contains 2 mass% or more and 50 mass% or less of a latex.

~~[8]~~8. The transfer sheet for forming a recessed and projecting shape according to claim 6, wherein

the water-soluble resin layer contains 2 mass% or more and 10 mass% or less of a plasticizer.

~~[9]~~9. The transfer sheet for forming a recessed and projecting shape according to any one of claims 1 to 8, which is a long sheet wound into a roll.

~~[10]~~10. The transfer sheet for forming a recessed and

projecting shape according to any one of claims 1 to 9, further comprising

a support layer stacked on a surface of the water-soluble resin layer opposite to the first surface,

a peel strength between the support layer and the water-soluble resin layer being 2 g/cm or more and 70 g/cm or less.

~~[11]~~11. The transfer sheet for forming a recessed and projecting shape according to any one of claims 1 to 10, further comprising

a sliding layer on a surface of the support layer opposite to a surface that is in contact with the water-insoluble resin layer.

~~[12]~~12. The transfer sheet for forming a recessed and projecting shape according to any one of claims 1 to 11, further comprising

an adhesive layer stacked on a surface of the water-insoluble resin layer on a side opposite to a surface thereof facing the first surface of the water-soluble resin layer.

~~[13] The transfer sheet for forming a recessed and projecting shape according to any one of claims 1 to 12, wherein~~

~~the water-insoluble resin layer is formed of a coating material.~~

~~[14] The transfer sheet for forming a recessed and~~

~~projecting shape according to any one of claims 1 to 13, wherein~~

~~the water-insoluble resin layer is formed of polyurethane or an acrylic resin.~~

~~[15] The transfer sheet for forming a recessed and projecting shape according to any one of claims 1 to 13, wherein~~

~~the water-insoluble resin layer is formed of a resin obtained by curing a UV curable resin composition.~~

~~[16]~~ 13. A method of producing the transfer sheet for forming a recessed and projecting shape according to any one of claims 1 to ~~15~~12, comprising the steps of:

preparing the water-soluble resin layer that includes recesses and projections on the first surface;

forming a water-insoluble resin layer on the first surface.

~~[17]~~14. The method of producing the transfer sheet for forming a recessed and projecting shape according to claim ~~16~~13, further comprising the steps of:

feeding a roll-shaped water-soluble resin sheet forming the water-soluble resin layer; and

transferring recesses and projections to a first surface of the fed water-soluble resin sheet using a heating recessed/projecting roller.

~~[18]~~15. The method of producing the transfer sheet

for forming a recessed and projecting shape according to claim ~~16~~ 13 or ~~17~~14, further comprising the step of

winding, after forming a water-insoluble resin layer on the first surface, the transfer sheet for forming a recessed and projecting shape into a roll.

~~[19]~~16. The method of producing the transfer sheet for forming a recessed and projecting shape according to any one of claims ~~16~~ 13 to ~~18~~15, comprising the steps of:

preparing a support;

performing surface treatment on the support layer; and

stacking the water-soluble resin layer on a surface of the support that has been subjected to the surface treatment.

~~[20]~~17. The method of producing the transfer sheet for forming a recessed and projecting shape according to any one of claims ~~16~~ 13 to ~~19~~16, further comprising the step of

stacking an adhesive layer on a surface of the water-insoluble resin layer on a side opposite to a surface thereof facing a first surface of the water-soluble resin layer.

~~[21]~~18. The method of producing the transfer sheet for forming a recessed and projecting shape according to any one of claims ~~16~~ 13 to ~~20~~17, wherein

the water-insoluble resin layer is formed of a coating material, and

the step of forming a water-insoluble resin layer on the first surface includes

a step of stacking a coating liquid of the coating material on the first surface, and

a step of drying the coating liquid to form the water-insoluble resin layer on a first surface of the water-soluble resin layer.

~~[22]~~19. The method of producing the transfer sheet for forming a recessed and projecting shape according to any one of claims ~~16~~ 13 to ~~20~~17, wherein

the water-insoluble resin layer is formed of a resin obtained by curing a UV curable resin composition, and

the step of forming a water-insoluble resin layer on the first surface includes

a step of stacking a coating liquid of the UV curable resin composition on the first surface, and

a step of curing the coating liquid to form the water-insoluble resin layer that is formed a resin obtained by curing the UV curable resin composition on a first surface of the water-soluble resin layer.

~~[23]~~20. A method of forming a recessed and projecting shape, comprising the steps of:

attaching the transfer sheet for forming a

recessed and projecting shape according to any one of claim 1 to ~~15~~ 12 on a side of the water-insoluble resin layer to a surface of a to-be-transferred body; and

removing the water-soluble resin layer of the transfer sheet for forming a recessed and projecting shape attached to the surface of the to-be-transferred body to leave the water-insoluble resin layer on the surface of the to-be-transferred body and expose a recessed and projecting shape formed by the water-insoluble resin layer on the surface of the to-be-transferred body.