[0008]

Accordingly, the invention provides the following waterproof sheet and waterproofing method.

According to a first aspect, there is provided a waterproof sheet comprising a base material layer and a pressure-sensitive adhesive layer formed on one side of the base material layer, wherein the base material layer comprises a rubber sheet reinforced with a reinforcing fiber layer and has a tensile strength of at least 15 MPa and a tear strength of at least 30 kN/m, and the pressure-sensitive adhesive layer has a hardness, as measured with an Asker C durometer, of 15 or less.

The waterproof sheet as disclosed, wherein the rubber sheet that forms the base material layer is made of a cured silicone rubber composition and the reinforcing fibers are of at least one type selected from the group consisting of glass fibers, carbon fibers, aramid fibers and silicon carbide fibers.

The waterproof sheet as disclosed, wherein the reinforcing fiber layer is a plain-weave or satin-weave layer having a yarn count for both warp and weft of from 5 to 600 tex, a density of from 10 to 150 yarns/25 mm, a thickness of from 0.02 to 0.6 mm and a tension of at least 70 N/25 mm, and the sheet has a total light transmittance of from 50 to 99%.

The waterproof sheet as disclosed, wherein the base material layer comprises a reinforcing fiber layer buried in a silicone rubber sheet and is obtained by applying a silicone rubber composition to each of the two sides of a cloth of reinforcing fibers and curing the rubber composition, which base material layer has a displacement when pulled in the surface direction of less than 5 mm at 25°C and has a thickness of from 0.2 to 3 mm.

The waterproof sheet as disclosed, wherein the pressure-sensitive adhesive layer is the cured form of an addition reaction-curable silicone composition, which cured composition has a hardness, as measured with an Asker C durometer, of not more than 15 and has a tack strength to a mortar test piece of at least 5 N/25 mm.

The waterproof sheet as disclosed wherein, one hour after attaching to a mortar test piece the waterproof sheet having a pressure-sensitive adhesive layer formed on the base material layer, the mortar test piece has a displacement when pulled in the surface direction of at least 10 mm.

The waterproof sheet as disclosed, wherein the base material layer has a thickness of from 0.2 to 3 mm, the pressure-sensitive adhesive layer has a thickness of from 0.5 to 3 mm, the waterproof sheet has an overall thickness of from 0.7 to 6 mm, the

waterproof sheet has a level of transparency such that, following attachment to an object, the color of the adherend can be discerned, and the sheet as a whole has a total light transmittance of from 50 to 99%.

A method for waterproofing with a waterproof sheet, comprising the step of liquid-tightly covering, with the pressure-sensitive adhesive layer of the waterproof sheet as disclosed, a region that includes a place where moisture infiltration is to be prevented, and also liquid-tightly overlapping and attaching to the waterproof sheet an adjoining waterproof sheet such as to set the width of the overlap to at least 5 mm.

The method of waterproofing with a waterproof sheet as disclosed, wherein the waterproof sheet is directly attached without a primer to the place where moisture infiltration is to be prevented, and at least some portion of the lateral ends and edges of the attached waterproof sheet is sealed.

The waterproofing method as disclosed, wherein the place that is waterproofed with the waterproofing sheet is a parapet expansion joint.

The waterproofing method as disclosed, wherein the place that is waterproofed with the waterproofing sheet is a region from a margin between a tank plate and a tank wall of an outdoor tank on a foundation to a surface of the tank plate and a surface of the foundation.

ADVANTAGEOUS EFFECTS OF INVENTION

[0009]

The waterproof sheet provided by embodiments of the invention includes a reinforcing layer and therefore may be less likely to be damaged than conventional waterproof sheets. Also, because it has a pressure-sensitive adhesive layer on one side, it may be capable of conforming to cracking and shifting of the installed surface. Moreover, when silicone is used as a primary ingredient, the sheet may have excellent weather resistance, heat resistance and cold resistance, enabling it to continue functioning as a waterproof sheet over a longer period of time.

BRIEF DESCRIPTION OF DRAWINGS

[0010]

[FIG. 1] Fig. 1 is a cross-sectional view showing an embodiment of the waterproof sheet of the invention.