It is noted that the prior documents pertinent to the invention are JP-A H08-198384 (Patent Document 1) and JP 4076673 (Patent Document 2).

SUMMARY OF INVENTION

TECHNICAL PROBLEM

[0003]

~~An object~~Embodiments of the invention~~, which has been made under the above circumstances, is~~ seek to provide a waterproof sheet which may serve~~s~~ over a long term without losing its physical properties, may maintain~~s~~ waterproofness over a long term, and ~~is~~may be suitable to apply to a boundary region between an outdoor tank and a foundation; and a waterproof treatment method.

SOLUTION TO PROBLEM

[0004]

~~The above object is attained by~~ Embodiments of the invention ~~which~~ provide~~s~~ a waterproof sheet and a waterproof treatment method using the sheet, as defined below.

[1] ~~A~~In a first aspect, there is provided a waterproof sheet comprising a rubber base layer and a pressure-sensitive adhesive layer disposed thereon, ~~characterized in that~~wherein the rubber base comprises a silicone rubber having a JIS-A hardness of 15 to 90, a tensile strength of at least 3 MPa, an elongation of 100 to 800%, and a crescent tear strength of at least 3 kN/m.

[2] The waterproof sheet of [1] wherein the adhesive layer has a hardness which is lower than that of the rubber base and in a range of 1 to 60 on Asker C hardness scale.

[3] The waterproof sheet of [1] or [2] wherein the adhesive layer has a bond strength of 0.5 to 10 N/25 mm to glass.

[4] The waterproof sheet of any one of [1] to [3] wherein the adhesive layer comprises a pressure-sensitive adhesive silicone resin or gel.

[5] The waterproof sheet of any one of [1] to [4] wherein the rubber base has a thickness of 0.2 to 5 mm and the pressure-sensitive adhesive layer has a thickness of 0.3 to 3 mm.

[6] The waterproof sheet of any one of [1] to [5] which is applied to a boundary region between an outdoor tank and a foundation for waterproof treating the outdoor tank.

[7] ~~A~~In a second aspect, there is provided a method of waterproof treating an outdoor tank installed on a foundation, a boundary region being defined between the bottom of the outdoor tank and the foundation, the method comprising the step of attaching the waterproof sheet of any one of [1] to [6] across the boundary region such that the adhesive layer of the sheet may extend from the outdoor tank to the foundation, for thereby forming a liquid tight cover to the boundary region.

[8] The waterproofing method of [7] wherein a plurality of waterproof sheets are juxtaposed to form a liquid tight cover to the boundary region and liquid-tightly overlapped to define an overlap between adjacent waterproof sheets, the overlap having a width of at least 5 mm.

[9] The waterproofing method of [7] or [8] wherein the foundation is made of concrete, mortar, asphalt concrete, asphalt mortar, or asphalt sand.

ADVANTAGEOUS EFFECTS OF INVENTION

[0005]

Embodiments of ~~The~~ the invention provide~~s~~ a waterproof sheet which may serve~~s~~ over a long term without experiencing any loss of its physical properties and may maintain~~s~~ waterproofness over a long term. In particular, the waterproof sheet may withstand~~s~~

long-term service since physical properties of rubber base are specified. The method for the waterproof treatment of an outdoor tank may ensures to waterproof the bottom side of the outdoor tank in a simple treatment way.

BRIEF DESCRIPTION OF DRAWINGS

[0006]

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

[FIG. 2] FIG. 2 is a schematic cross-sectional view showing the installation of an outdoor tank.

[FIG. 3] FIG. 3 is a partially cutaway cross-sectional view showing one embodiment of the waterproofing method of the invention.

[FIG. 4] FIG. 4 is a partially cutaway cross-sectional view showing another embodiment of the waterproofing method of the invention.

[FIG. 5] FIG. 5 shows a further embodiment of the water-proofing method of the invention, (A) being a partially cutaway plan view of waterproof sheets disposed to cover the outdoor tank, foundation and boundary region therebetween and (B) being a cross-sectional view of an overlap between waterproof sheets.

[FIG. 6] FIG. 6 is a partially cutaway cross-sectional view showing a still further embodiment of the waterproofing method of the invention wherein outer peripheries of a waterproof sheet are bonded with a sealant.

DESCRIPTION OF EMBODIMENTS

[0007]

The invention provides a waterproof sheet comprising a rubber base and a pressure-sensitive adhesive (PSA) layer stacked on one surface thereof. Typically a cover film is

CLAIMS:

1. A waterproof sheet comprising a rubber base layer and a pressure-sensitive adhesive layer disposed thereon, ~~characterized in that~~wherein the rubber base comprises a silicone rubber having a JIS-A hardness of 15 to 90, a tensile strength of at least 3 MPa, an elongation of 100 to 800%, and a crescent tear strength of at least 3 kN/m.

2. The waterproof sheet of claim 1 wherein the adhesive layer has a hardness which is lower than that of the rubber base and in a range of 1 to 60 on Asker C hardness scale.

3. The waterproof sheet of claim 1 or 2 wherein the adhesive layer has a bond strength of 0.5 to 10 N/25 mm to glass.

4. The waterproof sheet of any one of claims 1 to 3 wherein the adhesive layer comprises a pressure-sensitive adhesive silicone resin or gel.

5. The waterproof sheet of any one of claims 1 to 4 wherein the rubber base has a thickness of 0.2 to 5 mm and the pressure-sensitive adhesive layer has a thickness of 0.3 to 3 mm.

6. The waterproof sheet of any one of claims 1 to 5 which is applied to a boundary region between an outdoor tank and a foundation for waterproof treating the outdoor tank.

7. A method of waterproof treating an outdoor tank installed on a foundation, a boundary region being defined between the bottom of the outdoor tank and the foundation,