CLAIMS

1. A sealed and thermally insulating tank for the storage or transport of a cold fluid, the tank comprising supporting walls defining a supporting structure (1) and tank walls attached on an inner surface of the supporting walls, in which each tank wall comprises a sealed membrane and a thermally insulating barrier fitted between the sealed membrane and the supporting wall,

in which the supporting structure comprises a bottom supporting wall (2) presenting a drain hole (11) passing through the bottom supporting wall to enable draining of the supporting structure,

in which the bottom supporting wall carries a projecting flange (10) to guide a flow of liquid to the drain hole, the projecting flange extending along the edges of the bottom supporting wall (2) at a distance from the edges of the bottom supporting wall continuously on the whole periphery of the bottom supporting wall, the projecting flange (10) being covered by the thermally insulating barrier of the tank wall attached on the bottom supporting wall.

2. A sealed and thermally insulating tank for the storage or transport of a cold fluid, the tank comprising supporting walls defining a supporting structure (1) and tank walls attached on an inner surface of the supporting walls, in which each tank wall comprises a sealed membrane and a thermally insulating barrier fitted between the sealed membrane and the supporting wall,

in which the supporting structure comprises a bottom supporting wall (2) presenting a drain hole (11) passing through the bottom supporting wall to enable draining of the supporting structure,

in which the bottom supporting wall carries a projecting flange (10) to guide a flow of liquid to the drain hole, the projecting flange extending along the edges of the bottom supporting wall (2) at a distance from the edges of the bottom supporting wall and is interrupted only at said drain hole,

the projecting flange (10) being covered by the thermally insulating barrier of the tank wall attached on the bottom supporting wall.

3. The tank according to claim 1 or 2, in which the projecting flange (10) comprises a bead (41, 30, 27) made of a polymer resin adhering on the bottom supporting wall (2).

4. The tank according to any one of claims 1 to 3, in which the projecting flange (10) comprises a series of metal parts (20) welded on the bottom supporting wall (2).

5. The tank according to any one of claims 1 to 4, in which the supporting structure comprises at least one side supporting wall (4, 5, 6), vertical or slanting, connected to an edge of the bottom supporting wall (2) on a ridge (28, 29) of the supporting structure, the projecting flange being positioned parallel to the ridge.

6. The tank according to claim 5, in which the thermally insulating barrier of the tank wall attached on the bottom supporting wall comprises a plurality of corner structures (22) fitted along the ridge of the supporting structure, each corner structure (22) comprising a first wing covering a border area of the bottom supporting wall (2) and a second wing inclined with respect to the first wing and covering a border area of the side supporting wall (4, 5, 6).

7. The tank according to claim 6, in which the projecting flange is positioned under the first wing of the corner structures (22), along an outer side of the first wing of the corner structures opposite the ridge (28, 29) of the supporting structure.

8. The tank according to claim 6, in which the thermally insulating barrier of the tank wall also comprises a plurality of flat insulating blocks (21) attached on the bottom supporting wall so as to substantially cover the inner surface of the bottom supporting wall (2), and in which the projecting flange (10) is positioned between the first wing of the corner structures (22) and the flat insulating blocks (21).

9. The tank according to claim 5, in which the thermally insulating barrier of the tank wall attached on the bottom supporting wall comprises a rigid plate (40) straddling the ridge of the supporting structure and presenting a first edge bearing on the bottom supporting wall and a second edge bearing against the side supporting

wall, the projecting flange consisting of a bead of polymerisable resin (41) fitted between the first edge of the rigid plate and the bottom supporting wall (2) to attach the first edge of the rigid plate to the bottom supporting wall by adhesion.

10. The tank according to claim 9, in which the thermally insulating barrier of the tank wall comprises flat insulating blocks (43) attached on the bottom supporting wall (2) and on the side supporting wall (4, 5, 6) so as to substantially cover the inner surface of the bottom supporting wall and of the side supporting wall, the rigid plate (40) being fitted between a row of the flat insulating blocks attached on the bottom supporting wall and a row of the flat insulating blocks attached on the side supporting wall, a flexible insulating material (45) also being fitted on the rigid plate (40) between the row of the flat insulating blocks attached on the bottom supporting wall and the row of the flat insulating blocks attached on the side supporting wall.

11. The tank according to claim 7, in which the projecting flange (10) comprises a bead (30) made of a polymer resin deposited on and adhering on the face of the corner structures (22) designed to be opposite the supporting structure.

12. The tank according to claim 11, in which the corner structures (22) are positioned along the ridge of the supporting structure in the form of a row comprising intermediate spaces (35) and in which blocks of insulating material (38) are inserted in the intermediate spaces (35) between the corner structures (22) of the row,

the projecting flange (10) comprising bead sections (36) made of the polymer resin deposited on and adhering on the face of the corner structures (22) designed to be opposite the supporting structure and connecting sections (37) made of the polymer resin deposited on and adhering on the face of the blocks of insulating material (38) designed to be opposite the supporting structure, so that the connecting sections (37) connect the bead sections (36) to each other.

13. The tank according to claim 13, in which a strip of flexible insulating sealing material is inserted in a remaining part of the intermediate space (35) so as to limit heat transfers by convection.

14. The tank according to any one of claims 2 to 13, in which the projecting flange is interrupted at the drain hole (11) to allow the flow of liquid to pass towards the drain hole.

15. The tank according to claim 14, in which the edges of the bottom supporting wall (2) are located on an outer side of the projecting flange (10) and the drain hole (11) is located on an inner side of the projecting flange (10) opposite the outer side,

in which the thermally insulating barrier of the tank wall comprises flat insulating blocks (43) attached on the bottom supporting wall on the inner side of the projecting flange,

and in which a flat insulating block (50) located between a break in the projecting flange (10) and the drain hole (11) comprises a recess defining a flow channel (51) in a lower surface of the flat insulating block (50), the flow channel extending transversely to the projecting flange.

16. The tank according to claim 14, in which the drain hole (11) is located in line with the projecting flange (10), the projecting flange being interrupted at the edge of the drain hole.

17. The tank according to any one of claims 1 to 16, in which the supporting structure is the hull of a ship (70), the drain hole being located near an edge of the bottom supporting wall (2) located towards the rear (5) of the ship.

18. The tank according to any one of claims 1 to 17, in which the projecting flange (10) is at a distance from the edge of the bottom supporting wall (2) which is less than one tenth of the dimension of the bottom supporting wall in a direction perpendicular to said edge of the bottom supporting wall.

19. The tank according to any one of claims 1 to 18, in which the drain hole is equipped with a water presence sensor.

20. A ship (70) for transport of a cold liquid product, the ship comprising a hull (72) and a tank according to one of claims 1 to 19, in which the supporting structure consists of the hull (72) of the ship.

21. A process of loading or unloading of a ship (70) according to claim 20, in which a cold liquid product is routed through the insulated pipes (73, 79, 76, 81) from or to a floating or shore-based storage facility (77) to or from the tank (71) of the ship according to claim 20.

22. A transfer system for a cold liquid product, the system comprising a ship (70) according to claim 20, insulated pipes (73, 79, 76, 81) fitted so as to connect the tank (71) installed in the hull of the ship to a floating or shore-based storage facility (77) and a pump to cause a flow of cold liquid product through the insulated pipes from or to the floating or shore-based storage facility to or from the tank of the ship.