

connected with the hull compartment to prevent transfer of forces between the primary barrier and the secondary barrier.

The present invention also differs from the Conch patent in that in the present invention there is an access space on all sides (above, below and on all sides) between the primary and secondary barrier.

The present invention differs from membrane LNG containments in that in membrane containments the primary barrier is not a rigid self-supporting tank, but a thin membrane that transfers the loads from the LNG, through both the primary and secondary barriers and to the hull structure.

The present invention differs from IMO type B and IMO type C LNG containments in that the present invention has a complete secondary barrier. The present invention differs from IMO type B and IMO type C containments in that in the present invention the LNG tank, defined as primary barrier in the IGC Code, and the thermal insulation, defined as secondary barrier in the IGC Code, have no direct structural connection and do not transfer any loads directly between them. An impact force on one of the barriers will not be transferred to the other barrier. Whilst on type B and C tanks the thermal insulation is attached directly to the tank. The present invention differs from present IMO type A containment for liquefied gas in that on the present IMO type A containments for LPG the supports for the primary barrier is transferring loads to the adjacent secondary barrier structure. The present invention is an arrangement for containment of LNG where the supports for the primary barrier is transferring loads to adjacent structure so arranged that load transfer to secondary barrier is prevented.

Summary of the invention

~~The present invention relates to~~ According to an aspect, there is provided an arrangement for containment of liquid natural gas (LNG) in a hull compartment of a marine construction, comprising a self-supporting primary barrier, a secondary barrier surrounding the self-supporting primary barrier, and an access space between the self-supporting primary barrier and the secondary barrier, ~~and which~~ is characterized in that wherein the self-supporting primary barrier is a liquid-tight self-supporting LNG-liquid gas tank and is connected with the hull compartment by support devices penetrating the secondary barrier, the secondary barrier is a liquid-tight thermal insulation connected with the interior surface of the hull compartment and is sealed to the support devices by a flexible

liquid tight seal, so that the self-supporting primary barrier and the secondary barrier are separately connected with the hull compartment to prevent transfer of forces between the primary barrier and the secondary barrier.

In an embodiment of the above arrangement, the secondary barrier is connected with the hull compartment plating by connection devices.

In a further embodiment of the above arrangement for containment, the secondary barrier is sprayed onto the interior surface of the hull compartment.

In a further embodiment of the above arrangement for containment, the support devices for the self-supporting primary barrier are located at the hull structure girders.

In a further embodiment of the above arrangement for containment, the liquid-tight self-supporting LNG-liquid gas tank is an IMO independent tank type A.

In a further embodiment of the above arrangement for containment, the marine construction is a ship.

In a further embodiment of the above arrangement for containment, the marine construction is a barge or other floating unit.

In a further embodiment of the above arrangement for containment, the liquid gas is liquid natural gas (LNG).

In a further embodiment of the above arrangement for containment, the liquid-tight self-supporting liquid gas tank is a liquid-tight self-supporting liquid natural gas (LNG) tank.

Brief description of the drawings

Figure 1 shows an arrangement according to the present invention for containment of liquid natural gas (LNG) in a hull compartment of a marine construction.

Figure 2 shows details regarding a support device for a self-supporting LNG tank primary barrier.

Detailed description of the invention

Figure 1 shows an arrangement according to the present invention for containment of liquid natural gas (LNG) in a hull compartment 8 of a marine construction, comprising a liquid-tight self-supporting LNG tank primary barrier 1, a liquid-tight thermal insulation secondary barrier 3 which is surrounding the primary barrier 1, and an access space 6 between the primary barrier 1 and the secondary barrier 3. The liquid-tight self-supporting LNG tank primary barrier 1 is connected with the hull compartment 8 by support devices 2 penetrating the secondary barrier 3. The liquid-tight thermal insulation secondary barrier 3 is connected with the interior surface of the hull compartment 8 and is sealed to the support devices 2 by a flexible liquid tight seal 4.

CLAIMS

1. Arrangement for containment of liquid gas~~liquid natural gas (LNG)~~ in a hull compartment ~~(8)~~ of a marine construction, comprising a self-supporting primary barrier ~~(1)~~, a secondary barrier ~~(3)~~ surrounding the self-supporting primary barrier ~~(1)~~, and an access space ~~(6)~~ between the self-supporting primary barrier ~~(1)~~ and the secondary barrier ~~(3)~~,

~~characterized in that:~~wherein

the self-supporting primary barrier ~~(1)~~ is a liquid-tight self-supporting liquid gas ~~LNG~~-tank and is connected with the hull compartment ~~(8)~~ by support devices ~~(2)~~ penetrating the secondary barrier ~~(3)~~,

the secondary barrier ~~(3)~~ is a liquid-tight thermal insulation connected with the interior surface of the hull compartment ~~(8)~~ and is sealed to the support devices ~~(2)~~ by a flexible liquid tight seal ~~(4)~~,

so that the self-supporting primary barrier ~~(1)~~ and the secondary barrier ~~(3)~~ are separately connected with the hull compartment ~~(8)~~ to prevent transfer of forces between the primary barrier ~~(1)~~ and the secondary barrier ~~(3)~~.

2. Arrangement for containment according to ~~any of~~ claim 1, wherein the secondary barrier ~~(3)~~ is connected with the hull compartment plating by connection devices ~~(5)~~.

3. Arrangement for containment according to claim 1 or 2, wherein the secondary barrier ~~(3)~~ is sprayed onto the interior surface of the hull compartment.

4. Arrangement for containment according to any of claims 1-3, wherein the support devices ~~(2)~~ for the self-supporting primary barrier ~~(1)~~ are located at the hull structure girders ~~(7)~~.

5. Arrangement for containment according to any of claims 1-4, wherein the liquid-tight self-supporting liquid gas ~~LNG~~-tank is an IMO independent tank type A.

6. Arrangement for containment according to any of claims 1-5, wherein the marine construction is a ship.

7. Arrangement for containment according to any of claims 1-5, wherein the marine construction is a barge or other floating unit.

8. Arrangement for containment according to any of claims 1-7, wherein the liquid gas is liquid natural gas (LNG).

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9. Arrangement for containment according to any of claims 1-8, wherein the liquid-tight self-supporting liquid gas tank is a liquid-tight self-supporting liquid natural gas (LNG) tank.