

Title (en)
Tank with reinforced corrugated membrane

Title (de)
Kessel mit verstärkter Wellmembran

Title (fr)
Cuve a membrane ondulée renforcée

Publication
EP 2453159 A2 20120516 (FR)

Application
EP 12154056 A 20090630

Priority
• FR 0805567 A 20081008
• EP 09784452 A 20090630
• FR 2009051267 W 20090630

Abstract (en)
The tank has a wall including a sealed membrane that is in contact with a product i.e. liquefied natural gas, contained in the tank. A support is adjacent to the membrane. A reinforcement element (5) is inserted under a large corrugation (2) and a small corrugation of a plate (1) and between the membrane and the support. The reinforcement element includes an internal passage and an external case whose shape corresponds to shape of the large corrugation.

Abstract (fr)
Cuve étanche et thermiquement isolée, dont au moins une paroi comprend une membrane étanche destinée à être en contact avec du produit contenu dans la cuve et une couche thermiquement isolante adjacente à la membrane, dans laquelle la membrane comprend au moins une plaque (1) présentant au moins une onde (2, 3), caractérisée par le fait qu'elle comprend un élément de renfort (5) inséré sous l'onde, entre la membrane et la couche thermiquement isolante.

IPC 8 full level
F17C 3/02 (2006.01)

CPC (source: EP KR)
F17C 3/027 (2013.01 - EP KR); **F17C 2201/0157** (2013.01 - EP KR); **F17C 2201/052** (2013.01 - EP KR); **F17C 2203/012** (2013.01 - EP KR); **F17C 2209/232** (2013.01 - EP KR); **F17C 2221/033** (2013.01 - EP KR); **F17C 2223/0161** (2013.01 - EP KR); **F17C 2223/033** (2013.01 - EP KR); **F17C 2260/011** (2013.01 - EP KR); **F17C 2270/0107** (2013.01 - EP KR)

Citation (applicant)
• FR 2781557 A1 20000128 - GAZ TRANSPORT & TECHNIGAZ [FR]
• FR 2861060 A1 20050422 - GAZ TRANSPORT & TECHNIGAZ [FR]
• FR 2735847 A1 19961227 - KOREA GAS CORP [KR]
• KR 20050050170 A 20050531 - HYUN DAI HEAVY IND CO LTD [KR]

Citation (third parties)
Third party :
• JP S55122600 U 19800830
• JP S5578896 A 19800613 - KAWASAKI HEAVY IND LTD
• EP 2261110 A2 20101215 - SAMSUNG HEAVY IND [KR]
• JP 2012066539 A 20120405 - TOPPAN PRINTING CO LTD
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FR 2936784 A1 20100409; FR 2936784 B1 20101008; AU 2009301016 A1 20100415; AU 2009301016 B2 20160114; BR P10920667 A2 20160112; BR P10920667 B1 20200512; CN 102177389 A 20110907; CN 102588732 A 20120718; CN 102588732 B 20141210; CN 102588733 A 20120718; CN 102588733 B 20141210; EP 2337984 A1 20110629; EP 2337984 B1 20191127; EP 2453159 A2 20120516; EP 2453159 A3 20121212; EP 2453159 B1 20200729; EP 2455650 A2 20120523; EP 2455650 A3 20121212; EP 2455650 B1 20191030; ES 2767975 T3 20200619; ES 2821391 T3 20210426; JP 2012111558 A 20120614; JP 2012144298 A 20120802; JP 2012505125 A 20120301; JP 5379234 B2 20131225; JP 5379258 B2 20131225; JP 5778606 B2 20150916; KR 101645155 B1 20160803; KR 102594126 B1 20231024; KR 20110070998 A 20110627; KR 20120031312 A 20120402; KR 20120031313 A 20120402; KR 20140042936 A 20140407; KR 20160027222 A 20160309; KR 20170115105 A 20171016; KR 20220003163 A 20220107; MX 2011003688 A 20110502; MY 154077 A 20150430; MY 174853 A 20200519; RU 2011116959 A 20121110; RU 2012105125 A 20130820; RU 2012107912 A 20130910; RU 2505737 C2 20140127; RU 2533271 C2 20141120; RU 2535293 C2 20141210; WO 2010040922 A1 20100415

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