



ASPHALT SLENDOR: 37,000dwt asphalt tanker

Shipbuilder: **Avic-Dingheng Shipbuilding Co. Ltd**
 Vessel's name: **Asphalt Splendor**
 Hull No: **AD0019**
 Owner/Operator: **Sargeant Marine Inc.**
 Country: **US**
 Designer: **Shanghai Merchant Ship Design & Research Institute, CSSC**
 Country: **China**
 Model test establishment used: **CSSRC**
 Flag: **Marshall Islands**
 IMO number: **9763332**
 Total number of sister ships already completed (excluding ship presented): **0**
 Total number of sister ships still on order: **1**

ASPHALT SLENDOR, the first in the series of two 37,000dwt asphalt tankers was designed by Shanghai Merchant Ship Design and Research Institute (SDARI) for Sargeant Marine (USA). It was delivered at Avic-Dingheng Shipbuilding Co. on 15 December 2015.

The vessel is an ocean-going tanker with a bulbous bow, transom stern, and a flush deck with forecastle. One 5-blade high-skew propeller is driven by a two-stroke engine Wärtsilä 5RT-flex50D with a total output of 6,400kW.

Asphalt Splendor is at present the largest asphalt tanker with four independent blocks which are divided into 16 cargo tanks. The total cargo hold capacity is about 35,660m³ with a maximum deadweight of 36,962 at 10.4m scantling draught. It is designed to carry bitumen (maximum cargo temperature ≤ 170°C) and Product Oil (F.P.>60°C).

The cargo hull structure is designed with a double side and single bottom to satisfy MARPOL, SOLAS and Class requirements, and has convenient installation and maintenance space. The cargo tanks are made of high tensile steel and insulated at outside areas. After extensive strength, thermal and finite element analysis (FEM), the independent cargo blocks were placed on more than 560 special vertical supports with Tenmat Feroform pads and a set of anti-pitching, anti-rolling and anti-floating keys with pads are fitted. The pads are also used as a thermal insulation against the supporting ship structure and a sliding area to enable expected thermal expansion and heeling of the tanks.

For the cargo blocks, considerable attention has been paid to the effectiveness of the tank insulation and heating system, so that in the event of any incident the cargo temperature can be maintained sufficiently to keep the cargo fluid and the cargo can be pumped ashore. The cargo is heated by thermal oil through four separate loop heating coils inside each cargo tank with flexible temperature regulation. The cargo blocks are externally insulated by heat insulation of ceramic wool, which is based on the calculation of a temperature

drop of less than 3°C per day without heating to save the heat resource.

A cargo pipe system with three cargo pumps arranged in the cargo pump room amidships is divided into three sections connected with each other for standby purposes; they can be operated simultaneously and continuously.

Based on the optimised hull line and propeller design with energy saving devices (PSV and HVAF), the vessel sails at 14.15kn with a daily fuel consumption of 20.5 t/day at CSR with a 15% sea margin at design draught based on a calorific value of 42,700 KJ/kg under ISO conditions with a range of 11,000 nautical miles. For environmental purposes, the attained EEDI is below the base line (-26.34% reached phase 2) and a ballast water treatment system was installed.

TECHNICAL PARTICULARS

Length oa: 179.90m
 Length bp: 176.90m
 Breadth moulded: 30.60m
 Depth moulded
 To upper deck: 16.80m
 Width of double skin
 Side: 2.05m
 Draught
 Scantling: 10.40m
 Design: 9.50m
 Gross: 26,119gt
 Displacement: 48,385tonnes (scantling)
 Lightweight: 11,423tonnes
 Deadweight
 Design: 32,259dwt
 Scantling: 36,962dwt
 Block co-efficient: 0.8280 (Design draught)
 Speed, service (81 %MCR output): 14.15kn at design draught, 81%MCR, with 15% sea margin
 Cargo capacity (m³)
 Liquid volume: 35,660m³
 Bunkers (m³)
 Heavy oil: 946m³
 Diesel oil: 305m³
 Water ballast (m³): 12,854m³
 Tankers - percentage segregated ballast: 100%
 Daily fuel consumption (tonnes/day)
 Main engine only: 20.50tonnes/day
 Auxiliaries: 4.44tonnes/day
 Classification society and notations: BV I +HULL, +MACH, Oil Tanker - Asphalt Carrier (Independent tank Maximum cargo temperature ≤ 170°C), Flash Point > 60°C, Unrestricted Navigation, AUT-UMS, MON-SHAFT, BWT, CPS(WBT), INWATERSURVEY, SYS-NEQ 1, LI-HG-S3
 % high-tensile steel used in construction: 68%
 Main engine(s) x 1
 Design: Wärtsilä

Model: 5RT-flex50D, Tier II
 Manufacturer: Yichang Marine Diesel Engine Co. Ltd .
 Type of fuel: HFO or MDO
 Output of each engine: 6400 kW x 99.0 r/min
 Propeller(s) x 1
 Material: AL-NI-BRONZE
 Designer/Manufacturer: Nanjing High Accurate Marine Equipment Co., Ltd.
 Fixed/Controllable pitch: FPP
 Diameter: 6.05m
 Speed: 94.7r/min
 Diesel-driven alternators x 3
 Engine make/type: Anqing CSSC Diesel Engine Co. Ltd. / 6DK-20e
 Type of fuel : HFO or MDO
 Output/speed of each set: 900kW x 900rpm
 Boilers x 2
 Type: TOH3500V50
 Make: GESAB
 Output, each boiler: 3,500kW
 Other cranes x 1
 Make: Shanghai Hengyuan Marine Equipment Co. Ltd.
 Type: Electric hydraulic slewing crane
 Tasks: Manifold crane
 Performance: 10T-20m
 Mooring equipment
 Make x 6: WuHan Marine Machinery Plant Co. Ltd.
 Type: Hydraulic
 Special lifesaving equipment
 Number of each and capacity: 1-25P
 Make: JiangYin Beihai LSA Co., Ltd.
 Type: Free-fall lifeboat
 If MES, vertical or sloping chutes?: 35°
 Cargo tanks x 16
 Grades of cargo carried: Asphalt & Product Oil (Flash Point > 60°C) - Coated tanks - make and type of coating: - Stainless steel - structure/piping: -
 Cargo pumps x 3
 Type: V8.5z-70
 Make: BORNEMANN
 Capacity (each): 500m³/h
 Cargo control system
 Make: EEKELS
 Type: EVE440/370D
 Water ballast Treatment System
 Make: Panasia
 Capacity: 500m³/h
 Complement
 Officers: 9
 Crew: 12
 Suez Crew: 6
 Single/double/other rooms: Single room
 Stern appendages/special rudders: ... 1 rudder
 Bow thruster(s) x 1
 Make: WuHan Kawasaki Marine Machine Co. Ltd.
 Output (each): 900kW
 Bridge control system
 Make: Saiernico
 Is bridge fitted for one-man operation? Yes
 Fire detection system
 Make: TYCO
 Type: T2000CV
 Fire extinguishing systems
 Cargo holds: -
 Make/Type: Tyco/Fixed deck foam & water system
 Engine room:
 Make/Type: Tyco/Fixed CO₂ & water system
 Cabins: -
 Make/Type: Water system
 Radars x 2
 Make: Furuno
 Model(s): FAR-2827 & FAR-2837S
 Integrated bridge system (yes/no?): No
 Waste disposal plant
 Waste handled: Incinerator
 Make: Hanshun(Shanghai) Marine Technology Co. Ltd.
 Model: HSINC-50
 Sewage plant
 Make: Jiangsu Nanji Machinery Co. Ltd.
 Model: WCMBR-30(U)
 Contract date: August 2013
 Launch/float-out date: 15 May 2015
 Delivery date: 15 December 2015

