

# FKAB T38

25,000 DWT stainless steel chemical tanker, LNG as prime fuel and battery pack 1000 kWh

## HIGH QUALITY DESIGN DELIVERING REAL VALUE

A state-of-the-art design focusing on

\*Cost optimization \*Fuel Economy \*Environmental issues for both people & vessel.

This vessels will not only be compliant with future environmental regulations but will also apply innovative eco-technology for your next generation of 'Green' ships.

Chemical tanker (IMO II)

This FKAB design is 28,000 m<sup>3</sup> with 25,000 DWT, and is a TIER III tanker for chemicals (IMO II and III). The hull form is optimized for low fuel consumption and designed for excellent performance in harsh weather conditions and can operate in Sulphur Emission Control Areas (SECA). A shaft generator is installed with a frequency converter to save fuel costs in normal sea going conditions. There is a pipe trunk above the main deck were all cables and pipes located inside to ensure low maintenance cost.

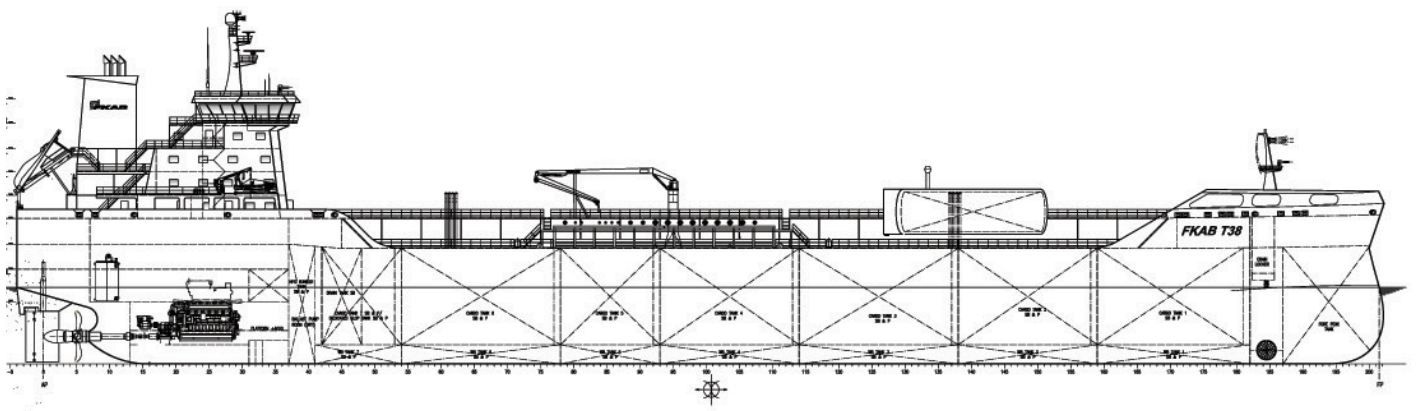
The vessel is divided into 14 cargo tanks, 2 cargo tanks dedicated as slop tanks , consisting of 14 cargo segregations. Cargo capacity with a density of 1,54 ton/m<sup>3</sup> and 1,85 ton/m<sup>3</sup> when partly filled. Two cargo tanks are dedicated for slop tanks in accordance with the rules.

The tanks are stainless steel in ferritic-austenitic steel, type 2205 with a molybdenum content of min 2.70%. The vessels primary fuel is LNG (MDO if required) and compliant with IMO SOx Tier III NOx emission limits. Manning is based on a crew number of 18 people in single cabins.

The propulsion system consists of one 4 stroke medium speed diesel engine directly coupled to the controllable pitch propeller. Main engine and Auxiliary engines will use box cooling systems. "Take me home" is handled via a hydraulic motor coupled via shaft generator in PTI mode. The shaft generator is connected via a frequency converter allowing optimum propeller rpm at various speeds.

Developing state-of-the-art design focusing and advising on energy savings

- Advising full hull optimization increasing the vessel efficiency up to 2-4% compared to other similar designs in the market and better value than required EEDI
- Real time propeller load/pitch optimization / R.O.I 1,5 years
- Waste heat recovery / R.O.I 2-5 years
- Flow control system / fresh water / R.O.I 1-3 years
- Auxiliary engine can be replaced by a battery bank of about 300-500 kWh or the running hours can be reduced with 2/3
- Enthalpy wheel / R.O.I 2,5 years
- Including noise and vibration analyses in all projects



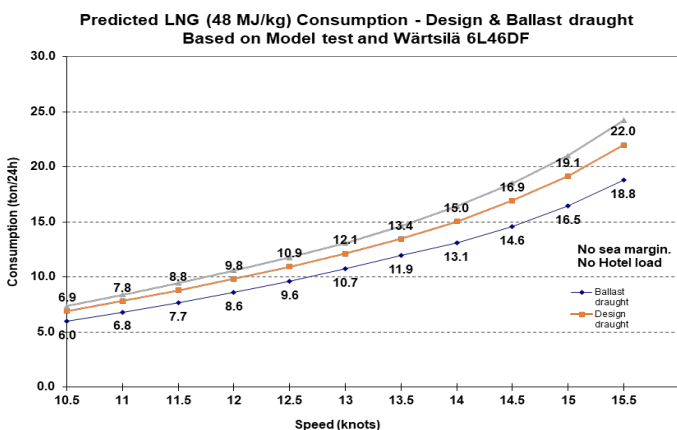
## MAIN PARTICULARS

Length over all	165,00 m	Aux engines	DF 2 x 1100 kW
Length between PP	161,10 m	Battery power	1 x battery pack 1 000kWh (replacing one Aux)
Breadth mld	26,50 m	Shaft generator	1500 kW (PTI/ PTO)
Depth mld	13,90 m	Emergency mode PTH mode in case ME fails SG is able to run the vessel	
Draught design	9,20 m	Boilers 2x oil fired steam boilers LNG/HFO/MDO 1700kW, 1 x EGH exhaust gas boiler	
Draught scantling	10,00 m	Vessel is fitted with a primary thermal oil heating system and one secondary hot water heating systems heated by two (2) LNG /HFO/MDO fired thermal oil boilers and one EGH exhaust gas heated thermal oil boiler.	
Deadweight at design draught	22 000 tonnes	Bow thruster	1200kW
Deadweight at scantling draught	25 000 tonnes	Cargo pumps, submerged (electrical or hydraulic) 2 x 7, 14 x 330 m <sup>3</sup> /h Loading 3000 m <sup>3</sup> /h Discharge 2600 m <sup>3</sup> /h	
Cargo capacity	28 000 m <sup>3</sup>	Ballast pumps, submerged centrifugal : 2 x 350 m <sup>3</sup> /h	
N2 system	N2 generator	Accommodation	18 + 2 pilot/owner + 1 spare
LNG tanks	600 m <sup>3</sup> (2 x 300 m <sup>3</sup> tanks)	Ice class	1A
HFO tanks	400 m <sup>3</sup>		
MDO tanks	130 m <sup>3</sup>		
Technical FW tanks	400 m <sup>3</sup>		
Domestic FW tanks	120 m <sup>3</sup>		
Water ballast	10 200 m <sup>3</sup>		
Main engine			
Duel fuel 4-stroke duel fuel engine, 6L46DF 6700 kW at 600 rpm			
The engine shall run on either Natural-gas with MDO as pilot fuel or pure HFO or MDO			

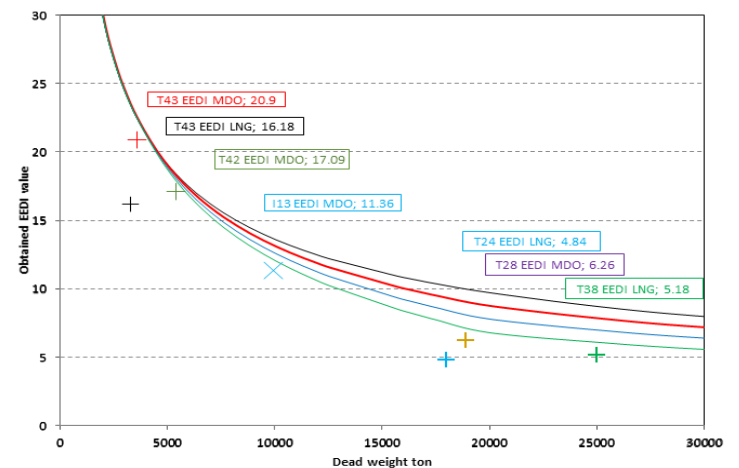
## SPEED

The vessel is designed for a service speed of 13,5 knots at 65% MCR with 15% sea margin, with clean hull, at design draught of 9,20 m and even keel with an output from the shaft generator of 300 kW. Fuel consumption at 13,5 knots at design draught excluding shaft generator and excluding sea margin 15.2 ton MDO per 24 hours or 13.2 ton LNG + 0.2 ton pilot fuel per 24 hours.

## PREDICTED LNG CONSUMPTION



## PREDICTED EEDI



## CLASS

DNV GL +1A Tanker for Oil and Chemical, CSR, ESP, ICE(1A), EO, HL (1,54) TMON, BIS, NAUT(OC), CLEAN, Recyclable, INERT, VCS(2), RP(1,22%), ETC, BWM(T)  
Register notations: Ship type 2, a2, b3, c3, v3, f2, str 0.075, k, ssp.

— Required EEDI phase 0 2013-2015  
— Phase 1 2015-2020  
— Phase 2 2020-2025  
— Phase 3 2025 -onwards  
+ T43 EEDI LNG  
+ T24 EEDI LNG  
+ T38 EEDI LNG  
× I13 EEDI MDO  
+ T43 EEDI MDO  
+ T28 EEDI MDO  
+ T42 EEDI MDO