PLAN HISTORY

REV. NO	DATE	DESCRIPTION	REMARK
0	2023.05.31	Prepared by basic design team	

(2) SHEETS WITH COVER

본 도면은 대한민국 정부의 “친환경중소형선박 기술역량 강화사업”의 일환으로 작성된 문서입니다.

MANAGER	K.D. OK	**DATE : 2023. 05. 31**	**SCALE**
APPROVED	S.S. JEONG	메탄올 연료추진 13K급 Product/Chemical Tanker	NONE
CHECKED	D. HUH	**PRELIMINARY EEDI CALCULATION**	**TEAM**
DRAWN	J.W. KIM		BASIC DESIGN
TEL.	051-260-7826		**REV.** 0
KRISO		친환경선박설계기술사업단	

Preliminary EEDI Calculation for Dual Fuel Mode
(Primary Fuel-GAS, w/o shaft G/E)

(1) Ship's data

Project	13K Methanol fueled Chemical tanker
Type of ship	Chemical tanker

(2) Principal Dimension

Length O. A.	:	abt. 129.90	m
Length B. P.	:	122.00	m
Breadth (mld.)	:	21.00	m
Depth (mld.)	:	11.80	m
Design/Scantling Draft (mld.)	:	8.55	m
EEDI Draft (mld.)		8.55	m
Deadweight at Scantling draft	:	13,040	ton
EEDI Speed at Scantling draft without SeaMargin	:	12.9	kts
Primary fuel	:	Methanol	

(3) Main Engine Particulars

ME TYPE	:	Wartsila W6L32	(1 set)
MCR	:	3,000	kW
Fuel Type	:	Methanol & MGO	
SFC of Methanol at 75% MCR for ME	:	351.02	g /kWh
SFC of Pilot for ME	:	22.40	g /kWh
SFC of MGO for AE	:	194.10	g /kWh

(4) Attained EEDI (A)

$$A = \frac{f_i * P_{ME} * \left(C_{f\ ME\ pilot} * SFC_{ME\ pilot} + C_{f\ Methanol} * SFC_{ME\ Methanol}\right) + P_{AE} * \left(C_{f\ AE\ pilot} * SFC_{AE\ pilot} + C_{f\ MGO} * SFC_{AE\ MGO}\right)}{f_c * Capacity * V_{ref}}$$

$$= \frac{1 \times 2250 \times (3.206 \times 22.4 + 1.375 \times 351) + 150 \times (3.206 \times 0 + 3.206 \times 191.6)}{1 \times 1.04 \times 13{,}040\ \text{ton} \times 1 \times 12.9\ \text{knots}}$$

= **7.661** g-CO_2 / ton· nm

* fc = 1.039, capacity correction factor for chemical tanker

(5) Required EEDI (R)

11.283	g-CO_2 / ton· nm	(Phase 1)	**Satisfied**
10.607	g-CO_2 / ton· nm	(Phase 2)	**Satisfied**
9.932	g-CO_2 / ton· nm	(Phase 3)	**Satisfied**

NOTE

1) Preliminary EEDI of ship has been investigated in accordance with Regulation of chapter IV, Annex VI, MARPOL.
2) Above figures is predicted for initial design and shall be updated with final measured data.
3) This calculation is prepared for reference only.