

Team Advanced Ocean Energy @ VT

Material List

Material	Surface Area [m ²]	Density [kg/m ³]
HDPE	6,442	970
SS 316	200	7,990

Representative Structural Thickness

Material	Low [cm]	Operational [cm]	High [cm]
HDPE	6.55	7.59	8.68
SS 316	1.84	2.04	2.25
-			

Manufactured Material Cost

Material	Low [USD/Tonne]	Typical [USD/Tonne]	High [USD/Tonne]
HDPE	\$6,000	\$7,900	\$12,000
SS 316	\$6,100	\$7,400	\$9,900
-			

Characteristic Capital Expenditure (CCE)

CCE = Total Surface Area (m²) x Representative Structural Thickness (m) x Density of Material (kgm⁻³) x Cost of Manufactured Material per unit Mass (\$kg⁻¹).

Material	RST [cm]	MMC [USD/Tonne]	CCE/material [\$]	TOTAL CCE [\$]
HDPE	7.59	\$6,000	\$2,845,676	\$3,086,910
SS 316	2.04	\$7,400	\$241,234	

Notes/Comments

MMC for HDPE judged low due to commercially available tubing not needing manufacturing