



RESINEX

SINCE 1961 MARINE TECHNOLOGY



Pipe Deployment Floats

A decorative graphic in the bottom-left corner consisting of a blue triangle with a black border, pointing towards the center.



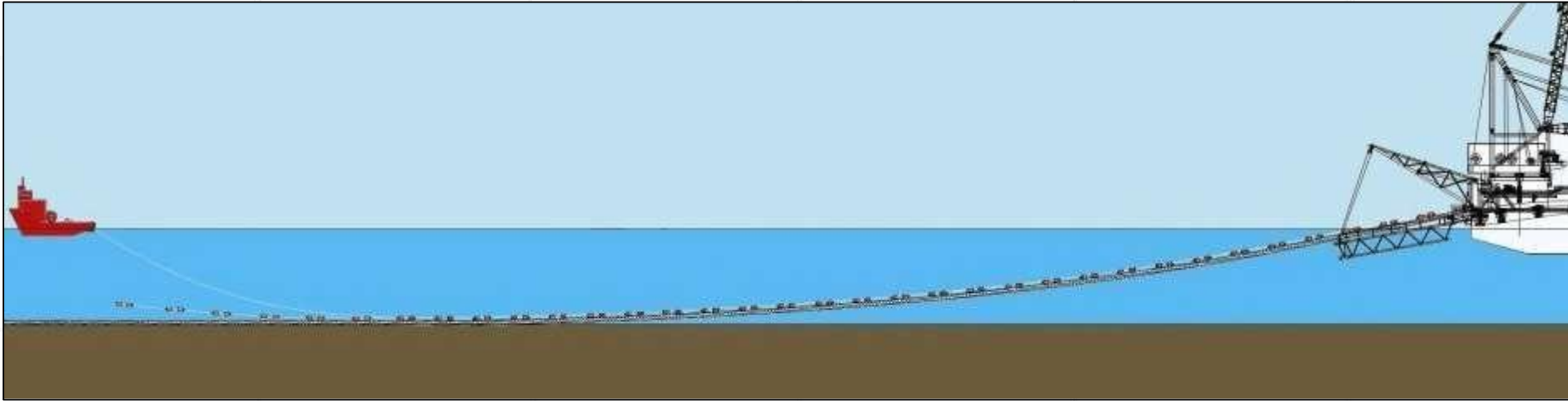
Pipe Deployment Floats (Tie-in)

- ▶ Resinex Pipe Deployment Floats, the so-called “Tie-in”, are used in open sea to support the weight of pipes during the launch of a pipeline
- ▶ They optimize deployment procedures thanks to a concave shape which hugs the tube and limits its movement during the operation
- ▶ They are usually utilized from 10 to 200-300 m of depth, but if necessary higher depths can be reached

Pipe Deployment Floats (Tie-in)

- ▶ It is possible to combine the modules in order to obtain buoys with different buoyancies
- ▶ They can be fixed on pipes with different types of straps according to necessity: steel straps, steel and textile straps, special plastic straps
- ▶ Exact details on deployment procedures are studied together with the client, following his specific needs and requests

Example: Pipeline Deployment

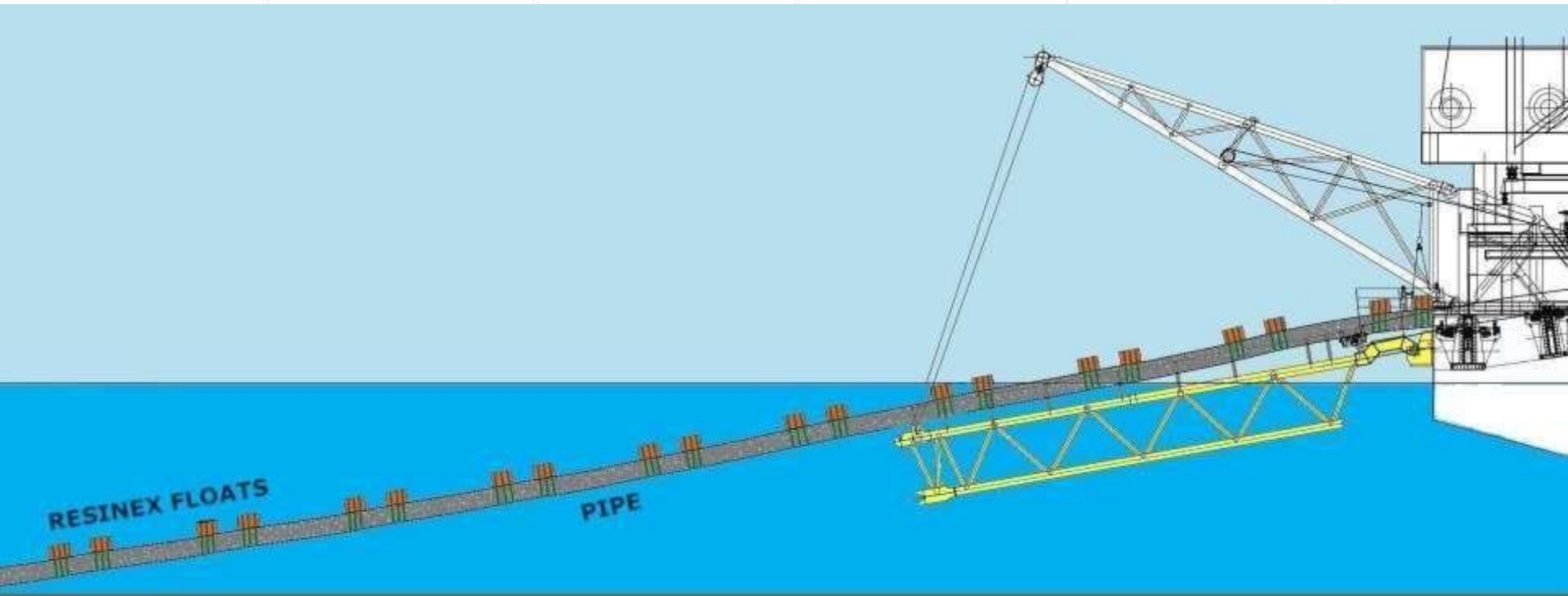


This is an example of “S-Lay” method for pipeline deployment, where pipes are assembled on the vessel and then launched into the sea as the vessel moves forward.

The S-lay method can handle the full range of pipe sizes and it’s suitable for deployment both in shallow and intermediate waters.

It is characterized by a fast installation process.

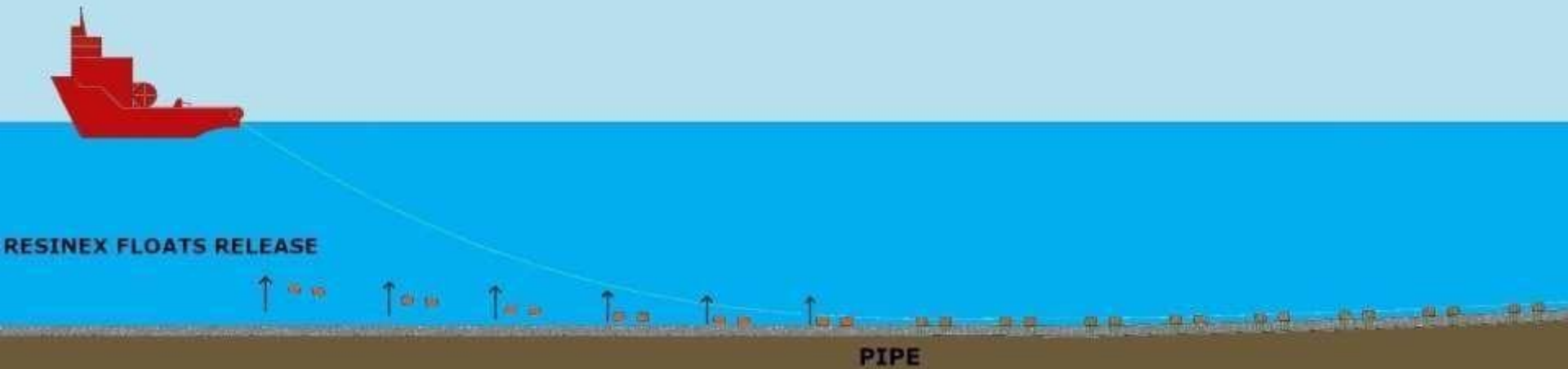
Example: Pipeline Deployment



Resinex floats are fixed on pipe in order to reduce its bending before it touches the seabed: this is a key element that allows to avoid damages to the pipe coating.

A stinger placed at the stern helps to support the pipeline when it is launched.









Example: Pipeline Deployment



After the pipe has reached the sea bottom, Resinex floats are released from it, recovered by a support boat and then subsequently moved on the vessel to be reinstalled on another section of the pipe. In this way the floats can be reused several times until the operation is completed and can be stored for future installations too.











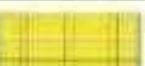



Our range





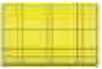









MODULAR PIPE DEPLOYMENT FLOATS (TIE-IN)				
TYPE	W x H x L (mm)	DEPTH [m]		
		0 - 50	50 - 100	100 - 200
NET BUOYANCY [kg]				
	1200x1200x1200	905	865	775
	1200x1200x2400	1935	1855	1675
	1200x1200x3600	2965	2845	2575
	1200x1200x4800	4000	3840	3480
	1100x1150x1350	1060	940	880
	1100x1150x2700	2220	2100	2040
	1100x1150x4050	3320	3190	3120
	1100x1150x5400	4520	4360	4260

Note: The net buoyancy depends on the foam density.

Our range

SINGLE MODULE PIPE DEPLOYMENT FLOATS (TIE-IN)					
TYPE	W x H x L (mm)	DEPTH [m]			
		0 - 50	50 - 100	100 - 200	
		NET BUOYANCY [kg]			
 	800x1000x1400	800	745	700	
 	1100x1150x1150	1075	1025	950	
 	1100x1150x1350	1325	1250	1150	
 	1100x1150x1950	1875	1775	1625	
 	1100x1150x2150	2000	1900	1750	
 	1100x1150x2450	2300	2175	2000	

Note: The net buoyancy depends on the foam density.

SINGLE MODULE PIPE DEPLOYMENT FLOATS (TIE-IN)					
TYPE	W x H x L (mm)	DEPTH [m]			
		0 - 50	50 - 100	100 - 200	
		NET BUOYANCY [kg]			
 	1100x1300x1150	1250	1175	1100	
 	1100x1300x1350	1475	1400	1275	
 	1100x1300x1950	2125	2000	1850	
 	1100x1300x2150	2300	2175	2000	
 	1100x1300x2450	2650	2500	2325	
 	1400x1270x2200	3150	2950	2700	
 	1400x1400x2800	4400	3900	3650	

Note: The net buoyancy depends on the foam density.

Some of our customers



subsea 7



Petroleum Marine Services Co.



Quality Test

- ▶ Resinex Quality System is certified by Lloyd's Register Quality Assurance following ISO 9001 standards
- ▶ Each job follows a proper inspection and test plan
- ▶ A Resinex Certificate of Conformity is issued for each job
- ▶ Examples of in-house tests:



Hydrostatic pressure test

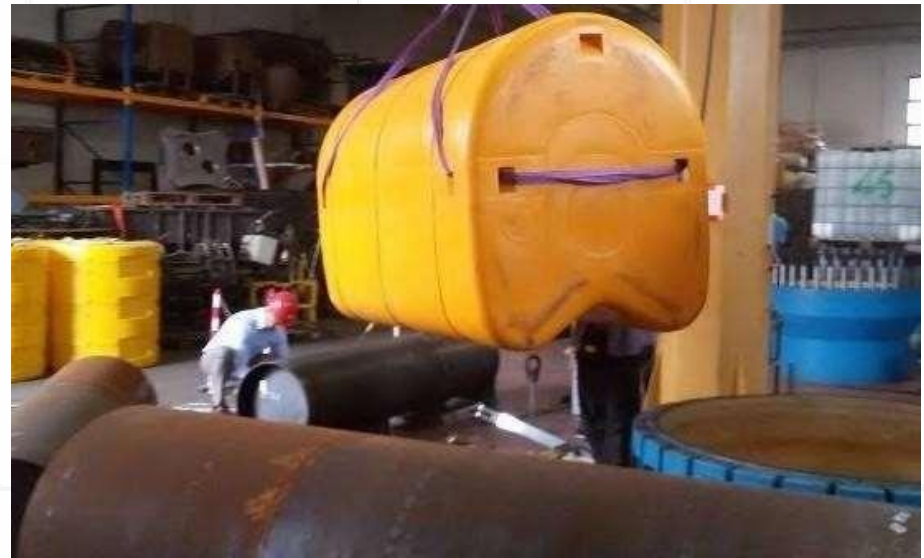


Net buoyancy test



Fit-up test

Fastening Removal Test (release of the hook)



Fastening Removal Test (cut)





Some of our projects

Sealine Gupco Project

- ▶ **PRODUCT:** Tie-in floats NB 2.2 tons, 150 m WD
- ▶ **YEAR:** 2006
- ▶ **LOCATION:** Egypt
- ▶ **CLIENT:** Saipem



Denise Project

- ▶ **PRODUCT:** Tie-in floats NB 4.4 tons, 100 m WD
- ▶ **YEAR:** 2007
- ▶ **LOCATION:** Egypt
- ▶ **CLIENT:** Saipem



Hasdrubal Project

- ▶ **PRODUCT:** Tie-in floats NB 4.4 tons, 100 m WD
- ▶ **YEAR:** 2008
- ▶ **LOCATION:** Tunisia
- ▶ **CLIENT:** Saipem



Aramco LTA Project

- ▶ **PRODUCT:** Tie-in floats NB 4.4 tons, 60 m WD
- ▶ **YEAR:** 2010
- ▶ **LOCATION:** Saudi Arabia
- ▶ **CLIENT:** Snamprogetti



Dragon Cigma IV Offshore Pipeline



- ▶ **PRODUCT:** Tie-in floats NB 3.3 tons, 140 m WD
- ▶ **YEAR:** 2012
- ▶ **LOCATION:** Venezuela
- ▶ **CLIENT:** Saipem



Pipeline Project

- ▶ **PRODUCT:** Tie-in floats NB 1.95 tons, 25 m WD
- ▶ **YEAR:** 2012
- ▶ **LOCATION:** Nigeria
- ▶ **CLIENT:** Unnamed



Moho Nord Project

- ▶ **PRODUCT:** Tie-in floats 2-2.5 tons, 50 m WD
- ▶ **YEAR:** 2015
- ▶ **LOCATION:** Congo
- ▶ **CLIENT:** Technip



El Burullus Project

- ▶ **PRODUCT:** Tie-in floats NB 4.4, 20 m WD
- ▶ **YEAR:** 2016
- ▶ **LOCATION:** Egypt
- ▶ **CLIENT:** Saipem



Zohr Project

- ▶ **PRODUCT:** Tie-in floats NB 2.2 tons, 50 m WD
- ▶ **YEAR:** 2017
- ▶ **LOCATION:** Egypt
- ▶ **CLIENT:** PMS



Tanap Project

- ▶ **PRODUCT:** Tie-in floats NB 2.7 tons, 28 m WD
- ▶ **YEAR:** 2017
- ▶ **LOCATION:** Turkey
- ▶ **CLIENT:** Sapura Energy



Moheshkhali Floating LNG Terminal



- ▶ **PRODUCT:** Tie-in floats NB 3 tons, 50 m WD
- ▶ **YEAR:** 2017
- ▶ **LOCATION:** Bangladesh
- ▶ **CLIENT:** Geocean



Dangote Refinery

- ▶ **PRODUCT:** Tie-in floats NB 1.5 tons, 50 m WD
- ▶ **YEAR:** 2018
- ▶ **LOCATION:** Nigeria
- ▶ **CLIENT:** China Offshore Oil Engineering Co.



NFA Wellhead Platform

- ▶ **PRODUCT:** Tie-in floats NB 750 kg, 60 m WD
- ▶ **YEAR:** 2018
- ▶ **LOCATION:** Qatar
- ▶ **CLIENT:** China Offshore Oil Engineering Co.



Pipeline Project

- ▶ **PRODUCT:** Tie-in floats NB 3 tons, 50 m WD
- ▶ **YEAR:** 2018
- ▶ **LOCATION:** Nigeria
- ▶ **CLIENT:** Unnamed



Bul Hanine Re-Development Project



- ▶ **PRODUCT:** Tie-in floats NB 2.2 tons, 30 m WD
- ▶ **YEAR:** 2019
- ▶ **LOCATION:** Qatar
- ▶ **CLIENT:** McDermott



Pipeline Project

- ▶ **PRODUCT:** Tie-in floats NB 2.4 tons, 50 m WD
- ▶ **YEAR:** 2019
- ▶ **LOCATION:** Egypt
- ▶ **CLIENT:** Micoperi



Pipe Layer Barge Israfil Huseynov

- ▶ **PRODUCT:** Tie-in floats NB 450 kg, 500 m WD
- ▶ **YEAR:** 2019
- ▶ **LOCATION:** Azerbaijan
- ▶ **CLIENT:** Saipem



Duqm Refinery

- ▶ **PRODUCT:** Tie-in floats NB 2-2.1 tons, 20 m WD
- ▶ **YEAR:** 2020
- ▶ **LOCATION:** Oman
- ▶ **CLIENT:** Ace Winches for China Petroleum Pipeline Engineering



Pipeline Project

- ▶ **PRODUCT:** Tie-in floats NB 2.4 tons, 70 m WD
- ▶ **YEAR:** 2020
- ▶ **LOCATION:** Middle East
- ▶ **CLIENT:** Subsea 7



BERRI FIELD

- **PRODUCT:** Tie-in floats NB 4.4 tons, 40 m WD
- **YEAR:** 2021
- **LOCATION:** Saudi Arabia
- **CLIENT:** Saipem for Aramco LTA



NORTH FIELD PRODUCTION SUSTAINABILITY PIPELINES PROJECT



- **PRODUCT:** Tie-in floats NB 4.4 tons,
80 m WD
 - **YEAR:** 2022
 - **LOCATION:** Qatar
 - **CLIENT:** Saipem



TOPR PROJECT IN TRINIDAD AND TOBAGO

- **PRODUCT:** Tie-in floats NB 2.4 tons, 70 m WD
 - **YEAR:** 2022
 - **LOCATION:** Trinidad and Tobago
 - **CLIENT:** Subsea7



UNDISCLOSED PROJECT: PIPELINE DEPLOYMENT FLOATS FOR ALLSEAS



- **PRODUCT:** Tie-in floats NB 2.1 tons,
10 m WD
- **YEAR:** 2023
- **CLIENT:** Allseas



GASTRADE ALEXANDROUPOLIS PROJECT



- **PRODUCT:** Tie-in floats NB 4.4 tons, 40 m WD
 - **YEAR:** 2023
 - **LOCATION:** Greece
 - **CLIENT:** Saipem



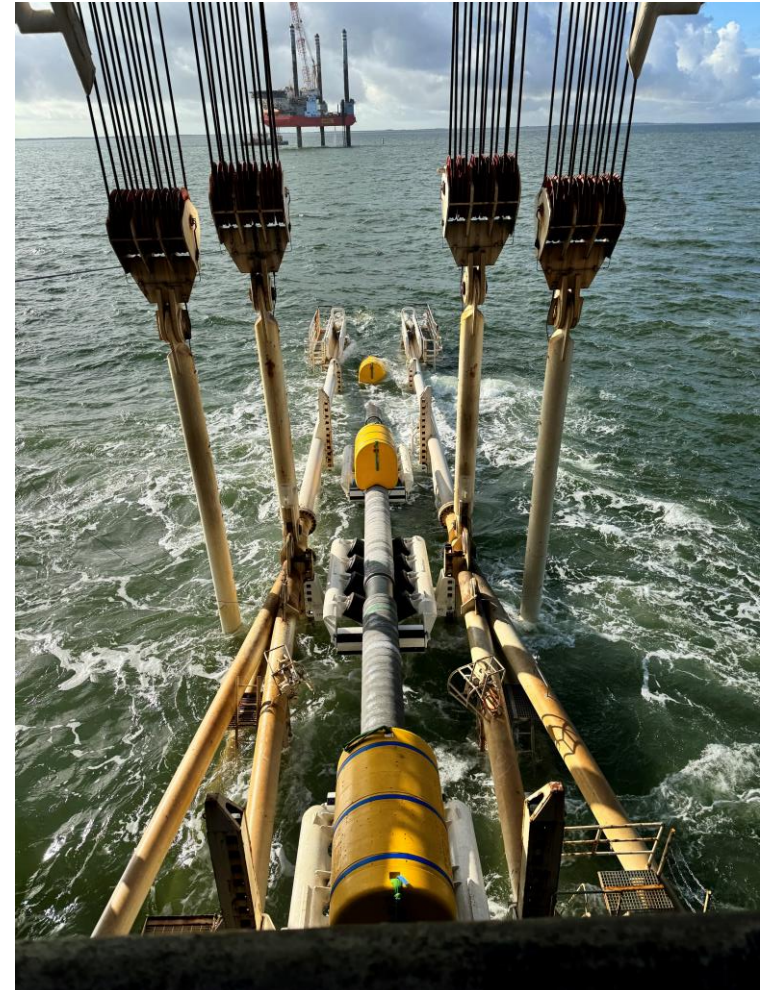
ZULUF AH TRUNKLINES PROJECT

- **PRODUCT:** Tie-in floats NB 2.3 tons, 15 m WD
- **YEAR:** 2023
- **LOCATION:** UAE
- **CLIENT:** Mcdermott Middle East



SINGLE MODULE PIPE DEPLOYMENT (TIE-IN) FLOATS

- **PRODUCT:** Tie-in floats NB 4.5 tons,
20 m WD
- **YEAR:** 2024
- **LOCATION:** The Netherlands
- **CLIENT:** Allseas



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