

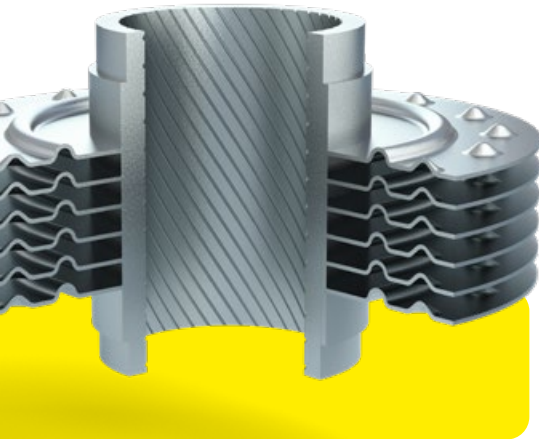
CAPEX savings -  
up to 20 % AFC field  
length reduction

Increased revenue

Improve CO<sub>2</sub> footprint

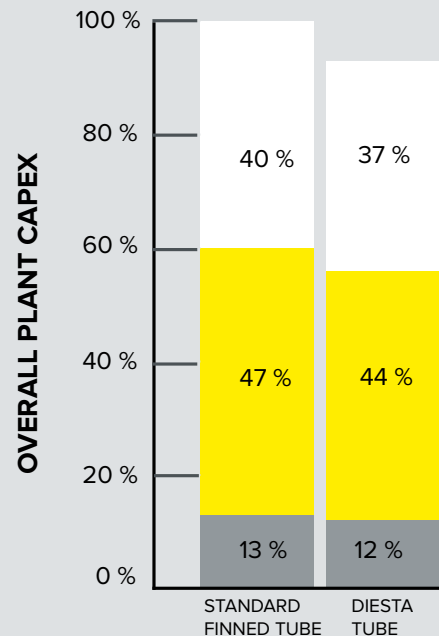
# Heat Rejection & Heat Recovery Solutions

## DIESTA TUBE TECHNOLOGY



### A SUCCESSFUL COLLABORATION

**DIESTA** is an innovative, patented finned tube technology, dedicated to air cooled heat exchangers, using enhanced surfaces, that has the ability to improve plant efficiency and reduce construction costs without deviating from the robust design requirements.



**DIESTA**  
7 % total plant  
cost savings  
10 % Pipe Rack  
savings

Construction

Procurement

Engineering

### MARKETS



Chemicals



Carbon  
Capture

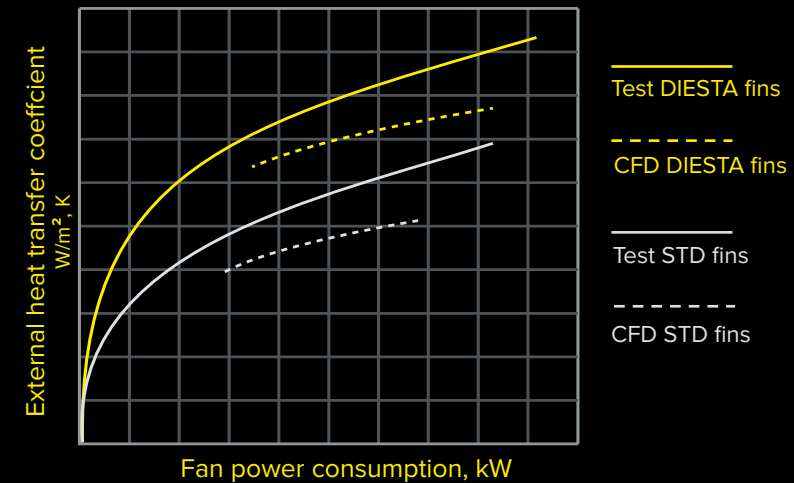


LNG



Oil & Gas

### TO BOOST PROCESS EFFICIENCY



### UP TO +15% ON THE EXTERNAL HEAT TRANSFER COEFFICIENT IMPROVEMENT AT:

- ▶ Same fan power consumption
- ▶ Same level of CO<sub>2</sub> emissions



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# Heat Rejection & Heat Recovery Solutions

## DIESTA TUBE TECHNOLOGY

### DIESTA PRODUCTION PROGRAM

TUBE MATERIAL	TUBE OD	PLAIN END CORE TUBE THICKNESS	FIN MATERIAL	FIN DENSITY
Carbon steel (ASME SA179 & SA334 Grade 6)	1 inch 1 ¼ inch 1 ½ inch	2.11 mm (in accordance with API 661)	Aluminium 1100	10 fpi (394 fpm)

#### DIFFERENT INTERNAL STRUCTURES ARE AVAILABLE FOR

- Gas cooling
- Condensation
- Liquid cooling  
(incl. high viscous fluid Pr <100)

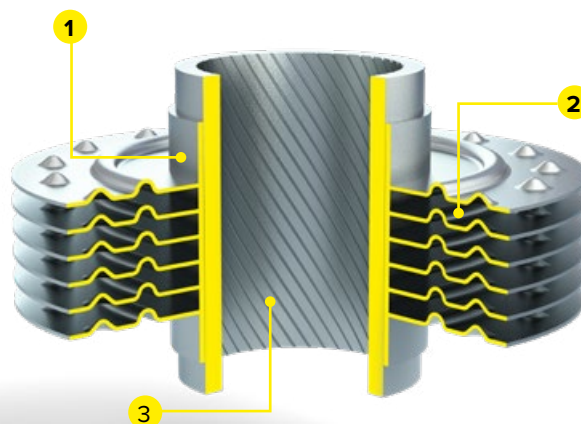
### IMPROVEMENTS

#### FINS SIDE

- Reducing “dead zone” by air guidance
- Increasing turbulences on tube and air sides
- More than 20% increase of air side heat transfer coefficient at equivalent fan power

#### TUBE SIDE

Internal structure leading to up to 40% heat transfer improvement for C3 condensation & cooling applications



The DIESTA tube is a bimetallic finned tube with an aluminum sleeve **1** fully covering the base carbon steel tube. The outside aluminum fins are embedded into the grooves of the aluminum sleeve. To optimize the air- and tubeside heat transfer performance enhancement structures are applied on both sides. The aluminum fins on the airside combine both a groove and a dimple structure **2**. Airside mechanical qualification confirmed robustness towards fouling, cleaning as well as mechanical strength of the fins equally to standard extruded finned tubes. The tubeside has an internally helical fin structure **3** ensuring an increased of tube side heat transfer coefficient while controlling the pressure drop.

**DIESTA Technology is a development by the cooperation of Wieland®, TechnipFMC® and Kelvion.**