

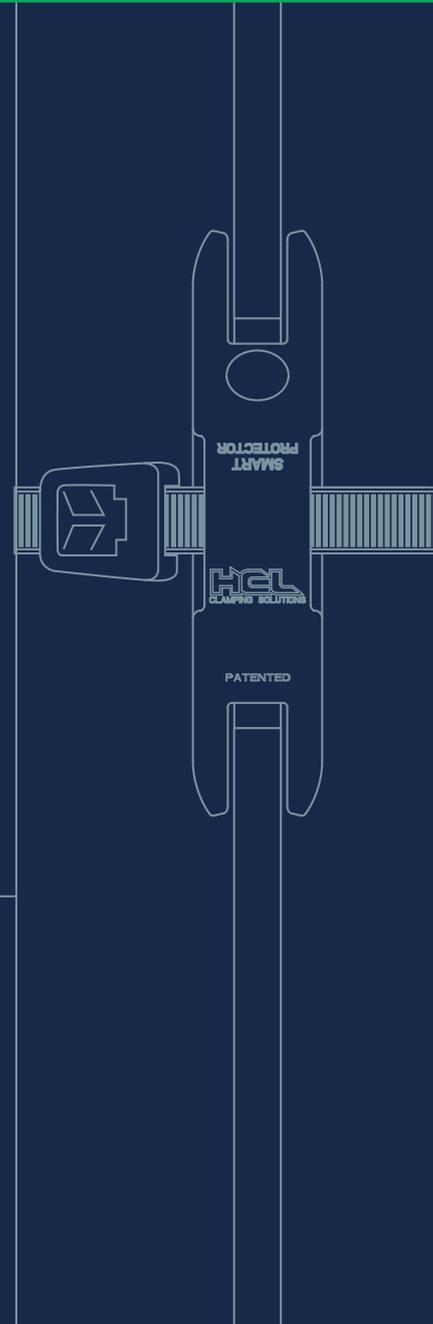
Smart[®] Products

Application Track Record

Information Booklet - January 2018



- **Smart[®] Band**
- **Smart[®] Tie**
- **Smart[®] Protector**
- **Smart[®] Installation Tools**



Smart® Band, Smart® Tie & Smart® Protector – Track Record & Project Reference

Over the past 10 years the Smart® Band, Smart® Tie & Smart® Protector products have been used in literally 100's of applications worldwide. Unfortunately most of these projects remain confidential due to client request. Those that have been released are included in this helpful booklet to assist in proving that these products are highly suited to the offshore, subsea (including deepwater) environment.

We hope that after reviewing these projects you will also be impressed by the versatility and durability of the products as you consider them for use in your own application.

Smart® Products

Application Track Record Information Booklet



-  1] Piggyback Pipelay
-  2] Cable, Riser & Flowline Protection
-  3] Flotation and Buoyancy
-  4] VIV Strakes
-  5] Wind Farms
-  6] Cable Attachment
-  7] Sensor Attachment
-  8] Other Applications
-  9] Downhole
-  10] Pile Protection

Piggyback Pipelay

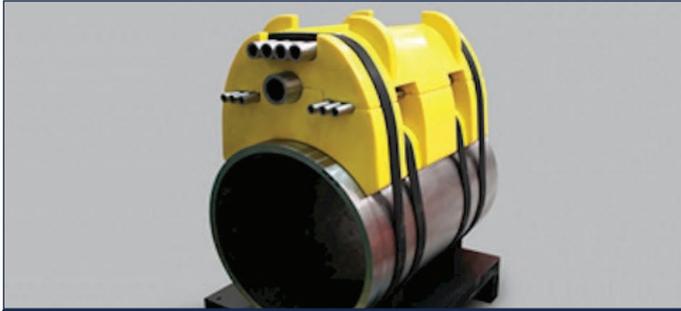
There are numerous requirements for piggyback pipe lay including the attachment of Fibre Optic, Methanol and DEH lines (Direct Electrical Heating). Smart® Band is an ideal solution for attachment in conjunction with piggyback clamps of the piggyback line to the main pipeline.

Smart® Band offers Long Life, resistance to Hydro-Static Compression and is safe and easy to fit. Its high strength and retention forces make it a viable alternative to commonly used CRA strapping products. In addition a full range of high speed pneumatic installation tools mean that the each strap can be fitted in less than 10 seconds.





1 Piggyback Pipelay



PROJECT: CLOV

CLIENTS Balmoral Offshore/Subsea7/Total
INSTALLATION DATE 2013
LOCATION West Africa



PROJECT: ENFIELD PHASE 1

CLIENTS Technip Subsea7 Asia Pacific
INSTALLATION DATE 2007
LOCATION North West Shelf - WA



PROJECT: CONFIDENTIAL

CLIENTS Group Courbis
INSTALLATION DATE 2012
LOCATION Confidential



PROJECT: VINCENT

CLIENTS Technip Subsea7 Asia Pacific
INSTALLATION DATE 2007
LOCATION Exmouth - WA



Photo courtesy of Ocean Renewable Power Company

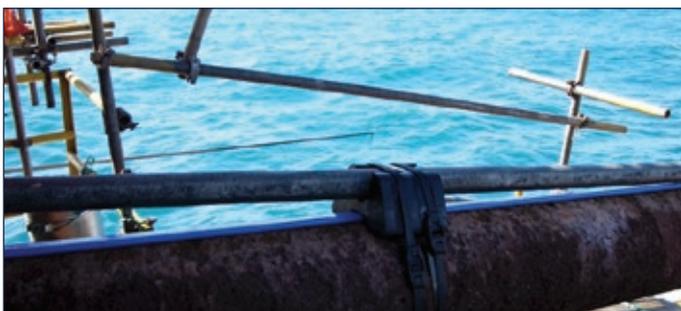
PROJECT: COBSCOOK BAY TIDAL ENERGY

CLIENTS ORPC - Ocean Renewable Power Company
INSTALLATION DATE 2012
LOCATION Cobscook Bay - Maine
WATER DEPTH 33m



PROJECT: ENFIELD PHASE 2

CLIENTS Technip Oceania Pty
INSTALLATION DATE 2009
LOCATION North West Shelf - WA



PROJECT: CLIFFHEAD

CLIENTS Apache & Rockoil
INSTALLATION DATE 2005
LOCATION Australia

PROJECT: CHISWICK DEVELOPMENT

CLIENTS Technip UK
INSTALLATION DATE 2007
LOCATION Southern North Sea

Cable, Riser & Flowline Protection

The installation of Subsea Cables is widespread. A key issue in this area is cable protection. HCL works alongside Half Shell Cable protection providers to provide a complete solution to the client. The Smart® Band is ideal for such applications offering good impact and abrasion resistance alongside its usual features of high strength, long life and price competitiveness.



PROJECT: KAOMBO

CLIENTS Stangeland
 INSTALLATION DATE 2016
 LOCATION Angola



PROJECT: CONFIDENTIAL

CLIENTS Group Courbis
 INSTALLATION DATE 2012 approx
 LOCATION Confidential



PROJECT: CLAIR RIDGE

CLIENTS Supergrip
 INSTALLATION DATE -
 LOCATION North Sea



PROJECT: TOMBUA LANDANA

CLIENTS Acergy
 INSTALLATION DATE 2009
 LOCATION North West Shelf - WA

PROJECT: PAZFLOR

CLIENTS Technip France
 INSTALLATION DATE 2010
 LOCATION Angola
 WATER DEPTH 600-1200m

PROJECT: THANNET WINDFARM

CLIENTS Subocean (Now Technip)
 INSTALLATION DATE 2009
 LOCATION United Kingdom

PROJECT: GIRRI

CLIENTS Technip France
 INSTALLATION DATE 2011
 LOCATION Angola
 WATER DEPTH 1300m

PROJECT: TOTAL HOLLAND LG4

CLIENTS Subsea7 (UK)
 INSTALLATION DATE 2005
 LOCATION United Kingdom

Flotation and Buoyancy

(Distributed & Flowline)

Smart® Band is being increasingly utilised on risers and flowlines for clamping buoyancy and flotation products. Offering High Strength and excellent Elastic and Hydrostatic Compression characteristics the Smart® Band works with the buoyancy products to provide excellent long term retention.



PROJECT: BP SCHIEHALLION FPSO

CLIENTS Technip UK
INSTALLATION DATE 2007
LOCATION North West Shelf - WA

PROJECT: CONFIDENTIAL

CLIENTS Confidential
INSTALLATION DATE 2009
LOCATION Artic Region



PROJECT: FAR SOVEREIGN PLOUGH

CLIENTS Saipem UK
INSTALLATION DATE 2004
LOCATION North Sea

VIV Strakes

(Risers, Umbilicals, Flowlines & Caissons)

Smart® Band is an ideal clamping solution for Strakes to risers and in particular in the deepwater environment. In these areas the Elasticity of the band and the excellent Hydrostatic Compression data become increasingly important. Specifically any applications where there is a susceptibility to compression. In addition to this the Smart® Band offers all the features that standard solutions such as Alloy 625 possess including, high strength & retention, high speed fitting & long life characteristics.



PROJECT: **CONFIDENTIAL**

CLIENTS Allbrow Universal
 INSTALLATION DATE 2015
 LOCATION Confidential



PROJECT: **CONFIDENTIAL**

CLIENTS VIV Solutions
 INSTALLATION DATE November 2013
 LOCATION Trinidad & Tobago



PROJECT: **CONFIDENTIAL**

CLIENTS Confidential
 INSTALLATION DATE January 2014
 LOCATION West of Shetland



PROJECT: **CONFIDENTIAL - HEEREMA**

CLIENTS Heerema
 INSTALLATION DATE 2011
 LOCATION Confidential

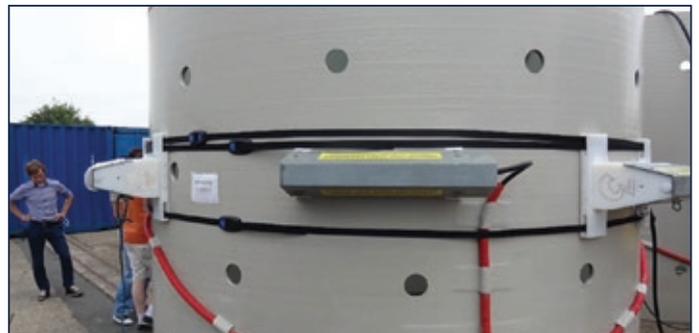
Wind Farms

Attaching cables or brackets to the main structure of a Wind Farm can be expensive and fraught with difficulty. The ease of installation and the non-corrosive nature of the Smart® Band makes it an ideal solution for this application and it has been installed successfully in many projects worldwide.



PROJECT: **CONFIDENTIAL**

CLIENTS **Confidential**
INSTALLATION DATE **2013**
LOCATION **Japan Offshore**



PROJECT: **CONFIDENTIAL**

CLIENTS **Confidential**
INSTALLATION DATE **2013**
LOCATION **Baltic Sea**

Cable Attachment

One of the most common applications for Smart® Band offshore is subsea/offshore attachment of all sorts of cables and umbilicals. In many cases Smart® Band is the ideal solution. It's safe and easy to fit and because it has no sharp edges to damage the cables etc. We have an extensive track record in this area.



PROJECT: UNKNOWN

CLIENTS Group Courbis
INSTALLATION DATE -
LOCATION -



PROJECT: UNKNOWN

CLIENTS Dril-Quip
INSTALLATION DATE Various
LOCATION Various



6 Cable Attachment



PROJECT: **KAOMBO**

CLIENTS Group Courbis, Technip, Hereema, Total
INSTALLATION DATE 2017
LOCATION Angola



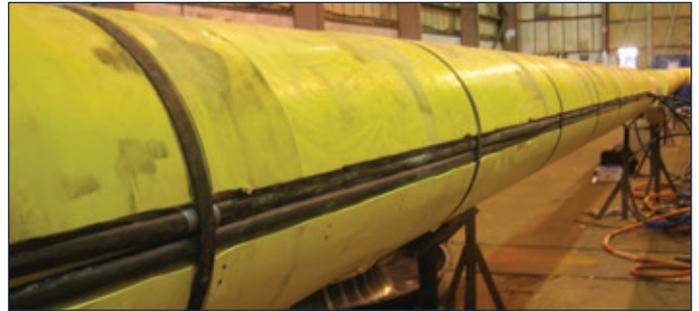
PROJECT: **CONFIDENTIAL – GEOOCEAN**

CLIENTS Geoocean
INSTALLATION DATE 2007
LOCATION Confidential



PROJECT: **MALAKI**

CLIENTS Oil States
INSTALLATION DATE 2015
LOCATION Malaysia



PROJECT: **ROSA**

CLIENTS IMM
INSTALLATION DATE 2006
LOCATION Angola



PROJECT: **WHEATSTONE SUBSEA INSTALLATION**

CLIENTS Technip
INSTALLATION DATE 2015
LOCATION Confidential



PROJECT: **SIMPSON A PLATFORM**

CLIENTS Apache
INSTALLATION DATE 2007
LOCATION North West Shelf – WA



PROJECT: **CONFIDENTIAL**

CLIENTS SBM - Monaco
INSTALLATION DATE 2014
LOCATION Confidential



PROJECT: **CONFIDENTIAL – SCHLUMBERGER**

CLIENTS Schlumberger
INSTALLATION DATE 2008
LOCATION Gulf of Mexico
WATER DEPTH 2000m

Sensor Attachment

Sensor attachment is a common application offshore and subsea as companies attempt to identify patterns and record data. Smart® Band and Smart® Tie have both been extensively utilised in this area.



PROJECT: CONFIDENTIAL
CLIENTS: Deepwater Corrosion
INSTALLATION DATE: 2014 approx
LOCATION: Location

PROJECT: VARIOUS
CLIENTS: Pulse Structural Monitoring
INSTALLATION DATE: 2011-2014
LOCATION: Various projects in the North Sea and Gulf of Mexico



7 Sensor Attachment



PROJECT: CONFIDENTIAL – DOOSAN BABCOCK

CLIENTS Doosan Babcock
INSTALLATION DATE 2009
LOCATION North Sea



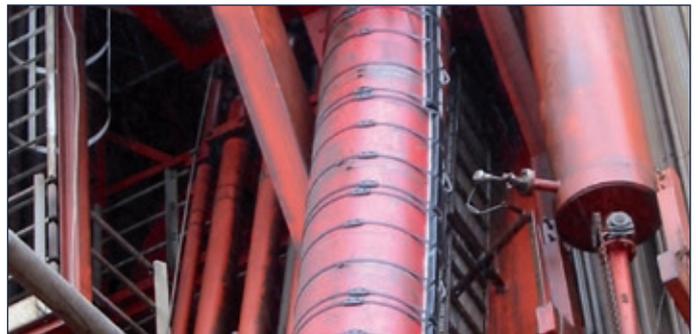
PROJECT: ROSA

CLIENTS IMM
INSTALLATION DATE 2006
LOCATION Angola



PROJECT: KASHAGAN EXPERIMENTAL PROJECT

CLIENTS Saipem & Cybernetix
INSTALLATION DATE 2008 onwards
LOCATION Kazakhstan



PROJECT: ORMEN LANGE

CLIENTS Sensorlink
INSTALLATION DATE 2005-2007
LOCATION North Sea – Norway



PROJECT: TURKISH PIPELINE

CLIENTS Aquatec Group
INSTALLATION DATE 2008
LOCATION Turkey



PROJECT: GREATER PLUTONIO

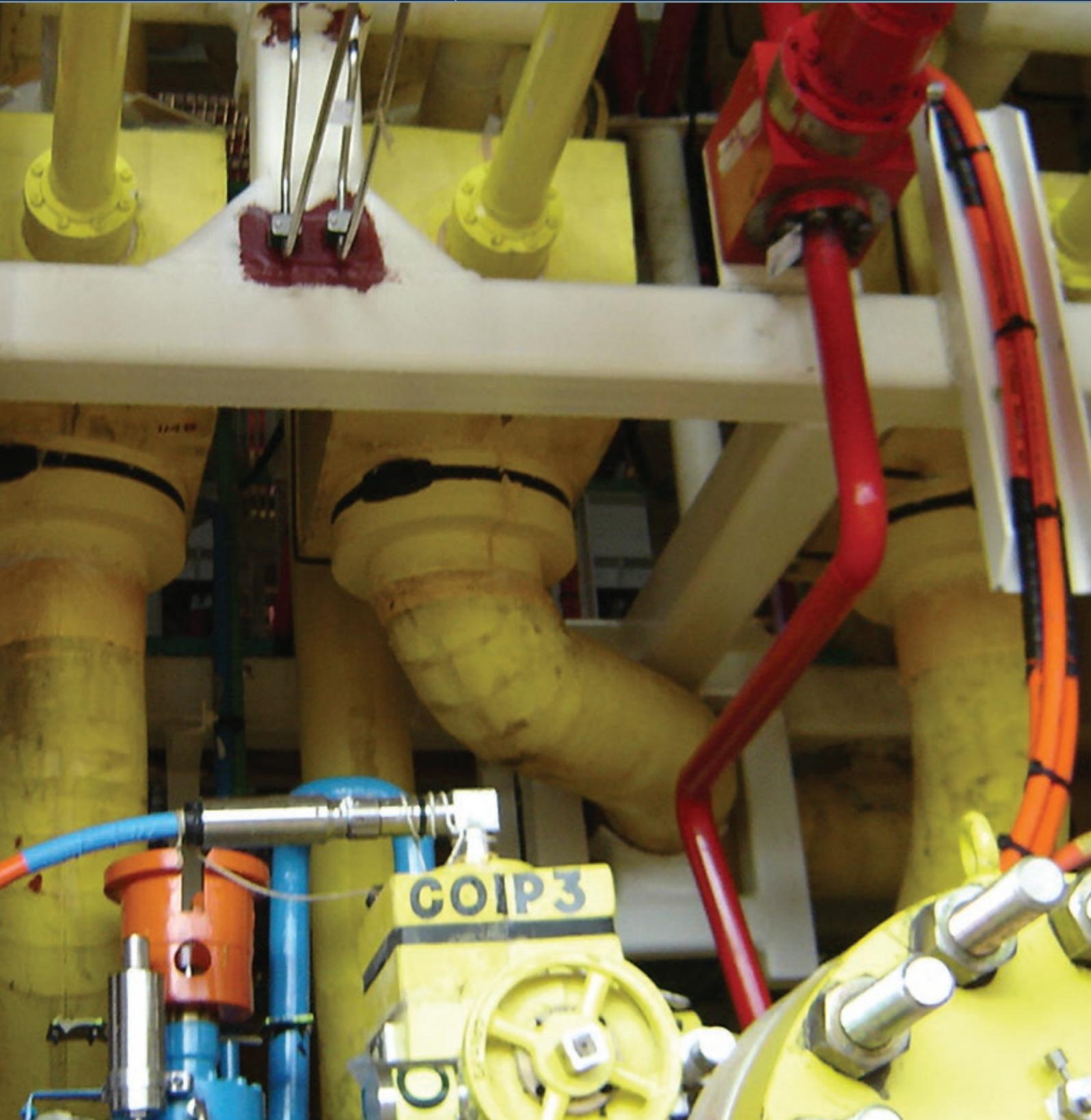
CLIENTS 2H Offshore, BP
INSTALLATION DATE 2007
LOCATION Angola

PROJECT: CONFIDENTIAL – FMC TECHNOLOGIES

CLIENTS FMC Technologies
INSTALLATION DATE 2010
LOCATION Norway

Other Applications

The uses for Smart® Band and Smart® Tie offshore and subsea are simply endless. Wherever something needs to be attached then these products can often be used. Opposite are displayed some applications where our clients have kindly shared the details.





8 Other Applications



PROJECT: **VARIOUS**

CLIENTS Permasense
INSTALLATION DATE Various
LOCATION Various



PROJECT: **CONFIDENTIAL**

CLIENTS -
INSTALLATION DATE -
LOCATION -



PROJECT: **CONFIDENTIAL - LANKHORST**

CLIENTS Lankhorst
INSTALLATION DATE 2012
LOCATION Confidential



PROJECT: **ERSKINE**

CLIENTS Technip UK
INSTALLATION DATE 2008
LOCATION United Kingdom



PROJECT: **KIKEH**

CLIENTS Group Courbise
INSTALLATION DATE 2007
LOCATION Malaysia

PROJECT: **MULTIPLE**

CLIENTS Exsto
INSTALLATION DATE 2007 Onwards
LOCATION Various

PROJECT: **VULCAN RD**

CLIENTS Oceanteam
INSTALLATION DATE 2007
LOCATION Southern North Sea



PROJECT: **MULTIPLE**

CLIENTS Multiple incl - KIKEH, BP KING, Tartan Platform & Britannia Satellites
INSTALLATION DATE 2006 onwards
LOCATION Worldwide

Downhole

Downhole is a very specific and aggressive application and attaching cables downhole often can often be a headache. The Smart® Tie is being increasingly utilised in this area replacing standard metal solutions which often causes significant disruption when they fail and fall to the bottom of the well.



PROJECT: **CONFIDENTIAL**

CLIENTS ConocoPhillips
INSTALLATION DATE Early 2015
LOCATION Norway



PROJECT: **CONFIDENTIAL**

CLIENTS Schlumberger
INSTALLATION DATE 2014
LOCATION USA



PROJECT: COLOMBIA ONSHORE

CLIENTS Oxy & Ecopetrol
INSTALLATION DATE Numerous Completions since 2014
LOCATION Colombia



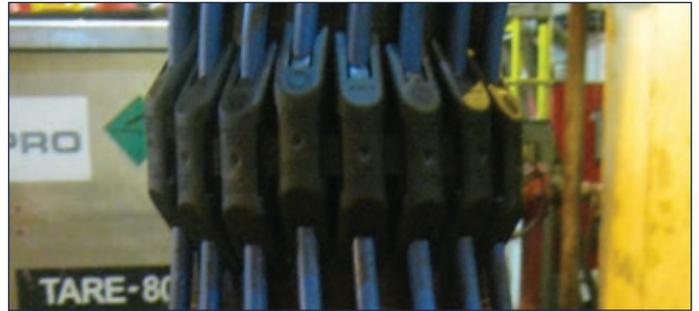
PROJECT: CONFIDENTIAL – IODP-USIO

CLIENTS IODP-USIO
INSTALLATION DATE 2011
LOCATION Gulf of Mexico



PROJECT: CONFIDENTIAL

CLIENTS Tendeka
INSTALLATION DATE 2014
LOCATION Australia



PROJECT: CONFIDENTIAL

CLIENTS Confidential
INSTALLATION DATE 2013
LOCATION North Sea UK



PROJECT: OBSERVATION WELL – OMAN – PDO & SHELL

CLIENTS Weatherford, PDO & Shell
INSTALLATION DATE Dec 2013 – Jan 2014
LOCATION Oman



PROJECT: CONFIDENTIAL – BAKER HUGHES

CLIENTS Baker Hughes
INSTALLATION DATE 2007-2010
LOCATION Angola



PROJECT: CONFIDENTIAL – SHELL/PDO

CLIENTS Shell/PDO
INSTALLATION DATE 2013
LOCATION Oman



PROJECT: CONFIDENTIAL – SCHLUMBERGER

CLIENTS Schlumberger
INSTALLATION DATE Early 2012
LOCATION Holland

Pile Protection

Attaching corrosion protective Jackets to Jetty Piles has been one of the most successful applications for the Smart® Band and in terms of strapping has become the number 1 solution in this application. Key benefits are the corrosion resistance, ease of use, competitive pricing and also Smart® Band is not easily recyclable therefore will not get stolen from the Jettys once installed.

HCL work with many of the leading Petrolatum tape Manufacturers around the world on Pile Protection Projects providing the method for securing the HDPE outer armour to protect the Tape & Paste.



PROJECT: **SAMSUNG LNG**

CLIENTS Central Products
 INSTALLATION DATE 2013
 LOCATION -



PROJECT: **CLARKE QUAY**

CLIENTS Central Products
 INSTALLATION DATE 2011
 LOCATION Singapore



PROJECT: **CROMER PIER**

CLIENTS Edwards Diving
 INSTALLATION DATE 2016
 LOCATION United Kingdom



PROJECT: **HYUNDAI OIL BANK**

CLIENTS DM Contra
 INSTALLATION DATE 2017
 LOCATION Korea



PROJECT: **MILFORD HAVEN LNG JETTY**

CLIENTS Confidential
 INSTALLATION DATE 2007
 LOCATION United Kingdom



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