

Riser and umbilical analysis

Fatigue, VIV and interference

Umbilicals (life supporting cables for your sub-sea equipment) and risers need to be designed for each specific oil and gas field, as conditions vary dramatically. Our expertise helps design riser and umbilical configurations to optimize your cross-section and to ensure safe operation throughout field life. We perform global strength analysis including operational and accidental conditions, fatigue analysis, VIV analysis and interference analysis.

Before challenging situations arise, you need to know how your risers will behave, and what they can stand. Optimizing your configurations at an early stage with a fit-to-purpose field architecture design will help maintain focus on the individual riser or umbilical.

We perform all sorts of analyses using a combination of standard software packages for slender marine structure and specialized software such as Bflex for detailed analysis of interaction and utilization of the different layers in a flexible riser. Deep insight into a wide variety of structures and their complex wear and tear scenarios, makes us one of the market leaders in risers and umbilicals.

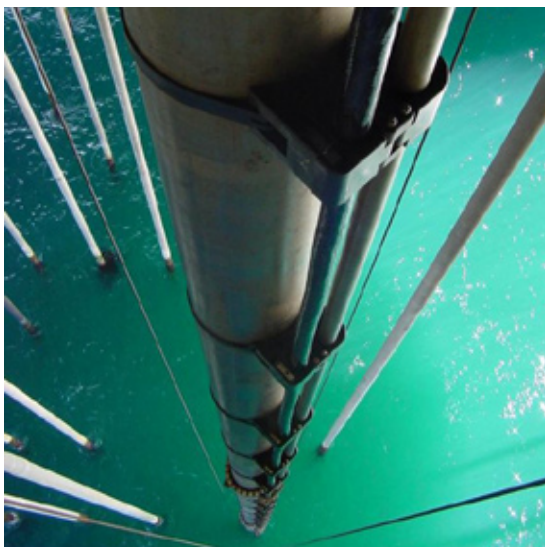
Fields of expertise

- Field development studies
- Global strength analysis, connected and disconnected
- Detailed fatigue analysis for flexible risers, Bflex
- VIV analysis
- On-bottom stability analysis
- Free-span analysis
- Crossing analysis
- Interference analysis
- Wear analysis
- Installation analysis
- J-tube pull-in analysis
- Coupled analysis for interface details
- Flexible and steel catenary risers

Tools

Flexcom
 VIVANA
 Shear7
 Bflex
 ABAQUS
 USFOS
 HYBER
 Orcaflex

For more information on Aker Solutions and our riser analysis capabilities, please contact Svein Rune Nottveit, Manager, on +47 90 03 22 19 or svein.rune.nottveit@akersolutions.com Visit us at www.akersolutions.com



“One highly experienced and dedicated team to cover your riser & umbilical needs, today and tomorrow.”

Riser and umbilical analysis

Reference list

The list is not exhaustive

Start year	End year	Client	Project Title
2008	2008	StatoilHydro	Troll B, Pliant wave configuration, 325m from semi
2008	ongoing	BP	Block 31, 2020m carbon fire reinforcement, 4x lazy wave config. from FPSO
2008	2008	Eni/Nae, Allied	Oyo, lazy wave configuration, 350m from FPSO
2008	2008	StatoilHydro	Morvin, pliant wave configuration, 300m from semi
2008	2008	StatoilHydro	Vega, pliant wave configuration, 370m from semi
2008	2008	StatoilHydro	Gjøa, 2x pliant wave configuration, 370m from semi
2007	2007	Reliance	MA-D6, pliant wave configuration, 1150m from FPSO
2006	2006	Murphy Oil	Kikeh, 2x lazy wave and 2x jumper configuration, 1350m from SPAR/FPSO
2006	2006	ExxonMobil	Saxi Batuque (Kizomba C), 3x lazy wave configuration, 720m from FPSO
2006	2006	Chevron (STAR)	Agbami, 4x lazy wave configuration, 1500m from FPSO
2006	2006	ExxonMobil	Marimba North (Kizomba A), lazy wave configuration, 1180m from FPSO
2006	2006	BP	Block 18, lazy wave and jumper configuration, 1310m from FPSO
2004	2004	ExxonMobil	Deepwater power cable (generic), lazy wave configuration, 1524m from FPSO
2004	2004	Total	Rosa, 4x lazy wave configuration, 1350m from FPSO
2003	2003	ExxonMobil	Kizomba B, lazy wave configuration, 1015m from FPSO
2002	2002	ExxonMobil	Kizomba A, lazy wave configuration, 1182m from FPSO