

Faster Product Development & Increased Reliability using ANSYS Structural Mechanics Software

BMP Europe Ltd specialises in the manufacture and conversion of Technical Non Woven Textiles, Engineered Polyurethane Elastomers, Mechanical Components and Sub Systems. To continue promoting innovation and to meet their complex key objectives, they require the most advanced simulation solution. As a value-added reseller, Wilde Analysis helps BMP achieve their goals by supplying ANSYS FEA software together with expert technical support.

Company

BMP is a wholly owned subsidiary of Andrew Industries Ltd, a privately owned and managed diversified industrial manufacturing group. Operating globally, BMP specialises in the manufacture and conversion of Technical Non Woven Textiles, Engineered Polyurethane Elastomers, Mechanical Components and Sub Systems for industrial and offshore equipment.



Fig 1: Split Piggyback Block - positioned along a riser or seabed flow-line to accommodate secondary cables or smaller diameter flow-lines (Courtesy: BMP Europe Ltd)

Challenge

BMP's mission is to provide their global customers with innovative new products that are reliable and meet, or exceed their requirements now and into the future. BMP recognised that to achieve this they require advanced software that would allow them to accurately simulate and analyse designs to optimise product performance.

Solution

To meet BMP's requirements, Wilde advised incorporating ANSYS Professional NLS software into their product development process with a bi-directional ANSYS Geometry Interface to enable seamless integration with their Autodesk CAD system. This provides their engineers with advanced FEA capabilities to understand and solve complex design problems for a wide range of applications. One example is the successful use of ANSYS to optimise their Piggyback Blocks for clamping and supporting pipelines.

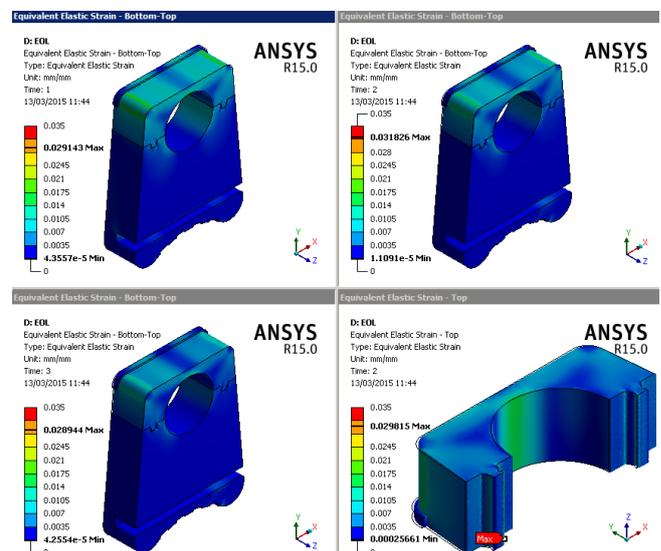


Fig 2: Piggyback Block Top Part Equivalent Elastic Strain at Operating Case (Courtesy: BMP Europe Ltd)

“ANSYS enables us to calculate stresses and FEA limits to optimise our design solutions and provide confidence in our products.”

When designing the Piggyback Block, ANSYS FEA software enabled BMP to accurately identify:

- Clearances or contact pressures between Protection Equipment and Cable, based on selected load cases
- Sufficient clamping pressures to prevent slippage over cables
- Stress or strain utilisations by cross validating design spreadsheets or hand calculations against ANSYS outputs
- Over engineered sections enabling them to reduce product weights
- Possible addition of an installation aid slot or cut out to an existing design without compromising load capacity

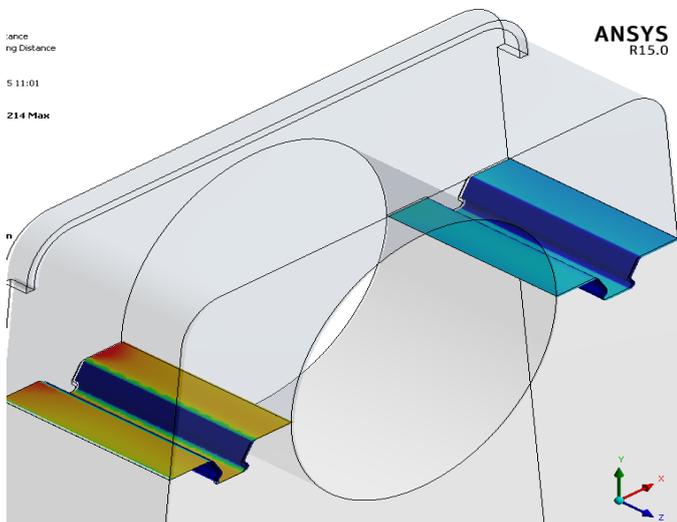


Fig 3: Piggyback Block Top and Bottom Part Maximum Sliding Distance at Operating Case (Courtesy: BMP Europe Ltd)

“By using this software, we have not only saved costs and time within our projects but also improved the reliability of our products.”

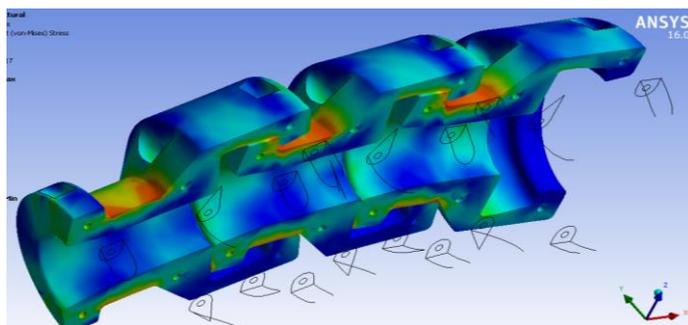


Fig 4: Bend Restrictor Equivalent von-Mises Stress Distribution (Courtesy: BMP Europe Ltd)

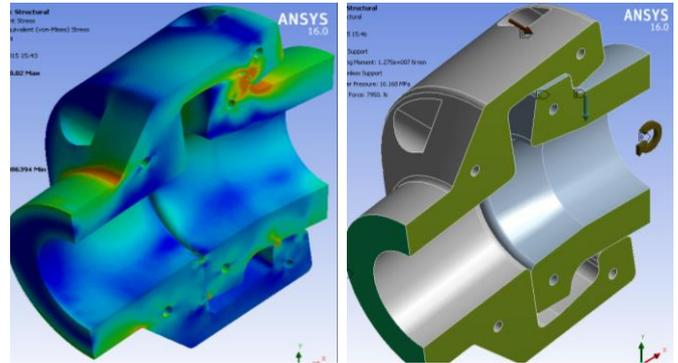


Fig 5: Bend Restrictor Equivalent von-Mises Stress Distribution and Bend Restrictor Boundary Conditions (Courtesy: BMP Europe Ltd)

Business Benefits

BMP continue to experience many benefits of using ANSYS simulation software, including:

- Project delivery time of bespoke and new products improved through reduced design and prototype iterations
- Cost savings through optimised material utilisation, prototyping and testing
- Improved product performance with greater reliability
- Increased customer confidence with new innovative product designs

Overall these benefits have enabled BMP to increase their productivity, minimise physical prototyping and helped to deliver better and innovative products in less time.

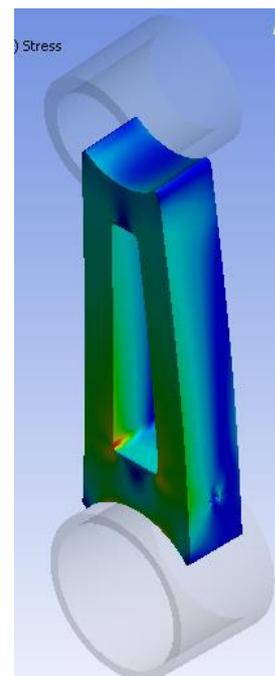


Fig 6: Piggyback Spacer Stress Distribution (Courtesy: BMP Europe Ltd)