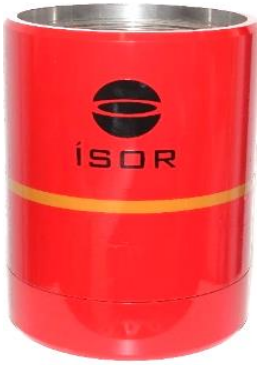
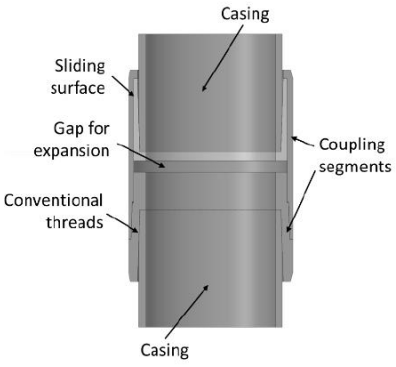
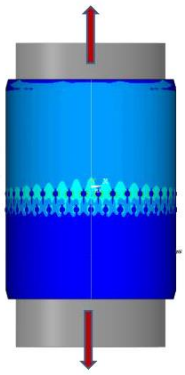
Novel Technology – Flexible Coupling

Within **ÍSOR,** Iceland GeoSurvey, a novel patented technology of **Flexible Couplings** for casings in geothermal wells has been in development since the year 2015. Its goal is to mitigate casing failures in production casings of geothermal wells, thereby increasing reliability of the downhole structure.

By allowing displacements of each casing joint in the production casing, the risk of casing failures as a result of constrained thermal expansion is minimized by limiting thermal straining of the casing material.







Research and development of **Flexible Couplings**:

- Design, prototyping (9 5/8”) and testing at ambient temperatures within the EU H2020 supported project GeoWell (2016-2019).
- Prototype design for larger diameter casings (13 3/8”), build and testing, as well as field testing in a geothermal well in Iceland within the EU H2020 supported project DEEPEGS (2015-2019).
- Market analysis, risk analysis and testing in relevant environment in a surface experiment demonstration by connecting to a HT geothermal well in Iceland within the GEOTHERMICA supported project GeConnect (2018-2021).
- Casing technology for increased well integrity for superhot wells in the EU Horizon Europe project COMPASS (2022-2025).

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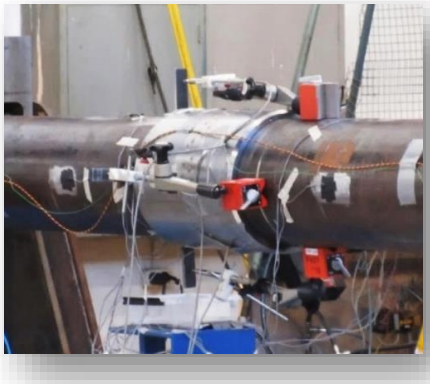
Research and development

Research and **development**, **testing** and **demonstration** of the **Flexible Coupling** intended to reduce thermal stress in casings:



Worldwide Experience

Overview of countries where ÍSOR has been involved in projects at different stages.