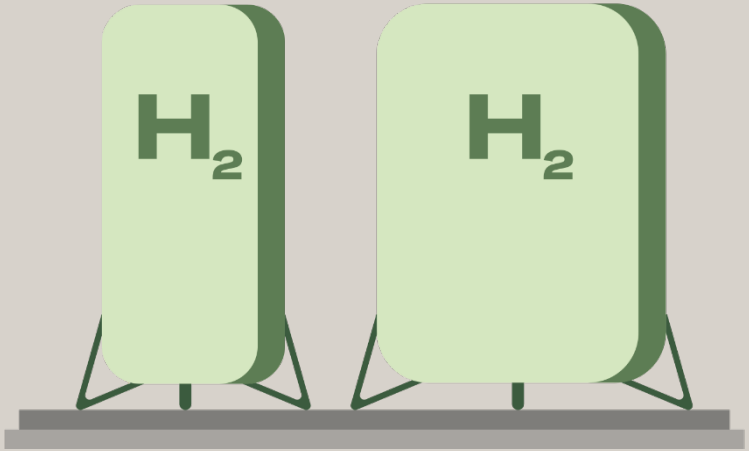
Reinforcing pressure vessels used in hydrogen storage and transport applications

High pressure vessels



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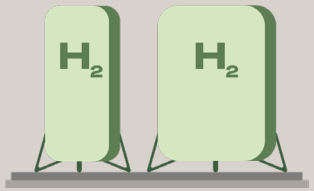
Key trends in hydrogen storage

- The global **hydrogen fuel cell vehicle market is expected to surge** from USD 1.49 billion in 2023 to approximately USD 50.58 billion by 2032.

- **Compressing hydrogen gas allows for higher storage density**. By keeping hydrogen under pressure, its volume decreases significantly, making it more space-efficient.

- Hydrogen tanks at **pressures of 350 bar (5,000 psi) and 700 bar (10,000 psi)** are commonly used for **hydrogen storage in vehicles**, especially those based on type IV carbon-composite technology

Bekiflex® – sensing wires to ensure safety



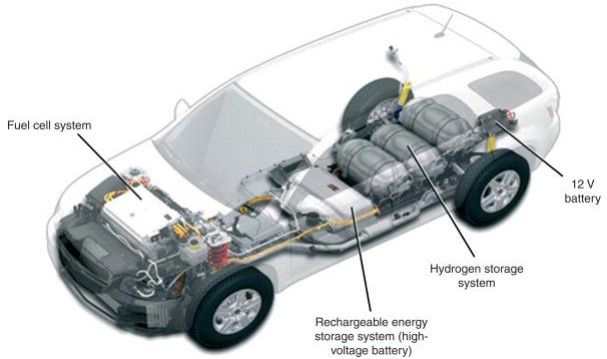
Sensing cables integrated into storage vessels to monitor scratches or impact

- Storing hydrogen as a compressed gas involves **high-pressure containers. (pressure of up to ~700bar)**

- **Safety is crucial** – therefore the manufacturers are looking to implement **reliable safety control systems** in order to **monitor the intactness of the tank.**

The wire used as a health monitoring device against possible scratches/impact:

- Resistive wire
- Easy to connect
- Requires to have a high tensile strength



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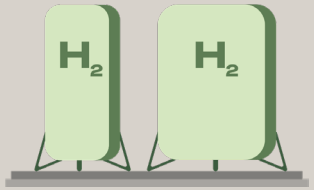
Storage

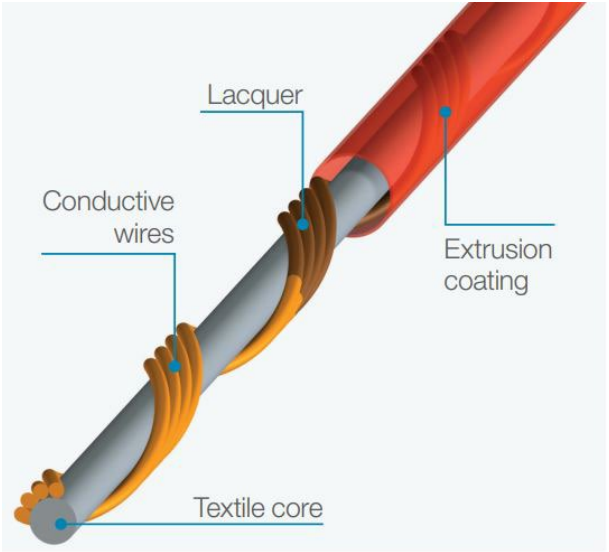
Hydrogen storage

Bekiflex® ultra fine cable – in a Helix/hybrid construction



Sensing cables integrated into storage vessels to monitor scratches or impact

- Cable portfolio with a **wide electrical resistance** range from 0.09 Ohm/meter to 200 Ohm/meter
- **High durability** and flexibility



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