

**Expert Session 1 – Workshop1**  
Commercialisation Roadmap  
Perspectives and Gaps for Hydrogen Storage

**C-H2 Session: Vessel manufacturing & mass  
production scale-up**  
R. Daval, LUXFER



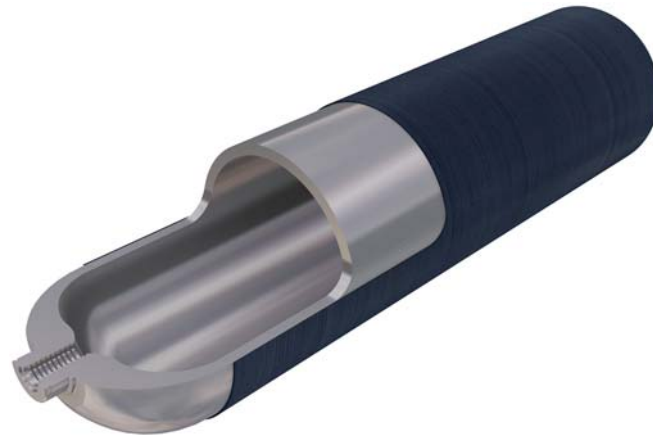
**STORHY  
FINAL EVENT**

**June 3-4, 2008  
Poissy, France**

# Luxfer: current situation



- **Luxfer currently manufactures:**
  - **Type 1 aluminium cylinders up to 50 L**
  - **Type 2 aluminium liners up to 50 L**
  - **Type 3 aluminium liners up to 320 L**

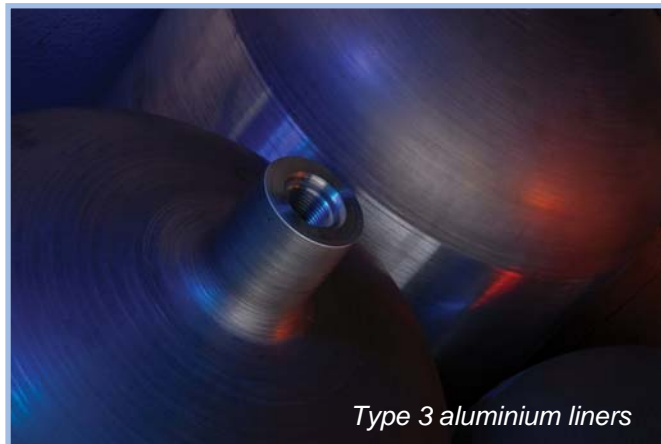


# Luxfer: current situation



STORHY

- Typical working pressure: 200 and 300 bar
- Proven possibilities for hydrogen as a fuel:
  - 350-bar Type 3
  - 300-bar Type 2



Type 3 aluminium liners



Wrapping Type 3 cylinders

# Challenges



- **Technical**
  - Only preliminary tests have been done on 700-bar
  - Current test equipment not designed for such high pressure
  - Investments would be required
- **Marketing**
  - Luxfer alternative fuel efforts currently focused on CNG
  - Additional resources would be required to add hydrogen cylinders to product line



*Wrapping Type 3 cylinders*

# Questions



- **At this point, we have more questions than answers concerning hydrogen as a fuel:**
  - Is Type 3 technology the best solution for 700-bar?
  - Is the current standard appropriate for such a high pressure?
    - Burst ratio?
    - Cycle test?
  - What new cylinder technologies and designs should be considered?

