

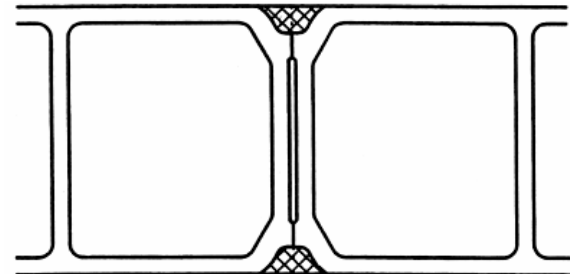
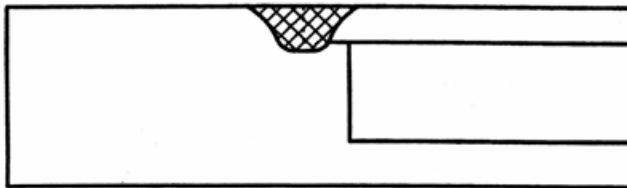
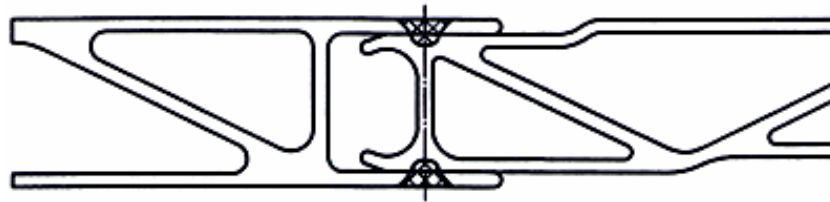
Friction Stir Welding in Sapa

Lars Mohlkert

Sapa Technology

- **Sapa Group – wholly owned by Orkla in Norway**
- **9000 employees, turnover 18.000 MSEK**
- **Al profiles and heat transfer strip**
- **Sapa Technology, R&D center**
- **Merger with Alcoa soft alloys planned**

- 1990 First FSW trials at TWI
- 1991 First patent application from TWI
- 1993 GSP formed
- 1994 First FSW weld at Sapa
- 1995 First order! “Freezing plate”
- 1997 First FSW-machine to Sapa
- 1997 First order in the new machine. Ericsson
- 1998 Production picks up speed
- 1999 Second FSW-machine. ABB Power Systems
- 1999 Third FSW-machine. Autoliv
- 1999 Long-length machine installed
- 2000 Industrial production long-length FSW
- 2006 Approximately 1000 m/day being welded



Water cooler

electronics industry

sapa:



Back rest support

Automotive industry

sapa:



Long-length FSW machine

sapa:



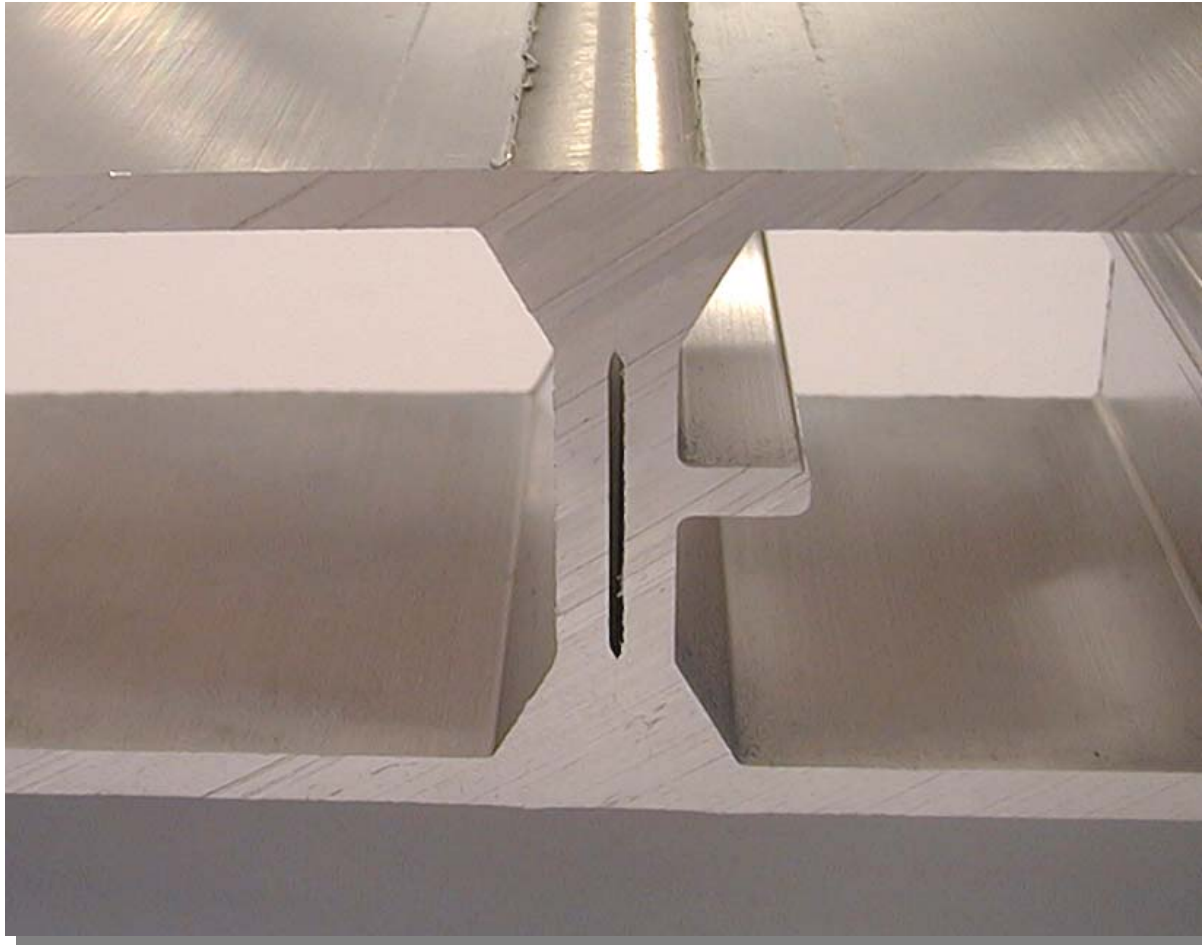
Deck panels

shipyard industry

sapa:



FSW - double sided, hollow profile



Floor panels

trainbuilding industry

sapa:



sapa:



- **Higher welding speeds**
- **Spot welding**
- **Robotic FSW**
- **Standardisation**