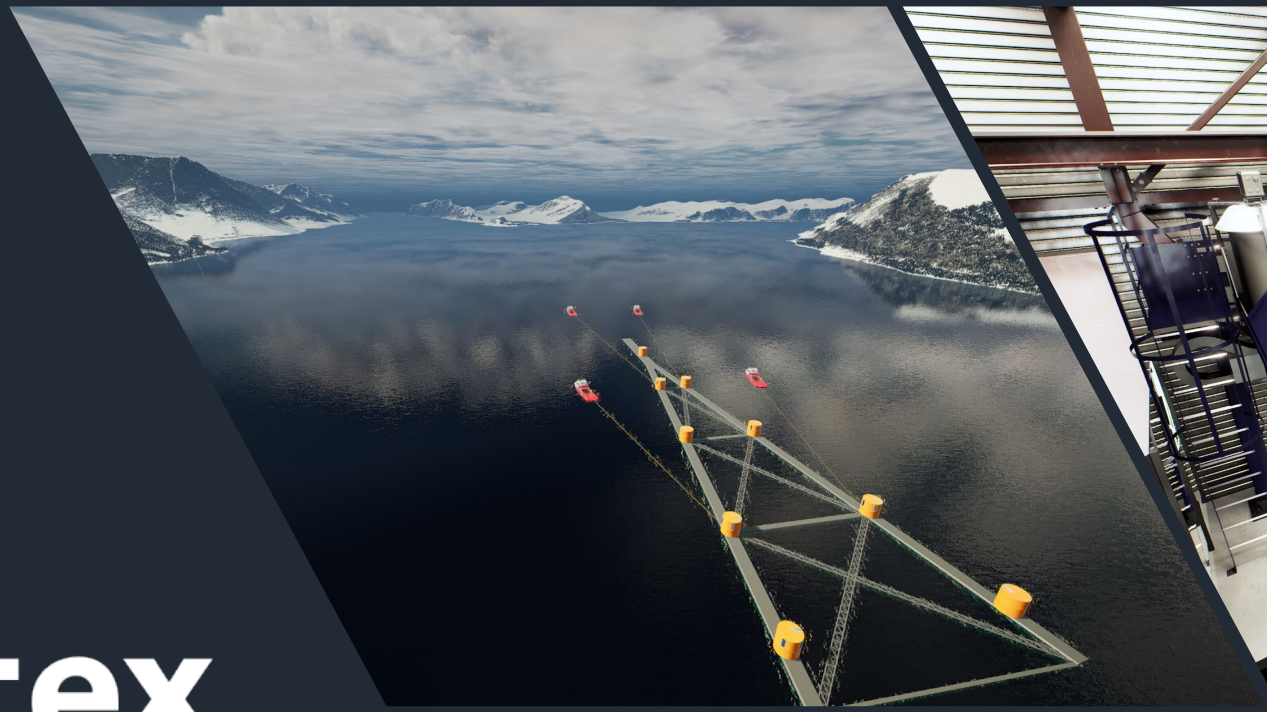
Prodtex

Production / Technology / Excellence

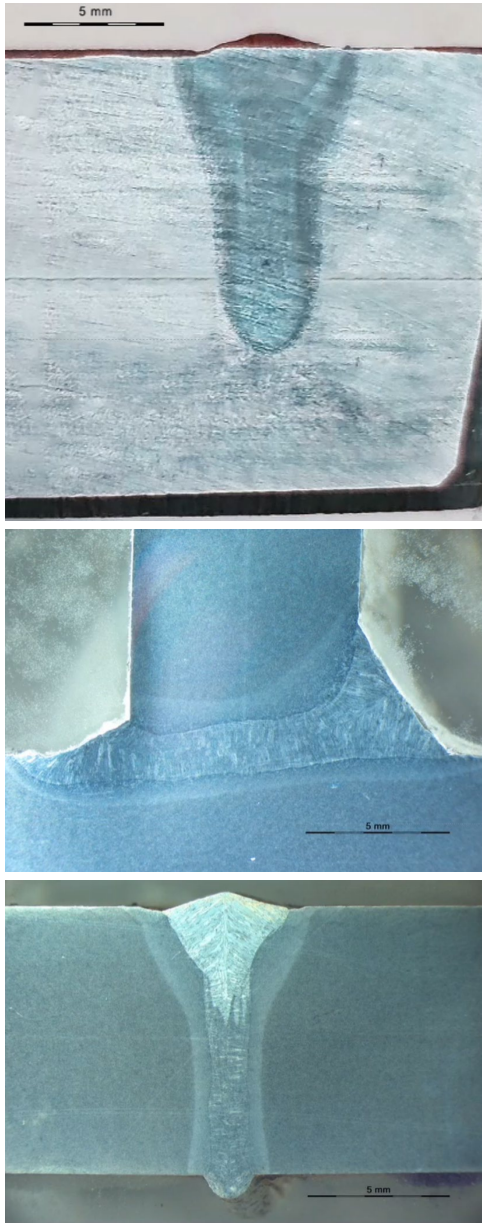


Prodtex industry – Facility at Fiskå

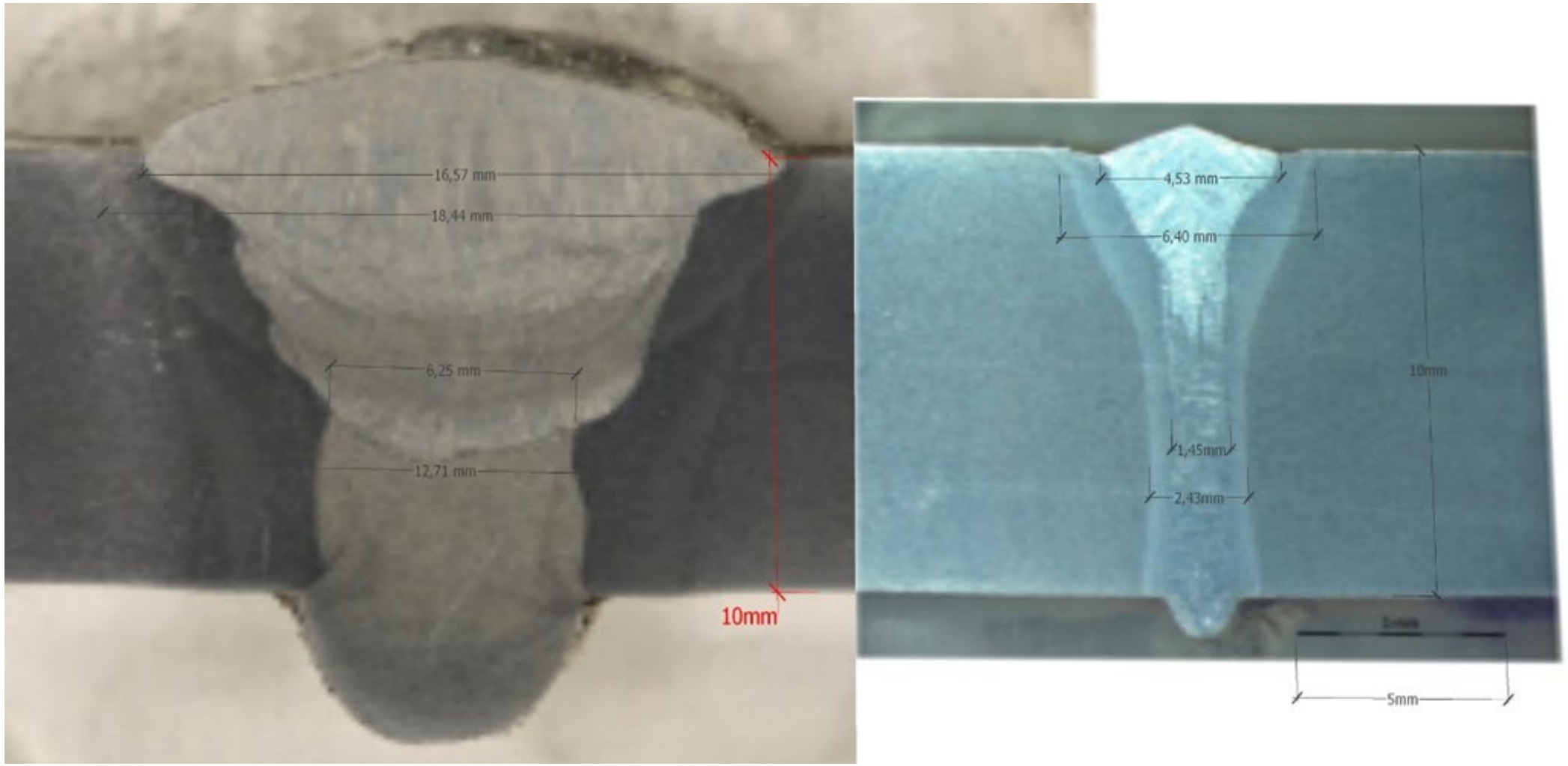
Length: 130 m
Width: 32 m
Gate opening: 24 m
Max height under crane hook: 20 m
Lifting capacity in production hall: 140 t
Access to 600 t mobile crane and multiwheelers (SPMT's)
Large outdoor area 25.000 m^2, approved land reclamation of additional 25.000 m^2
30 meter quay and barge quay

WELDING TECHNOLOGY THAT INCREASES PRODUCTION SPEEDS AND MAKES NEW DESIGN POSSIBLE

- Automated laser and laser-hybrid have been used in the car manufacturing and ship building industry for over 20 years.
- Prodtex have approved welding procedures for laser and laser-hybrid welding, and are certified according to NS-EN 1090-2, Execution Class 3.
- Laser and laser hybrid weld types executed at Fiskå:
  - Stake weld, also called lap weld, (top) for welding through plates of up to 8 mm with 10 kW laser source.
  - T-connection (mid), where we can achieve full penetration of 8 mm plate with laser-hybrid weld from one side. Full penetration of thicker plates with bevel.
  - Butt weld (bottom) where we can splice 10 mm plates without bevel by laying one wire (one pass), and up to 50 mm plates with multiple passes.
- Laser welding gives welding speeds 30 to 100 greater than manual welding because base material is melted together, and bevels (when necessary) are smaller.

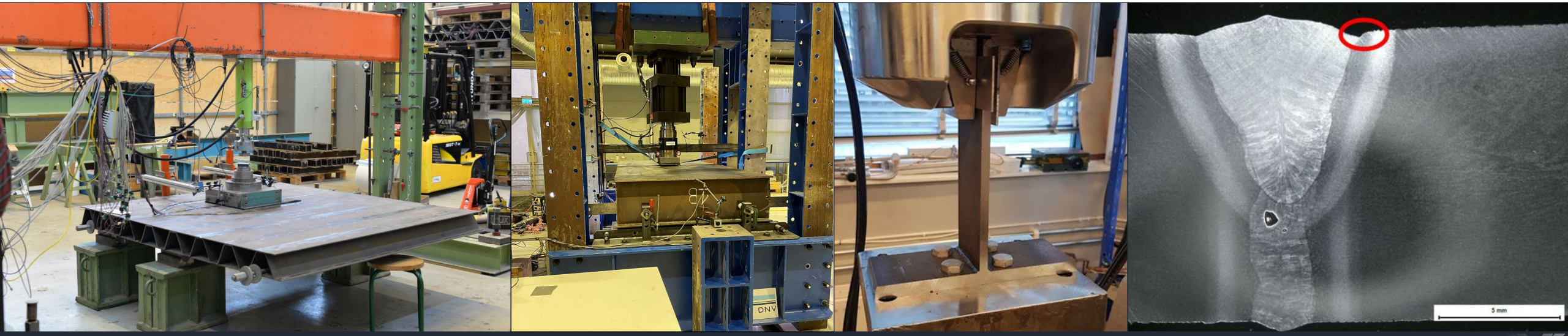


LASER AND LASER-HYBRID WELDING REDUCES ENERGY CONSUMPTION IN PRODUCTION TO A FRACTION

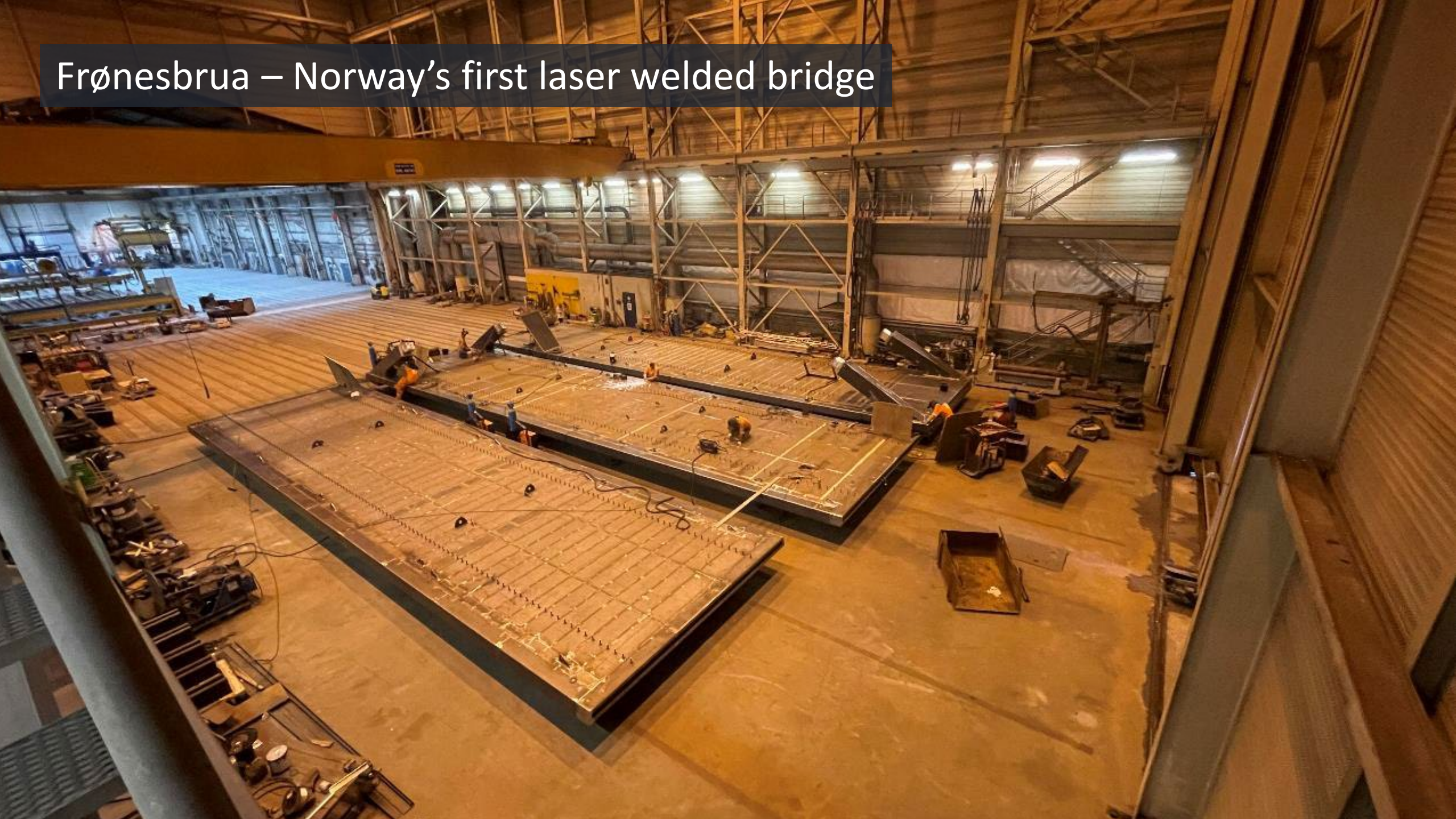


THE FATIGUE PERFORMANCE OF THE LASER- AND LASER-HYBRID WELDS IS EXCELLENT - CAN BE A GAMECHANGER

- Laser welded steel core sandwich bridge deck for Peter Nilsson's PhD work at Chalmers was produced at Kleven Yard in 2015. No failure could be detected after the panel had been subjected to 8.2 million load cycles with wheel loads larger than given by the standards.
- Test production of steel core sandwich bridge deck for Ya was fatigue tested (3 decks), with no fatigue failure in the welds. Fatigue cracks were observed in the plates due to cut-outs for instrumentation after over 10 times the number of cycles calculated as fatigue life for the weld.
- Specimen testing show very good fatigue behavior, almost in line with the parent material for some welds (even with defects)



Frønesbrua – Norway’s first laser welded bridge



Frønesbrua – Norway’s first laser welded bridge

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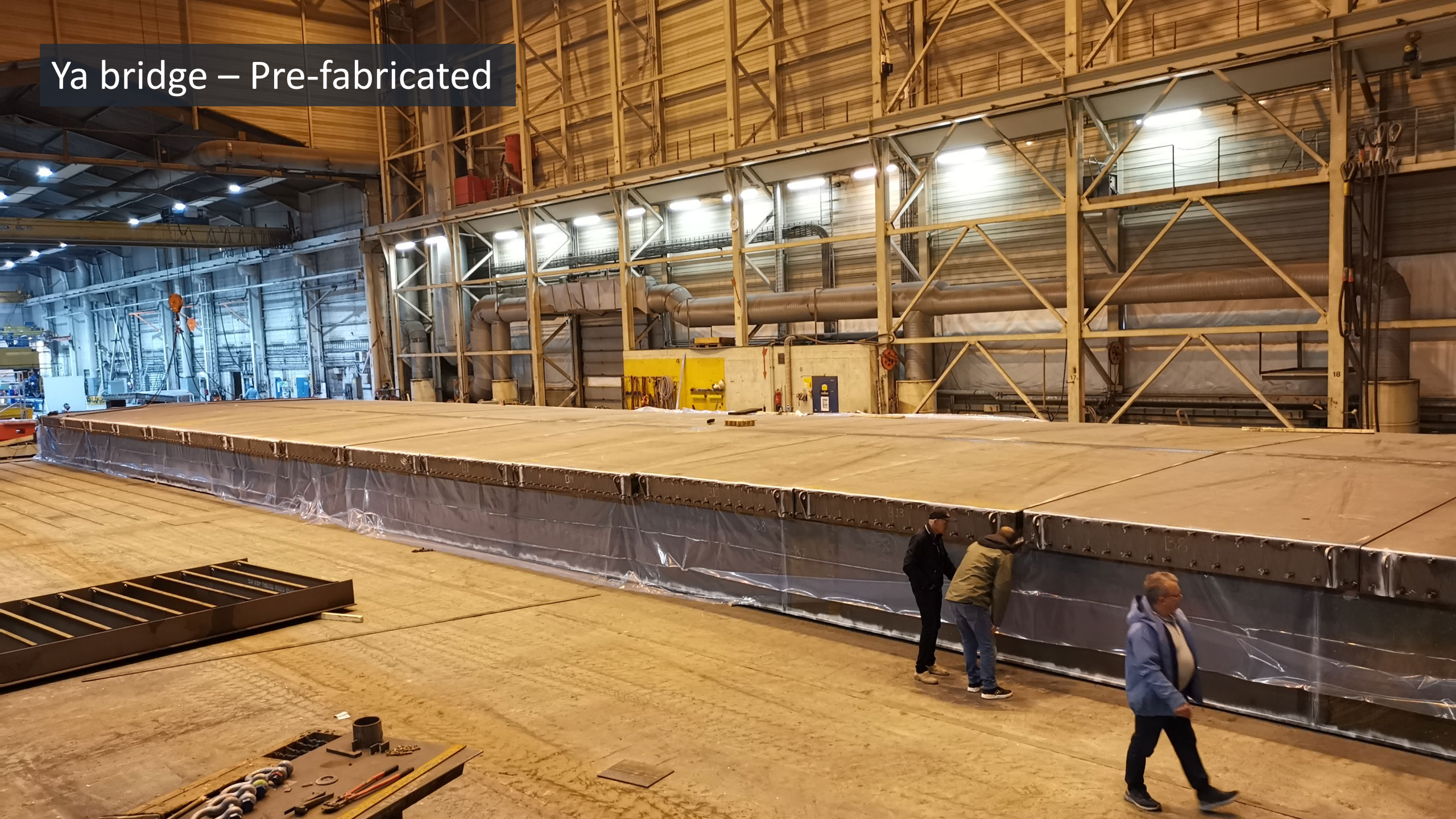
Ya bridge – Pre-fabricated



Ya bridge – Pre-fabricated

Ya bridge – Assembly at Kvikne

PRODTEX BUILDS STEEL STRUCTURES WITH:

- ✓ LOWER EMISSION CO_2
- ✓ LOWER COST KR
- ✓ BETTER QUALITY CE

COMPARED WITH TRADITION STEEL CONSTRUCTION