
Small Female Harmonized Jacket

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Small Female Jacket Harmonization Project

- FTSS & Denton created 2D SAE drawings of the harmonized jacket
 - These drawings were used to manufacture molds at both manufacturers. The drawings are an update of the official NHTSA drawing to correct errors and lack of information (see figure 1&2)
- FTSS & Denton ran a round-robin test matrix on 6 harmonized jackets (3 FTSS and 3 Denton) on their respective dummies. Testing also included an old jacket from each manufacturer as a baseline.
 - FTSS/Denton used their own dummy, instrumentation, DAS, and laboratory equipment

SAE 2D Jacket Drawing - Front

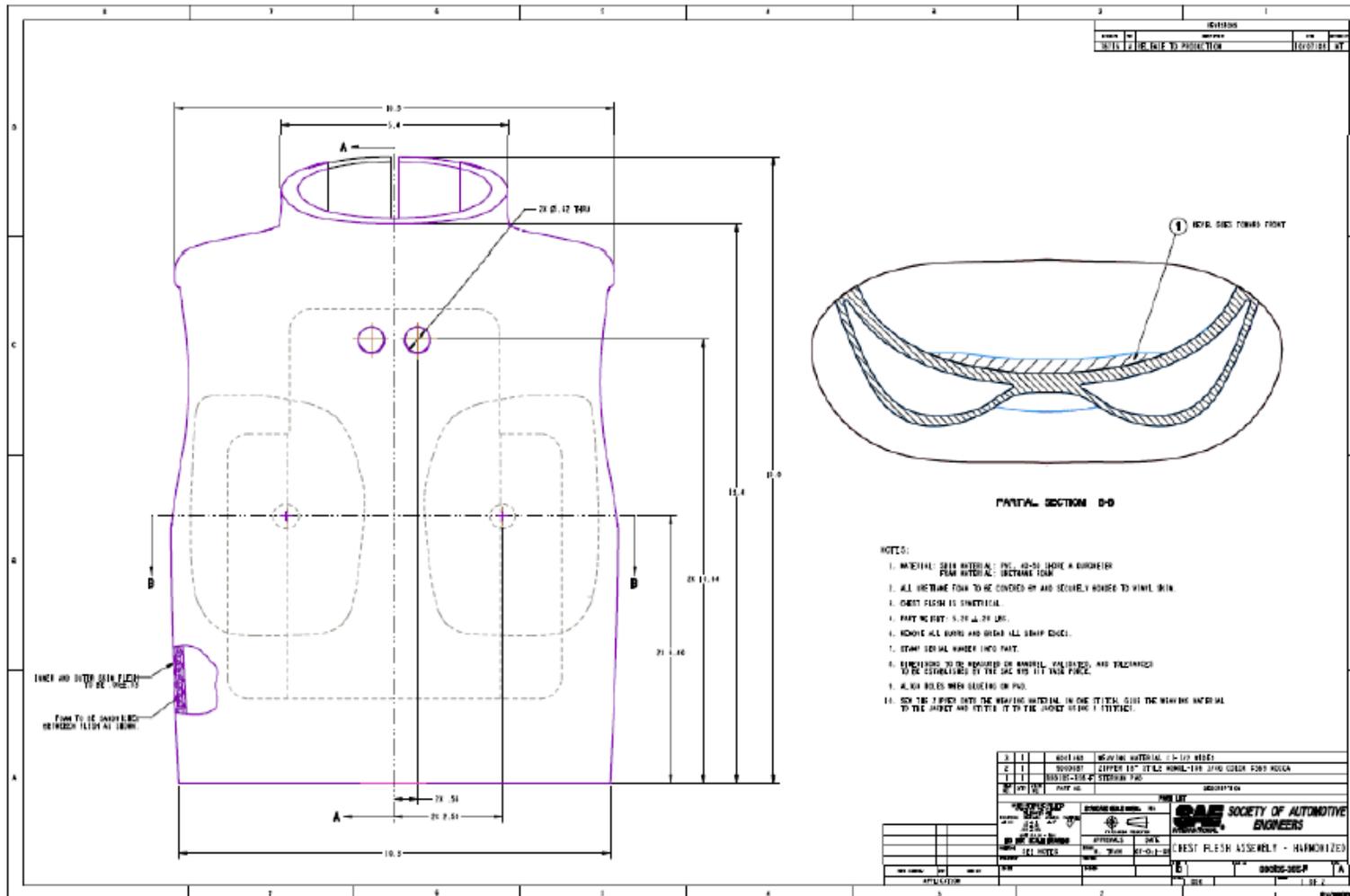


Figure 1

SAE 2D Jacket Drawing – Side/Rear

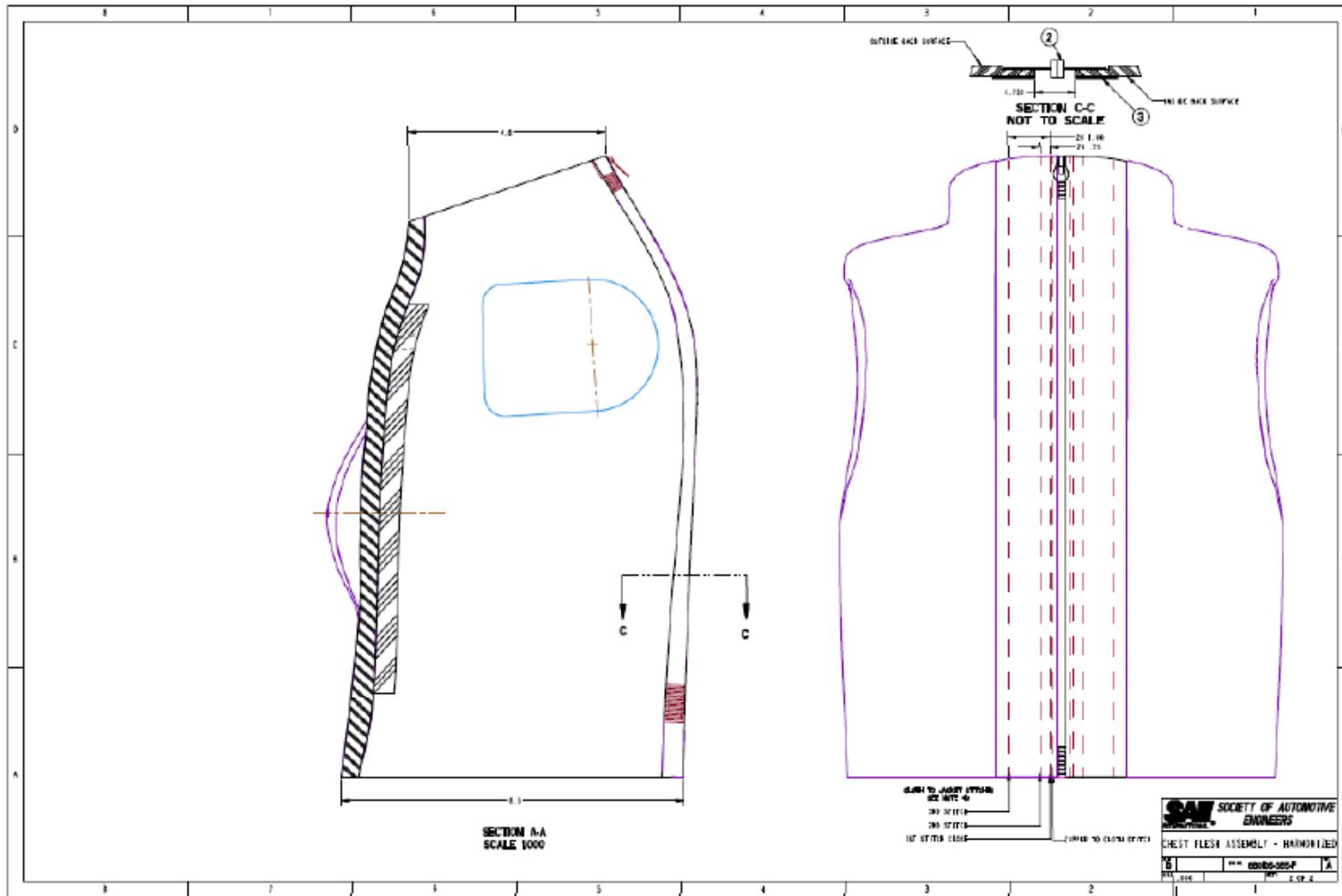
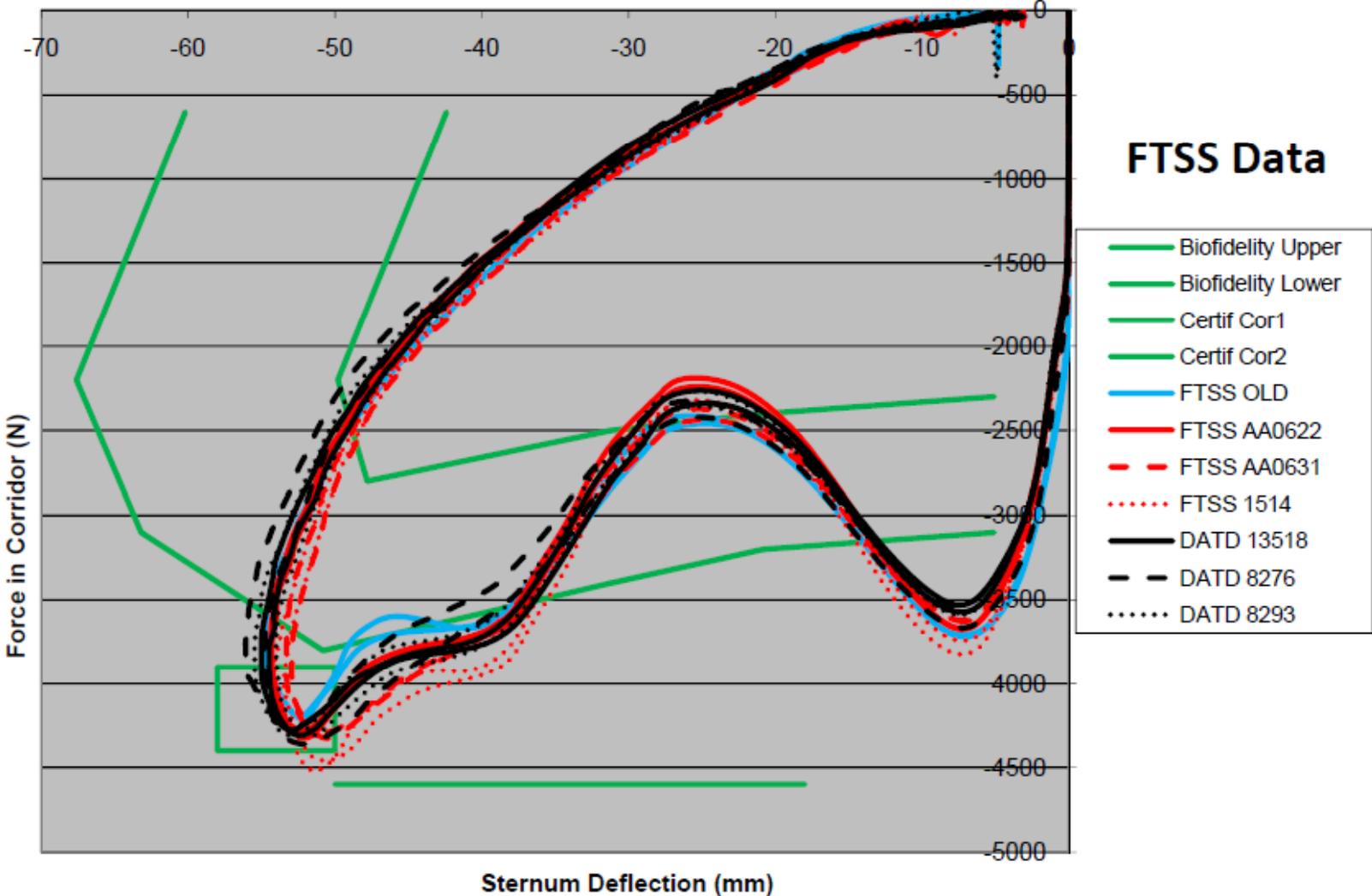


Figure 2

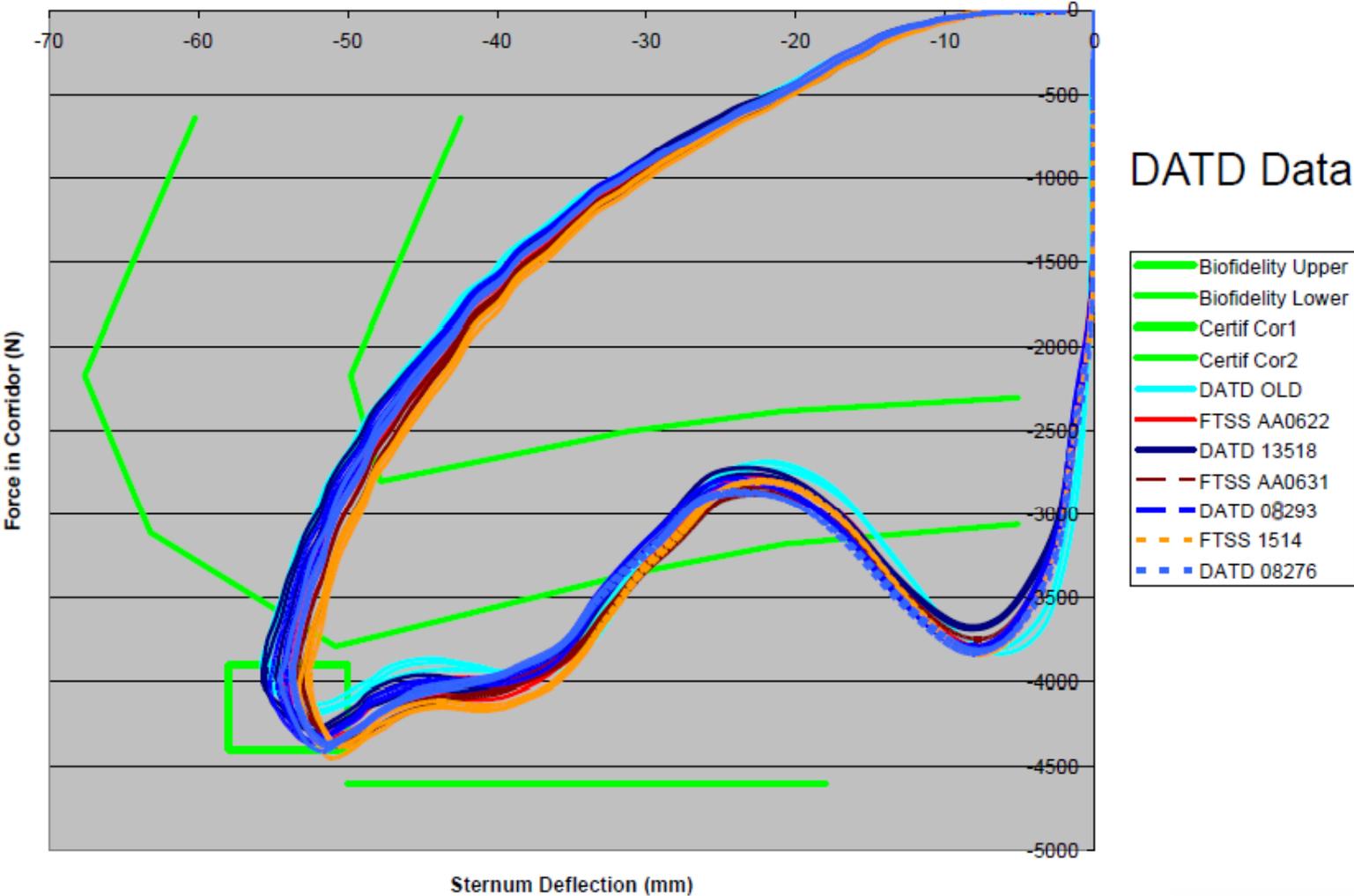
FTSS test protocol

- In order to ensure robust testing process FTSS used the following testing protocol:
 - Multiple test series were run to check reproducibility
 - Dummy ribs were checked thoroughly between each test series
 - All testing within a test series was carried out
 - by the same technician
 - within the same day to eliminate environmental effects
 - Each test series was started with a baseline test, using an old production jacket, to show contrast within the test series
 - Used randomized test sequence on the jackets to eliminate bias results and to offset the effect of rib fatigue

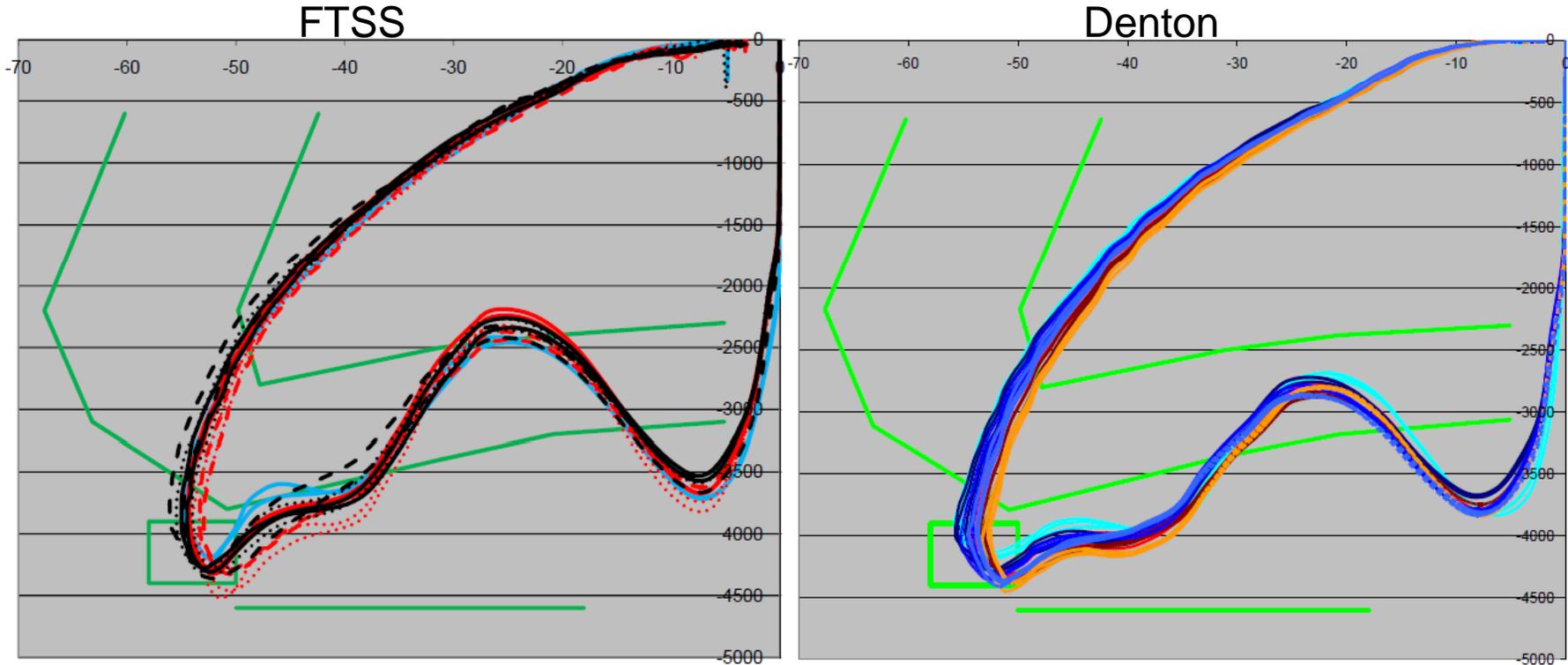
Round-robin Test Results



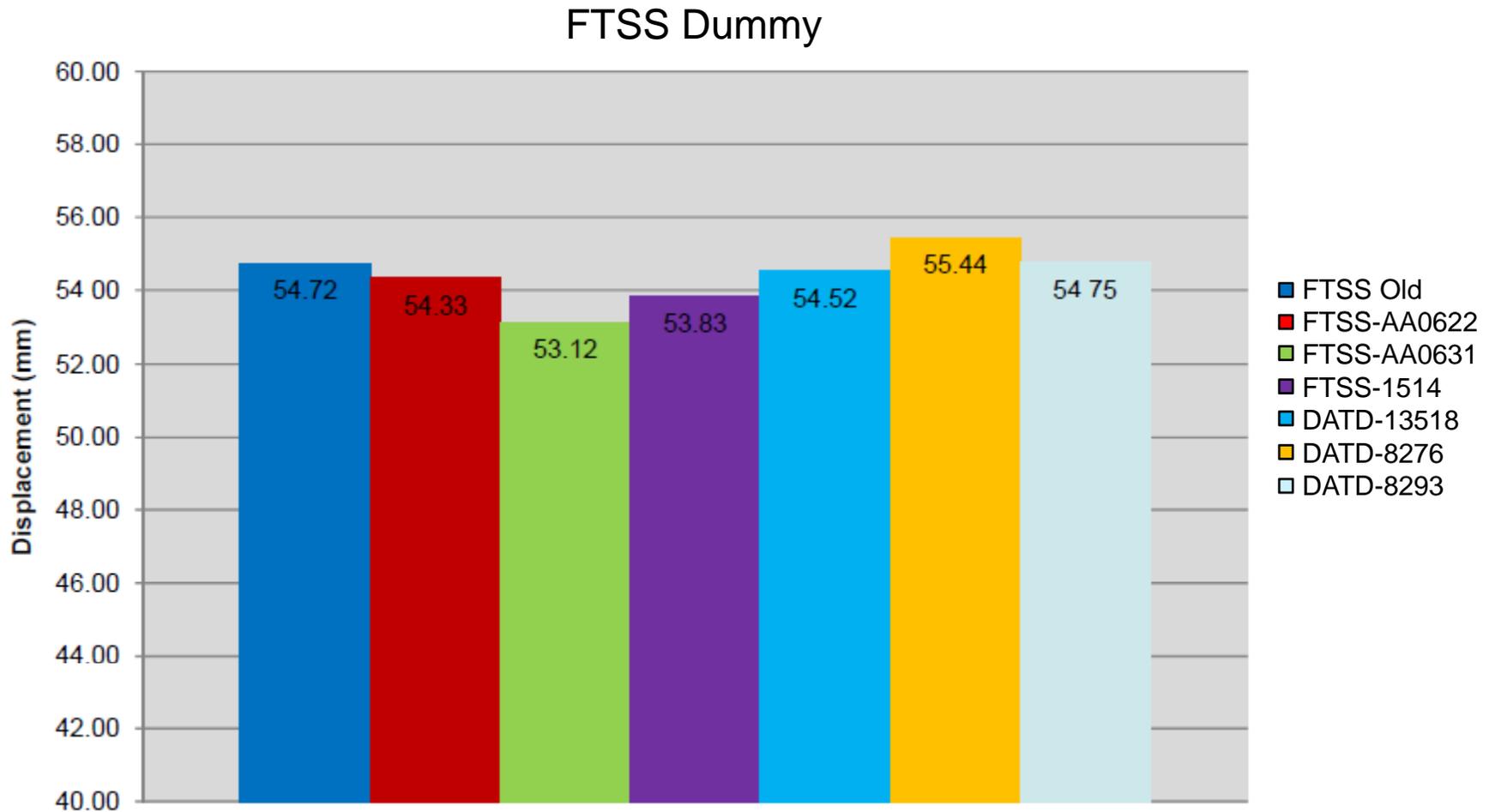
Round-robin Test Results



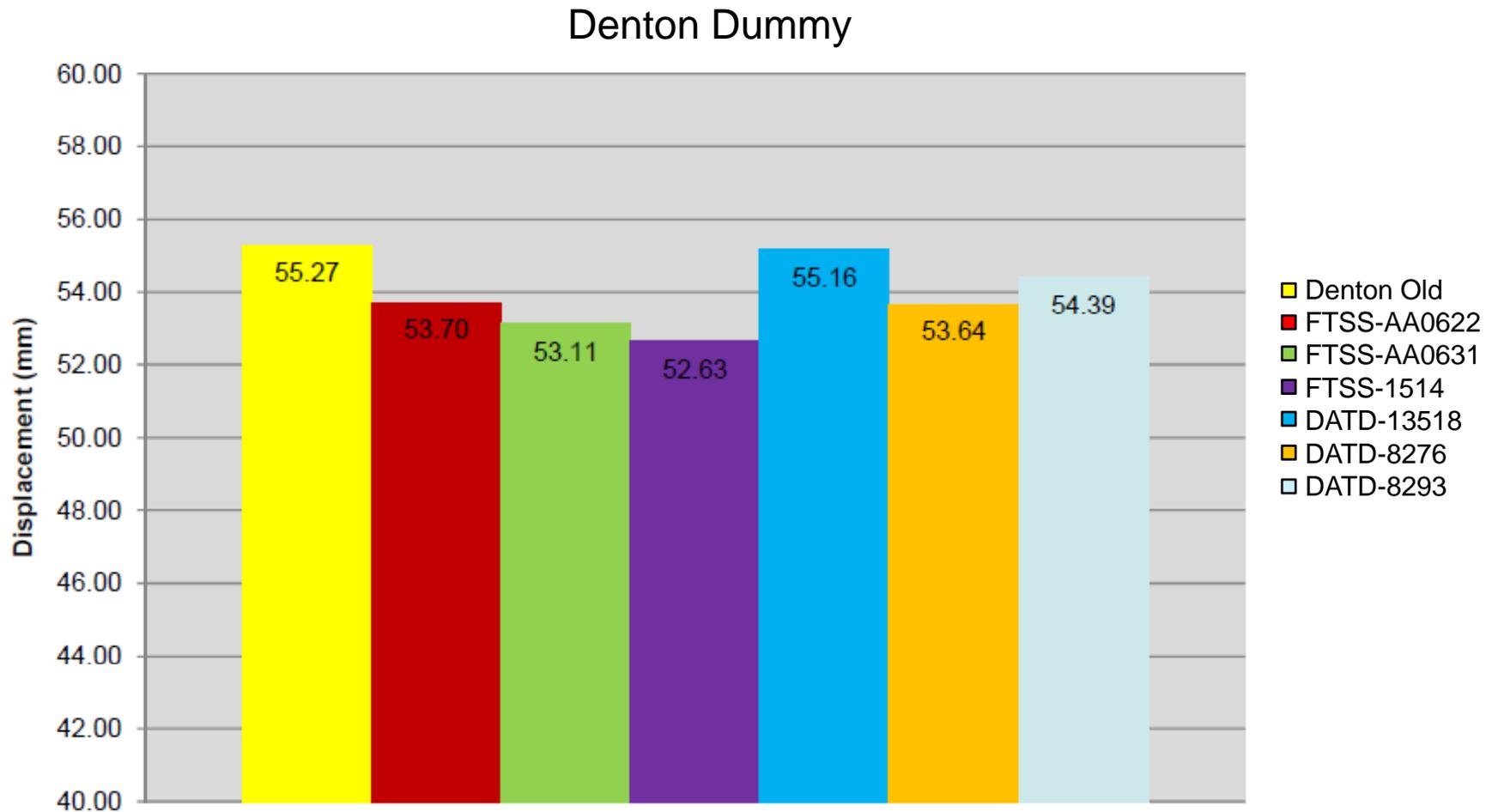
Round-robin Test Results



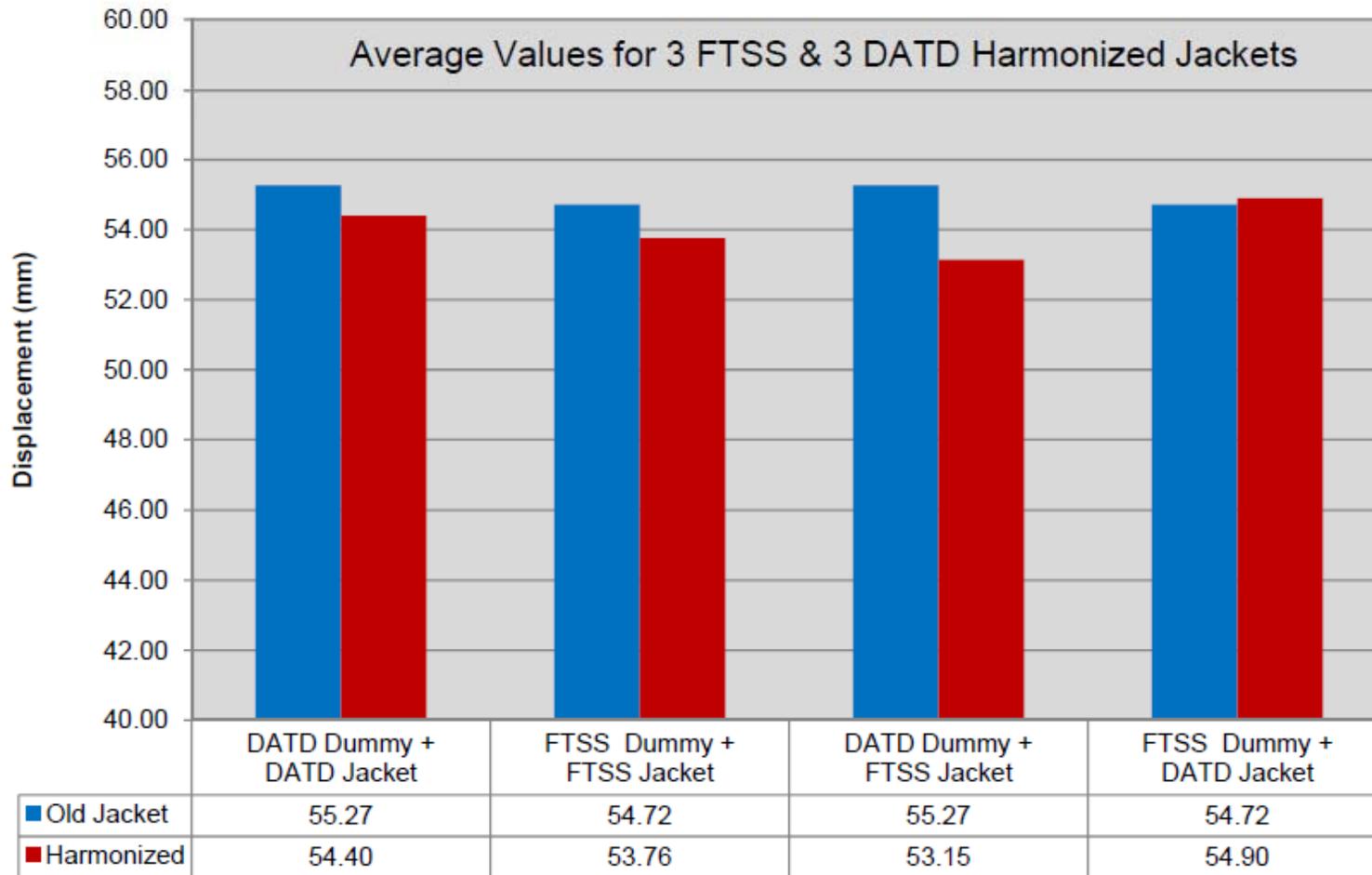
FTSS Test Result Summary



Denton Test Result Summary



Old Jacket versus Harmonized Jacket comparison



Round-robin Test Summary

- In total 35 thorax certification tests were executed during the round-robin test at FTSS en Denton
- Average FTSS rib displacement on:
 - Old FTSS Jacket: 54.72 mm
 - FTSS harmonized jacket: 53.76 mm
 - Denton harmonized jacket: 54.90 mm
- Average Denton rib displacement on:
 - Old Denton Jacket: 55.27mm
 - FTSS harmonized jacket: 53.15 mm
 - Denton harmonized jacket: 54.40 mm
- FTSS old jacket results are 0.96 mm more than the FTSS harmonized jacket
- Denton old jacket results are 0.87 mm more than the Denton harmonized jacket

Small Female Jacket Harmonization Summary

- FTSS and Denton are preparing SAE informational report (J-DOC) to outline the work executed:
 - Final document (J-DOC) to be made generally available after Hybrid III family committee's approval
- Petition to be drafted to NHTSA to update drawing package to correct errors found