



**Preliminary Results of NHTSA's Comparison
of the Current Offset Deformable Barrier Specified in
FMVSS NO. 208 and the Progressive Deformable Barrier**

Objective



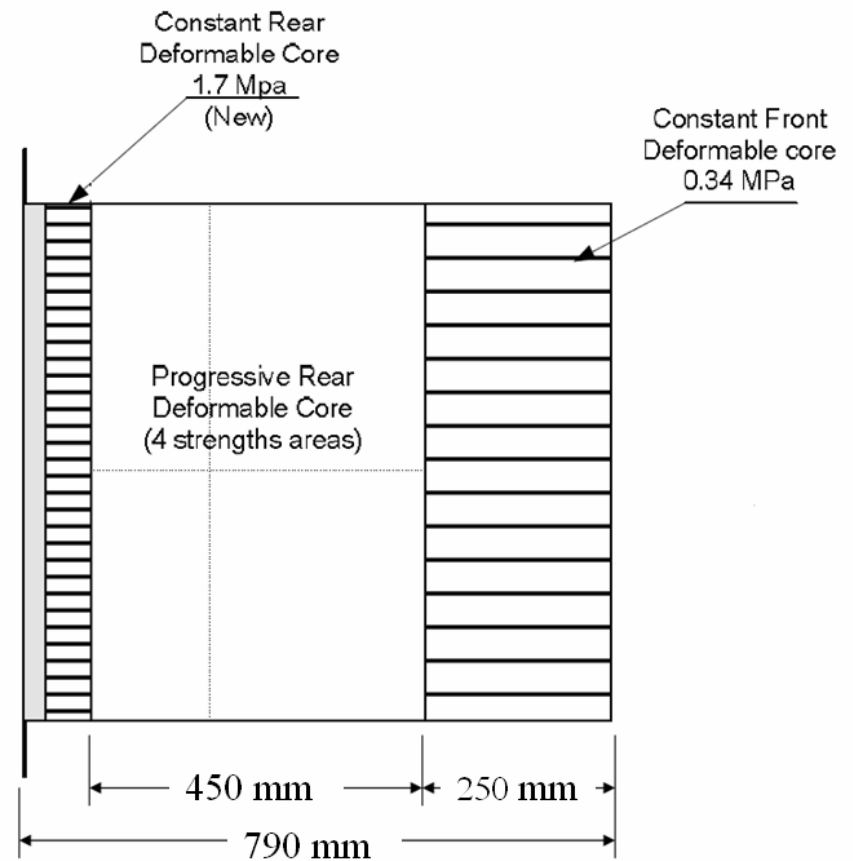
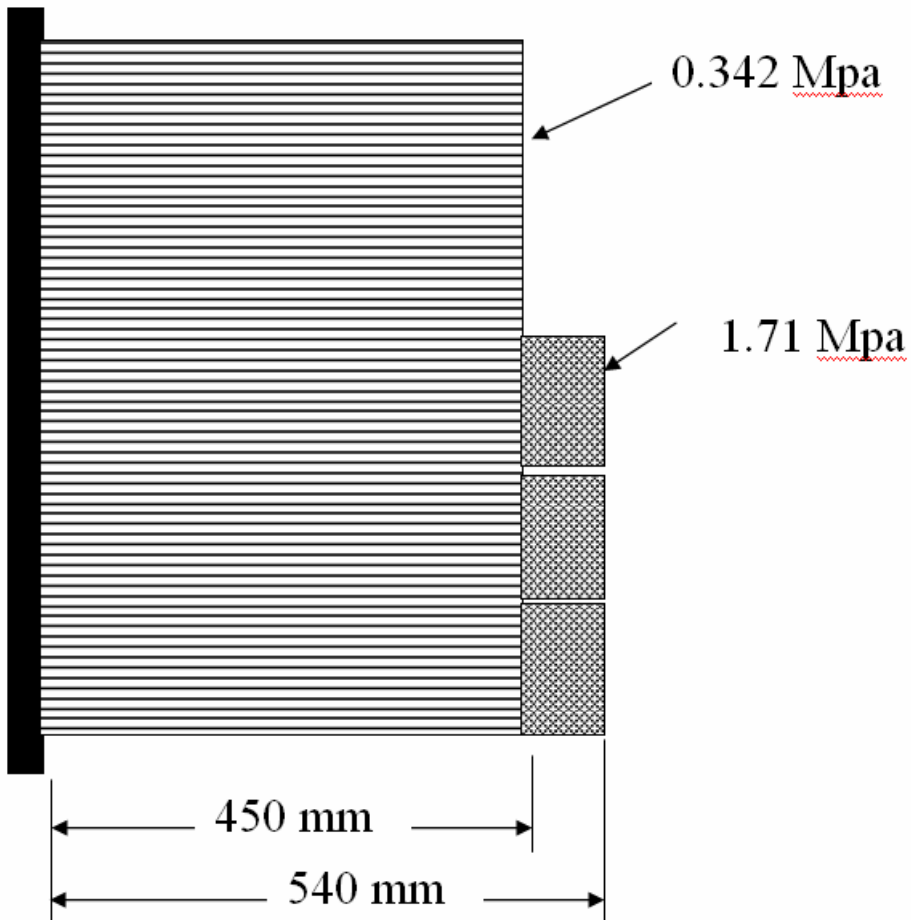
- Direct evaluation of the Progressive Deformable Barrier (PDB) and the ECE R94 Offset Deformable Barrier (R94)

Performance Measures



- THOR LX legs to evaluate lower leg injuries
- Barrier performance evaluated by
 - Bottoming out
 - Vehicle weight
 - Deformation pattern due to vehicle construction
 - Unibody vs. body on frame

Barrier Definition



Test Conditions



- R94
 - 56 kph at 40 percent overlap
- PDB
 - 60 kph at 50 percent overlap
- Dummy based seating procedure
 - Place foot on accelerator pedal

Test Matrix

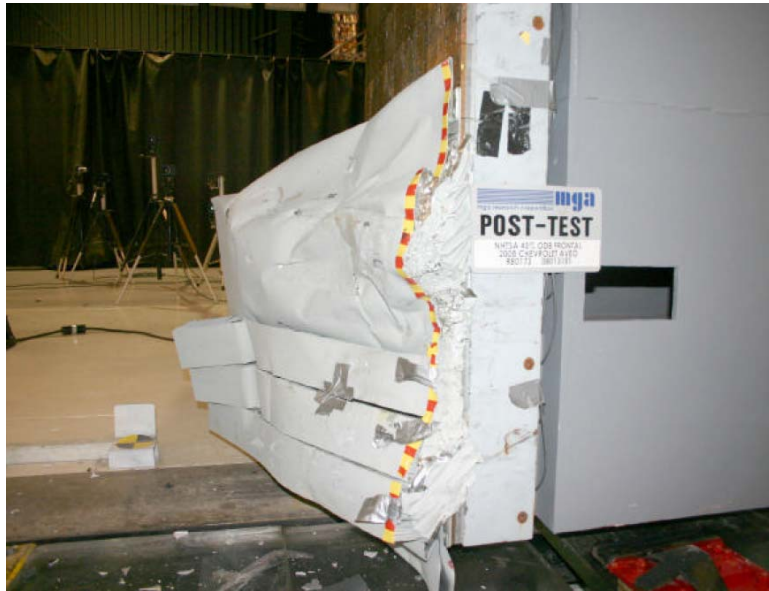


- Chevy Aveo – small car
- Ford 500 – midsize car
- Ford Escape – unibody SUV
- Saturn Outlook – unibody SUV
- Ford F-250 – large PU
- Ford 500 – midsize car
 - 3 repeat tests for both barriers

Aveo Left Side View



Aveo Barrier Crush



R94



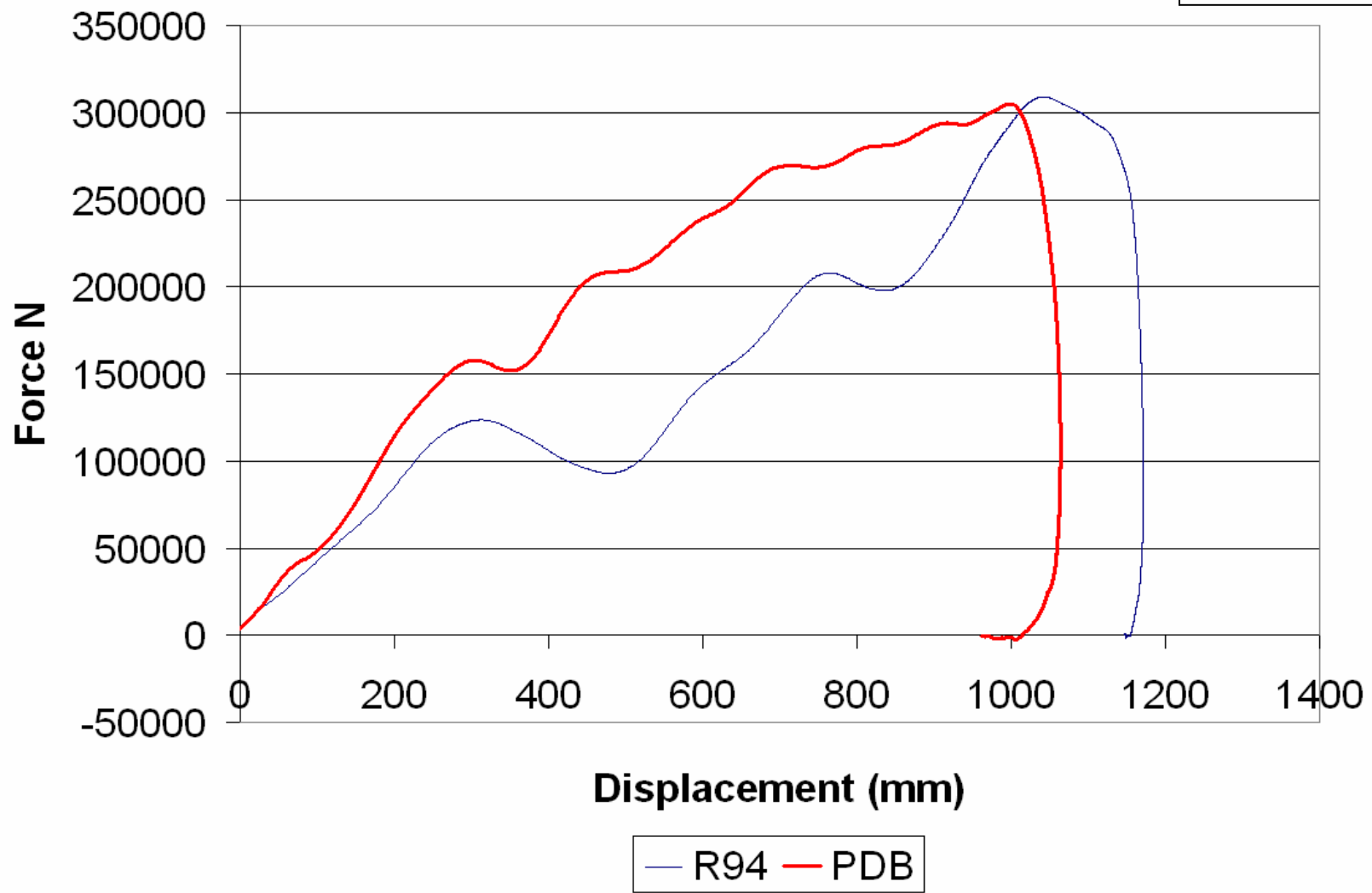
PDB

The Aveo (compact car) bottomed out the R94 barrier

Aveo Force vs. Displacement



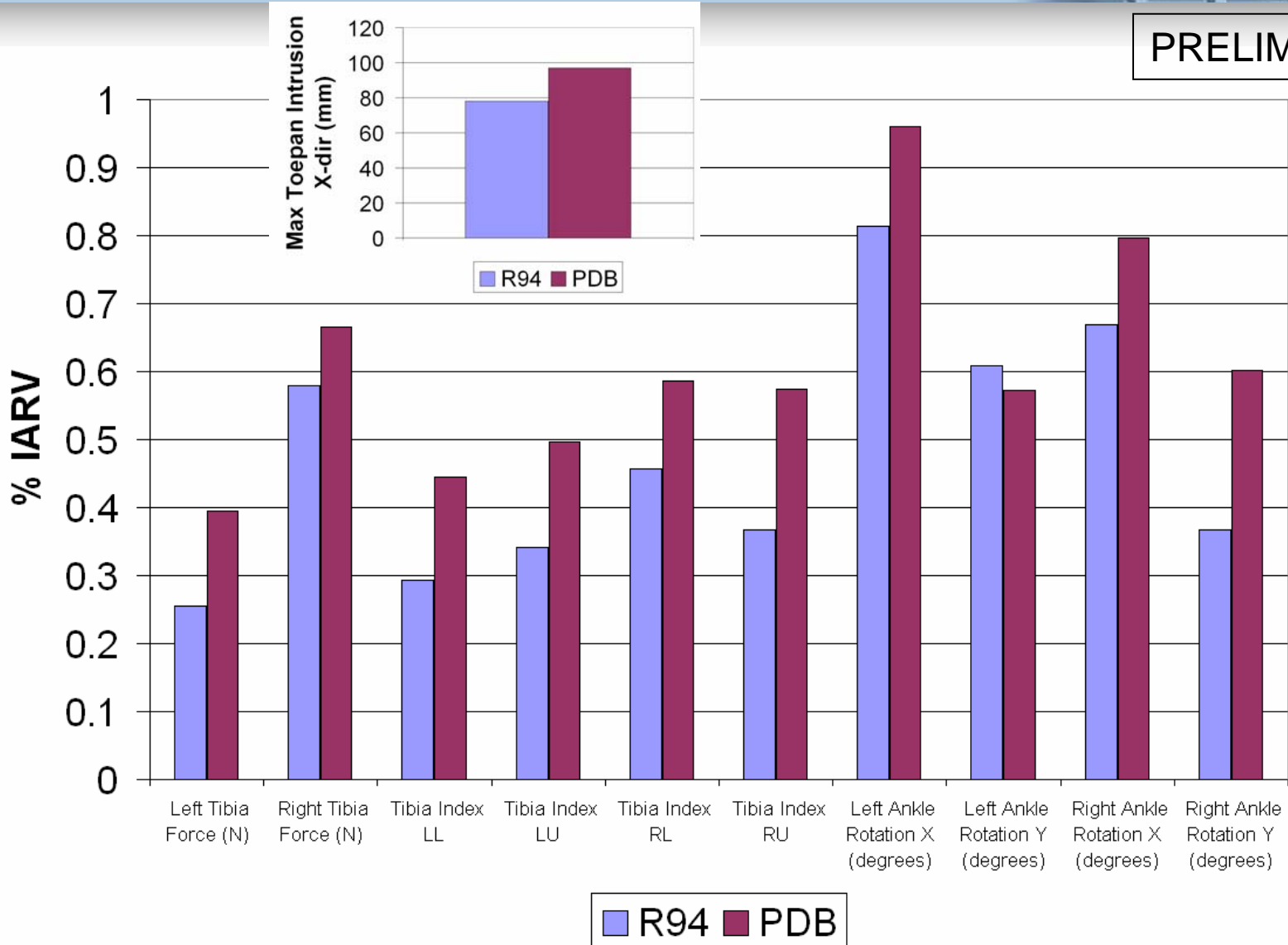
PRELIMINARY



Aveo Thor-Lx IAV



PRELIMINARY



Aveo Feet Kinematics



F250 Left Side View



R94



PDB

F250 Barrier Crush



R94



PDB

Front View of PDB for F250

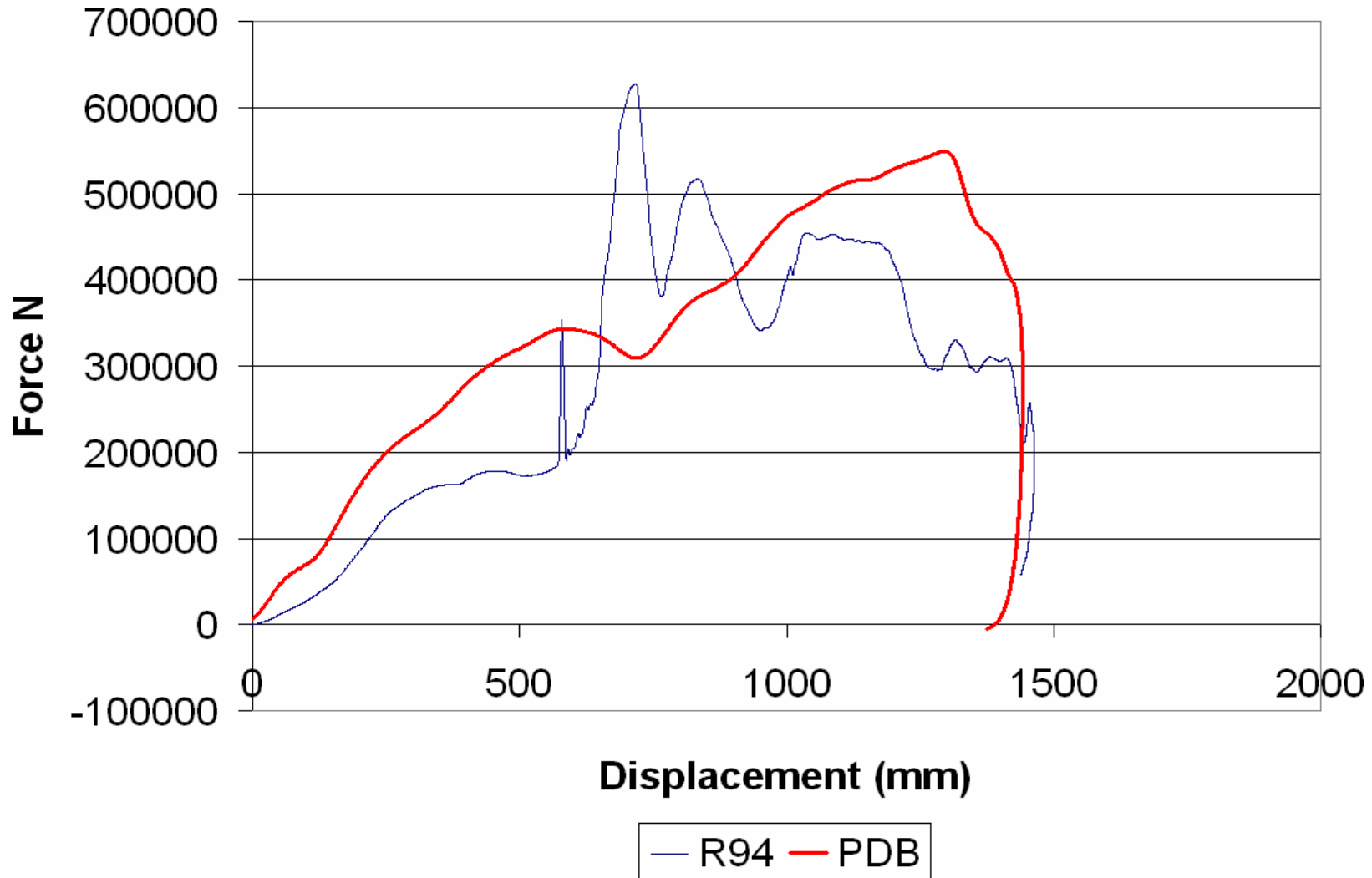


Frame punctured the PDB

F250 Force vs. Displacement



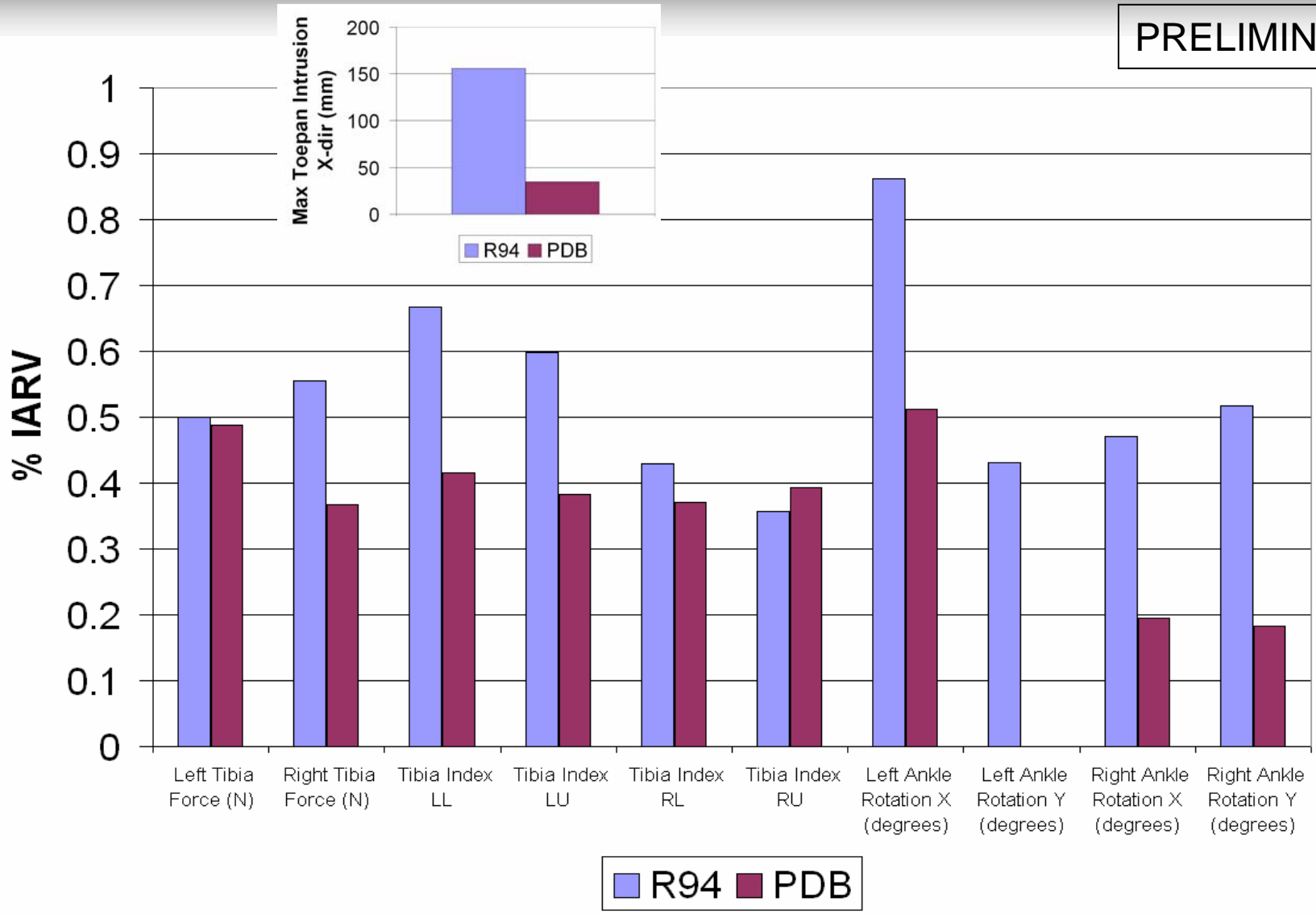
PRELIMINARY



F250 Thor-Lx IAV



PRELIMINARY



Summary



- The PDB barrier did not bottom out when impacted with the F250
- Both barriers applied the same global force to the Aveo
- The PDB absorbed more energy than the R94 barrier for the F250
 - Peak Force was latter in the event

Summary (continued)



- The Thor-Lx IAVs were higher for the PDB Aveo test
- The Thor-Lx IAVs were lower for the PDB F250 test