

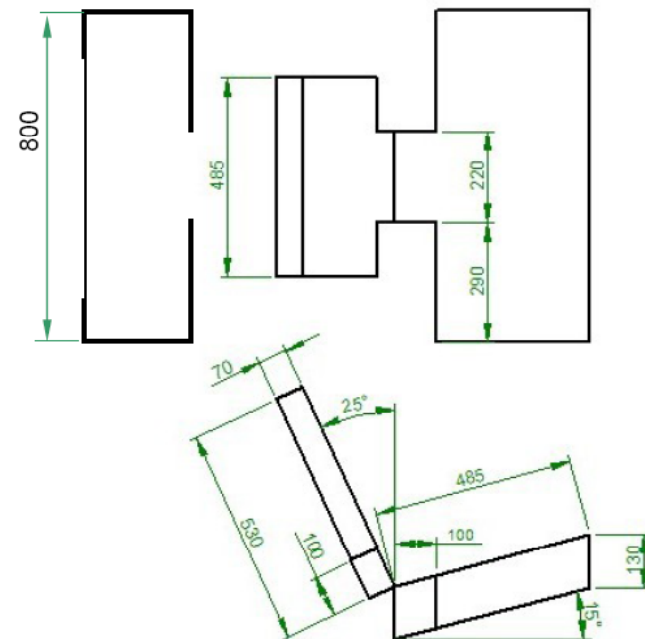
Test Bench Foam Definition

GRSP Informal Group CRS Testing
9th meeting in Paris
March 11, 2009

Prepared by: Kees Waagmeester

Drafting of Definition so far

- Document CRS 06-02:
 - NPACS Bench extended width for testing of carrycots
 - Dimensions as shown:



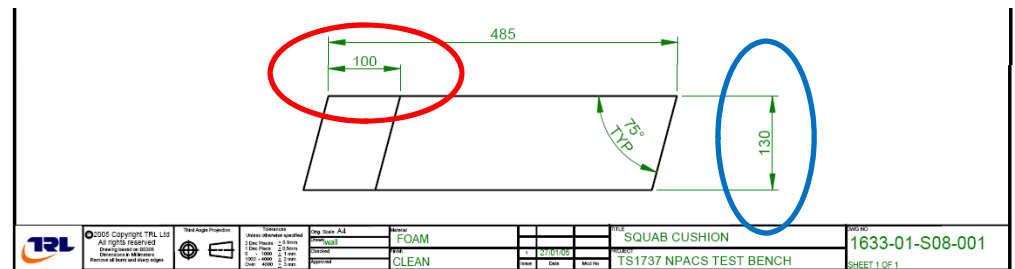
- Stiffness based on NPACS research:
NPACS foams: T75500 for seat and backrest (decided in 8th meeting)
- Foam cover – Sun shade cloth made of poly-acrylate fiber

Progress and issues

- Dimensions

GRSP IG CRS 06-02:

NPACS document Annex 13:



Questions that arose are:

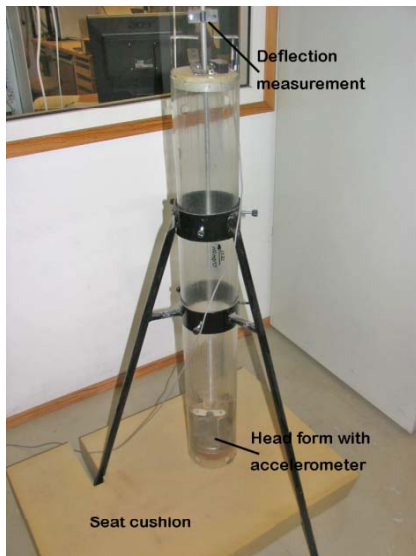
	GRSP CRS-06-02	NPACS Drawings
Squab thickness	125.6	130.0 (?)
Squab recess depth	100.0	96.6 (?)
Backrest height	530.0	590.0 (?)
Foam width at R-point	220.0	250.0 (?)

TRL to present their judgment on the correct definition

Progress – drop test set-ups

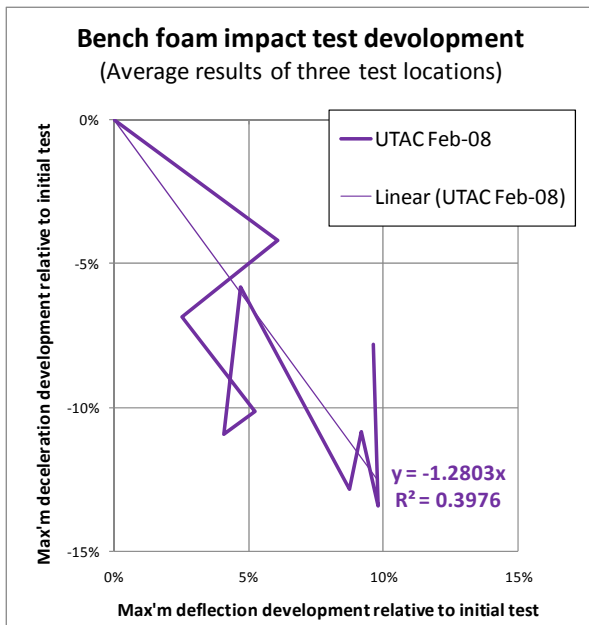
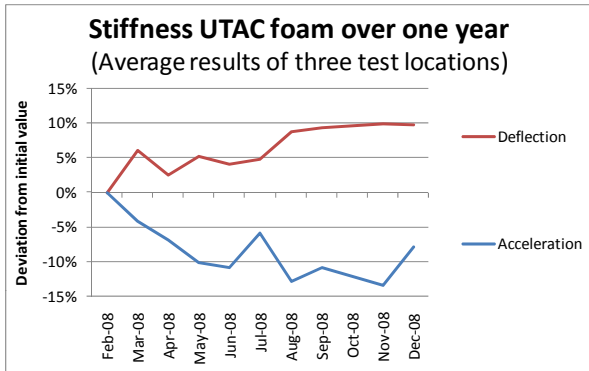
- Stiffness based on NPACS research
NPACS foam definition: T75500 seat and backrest (decided in 8th meeting):
 - Some test houses provided UNECE R44 foam test data
UTAC and Dorel provided useable data (other data not consistent)
 - No NPACS dynamic foam test results available.

Some dynamic drop test set-ups



**Support also requested from:
TRL, BAST, TUB, IDIADA and Britax
no response received so far**

Progress – test results



UTAC results shows:

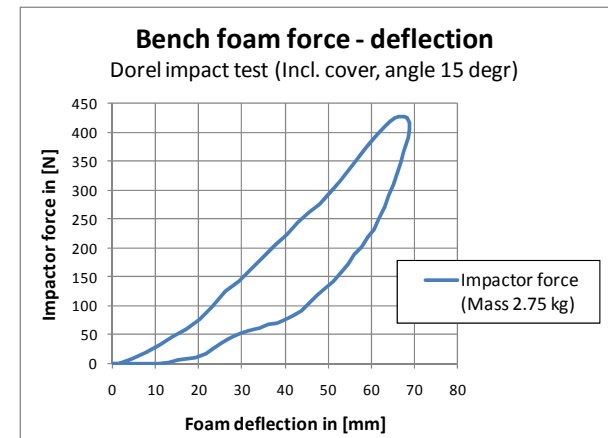
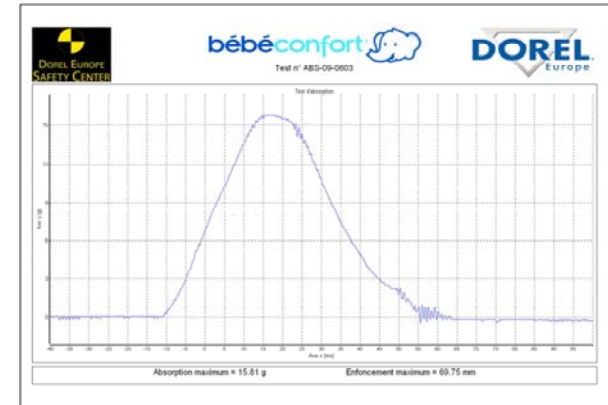
- Foam drop test results development over one year
- Large scatter of results
- Are the tests repeatable enough?
- Is the stiffness decrease due to ageing or test/loading history?

Dorel data shows:

- Acceleration signal
- Impact force deflection graph reconstructed
- How will this curve develop over time?

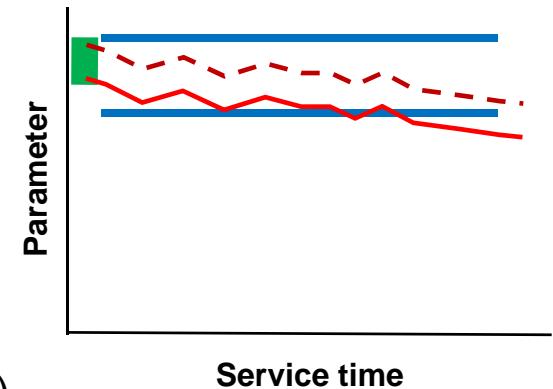
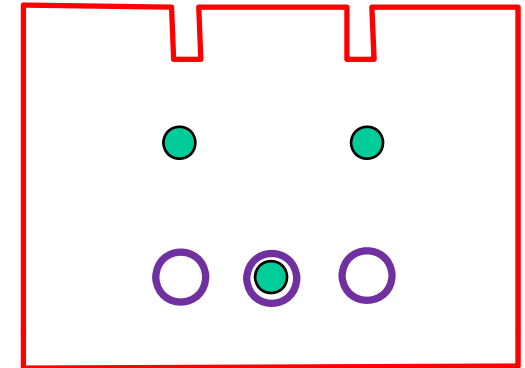
Conclusion:

- More test data required



Questions to be answered

- Locations to be tested: Triangle or inline?
- Is the drop test result for new foam products stable enough ?
(What will be the production scatter? Static properties specified with +/- 15%)
- What parameter is the most suitable:
Acceleration, Deflection or Force-deflection curve
- Initial certification hopefully **within +/- 10%**
(May selection is necessary)
- In service certifications
Method: On bench (15 degr) or On rigid floor level
Criterion: **Absolute values +10% / -20%**
or
Initial value +/- 15% ? (as it is in UNECE R44)



More data required to make decisions

Any Questions?

FTSS needs input and support...



... to draft an appropriate bench foam definition.