



NPACS Test Bench

Presented by Marianne Le Claire
02/09/08



Background

- Geometric and stiffness properties derived from research
- 30 vehicles examined
- Vehicles selection based on:
 - Sales
 - Child safety performance in EuroNCAP
 - Known child restraint interaction problems

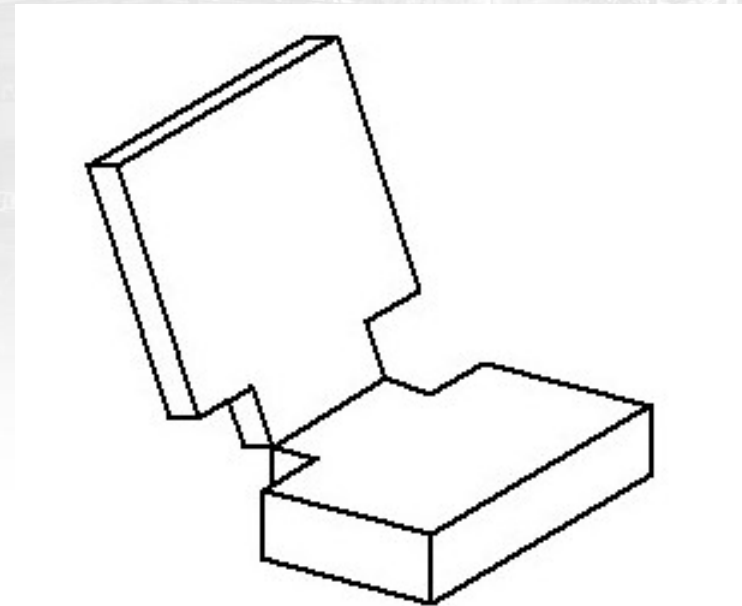
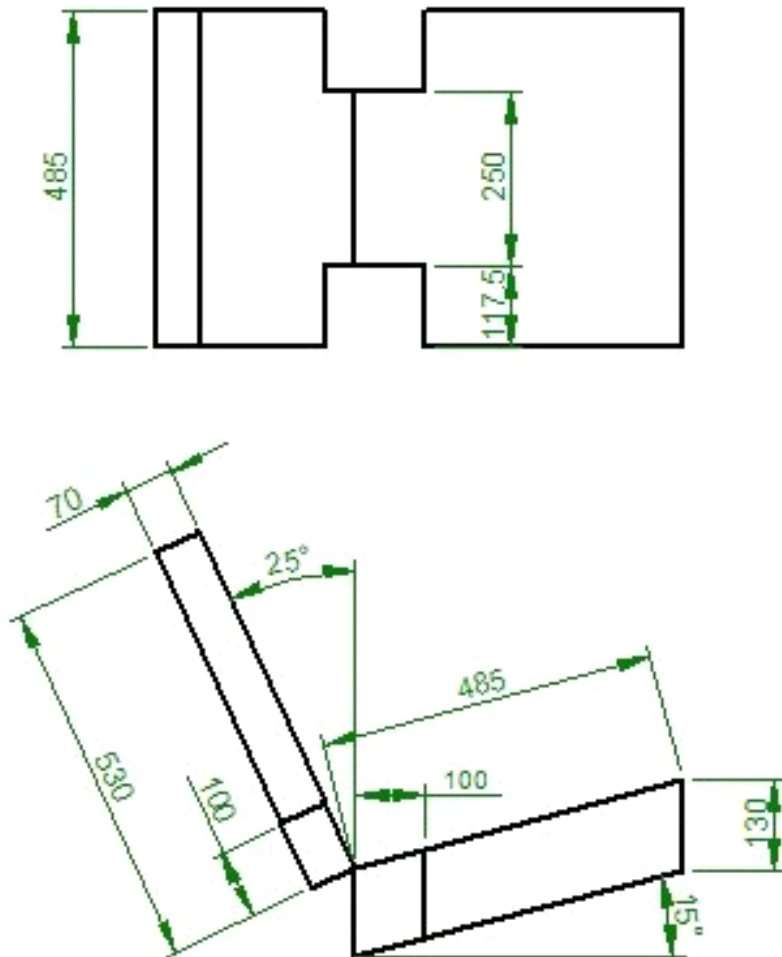
General description

- Backrest and seat cushions supported by rigid frame
- Cushion characteristics defined by FTSS specification – T75500
- Covered with sun shade cloth (FTSS)

- Design dependent on child restraint method of attachment
 - To accommodate different type and location of anchorages

Child restraints attached with the seat belt

Dimensions and 3-D view



Child restraints attached with the seat belt

Seat belt anchorages

- Referenced from Cr point (x and z axes) and test seat centreline (y axis)
- Coordinate system:
 - Positive x = Fore (towards front of sled)
 - Positive y = Left to right (from occupant's point of view)
 - Positive z = Downwards

Anchorage	Upper (mid position)			Upper (fwd position)			Lower inner (buckle)			Lower outer		
	x	y	z	x	y	z	x	y	z	x	y	z
Distance (mm)	-240	-250	-630	-130	-250	-630	-29	200	59	10	-200	14.5

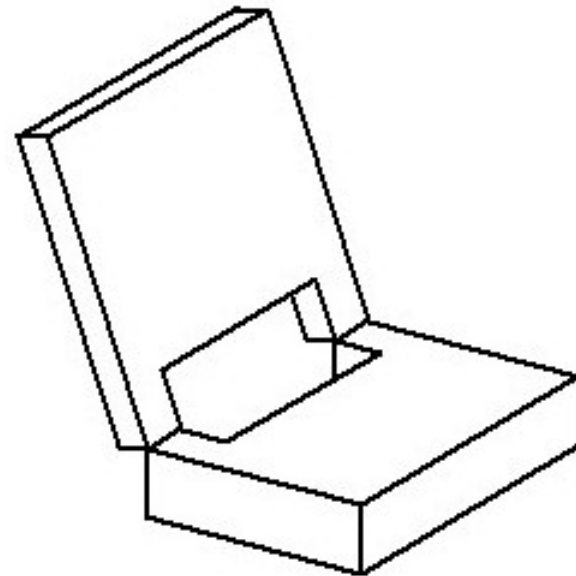
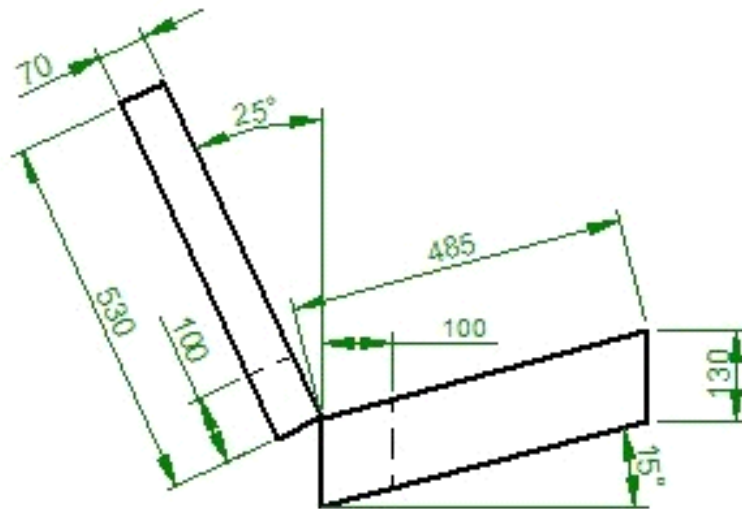
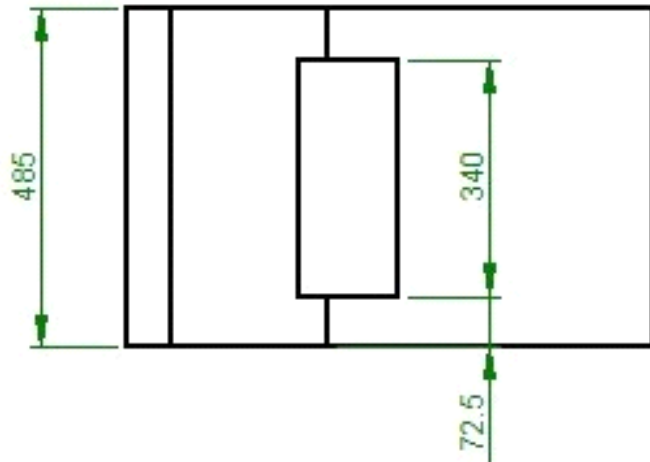
Child restraints attached with the seat belt

Seat belt retractor

- Complies with UNECE Regulation 16 for retraction force
- Diameter: 33 ± 0.5 mm

Child restraints attached with ISOFix

Dimensions and 3-D view



Child restraints attached with ISOFix

ISOFix anchorages

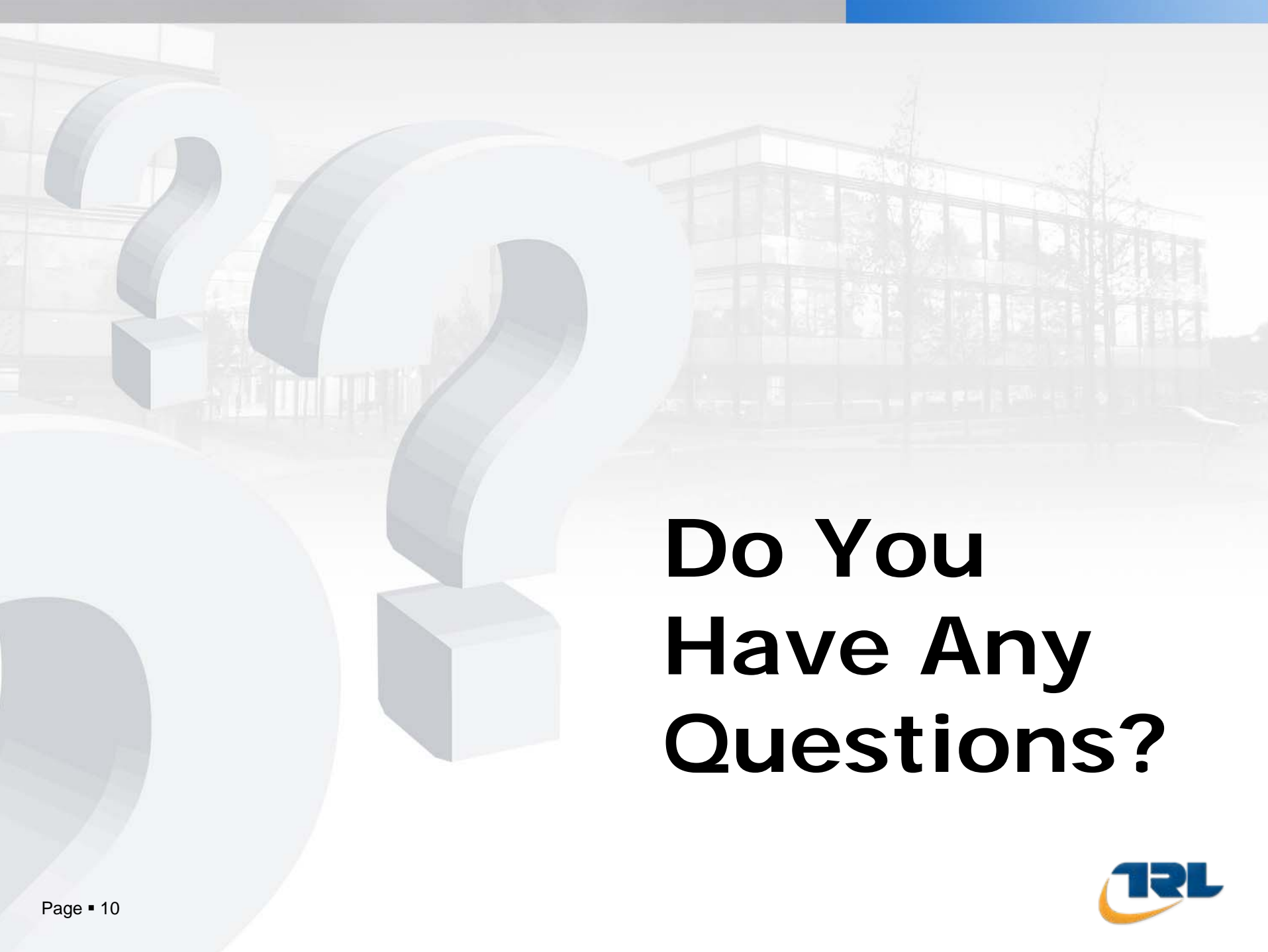
- Referenced from Cr point (x and z axes) and test seat centreline (y axis)
- Coordinate system:
 - Positive x = Fore (towards front of sled)
 - Positive y = Left to right (from occupant's point of view)
 - Positive z = Downwards

Anchorage	Lower left			Lower right			Top tether G1			Top tether G2		
Direction	x	y	z	x	y	z	x	y	z	x	y	z
Distance (mm)	-65	-140	-2	-65	140	-2	-550	0	-475	-1450	350	0

Child restraints attached with ISOFix

Sled floor pan

- 210 mm below Cr axis (adjustable)
- Surface hardness ≥ 120 HB, according to EN ISO 6506-1:1999
- Surface roughness $\leq Ra 6.3$, according to ISO 4287:1997
- Withstands 5 kN vertical concentrated load
 - Vertical movement ≤ 2 mm (relative to Cr axis)
 - No permanent deformation



**Do You
Have Any
Questions?**