

IFWG on Helmet R22-06

Geneva May 13th 2019

Brief Reaction / Discussion of rev4

R. Willinger, C. Deck, N. Bourdet

remy.willinger@unistra.fr

Strasbourg University

**Laboratoire des sciences de l'ingénieur, de l'informatique
et de l'imagerie (Icube)**

Equipe Matériaux multi-échelles et Biomécanique (MMB)

Reaction / Discussion of Draft R22-06 rev4

In light of R22-Workshop hold in Paris, Feb 2019

Content : Significant improvements have been made. Remaining discussion of R22-06 rev4 exists in terms of :

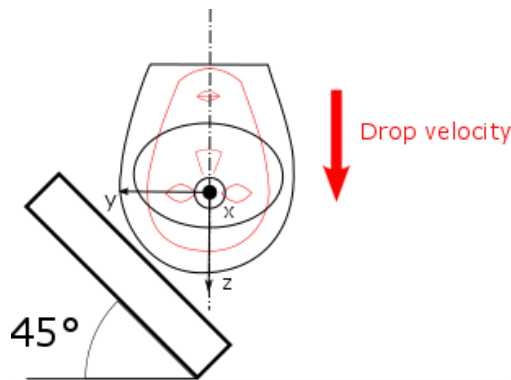
- Headform
- Linear impact
- Oblique impact.

- New headform for Linear and Oblique impacts should be introduced
- Illustration of CEN-WG11 headform for linear and oblique impact as presented at CEN-WG11 meeting, Strasbourg, March 2019
- WG11 headform available by summer 2019

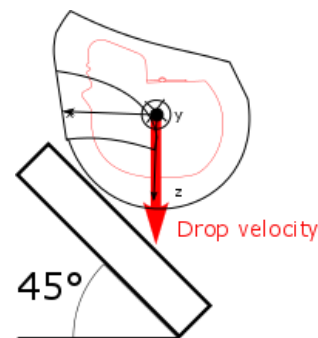


- Record **angular kinematic** under linear impacts is essential !
- Cold temperature is -10°C
- **High Energy 8,2 m/s ; PLA 275 ; HIC 2880 : Is too high**
- 6m/s or 5,5 m/s ; PLA 180 G; HIC 1200
- How to Monitor Model based injury criteria
(80% AIS2+)

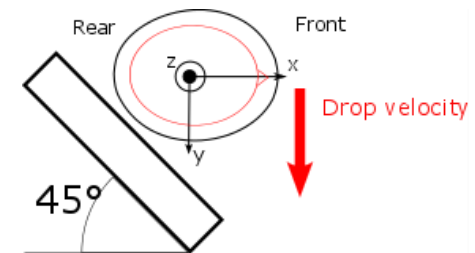
- Free drop against 45° inclined anvil
- Oblique impacts : RotX, RotY, **RotZ is essential as well**
- Diameter of anvil : 130 cm or **150 cm**
- 8m/s ; **HIC 1200 ; MAA 10,4 rd/s² BRIC 0,78 or 0,6 or 0,75. :**
linear loading must be considered as well.
- How to Monitor Model based injury criteria
(80% AIS2+)



RotX



RotY



RotZ