Flexible Pedestrian Legform Impactor
Type GT (FLEX-GT)
Evaluation Test Results

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Flex-GT: Repeatability and Reproducibility Evaluation Test
- Femur, Test setup -

- Femur-1 (Nm) = F/2 x 0.065
- Femur-2 (Nm) = F/2 x 0.145
- Femur-3 (Nm) = F/2 x 0.105

quasi static 3 point bending test
Flex-GT: Repeatability and Reproducibility Evaluation Test
- Tibia, Test setup -

quasi static 3 point bending test

Support Length: 410 mm

Support Length: 400 mm

Moment: Tibia-1 (Nm) = F/2 x 0.065
Moment: Tibia-2 (Nm) = F/2 x 0.145
Moment: Tibia-3 (Nm) = F/2 x 0.185
Moment: Tibia-4 (Nm) = F/2 x 0.105

Flex-GT: Repeatability and Reproducibility Evaluation Test
- Knee, Test setup -

quasi static 3 point bending test

Support Length: 400 mm

Moment: Knee joint surface (Nm) = F x 0.2
Flex-GT: Repeatability and Reproducibility Evaluation Test
- Femur, Test results -

Flex-GT: Repeatability and Reproducibility Evaluation Test
- Tibia, Test results -
Flex-GT: Repeatability and Reproducibility Evaluation Test - Knee, Test results -

Knee SN01 test01  
Knee SN01 test02  
Knee SN01 test03  

Knee SN02 test01  
Knee SN02 test02  
Knee SN02 test03  

Knee SN03 test01  
Knee SN03 test02  
Knee SN03 test03  

SN01, SN02, SN03

Flex-GT: Repeatability and Reproducibility Evaluation Test - Assembly Test, Test setup -

Flex-GT

Pin joint  
Supporting rig  
Leg suspension angle 15 deg.  
Angular measurement tool  
Without flesh  
Free fall  
Knee joint surface level  
Rubber 30 (5mm x3)  
Neoprene (5mm x2)  
Put neoprene and rubber sheets (5 sheets in total) on the impact face.
Flex-GT: Repeatability and Reproducibility Evaluation Test
- Assembly Test, Test results -

**Flex-GT (Femur)**
Three test results for each impactor (SN01, SN02, SN03)

Femur output: does not use injury assessment
(just check tool reliability)

**Flex-GT (Knee)**
Three test results for each impactor (SN01, SN02, SN03)
Flex-GT: Repeatability and Reproducibility Evaluation Test
- Assembly Test, Test results -

Flex-GT (Tibia) Three test results for each impactor (SN01, SN02, SN03)

Flex-GT: Reproducibility Evaluation Test
- Car Test, Test setup -

Impact speed 11.1 (m/s)
Test car (Car07D) Flex-GT
Impact height (H) : base* + 50 mm
* base: 25 mm
Car07D, Center ⇐ Flex-GT (SN01, SN02), $H_i = base + 50$ mm

Flex-GT(SN01)

Flex-GT(SN02)

Car07D, Center ⇐ Flex-GT (SN01, SN02), $H_i = base + 50$ mm

Tibia output (Tibia-1, Tibia-2, Tibia-3, Tibia-4)
Car07D, Center ⇐ Flex-GT (SN01, SN02), H_base + 50 mm

**Knee output (Knee-ACL, Knee-PCL, Knee-MCL)**

- ACL, Flex-GT(SN01)
- ACL, Flex-GT(SN02)
- PCL, Flex-GT(SN01)
- PCL, Flex-GT(SN02)
- MCL, Flex-GT(SN01)
- MCL, Flex-GT(SN02)

**Femur output (Femur-1, Femur-2, Femur-3)**

- Femur-1, Flex-GT(SN01)
- Femur-1, Flex-GT(SN02)
- Femur-2, Flex-GT(SN01)
- Femur-2, Flex-GT(SN02)
- Femur-3, Flex-GT(SN01)
- Femur-3, Flex-GT(SN02)
Car07D, Center ⇔ Flex-GT (SN01, SN02), Hₐ= base + 50 mm