

Pedestrian safety Technical report No.12

[Flex-PLI GTR performance advantage]

JASTI started development of Flexible Lower Leg Impactor under JAMA/JARI proposed a flexible type of Leg form impactor and it has adopted GTR model in 2013.



1. The market problems

In 2014, JASTI reviewed the market comments and improved total performance.

Problems are provided from customers;

1. Each calibration works were **very tight in the corridor**.
Beam has been cut to the requested dimensions.
2. **Beam are broken** in the middle of point as vertical line.
Cut surface are no longer strong cover protection.
3. **Strain gauge are come off** from the beam.
Cut surface are grinded rough surface which cannot hold. the gauges.
4. **Strain gauge are broken itself** by test.
Used strain gauge elongation capacity are too low (2-3%)

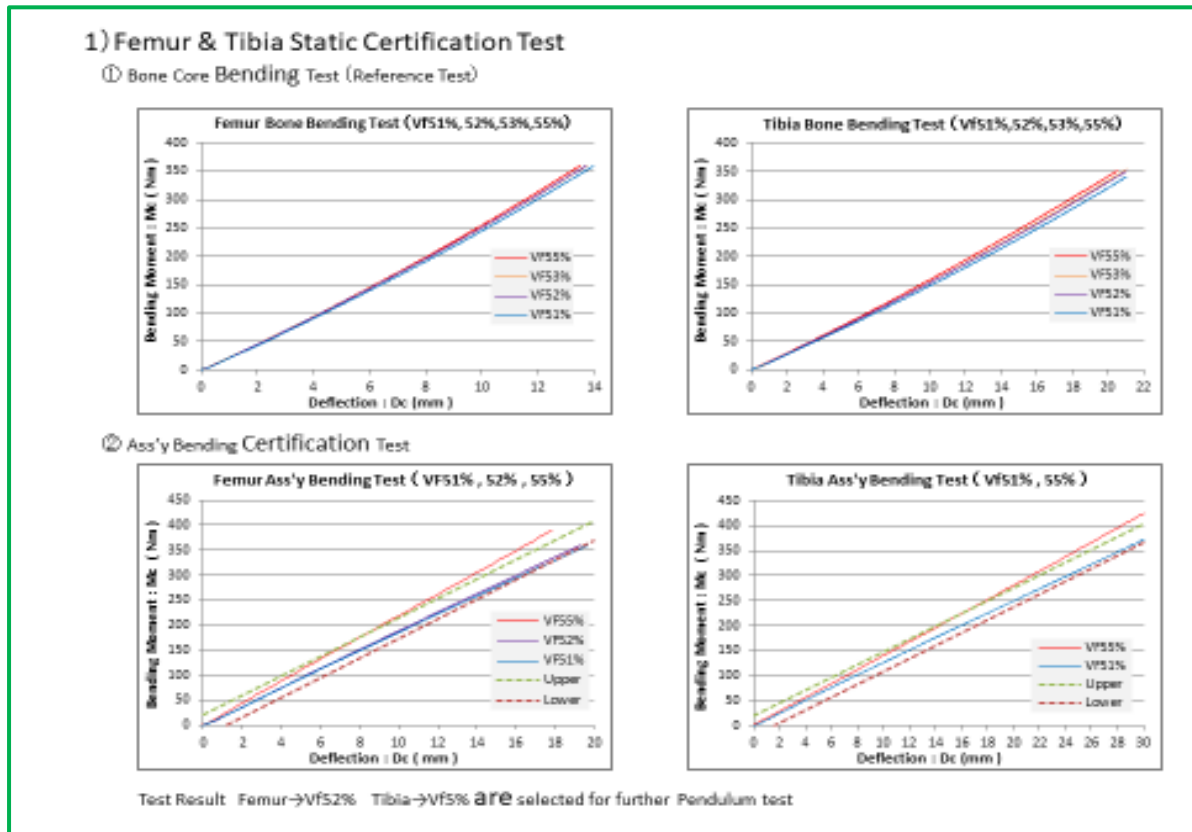
2. JASTI Femur and Tibia bones

JASTI has solved all market problems by new production process 1n 2015.

1. JASTI prepare the injection gate tools which can make beams
(Linearity less than 0.2%, Flatness is less than 0.1%).
No need to grind the surface at all.
2. The hard top surface keep the durability.
No crack and broken **by twice of 150 times of Pendulum impact tests.**
3. The stain gauges are glued on top hard surface. **Never drop off.**
4. JASTI has used **8% of the strain gauge elongation capacity.**

Fiber glass mixture ratio to determine Femur and Tibia bones.

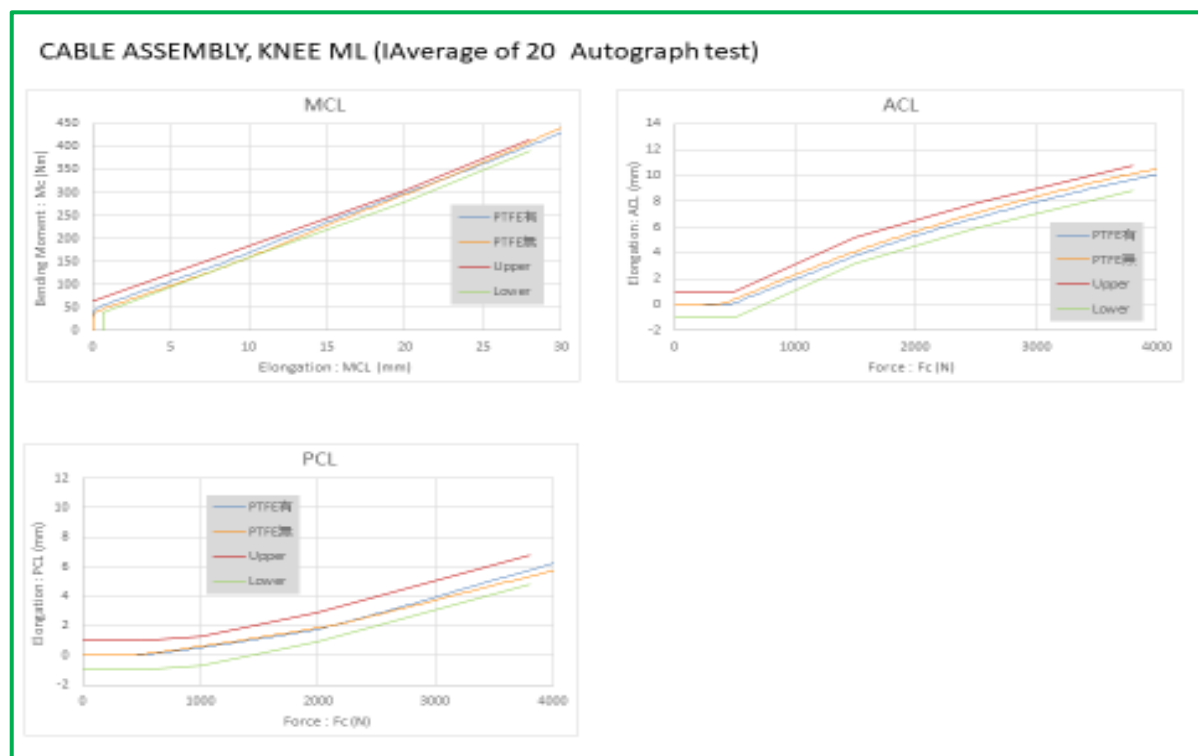
(Please refer below bending test by different mixture ratio.)



JASTI Flex PLI has been very reliable and durable by actual test condition.

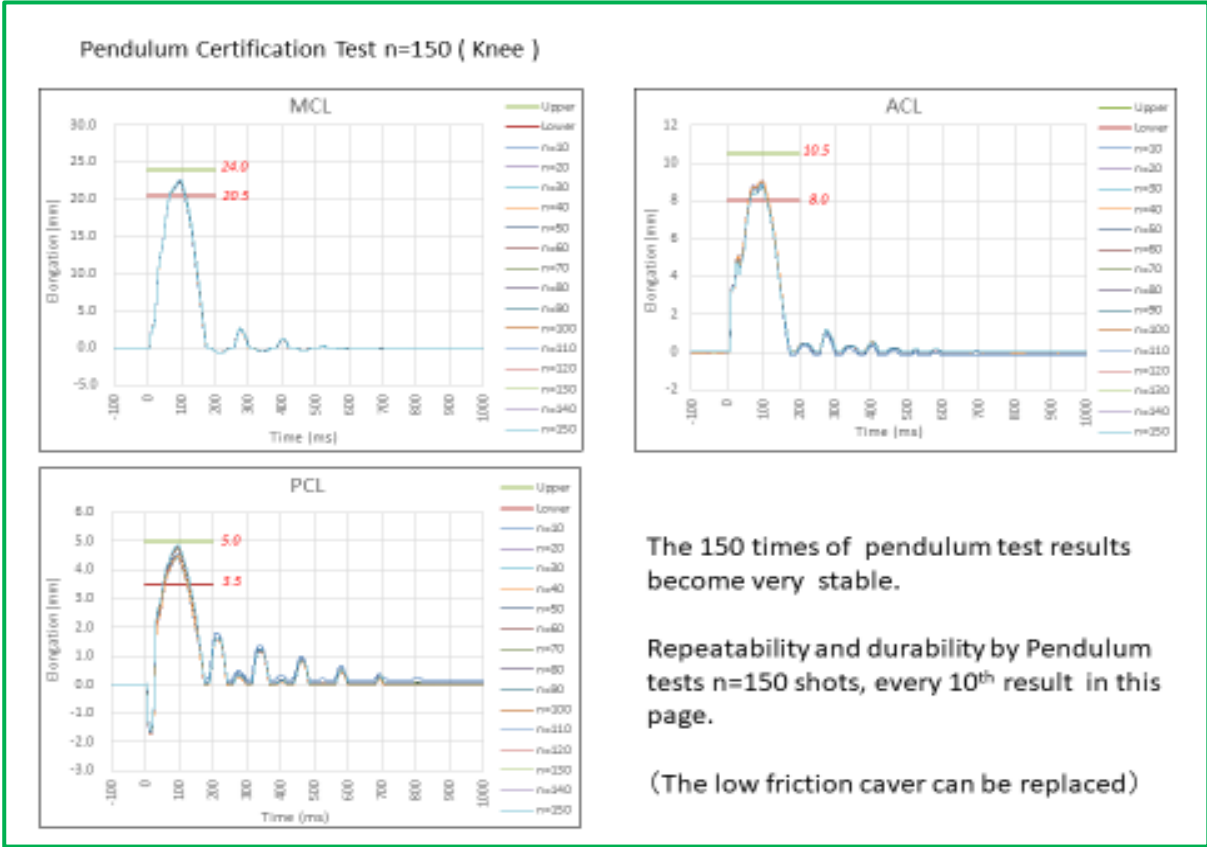
The improved points are; Knee block cable corner shape more round which reduce the bending force increase at bent angle.

(Please refer the below test results)



Knee block cables are more lea friction type. This change create more durable and repeatable by twice of 150 times (Total 300 times) pendulum tests. (Please refer the below test results)

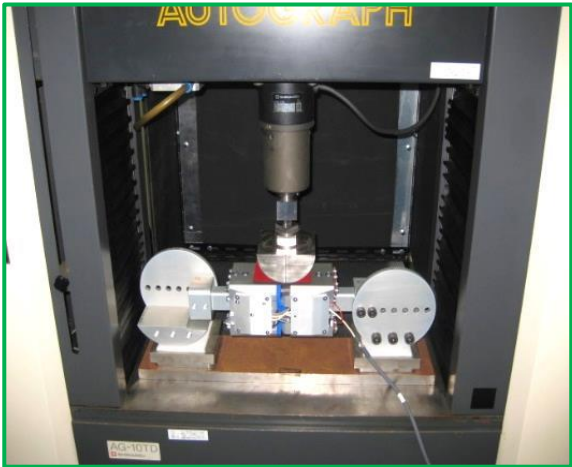
Durability test result



Calibration Pictures



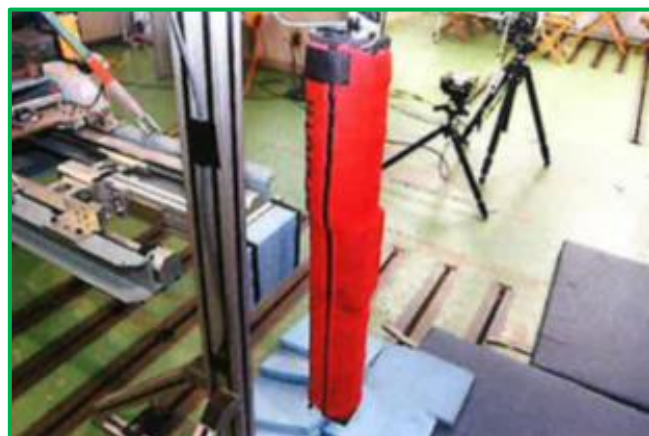
Femur / Tibia looks same set up



Knee Blocks Test set up



Pendulum Test



Inverse Test

Please also refer the Technical report as JARI Japan, BAST Germany test results.

Please contact ; info@jasti.co.jp

URL http://www.jasti.co.jp/en/product/flex-pri_gtr.html

[Thank you for your attention!!!](#)