

# Novel Cost Effective Surficial Geometric Imperfection Measurement Device: Know-how

## Technology in Brief

Measuring of surface imperfections is one of the important aspects for grading of material into various classes as per the user defined tolerances. Therefore, the developed technology is non-contact laser displacement sensor (LDS)-based surface imperfection measurement device, as shown in Fig 1. It consists of variable height stepped MS Table, Electric motor (Continuous speed variable by rotary knob type), Spirit Level, Crank Handle, Laser displacement sensor, power supply, microcontroller (ST-32 or equivalent), high strength aluminium guideline rail and Laptop. The signal obtained from the LDS is processed through microcontroller ST-32 and is displaced in the laptop. A coding interface is developed in LabVIEW platform for processing of data accrued by the sensor. The surficial imperfection of a typical cold-formed steel sections (indicating locations of imperfections as shown in Fig. 2) are shown in Fig. 3.

## Salient features/Advantages

- Specimen length - up to 2.5 meter
- Frequency range - 0.1 to 10 Hz along the length of the specimen
- Measuring Range - 60 to 100 mm ( $\pm 0.0075$  mm).

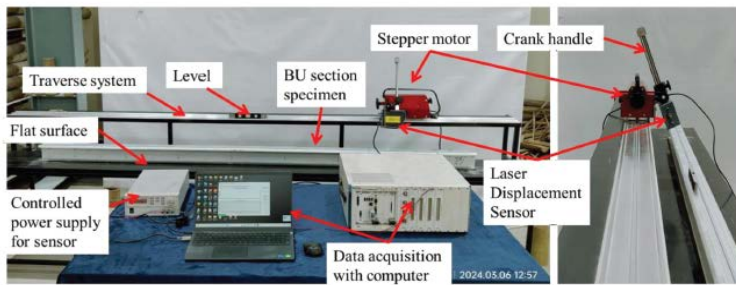


Fig. 1

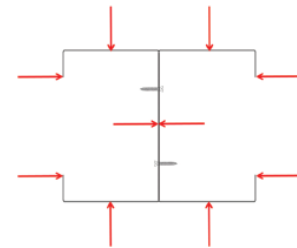


Fig. 2

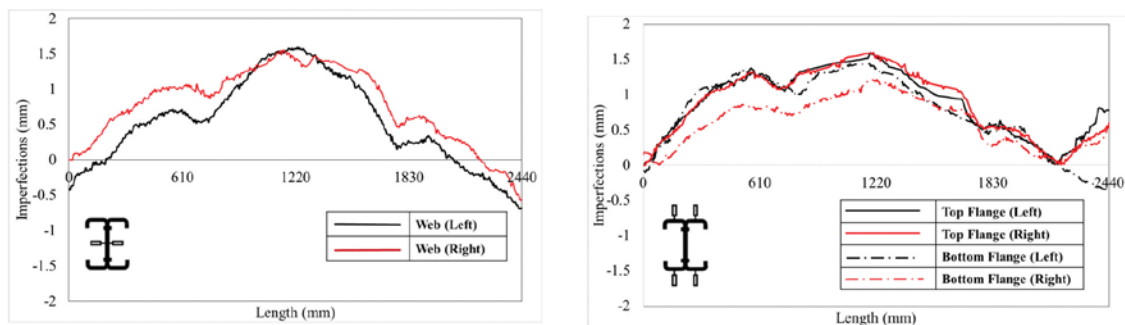


Fig. 3

End Product(s)	Novel Cost Effective Surficial Geometric Imperfection Measurement Device
License/Commercialization	Yet to be transferred
TRL	7
Environmental Impact	Environmentally friendly (Use of this device will help in gradation of sustainable natural building materials)

Setup - Equipment required	Variable height stepped MS Table, Electric motor (Continuous speed variable by rotary knob type), Spirit Level, Crank Handle, Laser displacement sensor, DC power supply, microcontroller (ST-32 or equivalent), Laptop
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