

3590VHR Accuracy Specification Details

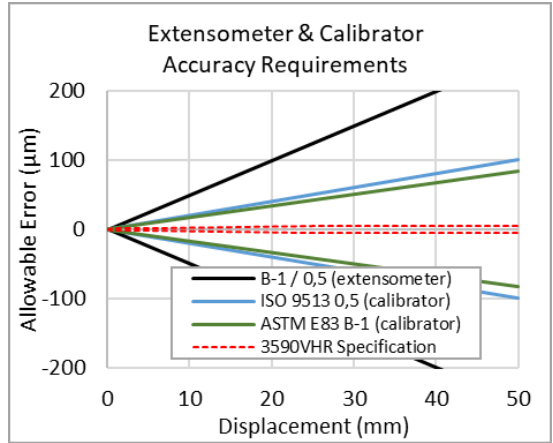
Accuracy requirements for extensometers and their calibration apparatus

Author: Wesley Womack, PE PhD

Accuracy requirements for extensometers are specified in standards ASTM E83 (Table 1) and ISO 9513 (Table 2). Requirements for the verification apparatus (*mechanical calibrator*) are tighter than those for the extensometers by 3x under E83 §4.1 (excerpt below) and are similarly defined in ISO 9513 Table 2 (shown at right).

E83 §4.1: *The errors of the verification apparatus shall not exceed one third of the permissible error of the extensometer.*

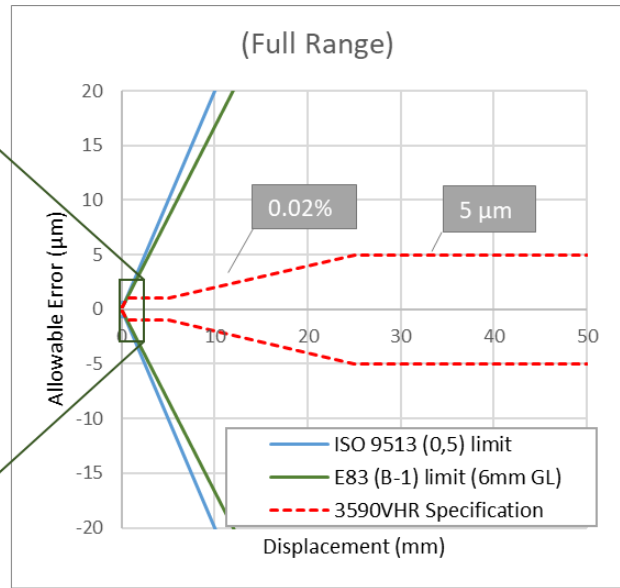
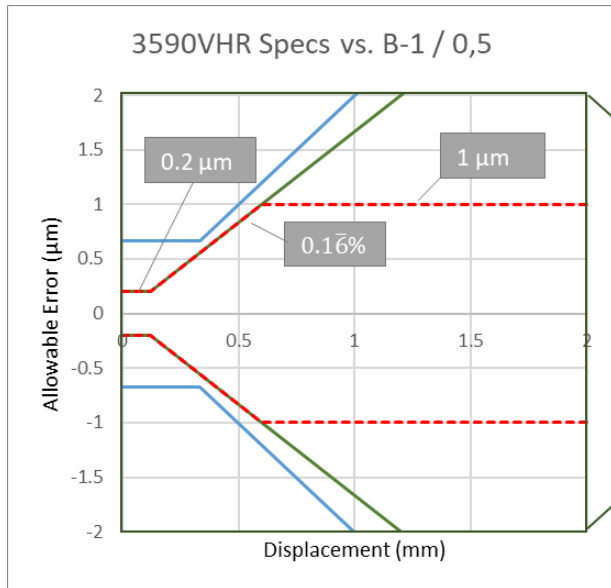
ISO 9513 limits are specified in units of μm ; E83 limits are specified in units of *strain* (m/m) and are converted here to absolute units assuming a 6mm gage length (the minimum extensometer gage length for which the 3590VHR is specified to meet E83 B-1 accuracy class).



3590VHR Accuracy Specifications

The specified accuracy of the 3590VHR calibrator is given over several ranges. In text and shown graphically below. ISO 9513 and ASTM E83 limits shown below are for the verification apparatus (3590VHR calibrator):

Better than: $\pm 0.2 \mu\text{m}$ [0-0.12 mm], $\pm 0.1\bar{6}\%$ [0.12-0.60 mm], $\pm 1.0 \mu\text{m}$ [0.6-5.0 mm], $\pm 0.02\%$ of value [5.0-25mm], $\pm 5 \mu\text{m}$ max [$>25\text{mm}$].
 Class: Better than the requirements for verification apparatus under ISO 9513 (0,5) or ASTM E83 (B-1 @ $\geq 6\text{mm}$ GL)



Epsilon Technology Corp.
 3975 South Highway 89 • Jackson, WY 83001 • USA
 307-733-8360 • info@epsilontech.com • www.epsilontech.com