Certificate of Conformance – Bluehill® Universal Calculation Test Suite

Dear Instron Customer,

The Bluehill Universal Standard Calculation Test Suite compares results from the software under test with expected results using known data sets as input. The expected results are determined using a variety of independent methods including MathCad, Excel, hand calculation and visual inspection.

The following calculation algorithms are included in the Bluehill Universal calculation test suite:

- % of break
- Area reduction
- Area under curve
- Average value
  - *Peaks and troughs*
  - *Peaks*
  - *Troughs*
  - *Region*
  - *Integral*
  - *Automatic peaks*
  - *All peaks*
  - *High and low peaks*
- Button
- Break
  - *Standard*
  - *Measurement value*
  - *% Maximum*
  - *Force/displacement rate*
  - *Force/strain rate*
  - *Cursor*
  - *Automatic force drop*
- Break location
- Coefficient of friction
- Compensated energy
- Creep/Relaxation
  - *Total creep*
  - *Total relaxation*
  - *Delta creep*
  - *Delta relaxation*

- Elongation after fracture
- Fracture toughness conditional point
- Hold preset point
- Line intersection
- Modulus
  - *Automatic Young's*
  - *Young's*
  - *Segment*
  - *Chord*
  - *Secant*
  - *Tangent*
  - *E-modulus*
  - *Hysteresis*
  - *Metal matrix*
- Non-proportional elongation
  - *Standard*
  - *Force*
  - *% Maximum Force*
  - *Force/displacement rate*
  - *Force/strain rate*
  - *EN/ISO standard*
  - *ISO 6892*
- n-value
  - *Manual*
  - *Automatic*
  - *Manual (automatic validation)*

The difference is measurable®

- Peak first
- Peak local
  - *Maximum*
  - *Minimum*
- Peak maximum/minimum
  - *Maximum*
  - *Minimum*
- Poisson's ratio
  - *Chord*
  - *Least squares fit*
- Polynomial fit
  - *Degree 2 (quadratic)*
  - *Degree 3*
  - *Degree 4*
  - *Degree 5*
  - *Degree 6*
- Preset point
- r-value
  - *Manual*
  - *Automatic*
  - *Manual (automatic validation)*
- r-value (ISO)
  - *Manual*
  - *Automatic*
  - *Semi-automatic*
- Seam slippage
  - *ASTM*
  - *EN/ISO*

- Slack correction
  - *Automatic*
  - *Automatic Young's*
  - *Young's*
  - *Measurement value*
- Slope
  - *Automatic*
  - *Automatic Young's*
  - *Young's*
  - *Segment*
  - *Chord*
  - *Secant*
  - *Tangent*
- Switch
- Tensile Strength
- User calculation
- Yield
  - *Zero slope*
  - *Slope threshold*
  - *Offset*
  - *Lower*
  - *Proportional limit*
  - *EUL yield*
- Yield discontinuous
- YPE/Ae

Sincerely,

Jeffrey Manney
Engineering R&D Manager
System Quality Assurance

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