

| Discipline<br>Function   |  | Vibration Required Instrumentation (Effective January 1, 2019)  |          |            | NOTES | Calibration requirements |
|--|--|---|----------|------------|-------|--------------------------|
|  |  | RANGE   | ACCURACY | RESOLUTION |       |                          |
| Vibration Instruments  | Vibration Analyzer / Meter, Real Time Analyzer & Spectrum Analyzer | Shall meet the minimum requirements as specified below:<br>Displacement – 0.1 to 100 mils (0.0001 to 0.1 inches)<br>Velocity – 0.0005 to 10 in/sec<br>Acceleration – 0.0001 to 30 G's<br>Frequency Range – 1 to 1000 Hz (60 to 60,000 RPM)<br>Frequency Resolution (bandwidth) – at least 1.25 Hz (1 / 75 RPM) Minimum<br>Lines of resolution ≥ 800<br>Detection - Peak, Peak-to-Peak, RMS<br>FFT Windowing- Hanning at least<br>Averaging – exponential or time and selectable to at least four averages |          |            | *4    | 12 Months                |
|  | Accelerometers / Transducer  | Shall have the following minimum specifications:<br>Sensitivity (± 10%) ≥ 100 mV/G typical<br>Measurement Range = ± 20 G peak<br>Frequency Range = 2 to 3000 Hz at ± 5%   |          |            |       | 12 Months                |
| <b>NOTES</b><br>*1 CPT Option - choose only Option 1 OR Option 2 - along with required instrument for CPT certification (All instruments in any of the chosen is required)<br>*2 FHT Orifice Calibrator - Choose only one<br>*3 Refer to Appendix A for complete instrumentation requirements for Sound Measurement (SM)<br>*4 Firms may own or rent vibration equipment instrumentation for vibration certification.<br>*5 Calibration Requirement: Data logger calibration may be verified from a calibrated instrument with an associated calibration form showing calibration readings from both the calibrated instrument and the data logger. If a data logger is out of calibration and cannot be adjusted, the logger must be sent back to the factory for re-calibration or be replaced<br><b>General Note:</b> Some local jurisdictions require qualified electrician for any electrical readings<br><b>Calibration Requirement</b> Instruments require NIST Traceable calibration or National Metrology Institutes (NMI) which exist in many countries maintaining primary measurements of standards; such as NPL in the UK, PTB in Germany and many others which are approved for those regions. |  |   |          |            |       |                          |