

# ISO 7626-5:2019-12 (E)

## Mechanical vibration and shock - Experimental determination of mechanical mobility - Part 5: Measurements using impact excitation with an exciter which is not attached to the structure

<b>Contents</b>		<b>Page</b>
Foreword .....		iv
Introduction .....		v
1	Scope .....	1
2	Normative references .....	1
3	Terms and definitions .....	1
4	General characteristics of impact measurements .....	2
4.1	General description .....	2
4.2	Advantages and limitations of impact excitation .....	3
4.2.1	General .....	3
4.2.2	Nonlinearity restrictions .....	4
4.2.3	Signal-to-noise problems .....	4
4.2.4	Limited frequency resolution .....	4
4.2.5	Damping restrictions .....	4
4.2.6	Dependence on operator skill .....	5
5	Support of the structure under test .....	5
5.1	General .....	5
5.2	Ungrounded measurements .....	5
5.3	Grounded measurements .....	5
6	Application of the excitation .....	5
6.1	Impactor design .....	5
6.2	Force spectrum characteristics .....	6
6.3	Control of the frequency range of excitation .....	10
6.4	Avoidance of impactor double hits .....	10
7	Transducer system .....	12
7.1	General .....	12
7.2	Impactor calibration .....	12
8	Processing of the transducer signals .....	13
8.1	Filtering .....	13
8.2	Transient capture characteristics .....	13
8.3	Sampling relationships .....	14
8.4	Avoidance of saturation (clipping) .....	15
8.5	Windowing techniques .....	15
8.5.1	Force signal .....	15
8.5.2	Windowing the response signals .....	19
8.6	Averaging techniques .....	23
9	Tests for validity of the measurements .....	24
9.1	Coherence function .....	24
9.2	Repeatability check .....	25
9.3	Reciprocity check .....	25
9.4	Linearity check .....	25
9.5	Comparison with measurements using an attached exciter .....	25
Annex A (informative)	Correction of mobility measurements for the effects of exponential windowing .....	26
Bibliography .....		28