

# ISO 7626-2:2015-04 (E)

## Mechanical vibration and shock - Experimental determination of mechanical mobility - Part 2: Measurements using single-point translation excitation with an attached vibration exciter

---

<b>Contents</b>		<b>Page</b>
Foreword .....		v
Introduction .....		vi
<b>1</b>	<b>Scope .....</b>	<b>1</b>
<b>2</b>	<b>Normative references .....</b>	<b>1</b>
<b>3</b>	<b>Terms and definitions .....</b>	<b>1</b>
<b>4</b>	<b>Overall configuration of the measurement system .....</b>	<b>2</b>
<b>5</b>	<b>Support of the structure under test .....</b>	<b>3</b>
5.1	General .....	3
5.2	Grounded measurements .....	3
5.3	Ungrounded measurements .....	3
<b>6</b>	<b>Excitation .....</b>	<b>4</b>
6.1	General .....	4
6.2	Excitation waveforms .....	4
6.2.1	General .....	4
6.2.2	Discretely dwelled sinusoidal excitation .....	4
6.2.3	Slowly swept sinusoidal excitation .....	5
6.2.4	Stationary random excitation .....	5
6.2.5	Other excitation waveforms .....	5
6.3	Vibration exciters .....	5
6.4	Avoidance of spurious forces and moments .....	8
6.4.1	General .....	8
6.4.2	Transducer mass loading .....	8
6.4.3	Transducer rotational inertia loading .....	8
6.4.4	Exciter attachment restraints .....	8
<b>7</b>	<b>Measurement of the exciting force and resulting motion response .....</b>	<b>9</b>
7.1	General .....	9
7.2	Attachment of transducers .....	9
7.3	Mass loading and mass cancellation .....	10
7.4	Signal amplifiers .....	10
7.5	Calibrations .....	11
7.5.1	General .....	11
7.5.2	Operational calibration .....	11
<b>8</b>	<b>Processing of the transducer signals .....</b>	<b>14</b>
8.1	Determination of the frequency-response function .....	14
8.1.1	General .....	14
8.1.2	Sinusoidal excitation .....	14
8.1.3	Random excitation .....	14
8.2	Filtering .....	14
8.2.1	Sinusoidal excitation .....	14
8.2.2	Random excitation .....	14

8.3	Avoidance of saturation .....	15
8.4	Frequency resolution .....	15
8.4.1	General .....	15
8.4.2	Sinusoidal excitation .....	15
8.4.3	Random excitation .....	15
8.4.4	Periodic excitation .....	15
9	Control of the excitation .....	16
9.1	General .....	16
9.2	Time required for sinusoidal excitation .....	16
9.2.1	General .....	16
9.2.2	Discretely dwelled sinusoidal excitation .....	16
9.2.3	Slowly swept sinusoidal excitation .....	17
9.3	Time required for random excitation .....	17
9.4	Dynamic range .....	18
9.4.1	General .....	18
9.4.2	Sinusoidal excitation .....	18
9.4.3	Random excitation .....	18
10	Tests for valid data .....	18
11	Modalparameteridentification .....	19
Annex A (normative) Tests for validity of measurement results .....		20
Annex B (normative) Requirements for excitation frequency increments and duration .....		23
Annex C (informative)Modalparameteridentification .....		25
Bibliography .....		26