

# ISO 532-1:2017-06 (E)

## Acoustics - Methods for calculating loudness - Part 1: Zwicker method

---

<b>Contents</b>		<b>Page</b>
Foreword .....		iv
Introduction .....		v
<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>Specification of input signal and instrumentation .....</b>	<b>4</b>
<b>5</b>	<b>Method for stationary sounds .....</b>	<b>5</b>
<b>5.1</b>	<b>General .....</b>	<b>5</b>
<b>5.2</b>	<b>Description of the method .....</b>	<b>6</b>
<b>5.3</b>	<b>Calculation of loudness and loudness level .....</b>	<b>9</b>
<b>6</b>	<b>Method for time-varying sounds .....</b>	<b>12</b>
<b>6.1</b>	<b>General .....</b>	<b>12</b>
<b>6.2</b>	<b>Description of the method .....</b>	<b>13</b>
<b>6.3</b>	<b>Calculation algorithm .....</b>	<b>14</b>
<b>6.4</b>	<b>Guidance for determining the loudness of time-varying sounds .....</b>	<b>15</b>
<b>7</b>	<b>Reporting data .....</b>	<b>16</b>
<b>Annex A (normative)</b>	<b>Numerical details and program code for the calculation of loudness of stationary and time-varying sounds (test implementation) .....</b>	<b>17</b>
<b>Annex B (normative)</b>	<b>Test signals for the validation of implementation .....</b>	<b>45</b>
<b>Annex C (informative)</b>	<b>Graphical user interface for the calculation of loudness of stationary and time-varying sounds .....</b>	<b>48</b>
<b>Annex D (informative)</b>	<b>Guidance for determining the loudness when using head and torso simulator microphones .....</b>	<b>53</b>
<b>Annex E (informative)</b>	<b>Uncertainty considerations .....</b>	<b>54</b>
<b>Bibliography .....</b>		<b>57</b>