

# DIN ISO 1413:2017-07 (E)

## Horology - Shock-resistant wrist watches (ISO 1413:2016)

---

<b>Contents</b>		<b>Page</b>
<b>National foreword</b> .....		<b>3</b>
<b>Foreword</b> .....		<b>4</b>
<b>Introduction</b> .....		<b>5</b>
<b>1 Scope</b> .....		<b>6</b>
<b>2 Normative references</b> .....		<b>6</b>
<b>3 Terms and definitions</b> .....		<b>6</b>
<b>4 Test conditions</b> .....		<b>7</b>
4.1 Test temperature .....		7
4.2 Water resistance .....		7
4.3 Shock characteristics .....		7
4.4 Test apparatus .....		7
4.4.1 Material .....		7
4.4.2 Shock test apparatus .....		7
4.4.3 Free-fall test apparatus .....		7
4.5 Preliminary settings of the test samples .....		8
4.5.1 Determination of the rate for mechanical watches .....		8
4.5.2 Determination of the rate for quartz watches .....		8
4.5.3 Determination of the watch head setups .....		8
<b>5 Test method</b> .....		<b>8</b>
5.1 General .....		8
5.2 Procedure for shocks on watch heads .....		8
5.2.1 General .....		8
5.2.2 First shock .....		9
5.2.3 Second shock .....		10
5.2.4 Third shock .....		11
5.3 Procedure for free-fall test (complete watch) .....		12
5.3.1 General .....		12
5.3.2 First free fall .....		12
5.3.3 Second free fall .....		12
5.3.4 Requirements after free-fall shocks .....		13
<b>6 Marking</b> .....		<b>13</b>
<b>Annex A (normative) Shocks characteristics verification</b> .....		<b>14</b>
<b>Annex B (informative) Example of apparatus for three first shocks (shock test apparatus)</b> .....		<b>15</b>
<b>Annex C (informative) Example of test apparatus for free-fall shock</b> .....		<b>23</b>
<b>Annex D (normative) Flow charts</b> .....		<b>28</b>
<b>Annex E (informative) Shock description and consequences of exposure</b> .....		<b>30</b>
<b>Bibliography</b> .....		<b>33</b>