

# ISO 7240-20:2010-05 (E)

## Fire detection and alarm systems - Part 20: Aspirating smoke detectors

---

<b>Contents</b>		<b>Page</b>
Foreword .....		v
Introduction .....		vii
<b>1</b>	<b>Scope .....</b>	<b>1</b>
<b>2</b>	<b>Normative references .....</b>	<b>1</b>
<b>3</b>	<b>Terms, definitions and abbreviated terms .....</b>	<b>2</b>
<b>3.1</b>	<b>Terms and definitions .....</b>	<b>2</b>
<b>3.2</b>	<b>Abbreviated terms .....</b>	<b>2</b>
<b>4</b>	<b>Requirements .....</b>	<b>3</b>
<b>4.1</b>	<b>Compliance .....</b>	<b>3</b>
<b>4.2</b>	<b>Classification .....</b>	<b>3</b>
<b>4.3</b>	<b>Individual visual alarm indication .....</b>	<b>3</b>
<b>4.4</b>	<b>Connection of ancillary devices .....</b>	<b>3</b>
<b>4.5</b>	<b>Manufacturer's adjustments .....</b>	<b>3</b>
<b>4.6</b>	<b>On-site adjustment of response behaviour .....</b>	<b>4</b>
<b>4.7</b>	<b>Response to slowly developing fires .....</b>	<b>4</b>
<b>4.8</b>	<b>Mechanical strength of the pipework .....</b>	<b>4</b>
<b>4.9</b>	<b>Hardware components and additional sensing elements in the sampling device .....</b>	<b>5</b>
<b>4.10</b>	<b>Airflow monitoring .....</b>	<b>5</b>
<b>4.11</b>	<b>Power supply .....</b>	<b>5</b>
<b>4.12</b>	<b>Marking .....</b>	<b>6</b>
<b>4.13</b>	<b>Data .....</b>	<b>6</b>
<b>4.14</b>	<b>Additional requirements for software controlled detectors .....</b>	<b>7</b>
<b>5</b>	<b>Tests .....</b>	<b>8</b>
<b>5.1</b>	<b>General .....</b>	<b>8</b>
<b>5.2</b>	<b>Repeatability .....</b>	<b>11</b>
<b>5.3</b>	<b>Reproducibility .....</b>	<b>11</b>
<b>5.4</b>	<b>Variation in supply parameters .....</b>	<b>12</b>
<b>5.5</b>	<b>Dry heat (operational) .....</b>	<b>13</b>
<b>5.6</b>	<b>Cold (operational) .....</b>	<b>14</b>
<b>5.7</b>	<b>Damp heat, steady state (operational) .....</b>	<b>15</b>
<b>5.8</b>	<b>Damp heat, steady state (endurance) .....</b>	<b>16</b>
<b>5.9</b>	<b>Sulfur dioxide (SO<sub>2</sub>) corrosion (endurance) .....</b>	<b>17</b>
<b>5.10</b>	<b>Shock (operational) .....</b>	<b>18</b>
<b>5.11</b>	<b>Impact (operational) .....</b>	<b>19</b>
<b>5.12</b>	<b>Vibration, sinusoidal (operational) .....</b>	<b>20</b>
<b>5.13</b>	<b>Vibration, sinusoidal (endurance) .....</b>	<b>21</b>
<b>5.14</b>	<b>Electromagnetic compatibility (EMC) immunity tests .....</b>	<b>22</b>
<b>5.15</b>	<b>Fire sensitivity .....</b>	<b>23</b>
<b>5.16</b>	<b>Mechanical strength of pipe .....</b>	<b>26</b>
<b>6</b>	<b>Test report .....</b>	<b>26</b>
<b>Annex A (informative) Apparatus for response threshold value measurements .....</b>		<b>27</b>
<b>Annex B (normative) Smouldering (pyrolysis) wood fire (TF2) .....</b>		<b>32</b>

<b>Annex C (normative) Reduced smouldering pyrolysis wood fires (TF2A and TF2B) .....</b>	<b>34</b>
<b>Annex D (normative) Glowing smouldering cotton fire (TF3) .....</b>	<b>36</b>
<b>Annex E (normative) Reduced glowing smouldering cotton fire (TF3A and TF3B) .....</b>	<b>38</b>
<b>Annex F (normative) Flaming plastics (polyurethane) fire (TF4) .....</b>	<b>40</b>
<b>Annex G (normative) Flaming liquid (n-heptane) fire (TF5) .....</b>	<b>42</b>
<b>Annex H (normative) Reduced flaming liquid (n-heptane) fire (TF5A and TF5B) .....</b>	<b>43</b>
<b>Annex I (normative) Fire test room and ventilation system .....</b>	<b>45</b>
<b>Annex J (informative) Information concerning the requirements for the response to slowly developing fires .....</b>	<b>48</b>
<b>Annex K (informative) Apparatus for airflow monitoring test .....</b>	<b>52</b>
<b>Bibliography .....</b>	<b>54</b>