

Product specific requirements: 203. Iron

Version: 4.0  
Last update: 06.04.2022

Material	Products	Remark
-	Iron	-

No	Parameter	Method	Reference	Requirement
<b>Safety</b>				
1	LVD	-	Low Voltage Directive 2014/35/EU EN 60335-1 EN 60335-2-3 EN 62233	Have to fulfill requirements
2	EMC	-	EMC Directive 2014/30/EU EN 55014-1 EN 55014-2 EN 61000-3-2 EN 61000-3-3	Have to fulfill requirements
3	ErP	-	Eco-design Directive 2009/125/EC (Erp) (EC) No 1275/2008 (EC) No 801/2013	Have to fulfill requirements
<b>Chemical Requirements</b>				
4	WEEE	-	Directive 2012/19/EU EN 50419	Have to fulfill requirements
5	RoHS	-	Directive 2011/65/EU amended by EU directive 2015/863	Have to fulfill requirements
6	PAHs	-	REACH regulation 1907/2006/EC Annex XVII Entry 50 ((EU) 1272/2013)	Have to fulfill requirements
7	PAHs	-	AfPS GS 2019:01 PAK	Have to fulfill requirements
8	REACH SVHC	-	Regulation (EC) No 1907/2006	Have to fulfill requirements
9	SCCP	-	POPs Regulation (EU) 2019/1021 and its amendments	Have to fulfill requirements
<b>Performance Requirements</b>				
10	Durability	EN 60311:2010-05 ELECTRIC IRONS FOR HOUSEHOLD OR SIMILAR USE - METHODS FOR MEASURING PERFORMANCE	-	Have to fulfill requirements
11	Durability	Actual Use	-	Switch test Rating [cycles] very good: ≥ 2000 good: ≥ 1600 satisfactory: ≥ 1200
12	Durability	Actual Use	-	Endurance Rating(hours): Very Good ≥ 480 Good ≥ 360 Sufficient ≥ 240
13	Function Test	Actual Use	-	Practical use <u>Test preparation</u> - Use the sample for all the intended major functions according to the instruction manual. - Especially for steam function: set the temperature regulator to minimum which position could occur the steam indicated by instruction or marking.
14	Function Test	Actual Use	-	Measurement of heating-up time <u>Test preparation</u> - The iron is placed on the three metallic supports; for cordless irons, the iron is placed on its stand, and the thermocouple is attached at the mid-point of the sole-plate. - The thermostat, if any, set at the highest temperature. - The time necessary for the temperature to exceed the ambient temperature by 180 K is measured, and is expressed in minutes and seconds.
15	Function Test	Actual Use	-	Measurement of initial over swing temperature and heating-up excess temperature <u>Test preparation</u> - The iron is placed on the three metallic supports; for cordless irons, the iron is placed on its stand, and the thermocouple is attached at the mid-point of the sole-plate. - The thermostat is first set to the 1 dot marking position. If there is no dot marking, the thermostat is so adjusted as to obtain an average temperature of the sole-plate as close as possible to 95 °C under steady conditions. - After the first measurement, the iron is allowed to cool to room temperature (20 °C ± 5 °C); then the sole-plate temperature is measured again at the highest setting position of the thermostat.

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16	Function Test	Actual Use	-	<p>Measurement of sole-plate temperature</p> <p><u>Test preparation</u></p> <ul style="list-style-type: none"> <li>- The iron is placed on the three metallic supports; for cordless irons, the iron is placed on its stand, and the thermocouple is attached at the mid-point of the sole-plate.</li> <li>- The iron is switched on for each setting of the thermostat, the highest and the lowest temperatures are measured during five successive cycles of temperature variation after the iron has reached steady conditions.</li> <li>- For irons having thermostat settings which are indicated by a sector, the setting is to be at the centre of the range.</li> <li>- If the thermostat set to the middle of each of these dot markings the sole-plate temperatures are measured after steady conditions have been reached.</li> <li>- The sole-plate temperature for the setting (T) is the average of the five highest temperatures (Ta) and the five lowest temperatures (Tb) of the mid-point of the sole-plate during five successive cycles of temperature variation.</li> </ul>
17	Function Test	Actual Use	-	<p>Determination of the hottest point</p> <p><u>Test preparation</u></p> <ul style="list-style-type: none"> <li>- The iron is placed on the three metallic supports; for cordless irons, the iron is placed on its stand.</li> <li>- The iron is switched on with the thermostat set at the highest position.</li> <li>- Immediately after the thermostat has operated twice, the iron is placed for several seconds on a sheet of white paper spread over flannel cloth, which covers a wooden board.</li> <li>- After removal of the iron, darkening of the paper indicates the temperature distribution over the sole-plate.</li> <li>- The hottest point is determined as the centre of the darkest area.</li> </ul>
18	Function Test	Actual Use	-	<p>Measurement of temperature distribution</p> <p><u>Test preparation</u></p> <ul style="list-style-type: none"> <li>- The iron is placed on the three metallic supports; for cordless irons, the iron is placed on its stand.</li> <li>- For a thermostatic iron, the thermostat is set so that the temperature at the mid-point is maintained at approximately 150 °C under steady conditions, and the measurement is performed after the iron has reached steady conditions.</li> <li>- For other iron types, the temperature at the mid-point is maintained at approximately 150 °C for at least 15 min by switching the supply on and off before taking temperature measurements.</li> <li>- Using a recording-type instrument, the varying temperature is recorded for 10 min and the average temperature for the 10 min is determined for each of the four points.</li> <li>- The mean of the four average temperatures is then determined, and the difference between each average temperature and the mean temperature is also calculated.</li> <li>- The four temperature differences are recorded as the indication of the temperature distribution over the sole-plate.</li> </ul>
19	Function Test	Actual Use	-	<p>Measurement of cyclic fluctuation of temperature of the hottest point</p> <p><u>Test preparation</u></p> <ul style="list-style-type: none"> <li>- The iron is placed on the three metallic supports; for cordless irons, the iron is placed on its stand, and the thermocouple is attached at the mid-point of the sole-plate.</li> <li>- The sole-plate temperature is measured at the highest setting position of the thermostat.</li> <li>- The highest and lowest temperatures of each cycle are measured for five successive cycles after the iron has reached steady conditions.</li> <li>- The mean value for the highest temperatures and that for the lowest temperatures are determined.</li> <li>- One-half of the difference between the mean values is the cyclic fluctuation of the temperature of the hottest point and is expressed in ± Celsius degrees.</li> </ul>
20	Function Test	Actual Use	-	<p>Determination of the mass of spray for irons with manual spray pumps</p> <p><u>Test preparation</u></p> <ul style="list-style-type: none"> <li>- The spraying system is prepared by operating the spray device several times.</li> <li>- The mass W1 of the iron including the power supply cord is determined on a balance having an accuracy of at least 0.1 g.</li> <li>- The iron is placed on a horizontal plane and the spray device is operated 50 times at intervals of 5 s.</li> <li>- The mass W2 of the iron including the power supply cord is then measured.</li> <li>- The mass of spray M for each operation is calculated as follows: <math>M = (W1 - W2) / 50</math></li> </ul>
21	Function Test	Actual Use	-	<p>Determination of the mass of spray for irons with means for continuous spray</p> <p><u>Test preparation</u></p> <ul style="list-style-type: none"> <li>- The spraying system is prepared by operating the spray device for 3 s.</li> <li>- The mass W1 of the iron including the power supply cord is determined on a balance having an accuracy of at least 0.1 g.</li> <li>- The iron is placed on a horizontal plane and the spray device is operated for 20 s continuously.</li> <li>- The mass W2 of the iron including the power supply cord is then measured.</li> <li>- The mass of spray for continuous operation MSC is then calculated as follows: <math>MSC = 3 (W1 - W2) [g/min]</math></li> </ul>

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22	Function Test	Actual Use	-	<p>Measurement of heating-up time for steaming operation</p> <p><u>Test preparation</u></p> <ul style="list-style-type: none"> <li>- Weigh the empty iron (W0) by means of a balance having an accuracy of at least ± 0,1 g.</li> <li>- The water reservoir is filled with distilled water having a temperature of 20 °C ± 2 °C up to the capacity specified by the manufacturer, then weigh the full iron (W1).</li> <li>- The iron is then placed with the sole-plate in a horizontal position with a tolerance of ± 1° on the carriage, the thermostat is set to the maximum setting indicated for steam ironing.</li> <li>- The iron is connected to the supply and immediately after the thermostat has switched off for the second time, the steam control is operated to give the maximum flow rate.</li> <li>- The heating-up time is the time between the connection to the mains and the instant when the steaming flow appears under the soleplate.</li> <li>- The test is repeated but with the thermostat set to the minimum setting for steam ironing.</li> </ul>
23	Function Test	Actual Use	-	<p>Measurement of steaming time, steaming rate and water leakage rate</p> <p><u>Test preparation</u></p> <ul style="list-style-type: none"> <li>- At the end of heating up time, the thermostat is set to the maximum setting, when steam appears under the soleplate, movements of the carriage for the steaming time (t) are started.</li> <li>- The duration of steaming time is 3 minutes. At the end of steaming time close the steam control to stop the steam. Weigh the iron (W2).</li> <li>- The container is weighed again and the mass of the water which has leaked from the iron without being evaporated is determined (W3).</li> <li>- For cordless irons, appliances having a main supply attachment are tested as conventional irons.</li> <li>- For appliances without a main supply attachment, dynamic steam rate is measured by sequences of 20 s without power supply.</li> <li>- Between two sequences; the cordless iron is being reloaded on its stand. Repeat this cycle until 3 minutes of steaming have occurred.</li> <li>- The steaming rate SR is calculated as follows: <math>SR=(W1-W2-W3) / t</math></li> <li>- The water leakage rate LR is calculated as follows: <math>LR=W3 / t</math></li> <li>- The steaming time is the time when 90 % of the water has evaporated: <math>ST=(W1-W0) \times 0,9 / SR</math></li> </ul>
24	Function Test	Actual Use	-	<p>Determination of mass of a shot of steam</p> <p><u>Test preparation</u></p> <ul style="list-style-type: none"> <li>- The mass W1 of the iron including the power supply cord is determined on a balance having an accuracy of at least 0,1 g.</li> <li>- A container of known mass within ±0,1 g is placed under the sole-plate at a distance of approximately 200 mm in order to collect any leaking water.</li> <li>- The iron is placed on a horizontal plane and the spray device is operated 50 times at intervals of 15 s.</li> <li>- The mass W2 of the iron including the power supply cord is then measured.</li> <li>- The container is weighed again and the mass of the water W3 which has leaked from the iron without being evaporated is determined.</li> <li>- The mass of a shot of steam M is calculated as follows: <math>M= (W1-W2-W3) / 50</math></li> <li>- The leakage for each shot of steam L is calculated as follows: <math>L=W3 / 50</math></li> </ul>
25	Function Test	Actual Use	-	<p>Measurement of the energy consumed during heating-up operation</p> <p><u>Test preparation</u></p> <ul style="list-style-type: none"> <li>- The iron is placed on the three metallic supports; for cordless irons, the iron is placed on its stand, and the thermocouple is attached at the mid-point of the sole-plate.</li> <li>- The thermostat, if any, set at the highest temperature.</li> <li>- The iron is connected to a suitable energy meter, capable of measuring to an accuracy of ±1 %.</li> <li>- The energy necessary for the temperature to exceed the ambient temperature by 180 K is measured</li> </ul>
26	Function Test	Actual Use	-	<p>Thermostat stability after drop test</p> <p><u>Test preparation</u></p> <ul style="list-style-type: none"> <li>- The iron is heated up and the thermostat is set so that an average temperature of 190 °C ± 10 °C is maintained under steady conditions for 24 hours.</li> <li>- The setting of the thermostat is fixed in an appropriate way so that the setting does not change during the measurement.</li> <li>- The thermocouple is removed from the sole-plate and the iron is subject to 1000 drops from a height of 4 cm at a rate of about five drops per minute. When the iron drops, it should strike in a horizontal position on a rigidly supported flat steel plate at least 5 mm thick and at least 15 kg in mass.</li> <li>- During the drop test, the iron is connected to the power supply.</li> <li>- Immediately after the drop test, the average temperature t at the mid-point is determined as for T tested in 3.1.2</li> </ul>

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27	Handling	Actual Use	-	Unpacking / assembly Check the suitability and convenience for unpacking and assembly the sample.
28	Handling	Actual Use	-	Panel operation Check the suitability and convenience for using.
29	Handling	Actual Use	-	Sole-plate Check the suitability and convenience for using.
30	Handling	Actual Use	-	Temperature regulator Check the suitability and convenience for using.
31	Handling	Actual Use	-	Steam regulator Check the suitability and convenience for installation, assembling and using of the accessories.
32	Handling	Actual Use	-	Spray button Check the suitability and convenience for using.
33	Handling	Actual Use	-	Shot steam button Check the suitability and convenience for using.
34	Handling	Actual Use	-	Stand Check the suitability and convenience for using.
35	Handling	Actual Use	-	Weight / Balance Record the net weight of the sample with necessary accessories installed. Check the balance and stability of it.
36	Handling	Actual Use	-	Radius of action Record the length of the power cord. Check if it is long enough when using.
37	Handling	Actual Use	-	Maintenance Check the maintenance operations of the sample according to the instruction manual.
38	Handling	Actual Use	-	Care Check the care operations of the sample according to the instruction manual.
39	Handling	Actual Use	-	Cleaning Check the suitability and convenience for cleaning.
40	Finishing	In-House Method	-	Housing Marking Switch / Buttons Control panel Lid Container Heating element Accessories Power cord Check the workmanship and type of the product.

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41	Instruction manual	In-House Method	DIN EN 82079-1:2013-06 DIN EN 60335-2-3 DIN EN 82079-1:2018	<table border="1"> <tr> <td>Product identification</td> <td> <ul style="list-style-type: none"> <li>Check for :                             <ul style="list-style-type: none"> <li>Type</li> <li>Description</li> <li>Technical data</li> <li>Address of Retailer / Distributor / Manufactu</li> </ul> </li> </ul> </td> </tr> <tr> <td>Safety instruction</td> <td> <ul style="list-style-type: none"> <li>All safety instructions acc. safety standard are included</li> <li>Additional instructions by manufacturer</li> <li>Hazards from special features</li> <li>Explanation of symbols / pictograms</li> <li>Information in case of emergency</li> </ul> </td> </tr> <tr> <td>Information for use</td> <td> <ul style="list-style-type: none"> <li>Intended purpose of use, features, ranges of adjustment</li> <li>Intended use</li> <li>Forbidden and not intended use</li> </ul> </td> </tr> <tr> <td>Installation / assembly</td> <td>Unpacking, checking, assembling, installation, transport</td> </tr> <tr> <td>Putting into operation</td> <td> <ul style="list-style-type: none"> <li>Safety warning before each operation step</li> <li>Putting into operation</li> <li>Explanation and assembly of accessories</li> <li>Explanation of controls</li> </ul> </td> </tr> <tr> <td>Performing work process</td> <td> <ul style="list-style-type: none"> <li>Performing work process</li> <li>Handling and adjustment of special features</li> </ul> </td> </tr> <tr> <td>End work process</td> <td>Ending work process</td> </tr> <tr> <td>Care / maintenance</td> <td> <ul style="list-style-type: none"> <li>User maintenance</li> <li>Type / consumption / quantity of auxiliary supplies</li> <li>Maintenance by service centre</li> <li>Cleaning and lubrication</li> <li>Storage / abandonment</li> </ul> </td> </tr> <tr> <td>Troubleshooting</td> <td>Checklist</td> </tr> <tr> <td>Guarantee / service</td> <td> <ul style="list-style-type: none"> <li>Warranty declaration</li> <li>Service address / reachability</li> <li>Spare parts list</li> <li>Recycling / proper disposal information appliance</li> <li>Recycling / proper disposal information packaging</li> </ul> </td> </tr> <tr> <td>Layout</td> <td> <ul style="list-style-type: none"> <li>Page size / paper quality</li> <li>Binding</li> <li>Height of characters</li> <li>Line spacing and length</li> <li>Colour / Black &amp; White</li> <li>Photos / sketches</li> <li>Drawings / tables</li> </ul> </td> </tr> <tr> <td>Language / grammar</td> <td> <ul style="list-style-type: none"> <li>Comprehensibility</li> <li>Correctness of grammar / spelling</li> <li>Language checked</li> </ul> </td> </tr> </table>	Product identification	<ul style="list-style-type: none"> <li>Check for :                             <ul style="list-style-type: none"> <li>Type</li> <li>Description</li> <li>Technical data</li> <li>Address of Retailer / Distributor / Manufactu</li> </ul> </li> </ul>	Safety instruction	<ul style="list-style-type: none"> <li>All safety instructions acc. safety standard are included</li> <li>Additional instructions by manufacturer</li> <li>Hazards from special features</li> <li>Explanation of symbols / pictograms</li> <li>Information in case of emergency</li> </ul>	Information for use	<ul style="list-style-type: none"> <li>Intended purpose of use, features, ranges of adjustment</li> <li>Intended use</li> <li>Forbidden and not intended use</li> </ul>	Installation / assembly	Unpacking, checking, assembling, installation, transport	Putting into operation	<ul style="list-style-type: none"> <li>Safety warning before each operation step</li> <li>Putting into operation</li> <li>Explanation and assembly of accessories</li> <li>Explanation of controls</li> </ul>	Performing work process	<ul style="list-style-type: none"> <li>Performing work process</li> <li>Handling and adjustment of special features</li> </ul>	End work process	Ending work process	Care / maintenance	<ul style="list-style-type: none"> <li>User maintenance</li> <li>Type / consumption / quantity of auxiliary supplies</li> <li>Maintenance by service centre</li> <li>Cleaning and lubrication</li> <li>Storage / abandonment</li> </ul>	Troubleshooting	Checklist	Guarantee / service	<ul style="list-style-type: none"> <li>Warranty declaration</li> <li>Service address / reachability</li> <li>Spare parts list</li> <li>Recycling / proper disposal information appliance</li> <li>Recycling / proper disposal information packaging</li> </ul>	Layout	<ul style="list-style-type: none"> <li>Page size / paper quality</li> <li>Binding</li> <li>Height of characters</li> <li>Line spacing and length</li> <li>Colour / Black &amp; White</li> <li>Photos / sketches</li> <li>Drawings / tables</li> </ul>	Language / grammar	<ul style="list-style-type: none"> <li>Comprehensibility</li> <li>Correctness of grammar / spelling</li> <li>Language checked</li> </ul>
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