

The Assessor shall determine the business's commitment and support to good and safe working practices; also that it has a positive culture in all aspects of its work. In particular, the Assessor shall check that the business's health, safety and environmental arrangements are followed while the work is carried. The details that the assessor will expect to find in use, are given in the BESCA standard BS.5 and BS.6. The level of assessment will be appropriate for, the size and the complexity of the business.

<b>Setting-to-work, commissioning and hand-over - technical standards</b>			
BESCA standard	Scheme Requirement	Typical evidence required	
		Work done in domestic premises	Work done in non-domestic premises
TS.3.1	<p><b>Setting-to-work</b></p> <p><b>Technical standards that apply to this work:</b></p> <p><i>The Building Regulations Approved Documents Compliance guides</i></p> <p><i>British Standards</i></p> <p><i>BSRIA Guidance</i></p> <p><i>BESA standards</i></p> <ul style="list-style-type: none"> <li>o IET Guidance</li> </ul> <p><i>Electricity at Work Regulations 1989</i></p> <p><i>IET Guidance Note 3 – “Inspection and Testing”, and “On-Site Guide”</i></p> <p><i>BS 7671- Requirements for electrical installations</i></p> <p><i>Manufacturers instructions</i></p>	<ul style="list-style-type: none"> <li>• Only Competent individuals, who have the necessary skills, knowledge and experience, as set out in BESCA standard BS.9, shall undertake the work so that it meets the standards set by BESCA. The business's training and/or subcontract records should identify these people, as set out in BESCA standards BS.9 and/or BS.10.</li> <li>• The work shall be carried out in such a way that it does not compromise compliance with health, safety, or environmental requirements.</li> <li>• An assessment of risks arising from setting the systems, plant, equipment, etc to work shall be carried out to comply with health and safety regulations and other relevant legislation.</li> <li>• All relevant people shall be notified and be clearly and accurately advised about the potential disruption and consequences of carrying the intended work.</li> <li>• Non-potable and non-domestic water systems shall be flushed and cleaned in accordance with the BSRIA - AG 1 / 2001.1 – “Pre-commission cleaning of pipework systems (2nd Edition)”. After the system is cleaned it shall be treated against corrosion by injecting a suitable inhibitor chemical into the system.</li> <li>• Pipework systems that are used for hot or cold domestic water or drinking water services, including any tanks or associated plant or equipment, shall be cleaned and sterilised in accordance with BS 6700, before being put into use.</li> <li>• Ductwork systems that have become contaminated by dust, debris or other products or substances, shall be cleaned in accordance with BESCA standard TS.7.5, before being put into use.</li> <li>• Fire and/or smoke dampers in ductwork systems shall be set as detailed in the BESA publication DW/145 –“Guide to Good Practice: For the Installation of Fire and Smoke Dampers”.</li> <li>• Local exhaust ventilation (LEV) systems shall have the ductwork, joints and hood tested with a smoke generator, before final commissioning is undertaken, to verify that there is no leakage and that the installation will control the containment cloud.</li> <li>• Electrical installations shall be inspected and tested as set out on BESCA standard TS.13.4, so as to ensure compliance with the requirement of the Electricity at Work Regulations 1989, The Health &amp; Safety at Work Act 1974 and BS 7671- ‘Requirements for electrical installations’</li> <li>• Control systems, high-limit thermostats, and/or other safety features, shall be tested and then shall be set at the correct temperature and function before the controls system is set to work and commissioned.</li> <li>• Sanitary and waste drainage systems shall be flushed through with water; and manholes and other access points visually checked to verify that there are no restrictions or blockages, and there is a free flow through them.</li> <li>• Where required, safety warning and information notices shall be fixed to the system to make people aware of the key risks and of the procedures that must be followed while the system is being set to work.</li> <li>• Flushing water that is likely to be contaminated shall be disposed of safely so that watercourses or land are not polluted when the system is draining down.</li> </ul>	

<p>TS.3.2</p>	<p><b>Commissioning</b></p> <p><b>Technical standards that apply to this work:</b></p> <p><i>The Building Regulations Approved Documents Compliance guides</i></p> <ul style="list-style-type: none"> <li>o CIBSE Guidance &amp; Codes</li> <li>o CSA documents</li> <li>o BSRIA Guidance</li> <li>o IEE Guidance</li> </ul> <p><i>Electricity at Work Regulations 1989</i></p> <p><i>BS 7671- Requirements for electrical installations</i></p> <p><i>Manufacturers instructions</i></p>	<ul style="list-style-type: none"> <li>• Only Competent individuals, who have the necessary skills, knowledge and experience, as set out in BESCA standard BS.9, shall undertake the work so that it meets the standards set by BESCA. The business's training and/or subcontract records shall identify these people, as set out in BESCA standards BS.9 and/or BS.10.</li> <li>• Commissioning and performance verification shall be carried out in accordance with the requirements set out in the various Parts of the Building Regulations, including the applicable Approved Documents and General Guidance documents; and one or more of the following:             <ul style="list-style-type: none"> <li>o CIBSE Code 'B' - Boilers</li> <li>o CIBSE Code 'W' - Water distribution systems</li> <li>o BSRIA application guide AG 2/89 - Commissioning Water Systems. Application principles</li> <li>o CIBSE Code 'A' - Air distribution systems</li> <li>o BSRIA application guide AG 3/89.3 (2001) – Commissioning air systems. Application procedures for buildings</li> <li>o BESA publication DW/145 – Guide to Good Practice: For the Installation of Fire and Smoke Dampers</li> <li>o CIBSE Code 'R' - Refrigeration systems</li> <li>o CIBSE Code 'C' – Automatic Controls</li> <li>o HSG 257 - Chapter 8 - Local exhaust ventilation (LEV) systems (also when a statutory thorough examination and test is required)</li> <li>o Electricity at Work Regulations 1989</li> <li>o BS 7671- Requirements for electrical installations</li> <li>o IET Guidance Note 3 – Inspection and Testing</li> <li>o Manufacturers' instructions and commissioning requirements for items of plant and equipment that are incorporated into the system</li> </ul> </li> <li>• The instruments used to check the energy performance of the installation shall be identified by a unique reference that is indelibly marked on them and, where the business has more than three instruments, these shall be recorded on an instrument register. The register shall record the calibration frequency and results for each instrument. All instruments that are used shall have valid calibration certificates. Where required, the instrument shall be calibrated against a certified standard source or correction data shall be available to allow measurements to be adjusted to suit the instrument.</li> <li>• An assessment of risks arising from the commissioning work shall be carried out to make sure that it is carried out in such a way that it does not compromise compliance with health, safety, or environmental requirements.</li> <li>• All relevant people shall be notified and be clearly and accurately advised about the potential disruption and consequences of carrying the intended work.</li> <li>• Test holes in ductwork shall be covered over when the readings are completed. Double regulating valves shall not be closed beyond their minimum setting (usually 25%). Those that are set, shall be locked but can be closed and re-opened to their set positions. There shall be no uncontrolled leakage of water from pipework where pressure or other readings have been taken.</li> <li>• There shall be no damage caused to the insulation, vapour barriers, etc due to any commissioning activity.</li> <li>• Where the actual performance of the system or plant varies from the design, it shall be investigated. Performances that are less than, or are significantly better than that which was expected, and which will, or may, affect the energy efficiency requirements of the dwelling or building, shall be referred back to the designer.</li> <li>• During the commissioning process, a record shall be kept of each test that is carried out and notes shall be made, or drawings of the installation marked to show any deviations from the original specification or envisaged layout, as well as the location of test holes in ductwork. This information shall be passed back to the office to use when the final record drawings are produced, and shall be retained for at least six years.</li> </ul>
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<p>TS.3.3</p>	<p><b>Hand-over</b></p> <p><b>Technical standards that apply to this work:</b>  <i>The Building Regulations Approved Documents</i>  <i>Compliance guides</i>  <i>CIBSE Guidance &amp; Codes</i>  <i>BESA standards</i>  <ul style="list-style-type: none"> <li>o IET Guidance</li> </ul> <i>HHIC Benchmark logbook</i></p>	<ul style="list-style-type: none"> <li>• All systems and controls shall be left in their intended working order and be capable of operating efficiently so as to conserve fuel and power.</li> <li>• Only Competent individuals, who have the necessary skills, knowledge and experience, shall produce the required documents and drawings. The business’s training and/or subcontract records shall identify these people, as set out in BESCA standards BS.9 and/or BS.10.</li> <li>• The documents that the customer needs to prove that the overall installation complies with the Building Regulations shall be completed after the systems have been set to work and following the final commissioning.</li> <li>• Operating and maintenance instructions that inform the customer how to look after and use the installation properly and drawings that show the actual installation shall be produced. The use of these, and the importance of operating the plant correctly and efficiently so as to conserve energy, shall be explained to the customer or customer.</li> <li>• The documents required to be handed over include, but are not limited to: <ul style="list-style-type: none"> <li>o Instructions for the safe and efficient operation of the installation;</li> <li>o The warranties provided by the manufacturers of the equipment;</li> <li>o A schematic of the system;</li> <li>o A copy of the boiler efficiency test;</li> <li>o The boiler benchmark logbook, or similar;</li> <li>o The Building Regulations compliance certificate;</li> <li>o Details of an insurance backed warranty (See BESCA standard BS.2).</li> <li>o Comprehensive instructions for the safe and efficient operation of the installation;</li> <li>o Schematics of the systems;</li> <li>o Record drawings of the complete installation;</li> <li>o Wiring diagrams for electrical power, lighting and control circuits and systems, and for items of plant, as appropriate ;</li> <li>o The results of pressure, electrical and similar tests;</li> <li>o Copies of all commissioning reports;</li> <li>o The appropriate compliance certificates;</li> <li>o The building logbook or details for inclusion in an existing logbook. (see <i>CIBSE Guidance TM31 Log books</i>)</li> <li>o A Local Exhaust Ventilation (LEV) user manual and log book, where it is appropriate.</li> </ul> </li> </ul>
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