

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>Pipework systems technical standards</b>			
BESCA Standard	Scheme Requirement	Typical evidence required	
		Work done in domestic premises	Work done in non-domestic premises
TS.5.1	<p><b>Copper pipework systems for heating, chilled, heat recovery, hot and cold water services</b></p> <p><b>Technical standards that apply to this work:</b>  <i>The Building Regulations Approved Documents</i>  <i>Compliance guides</i>  <i>Water Fittings Regulations</i>  <i>Gas Safety (Installation and Use) Regulations</i>  <i>British Standards</i>  <i>IGEM Guidance</i>  <i>BESA Standards</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 must identify these people, as set out in BESCA standards BS.9 and/or BS.10.</li> <li>• Cold water supplies shall comply with the requirements set out in sections G1 and G2 of the Approved Document and Guidance to the Building Regulations. The competent individual must produce a notice specifying the estimated consumption of wholesome water for the property per person per day. The notice must be provided to the Building Control Body no later than five days after the work has been completed.</li> <li>• Hot water supplies shall comply with the requirements set out in section G2 and G3 of the Approved Document and Guidance to the Building Regulations. The competent individual must produce a notice specifying the estimated consumption of wholesome water for the property per person per day. The notice must be provided to the Building Control Body no later than five days after the work has been completed.</li> <li>• The pipework, fittings and other materials used shall meet the requirements of the Regulations, and all fittings used shall have been approved by the Water Regulations Advisory Scheme (WRAS).</li> <li>• Valves, strainers, air vents, drain and test points, etc as well as connections to items of equipment shall be installed so that they are accessible for future servicing and maintenance needs. Isolating valves shall be fitted to allow the removal of plant items and the isolation of main distribution circuits, risers and terminal units.</li> <li>• The pipework is run neatly and parallel to walls, floors, etc, it is jointed according to requirements and is properly supported and clipped. It is routed and laid in accordance with the Regulations. Provision shall be made for thermal and building movement when fixing and jointing. As far as possible, pipe routes should not obstruct access or exit routes, machinery or the future maintenance of installed equipment. Sleeves shall be used where the pipe passes through walls and be sealed to prevent the spread of noise, fire and smoke, as set out in BESCA Standard TS.4.1.</li> <li>• The incoming cold water supply is fitted with a stop valve and, where required, a double-check valve. Outlets on hot and cold domestic water services shall be fitted with secondary isolation valves.</li> <li>• On a vented system, the open vent pipe is taken at least 150 mm above the level of the warning pipe off the feed tank and terminates above level of the warning pipe outlet on the tank. The feed and expansion tank is installed as set out in BESCA standard TS.2.7.</li> <li>• On a sealed heating system, there is an expansion vessel (see BESCA standard TS.5.6), a pressure relief valve, and a filling loop, or other arrangement for filling, which meets the Regulations. Where required, dosing pots shall be installed on closed water circulation systems.</li> <li>• Leakage checks, and pressure tests, shall be carried out when the system is completed, or where sections of the system may be inaccessible later. Pressure testing shall be carried out as set out in BESCA standard TS.5.8.</li> <li>• Pipework carrying heated, chilled or cold water shall be insulated to prevent heat loss or gain. Pipework and/or fittings that may freeze in cold conditions shall be insulated. All pipes shall be labelled and/or have coloured bands (in accordance with BS 1710) applied to identify them. Thermal insulation is installed to BESCA standard TS.5.9.</li> <li>• Pipework systems that are used for hot or cold domestic water or drinking water services shall be commissioned in accordance with BS 6700 before being put into use.</li> <li>• On completion, notes shall be made or a drawing of the pipework marked to show any deviations from the routes originally specified or envisaged. This information shall be passed back to the office to use when the final record drawings are produced.</li> </ul>	

<p>TS.5.2</p>	<p><b>Copper pipework systems for refrigeration</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>The Water Regulations</i></p> <p><i>The F Gas Regulations</i></p> <p><i>British Standards</i></p> <p><i>BRA Guidance</i></p> <p><i>BESA Standards</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, including a suitable refrigerant handling certificate, shall undertake the work so that it meets the standards set by BESCA. The business's training and/or subcontract records must identify these people as set out in BESCA standards BS.9 and/or BS.10.</li> <li>• All pipes used shall be of refrigeration quality, have the correct wall thickness and shall be kept as short as possible to minimise the system's charge of refrigerant. They shall have the minimum number of joints, which shall be formed by brazing to the required standards, or by using mechanical fittings. Generally, pipework is purged with nitrogen during the brazing process to minimise contamination.</li> <li>• Where pipes are cut while they are being installed, care shall be taken to prevent any contamination from entering the system. Additionally, unused pipes and/or unfinished pipework shall be sealed to prevent contamination.</li> <li>• As far as possible, pipe routes should not obstruct access or exit routes, machinery or the future maintenance of installed equipment. Provision shall be made for thermal and building movement when fixing and jointing. The pipework shall be installed with the necessary traps and slopes to aid the return of oil, and be supported at the recommended intervals. Isolation and access valves that are installed shall be accessible for future servicing and maintenance needs. Sleeves shall be used where the pipe passes through walls and be sealed to prevent the spread of noise, fire and smoke, as set out in BESCA Standard TS.4.1.</li> <li>• Flexible pipe connections should be used to compensate for vibration and thermal expansion at key points. These shall be protected from mechanical damage, and from torsional and other stresses.</li> <li>• Pipework shall be pressure and leak tested before being evacuated. Testing is done as set out in BESCA standard TS.5.8.</li> <li>• The correct type and thickness of insulation should be installed on the pipework. Where there is no alternative but to route pipes next to hot pipes or other sources of heat, then they shall be adequately protected. All pipes shall be labelled and/or have coloured bands (in accordance with BS 1710) applied to identify them. Thermal insulation shall be installed to BESCA standard TS.5.9.</li> <li>• On completion, notes shall be made or a drawing of the pipework marked to show any deviations from the routes originally specified or envisaged. This information shall be passed back to the office to use when the final record drawings are produced.</li> </ul>
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<p>TS.5.3</p>	<p><b>Steel pipework systems for LTHW, MTHW, steam, &amp; condensate, chilled water, heat recovery, etc</b></p> <p><b>Technical standards that apply to this work:</b>  <i>The Building Regulations Approved Documents Compliance guides</i>  <i>The Water Regulations</i>  <i>The Gas Safety (Installation and Use) Regulations</i>  <i>British Standards</i>  <i>IGEM Guidance</i>  <i>BESA Standards</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>• The pipework, fittings and other materials used shall meet the requirements of the BESA publication TR20. As far as possible, tubes should be free from burrs, rust, scale, dirt and obstructions before being installed and any open ends of pipe left while being installed shall be capped off.</li> <li>• Valves, strainers, air vents, drain and test points, etc as well as connections to items of equipment, shall be installed so that they are accessible for future servicing and maintenance needs. Isolating valves shall be fitted to allow the removal of plant items and the isolation of main distribution circuits, risers and terminal units. Expansions bellows, flexible couplings, and similar devices, shall be fitted into the pipework system where they are required.</li> <li>• The pipework should be run neatly and parallel to walls, floors, etc, jointed according to requirements and properly supported and clipped. Provision shall be made for thermal and building movement when fixing and jointing. Steam pipework shall be installed with the necessary slopes and traps to aid the return of condensate. As far as possible, pipe routes should not obstruct access or exit routes, machinery or the future maintenance of installed equipment.</li> <li>• The pipework shall be routed and laid in accordance with the details set out in the BESA publication TR20. This requires pipework (including any insulation) to be fixed at least 25 mm from walls and/or any other fixture, and low-level horizontal pipework to be fixed not less than 100mm clear above floors. Sleeves shall be used where pipes pass through walls and shall be sealed to prevent the spread of noise, fire and smoke, as set out in BESCA Standard TS.4.1.</li> <li>• On a vented system, the open vent pipe shall be taken at least 150 mm above the level of the warning pipe of the feed tank and terminates above level of the warning pipe outlet on the tank. The feed and expansion tank shall be installed as set out in BESCA standard TS.5.7.</li> <li>• Where there is an expansion vessel and a pressurisation set on each sealed water system (see BESCA standard T.6.6) dosing pots shall be installed on closed water circulation systems.</li> <li>• When the system is completed, or where sections of the system may be inaccessible later, it shall be tested. Pressure testing shall be done as set out in BESCA standard TS.5.8.</li> <li>• Where required, insulation shall be fitted to control the loss or gain of heat from or to the pipework. Pipework and/or fittings that may freeze in cold conditions shall be insulated to prevent this happening. All pipes shall be labelled and/or have coloured bands (in accordance with BS 1710) applied to identify them. Thermal insulation is installed to BESCA standard TS.5.9.</li> <li>• On completion, notes shall be made or a drawing of the pipework marked to show any deviations from the routes originally specified or envisaged. This information shall be is passed back to the office to use when the final record drawings are produced.</li> </ul>
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<p>TS.5.4</p>	<p><b>Plastic pipework systems for heating, chilled, heat recovery, reclaimed water, hot and cold water services, etc</b></p> <p><b>Technical standards that apply to this work:</b>  <i>The Building Regulations Approved Documents Compliance guides</i>  <i>The Water Regulations British Standards BESA Standards CIBSE Guidance</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>• The pipework, fittings and other materials that are used, meet the requirements of the Regulations. Valves, strainers, air vents, drain and test points, etc as well as connections to items of equipment shall be installed so that they are accessible for future servicing and maintenance needs. Isolating valves shall be fitted to allow the removal of plant items and the isolation of main distribution circuits, risers and terminal units.</li> <li>• The pipework should be run neatly and parallel to walls, floors, etc, is jointed according to requirements and be adequately supported and clipped. It shall be routed and laid in accordance with the Building and other Regulations; and provision shall be made for thermal and building movement when fixing and jointing. As far as possible, pipe routes should not obstruct access or exit routes, machinery or the future maintenance of installed equipment.</li> <li>• Gaps around pipes within the thickness of the wall or floor shall be sealed with a suitable fire rated intumescent mastic, backed by a plug of stone mineral wool or PE foam, or a fire collar that is designed to maintain the fire resistance; so as to prevent the spread of noise, fire and smoke, as set out in BESCA Standard TS.4.1.</li> <li>• The incoming cold water supply is fitted with a stop valve and, where required, a double-check valve. Outlets on hot and cold domestic water services shall be fitted with secondary isolation valves.</li> <li>• On a sealed system, there is an expansion vessel (see BESCA standard TS.6.6), a pressure relief valve, and a filling loop, or other arrangement for filling, which meets the Regulations.</li> <li>• Underfloor heating pipework shall be installed in accordance with the pipework manufacturer's instructions and CIBSE guidance – Underfloor heating, design and installation guide.</li> <li>• Leakage checks, and where required pressure tests, shall be carried out when the system is completed, or where sections of the system may be inaccessible later, e.g. on underfloor systems when the system is completed, but before any screed or other coverings are laid. Pressure testing shall be carried out as set out in BESCA standard TS.5.8.</li> <li>• Pipework carrying heated, chilled or cold water shall be insulated to prevent heat loss or gain. Pipework and/or fittings that may freeze in cold conditions shall be insulated to prevent this happening. All pipes shall be labelled and/or have coloured bands (in accordance with BS 1710) applied to identify them. Thermal insulation shall be installed to BESCA standard TS.5.9.</li> <li>• Pipework systems that are used for hot or cold domestic water or drinking water services shall be commissioned in accordance with BS 6700 before being put into use.</li> <li>• On completion, notes shall be made or a drawing of the pipework marked to show any deviations from the routes originally specified or envisaged. This information shall be passed back to the office to use when the final record drawings are produced.</li> </ul>
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<p>TS.5.5</p>	<p><b>Drainage systems</b></p> <p><b>Technical standards that apply to this work:</b></p> <p><i>The Building Regulations</i>  <i>Approved Documents</i>  <i>Compliance guides</i>  <i>Water Fitting Regulations</i>  <i>British Standards</i>  <i>BESA standards</i>  <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>• Drainage installations shall comply with the requirements set out in section H of the Approved Document and Guidance to the Building Regulations. All fittings used shall have been approved by the Water Regulations Advisory Scheme (WRAS).</li> <li>• The pipework shall be routed and laid in accordance with the Building and other Regulations; and installed to comply with the manufacturer's instructions and recommendations. It shall be run neatly and parallel to walls, floors, etc, jointed according to requirements and be adequately supported and clipped so that appliances drain quickly, quietly and completely at all times; and so that the discharge is conveyed without cross flow, back fall, leakage or blockage. Provision shall be made for thermal and building movement when fixing and jointing.</li> <li>• Access fittings and rodding eyes shall be provided as necessary in convenient locations to permit adequate cleaning and testing of pipe work. Adequate access shall be provided to all cleaning eyes and rodding points. Overflows, where used, shall discharge in a conspicuous position outside the building.</li> <li>• As far as possible, pipe routes should not obstruct access or exit routes, the future maintenance of installed sanitaryware, or other services. Where a soil vent pipe is used, it shall terminate a minimum of 900 mm above roof lights or window openings.</li> <li>• Gaps around pipes within the thickness of the wall or floor shall be sealed with a suitable fire rated intumescent mastic, backed by a plug of stone mineral wool or PE foam, or a fire collar that is designed to maintain the fire resistance; so as to prevent the spread of noise, fire and smoke, as set out in BESCA Standard TS.4.1.</li> <li>• On completion, notes shall be made or a drawing of the pipework shall be marked to show any deviations from the routes originally specified or envisaged. This information shall be passed back to the office to use when the final record drawings are produced.</li> </ul>
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<p>TS.5.6</p>	<p><b>Gas supply pipework</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>Gas Safety (Installation and Use) Regulations Approved Code of Practice (ACOP) and Guidance L56</i></p> <p><i>British Standards IGEN Guidance BESA Standards</i></p>	<ul style="list-style-type: none"> <li>• Only businesses or individuals which are GAS SAFE Registered shall undertake the work on gas systems.</li> <li>• Only Competent individuals, who have the necessary skills, knowledge and experience, as set out in BESCA standard BS.9, and who have current and appropriate ACS Accreditation, shall undertake any work on gas systems. 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>• No person carrying out gas fitting work shall leave work unattended unless every incomplete gas way has been sealed with an appropriate fitting.</li> <li>• The pipework, fittings and other materials used shall meet the requirements of the Gas Safety (Installation &amp; Use) Regulations. Valves and connections to appliances and items of plant shall be installed so that they are accessible for future servicing and maintenance needs.</li> <li>• The pipework should be run neatly and parallel to walls, floors, etc and shall be jointed according to requirements and adequately supported and clipped. Provision shall be made for thermal and building movement when fixing and jointing. As far as possible, pipe routes should not obstruct access or exit routes, machinery or the future maintenance of installed equipment. Copper pipe up to 42mm shall be jointed with capillary and/or compression fittings and steel pipework is either screwed or welded up to 150mm and welded above 150mm. Purge points shall be fitted at appropriate places and shall be capped or plugged.</li> <li>• The points where any pipes pass through the external walls of buildings shall be adequately sleeved with the space between the sleeve and the pipe sealed. The incoming gas supply shall be fitted with an isolation valve. Sleeves shall be used where the pipe passes through internal walls and shall be sealed to prevent the spread of noise, fire and smoke, as set out in BESCA Standard TS.4.1.</li> <li>• Where a meter is installed, the pipework system shall be earth bonded at the meter outlet. All gas pipes shall be labelled and/or have coloured bands (in accordance with BS 1710) applied to identify them.</li> <li>• On completion, the pipework system shall be tested for gas tightness. Pressure testing shall be carried out as set out in BESCA standard TS.5.8. After testing, the pipework, associated appliances and plant, shall be purged with an inert gas, such as nitrogen, to remove the air before natural gas is allowed to enter the system.</li> <li>• On completion, notes shall be made or a drawing of the pipework marked to show any deviations from the routes originally specified or envisaged. This information shall be passed back to the office to use when the final record drawings are produced.</li> </ul>
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<p>TS.5.7.</p>	<p><b>Fuel oil pipework</b></p> <p><b>Technical standards that apply to this work:</b></p> <p><i>The Building Regulations</i>  <i>Approved Documents</i>  <i>Compliance guides</i></p> <p><i>British Standards</i>  <i>OFTEC Guidance</i>  <i>BESA Standards</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>• The fuel oil system shall comply with the requirements set out in Part J of the Building Regulations, including the applicable Approved Documents and General Guidance.</li> <li>• The pipework shall be run neatly and adequately supported and clipped. Provision shall be made for thermal and building movement when fixing and jointing. Joints on steel pipework systems shall be flanged, rather than screwed, so that they can easily be broken when required. Air vents shall be provided at high points. Valves and connections to appliances and items of plant shall be installed so that they are accessible for future servicing and maintenance needs.</li> <li>• A stop valve shall be fitted at the tank outlet, followed by first stage filter in the supply pipe. On pumped supply systems where the suction line enters through the side of the tank, a non-return valve shall be fitted in the suction line close to the tank. On gravity supply systems, the oil pipework shall fall continuously from the oil storage tank. As far as possible, pipe routes should not obstruct access or exit routes, or the future maintenance of installed equipment.</li> <li>• Sleeves shall be used where the pipe passes through walls and be sealed to prevent the spread of noise, fire and smoke, as set out in BESCA Standard TS.4.1.</li> <li>• The points where any pipes pass through the external walls of buildings shall be adequately sleeved, and the space between the sleeve and the pipe shall be sealed to prevent the passage of moisture, as set out in BESCA Standard TS.4.1.</li> <li>• The incoming oil supply pipe shall be fitted with an isolation valve and a fire valve. Where required, a pressure gauge shall be fitted at the inlet to the burner.</li> <li>• On completion of the pipework system it shall be leak tested and then tested for tightness. Pressure testing shall be carried out as set out in BESCA standard TS.5.8.</li> <li>• Where there is a risk of the oil in external pipework thickening in cold weather, or if it is high-viscosity oil, then trace heating and/or insulation may be required and should be fitted to the oil line. All oil pipes shall be labelled and/or have coloured bands (in accordance with BS 1710) applied to identify them. Thermal insulation shall be installed to BESCA standard TS.5.9.</li> <li>• On completion, notes shall be made or a drawing of the pipework marked to show any deviations from the routes originally specified or envisaged. This information shall be passed back to the office to use when the final record drawings are produced.</li> </ul>
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<p>TS.5.8.</p>	<p><b>Testing pipework systems</b></p> <p><b>Technical standards that apply to this work:</b>  <i>The Building Regulations          Approved Documents          Compliance guides          BESA standards</i></p>	<p><b>WARNING - Pressure testing to prove the mechanical strength and integrity of a vessel or pipework is potentially hazardous. The potential energy of a gas under pressure can be up to 200 times that contained in water of the same volume and pressure. If released by a failing pipe or component, the released force could kill as if it were an explosion. Restrict pressure testing using compressed gas to low pressures.</b></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 testing. 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>• When the system is completed, or where sections of the system may be inaccessible later, it shall be leak and pressure tested.</li> <li>• Components not designed to carry the full test pressure shall be disconnected and the pipework capped, or plugged off, during the test. After reconnecting, following the pressure test, the reconnected joints shall be checked for soundness.</li> <li>• To reduce the risk of injury, valves that could be opened inadvertently shall be locked-off, and warning notices shall be posted to keep other people out of the areas where testing is taking place.</li> <li>• The results shall be recorded and certified by the installer and copies of them shall be retained for at least six years.</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>• Hydraulic testing             <ul style="list-style-type: none"> <li>○ Hydraulically testing shall be done with a suitable fluid. Water is generally used, but oil can be used to check systems that will contain oil. Wherever possible, testing using water should not be carried out in frosty weather.</li> <li>○ The system shall be checked for leaks whilst it is filling, and all high points shall be vented and closed systematically.</li> <li>○ Test water that is likely to be contaminated shall be disposed of safely so that watercourses or land are not polluted when the system is drained down.</li> <li>○ During the test the pressure is raised gradually, then the system is sealed for a period of between ½ and 1 hour, and re-examined for leaking valves or joints. The test pressure is usually 1½ times the normal working pressure of the system. The customer may specify a different test pressure.</li> </ul> </li> <li>• Low pressure gas testing             <ul style="list-style-type: none"> <li>○ Testing shall be carried out using air or an inert gas, such as nitrogen.</li> <li>○ Leaks shall be found by systematically checking the pipework system using a leak detection fluid that is brushed or sprayed on to joints.</li> <li>○ During the test the pressure is raised gradually, then the system is sealed for a period of between ½ and 1 hour, and re-examined for leaking valves or joints. The test pressure is usually 1½ times the normal working pressure of the system. The customer may specify a different test pressure.</li> <li>○ Where required, the test results shall be adjusted for variations in temperature and/or barometric pressure occurring during the test.</li> </ul> </li> <li>• Drainage testing             <ul style="list-style-type: none"> <li>○ Testing to prove the integrity of the drainage pipework shall be done upon completion of system, or on sections of the system which will be inaccessible later. This shall be carried out by temporarily sealing open ends of pipework with test plugs or bags and connecting a "U" tube water gauge, then pumping air into the pipework until the gauge registers 38mm.</li> <li>○ Allow a period for temperature stabilisation, after which the pressure of 38mm shall be maintained for not less than three minutes. The test results shall be recorded and certified by the installer and a copy provided to the Local Building Control Officer.</li> </ul> </li> </ul>
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<p>TS.5.9.</p>	<p><b>Pipework insulation</b></p> <p><b>Technical standards that apply to this work:</b></p> <p><i>The Building Regulations</i></p> <p><i>Approved Documents</i></p> <p><i>Compliance guides</i></p> <p><i>British Standards</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>• Pipework systems that carry hot, chilled and cold water or refrigerants shall be adequately insulated, so as to conserve energy and to prevent heat loss or gain. Pipework and/or fittings that may freeze in cold conditions shall be insulated to prevent this happening. This shall be done to the standards set out in BS 5970 - 'Code of practice for thermal insulation of pipework and equipment'.</li> <li>• The joints on rigid sections of thermal insulation shall be staggered and the sections shall be securely fixed by means of adhesive, bands etc. Where insulation is required on flanges and valves shall be equal in thickness to that on the associated pipes.</li> <li>• There shall be provision to allow movement of the pipework to take place due to thermal expansion or contraction.</li> <li>• Where the temperature of the pipework is low enough for condensation to occur on it, or where specified by the designer, the pipework and the associated hangers shall be vapour sealed.</li> <li>• Where metal cladding is used in an area that is designated as hazardous, there shall be electrical earth bonding between the sections of metal cladding.</li> <li>• External pipework shall be insulated and weatherproofed using a covering that has lapped and sealed joints and which continues over fittings, flanges, etc so as to prevent the ingress of water.</li> <li>• All pipework insulation systems shall be labelled and/or have coloured bands applied to identify them in accordance with BS 1710.</li> </ul>
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