

In recent years we have started to see basic commissioning standards slip throughout our industry. The CSA is getting feedback from various parties in the commissioning world, reporting that the initial steps of the commissioning process are not being adhered to, with various basic steps being missed and errors occurring throughout the whole process.

This is a reminder to all our members that the CSA Commissioning Engineers Compendium, CIBSE Commissioning Codes and BSRIA Application Guides should be always adhered to.

Some of the key items being drawn to our attention:

Item	Notes
Design Information	<ul style="list-style-type: none"> ✘ Systems are being commissioned using superseded design information. ✔ The commissioning engineer MUST always check that they are using the latest design information.
Correction Factors	<ul style="list-style-type: none"> ✘ Only overall system factors or single grille correction factors are being taken resulting in erroneous flowrates. ✔ Correction factors should be established, wherever possible, for each type of terminal and flow capture hood in use. Where this is not possible, the commissioning engineer must agree a suitable compromise with the design team and/or witnessing agent.
Initial Readings	<ul style="list-style-type: none"> ✘ Initial total volumes and fan/pump pressures are not being recorded, which are essential data if the system has any issues following completion of the proportional balancing. ✔ The commissioning engineer MUST record the initial total volumes and fan/pump pressures, ensuring in excess of 100% of the design volume. Any issues at this stage must be investigated. ✔ For traditional systems (not PICV/VAV systems) The commissioning engineer MUST record the initial indicated rates of flow at all Terminals/Grilles, Index grilles should also be indicated on the test sheets. <p>Note: Records of the system 'initial scan' are invaluable to indicate the extent of the balancing required on the system. They may also be useful in the investigation of any problems, such as excessive noise or system resistance experienced with the system once it is balanced.</p>
Valve Kv Values	<ul style="list-style-type: none"> ✘ Commissioning engineers have been using incorrect kv / kvs values from the manufacturers literature, resulting in pumps being inaccurately indicated as down on duty. Engineers are also using the wrong information, such as looking at the regulation valve as opposed to the orifice plate where these are separate. ✔ The commissioning engineer MUST always ensure they use the correct Kv or kvs value from the manufacturers' literature. They must phone and check with the manufacturers if unsure. ✔ For variable orifice valves a range of flow coefficients (K_v values) for each handwheel setting are to be used to determine flow rate or pressure drop. ✔ For fixed orifice valves the flow coefficient (K_{vs} value) is used to determine flow rate or pressure drop.
PICV DP's	<ul style="list-style-type: none"> ✘ Test sheets are being issued without recording Pressure Independent Control Valve (PICV) Differential pressure drops. ✔ The commissioning specialist MUST always record pressure drops across PICV's to ensure that the valves can control under their design parameters. The pressure drops must be included within the test documentation.

Sub-Main Total Volumes	<ul style="list-style-type: none"> ✘ Fresh Air systems serving fan coil units, may wrongly be installed with VCD's located at the ends of spigots, thus disrupting the airflow and hence anemometer readings. Engineers then look to balance the spigots inadequately while not recording a traverse to said leg to validate indicated readings from the anemometer. ✔ The Commissioning Engineer MUST always validate branches of spigots where the above installation occurs to ensure accuracy and system optimisation.
Pressure Profiles	<ul style="list-style-type: none"> ✘ Final system operating characteristics are not being recorded. ✘ Fan suction / discharge pressures are being inaccurately recorded on test sheets, with engineers using the unit in/out pressures which does not provide the required information to enable plotting of fan curves. ✔ The commissioning engineer MUST record operating characteristics of Fans/Pumps. This should include a pressure profile of the Fan/AHU and pump system pressures including closed head readings.
Final Set Points	<ul style="list-style-type: none"> ✘ Final system setpoints are not being set or recorded, resulting in BMS engineers not setting the systems up to the correct parameters. ✔ The commissioning engineer MUST ensure once commissioning is completed that they have set up the system with the BMS engineer using the correct inverter setpoints and pressure setpoints to ensure the correct system operation. ✔ All set-points are to be recorded within the commissioning reports for record purposes. Systems should be offered for witnessing in their automatic state with valves driven fully open or to an agreed scenario where there is a designed diversity.
Damper / Valve Settings	<ul style="list-style-type: none"> ✘ VCD's are not being locked / Marked ✘ Valves are not being locked / settings recorded ✔ The commissioning engineer MUST ensure that all VCD's / Valves are locked, marked and setpoints recorded at all times.
System Reports	<ul style="list-style-type: none"> ✘ System test packs don't include a detailed narrative of the commissioning process or any issues identified. ✔ The nature and complexity of some systems requires a narrative to describe the system, the parameters, commissioning/proving process and the reasoning behind this. Explaining how the system diversity was set up, or filters/strainer dirty condition was simulated makes it clear and easier for the consultant or witnessing authority to understand or the process to be repeated at a future stage.
Schematics	<ul style="list-style-type: none"> ✘ Schematics are not being included within test reports. ✔ The system schematic should clearly identify the terminal units / equipment that has been commissioned with specific notes for test point locations. ✔ These days it's easy to grab the design schematic, mark it up electronically and attach to the test report.

Reminder:

Our constitution sets out to promote excellence in the technical expertise and business practice of those engaged in the profession of Commissioning Specialists.

Membership of the Association shall be dependent on acceptance of the Code of Practice. Such acceptance embodies an undertaking by the Member to conduct themselves, at all times, in a manner commensurate with the requirements of that Code.

The Member shall observe a good standard of workmanship, services shall be of good quality. The Member shall consistently check all of the work carried out forms part of quality assurance.