Table of Contents

Commissioning schedule 2
Commissioning schedule

Tests and operational commissioning

Introduction

The construction company must carry out commissioning of the facility in accordance with the relevant statutory requirement, Australian standard or planning and development guideline (PDG) and this commissioning schedule without limiting compliance.

In relation to the facility prior to issue of the Certificate of Occupancy, this schedule describes:

- tests which the construction company must carry out and pass
- criteria which the construction company must satisfy
- certificates which the construction company must obtain.

Standard

The standard applicable to each test, criteria or certificate is the standard described in:

- this schedule
- any relevant standards
  - prescribed by the law
  - contained in a health policy
  - contained in a quality standard
- any relevant standards prescribed by the Building Code of Australia
- manufacturer guidelines, as applicable.

If and to the extent that there is any inconsistency between the standard described in this schedule, the law, health policy, the quality standards, the Building Code of Australia and the manufacturer’s guidelines, the applicable standard shall be the most stringent standard.

If and to the extent that a quality standard permits more than one standard of testing, the relevant item shall be tested to the level specified in the approved drawings and specifications or, if no level is specified, to the reasonable satisfaction of the superintendent.

Ongoing testing

The construction company must operate the facility as per the standard described in this schedule for a continuous period of 14 days.

The construction company must provide monitoring equipment as appropriate (i.e. acceptable to an independent reviewer if appointed) to test the following during the 14-day period:

- temperature – climate control
- air borne particles (dust and bacteria)
- air volume – flow velocity
- operating theatre pressure volumes (smoke testing)
- isolation room pressure testing
- sound decibel levels – internal, external and boundary measurements
- humidity
- lighting levels.

The monitoring equipment described must be:

- tamper proof
- operate independently of the building management system
- capable of providing continuous 24/7 monitoring over 14 consecutive days
- capable of measuring part or all of the items described above depending on the area to be monitored
- strategically placed throughout the facility and the site.

The results of the ongoing testing is to be provided to the superintendent or the superintendent’s representative by the construction company. These results may be passed onto an independent reviewer along with all source information, documentation and data produced by the monitoring equipment.

Commissioning manual

A commissioning manual is to be submitted to the superintendent for endorsement no less than 30 business days before the construction company
proposes to commence the commissioning tests by the construction company.

The manual, which the construction company must adhere to, must describe to the reasonable satisfaction of the superintendent, a detailed and comprehensive methodology for commissioning according to the standards set out in the schedule. This includes:

- details of each test to be conducted
- date and time of each test
- the testing entity.

The manual must include all tests described in the schedule and any additional commissioning tests according to the relevant statutory requirement, Australian Standard or PDG, unless it is otherwise agreed to in writing by the superintendent.

The manual must contain (as a minimum) the following information:

- methodology for on-going testing
- tests and criteria for the facility
- schedules of building, fixed furniture and equipment (FF&E) items and structural items
- survey plans
- list of equipment
- schedules of calibration tests
- tests and criteria for equipment
- tests, criteria and certificates for air conditioning system
- information, tests, criteria, approvals and certificates for radiology
- methodology for operational readiness simulations
- certificates of compliance signed by the structural engineer
- floor area schedule
- staff profile
- records in relation to training
- occupancy permit and relevant test results and compliance certificates
- methodology for fire drill
- schedule of sterile areas and methodology for final clean.

The independent reviewer or superintendent must specify in reasonable detail to the construction company why the manual is not endorsed or has only given qualified endorsement.

Tests and criteria for facility and equipment

In relation to the facility and equipment, appendix A: completion tests and B: tests and criteria for equipment describes:

- tests that the construction company must carry out and pass
- criteria that the construction company must satisfy
- certificates that the construction company must obtain.

Not less than 30 business days before the construction company proposes to commence the commissioning tests the construction company must provide to the superintendent:

- a schedule of all calibration tests to be carried out, as specified in appendix B: tests and criteria for equipment
- a list that identifies the location in the facility (on a room by room basis) and quantity of category 1, 2 and 3 scheduled equipment and any other equipment installed in the facility (equipment).
- the list must specify the make, model, reference number and if required, the manufacturer of each item of equipment. It must be consistent with the relevant room data sheets.

The independent reviewer must be satisfied that each item of equipment has been installed, calibrated (if applicable) and is operating satisfactorily according to the standards described in this schedule and the endorsed commissioning manual.

Air conditioning and heating system

The commissioning schedule proforma describes tests, criteria and certificates in relation to the air conditioning and heating system installed in the facility.

Radiology

The tests for criteria for equipment proforma describes tests criteria and approvals in relation to the radiology department in the facility.

Operational readiness simulations

The completion tests proforma describes operational readiness simulations to be carried out and the relevant tests and results that must be achieved.
The superintendent or independent reviewer will notify the construction company of additional simulations to test operational readiness and functionality of systems during commissioning.

Certificates of compliance

The construction company must provide to the superintendent certificates of compliance according to the Building Act 1993 and building regulations described in the tests and operational commissioning proforma.

Floor area in hospital

Not less than 30 business days before the construction company proposes to commence commissioning the construction company must submit to the superintendent, a floor area schedule for the Hospital that contains:

- zone and room type
- tendered areas
- as built areas.

Staff

The construction company must provide a staff schedule containing the qualifications, roster and training details of personnel to the superintendent for approval. The schedule is to contain the personnel who have been instructed to carry out the following duties:

- operations and general maintenance
- security services
- external cleaning and building / services maintenance
- helpdesk operation, pest control, car parking operation and delivery of any other facility service.

Establishment on site

The construction company must demonstrate to the reasonable satisfaction of the superintendent that has established operational procedures that record:

- relevant location, plans, boundaries and titles to the site
- as built drawings
- of all relevant permits and approvals obtained by the construction company
- relevant to compliance with the law.

Training

The construction company must demonstrate to the reasonable satisfaction of the superintendent that it has undertaken:

- The necessary training of hospital employees, personnel and/or contractors and are familiar with:
  - layout of the site and facility
  - operation and use of equipment relevant to the delivery of the hospital functions, as appropriate for their intended duties
  - safety and security procedures.
- Appropriate personnel and systems are ready and able to deliver the facility services helpdesk.

Occupancy permit

The construction company must obtain an occupancy permit and provide this to the superintendent, along with copies of all relevant test results and compliance certificates.

Fire drills

The construction company must conduct code red and code orange fire drills by calling a mock fire.

The construction company must demonstrate to the reasonable satisfaction of the superintendent and the Metropolitan Fire Brigade (MFB) or Country Fire Authority (CFA) that:

- Adequate and appropriate fire evacuation and emergency procedures have been implemented for the facility. These procedures are to be contained in the policy and procedures manual.
- Construction company associates and hospital employees have received adequate and appropriate training in fire evacuation and emergency procedures.
- Fire protection system manuals are available.
- Location plans of hazchem materials and agents stored on the site are available and readily accessible to the fire brigade.

Final clean

Not less than 30 business days before the construction company proposes to commence commissioning the construction company must submit to
the superintendent a schedule that:

- contains details of all operating suites and other sterile areas required to meet bacteriological standards of cleanliness
- describes a detailed and comprehensive methodology for cleaning the facility and site, including the program for cleaning.

Each area within the facility must be cleaned to an appropriate standard with regard to its intended purpose by the construction company to meet the approval of the superintendent. In particular, operating suites and other sterile areas (including air conditioning systems) must be cleaned to the highest standard and comply with the commissioning procedures and standards described in the United Kingdom, Hospital Infection Society (HIS) working party report on Microbiological Commissioning and Monitoring of Operating Theatre Suites of the 4th April 2002.

The construction company must demonstrate to the reasonable satisfaction of the superintendent and hospital that:

- an ‘infection control curtain’ in sterile areas has been established
- verification via samples of air and equipment suppliers that equipment air meets the appropriate standard of cleanliness for a hospital facility. Air purity samples must be provided.
- the final clean may be carried out progressively.

Record of commissioning

Within one month of the completion of commissioning according to the schedule and the relevant statutory requirement, Australian standard or planning and development guideline (PDG), the construction company must submit to the superintendent an updated version of the manual described above.

The updated manual is to record each test carried out during commissioning and must identify the testing criteria.

The updated manual is to include a description of all applicable standards, methodologies, data, test results, certificates and approvals.

Completion tests

The construction company must carry out and pass the tests described in the standard tests table following. All installations are to be tested to the standard prescribed by the relevant authority and / or Australian Standard and / or manufacturer’s recommendation, as detailed in the completion tests table.

Not less than 30 business days before the construction company proposes to commence the commissioning tests the construction company must provide to the superintendent for endorsement, a detailed schedule of all tests to be undertaken and details of how and when the construction company proposes to carry out the testing.

The schedule must include all tests described in the completion tests table and any relevant additional commissioning tests notified according to the relevant statutory requirement, Australian Standard or PDG, unless otherwise agreed in writing with the superintendent.

Following completion of the relevant tests, the construction company must verify with the superintendent the details of installation and the results of each completed test. The verification must be signed off by the:

- construction company or builder
- relevant consultant
- testing entity, e.g. relevant water authority
- relevant trade - installer
- relevant manufacturer(s) where applicable.

The verification must confirm that installation has been constructed according to the approved drawings and specifications. The builder and the relevant builder’s consultant(s) must sign off this part of the verification. The builder must confirm that the installation has been constructed according to the builder’s quality assurance program.

Tests and criteria for equipment

Introduction

The construction company must carry out and pass the tests and satisfy the criteria described in this appendix.

The tests and criteria table details the tests and criteria for the equipment related to the commissioning activities following:

- calibration and / or biomedical approvals
- medical equipment
- non-medical equipment
- category 2 scheduled equipment
- equipment compliance
- equipment testing and personnel.

Not less than 30 business days before the construction company proposes to commence the commissioning tests and the construction company must provide to the superintendent a detailed schedule of all tests to be undertaken and the methodology for testing. This schedule must include (as a minimum) all tests described in the tests and criteria - equipment table (table), which forms part of this appendix and any relevant statutory
Following completion of the relevant tests, the construction company must provide verification to the superintendent that confirms that testing has been completed, records each test and the results of each test. The construction company, the builder and the testing entity must sign off the verification.

The table also details the identity of the testing entity conducting the tests.

Not less than 30 business days before the construction company must submit to the superintendent a schedule, which contains the following information:

- a list that identifies the location in the facility (on a room by room basis) of each item of equipment requiring calibration and/or biomedical tests in order to function (including tag number of each item)
- calibration test benchmarks and manufacturer’s calibration requirements (including any calibration biomedical manuals, tests and standards) for each item of equipment
- calibration biomedical certificates issued by testing entities (biomedical engineer, anaesthetist, supplier, installer, maintenance engineer or as appropriate).

### Tests and criteria - equipment

<table>
<thead>
<tr>
<th>Commissioning activity</th>
<th>Operational commissioning test</th>
</tr>
</thead>
<tbody>
<tr>
<td>All equipment requiring calibration and/or biomedical testing approvals, should be listed and details of testing supplied to the superintendent, including but not limited to:</td>
<td></td>
</tr>
<tr>
<td>- commissioning and calibration requirements including any calibration manuals, tests and standards</td>
<td></td>
</tr>
<tr>
<td>- manufacturer’s commissioning and calibration or biomedical testing requirements including any calibration manuals, tests and standards</td>
<td></td>
</tr>
</tbody>
</table>

Relevant calibration or biomedical test benchmarks:

- all equipment, which is to be tagged to demonstrate calibration and/or biomedical testing
- the tag number for each item of equipment.

Medical equipment that needs to be biomedically certified should be available, appropriate for intended use, installed and in working condition.

This equipment may include the following items:

- monitors
- ventilators
- image intensifiers
- infusion pumps.

Fixed equipment may include:

- theatre pendant and lights
- radiology equipment.

Non-medical equipment

Non-medical equipment (not requiring biomedical testing or calibration) should be available, appropriate for intended use, installed and in working condition.

Category 2 scheduled equipment

Category 2 scheduled equipment should be available, appropriate for intended use, installed and in working condition.

All equipment and goods purchased should conform to the following standards:

- Australian Code of Goods Manufacturing Practice
- Therapeutic Goods Act
- Australian standards

Equipment compliance

- occupational health and safety
- plant regulations
- any other code, law or regulation that applies to equipment purchases.

Construction company shall provide the superintendent with an equipment compliance statement detailing all equipment and its compliance with the required standards.

Equipment checking must be conducted by appropriately qualified persons, as follows:

- electrical acceptance testing (all patient equipment) by a practicing Independent biomedical engineer
- performance testing (all essential patient equipment, e.g. syringe pumps, infusion pumps, ventilators) by a biomedical engineer
- area testing (operating theatres, HDU, nursery) by a practicing biomedical engineer
Testing entity

- calibration and acceptance testing (Medical gases, anaesthetic, televisions, security systems, gas outlets) by a biomedical engineer or anaesthetist as applicable
- noise testing (kitchens, workstations) by ergonomist or equivalent
- computer systems testing by ICT supplier, installer or maintenance engineer
- temperature testing (boiling water units, A/C plant) by supplier, installer, maintenance engineer as applicable
- radiology equipment calibration and plant assessment by supplier / installer, performance testing by a person qualified to undertake an independent assessment of the design and siting of radiology equipment and shielding in accordance with the Health Act 1958 - Division 2AA Radiation Safety and the Health (Radiation Safety) Regulations 1994
- plant assessment of those items that have not been formally assessed by supplier according to plant regulations.

Asset register


Construction company has developed an asset register in a format that contains the required information.

The construction company shall comply with the requirements as identified in the draft guidelines with respect to the provision and reporting requirements of essential service infrastructure for Victorian public hospitals.