

USING DESIGN AND INSTALL SERVICES WORKSECTIONS

INTRODUCTION

NATSPEC provides design and install worksections for mechanical, electrical, hydraulic and fire services. These worksections are intended for use by architects and other designers without input from specialist services consultants, with the services design being completed by the contractor using NCC Deemed-to-Satisfy requirements. This TECHnote describes the use of these worksections and their limitations.

These design and install worksections are NOT suitable for use by specialist services consultants who should use the full services worksections including relevant Optional text. See *TR 03 Specifying design and construct for mechanical services* for information on using other NATSPEC worksections to document design and construct projects.

INTENDED PROJECTS

Architects using the design and install worksections should consider their suitability for the intended project and services installation. The following may be used as guidance for the type of project and installation:

- Low-rise commercial.
- Simple industrial such as factory-warehouse with attached office showroom.
- Medium density residential (townhouses and apartments up to 3-4 storeys).
- Pre-school/childcare centres.
- Single residences.

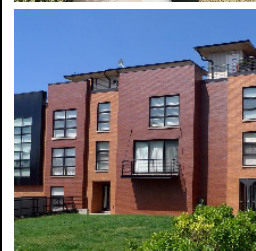
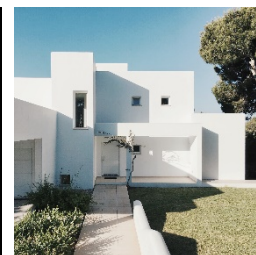
The design and install worksections are not intended for more complex projects such as:

- High rise commercial.
- Health.
- Educational.
- Large shopping malls.
- Sports.
- Complex industrial projects.
- Apartments over 4 stories.
- Demolition, modification of, or extensions to existing services.
- Office fitout.
- Services with complex requirements such as specialised air conditioning, central plant or trade waste.

LIABILITY

By using a design and install worksection, the specifier (usually an architect) takes on the responsibilities of specialist services consultants. As these worksections cannot cover all possible projects or situations, specifiers need to be aware of the limitations of the approach and their own limitations and responsibilities. They should consider their professional and public liability when there is no specialist consultant and whether their professional liability insurance provides appropriate cover.

When transferring responsibility to the contractor, specifiers should be sure that the contractor has all relevant design and safety information and relevant insurance.



DESCRIPTIONS

Mechanical services

Applicable to ducted and non-ducted packaged air conditioning, and simple ventilation systems such as toilet exhaust and car park ventilation.

Hydraulic services

Applicable to sanitary fixtures, tapware, water heaters, tanks used in hydraulic services, stormwater, wastewater, cold and heated water, and rainwater storage.

Electrical services

Applicable to low voltage power systems, power generation – photovoltaic, switchboards – proprietary, switchboard components, lighting, telecommunications cabling, television distribution systems, emergency evacuation lighting, and electronic security and access control.

Fire services

Applicable to active and passive fire protection systems: hydrants, hose reels, sprinklers, fire detection and alarms, and emergency warning intercommunication systems.

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SPECIFICATION ISSUES

It is recommended that specifiers using the design and install worksections:

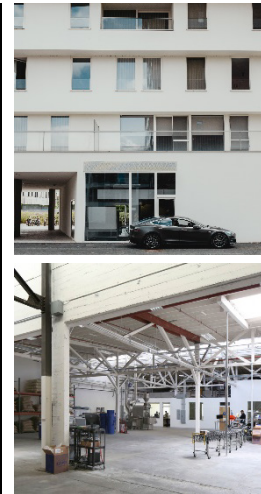
- Consider the complexity of the services installation. If the respective design and install worksection does not cover the intended work, it is an indication that a specialist services consultant should be engaged to provide documentation based on appropriate worksections from NATSPEC SERVICES.
- Consider NCC and other statutory requirements.
- Consider Work Health and Safety requirements. For example, will the proposed plant locations meet statutory access provisions?
- Make sure that all relevant information is made available at the time of tendering.
- Require that the design be undertaken by people with suitable qualifications and experience.
- Require the contractor to provide certification on completion that the design and installation has been carried out in conformance with all statutory and contractual requirements. Even so, this may not necessarily prove that the installation does, in fact, conform. For example, commercial pressures may mean that the design is carried out by a drafter or CAD operator who is unaware of all the statutory requirements, particularly in relation to issues such as Work Health and Safety. Contract administrators should satisfy themselves that the design has been carried out by competent persons.

COMPLETING SCHEDULES IN DESIGN AND INSTALL WORKSECTIONS

The NATSPEC design and install worksections require input of only project specific information which the architect can be reasonably expected to know. Engineering matters are dealt with in default text and not intended to be modified by the architect. Although schedules are provided, much of the information in the schedules could instead be shown on the drawings. Consult the **Documenting this and related work** guidance at the beginning of each design and install worksection for a summary of items that need to be documented for a complete specification.

Examples of information to be provided by the architect include:

- Details of any constraints on the services such as DA conditions and site restrictions.
- List of samples required.
- Spaces to be air conditioned and the type of system e.g. split system or ducted.
- Location and selection details of appliances.
- Location of mechanical plant.
- Details of selected sanitary fixtures and tapware. The shell worksections 0811s *Sanitary fixtures* and 0812s *Tapware* schedules may be used in conjunction with 0802 *Hydraulic design and install* to identify details to be included. If using the shell worksections delete the corresponding schedules from 0802 *Hydraulic design and install*.
- Type of water heating and location e.g. gas instantaneous, solar.
- Rainwater collection system requirements, if any, e.g. location of tank.
- LPG storage requirements, if any, including location.
- Location of electrical switchboard, distribution boards and metering.
- Location of electrical outlets and permanently connected equipment.
- Location and type of lighting.
- Type of electrical accessories e.g. socket outlets, light switch plates and face plates.
- A summary of fire services required.
- Location of hose reels.
- Location of fire services plant and controls.



Relevant worksections

- 0702 *Mechanical design and install*
- 0802 *Hydraulic design and install*
- 0811s *Sanitary fixtures*
- 0812s *Tapware*
- 0902 *Electrical design and install*
- 1002 *Fire services design and install*

Relevant documents

NATSPEC TECHreport
TR 03 *Specifying design and construct for mechanical services*

Extract from
Architects' liability,
Acumen, Australian
Institute of Architects'
practice advisory
subscription service.

'Architectural practice is complex and requires a degree of skill and diligence much higher than many occupations. It therefore provides many opportunities for mistakes that may lead to liability. Extreme care needs to be taken to only provide services within your expertise. This does not mean your own or your colleagues' view of your skills but the ordinarily accepted skills of an architect, for which professional-indemnity insurance (PI) can be obtained.'