



Jcw Drafting Pty. Ltd. Capabilities Statement



**Fire Protection
Association Australia**
Life. Property. Environment.

FPA license: 62381
Classes: Fire System Design
NSW jurisdiction:
Fire hydrant and hose reel
design - advanced (lvl 3)
Fire sprinkler systems design
-specialist (lvl 4)



QBCC license no. 15263954
License class: Water-based
Fire System-Design



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Member no.
0619QI

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Definitions as per AS 4587, NFPA 120, AS 2118.1, FM 2-0, NCC 2022

Some Abbreviations are used in this document to improve efficiency when reading. A general list is provided below for the less commonly known abbreviations.

Shall

- Indicates that a statement is mandatory or a legal requirement.

Listing

- Report or statement confirming that equipment, materials or services are listed and the conditions and limitations under which it was listed with regard to but not limited to hazard, fuel, operating parameters, environment, risk dimensions, agent attributes and system capacity.

May

- Indicates the existence of an option

Listed

- Equipment, materials, or services included in a list published by an organization, (the listing authority), that is acceptable to the relevant authority and concerned with the evaluation of products or services, and which maintains periodic inspection of production or listed equipment or materials or periodic evaluation of services and whose listing states that either the equipment or materials, or service meets appropriate designated standards or has been tested and found suitable for a specified purpose.
- Note 1 to entry: Examples of recognized testing and approval bodies are organizations accredited by JAS-ANZ, CSIRO Actifire, Factory Mutual (FM), Loss prevention Certification board (LPCB), SP Technical research institute of Sweden, Underwriters Laboratories (UL), and Verband der Schadenverhütung (VdS).
- Note 2 to entry: A manufacturer's statement of conformance does not by itself confirm that a system has been listed. The relevant authority should seek evidence of conformity to demonstrate that the system has been independently verified as being appropriate for the intended application. (AS 4587, section 3.19).

Should

- Indicates a recommendation

Automatic

- Performing a function without the necessity of human intervention.

NCC

- National Construction Code of Australia

Permissible Equipment

- A completely assembled machine or accessory for which formal approval has been issued, allowing operation in a potentially explosive methane and air-mixture environment.

Building or structure

Deemed-to-Satisfy Solution

- A solution that complies with the Deemed-to-Satisfy Provisions is deemed to have met the Performance Requirements.
- A Deemed-to-Satisfy Solution can show compliance with the Deemed-to-Satisfy Provisions through one or more of the following Assessment Methods:
 - o Evidence of suitability in accordance with Part A5 that shows the use of a material, product, plumbing and drainage product, form of construction or design meets a Deemed-to-Satisfy Provision.
 - o Expert Judgement.

QBCC

- Queensland Building and Construction Commission

AS

- Australian Standards

RPEQ

- Registered Professional Engineer of Queensland

BCA

- The Building Code of Australia

NFPA

- National Fire Protection Association of America

FM

- Factory Mutual American Insurance Association

About us

"Small but highly skilled, niche but revolutionary, striving to make dreams a reality while implementing sustainability, materials analysis and professional engineering practice."

At Jcw Drafting, we take a collaborative approach to our projects. We work closely with our clients to understand their needs and develop solutions that meet their specific requirements. We are passionate about delivering exceptional results that exceed our client's expectations. With over 20 years of experience in the engineering and professional engineering services industry, we have a deep understanding of the challenges our clients face.

Some of the industries include mining, civil construction, structural consulting, Commercial and industrial fabrication, Marine, Aeronautical, Agricultural, Water Treatment and wastewater treatment, Health and NDIS Services.

Dedication to Community and Learning

As a Local Mackay Company, Jcw Drafting are dedicated to providing for the mining, manufacturing, food and agricultural sectors. We take pride in our ability to tailor projects to our client's unique needs.

Jcw Drafting are also dedicated to providing support for future generations and interested parties. Repairing 3D printing equipment and providing products for the local university, Cq university, community groups such as Makerspace, Mackay Musical Comedy Players and more.

Skilled Professionals

At Jcw Drafting, our team of skilled professionals are the backbone of our success, bringing a wealth of knowledge and expertise to every project. Comprising Engineers, experienced drafters, and fire protection specialists, our diverse group is dedicated to designing effective and innovative fire system solutions.

Each member is committed to continuous learning and staying updated on the latest industry standards and technologies, ensuring that our clients receive the highest level of service and expertise. Through collaboration and a shared passion for excellence, the talented professionals at Jcw Drafting work diligently to create systems that not only meet regulatory requirements but also exceed client expectations in safety and reliability.

Innovative Solutions

At Jcw Drafting, innovative additive manufacturing solutions are at the core of our design and production processes, revolutionizing the way we approach fire system components and other advanced manufacturing projects. By utilizing cutting-edge 3D printing technologies, we can create complex geometries and customized parts with unparalleled precision and efficiency. This approach not only reduces material waste but also accelerates the production timeline, allowing us to respond quickly to client needs.

Our additive manufacturing capabilities enable us to experiment with advanced materials and designs, pushing the boundaries of what is possible. At Jcw Drafting, we are committed to harnessing the power of additive manufacturing to deliver high-quality, tailored solutions that enhance safety and performance for our clients.

What we Offer

- Design & Manufacture of Composite plastic components to a maximum size of 800x800x1000 using the following materials:
 - o PLA (Poly Lactic Acid)
 - o PETG (polyethylene terephthalate glycol-modified)
 - o ABS (Acrylonitrile Butadiene Styrene)
 - o ASA (Acrylonitrile Styrene Acrylate)
 - o PA6 Nylons (Polyamide 6 or Nylon 6)
 - o PA12 Nylons (Polyamide 12 or Nylon 12)
 - o PP (Poly Propylene)
 - o LDPE (Low Density polyethylene)
 - o HDPE (High Density polyethylene)
 - o HIPS (High impact polystyrene)
 - o TPU (thermoplastic Polyurethane)
 - o TPE (thermoplastic Polyethylene)
 - o PVB (polyvinyl butyral)
 - o PVA (PVOH) (polyvinyl Alcohol)
 - o PPA (Polyphthalamide)
 - o PPS (Polyphenylene Sulfide)
 - o PC (Poly Carbonate)
 - o PEEK Polyetheretherketone)
 - o PEI Ultem (Polyetherimide Ultem)
 - o All carbon and glass fiber filaments
 - o All forms of Polyurethane (PU) UV actuated Resins.
- QBCC form 15 Design of Water Based fire systems, fire pumps, Tanks, Control systems, hydrants, deluge systems for Commercial, Industrial, Residential and Mining Structures.
- Engineering Computations for Design services, Pressure and flows. Computational Fluid Dynamics for components
- Design & Manufacture of Atomic Diffusion 3D printed Metals, currently to a maximum size of 75id x 250mm. Tested to appropriate Australian standards with published International ISO standard values.
- Design & Manufacture of Stereolithography Resin components.
- Design & Manufacture of BioMed Biocompatible rigid resin components.
- Development of Thermoplastic material solutions. Sugar based PLA, Material Binder compound.
- 3D and 2D modeling includes products in the following disciplines:
 - o Electrical drafted design.
 - o Electrical schematics.
 - o Civil Engineering drafted design.
 - o Pipe and instrumentation diagrams.
 - o Building and construction drafted design.
 - o Mechanical drafted design.
 - o Injection molding design and drawing sets.
 - o Highly detailed shop, manufacture and installation drawing sets
 - o Force analysis drawing sets and report summaries.
 - o Site layout and fire protection services layouts.
 - o Escape route drawing sets for building health and safety.
 - o Animated product sets that could be used for sales material, smoke path analysis, video game resources and much more.
- Volumetric Rendered Data to CAD FEA analysis, Computational Fluid Dynamics.
- Photo-Lithography creation, converting signage, photos etc to tactile 3D printed signs and artwork.
- RPEQ certification through a third party.
- Certification for materials testing through a third-party NATA listed Lab.
- Firmware coding and design using C++, python and Arduino ide prototyping scripts.
- HMI TFT coding specialising in Nexion and TJC screens.
- Big Tree Tech, (Biqu), component firmware programing and integration.
- Proudly redistributing Australian made resins from Monocure, filaments from Fortis Filaments and High performance filaments from the United States with Polymaker.

Engineering Standards & Specifications

Jcw Drafting and its contracts can supply services in compliance with Australian and International Standards including but not limited to the following:

- MDG 1032:2010 – guideline for the prevention, early detection and suppression of fires in coal mines.
- AS 4587:2020 – Water mist fire protection systems - system design, installation and commissioning.
- AS 2118:2017 – Automatic fire Sprinkler systems
- AS 4118:2013 – Fire Sprinkler System Piping.
- NCC 2022 – Volume One – specification 17 – Fire Sprinkler Systems
- AS 2941-2013 – Fixed fire protection installations – pump set systems.
- NFPA 13:2022 – Standard for the installation of Sprinkler Systems
- NFPA 14:2022 – Standard for the Installation of Standpipe and Hose systems
- NFPA 15:2022 – Standard for Water Spray Fixed Systems for fire protection
- NFPA 120:2023 – Standard for fire prevention and control in coal mines
- NFPA 122: 2023 – Standard for fire prevention and control in Metal/Nonmetal Mining and Metal mineral processing facilities.
- FM data sheet 2-0 – Installation guidelines for automatic sprinklers
- FM data sheet 3-0 – Hydraulics of fire protection systems
- FM data sheet 3-2 – Water tanks for fire protection
- FM data sheet 3-7 – Fire protection pumps
- BMA-STD-0011:2022 Asset Integrity Fixed Firefighting facilities standard.
- BRM-MAN-0019:2023 Fire protection Facilities Design & operations manual.
- PC-SAH-STD-S009:2019 Standard for fire & related Explosion Protection.
- CV0106:2023 Material handling System technical Specification
- AA TS 402 003: 2020 Fire Prevention Specification.
- ISO 13485 Quality Management Systems for Medical Devices
- ISO 17295:2023 Additive manufacturing General Principles part 1
- ISO 17296:2015 Additive Manufacturing General Principles part 2
- ISO/ASTM 52901 Additive Manufacturing Requirements for purchased AM parts
- ISO/ASTM 52916:2022 Manufacturing for Medical – data – Optimized medical image data
- ISO/ASTM 52920L2023 Qualification principles – requirements for industrial additive manufacturing processes and production sites.
- AS 4041-2006 pressure piping.
- AS 300:2018 Electrical Installations, “Wiring Rules”
- AS 3010:2017 Electrical installations – Generating Sets
- AS 2417:2001 Rotodynamic pumps – hydraulic performance acceptance tests.
- AS 1428.1:2021 Design for access and mobility
- AS 2441-2005 Installation of fire hose reels.
- AS2304:2019 water storage tanks for fire protection systems
- AS 4118.1.5 components – Deluge and pre-action valves
- FM approval standard for automatic and open water – spray nozzles for installation in permanently piped systems.
- AS 1530.1 methods for fire tests on building materials, components and structures- combustibility test for materials.
- ISO 4498 – sintered metal materials, excluding hard metals – determination of apparent hardness and microhardness.
- AS 1319 – 1994 safety signs for the occupational environment.
- AS 1579-2001 arc welded steel pipes and fittings for water and wastewater.
- AS 2200-2006 design charts for water supply and sewerage.
- AS 3600-2009 reinforced concrete design.

Relevant Associations



FPA Australia



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Association Australia**
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design - advanced (lvl 3)
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- specialist (lvl 4)



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