

Candidate induction Check List

ABBE Level 5 Diploma in

Classification & Pre-Calculated Commercial Fire Sprinkler System Design (EXP Designer).

Candidate Name	
Company	
Course Date attended	

Overview of your qualification :

Qualification size and credit

This course relates to the classification of sprinkler systems and the design of pre-calculated commercial fire sprinkler systems in accordance with the LPC rules incl. BS EN 12845.

The size of the qualification can also be indicated by the terms; award, certificate or diploma. These terms reflect the size of the qualification rather than its difficulty.

The qualification levels indicate the complexity of the qualification.

- An Award indicates a small-sized qualification that has a TQT value of 120 hours or less
- A Certificate indicates a medium-sized qualification that has a TQT value in the range of 121-369
- A Diploma indicates a large-sized qualification that has a TQT value of 370 or more.

Course duration:

5 Days Virtual Classroom with coursework.

Followed by regular submission of formal course work to be completed and uploaded within 12months from the end of the Virtual Classroom.

Formal Coursework 'A'

Prepare a 1500-to-1600-word essay outlining the steps in preparing a specification for a High School sprinkler system. The essay is to refer to the authorities to be engaged and the considerations to be included, with note to the relevant clauses of The LPC Rules incorporating BSEN12845. (this document must be uploaded in Microsoft word).

Formal Coursework 'B'

- 1.0 Prepare an outline specification for a Multi-storey office block sprinkler system. The specification should detail the classification of each different area, in line with The LPC Rules incorporating BSEN12845.
- 2.0 Prepare an outline specification for a 16-metre-high storage warehouse sprinkler system. The specification should detail the classification of each different area in line with The LPC Rules incorporating BSEN12845.

Formal Coursework 'C'

Space the sprinkler on the provided AutoCAD drawing.

Formal Coursework 'D'

Size the pipework on the provided "Drawing D"

This involves sizing the ranges, Distribution and mains pipework downstream of the design points.

The pipework may need to be completed before any calculations are carried out

all pipework sized downstream of the control valve?

Formal Coursework 'E'

Submit a pre-calculated sprinkler design incorporating an Installation control valve, false ceiling protection, void protection and pressure loss calculations.

This must be a design carried out by yourself; it must be a full design that could be used to install an installation.

Formal Coursework 'F'

Submit a pre-calculated sprinkler design incorporating water supplies (inc, storage tank, electric & diesel pumps, below ground mains), Installation control valve, sprinkler installation and pressure loss calculations.

This must be a design carried out by yourself incorporating a Diesel and Electric pumphouse, prepackage pump houses are NOT permitted, the pumphouse must be completed by yourself.

Formal Coursework 'G'

Submit a simple P&ID for the previous design exercise. To include a pipework, electrical power and detailed monitoring schematic.

Your Assessor requires 4 -6 weeks to assess your work, Therefore we require your work to be uploaded in the timescales, if your submission is late you will not be given a chance to resubmit your work, if you submit your work within the time scales, you will have 4 weeks to resubmit your work on the assessors comments, you only get one chance to resubmit your work, if your work falls short of the minimal requirements you will need to retake the course.

Formal Coursework 'H'

Technical interview will be carried out on one of the designs submitted, This will be by invitation once coursework F & G have been submitted and marked as passed.

Formal Coursework 'J'

Carry out an in-person exam under exam conditions and to be taken either East Kilbride or the BRE offices in Garston.

The exam is split into 6 sections

- Section 1 - Sprinkler Installation Design Principles.
- Section 2 - Sprinkler Head Types and Uses.
- Section 3 - Installation Control Valve Types and Uses.
- Section 4 - Sprinkler Head Spacing and Location.
- Section 5 - Pre-Calculated Method of Pipe Sizing
- Section 6 - Water Supply Requirements

For more details please refer to Annex 'A' of this document.

Exam Resits - To be completed within 18 months of the start of the course resit results will be uploaded to your learning portal within 4 weeks of taking the exam.

No qualification certification can be awarded for partial completion.

This qualification covers:

- Classification of sprinkler systems in accordance with LPC Rules inc BS EN 12845.
- Design of Sprinkler systems using pre calculated methods

The qualification consists of:

- Unit 1 - Understanding Sprinkler Systems
- Unit 2 - System Classification
- Unit 3 - Sprinkler Head Spacing
- Unit 4 - Pipework Sizing
- Unit 5 - Water supply Design

This course relates to the classification and design of pre-calculated fire sprinkler system's in accordance with the LPC Rules inc BS EN 12845. The course aim is to address the knowledge and skills required to classify and design a precalculated sprinkler system.

Successful completion of the programme will require :

- Attend 5 days during the virtual classroom
- Completion of the 7off formal course work.
- Sit and Pass the Exam
- Attend a Technical interview (Which will be recorded)

Note : Candidates who miss any of the days from the virtual classroom will need to catch up in their own time, the classroom is not recorded, only guidance can be given through the monthly "open forums" that are available for 12 months from the start of the course.

Methods of assessment : Continuous Assessment including:

- Participation in the virtual classroom, course theory and discussions sessions including sharing of experience, questioning and feedback.
- Completion of assessment at the end of each section of the course
- The candidate will have to submit the formal coursework onto the Bafsa Portal.
- Exam (as detailed in Annex 'A')
- Carry out a Technical Interview.

Your Tutor does not check your work, this is carried out by an independent assessor, one in every 5 assessments are verified by a second assessor, on occasion we may have your work assessed by a third assessor if your submission is not clear.

You may not get feedback if you pass the minimal requirements, however you will get feedback if you fall short of the minimal requirements.

We will endeavour to check your work as it is submitted, your assessor will need between 4-6 weeks to check your work for each submission.

Therefore we require your work to be uploaded in the timescales, if your submission is late, you will not be given a chance to resubmit your work, if you submit your work on the above within the time scales, you will have 4 weeks to resubmit your work on the tutors comments, you only get one chance to resubmit your work, if your work falls short of the minimal requirements you will need to retake the course.

Course Pass criteria

- Attend 5 days of the virtual classroom
- Pass mark for the formal assessments : 70%.
- Pass the Exam : 70%
- Attend a Technical Interview.

Post-Course Video Evidence (Mandatory) must be uploaded via BAFSA E-portal

Formal Coursework "A" Essay	- To be uploaded within 2 months of the start of the course
Formal Coursework "B" Specification	- To be uploaded within 3 months of the start of the course
Formal Coursework "C" Head Spacing	- To be uploaded within 4 months of the start of the course
Formal Coursework "D" Pipework Sizing	- To be uploaded within 5 months of the start of the course
Formal Coursework "E" Design Submission	- To be uploaded within 7 months of the start of the course
Formal Coursework "F" Design Submission	- To be uploaded within 9 months of the start of the course
Formal Coursework "G" P&ID Drawing	- To be uploaded within 11 months of the start of the course
Formal Coursework "H" Technical Interview	- You shall be invited Once the coursework is complete
Formal Coursework "J" Exam	- To be uploaded within 18 months of the start of the course

Failure to Submit the work within the timescales may affect your ability to successfully complete the course.

Role of the staff team: Course Manager, Course Tutor, Assessor, Internal Verifier, Administrator, BAFSA

Course Manager: Alan Crichton

- Oversees quality assurance.
- Issues deadlines.
- Manages certification approval.

Tutor:

- Delivers the In Person course.

Assessor :

- Marks coursework.
- Provides Feedback

Centre Co-Ordinator :

- Allocates Assessor
- Will Chase candidates who don't upload coursework in time.

Internal Verifier:

- Samples 20% of submissions.
- Ensures marking consistency.

BAFSA:

Manages e-portal and CRM system providing a platform for evidence submission storage and recording training activity, Manages booking, enrolment, extension and course queries through the e-portal.

Please contact BAFSA using the 'Get in Touch' button on the Home Page of the e-portal with any query or request you may have concerning your programme.

Support & Support and Guidance

Guidance from your Tutor:

You will be invited to a monthly “Open Forum” for 1 hour per month where you can ask questions for technical queries and guidance, this will last for 12 months from the start of the course.

Guidance from your Assessor:

Once your assessor has marked your work and provided feed back contact can be arranged for any questions.

Please contact BAFSA using the ‘Get in Touch’ button on the Home Page of the e-portal with any query or request you may have concerning your programme.

British Fire Sprinkler Association

Enrolment

You have enrolled on this course via BAFSA (British Automatic Fire Sprinkler Association).

Your course is delivered and assessed by the Fire Systems Academy (a BAFSA Preferred Provider) BAFSA does not have any active part in delivery of assessment.

Who do you contact if you need a programme extension ?

Extensions to programmes are considered on an individual basis. Your training activity/record will be considered along with your request. Please contact BAFSA using the ‘Get in Touch’ button on the Home Page of the e-portal with your request. Your Course Manager and Assessor will be involved in any final decision. You will be notified in writing of any change agreed to your programme end date.

BAFSA e-learning portal

The BAFSA eLearning portal (<https://training.bafsa.org.uk/>) is an online platform for training, qualification, and CPD (Continuing Professional Development) in fire sprinkler systems. It provides both members and non-members with access to interactive, industry-specific courses—including free awareness training and paid, accredited qualifications—that can be completed at the learner's own pace.

Key features and details include:

Accessibility: The portal is available 24/7, with content designed for individuals working in the industry or seeking to enter it.

Registration: Users must register individually with a personal email address to access content.

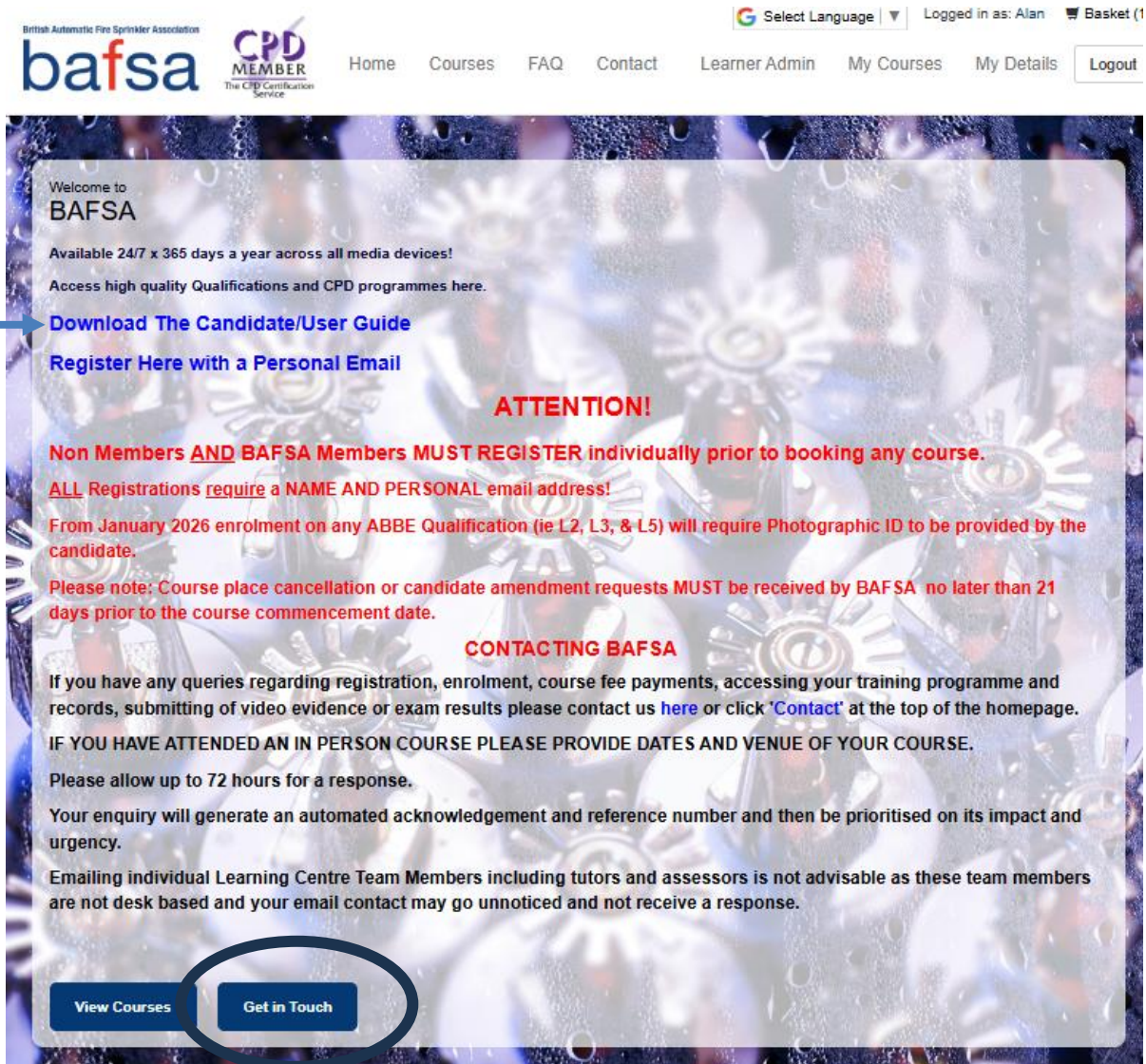
Support: The platform serves as a hub for tutors and candidates to manage their learning journeys.

How do I access the e-learning portal ?

[BAFSA - eLearning Platform](#)

Guidance on how to use the Learning Portal to upload the course work

[BAFSA Portal User Guide July 2025 Version Portal & Candidate Management.pdf](#)



British Automatic Fire Sprinkler Association

bafsa CPD MEMBER The CPD Certification Service

Home Courses FAQ Contact Learner Admin My Courses My Details Logout

Select Language | Logged in as: Alan | Basket (1)

Welcome to
BAFSA

Available 24/7 x 365 days a year across all media devices!
Access high quality Qualifications and CPD programmes here.

[Download The Candidate/User Guide](#)
[Register Here with a Personal Email](#)

ATTENTION!

Non Members AND BAFSA Members MUST REGISTER individually prior to booking any course.
ALL Registrations require a NAME AND PERSONAL email address!
From January 2026 enrolment on any ABBE Qualification (ie L2, L3, & L5) will require Photographic ID to be provided by the candidate.
Please note: Course place cancellation or candidate amendment requests **MUST** be received by BAFSA no later than 21 days prior to the course commencement date.

CONTACTING BAFSA

If you have any queries regarding registration, enrolment, course fee payments, accessing your training programme and records, submitting of video evidence or exam results please contact us [here](#) or click 'Contact' at the top of the homepage.
IF YOU HAVE ATTENDED AN IN PERSON COURSE PLEASE PROVIDE DATES AND VENUE OF YOUR COURSE.
Please allow up to 72 hours for a response.
Your enquiry will generate an automated acknowledgement and reference number and then be prioritised on its impact and urgency.
Emailing individual Learning Centre Team Members including tutors and assessors is not advisable as these team members are not desk based and your email contact may go unnoticed and not receive a response.

[View Courses](#) [Get in Touch](#)

What if I forget my password ?

Contact BAFSA using the 'Get in Touch' button on the e-portal home page
A new password will be generated and sent to you.

Your course book and workbooks

You will receive a link providing access to your electronic workbook.

If you would prefer a hard copy these can be purchased through the Fire systems Academy's Shop

<https://www.firesystemsacademy.co.uk/product-category/workbooks/>

If any materials are missing, notify the administrator immediately.

Material you require for the course

You must have access to:

- LPC Rules inc BS EN 12845.
- Up to date LPC Technical Bulletins.
- A Good Internet Connection
- A Quiet Space to Learn
- a scientific Calculator (not an iPhone)

Computer programmes required to complete the Course.

You must have:

- Microsoft Word or equivalent.
- Excel or equivalent.
- AutoCAD or drawing program.
- Web cam which must be on at all time during the virtual classroom.
- Stable internet connection (minimum recommended 10 Mbps).

Progress reviews (Monthly)

- A monthly reminder email will be provided.
- Candidates must demonstrate progress by meeting the post course work submission dates.
- Extension requests must be submitted via BAFSA E-portal before programme 4 weeks before the deadline.

<https://training.bafsa.org.uk/home.aspx>

Please contact BAFSA using the 'Get in Touch' button on the Home Page of the e-portal with any query or request you may have concerning your programme.

Individual assessment arrangements

If you require additional time, accessibility adjustments, alternative submission format, or technical assistance, you must notify the Centre Coordinator as early as possible.

Reasonable adjustments will be applied where appropriate.

Methods of assessment we will use

Your course work will be assessed by your allocated assessor

Written feedback will be issued via BAFSA e-portal

If elements are below standard, only failed sections require resubmission.

Resubmission deadline: 4 weeks from feedback.

Further reassessment beyond this may require re-enrolment.

Opportunity for you to provide feedback

Candidates may provide feedback at course completion, during submission period, or following certification via email or via BAFSA Course Evaluation Questionnaire issued automatically following course completion

Making a complaint and Assessment Appeals

The Fire Systems Academy and BAFSA have written individual Complaints & Appeals Policy

In the first instance you must talk with your Course Manager – Alan Crichton
Early discussion is advised.

If you need to raise a formal complaint then you must follow the Fire Sprinkler Academy Complaints & Appeals Policy or BAFSA Complaints & Appeals Policy (available from the BAFSA eportal).

Fire systems academy's policies can be issued on request.

Ensuring the authenticity of your work and malpractice procedures

You must confirm that all submitted work are your own.

The following are prohibited:

- Using coursework completed by others.
- using companies standard pump house or containerised pumphouse drawings.
- Using AI to Generate Answers
- Recording virtual classroom sessions.
- Copying course workbook content.

Malpractice may result in fail outcome, removal from programme, employer notification, or certification withdrawal.

Data management including General Data Protection Regulations (GDPR)

All personal data is stored securely and retained for 3 years (assessment records) on the BAFSA e-portal.

Technical Interview Videos retained for 12 months.

Processed in accordance with UK GDPR and you may request access to your data at any time.

Do you understand the requirement of the Formal Course submissions

Formal Coursework "A"	Essay	- To be uploaded within 2 months of the start of the course
Formal Coursework "B"	Specification	- To be uploaded within 3 months of the start of the course
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Formal Coursework "H"	Technical Interview	- You shall be invited Once the coursework is complete
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All evidence is to be provided within the timescales provided.

I also understand that the workbook shall not be copied or at any point.

Any online courses may be recorded at any time by Bafsa or the Fire systems academy.

All Course materials are copyright protected.

Workbook may not be copied or distributed.

Virtual classroom may not be recorded.

Screenshots may not be taken.

Materials may not be shared with third parties.

Breach may result in removal from course and potential legal action.

Candidate Declaration

I confirm that I have received, read, and understood the Candidate Induction Guidance Document and the requirements outlined within it.

I understand the assessment requirements, submission deadlines, authenticity requirements, and malpractice policies.

Candidate Name : _____

Candidate Company: _____

Signature : _____

Date : _____

Annex 'A'

Bafsa unit 3 – Final Exam

Delivered and Assessed by the Fire systems academy

Unit 3 – Classification and Pre calculated system design.

This Exam is one of the formal assessments on the course, once you pass this exam and have completed all of the required course work a completion certificate will be issued through Abbe as a national award.

The components of the examination are clearly stated within this prospectus, and the standards required are necessarily high, but consistent with a thorough understanding of the design and basic calculation and construction of a sprinkler system designed using pre-calculated design principles with water supplies.

The qualification is awarded to the individual designer.

The candidate must demonstrate that they have a good understanding of the LPC Sprinkler Rules (BS EN 12845) applicable to pre-calculated designs and water supplies by demonstrating an ability to perform certain key tasks accurately.

The design of sprinkler protection to Light Hazard is not covered in this exam as this type of protection is rarely used.

The candidate may bring the following into the exam.

A candidate may bring into the examination a hard copy of the current LPC Rules for Automatic Sprinkler Installations.

The Rules can have bookmarks and annotations. However, the annotations must not include training material, calculation formulae or worked examples.

No extra pages are permitted to be added to the Rules.

Blank hydraulic calculation sheets, which do not guide the calculation process, may also be brought into the examination room and used by the candidate.

The candidate must bring with them a pen or pencil, ruler and calculator (not part of a phone).

The Fire Systems academy reserve the right to disqualify any candidate found to be employing unfair practices or bringing into the examination room any additional material deemed to be unfair or communicating or colluding with others during the examination.

EXAM SCOPE

1. PRINCIPALS OF SPRINKLER INSTALLATION DESIGN.

Determination of hazard classes: understanding of design density, assumed maximum areas of operation, categorisation of storage, storage arrangements and height limitations.

2. SPRINKLER HEAD TYPES AND USES.

Selection for use within relevant hazards with respect to types, size, temperature rating and sensitivity.

3. INSTALLATION CONTROL VALVES TYPES AND USES.

Selection and limitations of suitable types: principles of operation, testing requirements.

4. SPRINKLER HEAD SPACING AND LOCATION.

Spacing limitations of standard and sidewall types for various hazards, building Construction's, boundaries, obstructions and requirements for concealed spaces.

5. PRE-CALCULATED METHOD OF PIPE SIZING.

Definitions of range and distribution pipes, the use of pipe sizing tables for light, ordinary and high hazards, design point location, principles of static gain and basic hydraulic calculation.

6. WATER SUPPLY REQUIREMENTS.

Suitable sources, reliability aspects, pre-calculated flow and pressure requirements for Ordinary Hazards, duration, and testing requirements at installation control valve locations.

Sections 1 to 4 shall be run from 09.30 till 12.30.

Sections 5 & 6 shall be run from 13.30 till 16.30.

If you Fail 1 section, you can resit that Section.

If you Fail 2 sections or more, you will need to resit the full exam.

You will only be allowed one resit.

1. PRINCIPALS OF SPRINKLER INSTALLATION DESIGN

SCOPE
Selection of suitable hazard classification for LH, OH and HHP
Understanding of design density and AMAO principles
Storage categories, listings, special hazards and material factor methodology
Storage methods, arrangements and height limitations
Determination of correct design density and AMAO

2. SPRINKLER HEAD TYPES AND USES.

SCOPE
Understanding of available sprinkler types and codes
Hydraulic flow/pressure characteristics associated with sprinkler heads
Selection of suitable sprinkler types for property and life safety applications
Temperature rating requirements
Selection and limitations with respect to thermal sensitivity
Limitations with respect to the use of sidewall sprinklers
Spares requirements for one or more installations

3. INSTALLATION CONTROL VALVES TYPES AND USES

SCOPE
Wet type definitions, use and limitations
Dry and TEAV, (SAV), type definitions, where permitted, limitations, accelerators and exhausters
Pre-action type definitions, use and limitations
Location and alarm facilities
Zoned installation requirements
Additional system measures to improve reliability and availability
Sprinkler system monitoring
Testing and commissioning facilities and requirements

4. SPRINKLER HEAD SPACING AND LOCATION

SCOPE
Maximum and minimum spacing limitations for LH, OH and HH applications
Distance below differing roof/ceiling types and construction, apex requirements
Obstruction by building elements such as beams, girders, trusses and columns
Permitted and not permitted lower obstructions such as ducting and open cell ceilings
Supplementary protection in roof, intermediate floor and concealed spaces

5. PRE-CALCULATED METHOD OF PIPE SIZING

SCOPE
Range, distribution, riser, and arm pipe definitions
Suitable pipe array layouts for pre-calculated installations
Understanding and the use of pipe sizing tables for LH, OH and HH applications
Design point location and distribution pipe hydraulic calculation sizing requirements
Understanding of static gain and relationship with pre-calculated water supply requirements when measured at an installation control valve 'C' gauge.
PRACTICAL EXERCISE of an Ordinary Hazard system to evaluate the delegate's ability to apply pipe sizing downstream of design points, hydraulic calculation of distribution pipe losses, interpretation of static gain and basic water supply requirements.

6. WATER SUPPLY REQUIREMENTS

SCOPE
Suitable sources of water supply
Understanding of single, superior and duplicate supply arrangements
Grades of Supply for insurance purposes
Suitable combinations of duplicate supplies
Duration of supply for LH, OH and HH
Town's main limitations including connections for other services
Required flow and pressure characteristics at installation control valve 'C' gauge
Interpretation and meaning of 'static head' requirements
Determination of flow and pressure requirements at source
'Off the shelf' fire pump selection
Sizing trunk mains between source and installation control valves
Pump start 'cut-in' pressure settings
Available tank types and suitability
Tank arrangements for superior and duplicate supplies
Determination of required capacity, full and reduced capacities
Full holding capacity filling criteria
Reduced capacity in-flow calculation and arrangements
Suction conditions and vortex prevention options
Suction pipe layouts, valves and sizing
Jockey pump arrangement.
Delivery pipe layout for multiple pumps,
Automatic pump start test assembly
Pump test return facility
Pump house environmental and location requirements.
Pump house protection