FLUCON

Engineering Flow

CHILLED & HOT WATER SOLUTIONS

Contracting | Industry | Flushing | Trading

Company Profile

CHILLED & HOT WATER

SOLUTIONS

Content

About FLUCON

Overview

Founded in 2016, FLUCON has established itself as a leader in the cooling industry, specializing in delivering end-to-end solutions for chilled and hot water systems. Through its dedicated business units, FLUCON excels in seamlessly managing projects from concept to completion, leveraging cutting-edge engineering and adhering to the highest international standards..

Vision

To be the pioneering company in serving district energy plants across the Middle East.

Mission

Construct and provide integrated solutions for district energy plants through design, supply, and build processes that adhere to the highest engineering standards.

Our Core Values

F Focus on Future with Freedom

L Lead Learning with Loyalty

U Understand the utilization of unity

C Commit to change with challenge

O Optimize the Opportunities.. be optimistic

N Now!

Cooling Solutions

FLUCON Speciality

Your Partner in Advanced Cooling and Infrastructure Solutions:

- **District Cooling Plants – DCP's:**

Our expertise in District Cooling Plants ensures efficient, sustainable, and centralized cooling for large-scale urban developments, reducing energy consumption and enhancing system reliability

- **Hyper Scale Data Centers - DC:**

We deliver reliable and energy-efficient cooling systems tailored for hyperscale data centers, ensuring optimal performance and uninterrupted operations for critical IT systems

- **Flushing & Chemical Treatment:**

Specialized in cleaning and chemical treatment, our services remove impurities, enhance efficiency, and extend the lifespan of large-scale cooling systems.

- **Thermal Energy Storage Tanks (Test):**

Our thermal storage tanks are engineered to store and regulate cooling energy, ensuring peak efficiency and optimal energy usage in large-scale cooling applications

Why FLUCON?

1. Comprehensive Engineering Solutions
Delivering expert services in design, precise calculations, 3D modeling, hydraulic simulations, and pipe stress analysis to meet the most complex project demands.

2. Specialized Electro-Mechanical Contracting
Tailored solutions for industrial-scale projects, ensuring efficient, reliable, and high performance systems.

3. Advanced In-House Manufacturing
Producing high-quality components, including thermal storage tanks, buffer tanks, fuel tanks, pipe supports, and custom steel fabrications to support ambitious infrastructure projects.

4. Onsite Expertise and Support
Providing specialized services such as:

- Hydro-testing
- Flushing & Chemical Treatments
- System Balancing
- Shutdown Planning and Execution

5. Reliable Equipment Supply
Offering essential components, including:

- Cooling Towers
- Heat Exchangers
- Industrial Water Heaters
- Expansion Tanks
- Air & Dirt Separators

Technical Precision

FLUCON adheres to stringent standards, employing **ASME**, **ANSI**, and **API codes**. Our engineering team utilizes advanced tools such as **CEASER II** for pipe stress analysis, Autodesk Robot and **SAP2000** for support design, and **CFD** software for thermal energy transfer calculations.

FLUCON Business Units

Contracting

01

Industry

02

Flushing

03

Trading

04

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From Design to Delivery

01 | CONTRACTING

CONTRACTING

FLUCON provides advanced cooling solutions for industrial and commercial applications, including District Cooling Plants (DCPs), Energy Transfer Stations (ETS), and data center cooling systems. Our expertise ensures energy efficiency, seamless integration, and reliable performance.

District Cooling Plants (DCPs)

The rapid expansion of industrial sectors has driven the demand for large-scale, energy-efficient cooling solutions. District Cooling Plants (DCPs) are designed to meet these demands, offering up to 30% power savings over traditional AC systems. Centralized cooling minimizes energy consumption while optimizing operational and maintenance costs.

Energy Transfer Stations (ETS Rooms)

Energy Transfer Stations (ETS) enhance DCP efficiency by separating the chiller loop from the secondary circuit. Through advanced flow control and real-time monitoring, FLUCON ensures optimal system performance and energy transfer. Our ETS solutions integrate differential pressure transmitters, flow control valves, and full PLC systems with BTU meters, providing precise heat transfer data to the central DCP.

Hyper Scale Data Centers

As data reliance grows, FLUCON provides advanced cooling solutions designed to ensure efficiency and reliability for data centers.

Precision Cooling Systems:

Maintain stable temperature and humidity for sensitive equipment.

Energy Efficiency:

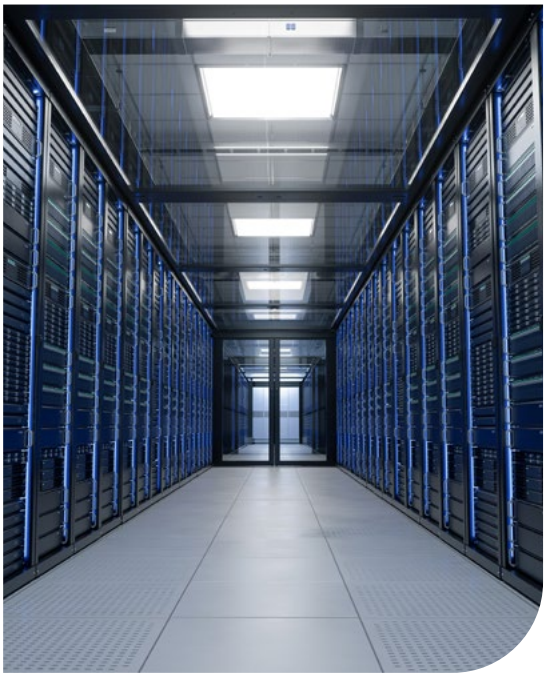
Reduce power consumption and operational costs.

Seamless Integration:

Compatible designs for current infrastructure with future scalability.

24/7 Reliability:

Continuous monitoring and control for optimal performance.
FLUCON is your partner for efficient, reliable, and future-proof data center cooling solutions.



Chiller Plants

Standalone chiller plants, ideal for business centers, hospitals, data centers, and other facilities, provide flexible, medium-capacity cooling. FLUCON designs custom configurations tailored to each facility's unique requirements, optimizing capital expenditure, energy efficiency, and operational performance. Our expertise spans mechanical, electrical, and control systems, ensuring seamless integration with primary and secondary circuits, variable flow rates, and thermal storage management.

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Supplying the Foundation of Cooling Systems

02 | INDUSTRY

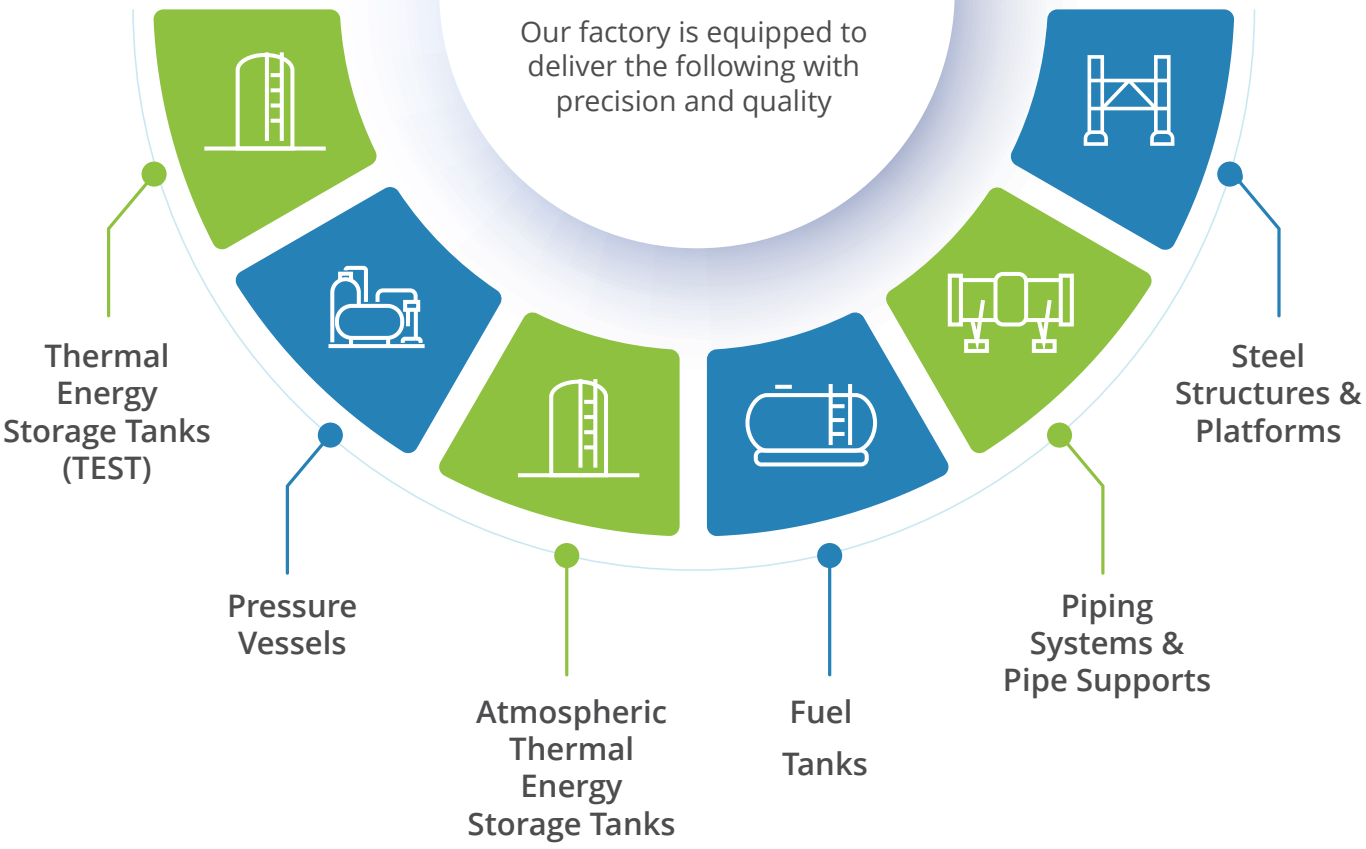
INDUSTRY

FLUCON specializes in the engineering, fabrication, supply, erection, and commissioning of Chilled Water Systems. Our FLUCON Steel Factory serves as a dedicated business unit, manufacturing high-quality equipment and structural components tailored to meet the demands of FLUCON's innovative projects.

Additionally, FLUCON Steel Factory is certified by ASME, ensuring compliance with the highest industry standards and reinforcing our commitment to quality and reliability.

Production Capabilities

Our factory is equipped to deliver the following with precision and quality



FLUCON Factory Products:

We excel in the design, fabrication, testing, and commissioning of advanced industrial components, including:

1. Thermal Energy Storage Tanks (TEST)
Designed with inner diffusers that can be tailored to meet specific thermal requirements.
We oversee the design, fabrication, and installation to guarantee superior quality and efficiency.

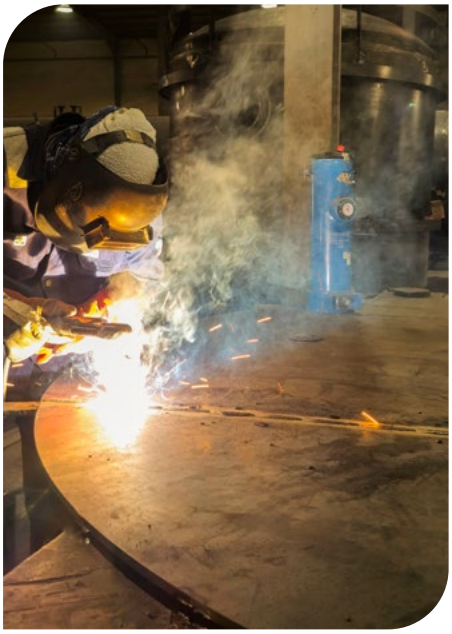
2. Pressure Vessels
Expertise in manufacturing pressurized thermal energy storage tanks, ensuring optimal performance and durability.

3. Atmospheric Thermal Energy Storage Tanks
A diverse range of thermal and buffer tanks with varying capacities and specifications to address diverse project needs.

4. Fuel Tanks
High-quality carbon and stainless steel fuel tanks designed for storage and distribution systems.
Customizable solutions to meet project-specific requirements with a focus on durability and safety.

5. Piping Systems & Pipe Supports

Advanced threaded and welded piping systems built for reliability.
Comprehensive pipe supports, clamps, and shoes to ensure system stability and performance.



6. Steel Structures & Platforms

Custom-engineered steel structures and platforms designed to support complex and large-scale projects.

Final Remarks

FLUCON's Steel Factory embodies precision, innovation, and quality, delivering solutions that empower ambitious projects with unmatched reliability.

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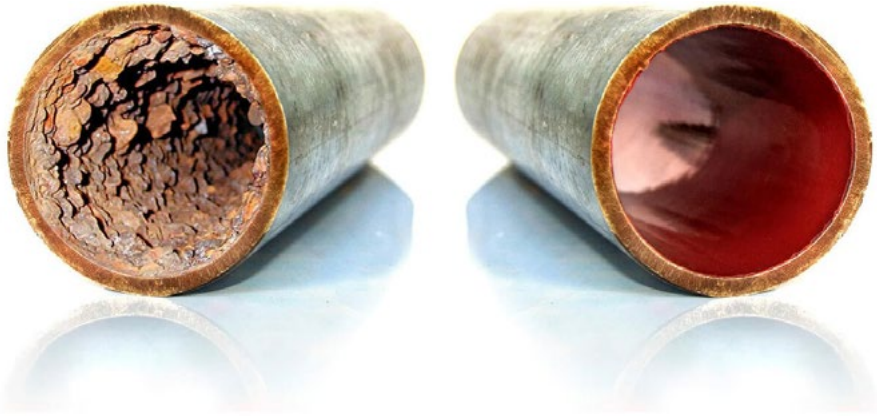
Optimizing Systems for Peak Performance

03 | FLUSHING & CHEMICAL TREATMENT

Flushing & Chemical Treatment



What is Flushing & Chemical Treatment?

Flushing

Flushing is the process of cleaning and clearing out systems such as piping networks (chilled or heating), including the pipeline and the equipment by using water. This method removes debris, sediment, and contaminants that can hinder performance and reduce the system's efficiency.

Chemical Cleaning & Chemical Treatment

Chemical Cleaning is a process used to remove contaminants, scale, corrosion, rust, or other deposits from the interior surfaces of pipes and associated equipment.

Chemical Treatment involves the use of specific chemicals to prevent corrosion, scale buildup, and biological growth within systems.

Combined Benefits

Together, flushing and chemical treatment enhance system efficiency, prolong equipment life and reduce maintenance costs, ensuring reliable operation.

Why We Need Flushing & Chemical Treatment

1- Cost-Effectiveness

Investing in flushing and chemical treatment can save money in the long run by preventing major repairs and reducing maintenance costs.

2- Removing Contaminants

Flushing eliminates debris and buildup, ensuring peak system performance.

3- Improving Energy Efficiency

Clean systems operate efficiently, reducing energy consumption and costs.

4- Extending Equipment Life

Flushing and treatment minimize wear, extending equipment lifespan.

5- Maintaining System Performance

Properly treated systems perform better, providing consistent output and reliability.

6- Reducing Downtime

Helps avoiding unexpected breakdowns and costly downtime, leading to smoother operations.

7- Ensuring Compliance

Many industries are subject to regulations regarding system cleanliness and maintenance; treatments help ensure compliance with these standards.

Where Do We Need Flushing & Chemical Treatment?

HVAC

Flushing prevents corrosion and buildup in piping networks, chillers, boilers, cooling towers and other equipment, ensuring efficient operation. These systems are found everywhere, such in Hospitals, Malls, Universities & Airports.

Power Generation

Power plants, including fossil fuel and renewable energy facilities, need flushing in cooling and boiler systems to maintain efficiency and prevent scaling.

Food and Beverage

Processing equipment and pipelines require flushing to ensure cleanliness and compliance with health and safety standards.

Manufacturing

Industrial process systems, such as those in chemical, automotive, Textile & Dyeing and pulp & paper manufacturing, require flushing to remove contaminants from production lines and equipment. And preventing cross-contamination and maintaining quality.

Data Centers

Cooling systems in data centers require flushing to prevent overheating and maintain optimal performance of IT equipment.

Pharmaceutical

Flushing is critical in production systems to prevent contamination and maintain sterile conditions in manufacturing processes.

FLUCON Capabilities

BSRIA

• High performance SS filtration skids ranging from 1 cartridge to 21 cartridges handling flowrates from 25m³/hr to 840m³/hr per skid, and up to 15000 m³/hr total.

• A range of electric circulation pumps that can be used in flushing.

• Highly skilled team of engineers and technicians trained to apply the BSRIA standard to any project.

• A long list of previous projects and approvals done by FLUCON.

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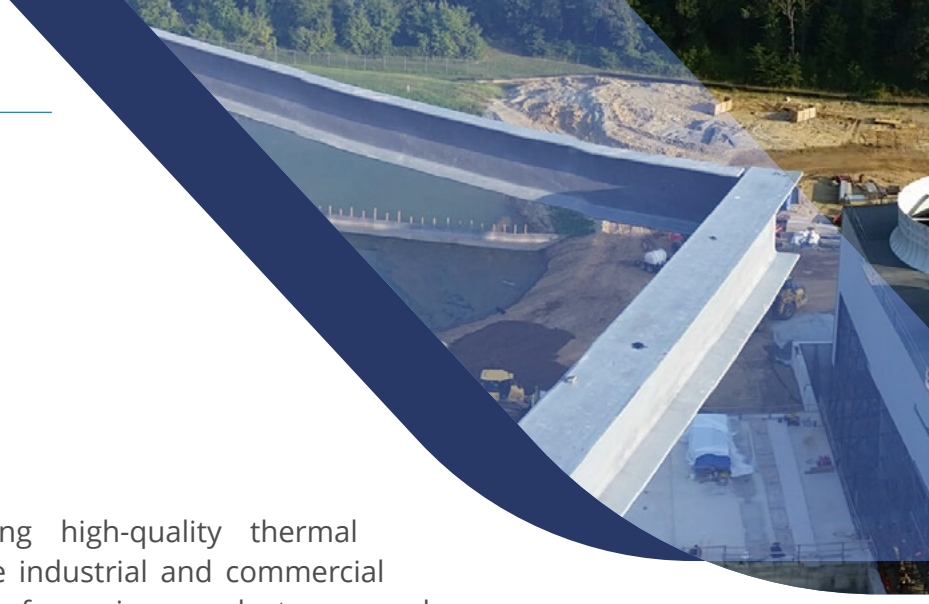
High-performance Supplies for Ambitious Projects

04 | TRADING



Trading

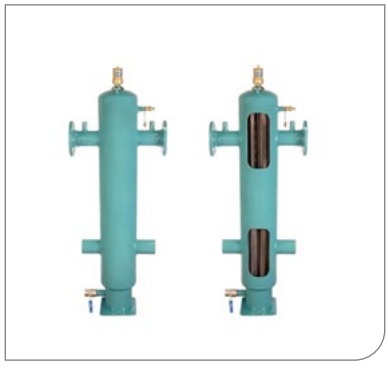
FLUCON specializes in delivering high-quality thermal solutions tailored to meet diverse industrial and commercial needs. We are a trusted supplier of premium products, sourced from leading manufacturers worldwide, including;

Cooling Towers

Heat Exchangers

Water Heaters & Calorifiers

Expansion Tanks



Air Separators

All products are certified and adhere to international standards, ensuring the highest levels of performance and safety

Cooling Towers

A cooling tower is an effective solution to remove unwanted heat from a system to the atmosphere.

Cooling towers may use either water evaporation to remove process heat and cool the working fluid near the wet-bulb air temperature, or in the case of closed-circuit dry cooling towers, only rely on air to cool the working fluid to be near the dry air temperature.

At FLUCON, we work with all types of cooling towers to provide tailored solutions for various industries:

Crossflow:

Streamlined cooling for HVAC and light industrial applications.

Counterflow:

Compact and efficient, perfect for space-saving designs.

Induced Draft:

Powerful cooling for large-scale industrial operations.

Forced Draft:

Reliable cooling for smaller systems and indoor setups.

Closed-Circuit:

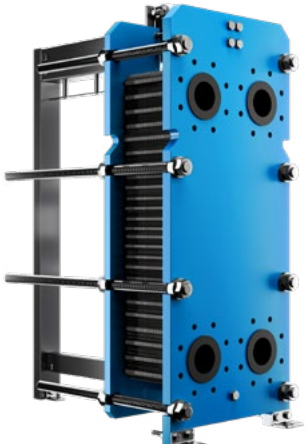
Advanced contamination-free cooling for sensitive industries.

Opened-Circuit: Energy-efficient cooling for massive facilities like power plants.

Applications

- HVAC Systems: Used in commercial buildings, malls, and hospitals to regulate temperature and remove excess heat.
- Industrial Processes: Vital for steel plants, chemical processing, and oil refineries to cool machinery and process water.
- Power Generation: Used in thermal power plants to cool condenser water.
- Manufacturing: Maintain optimal temperatures in plastic molding, food processing, and pharmaceutical industries.
- Data Centers: Ensure reliable cooling for servers and IT equipment. HEAT EXCHANGERS

Heat Exchangers



1- Plate Heat Exchangers

Compact and highly efficient heat transfer solutions designed for applications requiring quick heat exchange, such as HVAC systems and industrial processes.

Applications

- HVAC Systems: Efficient heat transfer in air-conditioning and refrigeration systems.
- Food and Beverage Industry: For pasteurization, cooling, and heating processes.
- Pharmaceuticals: Used in sterile applications where cleanliness and efficiency are paramount.
- Chemical Processing: Ideal for low to medium-pressure applications, including heat recovery and energy efficiency.
- Renewable Energy: Used in solar water heating and geothermal systems.

2- SHELL TUBE EXCHANGER

Robust and durable heat exchangers ideal for high-pressure and high-temperature applications, commonly used in oil & gas, chemical processing, and power generation.

Applications

- Oil & Gas: Essential in refineries, petrochemical plants, and offshore platforms for heat exchange between different fluids.
- Power Generation: Used in cooling condensers, steam generators, and nuclear plants.
- Chemical Plants: Handles high-pressure and high-temperature fluids, commonly found in chemical reactions and processes.
- Marine Applications: Common in cooling systems for engines and other machinery in ships.
- HVAC Systems: For large-scale applications like district heating and industrial heating/cooling.

Industrial Water Heaters Tanks & Calorifier

The central water heater tank is a heat exchanger storage tank that is used to heat up the desired liquid.

It's called a calorifier tank when the source of heat is another liquid generated from boilers, solar system, etc.

And it's called an electrical water heater tank if the source of heat is the electricity (electrical resistances).

These centralized water heater tanks can be supplied in several types:

- Water Heater Tank with Single Serpentine Type (Or called with Fixed Internal Heat Exchanger).
- Water Heater Tank with Double Serpentine Type (Or called with Two Fixed Internal Heat Exchangers).
- Water Heater Tank with Tube Coil.
- Electrical Heater Type.

Electrical type can be combined with other types as backup power.

Expansion Tank

What is the Expansion Tank?

The Expansion Tank (also called pressure tank, pressure vessel and expansion vessel, bladder tank) is a steel tank with bladder (membrane) inside, which is used to maintain the system pressure in certain limits.

These expansion vessels are used in chilled and hot water closed systems.

The pressure tanks (pressure vessels) are usually supplied pre-charged by air for about 3-4 bars.

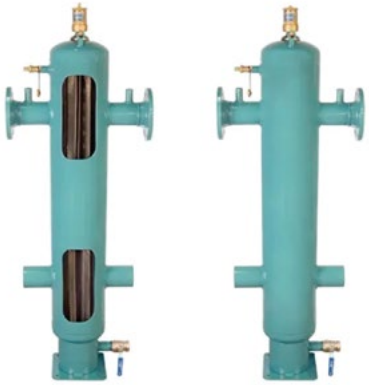
Area of Usage, Fields & Industries:

- HVAC Projects
- Chiller Plants
- Energy Transfer Stations – ETS Rooms
- Chilled water & hot water networks
- District Cooling Plants
- Boilers systems

Air & Dirt Separators

What is Air & Dirt Separator?

Air Separator, Dirt Separator, and Air/Dirt Separator are used for preventing the system from damages caused by air (and/or dirt) existing in the system, such as corrosion, cavitation, and clogging.



It can be supplied as:

- Air Separators: For systems that allow air to enter during operation.
- Dirt Separators: For systems that allow dirt to enter during operation.
- Air & Dirt Separators: For systems that allow both air and dirt to enter during operation.

Area of Usage, Fields & Industries:

- HVAC Projects
- Chiller Plants – District Cooling Plants
- Energy Transfer Stations – ETS Rooms
- Boilers systems

ISO Certificates

Certificate of Registration

This is to certify that the Quality Management System (QMS) of

Fluids Control Contracting Company Ltd.

P. O. Box 13322, Riyadh 2803, Kingdom of Saudi Arabia.

Has been successfully assessed as per the requirement of

ISO 9001: 2015

For the scope of

Provision Services of Engineering, Procurement, Construction, Fabrication, Testing & Commissioning of Electro-Mechanical Works in Chilled & Hot Water Projects.

Initial Registration Date	:	03 - 09 - 2024
Certificate Issue Date	:	03 - 09 - 2024
1st Surveillance Date	:	02 - 09 - 2025
2nd Surveillance Date	:	02 - 09 - 2026
Expiry Date	:	02 - 09 - 2027
Certificate Registration Number	:	CN-QMS-1525753
Accreditation Number	:	CB - MS - 5638

Managing Director

https://uafaccreditation.org/ https://iafcertsearch.org/ https://anssystemcertification.com/

Visit the websites to verify your certificate.

This certificate is the property of ANS System Certification Private Limited & must be returned on request.

Certificate of Registration

This is to certify that the Occupational Health & Safety Management System (OH&SM) of

Fluids Control Contracting Company Ltd.

P. O. Box 13322, Riyadh 2803, Kingdom of Saudi Arabia.

Has been successfully assessed as per the requirement of

ISO 45001:2018

For the scope of

Provision Services of Engineering, Procurement, Construction, Fabrication, Testing & Commissioning of Electro-Mechanical Works in Chilled & Hot Water Projects.

Initial Registration Date	:	03 - 09 - 2024
Certificate Issue Date	:	03 - 09 - 2024
1st Surveillance Date	:	02 - 09 - 2025
2nd Surveillance Date	:	02 - 09 - 2026
Expiry Date	:	02 - 09 - 2027
Certificate Registration Number	:	CN-OH& SM-1525755
Accreditation Number	:	CB - MS - 5631

Managing Director

https://uafaccreditation.org/ https://iafcertsearch.org/ https://anssystemcertification.com/

Visit the websites to verify your certificate.

This certificate is the property of ANS System Certification Private Limited & must be returned on request.

Certificate of Registration

This is to certify that the Environmental Management System (EMS) of

Fluids Control Contracting Company Ltd.

P. O. Box 13322, Riyadh 2803, Kingdom of Saudi Arabia.

Has been successfully assessed as per the requirement of

ISO 14001:2015

For the scope of

Provision Services of Engineering, Procurement, Construction, Fabrication, Testing & Commissioning of Electro-Mechanical Works in Chilled & Hot Water Projects.

Initial Registration Date	:	03 - 09 - 2024
Certificate Issue Date	:	03 - 09 - 2024
1st Surveillance Date	:	02 - 09 - 2025
2nd Surveillance Date	:	02 - 09 - 2026
Expiry Date	:	02 - 09 - 2027
Certificate Registration Number	:	CN-EMS-1525754
Accreditation Number	:	CB - MS - 5635

Managing Director

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Key Projects

Contracting Projects

Project Name	Client	Location	Scope
Microsoft Data Center	STC	Dammam	Total Length: 5,000 m Total Refrigiration ton: 4339 TR
Mobily Data Center	Mobily	Jeddah	Total Length: 2646 m Total Refrigiration ton: 1100.67 TR
NEOM Hyper Scale Data Center	Neom	Neom	Total Length: 4982 m Total Refrigiration ton: 706.7 TR
KAP4-118	MOI	Riyadh	Total Length: 2,840 m Total Refrigiration ton: 4,575 TR
ITC Advanced Data Center	ITC	Riyadh	Total Length: 866 m Total Refrigiration ton: 354.8 TR
Qiddiyah Project	Atkins	Qiddiyah	Total Length: 3600 m Total Refrigiration ton: 38,000 TR
NIC Project	SDAIA & NIC	Riyadh	Total Length:1550 m Total Refrigiration ton: 1205 TR
Nour Net	Nour Net	Riyadh	Total Length:1209 m Total Refrigiration ton: 750 TR

Flushing Projects

Project Name	Client	Location	Scope
Misk City	Misk	Riyadh	Biggest Pipe Size: 750mm Water Volume: 2400m³
Riyadh Metro	Riyadh Metro	Riyadh	Biggest Pipe Size: 300mm Water Volume: 300m³
Desert Rock Hotel	Red Sea	Umluj	Biggest Pipe Size: 300mm Water Volume: 280m³
Almohammadiya Hospital	Suliman Al Habib Medical Group	Jeddah	Biggest Pipe Size: 750mm Water Volume: 600m³
KAP4-119	MOI	Riyadh	Biggest Pipe Size: 600mm Water Volume: 450m³
Samhan Historical Hotel	Diriyah Gate Company Limited	Diriyah	Biggest Pipe Size: 250mm Water Volume: 50m³

Factory Projects

Project Name	Client	Location	Scope
STC Data Center	STC	Dammam & Riyadh	Thermal storage tank: 22m3 X 24 Nos
EDGNEX RYD-1 DATA CENTER	DAMAC	Riyadh	Thermal storage tank: 3,980L X 36 Nos
Huawei Data Center	Huawei	Neom	Thermal storage tank: 25m3 X 1 Nos
DDC306 Microsoft Data Center (Dammam)	STC	Dammam	Thermal storage tank: 62m3 X 4 Nos

Efficiency Meets Innovation

FLUCON
Engineering Flow

شركـــة التحكم بالسـوائـل للمقـــــاولات ذ.م.م

Fluids Control Contracting Company L.t.d

www.FLUCON.co FLUCONeng