

MEDIA RELEASE**Singapore launches world's first liquid cooling standard for data centres in tropical climates**

New national standard enables more energy-efficient cooling for AI data centres in tropical climates

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Singapore, 27 August 2026 – Singapore has launched the world's first standard to help data centres adopt liquid cooling technologies in the tropics to handle the growing energy demands of artificial intelligence (AI) workloads. The new **Singapore Standard (SS) 726:2026 Liquid Cooling in Tropical Data Centres** was jointly developed by the Infocomm Media Development Authority (IMDA) and Enterprise Singapore (EnterpriseSG), through the Singapore Standards Council (SSC), in close consultation with the industry. Together with other national standards such as the Tropical Data Centre standard and the Energy Efficiency of Data Centre IT Equipment standard, the new standard advances Singapore's commitment to the greening of data centres, complementing IMDA's Green Data Centre Roadmap¹.

2. Data centres are critical digital infrastructure that power AI systems, anchoring Singapore's ambitions to be a leading AI hub. As AI adoption grows, data centres are supporting increasingly compute-intensive workloads that generate more heat and require more efficient cooling. Compared to traditional air cooling, liquid cooling uses fluids to transfer heat from hardware chips and can reduce energy consumption at data centre level by more than 30%. However, tropical conditions such as high temperatures and humidity present additional challenges, including equipment corrosion, which can affect cooling efficiency and reliability. SS 726 therefore builds on existing international standards for liquid cooling, while addressing the specific requirements of operating such systems in tropical climates. Additionally, the standard also supports water efficiency by recommending best practices on measuring and optimising water use.

3. IMDA and EnterpriseSG, through the SSC, brought together industry, academia and technical experts to develop SS 726. This consensus-based approach translated the

¹ Singapore's Green Data Centre Roadmap was launched in 2024. It charts out key pathways for the sustainable growth of data centres in Singapore.

challenges of operating in Singapore's hot and humid tropical environment into practical considerations for the safe, reliable and energy-efficient adoption of liquid cooling. The standard equips data centre operators with technical guidelines to design, deploy and operate various liquid cooling systems, manage potential risks, and integrate liquid cooling with existing air-cooled data centres.

4. **Ms Aileen Chia, Deputy Chief Executive at IMDA, said,** "It is critical that data centres that underpin Singapore's digital economy continue to grow sustainably. Liquid cooling is increasingly important to support the higher power densities required for AI and other advanced computing workloads, while improving cooling efficiency. This standard reflects the close collaboration between industry and government to support the growing adoption of liquid cooling. IMDA will continue to work with like-minded partners to push the boundaries for data centre energy efficiency, in line with the Green Data Centre Roadmap."

5. **Ms Choy Sauw Kook, Director-General (Quality & Excellence) at EnterpriseSG, said,** "SS 726 gives data centre operators, technology providers and customers a trusted benchmark for designing, deploying and scaling liquid cooling systems safely and reliably in tropical conditions. By building confidence across the ecosystem, the standard can help unlock the wider adoption of more energy-efficient infrastructure needed to power the next generation of AI. In doing so, it positions Singapore as a trusted reference point for building a more sustainable data centre future in tropical markets."

6. Singapore's commitment to sustainable innovation in data centre cooling underscores its readiness to support AI growth while addressing environmental challenges. As demand for digital infrastructure grows, Singapore will continue to develop industry-relevant standards that enable the safe, reliable and energy-efficient adoption of emerging technologies. IMDA and EnterpriseSG, through the SSC, will continue to work with industry to support the sustainable growth and evolving needs of Singapore's data centre sector.

7. SS 726 can be purchased from the [Singapore Standards e-shop](#).

Please refer to the annex for quotes from the workgroup, including data centres operators and international associations.

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The Infocomm Media Development Authority (IMDA) leads Singapore's digital transformation by developing a vibrant digital economy and an inclusive digital society. As Architects of Singapore's Digital Future, we foster growth in Infocomm Technology and Media sectors in concert with progressive regulations, harnessing frontier technologies, and developing local talent and digital infrastructure ecosystems to establish Singapore as a digital metropolis.

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About Singapore Standards Council

The Singapore Standards Council (SSC) facilitates the development, promotion and review of Standards and Technical References in Singapore. This work is done through partnerships with the industry, academia and government organisations, under the national standardisation programme overseen by Enterprise Singapore, Singapore's national standards body.

Visit www.enterprisesg.gov.sg/standards for more information.

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ANNEX - Quotes from Working Group members

"The timing of this standard is really important. As AI workloads drive new data centre growth in Singapore and across Southeast Asia, clear guidance on liquid cooling will help ensure this infrastructure is efficient, reliable and more sustainable in tropical climates. This standard has been shaped by both policy makers and industry stakeholders and reflects what's happening in a rapidly evolving market. At AirTrunk, we're proud to contribute our experience and expertise in operating large scale liquid cooled operations across the region to support the next phase of AI infrastructure.

The standard will support us to align closely with our customers on the design and operation of liquid cooling facilities, supporting the development of industry best practices and facilitating wider adoption of the technology. It also reflects our commitment to the communities we operate in, including the responsible use of energy and water, as we continue to scale."

Jose Castaneda, Vice President, Innovation & Intelligence, AirTrunk DC

"Liquid cooling is critical to powering the next generation of AI infrastructure sustainably. We welcome SS 726 as an important step to develop guidelines for companies using this technology. We remain committed to building some of the most innovative, efficient and sustainable data centres in the world, and to our continued collaboration with Singapore."

Clara Koh, Director, Public Policy, Central Southeast Asia & ASEAN, Meta

"The publication of Singapore's national standard on liquid cooling for data centres is a significant milestone for the Southeast Asia data centre community. We are especially pleased to see elements of the OCP's liquid cooling specifications and guidelines reflected in the standard which is a testament to the value of open, collaborative frameworks. As AI workloads introduce increasingly complex and ever-expanding cooling challenges, this standard provides colocation providers with the critical guidance needed to navigate and adopt advanced cooling solutions. We commend the IMDA and the working group for their leadership and look forward to seeing Singapore shape the next generation of sustainable, high-performance data centre infrastructure."

Steve Helvie, Chief Emerging Ecosystem Officer, the Open Compute Project Foundation (OCP)

"SS 726 provides the industry with a practical and consistent framework for deploying liquid cooling systems in tropical environments. By aligning operators, technology providers and customers around a common set of best practices, the standard helps accelerate the adoption of liquid cooling to support increasingly demanding AI workloads.

As a data centre operator, STT GDC will leverage the standard to guide future liquid cooling deployments across our portfolio, strengthening operational readiness, consistency and scalability as we build AI-ready digital infrastructure. This milestone reflects the value of close industry-government collaboration and reinforces Singapore's position as a leader in sustainable digital infrastructure innovation."

Yeo Teong Chuan, Deputy Convenor of the Liquid Cooling in Tropical Data Centres Working Group and Head of R&D at ST Telemedia Global Data Centres

MEDIA FACTSHEET

Singapore Standard SS 726 – Liquid Cooling in Tropical Data Centres

SINGAPORE – 27 August 2026

1. Data centres (DCs) underpin Singapore's digital economy, supporting digital services, operations and transactions. As computing demand grows, including from increasingly compute-intensive Artificial Intelligence (AI) workloads, DCs will need to be more energy- and water-efficient to support their sustainable growth.
2. IMDA's Green Data Centre Roadmap outlines key thrusts to accelerate energy efficiency at both the facility and IT equipment levels, including for DCs supporting AI workloads. In line with this, IMDA and EnterpriseSG, through the Singapore Standards Council, have developed a new **Singapore Standard (SS) 726:2026 Liquid Cooling in Tropical Data Centres**. Developed by a working group including local DC operators, consultants, solutions providers, and academic researchers, this standard provides guidelines on designing and optimising liquid cooling systems for DCs in the tropics.

The Need for Liquid Cooling

3. Most DCs in Singapore today use air-cooling to remove heat generated from the servers to ensure optimal operations. AI applications require servers with accelerators (e.g. Graphics Processing Units (GPUs)) that consume significantly more power and generate more heat than servers used for general-purpose computing such as cloud and enterprise applications. Industry estimates that a rack of servers running AI applications can consume up to 50 times² more power than a conventional rack used for general-purpose computing. As liquids such as water can remove heat more efficiently than air, liquid cooling becomes increasingly important for high-density computing infrastructure. Compared to conventional air-cooling systems, deploying liquid cooling in DCs can reduce energy consumption by more than 30%³.

Addressing Implementation Challenges

4. Liquid cooling systems require pumps, piping, and heat exchangers, all of which must be carefully designed, installed and operated. The risk of leaks is a key concern, as even a minor leak can cause substantial damage to expensive IT equipment. Replacing or

² <https://www.goldmansachs.com/insights/articles/rising-power-density-disrupts-ai-infrastructure>.

³ <https://www.mckinsey.com/capabilities/operations/our-insights/operations-blog/keeping-cool-in-the-data-age>.

upgrading equipment can also be more complicated due to the tighter integration of the cooling system with the IT racks. As liquid cooling adoption is still relatively new, the DC industry may also lack the expertise and experience to design, commission and operate these systems, or manage the associated risks and safety considerations. SS 726 directly addresses these gaps by providing clear, practical guidelines on system design, commissioning, risk management, and safe operations, helping operators reduce costly mistakes and build capabilities to deploy liquid cooling effectively.

5. For example, as the implementation of liquid cooling in DCs is relatively new, integrating liquid cooling systems with existing air-cooling systems can be complex and costly, with higher upfront costs and complex installation and operations. To address this, the standard provides guidelines on choosing suitable coolant distribution unit (CDU) type, and details the available options to integrate CDU with existing air-cooling facilities, as well as the impacts on energy efficiency.

Tailored for Singapore's Tropical Climate

6. Operating liquid cooling facilities in Singapore's environment of high temperatures and humidity presents specific challenges, including corrosion in equipment, microbial growth, and the formation of biofilms in the cooling fluid — all of which can result in reduced cooling efficiency, equipment failure, and costly downtime. While international standards and industry best practices for liquid cooling are currently being developed, they are not specifically targeted for deployment in tropical environments.
7. To address these challenges, SS 726 provides tailored guidelines for tropical climates, including best practices from Open Compute Project and American Society of Heating, Refrigerating, and Air-Conditioning Engineers adapted to suit local DCs and Singapore's tropical climate. It helps DC operators to smoothen the adoption of liquid cooling and ensure efficient and reliable operations despite Singapore's demanding environmental conditions.

Comprehensive Lifecycle Guidance

8. DC operators also need clear guidance across the full lifecycle of liquid cooling infrastructure, from initial design, pre-deployment and commissioning through to day-to-day operations. SS 726 covers a comprehensive set of best practices and recommendations across this lifecycle, including:

- DC floor loading considerations
 - Design criteria for cooling loops and equipment
 - Piping materials selection
 - Fluid quality requirements
 - Monitoring and management
9. The standard also includes metrics and strategies for the sustainable operation of liquid-cooled DCs, supporting operators in achieving both operational excellence and sustainability goals (including energy efficiency and water usage efficiency). For example, the standard incorporates input from PUB on how to measure and calculate water utilisation efficiency in a liquid-cooled DC.

Availability

10. SS 726 is available for purchase from the Singapore Standards e-shop at www.singaporestandardseshop.sg.