



AIVC Webinar

New standards, guidelines or regulations for ventilation due to COVID-19
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An overview of the revision of Singapore Standards (SS553 and SS554) for control of infectious aerosols in buildings

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<p>SS 553:2016+A2:2021 <small>(ICS 91.140.30)</small></p> <p>First Published in 2009 Revised in 2016 Amendment A1 in 2017 Amendment (informative) A2 in 2021 SINGAPORE STANDARD</p> <p>Code of practice for air-conditioning and mechanical ventilation in buildings</p> <p><small>Incorporating Amendment No. 1 and 2</small></p> 	<p>SS 554:2016+A1:2021 <small>(ICS 13.040.20; 91.040.01)</small></p> <p>First Published in 2009 Revised in 2016 Amendment (informative) in 2021 SINGAPORE STANDARD</p> <p>Code of practice for indoor air quality for air-conditioned buildings</p> <p><small>Incorporating Amendment No. 1</small></p> 
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Revision in 2016 triggered due to prolonged Haze episodes experienced in 2015

Alignment for air filtration clauses with SS553

	Nature of the Standard	Filter ratings
SS554	Specifies performance	“SS553 specifies the minimum filter requirement. In preparation for unforeseeable haze events, the use of fine dust filters, especially those having at least a rating of Minimum Efficiency Reporting Value (MERV) 14 (ASHRAE 52.2:2012) or F8 (EN779:2012), is recommended. Such filters can remove particulates more effectively than coarse dust filters and can keep the building and the ACMV system clean at all times.”
SS553	Specifies design specifications	“The Minimum Efficiency Reporting Value (MERV) for cleaning the air in all air-handling units shall be equivalent to MERV 6 or better, and MERV 14 when the outdoor pollution level is in the unhealthy range in accordance with MOH’s guidelines. The MERV for cleaning outdoor air supplied to fan coil units shall be equivalent to MERV 6 or better, and MERV 14 when the outdoor pollution level is in the unhealthy range in accordance with MOH’s guidelines. Fan motors shall be sized such that the required air flow rate can be maintained.”

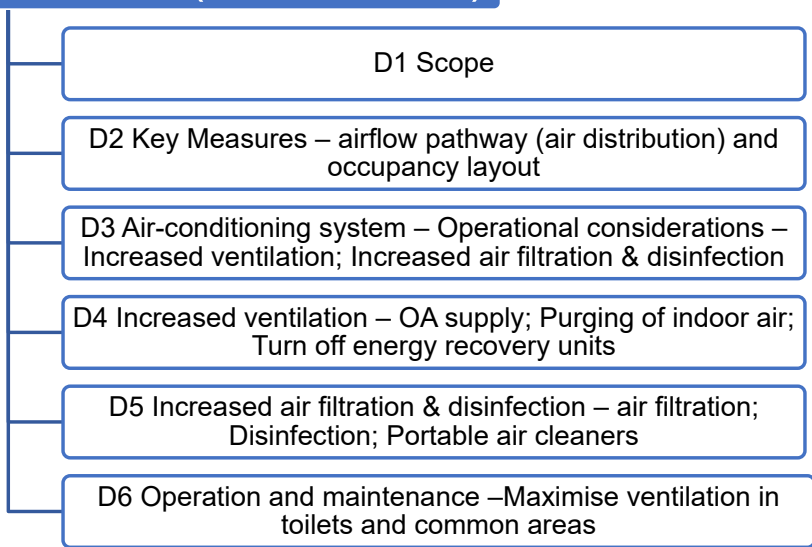
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Practical measures for existing building services operations amid pandemic

Singapore Standard SS 553 : 2016 Amendment No.2

May 2021

Annex D (Informative)

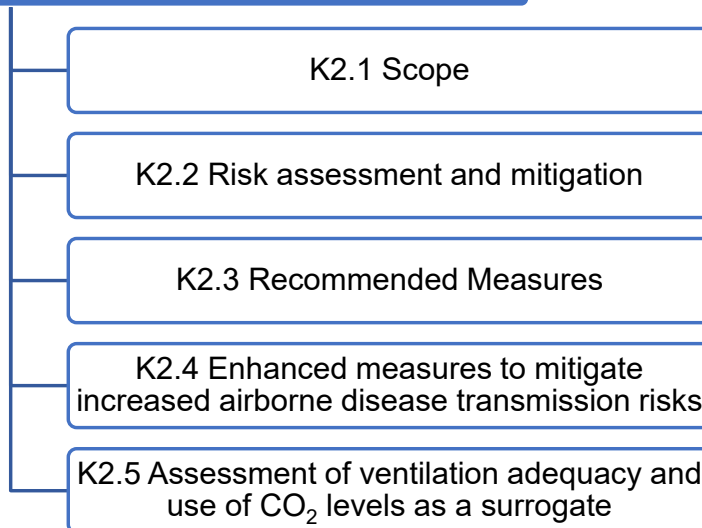


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Annex K (Informative)

Sept
2021



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K2.3 Recommended Measures (Key Highlights)

- Air-conditioned premises with MV (eg Centralised air-conditioning system) – Checks to ensure adequate ventilation provision, continuous operation, air balancing, maintenance activities
- Maximise ventilation for indoor air dilution – maximise OA, deactivate DCV systems, open all air dampers to ensure optimal supply of OA to all occupied zones, operate exhaust fans at full capacity, install additional supply and/or exhaust fans if found inadequate, use occupancy reduction if needed, increase filter efficiency and air cleaning strategies as feasible (if IAQ is worsened by increasing ventilation eg rise in PM2.5 levels)
- Purge indoor air before occupancy
- Treat recirculated air – use MERV14, F8 or ePM1 70-80% filters in AHUs, air cleaning technologies (such as UVGI) in upper rooms, AHU rooms or AHUs to augment filtration
- Increase ventilation in premises with limited ventilation and air filtration provision – open operable windows and doors, fans positioned at windows to blow air outwards and increase ACH, add dedicated OA supply and/or exhaust, use portable air cleaners
- Enclosed air-conditioned premises without mechanical ventilation provision (e.g. split-unit air-conditioners or FCUs without fresh air supply) - increased ventilation and ACH, install window-mounted exhaust fans, use air cleaners as localised air cleaning

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Current Revision in Progress

SS 553:2016+A2:2021
SINGAPORE STANDARD
Code of practice for air-conditioning and mechanical ventilation in buildings
Incorporating Amendment No. 1 and 2

SS 554:2016+A1:2021
SINGAPORE STANDARD
Code of practice for indoor air quality for air-conditioned buildings
Incorporating Amendment No. 1

- Infectious Aerosol Mitigation - 2021 amendments were informative – Enhancing them now to be part of SS553 and SS554
- Equivalent Clean Air (ECA_i)
ASHRAE Standard 241-2023 reference
- Building Resilience** – Haze Resilience incorporated in 2016 revision – current revision to include control of infectious aerosols
- Two modes of Design and Operation
NORMAL/PEACE mode
RESILIENT mode
- Target publication of revised version – **late 2024**

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Thank You for your Attention

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