



Manufacturer Declaration of Conformity to NZBC (G4.B2.H1)

Hoodmaster™ Commercial Kitchen Range Hoods Technical Compliance Statement

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Technical Compliance Statement

Section 1: Introduction to HoodMaster.

Hoodmaster™ is a New Zealand-based manufacturer of low velocity commercial kitchen range hoods. Our team of experienced engineers has over 40 years of combined experience working across projects in the UK, Europe, Middle East, and Australasia. This extensive knowledge and experience allow us to design and manufacture hoods that meet the highest European specifications, including German standard VDI2052 and British specifications DW172:2018.

The NZBC sets the standards for the design and construction of buildings in New Zealand, including commercial kitchens. Our low velocity commercial kitchen range hoods are designed and manufactured to meet the criteria of the New Zealand Building Code (NZBC) G4.3.3.a. Our hoods comply with the minimum design specifications outlined in the NZBC G2, B4, H1 and exceed these minimum requirements to ensure optimal performance and safety.

Section 2: Compliance with NZ building Code Commercial Kitchen Ventilation Standards.

The NZBC standard G4 3.3a outlines the minimum requirements for commercial kitchen ventilation systems, including exhaust hoods, to ensure the safety and health of building occupants. AS1668 sets the minimum design specifications for kitchen range hoods in Australia and New Zealand.

Our low velocity hoods meet and exceed the requirements of AS1668.2, as outlined in the standard's section 5 clauses 5.4, 5.5, 5.6, and specifically 5.4.1 paragraph 2. The standard states that alternative exhaust hood designs, including proprietary designs, may be used if their performance is at least equivalent to the hoods described in the standard.

Our hoods are designed to meet the performance requirements of the widely adopted standards DW172:2018. These standards cover the latest technical advancements and best practices in commercial kitchen ventilation systems, providing building owners and operators with peace of mind that the systems will perform as intended when needed.

Our hoods are designed with larger overhangs, and this allows for better capture and containment of cooking grease, smoke, and other by-products of cooking. This not only meets but exceeds the requirements of G4 3.3, AS1668, for commercial kitchen ventilation systems.

Our hoods' compliance with the New Zealand Building Code, AS1668, DW172, and VDI2052 can be proven through existing installations in the country.

By conforming to the stringent requirements of G4 3.3, AS1668, DW172, and VDI2052, our low velocity hoods provide safe, effective, and sustainable kitchen ventilation systems for commercial kitchens, ensuring the health and safety of building occupants and meeting the demands of modern commercial kitchens.

Section 3: Airflow Calculation Methodology

Hoodmaster™ designs its low velocity commercial kitchen range hoods to meet the highest European specifications, including the German standard VDI2052 and the British specification DW172. Our hoods are calculated using either DW172:2018 method 1 (thermal convection method) or VDI2052:2017 (thermal convection method). These airflow calculations are more efficient than those specified in AS1668.2002 and AS1668.2012 standards and are typically 30-50% more efficient.

The thermal convection method of airflow calculation is based on the principles of heat transfer, where hot air rises and cool air sinks. This method uses the temperature difference between the cooking surface and the surrounding air to calculate the necessary airflow required to effectively remove the heat and smoke generated by cooking equipment.

Advantages of the thermal convection method include a more accurate representation of real-world conditions in the kitchen environment, improved energy efficiency, and a better understanding of the performance of the hood in terms of capture and containment. Additionally, this method complies with the CIBSE Guide B2 and the Greenstar & NZBC H1 energy efficiency standards.

The thermal convection method used by Hoodmaster™ in the calculation of airflow for our commercial kitchen range hoods provides a more accurate and efficient solution, ensuring the performance and compliance of our hoods to the highest industry standards.

Section 4: Grease Separation

Hoodmaster™ range hoods feature exclusive UL-1046 'Spark Safe' approved stainless steel baffle filters, designed and tested to ensure high-efficiency grease separation in commercial kitchen environments. These filters are constructed with flame-retardant materials, providing a safe and effective solution for capturing and containing airborne grease particulate. These are the ONLY filters that should be used with these hoods.

Stainless steel baffle filters offer numerous advantages over traditional honeycomb filters, making them the best practice for commercial kitchen hood design. The unique design of baffle filters allows for the separation of grease droplets through a series of vertical, angled metal plates that interrupt the flow of grease-laden air. This results in a cleaner exhaust air, reducing maintenance costs and increasing the overall lifespan of the hood system.

Stainless steel baffle filters also provide resistance to corrosion, making them easy to clean and maintain. Their durability ensures they can withstand frequent use, providing a cost-effective solution for commercial kitchens.

In addition to their superior grease separation capabilities, HoodMaster™ Spark Safe stainless steel baffle filters are suitable for use in solid fuel appliances. All filters undergo strict testing and are manufactured to UL-1046 standards, ensuring consistent performance and quality.

The use of high-quality, efficient grease separation technology like stainless steel baffle filters is crucial in maintaining a safe and clean kitchen environment. By incorporating these technologies, Hoodmaster™ range hoods provide a superior solution for capturing and containing cooking fumes, ensuring a safer and more enjoyable cooking experience.

LONGAR® Type 2 HE75 High Performance 75% Grease Efficiency Baffle Filter



LONGAR® TYPE 2 HE75 HIGH PERFORMANCE BAFFLE FILTER FEATURES:

- High Performance Baffle Filter 75% Grease efficiency at 8 micron
- 100% Flame barrier protection to DIN 18869-5
- Cutsafe safety edges
- Fully welded construction – all stainless steel construction
- Meets insurance requirements
- Meets HVCA DW172 requirements
- Folding handles and drain holes as standard
- Robust baffle filter construction – built to last
- Tested & certified to European standard DIN 18869-5
- Tested to American standard ULI046
- Tested & certified to ASTM 2519

APPLICATIONS

- Commercial kitchens
- Water mist separation
- Spark arrestors
- Sand filtration
- Grease filtration

Section 6: peripheral hood design

For high smoke solid fuel appliances, Hoodmaster™ offers a range hood design that features filters at both the front and back of the hood. This dual filtration system maximizes the capture and containment of smoke and fumes, resulting in a cleaner kitchen environment. The combination of advanced filtration technology and unique design allows Hoodmaster™ to provide optimal performance in commercial kitchen ventilation.

Hoodmaster™ approved volumes can be to either AS1668.2002/AS1668:2012, DW172:2018, VDI 2052:2017 as stated on the manufacture drawings.

IMPORTANT NOTE:

Supply air is required to ensure complete combustion of the fuel and provide safe operation of the gas and solid fuel equipment.

1. Fire Code Compliance & Risk Assessment

- **Client Responsibility:** The client must ensure that the ventilation system is designed and installed to meet all relevant local fire codes and safety standards.
- **Engineer Certification:** It is recommended that a qualified engineer reviews the kitchen ventilation system to verify that it complies with the applicable fire safety regulations.

2. Solid Fuel Cooking Systems

- **Separate Ventilation System:** Solid fuel cooking appliances (such as wood-fired ovens, charcoal grills, etc.) must have a dedicated extraction system that is separate from gas or electric cooking appliances.
- Solid fuel appliances produce higher temperatures and potentially hazardous by-products like sparks and embers, requiring a system designed to handle these risks.
- A spark arrestor filter should be installed in the ventilation system to prevent embers from entering the ductwork and causing fires.

3. Maintenance of Ventilation Systems

- **Regular Cleaning of Ductwork and Filters:** Grease filters and ductwork must be regularly inspected and cleaned to prevent the accumulation of grease/soot, which poses a fire hazard.
- **Cleaning Frequency:** Solid fuel systems require more frequent cleaning due to the higher volume of soot and particulates produced. Follow the manufacturer's recommendations for cleaning schedules.
- **Fire Suppression System:** Ensure that the fire suppression system, if installed, is inspected and maintained according to the manufacturer's guidelines.

5. Ductwork Inspections and Fire Dampers

- **Ductwork Integrity:** Ensure that the integrity of the ductwork is maintained with regular inspections, especially near solid fuel appliances. Solid fuel systems produce higher temperatures, which can cause faster wear on the ductwork.

6. Staff Training and Fire Safety Procedures

- **Training:** Kitchen staff should be trained on the proper use of the ventilation system and fire suppression system. They should know how to quickly shut off the cooking equipment in case of a fire.
- **Emergency Procedures:** Clear emergency procedures must be established, including how to respond if a fire starts within the ductwork or ventilation system.

This compliance statement covers all hoods manufactured by Hoodmaster™ Limited.



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