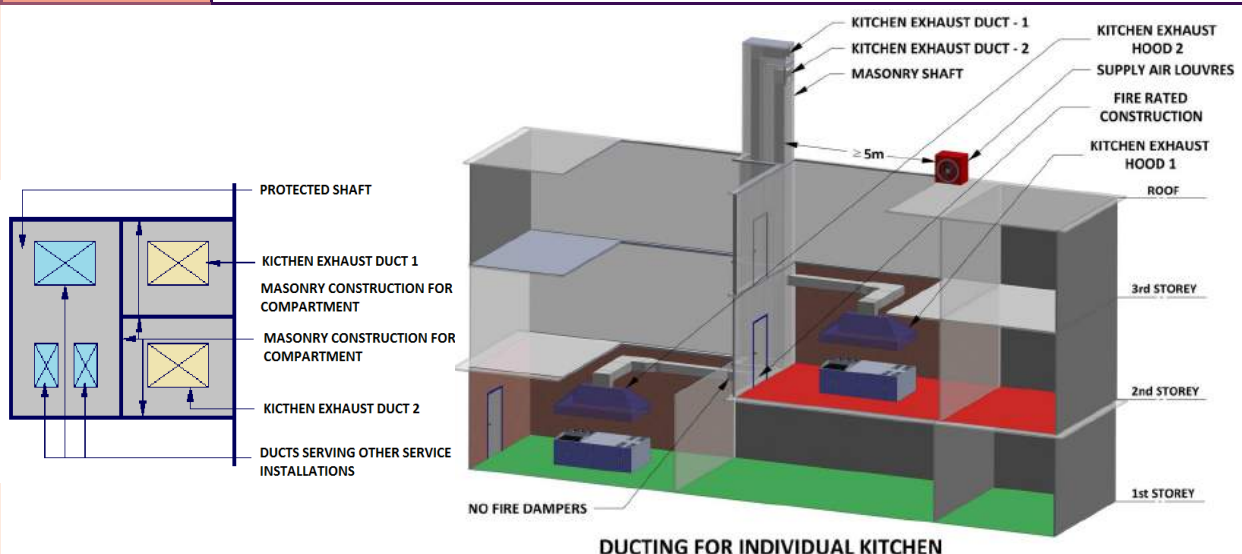


2.18. Ventilation System for Cooking Operations

2.18.1. Smoke Ventilation Systems for cooking operations shall comply with the relevant general requirements for smoke control systems as per **Section 2.5** and **Table 10.16**.

Table 10.16.: Ventilation System for Cooking Operations

ITEMS	REQUIREMENTS
1. OBJECTIVE	i. The cooking equipment used in processes and commercial kitchens produces smoke and grease laden vapors. Accumulation of these vapors in the exhaust equipment and ducting can be fuel for fires and needs to be adequately ventilated.
2. FANS	i. Smoke Exhaust fans shall be capable of operating effectively at 400°C for 2 hours. ii. The air velocity through any duct shall be not less than 152.4 m/min. iii. Exhaust air volumes for hoods shall be of a sufficient level to provide for capture and removal of grease-laden cooking vapors.
3. DUCTS	i. Kitchen exhaust ducts shall be dedicated and shall not be shared or interact with any other smoke control, ventilation or HVAC systems. ii. Exhaust ducts shall not pass through fire walls. All exhaust ducts shall lead directly to the exterior of the building, so as not to unduly increase any fire hazard. iii. Exhaust ducts shall be constructed of and supported by carbon steel not less than 1.37 mm (No. 16 MSG) in thickness or stainless steel not less than 1.09 mm (No. 18 MSG) in thickness. iv. Kitchen extract ducts shall be fire rated and approved in compliance with Table 10.1.3.2 . v. In kitchens where vertical fire barriers are penetrated, the ducts shall be enclosed in a continuous enclosure extending from the first penetrated fire barrier and any subsequent fire barriers or concealed spaces to or through the exterior, to maintain the fire resistance rating of the highest fire barrier penetrated. vi. The above mentioned continuous enclosure provisions shall not be required where a field-applied or factory built grease duct enclosure is protected with a listed duct-through-penetration protection system equivalent to the fire resistance rating of the assembly being penetrated and where the materials are installed in accordance with the manufacturer's instructions. vii. Wiring systems of any type shall not be installed in ducts, unless listed with the system.



Schematic 10.35.: Separated Vertical Shaft for Kitchen Exhaust Ducts