

Table 10.12.: Jet Fan Smoke Clearance System

ITEMS	REQUIREMENTS
9. CFD GUIDELINE	<p>8. GRID RESOLUTION</p> <p>i. The grid size to be used in the fire model shall not be larger than 0.2m X 0.2m X 0.2m in the smoke control zone where the fire is located and its adjacent zones. Other than these zones, the grid size shall not be larger than 0.4m X 0.4m X 0.4m. Alternatively, the relevant PE or FSE undertakes a grid resolution study to ascertain the appropriate grid size needed for the fire size and smoke flows modeled (e.g. outcome of study showing that additional resolution does not make much of a difference to the results).</p> <p>9. SENSITIVITY STUDY</p> <p>i. A sensitivity study is to be carried out to show the impact of 1 group of jet fan failure nearest the fire on the overall effectiveness of the jet fans system. This study is applicable to both fire modeling and hot smoke test. Notwithstanding the failure of 1 group of jet fans, the acceptance criteria must still be maintained.</p> <p>10. OPERATION AND MAINTENANCE MANUAL FOR JET FAN SYSTEM</p> <p>i. An operations and maintenance manual shall be attached.</p> <p>ii. The manual shall contain the roles and responsibilities of the building owner/operator, the restrictions placed on the building or tunnel, identification of the sub-systems, servicing and maintenance plan, fault identification, etc.</p> <p>iii. The manual can also be used as a guide for future renovations and changes to the building or tunnel.</p> <p>11. COMMISSIONING TEST</p> <p>i. The Inspector who carries out the commissioning test of the jet fans system may make reference to Table 2 of BS 7346 - Part 7 as a guide.</p> <p>ii. When hot smoke test is performed, the Fire Safety Engineer shall use a test fire size of 1 MW.</p> <p>iii. Reference may be made to AS 4391 on hot smoke test or any approved standards. (This standard is more relevant for an engineered smoke control system rather than jet fans system. Nevertheless, there are some aspects in this standard that the fire engineer may find useful, such as how the test can be prepared and carried out in a proper manner)</p>