

5. Tenability Criteria and Scientific Basis

Tenability criteria define the environmental conditions beyond which building occupants cannot safely egress. These criteria are based on extensive physiological research and are specified in ISO/TS 13571 and other fire safety engineering standards.

Temperature

< 60.0 °C

Upper thermal tolerance limit for exposed skin and respiratory tract

Visibility

> 5.0 m

Minimum visibility required for wayfinding and egress

CO₂

< 5.0 %

Carbon dioxide threshold before hyperventilation effects

CO

< 1400.0 ppm

Carbon monoxide limit to prevent incapacitation

O₂

> 15.0 %

Minimum oxygen concentration for normal respiration

5.1 Temperature Effects