Table 9.16.: Clean Agent Systems Requirements

ITEMS	REQUIREMENTS
8. DESIGN CONCENTRATION	i. The flame extinguishing or inerting concentrations shall be used in determining the agent design concentration for a particular fuel. ii. For combinations of fuels, the flame extinguishment or inerting value for the fuel requiring the greatest concentration shall be used unless tests are made on the actual mixture. iii. Design concentrations shall comply with NFPA 2001 and manufacturer's specifications.
9. TOTAL FLOODING QUANTITY	i. The amount of halocarbon agent required to achieve the design concentration shall be calculated from the following formula. $W = \frac{V}{S}\left(\frac{C}{100 - C}\right)$ Where, W—Weight of Clean Agent, Kg V—Net Volume of the Hazard, m^3 S– Specific volume of superheated agent vapor, t(m^3/Kg) C– Agent design concentration (Volume%) t– Minimum anticipated Temperature of protected volume, ^{0}C ii. The amount of halocarbon agent required to achieve the design concentration shall be calculated from the following formula. $X = 2.303\left(\frac{V_s}{s}\right)\mathrm{Log}_{10}\left(\frac{100}{100 - C}\right)$ Where, X—Volume of Inert gas added per volume of protected space, Kg V_s—Specific Volume of Inert Gas agent at 21^{0}C and 1.013 bar S– Specific volume of Inert gas, t(m^3/Kg) C– Inert Gas design concentration (Volume%) t– Minimum anticipated Temperature of protected volume, ^{0}C
10. DISCHARGE TIME	i. The minimum design rate of application shall be based on the quantity of agent required for the desired concentration and the time allotted to achieve the desired concentration. ii. The discharge time period is defined as the time required to discharge from the nozzles 95 percent of the agent mass, at 70°F (21°C), necessary to achieve the minimum design concentration based on 20 percent safety factor for flame extinguishment. iii. For Halocarbon agents, the discharge time required to achieve 95 percent of the minimum design concentration for flame extinguishment based on a 20 percent safety factor shall not exceed 10 seconds. iv. For Inert gas agents, the discharge time required to achieve 95 percent of the minimum design concentration for flame extinguishment based on a 20 percent safety factor shall not exceed 60 seconds.