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A non-mean field density functional theory (DFT) is proposed for nucleation in confined fluids. The excess Helmholtz free energy functional is formulated in terms of a modified fundamental measure theory for short ranged repulsion and a density-gradient expansion for long ranged attractions. Analytical expression for the direct correlation function of Lennard-Jones fluid is utilized to take into account the effect of long ranged attraction on intermolecular correlations. The nucleation properties for confined Lennard-Jones fluid, including density profile, work of formation, number of particles and the nucleation rate in a wide range of temperatures are investigated. The effect of external potential upon the nucleation properties in confined fluids is discussed.