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abstract The inclusive K^+ mesons production in π^+–nucleus reactions in the subthreshold energy regime is analyzed with respect to the one–step ($\pi^+ n \to K^+\Lambda$) and the two–step ($\pi^+ n \to \eta p_1,\ \eta p_2 \to K^+\Lambda$) incoherent production processes on the basis of an appropriate folding model, which allows one to take into account the various forms of an internal nucleon momentum distribution as well as on– and off–shell propagation of the struck target nucleon. Contrary to proton–nucleus reactions primary reaction channel is found to be significant practically at all considered energies. Detailed predictions for the K^+ total and invariant differential cross sections from π^+C^{12}– and π^+Pb^{208}–collisions at subthreshold energies are provided.