We propose a new approach to enforce integrability using recent advances in non-local methods. Our formulation consists in a sparse gradient data-fitting term to handle outliers together with a gradient-domain non-local low-rank prior. This regularization has two main advantages: 1) the low-rank prior ensures similarity between non-local gradient patches, which helps recovering high-quality clean patches from severe outliers corruption and 2) the low-rank prior efficiently reduces dense noise as it has been shown in recent image restoration works. We propose an efficient solver for the resulting optimization formulation using alternate minimization. Experiments show that the new method leads to an important improvement compared with previous optimization methods and is able to efficiently handle both outliers and dense noise mixed together.