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Benthic community composition and ascidian abundance can differ dramatically between adjacent man-made and natural substrates. Although multiple factors, including light exposure, surface orientation, predation exposure, and habitat type, are known to contribute to these patterns, few studies have directly tested the influence of substrate identity on community development. We compared fouling communities on settlement plates composed of commonly occurring natural (granite) and artificial (concrete, high density polyethylene, and PVC) marine materials deployed from late May to mid November 2014 from a floating dock in Newcastle, NH. We sought to determine if observed patterns resulted from differential recruitment onto substrate materials or post-settlement survival and growth. To do this, half of the plates were cleaned during bi-weekly examinations, and half were left un-cleaned. Preliminary analyses indicate that community composition differs between substrate types. These results will help us understand how substrate features contribute to non-native species establishment and habitat dominance, and may inform decisions regarding material usage in marine construction. These findings also underline the importance of settlement substrate choice in scientific studies, as plate material may influence experimental conclusions.