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I present a preliminary report on joint work with R.L. Wheeden of Rutgers University and Seng Kee Chua of the National University of Singapore. We give a Rellich-Kondratchov type compactness theorem for generalized Sobolev spaces defined as a cross product of a Lebesgue space and a normed linear space of measurable \mathbb{R}^k valued functions. This theorem applies to the case of degenerate Sobolev spaces defined with respect to non-negative quadratic forms on \mathbb{R}^n in the presence of a homogeneous space structure. (Received August 26, 2009)