We examine the large scale geometry of immersed horizontal surfaces in 3-dimensional graph manifolds. An immersed surface in a 3-manifold is *virtually embedded* if the immersion lifts to an embedding into a finite sheeted cover of the manifold. Virtual embedding is equivalent to separability of the surface group in the fundamental group of the 3-manifold.

We prove that the distortion of a horizontal surface is quadratic if the surface is virtually embedded, and is exponential otherwise. The proof depends on a combinatorial characterization of horizontal surfaces that virtually embed, due to Rubinstein-Wang. (Received September 22, 2015)