

A $[G, 2]$ -*complex* is a finite, two-dimensional CW-complex with fundamental group isomorphic to G . Two $[G, 2]$ -complexes are said to be at the same *level* if they have the same Euler characteristic. Drs. Wolfgang Metzler and Wesley Browning developed invariants for distinguishing same-level $[G, 2]$ -complexes up to homotopy for finite groups G . We generalize Browning's invariant to infinite groups. We also present a new invariant for distinguishing, up to homotopy, $[G, 2]$ -complexes with the same Euler characteristic for a broad range of infinite groups G . We demonstrate the homotopy equivalence of pairs of $[G_n, 2]$ -complexes for a family $\{(X_n, Y_n) \mid n \in \mathbb{N}\}$ of pairs X_n, Y_n of $[G_n, 2]$ -complexes.