The pair $(K,r)$ consisting of a knot $K$ and a surjective representation of the knot group onto a dihedral group is said to be a colored knot. The equivalence of colored knots up to surgery by unknots in the kernel of $r$ has been studied most recently by D. Moskovich and A. Kricker. We extend previous results by R.A. Litherland and the author to knots with knot group representations onto other types of groups. More precisely, we modify some three-manifold bordism invariants developed by T. Cochran, A. Gerges, and K. Orr, to define complete invariants of the surgery equivalence classes of generalized colored knots. (Received September 07, 2008)