The firing patterns of neurons in the brain give rise to combinatorial codes, i.e. subsets of the boolean lattice. In sensory systems, these firing patterns often represent the abstract intersection patterns of convex regions of a Euclidean space. One-layer feed-forward networks give rise to a class of these codes, hyperplane codes, in which these regions are open half-spaces intersected with a convex set. We investigate the distinguishing characteristics of hyperplane codes via the polar complex, a simplicial complex associated to any code. We demonstrate several necessary conditions for a polar complex to arise from a hyperplane code, and demonstrate that for non-degenerate hyperplane codes, this complex is shellable. (Received July 30, 2018)