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Bridget Eileen Tenner* (bridget@math.depaul.edu), Department of Mathematical Sciences, DePaul University, 2320 North Kenmore Avenue, Chicago, IL 60614. *Bruhat order structure via permutation patterns.*

Recent work has uncovered significant links between permutation patterns and both the reduced decompositions of a permutation and the structure of the Bruhat order. These links will be demonstrated through a selection of the following results: a new definition of vexillary permutations, a description of permutations with Boolean order ideals, a characterization of when the permutations avoiding a set of patterns is an order ideal, and the fact that a particular class of $2n$ -gons can be tiled by convex centrally symmetric $2k$ -gons iff k is 2 or n . (Received January 19, 2008)