

A maximum independent set of vertices in a graph is a set of pairwise non-adjacent vertices of largest cardinality  $\alpha$ . Plummer defined a graph to be *well-covered*, if every independent set is contained in a maximum independent set of  $G$ . Every well-covered graph  $G$  without isolated vertices has a perfect  $[1,2]$ -factor  $F_G$ , i.e. a spanning subgraph such that each component is 1-regular or 2-regular. Here, we characterize all well-covered graphs  $G$  satisfying  $\alpha(G) = \alpha(F_G)$  for some perfect  $[1,2]$ -factor  $F_G$ . This class contains all well-covered graphs  $G$  without isolated vertices of order  $n$  with  $\alpha \geq (n - 1)/2$ , and in particular all very well-covered graphs.