

```

PassReducible@k_MD := PassReducible@k = Block[ {1, n = Length@k, p = List@@Build@k //
  (#T ∪ (Abs@Reverse@# Sign /@ List@@Build[MD@@(-List@@k)])T)T[[2]] &, v = True},
Do[If[(Sign@p[[Mod[i + j (Range@o - 1), 2 n, 1]]] ∪ {})2 == {1},
  (*There is a (o, o-1)-pass.*) If[o == 3, Goto@1];
Do[If[Total@Mod[e, 2] == 2, If[(Mod[e, 2 n, e[[1]]] // Partition[#, 2] & //
  Range@@@# &) [[;;, 2;; -2]] // Mod[#, 2 n, 1] & // Union@@# & //
  # == Abs@p[[#]] ∪ {} &, Goto@1]], {e, Select[Table[SortBy[{c, i} ∪ Abs@
  p[[Mod[{i, i + j}, 2 n, 1]]], Mod[#, 2 n, i] &], {c, 2 n}], Length@# == 4 &]T[[
  If[j == 1, {2, 3, 4, 1}, ;;]]T]], {o, {3, 2}}, {i, 2 n}, {j, {1, -1}}];
v = False;
Label@1;
v];

```