Supplementary Figure 9. Reduction of the hinge selection by exploiting the symmetries of a prismatic structure considering only the internal hinges. a) Starting from the triangular prism that forms the basis for a prismatic structure, we number the edges and give them types depending on the connected faces. We assign a node to each edge with the same type and connect these nodes depending on their common vertices in the polyhedron to construct a graph. Additionally, to assign directions to the connections in the graph, we apply the right-hand rule to its normal. b) We determine the minimum distance between nodes. Note that instead of using the distance, we denote the path by the type of the nodes that are encountered when traveling along the path. c) We extract all principal sub-matrices that represent the hinge selections. We replace the node type by a numerical number in order to obtain the eigenvalues of the sub-matrices. In this step, symmetric hinge selections are removed by removing those that have sub-matrices with the same eigenvalues as already selected hinge combinations.