Multi-strand leader with reversible structure and torque compensation, comprising at least four strands, which are separate independent elements, characterized in that the strands are made of a polymer-based material, capable of elastic deformation with shape recovery without the formation of residual deformation after the load is removed. Wherein, the strands are pre-grouped and twisted into intermediate bundles in a first direction, and said intermediate bundles are twisted together in a second direction opposite to the first, wherein the twist pitch of the strands in the intermediate bundles and the twist pitch of the intermediate bundles relative to each other are selected in such a way that the internal mechanical tensions are mutually compensated due to the multidirectionality of the twisting stages.