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Sommario/riassunto	The present work includes the analysis of the load transmission and the modeling of the friction coefficient μ on rough surfaces during the shearing process of actively-driven vacuum grippers. The two main components of elastomeric friction (hysteresis and adhesion) are modeled. In addition, the positive locking is also examined in detail. The presented friction model allows to calculate the friction coefficient and therefore to optimize the design of restraint systems for vacuum grippers.