The classical Mead-Markus sandwich beam consists of two stiff beam layers which sandwich a beam compliant layer. We consider a multilayer generalization of this model consisting of $m+1$ stiff layers bound together by $m$ shear deformable layers with linear viscous shear damping included. We show that the semigroup associated with the multilayer beam is analytic. Furthermore, the angle of analyticity is described explicitly. A solution to the problem of how to optimally choose the damping in each layer to maximize the angle of analyticity is described. (Received September 11, 2008)