Static admissibility #2

We consider a prismatic domain with a Carthesian coordinate system $(\underline{O}, \underline{e}_1, \underline{e}_2, \underline{e}_3)$. The domain is clamped over the plane (z=0). The top surface is subjected to a uniform density of tractions (intensity T about direction $\underline{e}_1$). The other surfaces are free of traction and body forces are neglected.

Question: Write all the equations defining static admissibility for $\underline{\underline{\sigma}}$ and expand them.

Question: Clearly define the set of of statically admissible stress fields, S^{ad}.

Question: Can the following stress field be a viable solution for the problem:

$$\sigma_{13} = \sigma_{31} = T \quad ; \quad \text{otherwise} \quad \sigma_{ij} = 0 \tag{1}$$

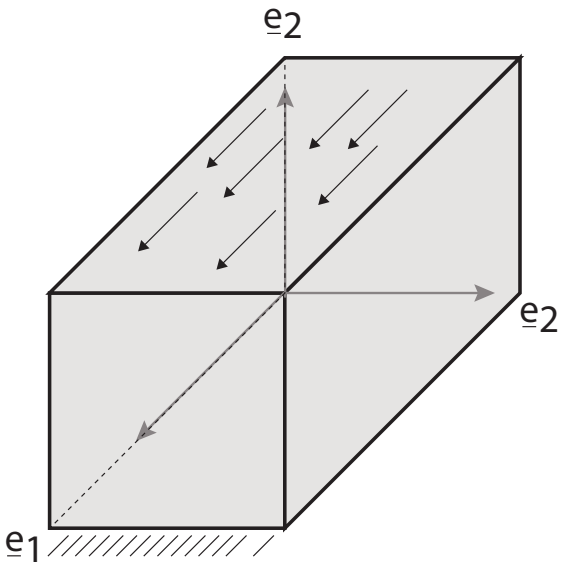

Figure 1: A prismatic domain with a Carthesian coordinate system $(\underline{O}, \underline{e}_1, \underline{e}_2, \underline{e}_3)$