

Chapter 25

Laminated composite structures

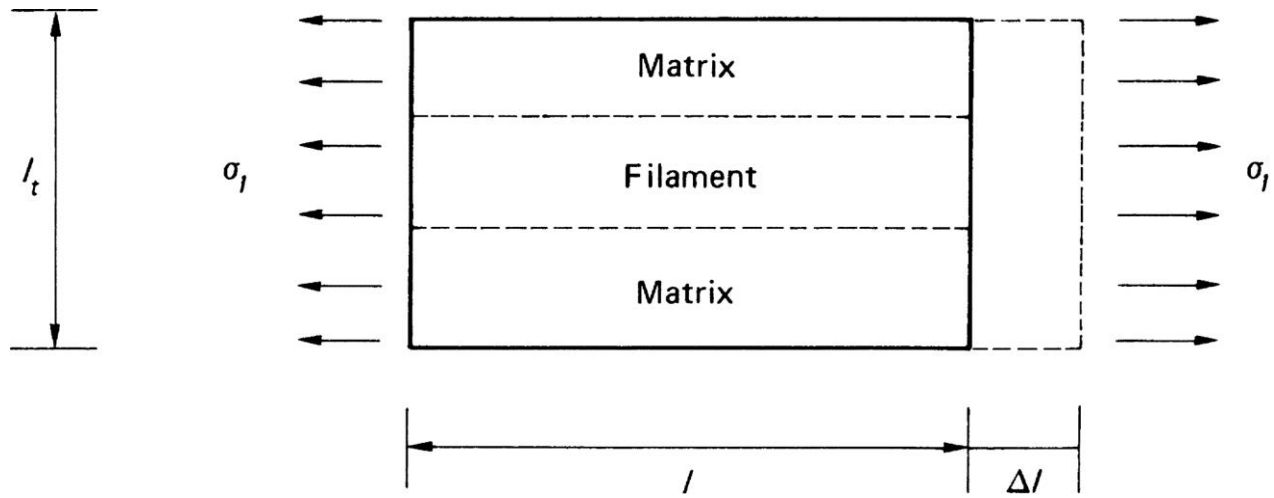


FIGURE 25.1 Determination of E_f

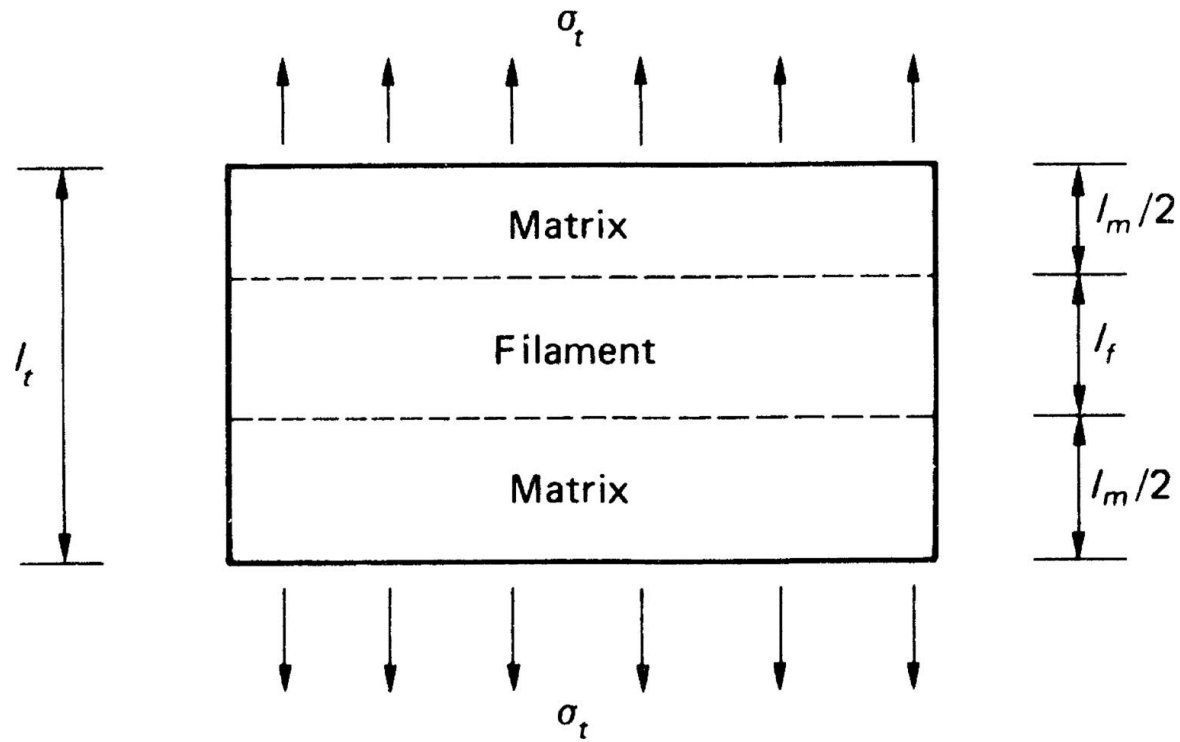


FIGURE 25.2 Determination of E_t

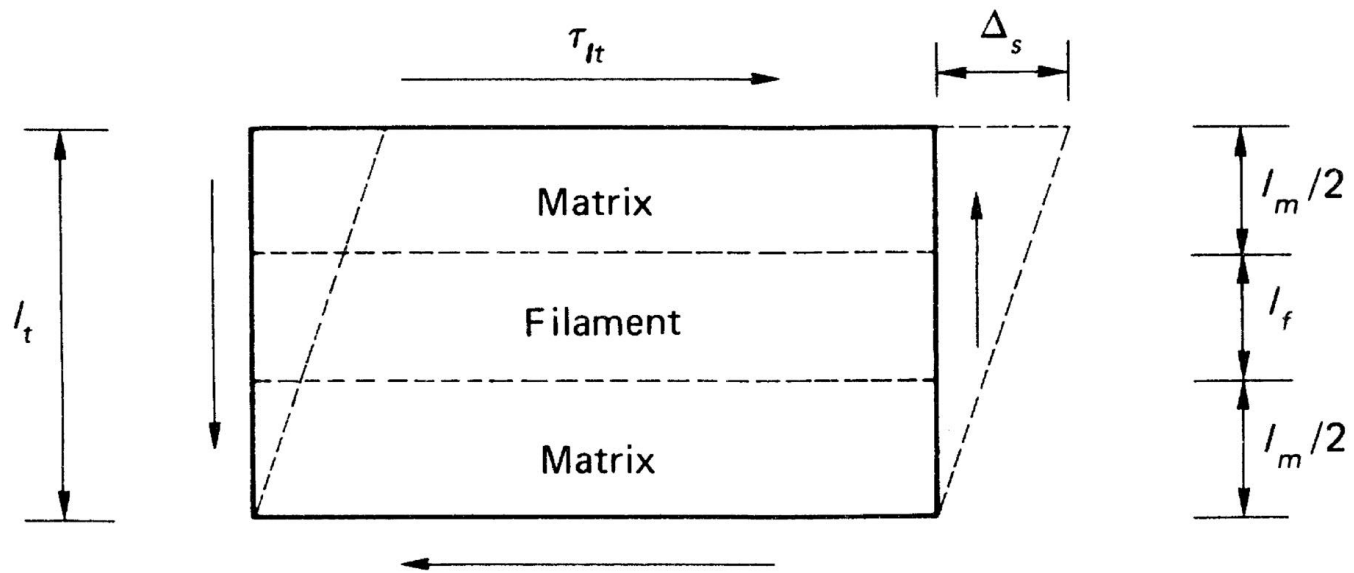


FIGURE 25.3 Determination of G_{lt}

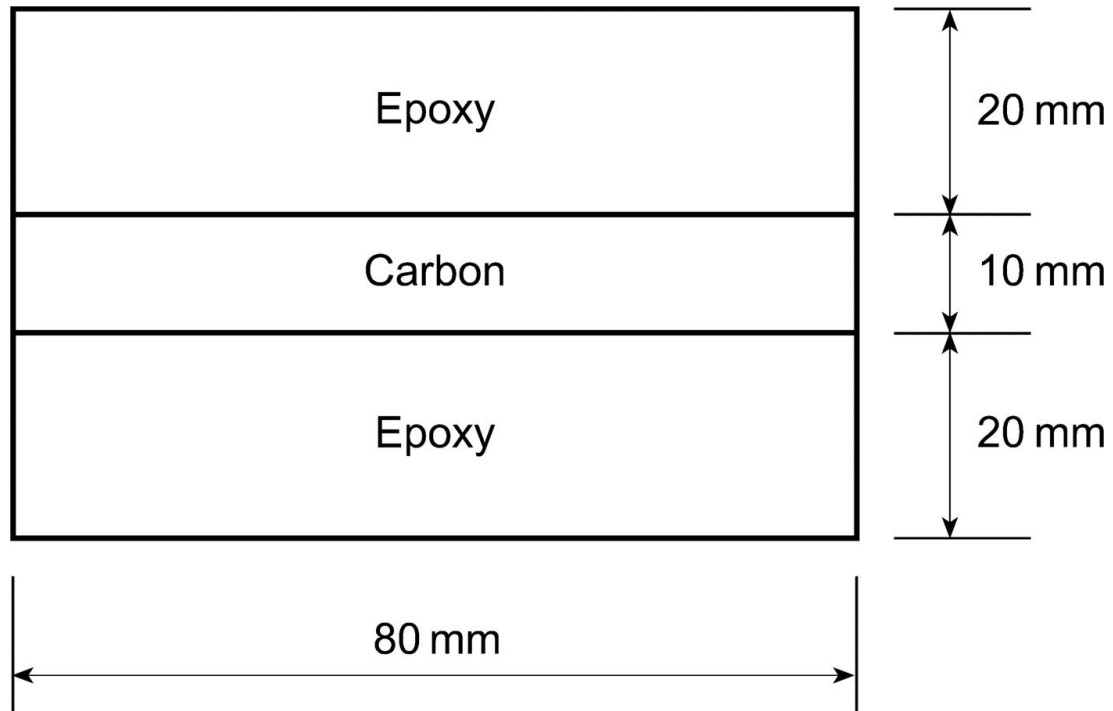


FIGURE 25.4 Cross-section of the Bar of Example 25.1

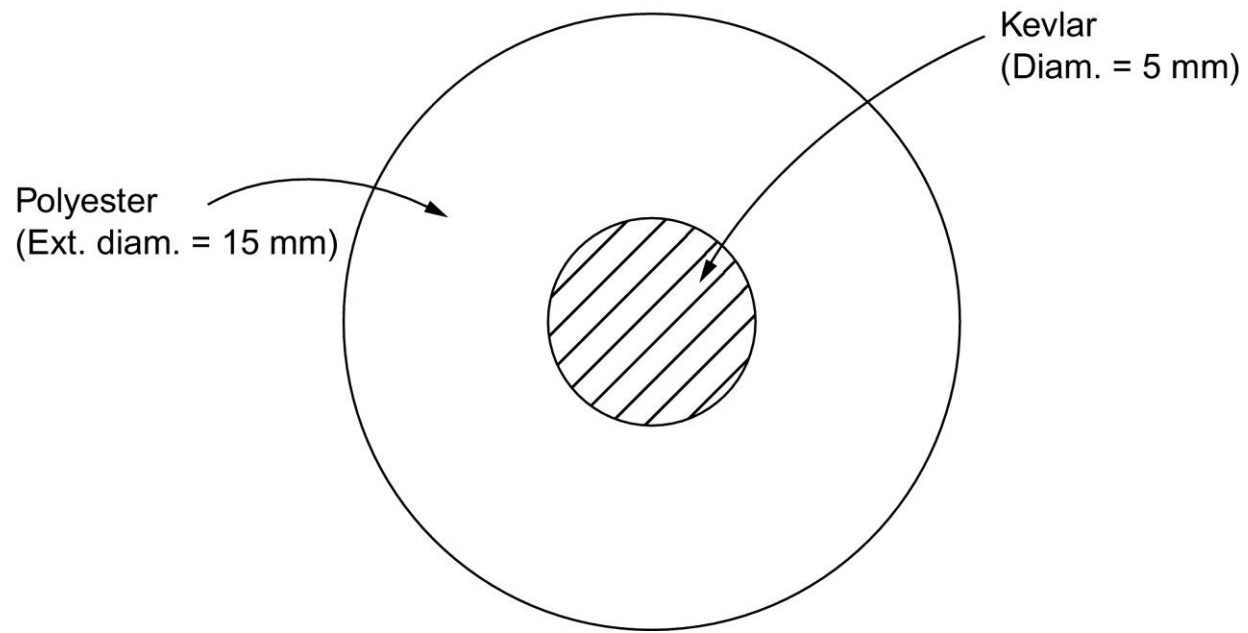
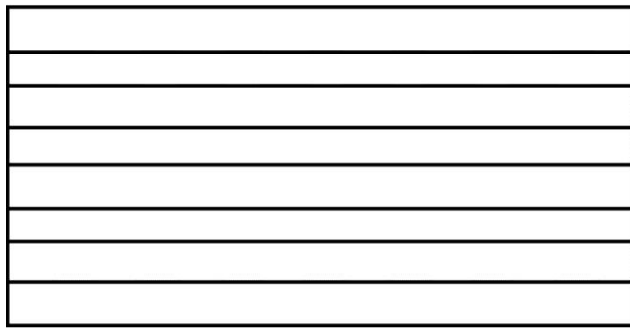
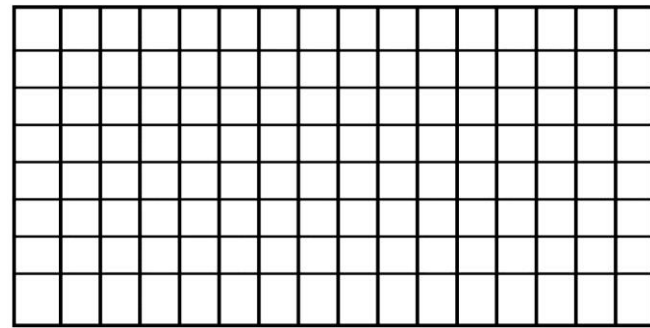


FIGURE 25.5 Cross-section of the Cable of Example 25.2



(a)



(b)

FIGURE 25.6 Types of Ply: (a) Unidirectional Ply; (b) Woven Ply

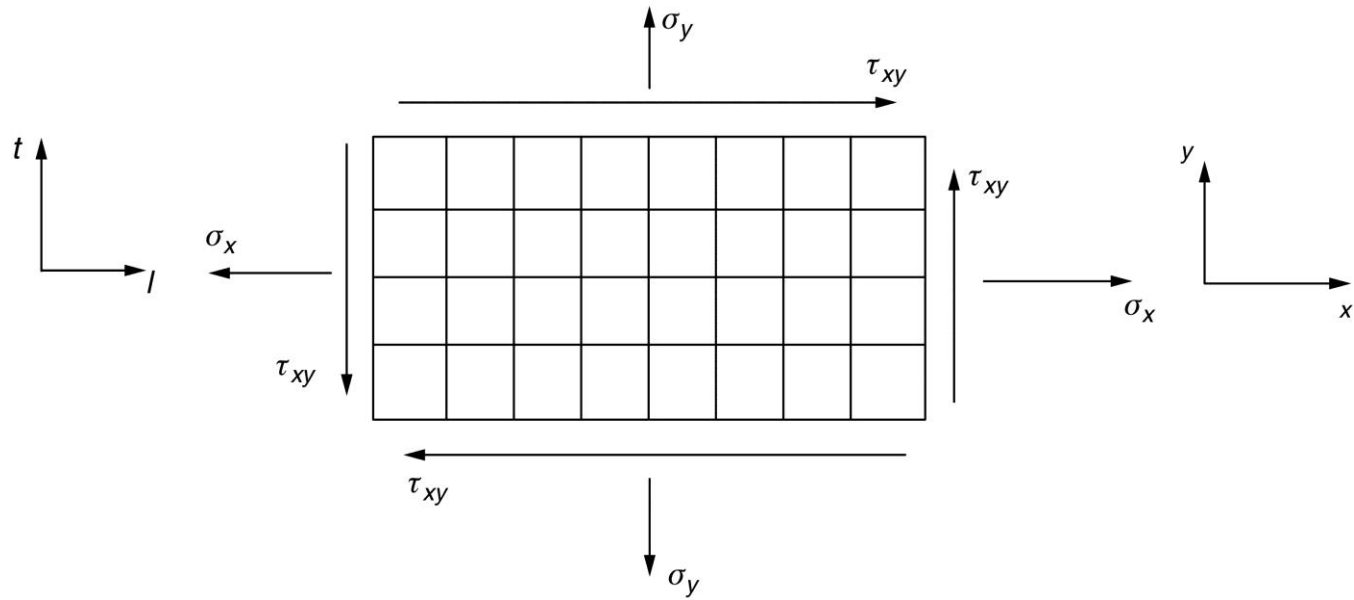


FIGURE 25.7 Reference Axes for a Specially Orthotropic Ply

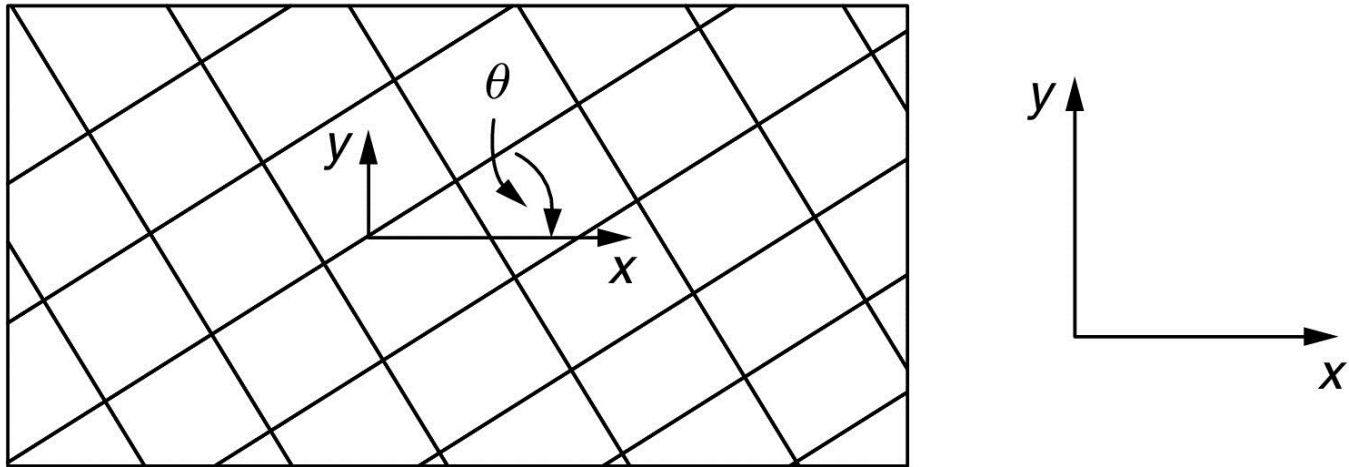


FIGURE 25.8 Generally Orthotropic Ply

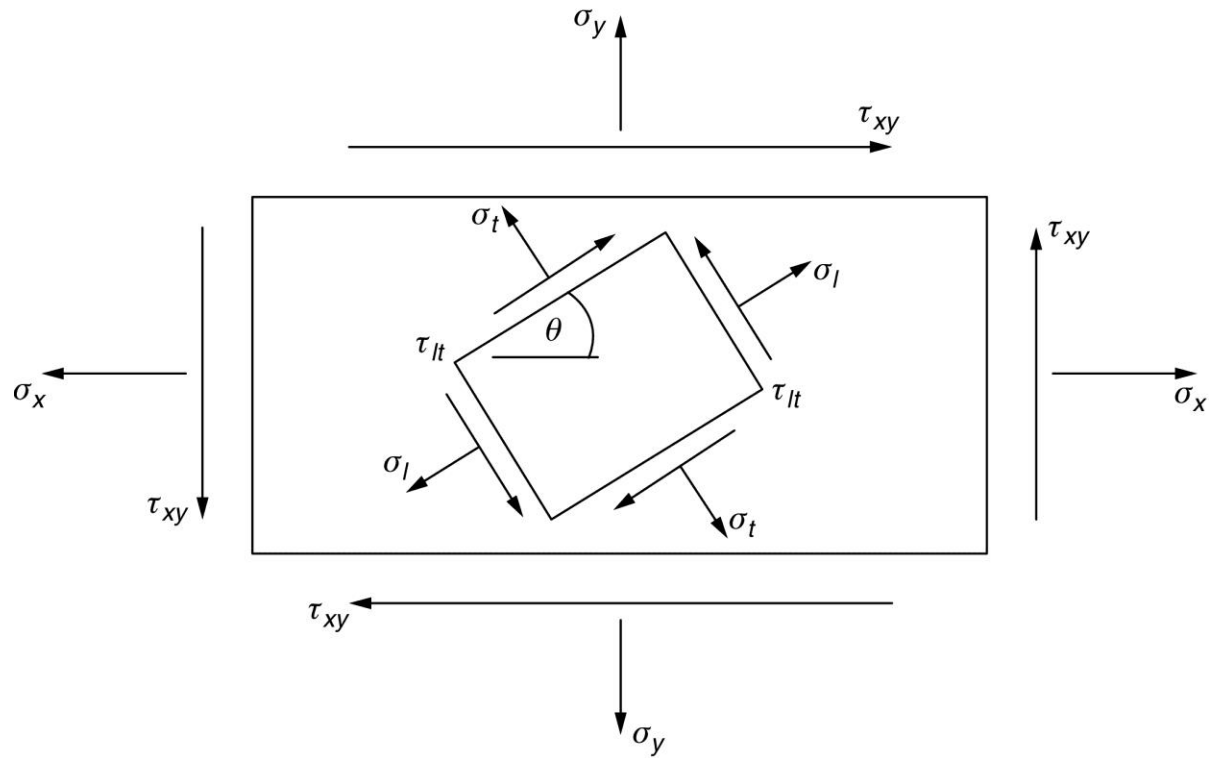


FIGURE 25.9 Stresses in a Generally Orthotropic Ply

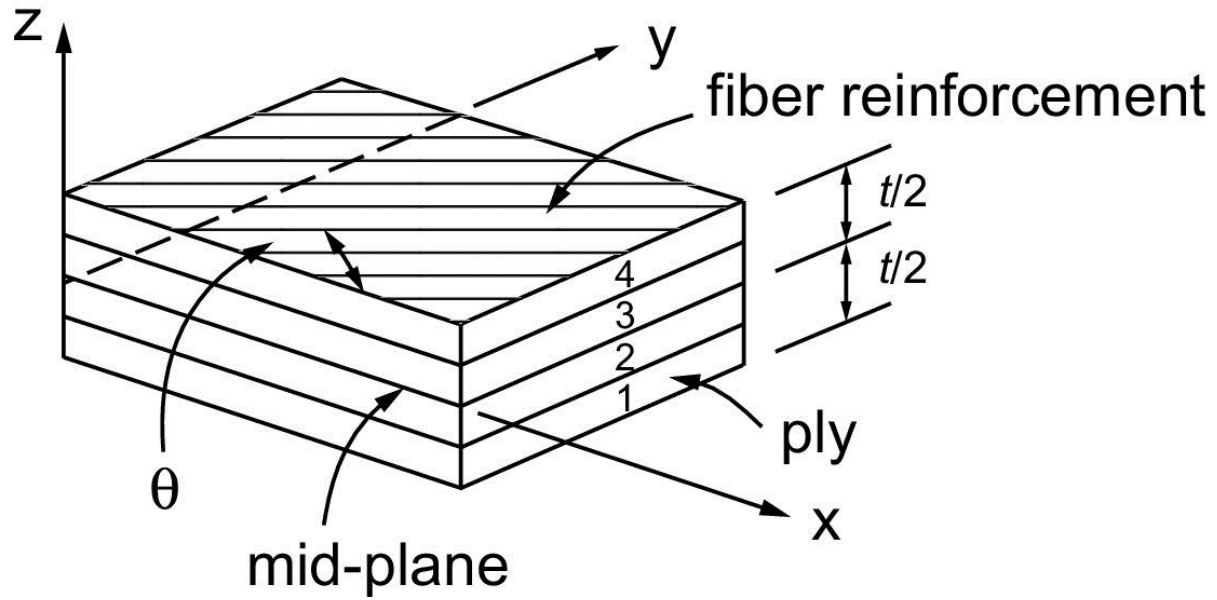


FIGURE 25.10 Axes System for a Laminate

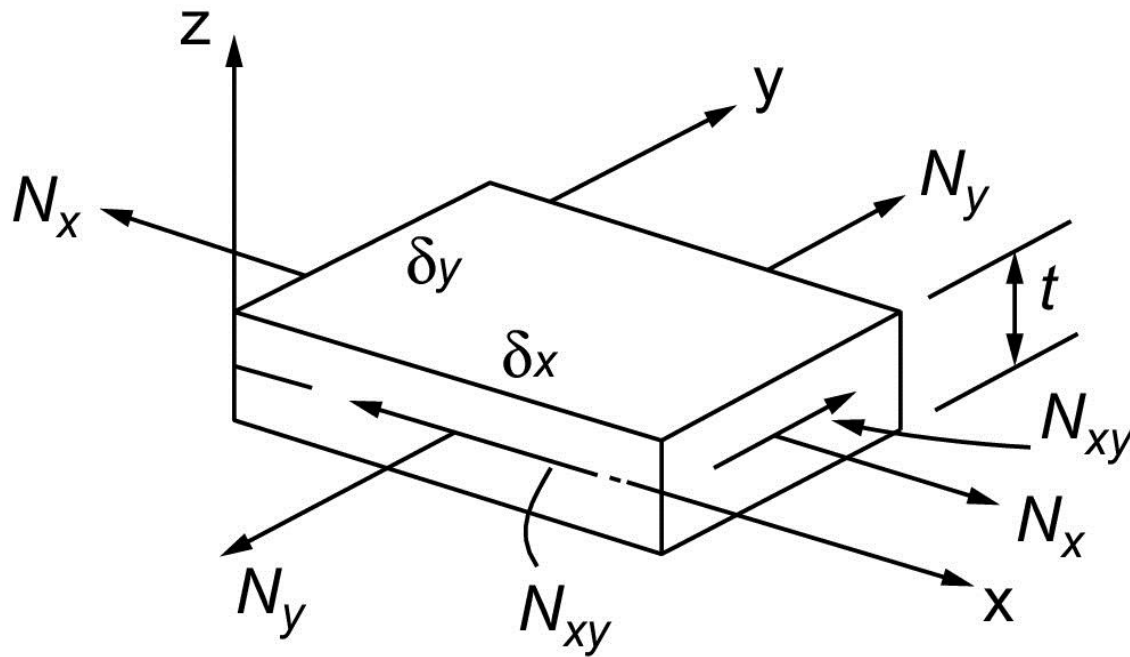


FIGURE 25.11 In-Plane Forces Acting at a Point in a Laminate

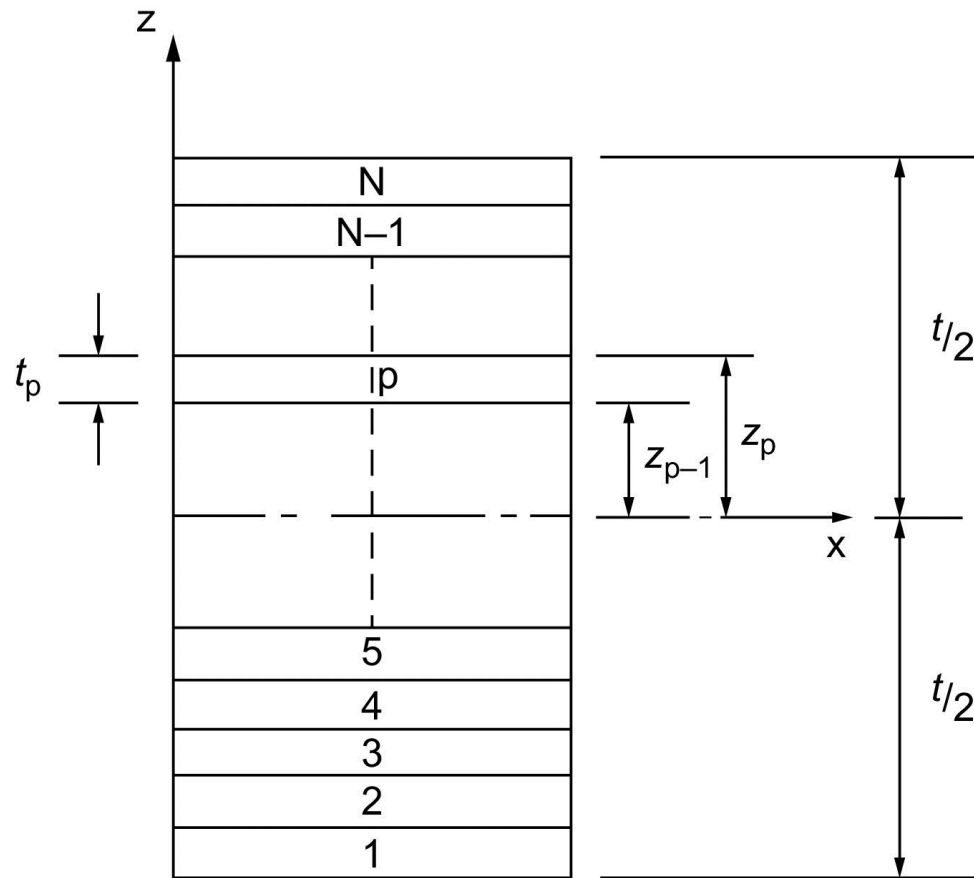


FIGURE 25.12 Portion of a Layered Laminate

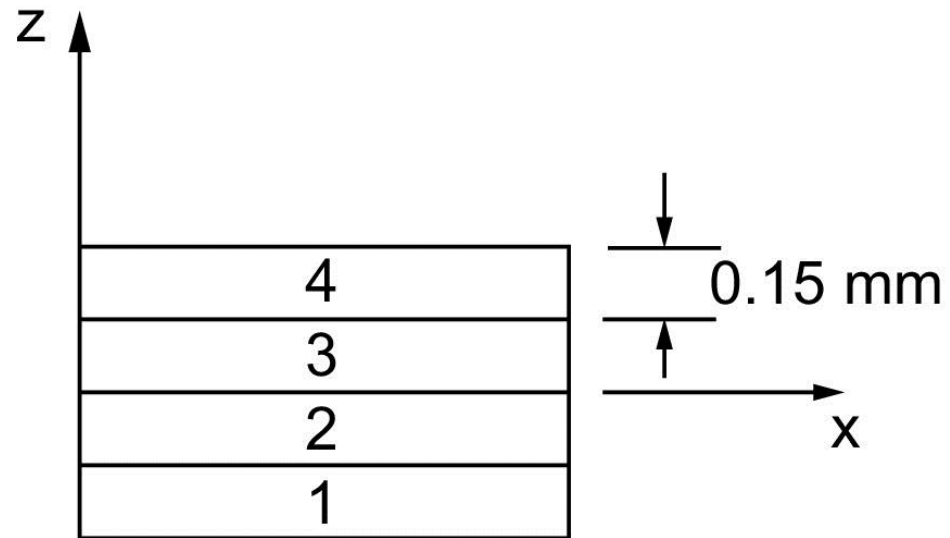


FIGURE 25.13 Laminate of Example 25.8

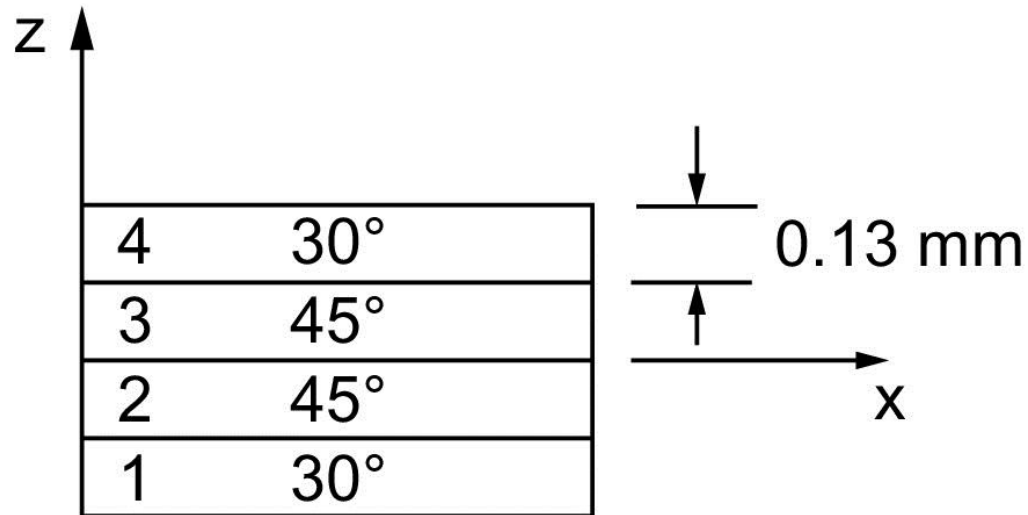


FIGURE 25.14 Laminate of Example 25.11

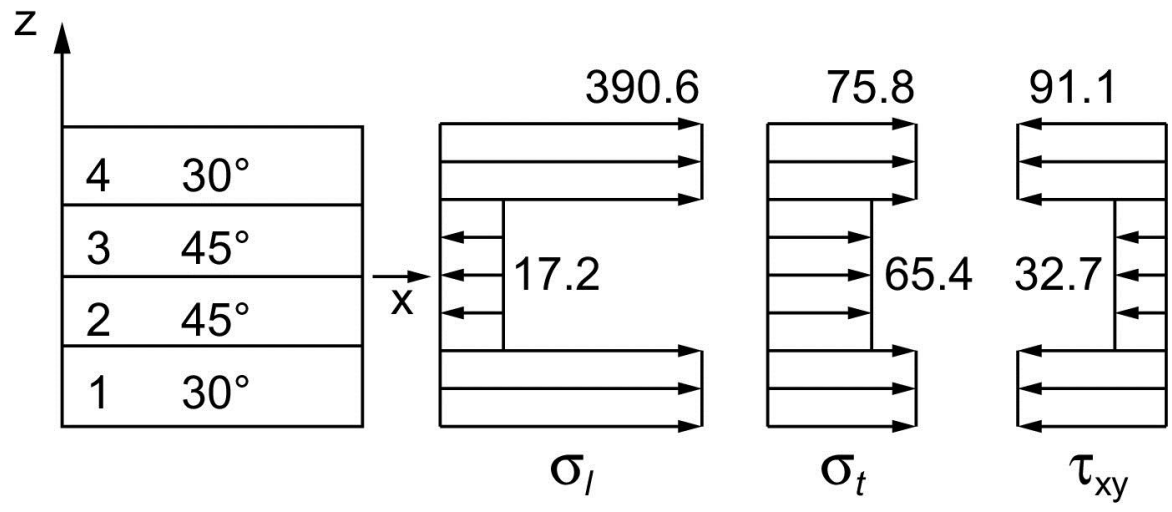


FIGURE 25.15 Distribution of Ply Stresses (N/mm²) in Laminate of Example 25.12

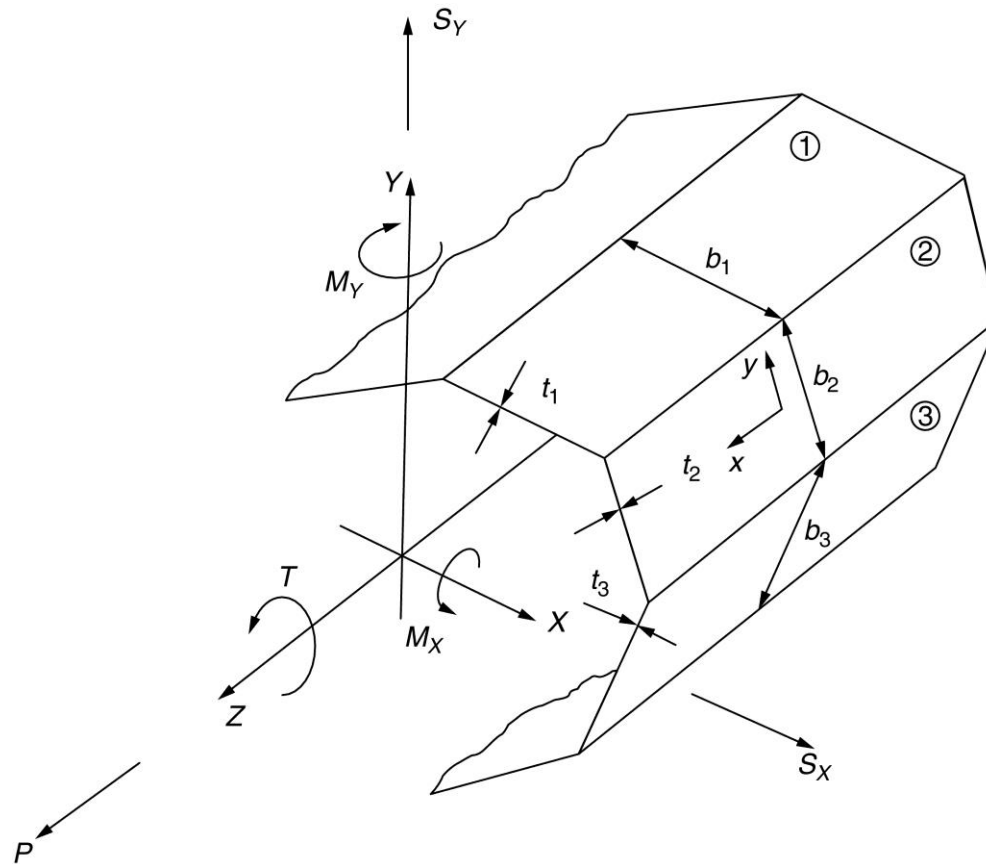


FIGURE 25.16 Composite Thin-Walled Section

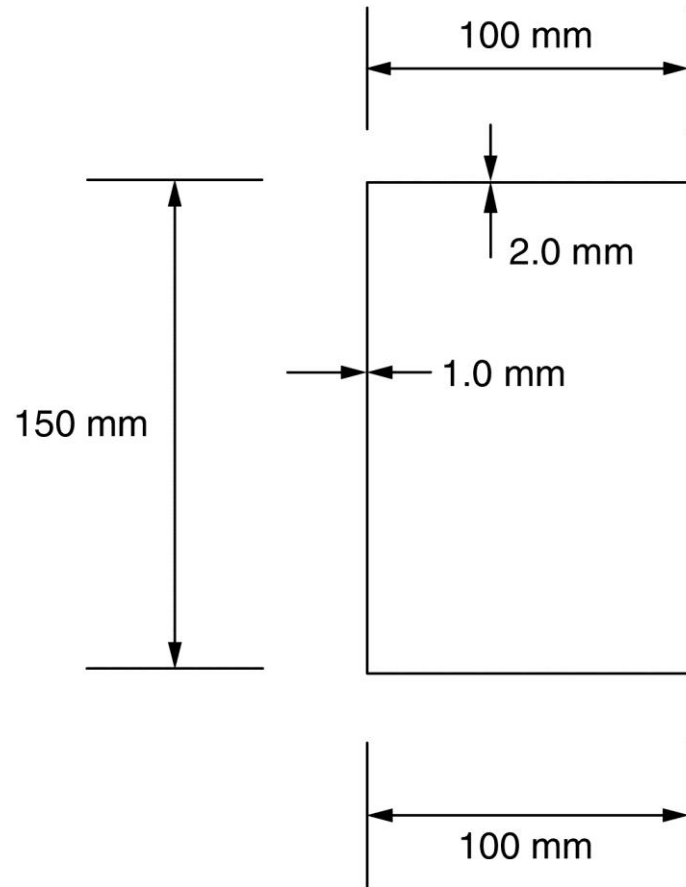


FIGURE 25.17 Beam Section of Example 25.13

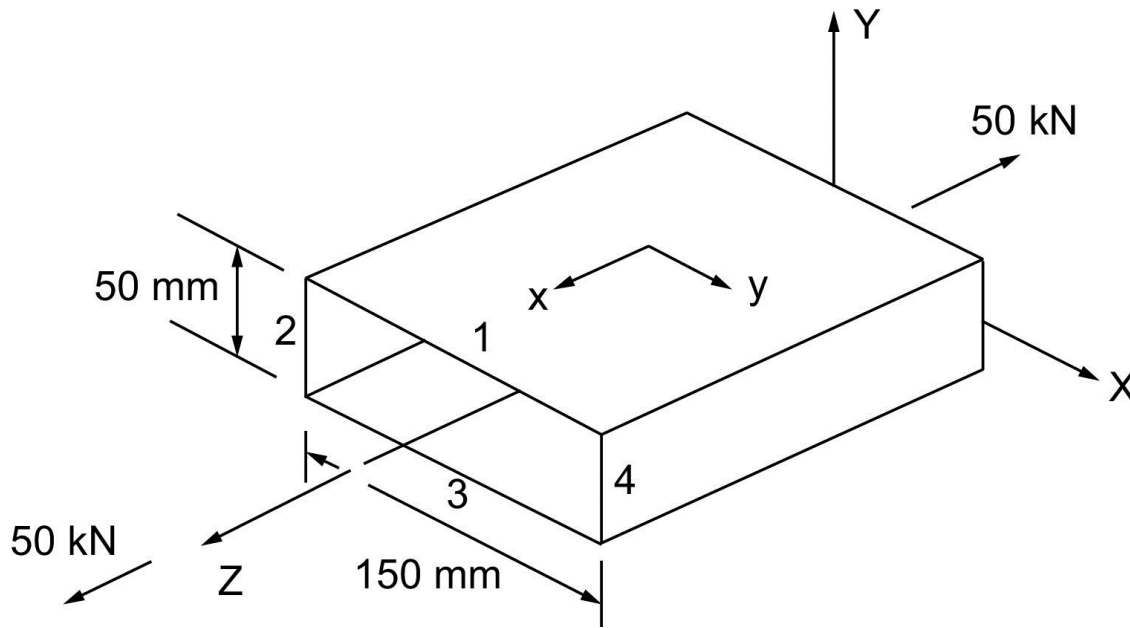


FIGURE 25.18 Beam of Example 25.14

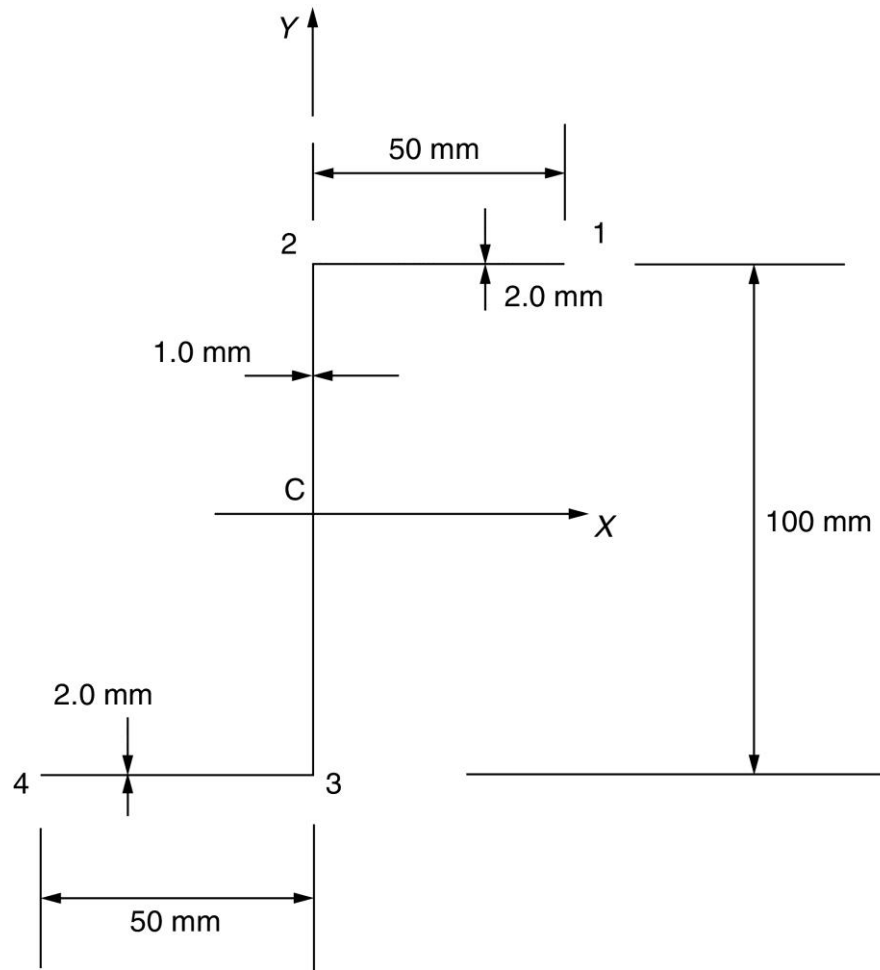


FIGURE 25.19 Beam Section of Example 25.15

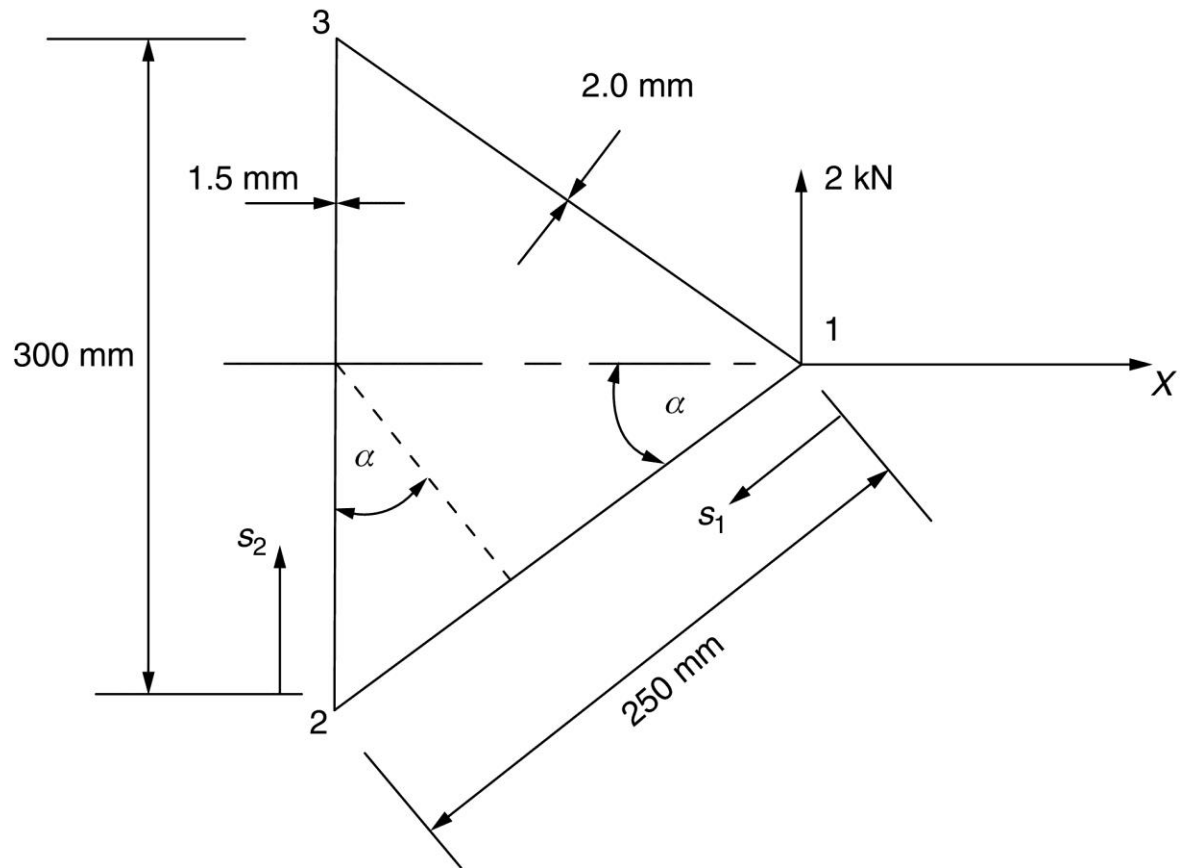


FIGURE 25.20 Beam Section of Example 25.18

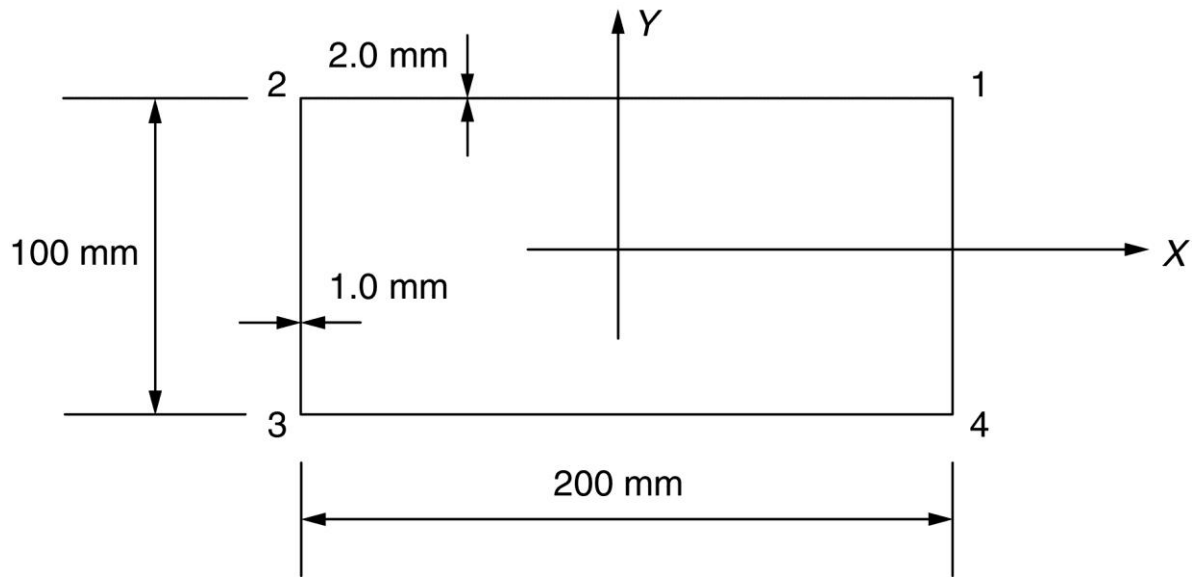


FIGURE 25.21 Beam Section of Example 25.19

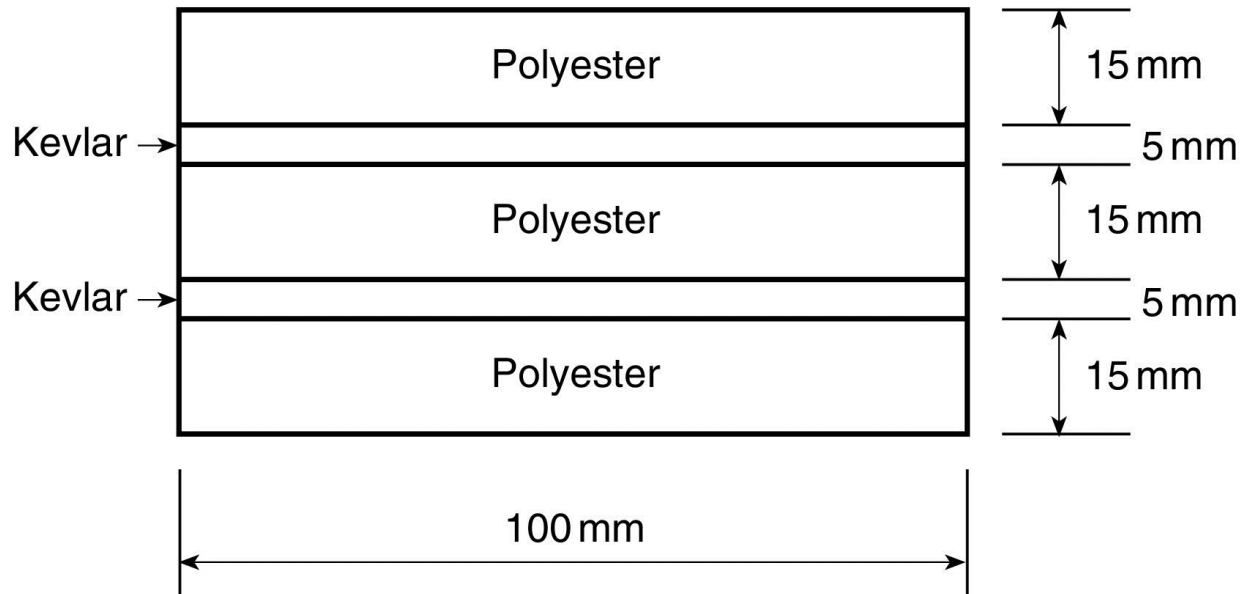


FIGURE P.25.1

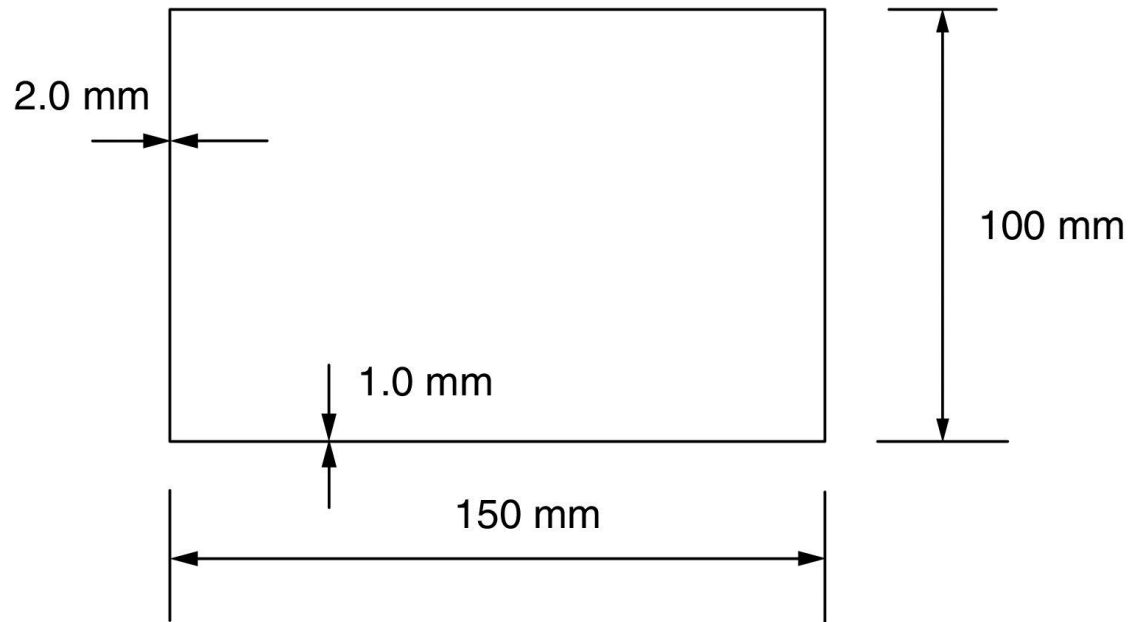


FIGURE P.25.13

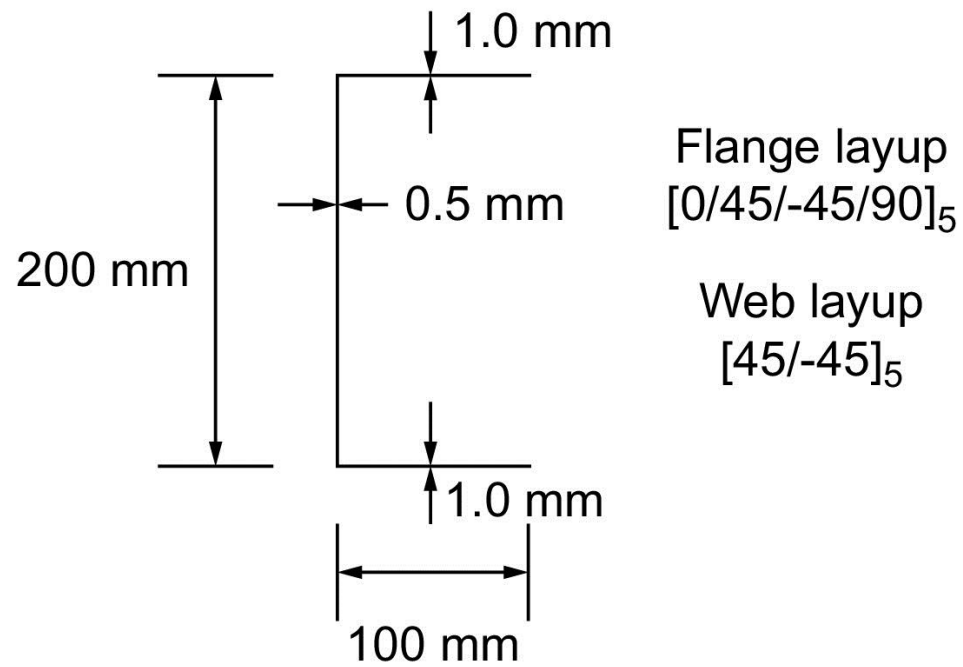


FIGURE P.25.14

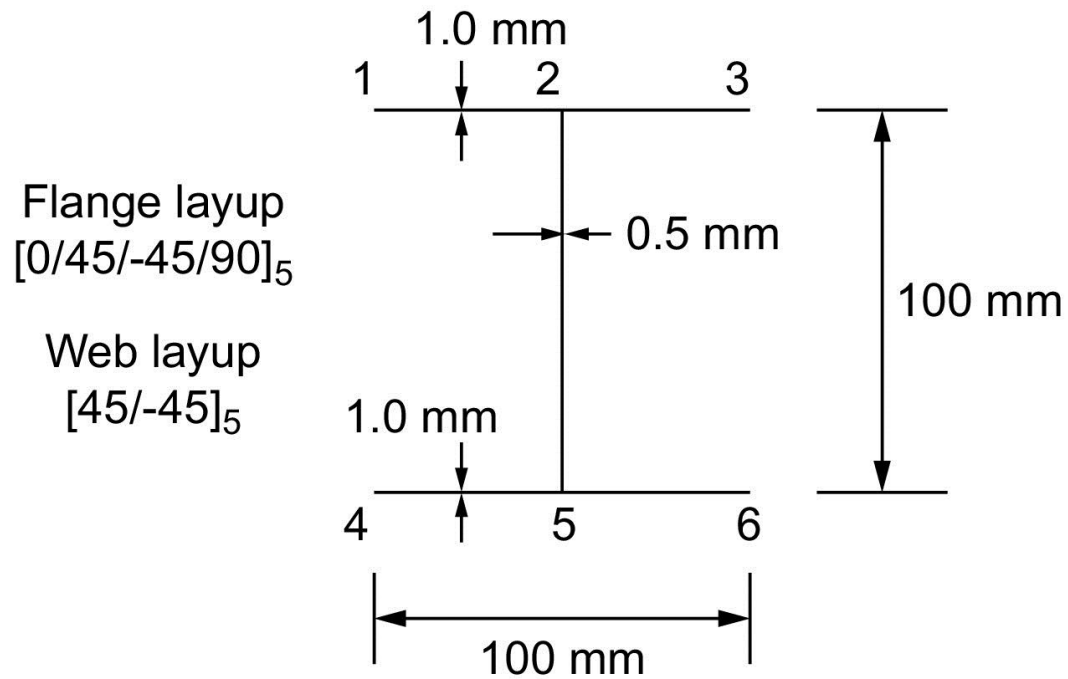


FIGURE P.25.17

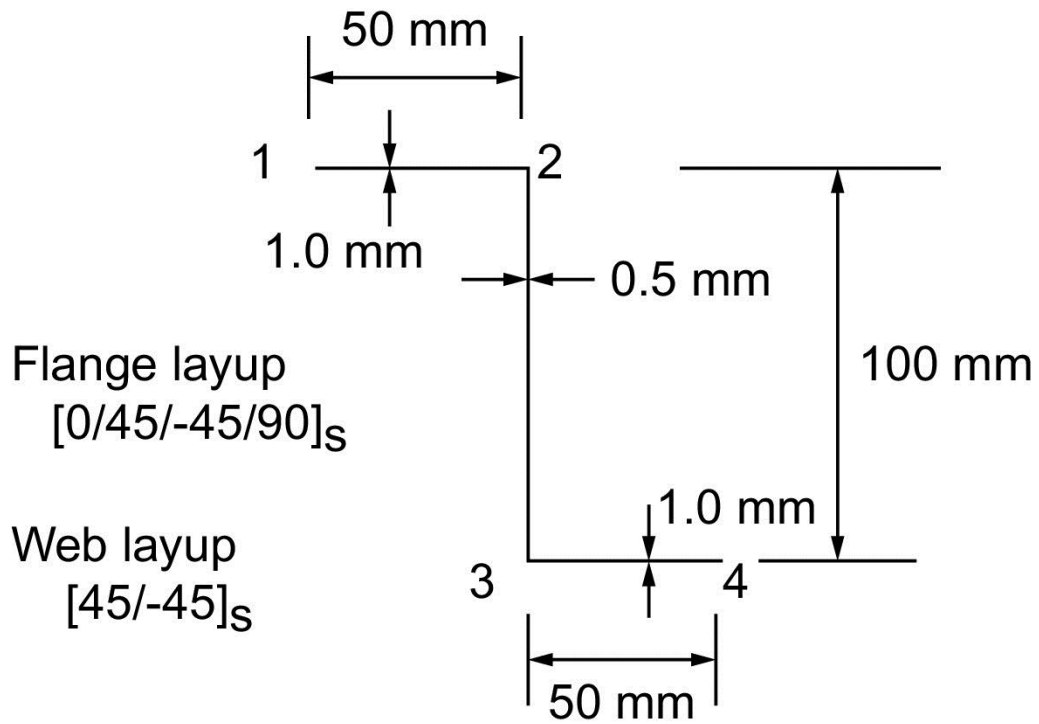


FIGURE P.25.18

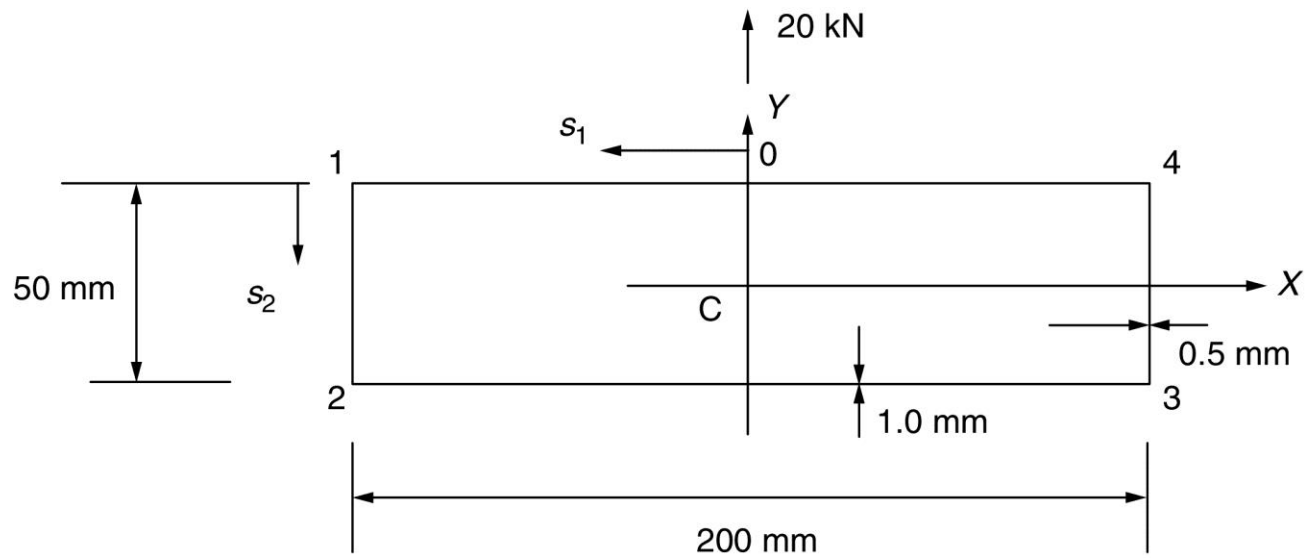


FIGURE P.25.20

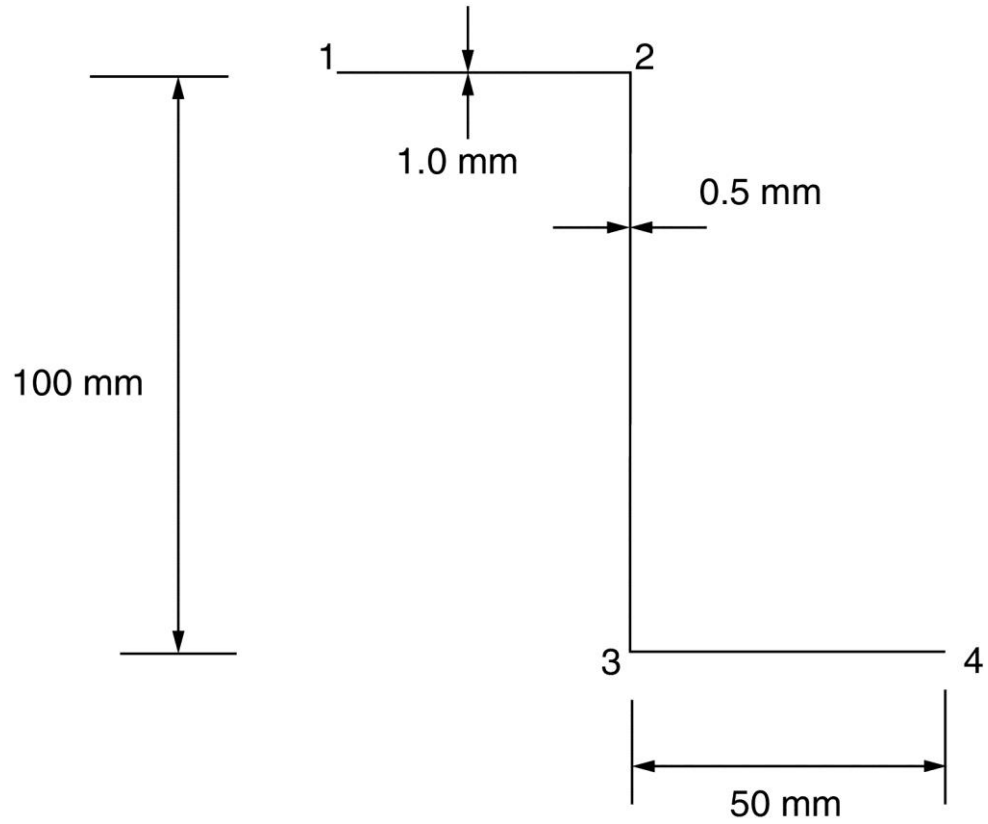


FIGURE P.25.22