

Lecture 5

Steel Hall Buildings – Part 4: Primary rafters

Acknowledgement

I express my gratitude to doctor Dawid Mądry for creating this work and for professor Antoni Biegus for making available to me the materials incorporated in his book "Stalowe budynki halowe" (Steel industrial buildings), which were mainly used at drawing this work up

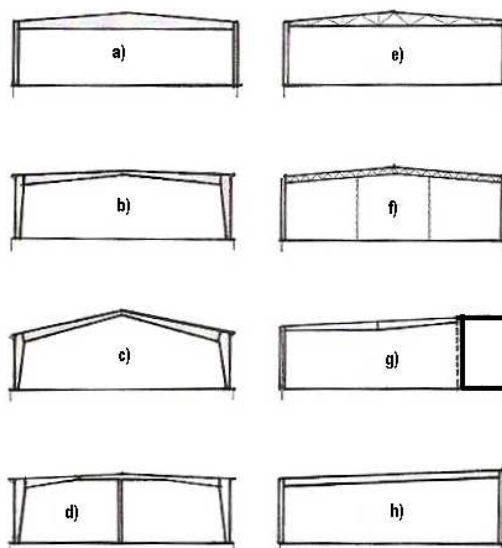
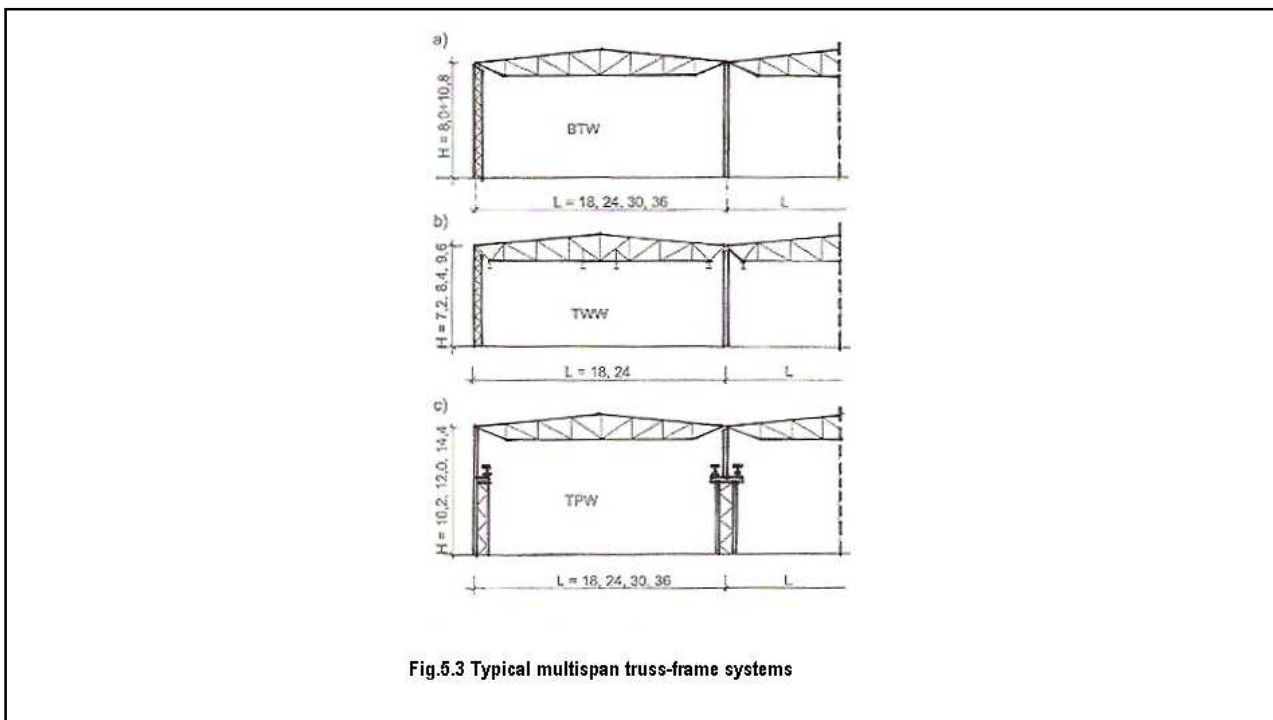
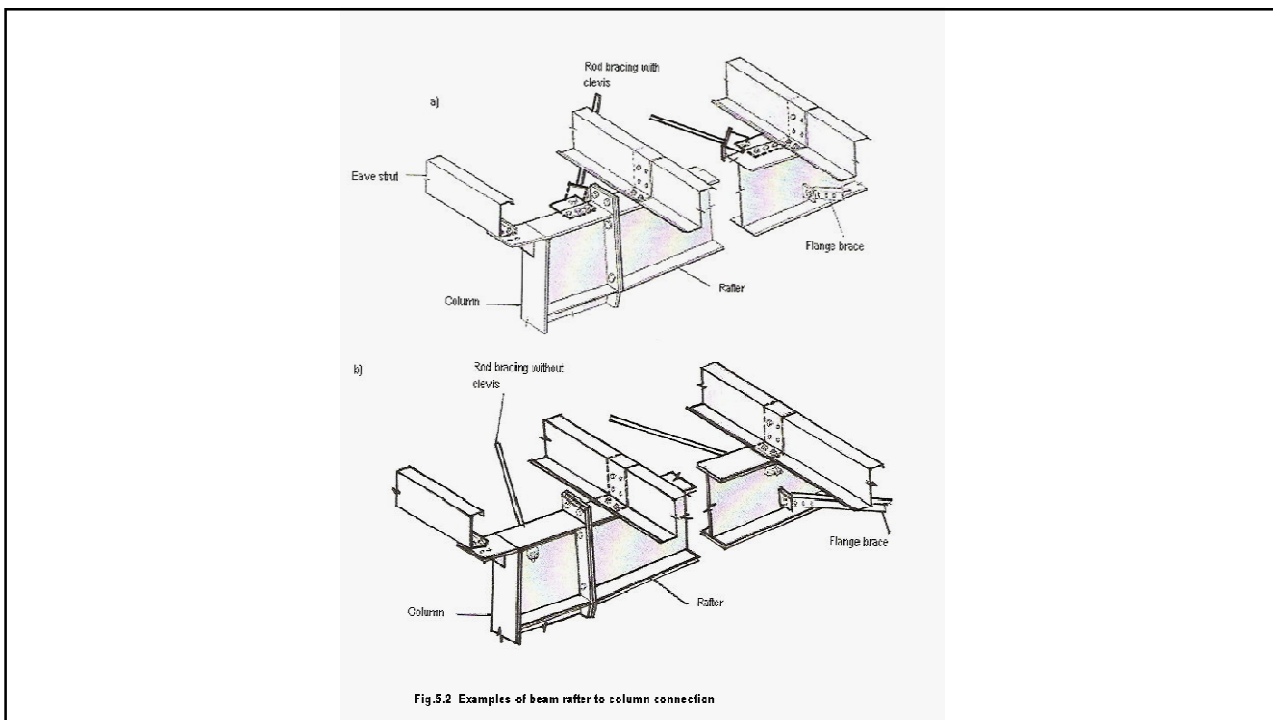


Fig.5.1 Types of primary frames: a) tapered beam, b) single-span rigid frame, low profile, c) single-span rigid frame, medium profile, d) multispan rigid frame, e) single-span truss, f) continuous truss, g) lean-to, h) single slope post-beam



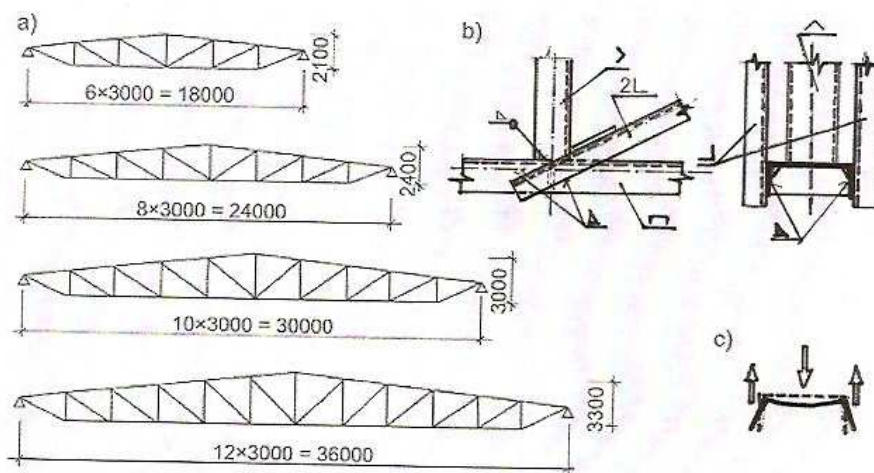


Fig.5.4 Typical truss rafters of N-shape, a) schemes, b) construction of a bottom joint, c) deformed cross-section of a bottom chord

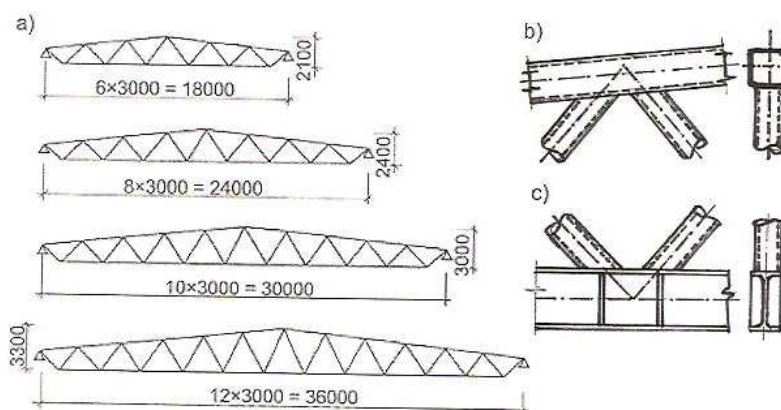
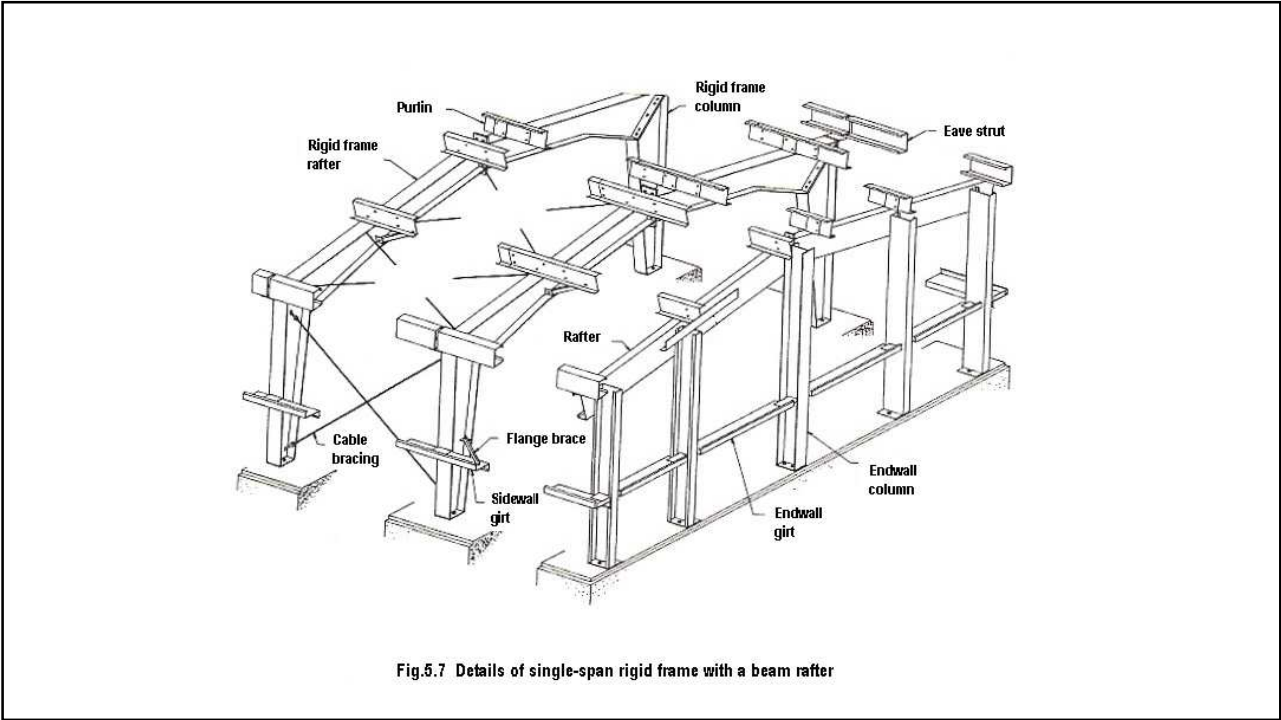
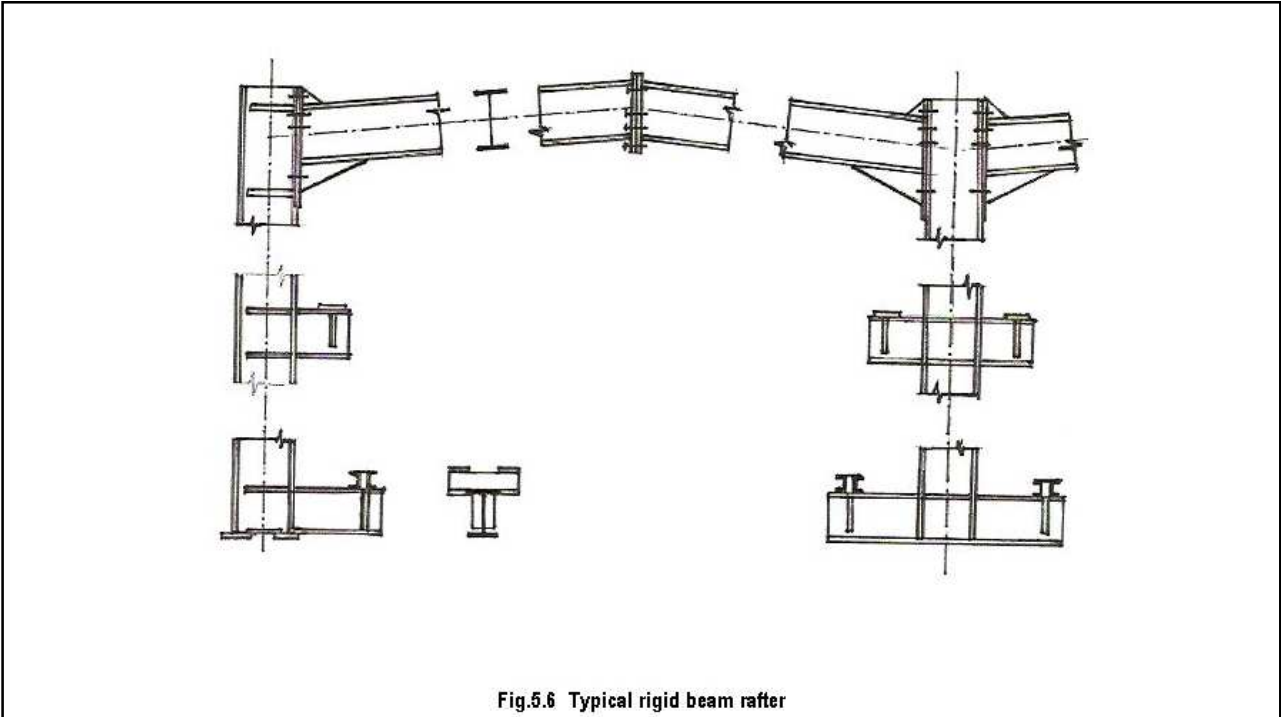


Fig.5.5 Typical truss rafters of V-shape: a) schemes, b) construction of the upper joint, c) construction of the bottom joint



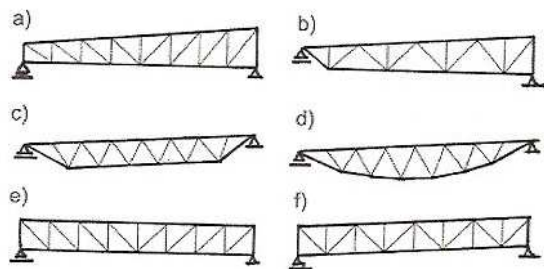


Fig.5.8 Examples of trapezoidal truss rafters

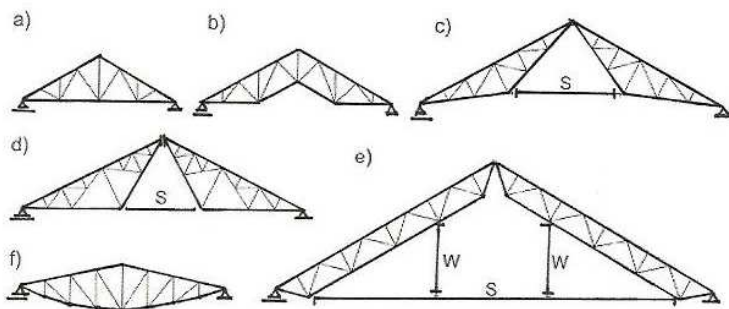


Fig.5.9 Examples of triangular truss rafters: S-tie, W-suspension rod

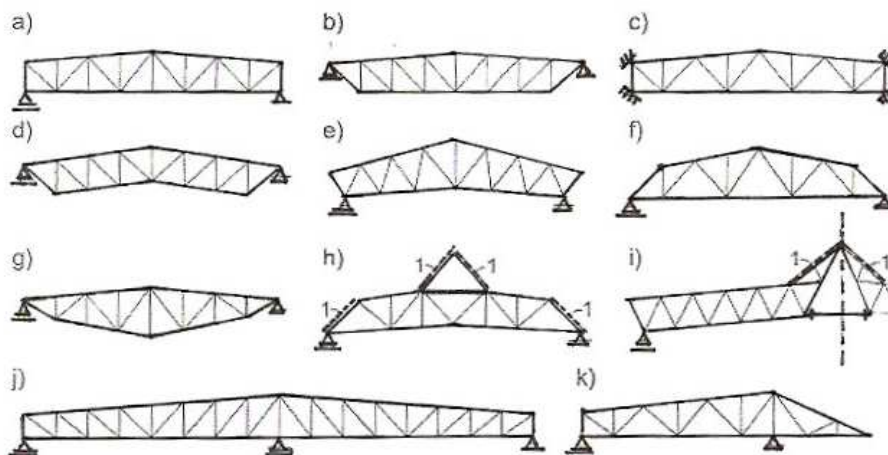
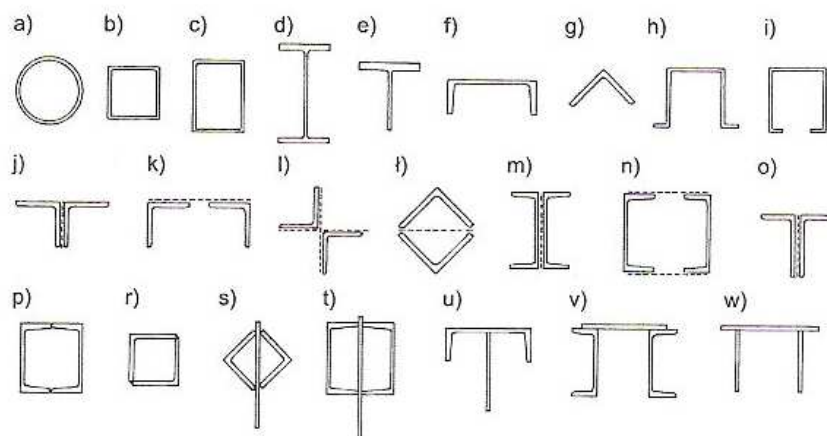
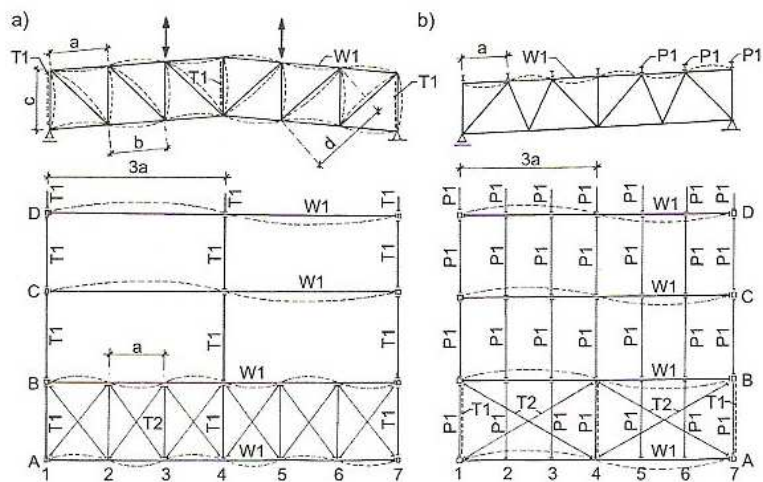


Fig.5.10 Examples of two-slope truss rafters: 1- glazing



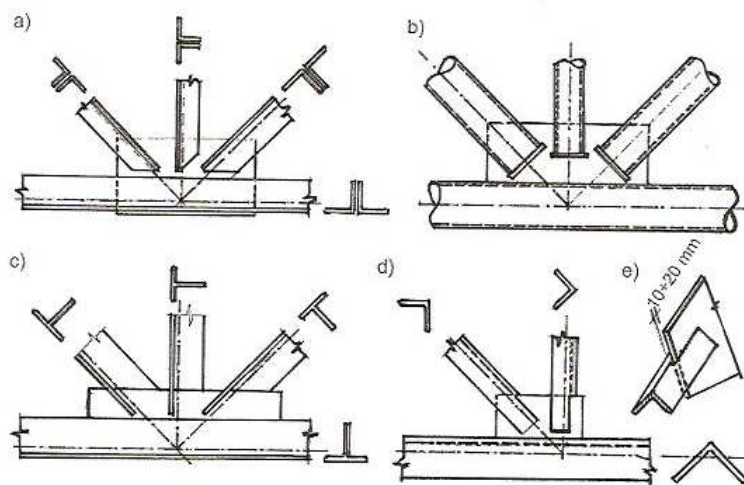


Fig.5.13 Construction of joints with gusset-plates - examples

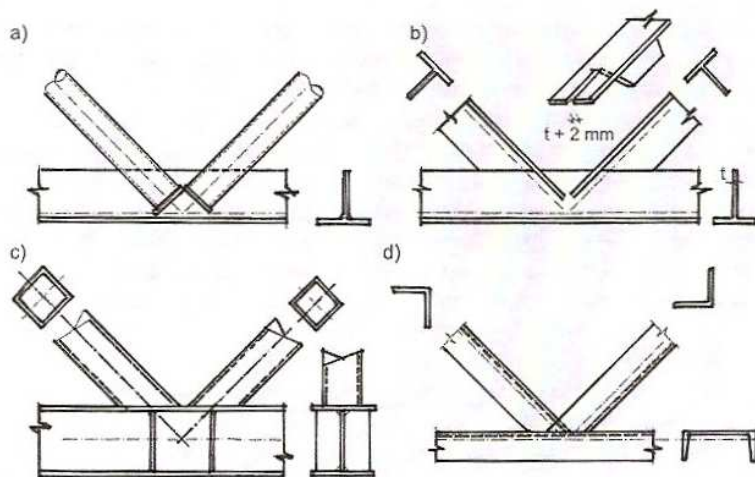
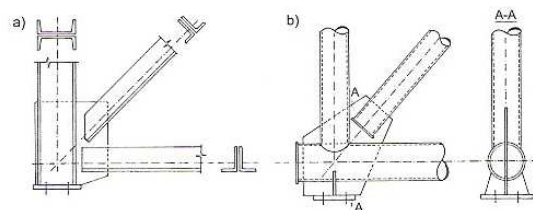
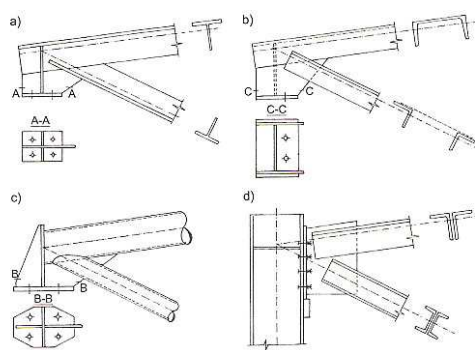
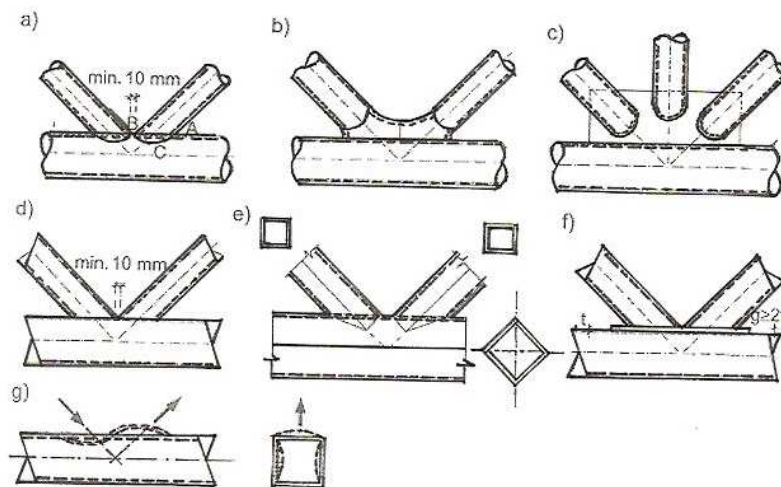


Fig.5.14 Constructions of joints without gusset plates - examples



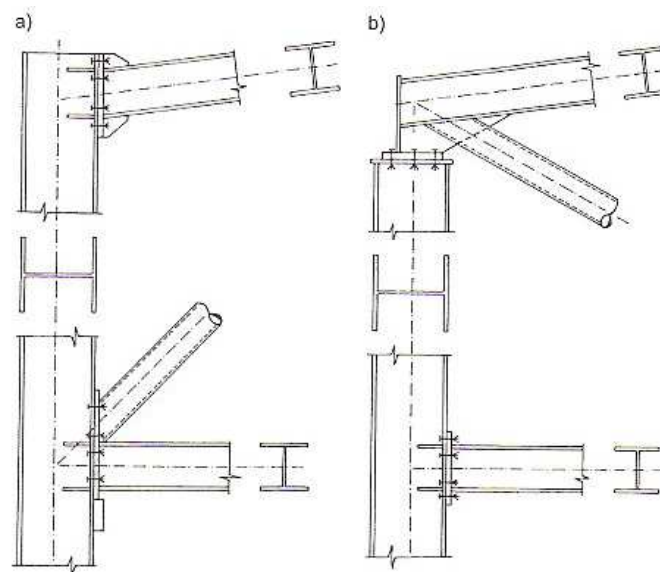


Fig.5.18 Fully fixed ends of a truss rafter

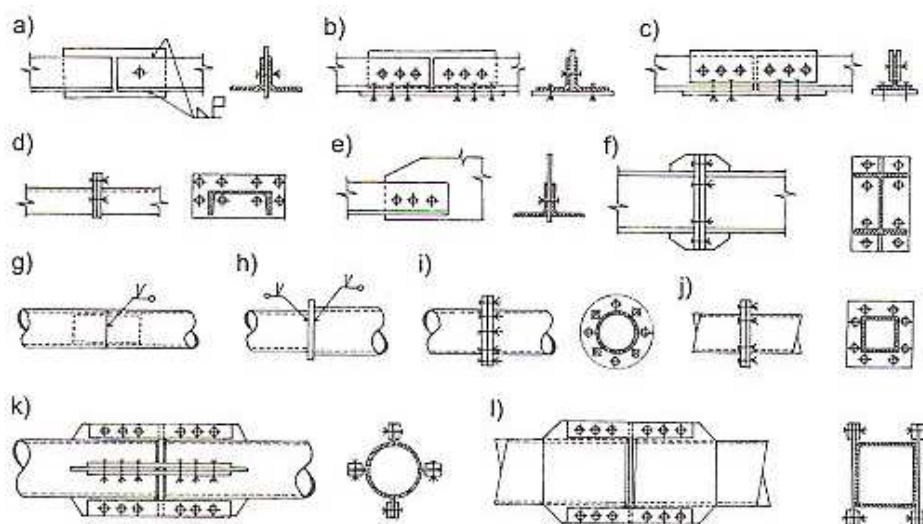


Fig.5.19 Examples of field connections between members

