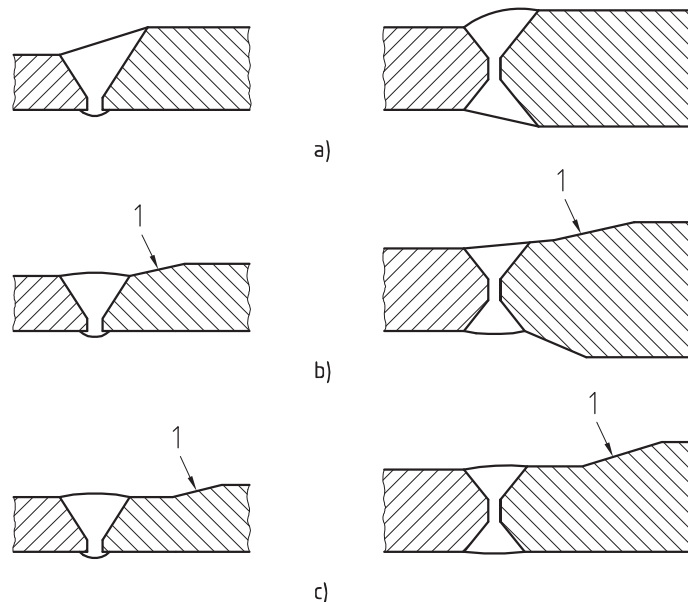


## B.2 Butt joints

Butt joints between parts of unequal cross-section, arranged in line, will result in a local increase in stress in addition to the stress concentration caused by the profile of the weld itself. If the centre planes of the two parts joined do not coincide, local bending also will be induced at the joint. If the stresses induced by these effects are unacceptable, then the parts should be shaped before welding by a slope of not greater than 1 in 4 so as to reduce the stresses. Examples of plain and shaped parts are shown in figure B.1, where a) and b) are the more common types with c) being a special configuration to facilitate non-destructive testing.

A partial penetration butt weld which is welded from one side only should not be subjected to a bending moment about the longitudinal axis of a weld. It would cause the root of the weld to be in tension. Therefore it should be avoided and only used when permitted by the design. Under such circumstances it may be allowed by an application standard or contract.



### Key

- 1 Slope approximately 1 in 4
- a) Slope in the weld
- b) Slope in the thicker plate
- c) Special configuration to facilitate non-destructive testing

Figure B.1 — Butt joints of unequal cross-section