

TABLE 2.1
CHARACTERISTICS OF VARIOUS RESTRAINT/FALL SITUATIONS

Restraint/fall situation	System description	Equipment and anchorage requirements (minimum) (see Notes 1 and 4)	Typical application
Restraint technique	A combination of anchorage placement and lanyard length adjustment which will not physically permit the operator to reach a fall-risk position (see Note 2) unless the lanyard is incorrectly adjusted.	Fall-arrest rated equipment as follows: Where any possible fall will only be a limited free fall (<600 mm), a lower-body harness and anchorage with ultimate strength 12 kN. All other cases, a full-body harness and anchorage with ultimate strength 15 kN.	Any situation where access to the work can be achieved entirely on a working surface with secure footing and without exposure to a fall provided that the equipment is correctly adjusted.
Restrained fall only	A pole-strap of length which will permit only a restrained fall when working on a pole	Full-body or lower-body harness and pole strap.	Working on a pole where no free fall is possible.
Limited free fall	A combination of anchorage placement and lanyard length which will permit only a limited free fall (< 600 mm).	Full-body or lower-body harness. Lanyard or fall-arrest device that will limit free-fall to 600 mm max. (See Note 2). 12 kN ultimate strength anchorage or equivalent horizontal lifeline or rail.	Any situation where the use of either a short lanyard or a fall-arrest device (or both where applicable) will limit any free fall to 600 mm. May also be applicable to rope access systems, see AS/NZS 4488.2.
Free fall	Any suitable fall-arrest system.	Full-body harness. Lanyard or fall-arrest device which will limit free fall to 2 m max. (see Note 2). 15 kN ultimate strength anchorage or equivalent horizontal lifeline or rail.	Any situation in which a free fall greater than 600 mm is possible.
Total restraint	A system where no fall is possible	Not specified in the AS/NZS 1891 Series of Standards (see Note 3).	See Appendix F.

NOTES:

- 1 Fall protection work practices not in accordance with this Standard, in particular, the use of non-complying personal equipment (e.g. lanyards without specified energy absorbing properties), may create fall-arrest forces which will exceed the anchorage strengths specified in the Table.
- 2 See also Section 8.
- 3 Whilst no equipment is specified, fall-arrest rated equipment can be used.
- 4 'Ultimate strength' means that the anchorage may yield at the stated load but must not fail.

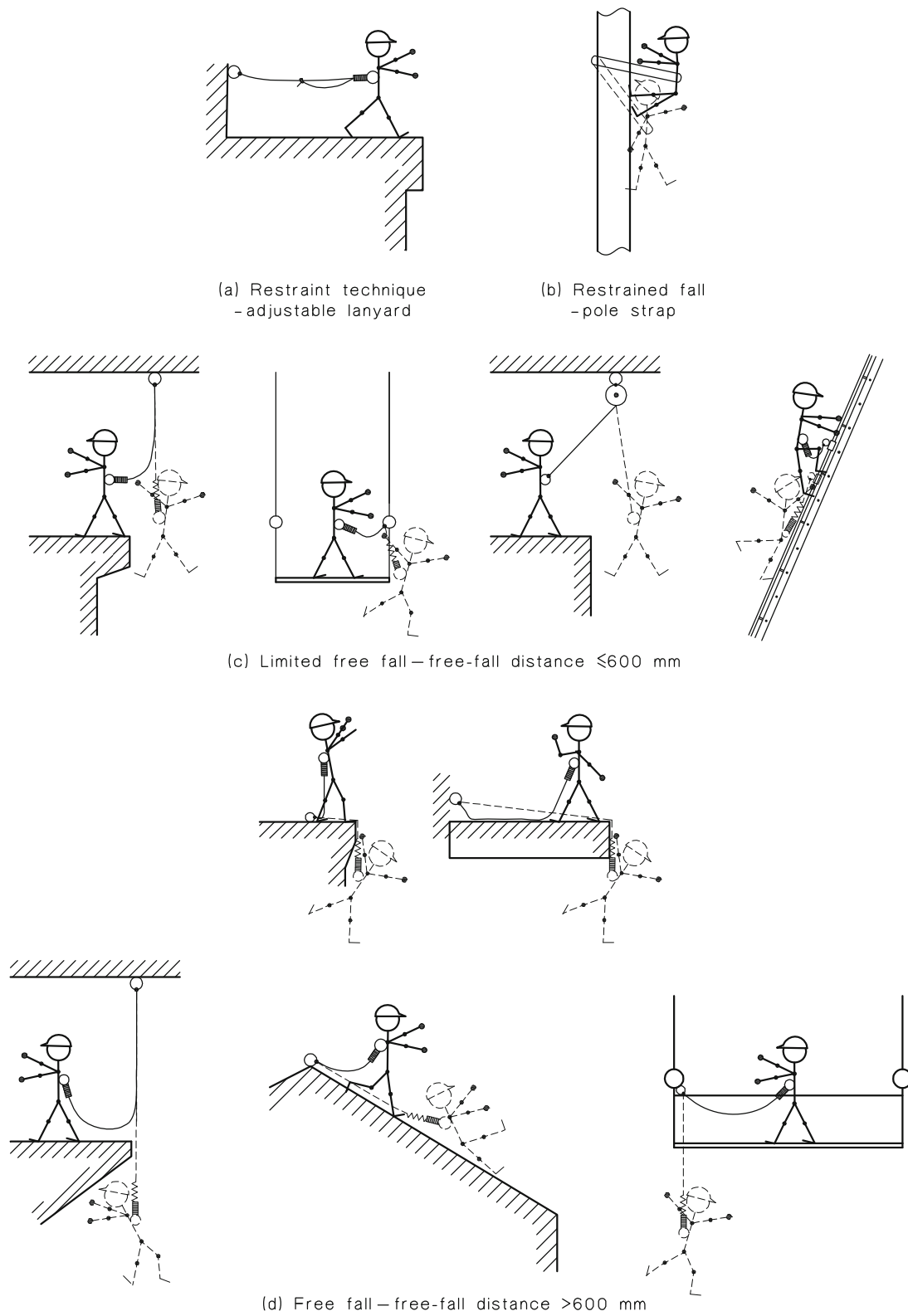


FIGURE 2.1 TYPICAL RESTRAINT/FALL SITUATIONS

SECTION 3 ANCHORAGES

NOTE: This Section should be read in conjunction with the relevant general requirements and recommendations relating to all systems and equipment given in Section 2.

3.1 ANCHORAGE SELECTION

3.1.1 General

Selection of the type and location of anchorages will depend on the nature and location of the task and the type of construction of the building or supporting structure. A summary of types of anchorage, their strength requirements and their application is given in Table 3.1.

NOTE: Certain structures may not be capable of providing anchorages of adequate strength for fall-arrest purposes as required by this Standard. In such cases alternative methods of protecting workers working at heights, based on appropriate risk assessment, will need to be developed.

TABLE 3.1
STRENGTH REQUIREMENT FOR ANCHORAGES

kilonewtons	
Purpose of anchorage	Ultimate strength in direction of loading (minimum) (see Notes 1 and 4)
(a) <i>Single point anchorages</i>	
Free fall-arrest—one person	15
Free fall-arrest—two persons attached to same anchor	21
Limited free fall-arrest (including rope access anchorages)	12
Restraint technique	12 or 15 (see Note 3)
(b) <i>Horizontal lifelines</i>	
End anchorages	See Clause 6.2.4
Intermediate anchorages	
—diversion less than 15°	12
—diversion 15° or more	12+ (see Note 2)

NOTES:

- 1 As far as practicable all single point one-person anchorages should meet the 15 kN requirement regardless of primary purpose.
- 2 Horizontal component of forces induced during a fall-arrest (multiplied by a safety factor of 2.0) is to be added as indicated in Clause 6.2.5.
- 3 Anchorage strengths applicable when using a restraint technique, see Clause 2.2.5, are either 15 kN or 12 kN depending on whether the ultimate fall risk is free fall or limited free fall.
- 4 'Ultimate strength' means that the anchorage may yield at the stated load but must not fail.