

ISO 14122-4:2004-12 (E)

Safety of machinery - Permanent means of access to machinery - Part 4: Fixed ladders

Contents		Page
Foreword		v
Introduction		vi
1	Scope	1
2	Normative references	1
3	Terms and definitions	1
4	Safety requirements	6
4.1	General requirements	6
4.2	Strength of fixed ladders	6
4.2.1	General requirements	6
4.2.2	Fixing elements	7
4.2.3	Platforms	8
4.3	Conditions for installation of an fall protection device	11
4.3.1	Conditions requiring the installation of an fall protection device	11
4.3.2	Choice of the type of fall protection device	12
4.4	Ladder	12
4.4.1	Position of the rungs	12
4.4.2	Rungs	13
4.4.3	Devices against slipping-off	15
4.4.4	Spacing between the ladder and any permanent obstruction	15
4.5	Safety cage	15
4.6	Guided type fall arrester on a rigid anchorage line	15
4.7	Departure and arrival areas - Platforms	15
4.7.1	Departure areas	16
4.7.2	Arrival areas	17
4.7.3	Access openings	18
4.7.4	Climbing off and getting on to a fixed ladder safely	18
4.7.5	Platforms	20
5	Verification of safety requirements	21
5.1	General	21
5.2	Tests of fixed ladders with two stiles	22
5.3	Testing of the safety cage	22
5.4	Tests of fixed ladders with one stile	24
5.4.1	Strength and bending of a ladder element; Torsion of the rungs	24
5.4.2	Strength of the rungs	25
5.4.3	Strength of the stile	26
5.5	Test of the anchor points	26
5.5.1	Fixed ladders with two stiles without fall arrester	26
5.5.2	Fixed ladders with one stile	27
5.5.3	Fixed ladders with fall arrester	27
6	Assembly and operating instructions	28
6.1	Assembly instructions	28
6.2	Operating instructions for ladders with fall arrester	28
6.3	Marking at points of entry and exit	28
Bibliography		29