

DIN EN 13591:2010-10 (E)

Food processing machinery - Fixed deck oven loaders - Safety and hygiene requirements (includes Amendment A1:2009)

Contents		Page
Foreword.....		4
Introduction		5
1 Scope		6
2 Normative references		6
3 Description		7
3.1 Terms and definitions		7
3.2 General principle.....		8
3.3 Classification.....		9
4 List of significant hazards		10
4.1 General.....		10
4.2 Mechanical hazards		10
4.3 Electrical hazards		11
4.4 Hazard generated by neglecting hygienic design principles		11
4.5 Hazards generated by neglecting ergonomic principles.....		12
4.6 Pneumatic and hydraulic equipment.....		12
5 Safety and hygiene requirements and/or protective measures		12
5.1 General.....		12
5.2 Mechanical hazards		12
5.2.1 General.....		12
5.2.2 Zone 1: Range of movement of oven loader and its belt, in relation to its support		12
5.2.3 Zone 2: Range of movement of the movable part when lifting		14
5.2.4 Zone 3: Area situated below the movable part when lifting		15
5.2.5 Zone 4: Range of movement of castors		15
5.2.6 Zone 5: Drive mechanisms		15
5.2.7 Zone 6: Range of movement of whole equipment.....		16
5.3 Electrical hazards		17
5.3.1 General.....		17
5.3.2 Safety requirements related to electromagnetic phenomena		17
5.3.3 Cleaning with water		17
5.3.4 Protection against electric shock A1 deleted text A1		17
5.3.5 Power circuits A1 deleted text A1		17
5.3.6 Protection against earth faults in control circuits.....		17
5.3.7 Emergency stop		18
5.3.8 Start function A1 deleted text A1		18
5.3.9 Unexpected start-up A1 deleted text A1		18
5.3.10 Electrical safety during movement		18
5.3.11 Motor enclosures		18
5.3.12 Electrical requirements of controls		18
5.4 Hygiene requirements		18
5.4.1 General.....		18
5.4.2 Food area.....		18
5.4.3 Splash area		19
5.4.4 Non food area.....		19
5.5 Hazards generated by neglecting ergonomic principles.....		19
5.6 Pneumatic and hydraulic equipment.....		20
6 Verification of safety and hygiene requirements and/or protective measures		20
7 Information for use		21
7.1 General.....		21

7.2	Instruction handbook.....	21
7.3	Marking.....	23
Annex A	(normative) Noise test code for fixed deck oven loaders (grade 2).....	25
A.1	Terms and definitions.....	25
A.2	Installation and mounting conditions.....	25
A.3	Operating conditions.....	25
A.4	Emission sound pressure level determination.....	25
A.5	Measurement uncertainties.....	26
A.6	Information to be recorded.....	26
A.7	Information to be reported.....	26
A.8	Declaration and verification of noise emission values.....	26
Annex B	(normative) Principles of design to ensure the cleanability of fixed deck oven loaders.....	27
B.1	Definitions.....	27
B.2	Materials of construction.....	27
B.2.1	Type of materials.....	27
B.2.2	Surface conditions.....	27
B.3	Design.....	29
B.3.1	Connections of internal surfaces.....	29
B.3.2	Connections of internal surfaces.....	29
B.3.3	Surface assemblies and overlaps.....	32
B.3.4	Fasteners.....	36
B.3.5	Feet, support and bases for cleaning the machines underneath.....	37
B.3.6	Ventilation openings.....	40
B.3.7	Hinges.....	41
Annex ZA	(informative) Relationship between this European Standard and the Essential Requirements of EU Directive 98/37/EC.....	44
Annex ZB	(informative) A1 Relationship between this European Standard and the Essential Requirements of EU Directive 2006/42/EC A1.....	45
	Bibliography.....	46