

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)  Relationship between this European Standard and the Essential Requirements of EU Directive 2006/42/EC 		45
Bibliography.....		46