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**