

DIN EN 13534:2011-02 (E)

Food processing machinery - Curing injection machines - Safety and hygiene requirements (includes Amendment A1:2010)

| Contents | | Page |
|---|--|-------------|
| Foreword | | 5 |
| Introduction | | 6 |
| 1 | Scope | 7 |
| 2 | Normative references | 11 |
| 3 | Terms and definitions | 12 |
| 4 | List of significant hazards | 13 |
| 4.1 | General | 13 |
| 4.2 | Mechanical hazards | 13 |
| 4.3 | Electrical hazards | 16 |
| 4.4 | Hazards generated by loss of stability | 16 |
| 4.5 | Hazard generated by noise | 16 |
| 4.6 | Hazards from non compliance with ergonomic principles | 17 |
| 4.7 | Hazards during maintenance | 17 |
| 4.8 | Hazards from non-compliance with hygienic principles | 17 |
| 5 | Safety and hygiene requirements and/or protective measures | 17 |
| 5.1 | General | 17 |
| 5.2 | Mechanical hazards | 18 |
| 5.3 | Electrical hazards | 24 |
| 5.4 | Hazards generated by loss of stability | 26 |
| 5.5 | Noise reduction | 27 |
| 5.6 | Ergonomic requirements | 27 |
| 5.7 | Hygiene and cleaning | 27 |
| 6 | Verification of safety and hygiene requirements and/or protective measures | 29 |
| 7 | Information for use | 31 |
| 7.1 | Instruction handbook | 31 |
| 7.2 | Operator training | 32 |
| 7.3 | Marking | 33 |
| Annex A (normative) Noise test code for curing injection machines (grade 2) | | 34 |
| A.1 | Emission sound pressure level determination | 34 |
| A.2 | Installation and mounting conditions | 34 |
| A.3 | Operating conditions | 34 |
| A.4 | Measurement | 34 |
| A.5 | Information to be recorded | 34 |
| A.6 | Information to be reported | 35 |
| A.7 | Declaration and verification of the noise emission values | 35 |
| Annex B (normative) Design principles to ensure the cleanability of curing injection machines | | 36 |
| B.1 | Definitions | 36 |
| B.2 | Materials of construction | 37 |
| B.2.1 | Type of materials | 37 |

| | | |
|--|--|-----------|
| B.3 | Design | 37 |
| B.3.1 | Food area | 37 |
| B.3.2 | Splash area | 38 |
| B.3.3 | Non-food area | 40 |
| Annex C (normative) Common hazards for food processing machines and reduction requirements applicable to curing injection machines | | |
| | | 41 |
| C.1 | Cutting and stabbing hazards | 41 |
| C.2 | Risks from cleaning | 41 |
| C.3 | External influences on electrical equipment | 41 |
| C.4 | Hazards from neglecting use of PPE | 42 |
| C.5 | Hazard from noise | 42 |
| Annex ZA (informative) "Relationship between this European Standard and the Essential Requirements of EU Directive 2006/42/EC" | | |
| | | 43 |
| Bibliography | | |
| | | 44 |
| Figure 1 -- Construction of a curing injection machine with needle bar, holding down clamp, infeed and outfeed device | | |
| | | 8 |
| Figure 2 -- Construction of a curing injection machine with needle bar, holding down clamp, infeed and outfeed device and transport car | | |
| | | 9 |
| Figure 3 -- Construction of a curing injection machine with needle bar, holding down clamp, infeed and outfeed device, transport car and loading device | | |
| | | 10 |
| Figure 4 -- Curing injection machine - danger zones | | |
| | | 15 |
| Figure 5 --Curing injection machine with loading device - danger zones | | |
| | | 15 |
| Figure 6 -- Curing injection machine infeed and outfeed side - safety distances | | |
| | | 19 |
| Figure 7 -- Curing injection machine infeed and outfeed side - safety distances outfeed side for a transport car | | |
| | | 19 |
| Figure 8 -- Moveable guard with splash guard flap | | |
| | | 20 |
| Figure 9 -- Fixed guard with trip bar, light barrier | | |
| | | 20 |
| Figure 10 -- Bottom reservoir, infeed and outfeed device, transport rake - safety distances | | |
| | | 22 |
| Figure 11 -- ON-/OFF-switch with cover | | |
| | | 26 |
| Figure 12 -- Curing injection machines - Hygiene zones | | |
| | | 27 |
| Figure B.1 -- Smooth surfaces - Food area | | |
| | | 36 |
| Figure B.2 -- Angles and radii in Food area | | |
| | | 37 |
| Figure B.3 -- Angles in food area | | |
| | | 38 |
| Figure B.4 -- Intersecting surfaces in food area | | |
| | | 38 |
| Figure B.5 -- Permissive fastening methods - head profiles | | |
| | | 39 |
| Figure B.6 -- Examples of dimensions | | |
| | | 40 |