

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
Figures		
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