

# DIN EN 536:2016-01 (E)

## Road construction machines - Mixing plants for road construction materials - Safety requirements

---

<b>Contents</b>		<b>Page</b>
European foreword .....		5
Introduction .....		6
1	Scope .....	7
2	Normative references .....	7
3	Terms and definitions .....	9
4	List of significant hazards .....	12
5	Safety requirements and/or measures .....	15
5.1	General .....	15
5.2	Means of access .....	15
5.2.1	General .....	15
5.2.2	Mobile plants .....	15
5.2.3	Openings .....	16
5.3	Guards .....	17
5.3.1	General .....	17
5.3.2	Fixed guards .....	17
5.3.3	Interlocking devices and interlocking devices with guard locking .....	17
5.4	Electrical installation .....	18
5.4.1	General .....	18
5.4.2	Electrical cables .....	18
5.4.3	Earthing .....	18
5.4.4	Isolation for maintenance purposes .....	18
5.5	Pneumatic .....	18
5.5.1	General .....	18
5.5.2	Energy isolation and dissipation .....	18
5.6	Hydraulic .....	19
5.6.1	General .....	19
5.6.2	Isolation and energy dissipation .....	19
5.7	Emergency stops .....	19
5.8	Hot parts .....	19
5.9	Piping .....	19
5.9.1	General .....	19
5.9.2	Piping for hot liquids .....	20
5.10	Control stations .....	20
5.10.1	General .....	20
5.10.2	Main control station .....	20
5.10.3	Starting .....	20
5.10.4	Stopping .....	20
5.10.5	Restarting .....	21
5.10.6	Troubleshooting .....	21
5.10.7	Maintenance mode .....	21
5.10.8	Alarms and warnings .....	21
5.11	Materials sampling .....	21
5.12	Restricted areas .....	22
5.13	Lifting, tie down and transport .....	22
5.13.1	General .....	22

5.13.2	Design of attachment points for transportation purpose .....	22
5.13.3	Location of tying-down and lifting attachment points for transportation purpose .....	22
5.13.4	Identification of tying-down and lifting attachment points for transportation purpose .....	23
5.13.5	Other lifting attachment points for handling purpose of components or other sub-assemblies .....	23
5.14	Transportable and mobile machines - Erecting equipment .....	23
5.15	Equipment for storage of constituent materials .....	23
5.15.1	Silos .....	23
5.15.2	Tanks .....	24
5.16	Equipment for handling of constituent materials .....	25
5.16.1	Conveyor belts .....	25
5.16.2	Vibrating scalping screen .....	26
5.16.3	Rotating drums .....	26
5.16.4	Bucket elevator .....	28
5.16.5	Screw conveyors .....	29
5.16.6	Rotary valve .....	29
5.16.7	Manually introduced additives .....	29
5.16.8	Screen .....	29
5.16.9	Hot aggregates storage .....	30
5.16.10	Equipment for metering .....	30
5.16.11	Water steam duct .....	31
5.16.12	Mixer .....	31
5.16.13	Mixing tower exhaustion .....	31
5.16.14	Lifting equipment .....	31
5.17	Equipment for handling of mixed material .....	31
5.17.1	Transfer skips .....	31
5.17.2	Skip Hoists .....	32
5.17.3	Drag slat conveyor .....	35
5.18	Burner .....	35
5.19	Exhaust system .....	36
5.19.1	Exhaust fans .....	36
5.19.2	Dust collector .....	36
5.20	Safety signs .....	36
5.21	Hazard generated by noise .....	37
5.21.1	Noise reduction at source at the design stage .....	37
5.21.2	Noise reduction by protective devices .....	37
5.21.3	Noise reduction by information .....	37
6	Verification of safety requirements and/or measures .....	37
7	Information for use .....	38
7.1	General .....	38
7.2	Information for the foundations .....	38
7.3	Erection and transport instructions .....	39
7.3.1	Erection .....	39
7.3.2	Transport .....	39
7.4	Instructions for use .....	39
7.5	Information for maintenance .....	39
7.6	Tools and equipment .....	40
7.7	Spare parts and wear parts .....	40
7.8	Troubleshooting .....	40
7.9	Procedure in case of fire .....	40
8	Marking .....	40
8.1	Machine plate .....	40
8.2	Thermal heaters .....	41
8.3	Tanks and vessels .....	41
Annex A (normative)	Minimum passage openings .....	42
A.1	Passage of the body .....	42

<b>Annex B (normative) Noise test code - Grade 2 .....</b>	<b>43</b>
<b>B.1 Scope .....</b>	<b>43</b>
<b>B.2 Determination of A-weighted emission sound pressure levels on a contour .....</b>	<b>43</b>
<b>B.2.1 Measurement method .....</b>	<b>43</b>
<b>B.2.2 Measurement positions on the contour .....</b>	<b>43</b>
<b>B.2.3 Measurement procedure .....</b>	<b>44</b>
<b>B.3 Determination of the A-weighted emission sound pressure level at workstations .....</b>	<b>45</b>
<b>B.3.1 Workstations .....</b>	<b>45</b>
<b>B.3.2 Measurement procedure .....</b>	<b>45</b>
<b>B.4 Measurement uncertainty .....</b>	<b>45</b>
<b>B.5 Installation conditions .....</b>	<b>46</b>
<b>B.6 Operating conditions .....</b>	<b>46</b>
<b>B.7 Information to be recorded .....</b>	<b>46</b>
<b>B.8 Information to be reported .....</b>	<b>46</b>
<b>B.9 Declaration of noise emission values .....</b>	<b>46</b>
<b>Annex C (informative) Examples for asphalt mixing plants and terminology .....</b>	<b>48</b>
<b>C.1 Stationary plant .....</b>	<b>48</b>
<b>C.2 Transportable plant .....</b>	<b>49</b>
<b>C.3 Mobile plant .....</b>	<b>49</b>
<b>C.3.1 Mobile plant assembled .....</b>	<b>49</b>
<b>C.3.2 Mobile plant during transportation .....</b>	<b>50</b>
<b>C.4 Batch plant .....</b>	<b>50</b>
<b>C.5 Continuous plant .....</b>	<b>52</b>
<b>Annex D (normative) Movable gratings .....</b>	<b>54</b>
<b>D.1 General .....</b>	<b>54</b>
<b>D.2 Safety requirements .....</b>	<b>54</b>
<b>D.2.1 General .....</b>	<b>54</b>
<b>D.2.2 Access .....</b>	<b>54</b>
<b>D.2.3 Controls .....</b>	<b>54</b>
<b>D.2.4 Maintenance .....</b>	<b>54</b>
<b>Annex E (informative) Pictorials .....</b>	<b>56</b>
<b>E.1 Examples .....</b>	<b>56</b>
<b>Annex F (normative) Performance levels of the safety related parts of control system .....</b>	<b>58</b>
<b>Annex ZA (informative) Relationship between this European Standard and the Essential Requirements of EU Directive 2006/42/EC .....</b>	<b>59</b>
<b>Bibliography .....</b>	<b>60</b>