

DIN EN 1755:2024-04 (E)

Industrial trucks - Safety requirements and verification - Supplementary requirements for operation in potentially explosive atmospheres

Contents		Page
European foreword		4
Introduction		5
1	Scope	7
2	Normative references	7
3	Terms and definitions	10
4	Safety requirements and/or protective measures	13
4.1	General	13
4.2	Hot surfaces	14
4.2.1	General	14
4.2.2	Temperature monitoring	14
4.2.3	Temperature classification	15
4.3	Safety shutdown	15
4.4	Mechanically generated sparks	16
4.4.1	Load handling devices	16
4.4.2	Fans of electrical equipment	16
4.4.3	Radiator fans on IC-engines	16
4.4.4	Other fans	16
4.4.5	Other rotating parts	17
4.5	Electrical system	17
4.5.1	General	17
4.5.2	Electrical equipment	18
4.5.3	Electrical system bipolarity	19
4.5.4	Insulation monitoring	19
4.5.5	Battery and battery connectors	20
4.6	Category 3G trucks equipped with restricted breathing enclosures "nR" and gas detection systems	20
4.6.1	General	20
4.6.2	Gas detection systems	20
4.6.3	Gas sensors	22
4.6.4	Restricted breathing enclosures "nR" in combination with a gas detection system	22
4.7	Internal combustion engines	23
4.8	Electrostatic risks	23
4.8.1	Bonding	23
4.8.2	Circuit resistance	24
4.8.3	Non-conductive parts	24
4.8.4	Transmission belts	25
4.8.5	Hydraulic systems	25
4.8.6	Castors and wheels	26
4.9	Requirements for brakes, clutches and couplings	27
4.9.1	General	27
4.9.2	Mechanical clutches and couplings	27
4.9.3	Hydrokinetic clutches	27
4.9.4	Service brakes and friction clutches for category 3G and 3D trucks	27
4.9.5	Service brakes and friction clutches for category 2G trucks	28
4.9.6	Service brakes and friction clutches for category 2D trucks	28
4.9.7	Parking brakes	29

4.9.8	Emergency stop brake	29
4.10	Requirements for pneumatic systems	29
4.11	Flammability of non-metallic materials	29
5	Verification of safety requirements and/or protective measures	29
5.1	Determination of the maximum surface temperatures	29
5.1.1	General	29
5.1.2	Test conditions	29
5.1.3	Test procedures	30
5.1.4	Measurements	32
5.2	Measurement of circuit resistance and capacitance	33
5.2.1	Verification and tests of circuit resistance and bonding resistance	33
5.2.2	Measurement of capacitance of insulated metal parts	34
6	Information for use	34
6.1	General	34
6.2	Instruction handbook	35
6.2.1	Operation of the truck	35
6.2.2	Service and maintenance of the truck	35
6.2.3	Additional safety information	36
6.2.4	Information for charging of the battery and battery handling	37
6.3	Marking	37
6.3.1	General	37
6.3.2	Minimum marking	37
6.3.3	Additional marking according to this document (Ex - marking)	38
6.4	Warning labels	39
Annex A (normative) List of significant hazards		40
Annex B (informative) Relationship between zones (area classification) and truck categories		41
Annex C (informative) Typical example of cladding of load handling devices		42
Annex D (informative) Typical examples of non-conductive surface areas according to 4.8.3.1		44
Annex E (normative) Requirements for transmission belts in accordance with ISO 9563:2015 or ISO 1813:2014		47
Annex F (informative) Significant technical changes between this document and the previous edition of this European Standard		48
Annex G (informative) Warning labels for trucks with restricted breathing enclosure(s) in combination with gas detection system		49
Annex ZA (informative) Relationship between this European Standard and the essential Health and Safety Requirements of Directive 2014/34/EU aimed to be covered		50
Bibliography		53