

# DIN EN 1501-1:2021-05 (E)

## Refuse collection vehicles - General requirements and safety requirements - Part 1: Rear loaded refuse collection vehicles

---

<b>Contents</b>		<b>Page</b>
European foreword .....		4
Introduction .....		6
1	Scope .....	8
2	Normative references .....	9
3	Terms and definitions .....	11
4	List of significant hazards .....	17
5	Safety requirements and protective measures .....	21
5.1	General .....	21
5.2	Danger Zones .....	21
5.2.1	General .....	21
5.2.2	Verification .....	23
5.3	Compaction mechanism .....	23
5.3.1	General .....	23
5.3.2	Interaction between bodywork and compaction mechanism .....	23
5.3.3	Hopper .....	23
5.3.4	Relationship between the compaction mechanism and the rake rail .....	24
5.3.5	Guide flap .....	24
5.3.6	Additional equipment(s) .....	24
5.3.7	Guards .....	24
5.3.8	Electro-sensitive protective equipment (ESPE) .....	24
5.3.9	Controls for the compaction mechanism .....	25
5.4	Discharge system .....	25
5.4.1	Controls for discharge system .....	25
5.4.2	Operation conditions for the tailgate or discharge door .....	26
5.4.3	Operation conditions for emptying the body and the tailgate .....	26
5.4.4	Hinged adaptation frame .....	27
5.5	Requirements for the refuse container lifting device(s) .....	27
5.6	Position of the refuse container lifting device in relation to the compaction mechanism ...	27
5.7	Satellite vehicle .....	27
5.8	Hydraulic, pneumatic and electric systems .....	27
5.8.1	Hydraulic system .....	27
5.8.2	Pneumatic system .....	27
5.8.3	Electric system .....	28
5.9	Operating symbols .....	28
5.10	Riding on rear loaded RCV by operator(s) .....	30
5.10.1	General .....	30
5.10.2	Cab .....	30
5.10.3	Footboard(s) and handles .....	31
5.11	Control systems .....	34
5.11.1	General requirements for safety circuits .....	34
5.11.2	Emergency stop devices .....	34
5.11.3	Control devices .....	35
5.12	Monitoring and warning .....	37
5.12.1	Closed circuit television system .....	37
5.12.2	Communication .....	37

5.12.3	Warnings .....	37
5.13	Electrical components .....	39
5.13.1	General .....	39
5.13.2	Protective interlocks .....	39
5.13.3	Two-hand operating controls .....	39
5.13.4	Overload protection .....	39
5.13.5	Energy interruption .....	39
5.13.6	Position sensors .....	39
5.13.7	Terminals and wire connections .....	39
5.13.8	Electric cables and wiring harness .....	39
5.13.9	Working lights .....	40
5.14	Requirements for maintenance .....	40
5.14.1	Unexpected start-up .....	40
5.14.2	Raised tailgate or discharge door or tilting body .....	40
5.14.3	Access and inspection door(s) .....	40
5.14.4	Cleaning .....	40
5.15	Stability and driving security .....	40
5.15.1	General .....	40
5.15.2	Stability in container lifting mode .....	41
5.15.3	Stability in discharging mode .....	41
5.15.4	Lateral stability .....	41
5.15.5	Minimum front axle mass .....	41
5.16	Exhaust pipe .....	41
5.17	Ventilation of the body .....	41
5.18	Vibration .....	41
5.18.1	Hand-arm vibration .....	41
5.18.2	Whole-body vibration .....	41
5.18.3	Uncertainty of vibration measurements .....	42
5.19	Noise control .....	42
6	Verification .....	43
7	Information for use .....	43
7.1	Instruction handbook .....	43
7.2	Maintenance .....	45
7.3	Spare parts list .....	46
7.4	Data sheet .....	46
7.5	Marking .....	46
Annex A(normative) Description of interfaces and systems .....		47
Annex B(normative) Open and closed systems - Footboard(s) .....		50
Annex C(normative) Basic scenarios of different danger zones .....		60
Annex D(informative) Volumes .....		70
Annex E(informative) Illuminated areas .....		71
Annex ZA(informative) Relationship between this European Standard and the essential requirements of EU Directive 2006/42/EC aimed to be covered .....		72
Bibliography .....		77