
Tovorna kolesa - 4. del: Težka tovorna kolesa - Mehanski in funkcionalni vidiki

Carrier Cycles - Part 4: Heavy weight carrier cycles - Mechanical and functional aspects

Lastenfahrräder - Teil 4: Schwere Lastenfahrräder - Mechanische und funktionale Aspekte

Cycles utilitaires Partie 4 : Cycles utilitaires lourds Aspects mécaniques

Ta slovenski standard je istoveten z: EN 17860-4:2025

ICS:

<https://standards.iteh.ai/catalog/standards/sist/e0830a94-2683-4cc4-b772-623ed84e4603/sist-en-17860-4-2025>

43.150

Kolesa

Cycles

SIST EN 17860-4:2025

en,fr,de

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 17860-4

October 2025

ICS 43.150

English Version

**Carrier Cycles - Part 4: Heavyweight carrier cycles -
Mechanical and functional aspects**

Cycles utilitaires - Partie 4 : Cycles utilitaires lourds -
Aspects mécaniques

Lastenfahrräder - Teil 4: Schwere Lastenfahrräder -
Mechanische und funktionale Aspekte

This European Standard was approved by CEN on 11 August 2025.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and United Kingdom.

SIST EN 17860-4:2025

<https://standards.iteh.ai/catalog/standards/sist/e0830a94-2683-4cc4-b772-623ed84e4603/sist-en-17860-4-2025>



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Contents

Page

European foreword	5
Introduction	6
1 Scope.....	7
2 Normative references.....	7
3 Terms and definitions	7
4 Use cases: commercial/professional use or low mileage use	7
5 General vehicle requirements.....	8
5.1 Numbers and condition of specimens for the strength tests	8
5.2 Accuracy tolerances of test conditions for brake tests and strength tests	8
5.3 Protrusions	8
5.4 Sharp edges.....	8
5.5 Securing and strength of safety-relevant fasteners.....	8
5.6 Steering function.....	8
5.7 Shimmy	8
5.8 Requirements for loading areas/load securing.....	8
5.9 Parking and stability	8
5.9.1 Requirement.....	8
5.9.2 Tipping stability of multi track carrier cycles	8
5.9.3 Parking stability while loading.....	8
5.9.4 Dynamic tipping stability of multi track carrier cycles	8
5.9.5 Double lane change test.....	8
5.9.6 Dynamic tipping stability on slopes	9
5.9.7 Prevention of wheel jamming of multi track carrier cycles	9
5.10 Pedal clearance.....	9
5.10.1 Ground clearance.....	9
5.10.2 Toe clearance	9
5.11 Wheel and tyre assembly – clearance.....	9
5.12 Wheel retention.....	9
5.13 Vibrations, ergonomics and design.....	9
6 Brakes	10
6.1 General.....	10
6.2 Hand-operated brakes	10
6.2.1 Brake lever position	10
6.2.2 Brake-lever grip dimension.....	10
6.2.3 Attachment of brake assembly and cable requirements.....	10
6.2.4 Brake-lever – Position of applied force	10
6.2.5 Brake-block and brake-pad assemblies – Safety test	10
6.2.6 Hand-operated braking-system – Strength test.....	10
6.2.7 Back-pedal braking system – Strength test	10
6.3 Requirements of the test method on a test track.....	10
6.4 Requirements of the test method on a test bench.....	11
6.4.1 Requirement for the minimum braking force.....	11
6.4.2 Requirement for the uniformity of braking forces	11
6.5 Tests.....	11

7	Steering.....	11
8	Frame	11
8.1	Suspension frames — Special requirements	11
8.2	Requirements for all frame types	11
8.3	Frame – Dynamic test with pedalling forces	12
8.3.1	General.....	12
8.3.2	Test method	12
8.4	Frame – Dynamic test with horizontal forces.....	14
8.4.1	General.....	14
8.4.2	Determination of the test loads	15
8.4.3	Test method	15
8.5	Frame — Dynamic test with a vertical force onto the seatpost.....	17
8.6	Frame – Dynamic test with vertical forces onto the loading area.....	17
8.7	Frame – Dynamic test with lateral forces.....	17
8.7.1	General.....	17
8.7.2	Determination of the lateral test load.....	17
8.7.3	Requirement.....	19
8.7.4	Test method	19
8.8	Frame assembly – Impact test (falling frame).....	23
8.8.1	General.....	23
8.8.2	Requirement.....	23
8.8.3	Test method	23
8.9	Frame – Brake mount test.....	25
8.9.1	Requirements.....	25
8.9.2	Brake mount fatigue test.....	26
8.9.3	Brake mount static torque test.....	26
8.10	Frame – Trailer suitability stress test.....	27
8.10.1	Requirement.....	27
8.10.2	Test method	27
9	Front wheel fork.....	27
9.1	General.....	27
9.2	Installation of the axle and wheel fastening	27
9.3	Front wheel fork —Static bending test	27
9.3.1	Requirements.....	27
9.3.2	Determination of the static test load ($x_s \geq 0,8 z_s$)	27
9.3.3	Test method	29
9.4	Front wheel fork — Dynamic bending test.....	30
9.5	Front wheel fork — Rearward impact test.....	30
9.6	Front forks for use with hub or disc brakes.....	30
9.6.1	Requirements.....	30
9.6.2	Front fork for hub/disc brake — Dynamic test of the brake mounting.....	30
9.6.3	Front fork for hub/disc brake —Static braking torque test.....	30
10	Wheels and wheel/tyre assembly.....	30
11	Rims, tyres and tubes	30
12	Mudguards/wheel covers	31
13	Pedals and pedal/crank drive system.....	31
14	Drive chain and drive belt	31
15	Chain-wheel and belt-drive protective device	31
16	Saddles, seatposts and seats	31

EN 17860-4:2025 (E)

17	Lighting systems and reflectors.....	31
17.1	General.....	31
17.2	Indicator lights.....	31
17.3	Brake lights.....	31
17.4	Retro reflective devices.....	31
18	Warning device.....	31
19	Rear-view mirror.....	31
20	Safety belts for cyclists.....	32
21	Marking.....	32
22	Manufacturer's instructions.....	32
23	Structural integrity test.....	32
23.1	General.....	32
23.2	Requirements.....	32
23.3	Verification methods.....	32
	Annex A (normative) Test cycles for professional/commercial use or low mileage use.....	33
	Annex B (informative) Examples of a “Complete vehicle test”.....	34
	Annex C (informative) Road test (Vehicle fatigue life test by means of test drives covering a representative distance.....	36
	Annex D (informative) Construction regulation for a “Belgian Block” test track.....	37
	Annex E (informative) Roller bank test.....	39
	Annex F (informative) Vibration test for vehicles on a uniaxial vibrating table/shaker.....	45
	Annex G (informative) Frame – Dynamic test with vertical forces on front wheel/axle.....	48
	Bibliography.....	51

SIST EN 17860-4:2025

<https://standards.iteh.ai/catalog/standards/sist/e0830a94-2683-4cc4-b772-623ed84e4603/sist-en-17860-4-2025>

European foreword

This document (EN 17860-4:2025) has been prepared by Technical Committee CEN/TC 333 “Cycles”, the secretariat of which is held by UNI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by April 2026, and conflicting national standards shall be withdrawn at the latest by April 2026.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document is part of the standard series consisting of the following parts. Users are invited to check which parts are applicable to their situation:

- EN 17860-1:2024, *Carrier Cycles — Part 1: Terms and definitions*
- EN 17860-2:2024, *Carrier Cycles — Part 2: Lightweight single track carrier cycles – Mechanical aspects*
- EN 17860-3:2024, *Carrier Cycles — Part 3: Lightweight multi track carrier cycles – Mechanical aspects*
- EN 17860-4:2025, *Carrier Cycles — Part 4: Heavyweight multi track carrier cycles – Mechanical and functional aspects*
- EN 17860-5:2024, *Carrier Cycles — Part 5: Electrical aspects*
- EN 17860-6:2025, *Carrier Cycles — Part 6: Passenger transport*
- EN 17860-7:2024, *Carrier Cycles — Part 7: Cargo trailers*

Any feedback and questions on this document should be directed to the users' national standards body. A complete listing of these bodies can be found on the CEN website.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.