

DIN 55415:2022-09 (E nglisch)

Transport stability - Test methods to determine the transport stability of unit loads in intermodal transportation

Contents	Page
Foreword	4
Introduction	5
1 Scope	6
2 Normative references	6
3 Terms and definitions.....	6
4 Requirements, test methods and evaluation.....	8
4.1 General requirements	8
4.2 Test methods	9
4.3 Evaluation.....	11
5 Procedure	12
6 Marking	14
7 Test report.....	14
Annex A (normative) Dynamic laboratory test.....	16
A.1 Equipment/testing device	16
A.1.1 General	16
A.1.2 Acceleration/deceleration measuring device.....	16
A.2 Machine settings.....	17
Annex B (informative) Figures of dynamic laboratory tests.....	18
Annex C (informative) Figures of static inclination tests.....	19
C.1 Static inclination test along the lines of DIN EN 12195-1:2021-01 and DIN EN 12642:2017-03.....	19
C.2 Static inclination test — Testing the stability of the handling unit.....	20
Bibliography	22

Figures

Figure 1 — Tilt angle over lifting time — Evaluation of measurements on different versions of tilting tables of different users.....	11
Figure 2 — Percentage of kinetic energy as a function of test duration	13
Figure 3 — Dynamic test speed as a function of the required test duration	13
Figure A.1 — Example: Acceleration/deceleration curve of a dynamic deceleration test.....	17
Figure B.1 — Sketch of the principle of a testing device for dynamic laboratory testing with inclination of the track.....	18
Figure B.2 — Sketch of the principle of a testing device for dynamic laboratory testing with horizontal arrangement.....	18

Figure C.1 — Example of the inclination of a test piece by an angle of $\alpha = 27^\circ$	19
Figure C.2 — Sketch of the principle of a tilting table	19
Figure C.3 — Sketch of the principle of a hexapod	20
Figure C.4 — Handling unit without aids for unit load securing (i.e. removal of top protection, edge protection, stretch film, shrink film, etc.).....	20
Figure C.5 — Minimum requirement for the angle of inclination $\alpha = 10^\circ$ of a handling unit (see 4.1).....	21

Tables

Table 1 — Transport stability classes (TK)	9
Table 2 — Dynamic driving tests with the driving cycles according to DIN EN 12642:2017-03, Annex B, to determine the transport stability class	10