

DIN 488-6:2024-09 (E)

Reinforcing steel - Part 6: Assessment of conformity

Contents		Page
Foreword		5
1 Scope		6
2 Normative references		6
3 Terms and definitions		6
4 Symbols		7
5 Assessment of conformity		8
5.1 General		8
5.2 Factory production control (FPC)		8
5.2.1 General		8
5.2.2 Sampling and testing of finished products		9
5.2.3 Assessment of test results		12
5.2.4 Traceability		14
5.2.5 Determination of long-term quality level		15
5.3 Initial type testing		16
5.3.1 General		16
5.3.2 Test scope (standard properties and fatigue strength)		16
5.3.3 Performing fatigue tests		19
5.3.4 Assessment, reporting and measures		20
5.4 Third-party inspection of factory production control and random testing		23
5.4.1 General		23
5.4.2 Random testing of test specimens taken in the works		23
5.4.3 Assessment, reporting and measures		29
6 Test methods		30
6.1 Test conditions		30
6.2 Bars, coils, reinforcing wire and decoiled products		30
6.3 Welded fabric		30
6.4 Lattice girders		31
7 Certification		31
Annex A (normative) Requirements for copper contents $0,60 \% < Cu \leq 0,80 \%$ according to the cast analysis (in connection with DIN 488-1:2009-08, Table 2)		32
Annex B (normative) Method for measurement of shear force of welded joints in lattice girders — Shear test on welded intersections		34
B.1 General		34
B.2 Method 1		34
B.3 Method 2		35
Annex C (normative) Method for determining the corrected relative rib area in the case of decoiled products		36
C.1 General		36
C.2 Calculated value of the corrected relative rib area		36
C.2.1 General		36
C.2.2 Condition for using the corrected relative rib area		36
C.2.3 Determining the calculated value of the corrected relative rib area		37
Annex D (normative) Tables for determining the acceptance constant k		39
Bibliography		46

Figures

Figure B.1 — Principle of the shear test using method 1	34
Figure B.2 — Principle of the shear test using method 2	35

Tables

Table 1 — Symbols	7
Table 2 — Assignment of the tasks for assessing the conformity of the reinforcing steel with the requirements of this standard.....	8
Table 3 — Number of test specimens for welded fabrics.....	10
Table 4 — Number of test specimens for lattice girders.....	11
Table 5 — Type and number of tests for the initial type testing of bars, coils and reinforcing wire coils and bars	16
Table 6 — Number of samples for the standard properties of bars, coils, reinforcing wire coils and bars and decoiled products in the initial type testing.....	17
Table 7 — Type and number of tests for the initial type testing of welded fabric.....	18
Table 8 — Number of samples for the standard properties of welded fabric in the initial type testing.....	18
Table 9 — Number of samples for the standard properties of lattice girders in initial type testing....	19
Table 10 — Type and number of tests for the third-party inspection of bars, coils and reinforcing wire bars and coils	24
Table 11 — Testing of the standard properties of bars, coils and reinforcing wire bars and coils in the third-party inspection.....	24
Table 12 — Number of samples for the standard properties of decoiled products in the third-party inspection	25
Table 13 — Type and number of tests for the third-party inspection of welded fabric.....	26
Table 14 — Testing of the standard properties of welded fabric in the third-party inspection	27
Table 15 — Testing the standard properties of lattice girders in the third-party inspection	28
Table 16 — Conditions for determining the mechanical properties.....	30
Table A.1 — Additional test rules to be applied in the factory production control for reinforcing steels with a copper content between $0,60 \% < Cu \leq 0,80 \%$ according to the cast analysis.....	32

Table D.1 — Acceptance constant k for R_e, F_s, F_j, Δ_{An} and f_R and as a function of the number (n) of test results in the case of unknown standard deviation (for a permitted percentage of rejects of 5 % [$p = 0,95$] at a probability of 90 %)	39
Table D.2 — Acceptance constant k for $A_{gtv} R_{e,ist}/R_{e,nenn}$ and R_m/R_e and as a function of the number (n) of test results in the case of unknown standard deviation (for a permitted percentage of rejects of 10 % [$p = 0,90$] at a probability of 90 %)	40
Table D.3 — Acceptance constant k for R_e, F_s, F_j, Δ_{An} and f_R and as a function of the number (n) of test results in the case of known standard deviation (for a permitted percentage of rejects of 10 % [$p = 0,90$] at a probability of 90 %)	41
Table D.4 — Acceptance constant k for $A_{gtv} R_{e,ist}/R_{e,nenn}$ and R_m/R_e and as a function of the number (n) of test results in the case of known standard deviation (for a permitted percentage of rejects of 5 % [$p = 0,95$] at a probability of 90 %)	42
Table D.5 — Acceptance constant k for $2\sigma_a$ as a function of the number (n) of test results (for a permitted percentage of rejects of 5 % [$p = 0,95$] at a probability of 75 % according to ISO 12491:1997)	43
Table D.6 — Acceptance constant k for R_e, F_s and F_j as a function of the number (n) of test results in the case of unknown standard deviation — valid for reinforcing steel bars, welded fabric, lattice girders and straightened reinforcing wire (for a permitted percentage of rejects of 5 % [$p = 0,95$] at a probability of 25 %) — ISO 12491:1997	43
Table D.7 — Acceptance constant k for $A_{gtv} R_{e,ist}/R_{e,nenn}$ and R_m/R_e as a function of the number (n) of test results in the case of unknown standard deviation — valid for reinforcing steel bars, welded fabric, lattice girders and straightened reinforcing wire (for a permitted percentage of rejects of 10 % [$p = 0,90$] at a probability of 25 %) — ISO 12491:1997	44
Table D.8 — Acceptance constant k for R_e, F_s and F_j as a function of the number (n) of test results in the case of unknown standard deviation — valid for reinforcing steel coils and reinforcing wire coils (for a permitted percentage of rejects of 5 % [$p = 0,95$] at a probability of 50 %) — ISO 12491:1997	44
Table D.9 — Acceptance constant k for $A_{gtv} R_{e,ist}/R_{e,nenn}$ and R_m/R_e as a function of the number (n) of test results in the case of unknown standard deviation, valid for reinforcing steel coils and reinforcing wire coils (for a permitted percentage of rejects of 10 % [$p = 0,90$] at a probability of 50 %) — ISO 12491:1997	45