

Specification for

Structural steel equal and unequal leg angles —

Part 2: Tolerances on shape and
dimensions

The European Standard EN 10056-2:1993 has the status of a
British Standard

UDC 669.14.018.29-423.2:621.753.1

Cooperating organizations

The European Committee for Standardization (CEN), under whose supervision this European Standard was prepared, comprises the national standards organizations of the following countries:

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This British Standard, having been prepared under the direction of the Iron and Steel Standards Policy Committee, was published under the authority of the Standards Board and comes into effect on 15 December 1993

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The following BSI references relate to the work on this standard:

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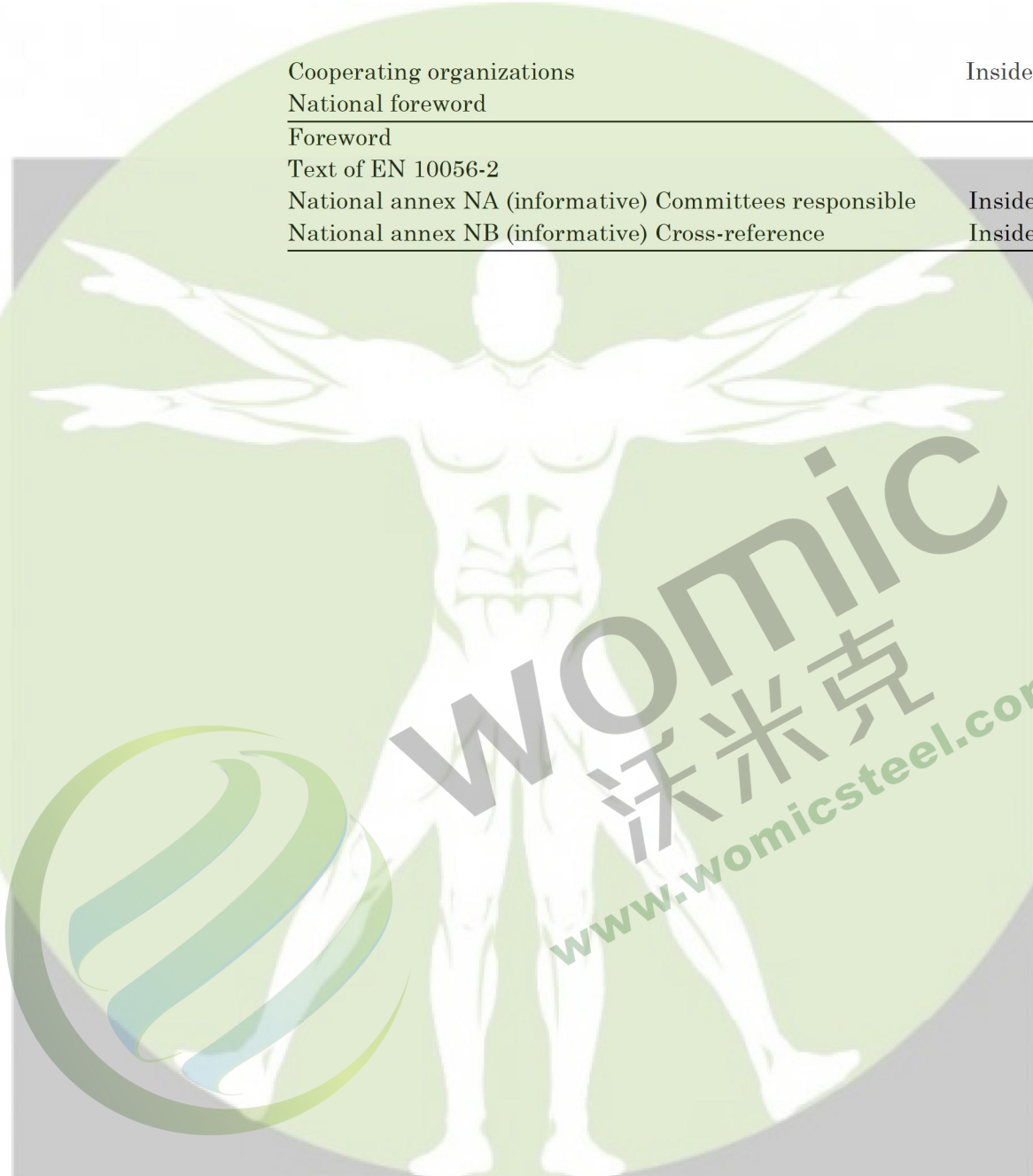
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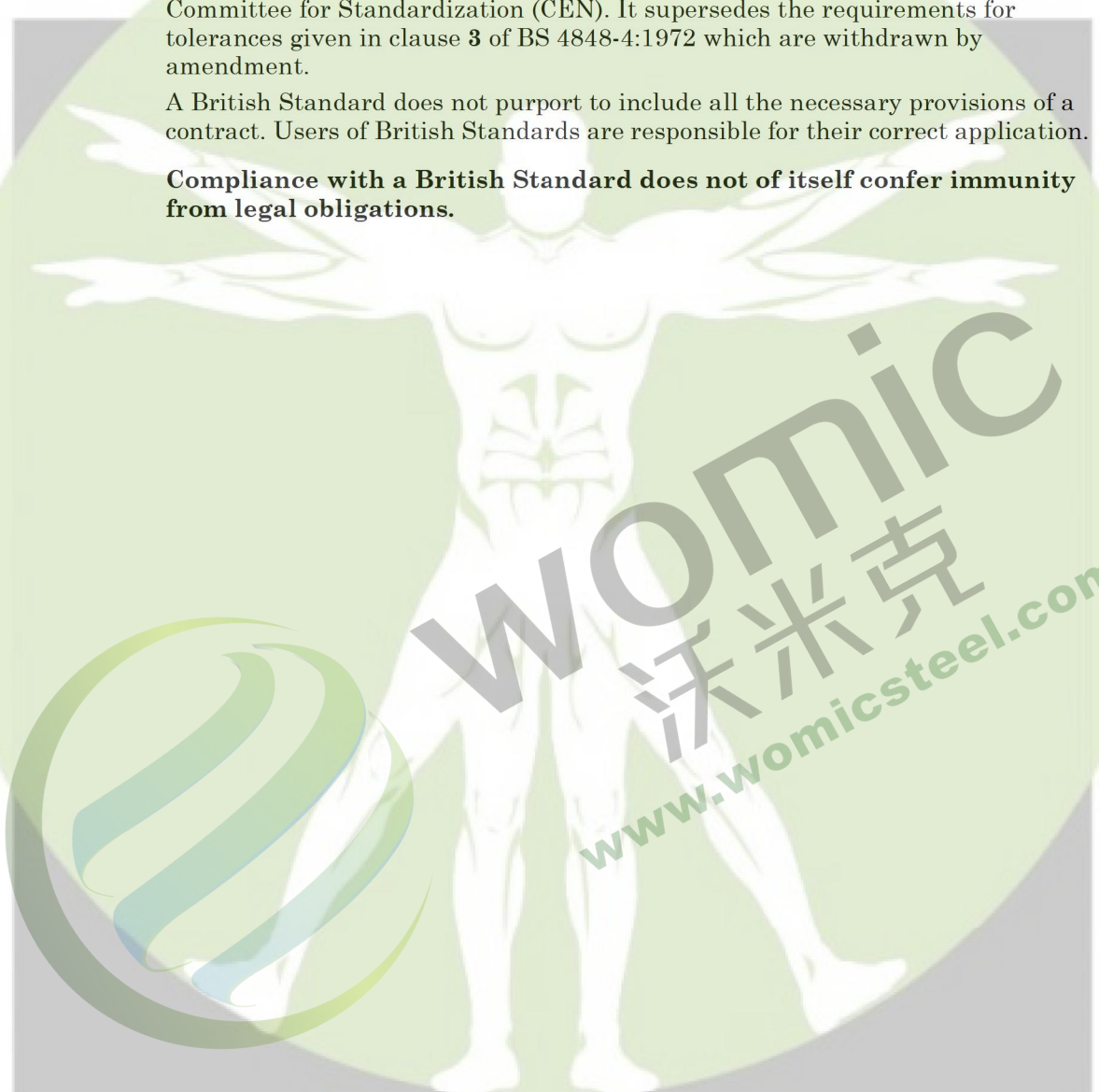
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National foreword

This British Standard has been prepared under the direction of the Iron and Steel Standards Policy Committee and is the English language version of EN 10056-2:1992 *Structural steel equal and unequal leg angles — Part 2: Tolerances on shape and dimensions*, published by the European Committee for Standardization (CEN). It supersedes the requirements for tolerances given in clause 3 of BS 4848-4:1972 which are withdrawn by amendment.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, the EN title page, pages 2 to 6, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

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Descriptors: Iron and steel products, angle irons, structural steels, dimensional tolerances, form tolerances

English version

Structural steel equal and unequal leg angles Part 2: Tolerances on shape and dimensions

Cornières à ailes égales et à ailes inégales en
acier de construction
Partie 2: Tolérances de formes et de
dimensions

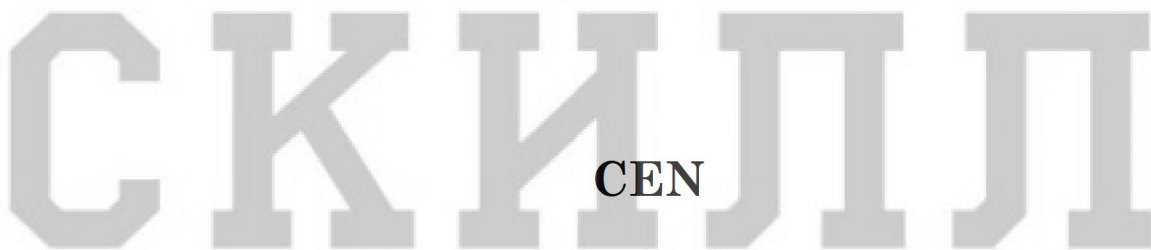
Gleichschenklige und ungleichschenklige
Winkel aus Stahl
Teil 2: Grenzabmaße und Formtoleranzen

This European Standard was approved by CEN on 1993-08-30. 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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.



European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart 36, B-1050 Brussels

Foreword

This Part of this European Standard has been prepared by ECISS/TC 11 Sections: Tolerances and dimensions, the Secretariat of which is held by BSI.

The discussions within ECISS/TC 11 were based on Euronorm 56 : 77 *Hot rolled equal angles (with radiused root and toes)* and Euronorm 57-78 *Hot rolled unequal angles (with radiused root and toes)*.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at least by March 1994, and conflicting national standards shall be withdrawn at the latest by March 1994.

According to the CEN/CENELEC Internal Regulations, the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom.

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1 Scope

This Part of this European Standard specifies tolerances on shape dimensions and mass of hot-rolled structural steel equal and unequal leg angles. The sizes of these angles are given in EN 10056-1. These tolerances do not apply to equal and unequal leg angles produced from stainless steel.

NOTE Until EN 10056-1 is published, either Euronorms 56 and 57 or the corresponding national standards may be used.

2 Normative references

This Part of this European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies. EN 10056-1, *Structural steel equal and unequal leg angles — Tolerances on shape and dimensions (under preparation)*.

EN 10079:1992, *Definition of steel products*.

Euronorm 56 (1977), *Hot rolled equal angles (with radiused root and toes)*.

Euronorm 57 (1978), *Hot rolled unequal angles (with radiused root and toes)*.

3 Definitions

For the purposes of this European Standard the definitions in EN 10079 apply.

4 Tolerances on shape and dimensions

4.1 Leg length (a or b)

The deviation from nominal on leg length shall be within the tolerance given in Table 1.

For unequal leg angles, the longer leg length (a) shall be used to determine the tolerance band.

4.2 Section thickness (t)

The deviation from nominal on thickness shall be within the tolerances given in Table 1.

4.3 Out-of-square (k)

Out-of-squareness of the section shall not exceed the maximum given in Table 1.

For unequal leg angles, the longer leg length (a) shall be used to determine the tolerance band.

4.4 Straightness (q)

The deviation from straightness shall not exceed the tolerances given in Table 1.

For unequal leg angles, the longer leg length (a) shall be used to determine the tolerance band.

5 Tolerance on mass

The deviation from the nominal mass of any individual piece shall not exceed:

- a) $\pm 6\%$ for thicknesses for $t \leq 4$ mm; or
- b) $\pm 4\%$ for thicknesses for $t > 4$ mm.

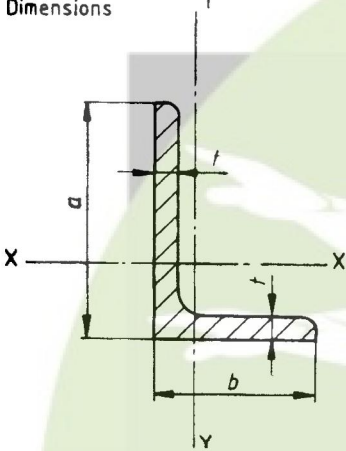
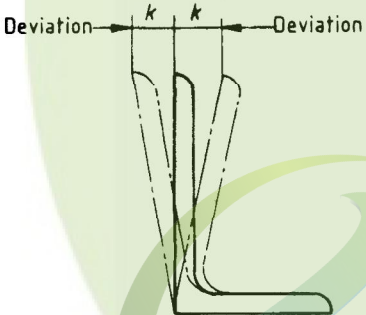
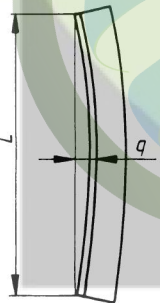
The deviation from the nominal mass is the difference between the actual mass of the piece and the calculated mass. The calculated mass shall be determined using a density of $7,85 \text{ kg/dm}^3$.

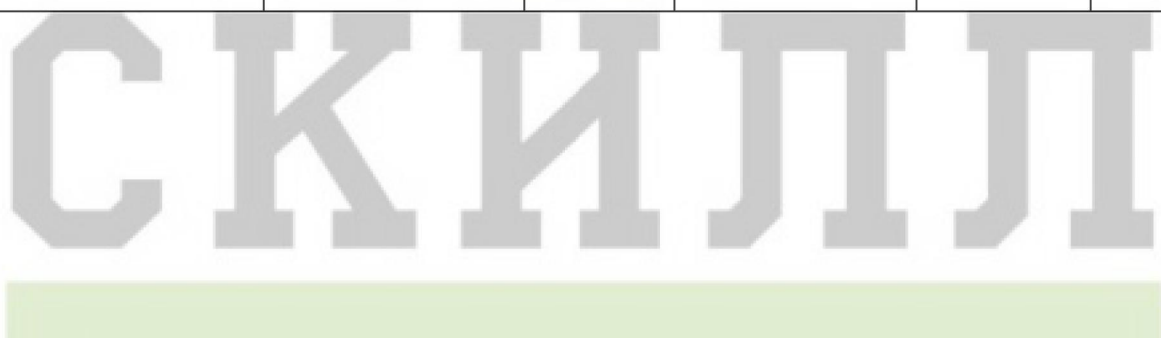
6 Tolerance on length

The tolerance on ordered length shall be either.

- a) ± 50 mm; or
- b) $+ \begin{matrix} 100 \\ 0 \end{matrix}$ where minimum lengths are required.

Table 1 — Tolerances on dimensions, squareness and straightness of structural steel equal and unequal leg angles

| Dimensions | Leg length | | Section thickness | | |
|--|---|--|--|--|----|
| | Length mm | Tolerance mm | Thickness (t) mm | Tolerance mm | |
|  | $a \leq 50$ $50 < a \leq 100$ $100 < a \leq 150$ $150 < a \leq 200$ $200 < a$ | ± 1.0 ± 2.0 ± 3.0 ± 4.0 $+6.0$ -4.0 | $t \leq 5$ $5 < t \leq 10$ $10 < t \leq 15$ $15 \leq t$ | ± 0.50 ± 0.75 ± 1.00 ± 1.20 | |
| Squareness Deviation $\leftarrow k \quad k \rightarrow$ Deviation  | Out-of-square | | Tolerance | | |
| | Leg length (a) mm | | (k) mm | | |
| | $a \leq 100$ $100 < a \leq 150$ $150 < a \leq 200$ $200 < a$ | | 1.0 1.5 2.0 3.0 | | |
| Straightness  | Leg length | Tolerance over full bar length | Leg length | Tolerance over any part | |
| | a | q | a | Length considered | q |
| | mm | mm | mm | mm | mm |
| $a \leq 150$ $150 < a \leq 200$ $200 < a$ | $0.4 \% L$ $0.2 \% L$ $0.1 \% L$ | $a \leq 150$ $150 < a \leq 200$ $200 < a$ | 1 500 2 000 3 000 | 6 3 3 | |



Annex A (informative) Straightness measurement

Straightness measurement requires a reference straight edge from which deviations in section straightness are measured. A taut string line is an acceptable straight edge provided that deviations in the horizontal plane only are measured.

Measurement is carried out as follows. The angle is placed on one leg on a flat surface and the string is taken along the toe of the other leg of the unconstrained angle for the length under consideration.





National annex NA (informative) Committees responsible

The United Kingdom participation in the preparation of this European Standard was entrusted by the Iron and Steel Standards Policy Committee (ISM/-) to Technical Committee ISM/13, upon which the following bodies were represented:

BEAMA Ltd.


British Constructional Steelwork Association Ltd.

British Steel Industry

National Association of Steel Stockholders

National annex NB (informative) Cross-reference

| Publication referred to | Corresponding British Standard |
|-------------------------|--|
| EN 10079:1992 | BS EN 10079:1993 <i>Definition of steel products</i> |



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