

Tabelle B.2 — Atmosphärische Korrosivitätskategorien nach EN ISO 12944-2 und Beispiele typischer Umgebungen

Korrosivitätskategorie	Korrosionsgrad	Beispiele typischer Umgebungsklimate (informativ)	
		Außen	Innen
C1	sehr gering	—	Beheizte Gebäude mit normaler Atmosphäre, z. B. Büros, Geschäfte, Schulen, Hotels.
C2	gering	Atmosphäre mit geringem Verschmutzungsgrad. Ländliche Gegend.	Unbeheizte Gebäude, in denen Kondenswasser auftreten kann, z. B. Lager- und Sporthallen.
C3	mittel	Städtische und Industriatmosphäre, mäßige Schwefeldioxid-Belastung. Küstengegend mit geringem Salzgehalt.	Produktionsstätten mit hoher Luftfeuchtigkeit und geringer Luftverschmutzung, z. B. Lebensmittelherstellung, Fabriken, Wäschereien, Brauereien und Molkereien.
C4	hoch	Industrie- und Küstengegend mit mäßigem Salzgehalt.	Chemische Industrie, Schwimmbäder, küstennahe Schiffs- und Bootshallen.
C5-I	sehr hoch (Industrie)	Industriegend mit hoher Luftfeuchtigkeit und aggressiver Atmosphäre.	Gebäude und Örtlichkeiten mit fast ständigem Auftreten von Kondenswasser und hoher Luftverschmutzung.
C5-M	sehr hoch (Seeklima)	Küstengegend und offenes Meer mit hohem Salzgehalt.	Gebäude und Örtlichkeiten mit fast ständigem Auftreten von Kondenswasser und hoher Luftverschmutzung.

Literaturhinweise

In Empfehlungen enthaltene Verweisungen (d. h. durch „sollte“-Sätze)

Die folgenden Dokumente werden im Text in solcher Weise in Bezug genommen, dass einige Teile davon oder ihr gesamter Inhalt keine streng einzuhaltenden Anforderungen, sondern nachdrücklich empfohlene Entscheidungen oder Verfahrensweisen darstellen. In Abhängigkeit von nationalen Regeln und/oder relevanten Vertragsbestimmungen könnten alternative Normen angewendet/angenommen werden, wenn sie technisch verifiziert sind. Bei datierten Verweisungen gilt nur die in Bezug genommene Ausgabe. Bei undatierten Verweisungen gilt die letzte Ausgabe des in Bezug genommenen Dokuments (einschließlich aller Änderungen).

Allgemeine Verweisungen

- [1] EN 1090-1, *Ausführung von Stahltragwerken und Aluminiumtragwerken — Teil 1: Konformitätsnachweisverfahren für tragende Bauteile*
- [2] EN 1090-3, *Ausführung von Stahltragwerken und Aluminiumtragwerken — Teil 3: Technische Regeln für die Ausführung von Aluminiumtragwerken*
- [3] EN 1090-5, *Ausführung von Stahltragwerken und Aluminiumtragwerken — Teil 5: Technische Anforderungen an tragende, kaltgeformte Bauelemente aus Aluminium und tragende, kaltgeformte Bauteile für Dach-, Decken-, Boden- und Wandanwendungen*

Verweisungen zur Tragwerksplanung

- [4] EN 1991 (alle Teile), *Eurocode 1 — Einwirkungen auf Tragwerke*
- [5] EN 1995-1-1, *Eurocode 5: Bemessung und Konstruktion von Holzbauten — Teil 1-1: Allgemeines — Allgemeine Regeln und Regeln für den Hochbau*

Werkstoffe und Werkstoffprüfung

- [6] EN 485-2:2008, *Aluminium und Aluminiumlegierungen — Bänder, Bleche und Platten — Teil 2: Mechanische Eigenschaften*
- [7] EN 508-2, *Dachdeckungs- und Wandbekleidungselemente aus Metallblech — Spezifikation für selbsttragende Bedachungselemente aus Stahlblech, Aluminiumblech oder nichtrostendem Stahlblech — Teil 2: Aluminium*
- [8] EN 1396:2015, *Aluminium und Aluminiumlegierungen — Bandbeschichtete Bleche und Bänder für allgemeine Anwendungen — Spezifikationen*
- [9] EN 10002-1, *Metallische Werkstoffe — Zugversuch — Teil 1: Prüfverfahren bei Raumtemperatur*

Verweisungen zu Verbindungselementen

- [10] EN ISO 1479, *Sechskant-Blebschrauben (ISO 1479)*
- [11] EN ISO 1481, *Flachkopf-Blebschrauben mit Schlitz (ISO 1481)*
- [12] EN ISO 15480, *Mechanische Verbindungselemente — Sechskant-Bohrschrauben mit Bund mit Blebschraubengewinde (ISO 15480)*

- [13] EN ISO 15481, *Flachkopf-Bohrschrauben mit Kreuzschlitz mit Blechschraubengewinde (ISO 15481)*
- [14] EN ISO 15973, *Geschlossene Blindniete mit Sollbruchdorn und Flachkopf — AIA/St (ISO 15973)*
- [15] EN ISO 15974, *Geschlossene Blindniete mit Sollbruchdorn und Senkkopf — AIA/St (ISO 15974)*
- [16] EN ISO 15977, *Offene Blindniete mit Sollbruchdorn und Flachkopf — AIA/St (ISO 15977)*
- [17] EN ISO 15978, *Offene Blindniete mit Sollbruchdorn und Senkkopf — AIA/St (ISO 15978)*
- [18] EN ISO 15981, *Offene Blindniete mit Sollbruchdorn und Flachkopf — AIA/AIA (ISO 15981)*
- [19] EN ISO 15982, *Offene Blindniete mit Sollbruchdorn und Senkkopf — AIA/AIA (ISO 15982)*
- [20] ISO 7049, *Cross recessed pan head tapping screws*

Verweisungen in Erlaubnis-Sätzen (d. h. durch „darf“-Sätze)

Die folgenden Dokumente werden im Text in solcher Weise in Bezug genommen, dass einige Teile davon oder ihr gesamter Inhalt keine zwingend zu befolgenden Anforderungen darstellen, sondern eine erlaubte Vorgehensweise innerhalb der Anwendungsgrenzen der Eurocodes beschreiben. Bei datierten Verweisungen gilt nur die in Bezug genommene Ausgabe. Bei undatierten Verweisungen gilt die letzte Ausgabe des in Bezug genommenen Dokuments (einschließlich aller Änderungen).

Weitere Verweisungen

Die folgenden Dokumente sind keiner der vorstehenden Kategorien zugeordnet, aber sie werden zu informativen Zwecken im Dokument zitiert, z. B. in Anmerkungen.

- [21] EN ISO 12944-2, *Beschichtungsstoffe — Korrosionsschutz von Stahlbauten durch Beschichtungssysteme — Teil 2: Einteilung der Umgebungsbedingungen (ISO 12944-2)*
- [22] ECCS Publication No. 88 (1995): European recommendations for the application of metal sheeting acting as a diaphragm

English Version

Eurocode 9: Design of aluminium structures - Part 1-4: Cold-formed structural sheeting

Eurocode 9: Calcul des structures en aluminium -
Partie 1-4: Calcul des structures à plaques formée à
froid

Eurocode 9: Bemessungen und Konstruktion von
Aluminiumtragwerken - Teil 1-4: Kaltgeformte
Profiltafeln

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 250.

If this draft becomes a European Standard, 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.

This draft European Standard was established by CEN 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, Turkey and United Kingdom.

Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

Warning : This document is not a European Standard. It is distributed for review and comments. It is subject to change without notice and shall not be referred to as a European Standard.



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

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European foreword

This document (prEN 1999-1-4:2021) has been prepared by Technical Committee CEN/TC250 “Structural Eurocodes”, the secretariat of which is held by BSI. CEN/TC 250 is responsible for all Structural Eurocodes and has been assigned responsibility for structural and geotechnical design matters by CEN.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 1999-1-4:2007.

The first generation of EN Eurocodes was published between 2002 and 2007. This document forms part of the second generation of the Eurocodes, which have been prepared under Mandate M/515 issued to CEN by the European Commission and the European Free Trade Association.

The Eurocodes have been drafted to be used in conjunction with relevant execution, material, product and test standards, and to identify requirements for execution, materials, products and testing that are relied upon by the Eurocodes.

The Eurocodes recognize the responsibility of each member State and have safeguarded their right to determine values related to regulatory safety matters at national level through the use of National Annexes.

Introduction

0.1 Introduction to the Eurocodes

The Structural Eurocodes comprise the following standards generally consisting of a number of Parts:

- EN 1990 Eurocode: Basis of structural and geotechnical design
- EN 1991 Eurocode 1: Actions on structures
- EN 1992 Eurocode 2: Design of concrete structures
- EN 1993 Eurocode 3: Design of steel structures
- EN 1994 Eurocode 4: Design of composite steel and concrete structures
- EN 1995 Eurocode 5: Design of timber structures
- EN 1996 Eurocode 6: Design of masonry structures
- EN 1997 Eurocode 7: Geotechnical design
- EN 1998 Eurocode 8: Design of structures for earthquake resistance
- EN 1999 Eurocode 9: Design of aluminium structures
- < New parts >

The Eurocodes are intended for use by designers, clients, manufacturers, constructors, relevant authorities (in exercising their duties in accordance with national or international regulations), educators, software developers, and committees drafting standards for related product, testing and execution standards.

NOTE Some aspects of design are most appropriately specified by relevant authorities or, where not specified, can be agreed on a project-specific basis between relevant parties such as designers and clients. The Eurocodes identify such aspects making explicit reference to relevant authorities and relevant parties.

0.2 Introduction to EN 1999 Eurocode 9

EN 1999 applies to the design of buildings and civil engineering and structural works made of aluminium. It complies with the principles and requirements for the safety and serviceability of structures, the basis of their design and verification that are given in EN 1990 – Basis of structural design.

EN 1999 is only concerned with requirements for resistance, serviceability, durability and fire resistance of aluminium structures. Other requirements, e.g. concerning thermal or sound insulation, are not considered.

EN 1999 does not cover the special requirements of seismic design. Provisions related to such requirements are given in EN 1998, which complements, and is consistent with EN 1999.

EN 1999 is subdivided in five parts:

- EN 1999-1-1 Design of Aluminium Structures: General structural rules.
- EN 1999-1-2 Design of Aluminium Structures: Structural fire design.
- EN 1999-1-3 Design of Aluminium Structures: Structures susceptible to fatigue.

- EN 1999-1-4 Design of Aluminium Structures: Cold-formed structural sheeting.
- EN 1999-1-5 Design of Aluminium Structures: Shell structures.

0.3 Introduction to EN 1999-1-4

This document gives design requirements for cold-formed trapezoidal aluminium sheeting. It applies to cold-formed aluminium products made from hot rolled or cold rolled sheet or strip that have been cold-formed by such processes as cold-rolled forming or press-breaking.

0.4 Verbal forms used in the Eurocodes

The verb “shall” expresses a requirement strictly to be followed and from which no deviation is permitted in order to comply with the Eurocodes.

The verb “should” express a highly recommended choice or course of action. Subject to national regulation and/or any relevant contractual provisions, alternative approaches could be used/adopted where technically justified.

The verb “may” expresses a course of action permissible within the limits of the Eurocodes.

The verb “can” expresses possibility and capability; it is used for statements of fact and clarification of concepts.

0.5 National annex for prEN 1999-1-4

National choice is allowed in this document where explicitly stated within notes. National choice includes the selection of values for Nationally Determined Parameters (NDPs).

The national standard implementing EN 1999-1-4 can have a National Annex containing all national choices to be used for the design of buildings and civil engineering works to be constructed in the relevant country.

When no national choice is given, the default choice given in this document is to be used.

When no national choice is made and no default is given in this document, the choice can be specified by a relevant authority or, where not specified, agreed for a specific project by appropriate parties.

National choice is allowed in EN 1999-1-4 through the following clauses:

4(4) NOTE 1

5.1(3) NOTE

9.3(3) NOTE

A.4.4(3)

National choice is allowed in EN 1999-1-4 on the application of the following informative annexes:

Annex B (Informative) Durability of fasteners

The National Annex can contain, directly or by reference, non-contradictory complementary information for ease of implementation, provided it does not alter any provisions of the Eurocodes.