STN	**Elektrochemické úpravy vystužených betónov re-alkalizáciou a extrakciou chloridov Časť 2: Extrakcia chloridov**	**STN EN 14038-2** 73 2152

Electrochemical realkalization and chloride extraction treatments for reinforced concrete - Part 2: Chloride extraction

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

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English Version

Electrochemical realkalization and chloride extraction treatments for reinforced concrete - Part 2: Chloride extraction

Réalcalinisation électrochimique et traitements d'extraction des chlorures applicables au béton armé - Partie 2 : Extraction des chlorures

Elektrochemische Realkalisierung und Chloridextraktionsbehandlungen für Stahlbeton – Teil 2: Chloridextraktion

This European Standard was approved by CEN on 14 September 2020.

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European foreword

This document (EN 14038-2:2020) has been prepared by Technical Committee CEN/TC 219 "Cathodic protection", the secretariat of which is held by BSI.

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of an identical text or by endorsement, at the latest by April 2021, and conflicting national standards shall be withdrawn at the latest by April 2021.

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 supersedes CEN/TS 14038-2:2011.

EN 14038, *Electrochemical realkalization and chloride extraction treatments for reinforced concrete* is currently composed of the following parts:

— Part 1: Realkalization;

— Part 2: Chloride extraction.

In comparison with CEN/TS 14038-2:2011, the following changes have been made:

a) Clause 2 "*Normative references*" has been revised;

b) Clause 4 "*Principle*", Clause 6 "*Assessment and repair of the structure*" has been revised;

c) 7.2.2 "*Anode*" has been complemented by requirements for the used anodes;

d) Requirements for anode zones have been added to 7.2.3 "*Anode zone*";

e) A note has been added to 7.4 "*Power supply*";

f) Clause 8 "*Installation procedures*" has been revised;

g) Clause 9 "*Commissioning, operation and termination of treatment*" has been revised, especially 9.6 "*Termination of treatment*";

h) Clause 10 "*Final report*" and Clause 11 "*Post-treatment coating and monitoring*" have been revised;

i) Bibliography has been supplemented with several publications;

j) Document has been revised editorially.

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, Turkey and the United Kingdom.

Introduction

The purpose of chloride extraction is to rehabilitate a reinforced concrete part from corrosion activity non-destructively and to provide long term corrosion protection of steel reinforcement in concrete which has been affected by chloride. The duration of the treatment is from several weeks up to as much as several months, depending on the amount and ingress depth of accumulated chloride, the permeability of the concrete, the layout of the reinforcement and other factors.

NOTE Based on experience, in case of a cover thickness of 30 mm to 40 mm and a concentration of chloride in the cover zone, an ECE can be done successfully in a one-stage treatment of 4 to 6 weeks.

There are other electrochemical procedures that can be used to provide corrosion protection to steel in concrete structures. These include cathodic protection and re-alkalization. There are European standards for cathodic protection of steel in concrete (EN ISO 12696) and for the re-alkalization of carbonated concrete (EN 14038-1).

It has been assumed in the drafting of this document that design and execution of a chloride extraction application will be entrusted to appropriately qualified, competent and experienced people, for whose use it has been prepared.

1 Scope

This document specifies a procedure for carrying out impressed current electrochemical chloride extraction from chloride bearing concrete in existing structures. It is applicable to atmospherically exposed parts of structures with ordinary reinforcement and/ or post-tensioned tendon ducts embedded in concrete. In the latter case, it is essential to verify that there is no risk of hydrogen embrittlement, if necessary by conducting trials and installing monitoring during the treatment.

This document does not apply to concrete containing pre-stressing steel, which can suffer hydrogen embrittlement during chloride extraction, or to concrete containing coated or galvanized reinforcement.

In case of post-tensioned, pre-stressing concrete, the endangered tendon strands can be shielded by the tendon ducts from unwanted and/or exceeded polarization into the cathodic range and respective water reduction.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 1504-2, *Products and systems for the protection and repair of concrete structures - Definitions, requirements, quality control and evaluation of conformity - Part 2: Surface protection systems for concrete*

EN 1504-9, *Products and systems for the protection and repair of concrete structures - Definitions, requirements, quality control and evaluation of conformity - Part 9: General principles for the use of products and systems*

EN 14629, *Products and systems for the protection and repair of concrete structures - Test methods - Determination of chloride content in hardened concrete*

EN 14630, *Products and systems for the protection and repair of concrete structures - Test methods - Determination of carbonation depth in hardened concrete by the phenolphthalein method*

EN ISO 8044, *Corrosion of metals and alloys - Vocabulary (ISO 8044)*

EN ISO 12696:2016, *Cathodic protection of steel in concrete (ISO 12696:2016)*

koniec náhľadu – text ďalej pokračuje v platenej verzii STN