

Allgemeine bauaufsichtliche Zulassung

Zulassungsstelle für Bauprodukte und Bauarten

Bautechnisches Prüfamt

Eine vom Bund und den Ländern
gemeinsam getragene Anstalt des öffentlichen Rechts

Mitglied der EOTA, der UEAtc und der WFTAO

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29/03/2016

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English translation authorized by DIBt – Original version in German language

Approval number:

Z-30.11-41

Validity

from: **29 March 2016**

to: **29 March 2021**

Applicant:

Alpin Technik und Ingenieurservice GmbH

Plautstrasse 80

04179 Leipzig

Germany

Subject of approval:

Corrosion protection system ATIS Cableskin® for load-bearing cables

The subject of approval mentioned above is herewith generally approved in the field of construction. This national technical approval (*allgemeine bauaufsichtliche Zulassung*) comprises six pages and four Annexes.

A national technical approval (*allgemeine bauaufsichtliche Zulassung*) was granted for this construction product for the first time on 3 November 2010.

DIBt

Allgemeine bauaufsichtliche Zulassung

('national technical approval')

No. Z-30.11-41

Page 2 of 6 | 29 March 2016

I GENERAL PROVISIONS

- 1 With the national technical approval (*allgemeine bauaufsichtliche Zulassung*), the fitness for use and the applicability of the subject of approval in accordance with the Building Codes of the Federal States (*Landesbauordnungen*) have been verified.
- 2 If in the national technical approval (*allgemeine bauaufsichtliche Zulassung*) requirements are made concerning the special expertise and experience of persons entrusted with the manufacture of construction products and construction techniques in accordance with the provisions of the relevant federal state following Section 17, Sub-Section 5 of the Model Building Code (*Musterbauordnung*), it is to be noted that this expertise and experience can also be proven by equivalent verifications from other Member States of the European Union. If necessary, this also applies to verifications presented within the framework of the Agreement on the European Economic Area (EEA) or other bilateral agreements.
- 3 The national technical approval (*allgemeine bauaufsichtliche Zulassung*) does not replace the permits, approvals or certificates prescribed by law for carrying out building projects.
- 4 The national technical approval (*allgemeine bauaufsichtliche Zulassung*) is granted without prejudice to the rights of third parties, in particular private property rights.
- 5 Notwithstanding further provisions in the 'Special Provisions', manufacturers and distributors of the subject of approval shall make copies of the national technical approval (*allgemeine bauaufsichtliche Zulassung*) available to the user and point out that the national technical approval (*allgemeine bauaufsichtliche Zulassung*) shall be available at the place of use. Upon request, copies of the national technical approval (*allgemeine bauaufsichtliche Zulassung*) shall be placed at the disposal of the authorities involved.
- 6 The national technical approval (*allgemeine bauaufsichtliche Zulassung*) may be reproduced in full only. Partial publication requires the consent of Deutsches Institut für Bautechnik. Texts and drawings in advertising brochures may not be in contradiction to the national technical approval (*allgemeine bauaufsichtliche Zulassung*). In the event of a discrepancy between the German original of the national technical approval (*allgemeine bauaufsichtliche Zulassung*) and this authorised translation, the German version shall prevail.
- 7 The national technical approval (*allgemeine bauaufsichtliche Zulassung*) is granted until revoked. The provisions of the national technical approval (*allgemeine bauaufsichtliche Zulassung*) can subsequently be supplemented and amended, in particular if this is required by new technical findings.

National technical approval*(allgemeine bauaufsichtliche Zulassung)***No. Z-30.11-41****Page 3 of 6** | 29 March 2016**II SPECIFIC PROVISIONS****1 Subject of approval and field of application**

The subject of approval is a corrosion protection system for load-bearing steel cables such as bridge cables where the corrosion protection is realised by two layers of butyl rubber tapes wrapped around the installed cables by means of a fully automated wrapping robot or with a hand-operated wrapping device with an overlap of about 50 % (corrosion protection system ATIS Cableskin®). In the overlapping areas a cold-welding of the tapes is achieved by interdiffusion of the rubber molecules over the layer boundaries leading to a closed mechanical resistant tube-like sheath to avoid inadmissible access of water vapour and oxygen. The application of the corrosion protection system ATIS Cableskin® is possible on new cables as well as for renovation of existing cable structures and can also be used for other rod-shaped structural steel components (e. g. for pipes and bars).

The corrosion protection system ATIS Cableskin® can also be used as coating for UV protection of the cable surface.

It can also be used to prevent the leakage of cable backfilling material at the free cable length.

It can also be used for more than one parallel cables together with humidity removal systems where the hollow space between the cables is exposed to dry gas.

Annex 1 shows a schematic diagram of the corrosion protection system.

This national technical approval (*allgemeine bauaufsichtliche Zulassung*) does not rule the cables and structural components to be protected by the corrosion protection system ATIS Cableskin®.

2 Provisions for the construction product**2.1 Characteristics and composition****2.1.1 Dimensions**

The corrosion protection system ATIS Cableskin® is suitable for cables and structural components with a diameter of at least 30 mm.

The total thickness of the two-layer winding is about 2.6 mm. In areas of overlapping and repair the thickness is higher due to more than two layers. Information with regard to the tolerances are deposited at Deutsches Institut für Bautechnik.

2.1.2 Materials

The details to the properties of the butyl rubber tapes used for the corrosion protection system ATIS Cableskin® are deposited at Deutsches Institut für Bautechnik. These properties shall be verified by inspection certificates 3.1 according to DIN EN 10204¹.

¹

National technical approval

(allgemeine bauaufsichtliche Zulassung)

Page 4 of 6 | 29 March 2016

No. Z-30.11-41

2.1.3 Corrosion protection

The corrosion protection system ATIS Cableskin® fulfils the requirements of TL/TP KOR-VVS and is suitable under environmental conditions up to the corrosivity categories C5-M or C5-I according to DIN EN ISO 12944-2².

2.1.4 Reaction to fire

The corrosion protection system ATIS Cableskin® with windings of butyl rubber tapes fulfils the requirements for normally flammable materials to performance class B2 according to DIN 4102-1³. According to DIN 4102-1³, Section 6.2.6 the butyl rubber tapes are considered as non-burning droplets.

2.2 Transport, storage and marking

2.2.1 Transport and storage

The butyl rubber tapes shall be transported and stored protected from dirt and moisture appropriately, so that damage, plastic deformations or excessive warming are avoided. The tapes shall be stored at a cool place at least before installation if the ambient temperature is increased.

2.2.2 Marking

The manufacturer's certificate for the execution of the corrosion protection system ATIS Cableskin® shall be marked by the executing company with the conformity mark Ü (Ü-mark) according to the Regulations on the conformity mark of the states of the Federal Republic of Germany (*Übereinstimmungszeichen-Verordnungen der Länder*). The marking may only be applied if the requirements according to Section 2.3 have been met.

2.3 Verification of conformity

2.3.1 General

Proof of conformity of the corrosion protected cables and structural components with the corrosion protection system ATIS Cableskin® with the provisions of this national technical approval (*allgemeine bauaufsichtliche Zulassung*) shall be verified by means of a declaration of conformity by the manufacturer for each manufacturing plant based on a factory production control and an initial-type testing of the cables and structural components protected against corrosion by the corrosion protection system ATIS Cableskin® from a therefore recognised inspection body. The declaration of conformity shall be given by the manufacturer by marking the corrosion protected cables or structural components with the mark of conformity (Ü-mark) according to Section 2.2.2 stating the intended use.

The manufacturer shall submit a copy of the initial type testing report to the Deutsches Institut für Bautechnik for information.

2.3.2 Factory production control

Every manufacturing plant shall have a factory production control system and exercise factory production control. Factory production control means the permanent control of the execution of the corrosion protection system ATIS Cableskin® exercised by the manufacturer by which the latter ensures that the corrosion protection system executed by him is in conformity with this national technical approval (*allgemeine bauaufsichtliche Zulassung*).

² DIN EN ISO 12944-2:1998-07

Paints and varnishes - Corrosion protection of steel structures by protective paint systems - Part 2: Classification of environments

³ DIN 4102-1:1998-05

Fire behaviour of building materials and building components - Part 1: Building materials; concepts, requirements and tests

National technical approval

(allgemeine bauaufsichtliche Zulassung)

Page 5 of 6 | 29 March 2016

No. Z-30.11-41

The factory production control shall include at least the following measures:

- It shall be checked if the inspection certificate 3.1 for the butyl rubber tape is available according to Section 2.1 and the attested properties meet the requirements.
- The environmental conditions shall be observed continuously (e. g. dew-point) and the work shall be interrupted if environmental conditions do not meet the requirements any longer.
- It shall be checked if the surface conditions of the cables or structural components meet the requirements before the wrapping starts.
- The whole wrapping process shall be observed and suitable documented.

The results of factory production control shall be recorded and evaluated. The records shall include at least the following information:

- designation of the construction project as well as detailed information to the cables or structural components to be protected,
- type of control or test,
- date of execution and of testing of the corrosion protection system respective of the initial material or its components,
- results of control and testing and comparison with requirements as far as relevant,
- signature of the person responsible for factory production control.

The records shall be kept for at least five years. On request, they shall be presented to the Deutsches Institut für Bautechnik and to the relevant supreme building authority.

In case of unsatisfactory test results the manufacturer shall immediately take the measures necessary to rectifying the fault. Corrosion protected fully locked cable not meeting the requirements shall be handled in a way that confusion with the products in compliance with the specifications will be excluded. As soon as the fault has been rectified – as far as technically possible and required for evidence that the fault has been rectified – the corresponding test shall be repeated immediately.

2.3.3 Initial type testing of cables and structural components protected with the corrosion protection system ATIS Cableskin®

Within the framework of the initial type testing the corrosion behaviour of cables or suitable test specimen protected with the corrosion protection system ATIS Cableskin® shall be tested in dependence on TL/TP KOR-VVS. Together with this, connection areas, changeovers between different systems, repair areas etc. shall be tested as well.

3 Provisions for design and calculation

For the design and calculation of the cables or cable structures and structural components the relevant technical rules apply (standards, national technical approvals, European technical approvals).

National technical approval

(allgemeine bauaufsichtliche Zulassung)

No. Z-30.11-41

Page 6 of 6 | 29 March 2016

4 Provisions for execution

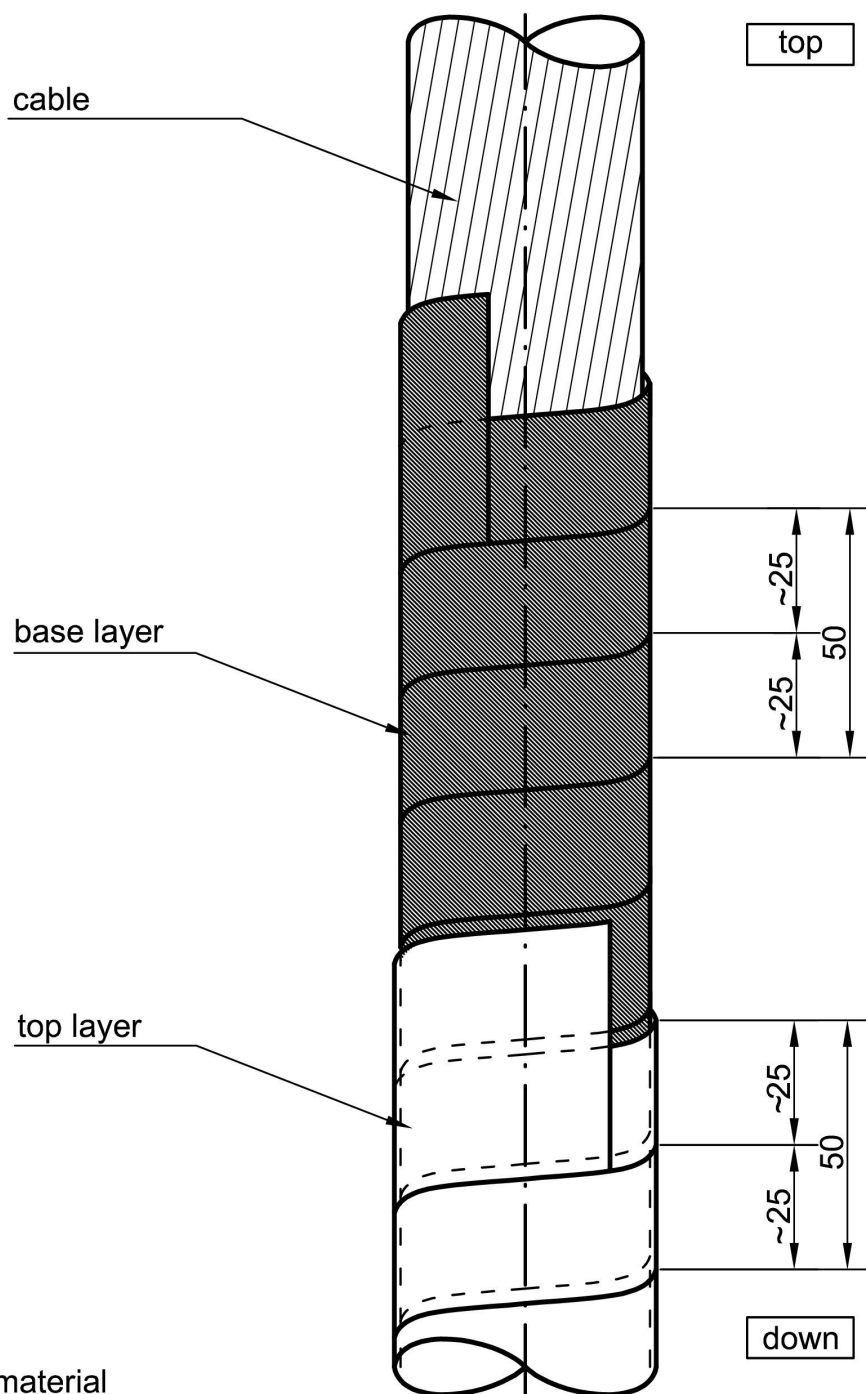
The corrosion protection system ATIS Cableskin® shall only be executed according to the instruction manual of the Alpin Technik und Ingenieurservice GmbH deposited at Deutsches Institut für Bautechnik. This does also apply to connection areas, butyl rubber joints (see also Annex 2) and repair areas (see also Annex 3).

All works shall only be executed by the company Alpin Technik und Ingenieurservice GmbH or by companies which can confirm the attendance of an appropriate and valid training course of the company Alpin Technik und Ingenieurservice GmbH.

The executing company shall attest the conformity of the corrosion protection executed with the corrosion protection system ATIS Cableskin® with the provisions of this national technical approval *(allgemeine bauaufsichtliche Zulassung)*.

Andreas Schult
Head of section

Confirmed (*Beglaubigt*)
Hahn



material

base layer: stabilized PE-carrier film, double-sided applied with butyl rubber,
 $t \geq 0.8 \text{ mm}$

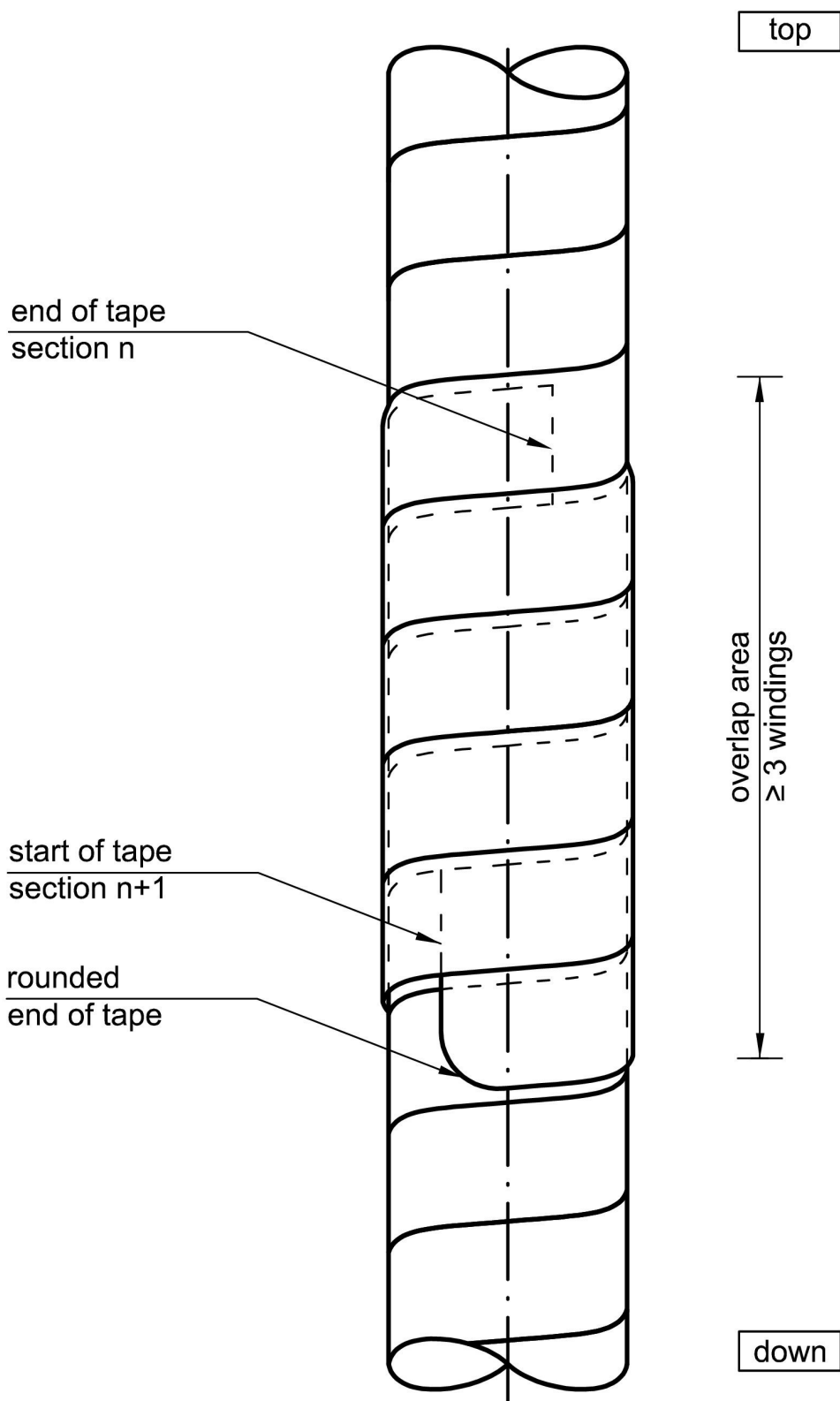
top layer: exterior stabilized PE-carrier film, coloured, one-sided
inside with butyl rubber, gray $t \geq 0.5 \text{ mm}$

dimensions in mm

Corrosion protection system ATIS Cableskin® for load-bearing cables

Standard design of the wrapping with butyl rubber tapes

Annex 1

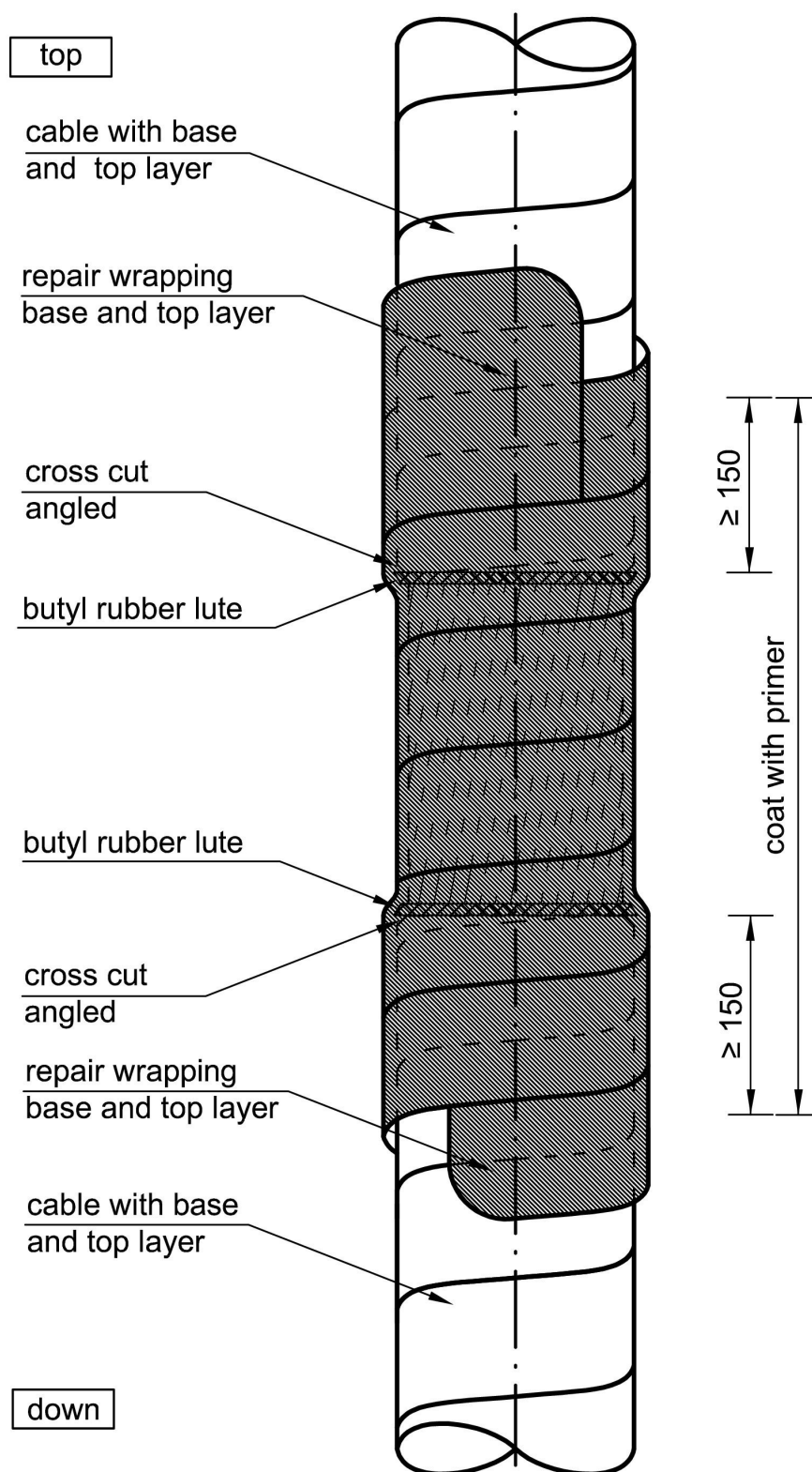


dimensions in mm

Corrosion protection system ATIS Cableskin® for load-bearing cables

Joint on the free cable length

Annex 2

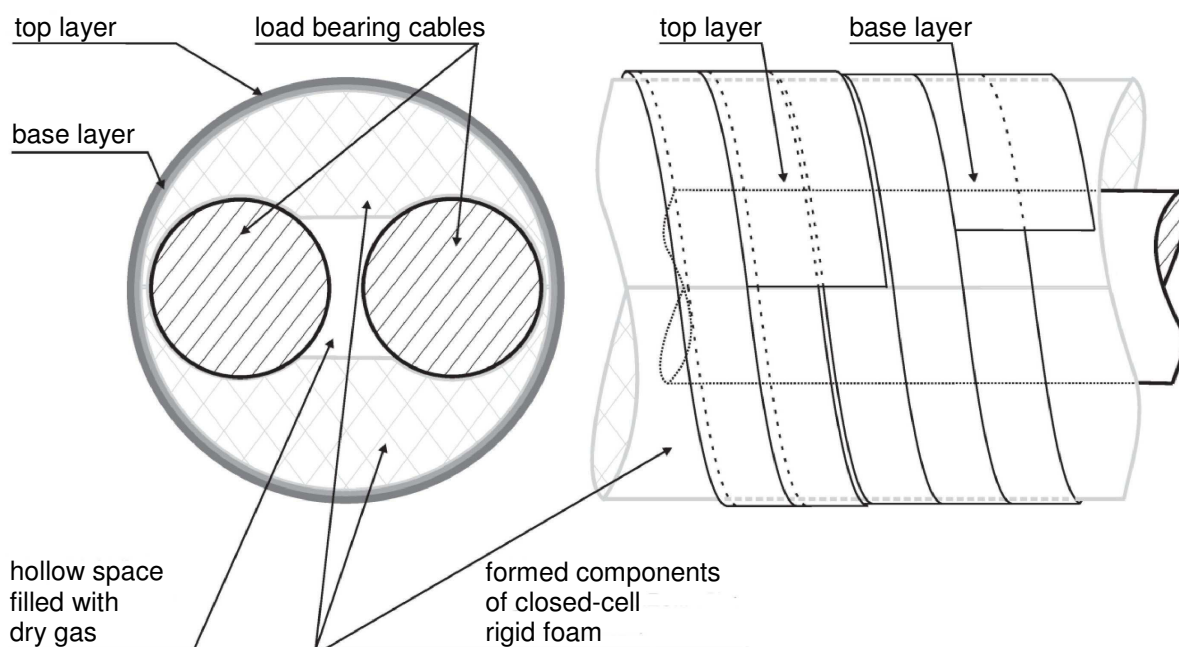


dimensions in mm

Corrosion protection system ATIS Cableskin® for load-bearing cables

Repair area

Annex 3



Corrosion protection system ATIS Cableskin® for load-bearing cables

Humidity removal system

Annex 4