BS ISO 37175:2024

International Standard

ISO 37175

Smart community infrastructures — Operation and maintenance of utility tunnels

Infrastructures urbaines intelligentes — Exploitation et maintenance des tunnels techniques

First edition
2024-08

Reference number
ISO 37175:2024(en)

Contents

Page

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at www.iso.org/patents. ISO shall not be held responsible for identifying any or all such patent rights.

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 268, *Sustainable cities and communities*, Subcommittee SC 1, *Smart community infrastructures*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

A utility tunnel is typically constructed underground to carry pipelines. A utility tunnel is also used to carry communications cables such as telecommunication cables, radio cables and television cables.

In a smart community, a utility tunnel is an important part of the infrastructure that accesses energy distribution, city information / data acquisition as well as transmission systems, while also being crucial for the redistribution of social resources. It is a valuable aspect of public infrastructure and a lifeline to ease the congestion of community traffic by fully utilizing the community underground space.

If the utility tunnel is well-planned, constructed and managed, it can have the following advantages:

— effectively conserves underground space;

— reduces the need for repetitive road / pavement excavations in contrast to traditional buried pipelines;

— eliminates the risk of overhead facility accidents caused by inclement weather, thereby enhancing the landscape and public safety of the community;

— reduces the operation and maintenance costs of pipelines and improves infrastructure management;

— increases community energy carrying capacity and promotes community efficiency and sustainable development.

This document provides a general overview and framework for the operation and maintenance of utility tunnels. It aims to provide requirements and recommendations for stakeholders of utility tunnels to improve safety, maintainability, cost-effectiveness, technology application, sustainability and management efficiency.

This document benefits the stakeholders of utility tunnels, including but not limited to, authorities, investors, developers, operation providers, maintenance providers, pipeline operators and citizens. It provides requirements and recommendations for cooperation between the public and private sectors and their regulators. Effective cooperation ensures the safe, orderly and intensive development and rational utilization of community underground space. The document also assists operation and maintenance providers in delivering safe and reliable energy supply services, improving the quality of community living for citizens.

This document contributes to the digitalization and smartness of the operation and maintenance of utility tunnels. Several global innovations have been made for the digitalization and smartness of the operation and maintenance of the utility tunnel, such as:

— National Underground Asset Register (NUAR)[1)] in the UK provides a digital map for stakeholders to access information about underground pipelines and cables, enabling stakeholders to obtain the data required for safe operation and maintenance based on their roles;

— The community underground pipeline network management platform in China are integrated platforms, for example, Beijing Government Services[2)];

— Before You Dig Australia (BYDA)[3)] in Australia is a national infrastructure information system platform that ensures the safety of construction workers and communities during excavation projects, promoting the vision of zero damage and zero harm.

This document encourages a platform-based approach for managing the operation and maintenance of the utility tunnels. It aims to strengthen information exchange and sharing, and ensure the safe and effective operation and maintenance of the utility tunnels.

---

1) https://www.gov.uk/guidance/national-underground-asset-register-nuar

2) https://banshi.beijing.gov.cn/

3) https://www.byda.com.au/