

For Comments Only

Draft Indian Standard
Security and resilience —
Guidelines for hardened protective Shelters
ICS 91.040.99; 03.100.01

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NATIONAL FOREWORD

(Formal clauses to be added later on)

The text of the International Standard has been approved as suitable for publication as an Indian Standard without deviations. Certain conventions are, however, not identical to those used in Indian Standards. Attention is particularly drawn to the following:

- a) Wherever the words 'International Standard' appear referring to this standard, they should be read as 'Indian Standard'.

In this adopted standard, reference appears to an International Standard for which no Indian Standard exists. The technical committee have reviewed the provisions of the following International standards referred in this standard and has decided that they are acceptable for use in conjunction with this standard:

<i>International Standard</i>	<i>Corresponding Indian Standard</i>	<i>Degree of Equivalence</i>
ISO 22300, Security and resilience — Vocabulary	IS/ISO 22300 : 2021 Security and Resilience — Vocabulary	Identical

Annex A is informative only.

Note: The technical content of the document is not available on website. For details, please refer the corresponding ISO/FDIS 22359:2024 or kindly contact:

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Scope

This document provides guidelines for the design, use and maintenance of hardened protective shelters (hereafter referred to as “shelters”). It specifies guidance on the layout, structures, equipment and actions related to a shelter.

This document is intended for organizations or individuals responsible for or involved in decision-making, planning, implementation, administration, use or upkeep of shelters, such as local, regional and national governments, civil protection agencies, first responders and businesses such as designers, constructors and equipment suppliers.

This document does not cover the minimum requirements or exact specifications for the properties of or actions related to a shelter; nor does it cover rapidly erected temporary shelters, such as lightweight canvas weather shelters, other tarp tent shelters, or metal and container shelters. Military shelters are subject to additional requirements which are outside the scope of this document.

Introduction

0.1 General

This document provides guidelines for hardened protective shelters used for protection of people, assets, and functions supporting critical infrastructures during a disaster through isolating them from the hazardous environment and thus protecting them against the dangerous effects of the hazard.

Protection of people is based on international treaties and protection of the civilian population when their country is at war, but also in peacetime is primordial. Article 3 of the United Nations Universal Declaration of Human Rights [2] gives everyone the right to life, liberty, and security. Furthermore, the fourth treaty of the Geneva Convention [1] proclaims the civilian populations right to be protected in armed conflicts

0.2 Hazards and disasters

Hazards create harmful effects such as loss of life, injury or other health effects, property damage, social and economic disruption or environmental degradation. Hazards can be single, sequential or combined in their origin and effects, as hazardous events can occur alone, simultaneously, cascading or cumulatively.

If the hazard(s) cannot be mitigated, they can result in a disaster. During a disaster, citizens typically need some type of societal protection against the effects of the hazard. Most societies have planned and implemented actions to protect their citizens against hazards and their effects. These actions are sometimes referred to diversely as civil protection, civil defence, crisis management, emergency management, emergency preparedness, contingency planning, civil contingency and civil aid.

The preventive measures and protective efforts depend on the threat assessments studying the risks created by various hazards or combinations of them. The threat assessments usually

address all four stages of the disaster management cycle (mitigation, preparation, response and recovery).

When a hazard occurs, it can cause effects that can affect the citizens. The citizens can be directly injured or harmed by the failure of critical infrastructure and the denial of vitally important functions of the society. This document focuses only on hazards and effects that can be mitigated through hardened protective shelters. Some other common and well-known methods to protect citizens are mass evacuations, quarantines and redundant systems.

0.3 Hardened protective shelter

A hardened protective shelter is a purpose-built structure, which is blast resistant (designed to withstand the effects of a blast with a predefined force) and gastight (so completely closed that no gases can get in or out), for protection of shelter occupants against the effects of disasters by isolating them from the hazardous environment.

The shelter is hardened against the mechanical effects of disasters by means of a heavily reinforced concrete or bedrock shield. This distinguishes it from rapidly erected temporary shelters such as lightweight canvas weather shelters, other tarp tent shelters as well as metal and container shelters.

The shelter can sustain the life of the occupants for an extended period of time should the anticipated threat so require, by maintaining a sufficient internal overpressure and using purified filtered air to prevent entry of all possible toxic substances that the ambient air can contain.

0.4 Use of shelters

The civil protection shelter programs are managed by civilian authorities. The primary purpose of hardened protective shelters is to protect citizens against the effects of weapons during wars or warlike situations, but they can also be used for safeguarding them in case of natural hazards or industrial accidents threatening civilian life.

Military shelters are usually hardened against weapon effects, such as blast, chemical, biological, radiological and nuclear (CBRN) warfare, and in many cases also against the effects of an electromagnetic pulse (EMP). They are used as command-and-control centres, for protection of troops and as fortified hangars for aircraft and other military assets.

There are several industry branches with a potential risk of accidents involving of flammable, explosive, poisonous or radiating materials. The accident is often caused by an explosion, but also natural effects such as flooding, or earthquake can trigger an incident. The industrial market segment comprises, among others, chemical industries, nuclear power plants, hospitals, industrial command and control centres and data storage facilities.