

ICS 13.220.20
CCS P 16;P72



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB 50351-2014

Replacing GB 50351-2005

**Code for design of fire-dike in storage tank farm
(English Translation)**

Issued on: March 31, 2014

Implemented on: December 1, 2014

**Issued by: Ministry of Housing and Urban-Rural Development of the
People's Republic of China;
General Administration of Quality Supervision, Inspection and
Quarantine of the People's Republic of China**

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1 General

1.0.1

This specification is formulated in order to reasonably design fire dikes and protective walls and ensure the safety of storage tank farms.

1.0.2

This code is applicable to the design of fire dikes and protective walls in the construction, reconstruction and expansion of above-ground liquid storage tank farms.

1.0.3

The design of fire dikes and protective walls shall be based on meeting various technical requirements, adapt measures to local conditions, and select models reasonably to achieve safe, durable, economical and reasonable effects.

1.0.4

The design of fire dikes and protective walls in storage tank farms shall not only comply with this code, but also comply with the current relevant national standards.

2.0.1 Tank group

A storage tank unit consisting of one or several storage tanks surrounded by fire dikes or protective walls.

2.0.2 Storage tank farm

A tank area consisting of one or several tank groups.

2.0.3 Fire dike

It is a structure used to prevent liquid outflow and fire spread when a leakage accident occurs in a group of flammable and combustible liquid storage tanks under normal pressure, a storage tank group that changes the gaseous state into a liquid state through low temperature under normal pressure conditions, or other liquid dangerous goods storage tank groups.

2.0.4 Dike dividing dike

It is used to reduce the scope of influence when a small amount of liquid leakage accident occurs in the storage tank in the fire dike, or to reduce the influence scope when a small amount of refrigerated liquid leakage accident occurs in the storage tank group that changes gaseous state to liquid state through low temperature under normal pressure conditions, and a The storage tank group is divided into several partitioned structures.

2.0.5 Safety wall

It is a structure used to prevent the sinking gas from overflowing when a leakage accident occurs in the storage tank group that changes the gaseous state into a liquid state by pressurization under normal temperature conditions.

2.0.6 Dividing wall

A structure that divides a storage tank group into several partitions to reduce the impact range before the liquid turns into gas when a small amount of leakage accident occurs in the storage tank in the protective wall.

2.0.7 Effective capacity surrounded by dikes

The volume that can be effectively used in the fire dike of a storage tank group.

2.0.8 Design height of liquid level

The design height of the liquid level in the dike when calculating the effective volume of the fire dike.

2.0.9 Inboard toe line of dike

The intersection line between the inner side of the fire dike or its side slope and the designed ground inside the fire dike.

2.0.10 Outboard toe line of dike

The intersection line between the outside of the fire dike or its side slope and the design ground outside the fire dike.

3.1 General provisions

3.1.1

The selection of fire dikes and protective walls shall be determined according to the properties of the stored liquid medium.

3.1.2

Fire dikes and protective walls should be constructed of non-combustible materials, and must be dense, closed, and leak-proof

3.1.3

The fire protection performance of the fire embankment shall comply with the current national standards "Code for Fire Protection of Petroleum and Natural Gas Engineering Design" GB 50183, "Code for Design of Petroleum Reserve Depot" GB 50737, "Code for Design of Petroleum Depot" GB 50074, "Code for Fire Protection Design of Petrochemical Enterprises" "Relevant regulations of GB 50160.

3.1.4

All kinds of pipelines and cables entering and leaving the storage tank group should cross from the top of fire dikes and protective walls or pass below the ground. When it is necessary to pass through fire dikes and protective walls, casings shall be provided and shall be tightly sealed with non-combustible materials, or fixed short pipes with flexible hose sealing connections at both ends.

3.1.5

Open drainage ditches should be set up in fire dikes and inside the protective walls.

3.1.6

The following requirements shall be met when setting open drainage ditches in fire dikes and protective walls.

- 1 When constructing drainage ditches along the inner side of the fire embankment without embankment, the distance between the outer side of the ditch wall and the inner embankment line of the fire embankment shall not be less than 0.5m;
- 2 When constructing drainage ditches along the inner side of the earth embankment or fire embankment with internal embankment, the distance between the outer side of the ditch wall and the footline of the inner side of the earth embankment or the embankment footline of earth embankment shall not be less than 0.8m;

3 When constructing drainage ditches along the protective wall, the distance between the outer side of the ditch wall and the footline of the inner dike of the protective wall shall not be less than 0.5m;

4 Anti-seepage measures shall be adopted for the drainage ditches;

5 The open drainage ditch should be provided with a grille cover plate, and the material of the grille cover plate should have fireproof and anti-corrosion properties.

3.1.7

The fire embankment and protective wall of each storage tank group shall be provided with not less than 2 steps or ramps for pedestrians crossing the embankment, and shall be arranged in different directions. Dikes and partition walls should be provided with pedestrian steps or ramps

3.1.8

The distance between adjacent steps, ramps and ladders of fire dikes should not be greater than 60m, and guardrails should be provided for steps or ramps with a height greater than or equal to 1.2m.

3.2 Layout of fire dikes for oil tank groups

3.2.1

The layout of above-ground oil tanks in the same fire dike shall meet the following requirements.

1 In the same fire dike, it is advisable to arrange oil storage tanks with the same or similar fire risk category (Category AB, B and C A oil storage tanks can be arranged in the same fire dike, but it is not suitable to arrange them with C and B oil tanks). Storage tanks are arranged in the same fire dike), when the volume of a single tank is less than or equal to 1000m³, atmospheric pressure storage tanks with different fire hazard categories can also be arranged in the same fire dike, but they should be separated by dikes;

2 Boiling oil storage tanks and non-boiling oil storage tanks shall not be arranged in the same fire dike, except for pressure relief tanks arranged separately in groups;

3 Atmospheric pressure oil storage tanks shall not be arranged in the same fire dike as liquefied petroleum gas, liquefied natural gas and natural gas condensate storage tanks;

4 The pressure storage tanks for flammable liquids may be arranged in the same fire dike as the full pressure storage tanks for liquefied hydrocarbons;

5 The low-pressure storage tanks for flammable liquids may be arranged in the same fire dike as the atmospheric pressure storage tanks;

6 Above-ground vertical oil tanks, high-level tanks and horizontal tanks should not be