

OSH Best Practices in Construction Industry: Japan Perspective

NATIONAL SEMINAR ON OCCUPATIONAL SAFETY AND
HEALTH IN THE CONSTRUCTION SECTOR 2014
‘START WITH OSH, SECURE THE FUTURE’
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National Institute of Occupational Safety and Health, Japan

Number of fatalities in Japan

Occupational safety and Health Act 1972

All industries

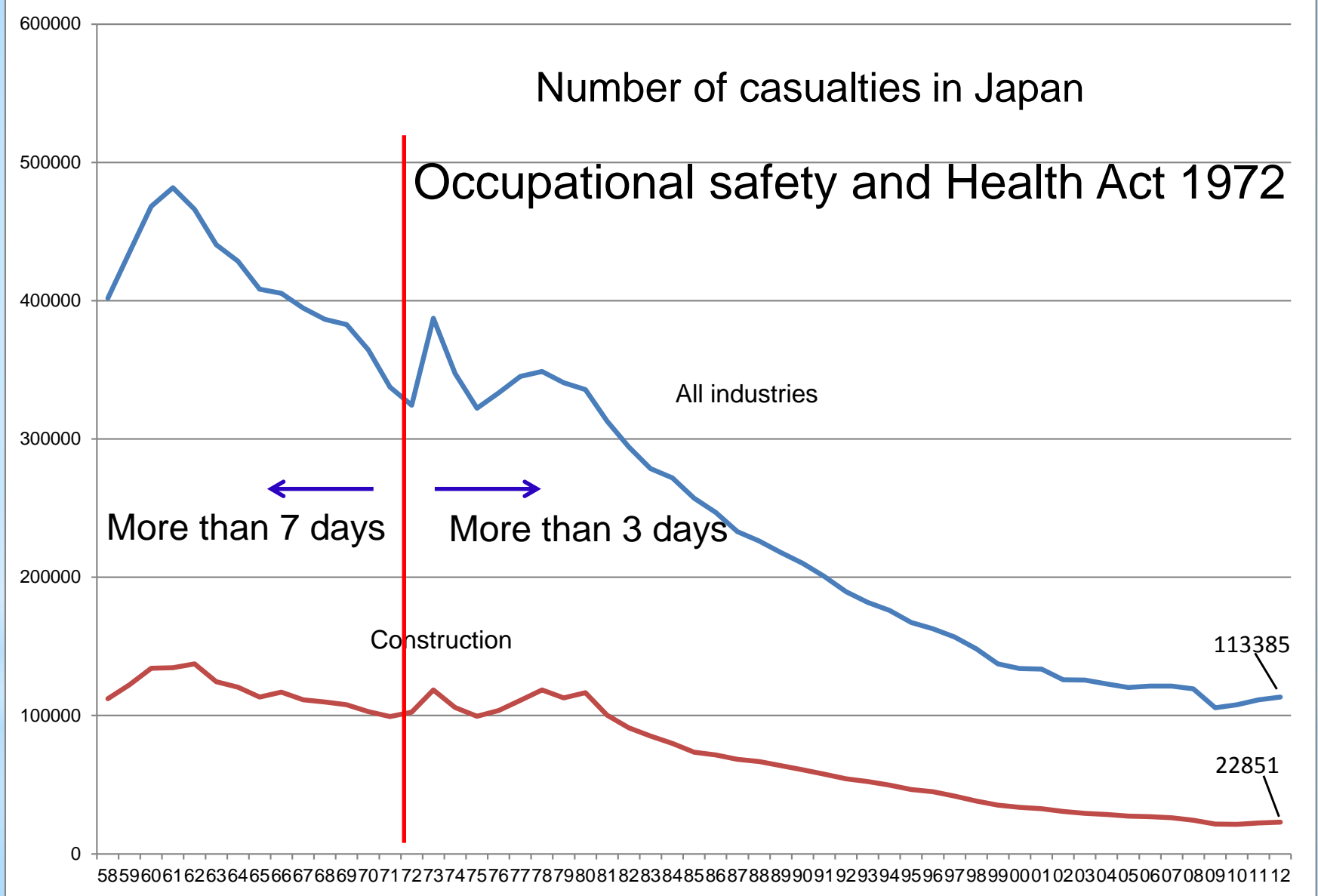
Construction

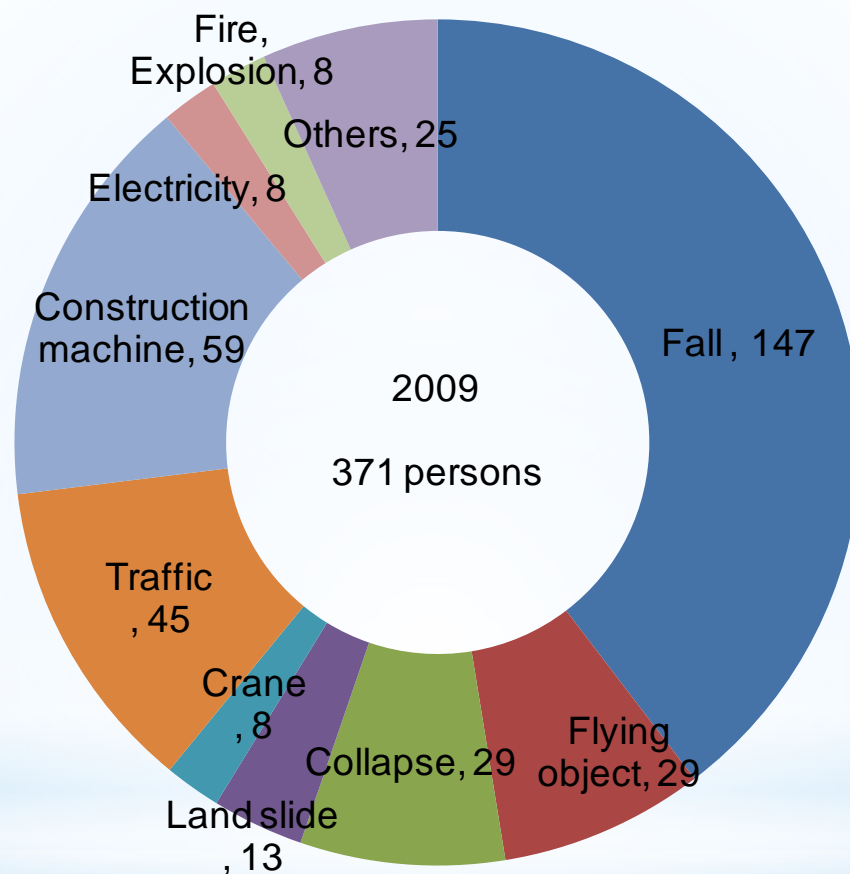
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Number of casualties in Japan Occupational safety and Health Act 1972





Number of fatal accidents in Japanese construction industry in 2009
Approximately 40% of fatal accidents during construction are caused
by workers fall

1. Activities in Administration

- (1) Spread of Methods to Erect Scaffolds First
- (2) Spread of Methods to Erect Handrails First
- (3) Spread of Method to Install Trench Supports First
- (4) Contest on visible safety activities
- (5) Award for excellent foremen by Minister

2. Activities in Association

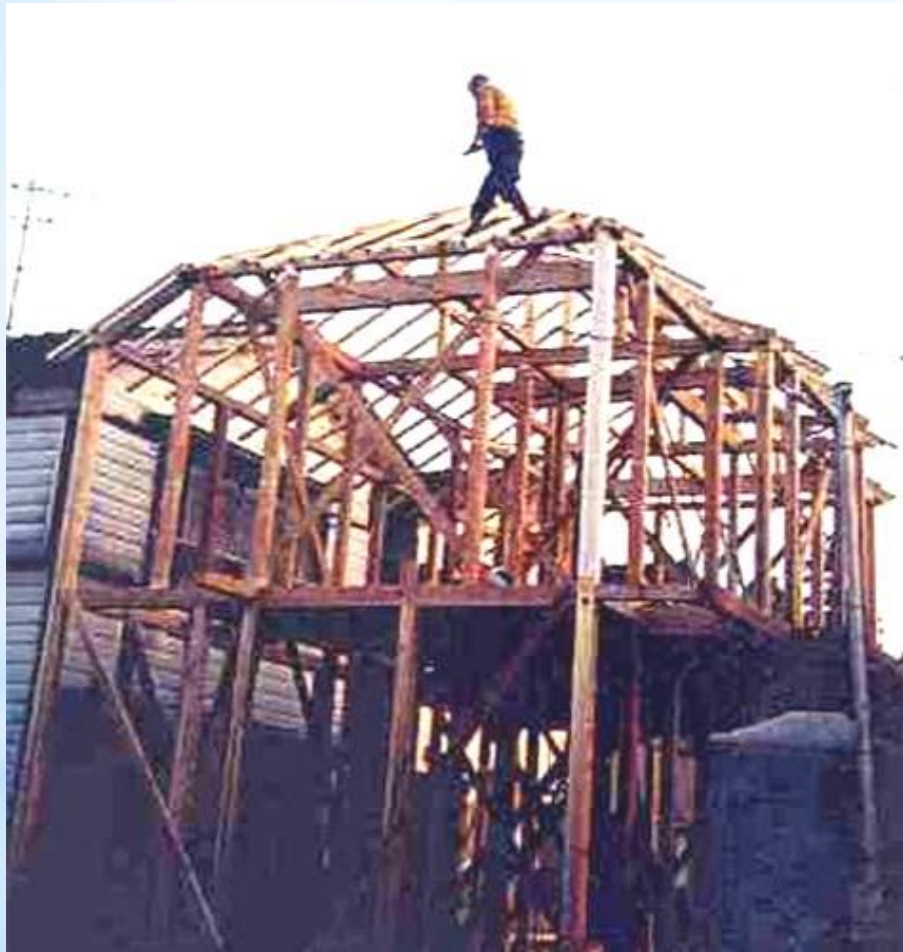
- (1) Various Industrial Accident Prevention Activities by JCOSHA
- (2) Construction Safety and Health Convention by JCOSHA
- (3) Institution of work standard manual for fall prevention from roofs by JCOSHA
- (4) Institution of guideline for safety work of Wire Sawing Demolition Methods by related four associations

3. Activities in Private Company

Example of visible safety activities

1. Activities in Administration

(1) Spread of Methods to Erect Scaffolds First



No scaffolds

Many fall accidents were happened at low-rise (wooden house etc.) construction sites.

More than 20 years ago in Japan



Methods to Erect Scaffolds First for low-rise house construction
(Height of a house is less than 10m)

The Ministry of Health, Labour and Welfare, Japan (MHLW) established safety guidelines aimed to spread the use of this method in 1996.

The guidelines were amended in 2006, to ensure improved safety in work environments.



This figure shows a house constructed by the method, in which scaffolds are assembled before the frame of the house is erected and are used in all construction stages to prevent falls by guardrails of scaffolds.

A house constructed by Methods to Erect Scaffolds First

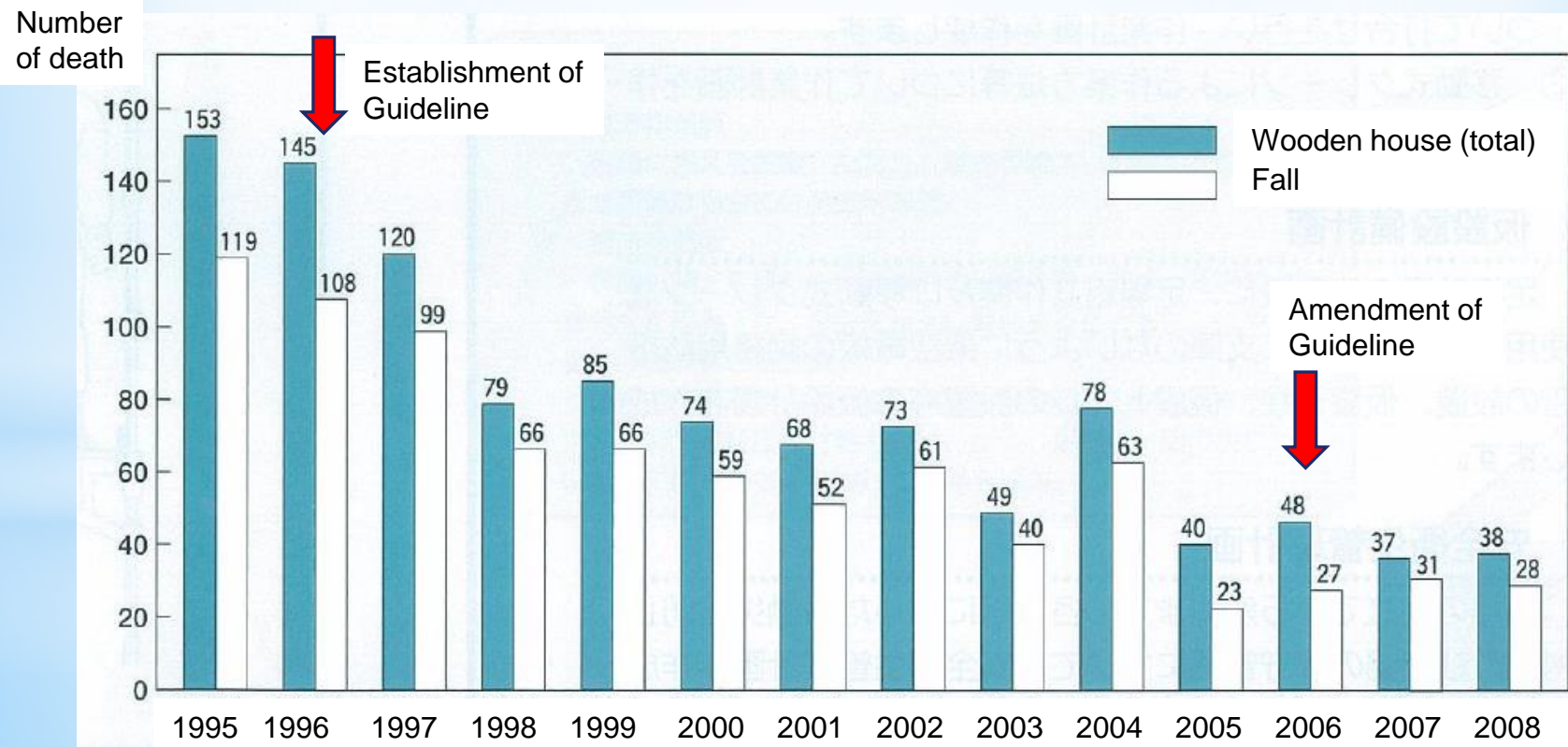
Spread by budgetary provision

The MHLW gave the subsidy for using the methods, and supported to educate the methods at construction sites.



As the results, almost all low-rise house construction sites use the methods, and fall accidents at these sites are decreased drastically.

The construction methods for low-rise house is changed by the spread of the methods.



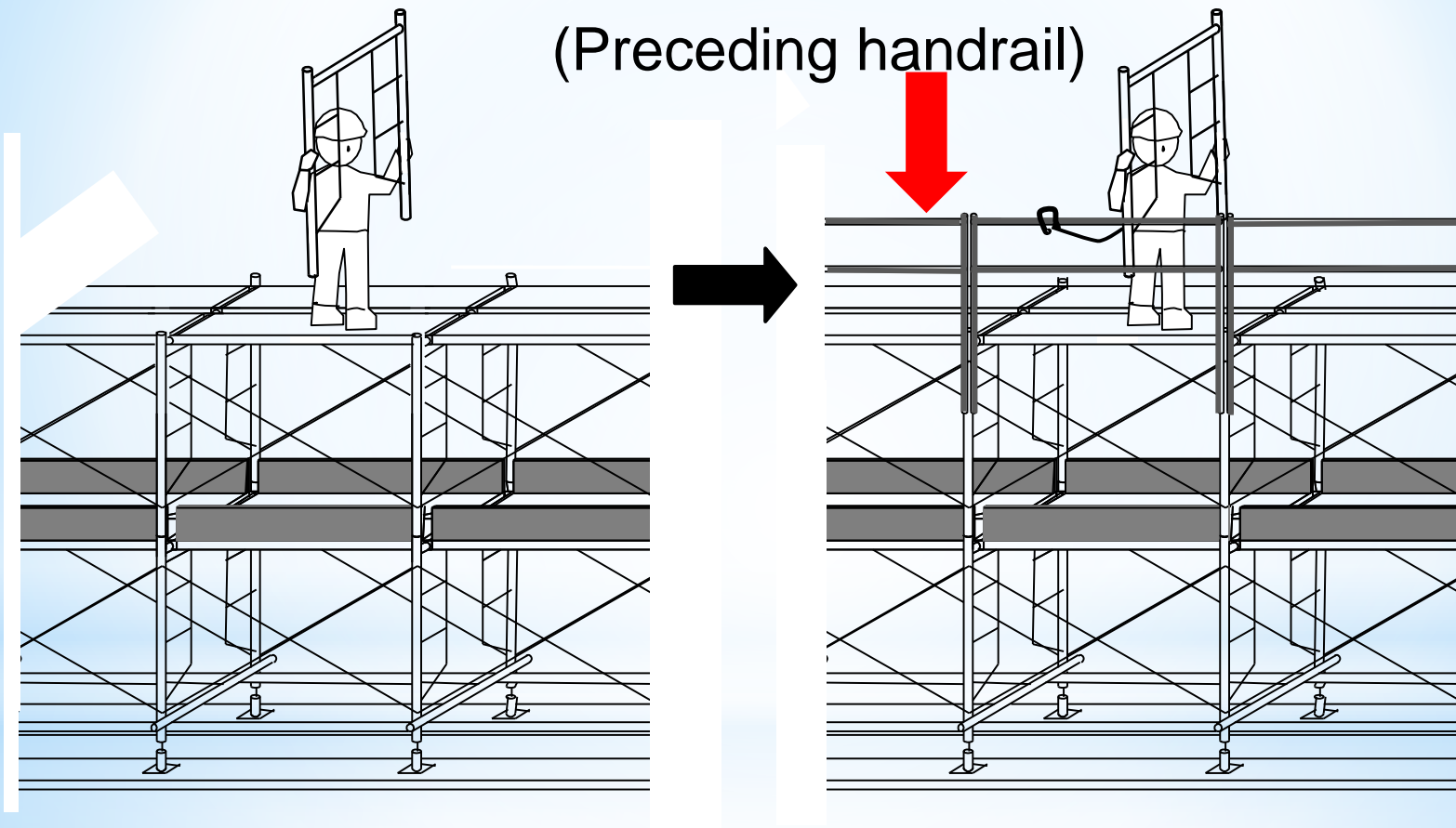
(2) Spread of Methods to Erect Handrails First (Preceding Handrail Construction Method)



Scaffolds assembled by Methods to Erect Handrails First

Purpose of Methods to Erect Handrails First

Advanced handrail
(Preceding handrail)



No handrail in the erection
More than 10 years ago

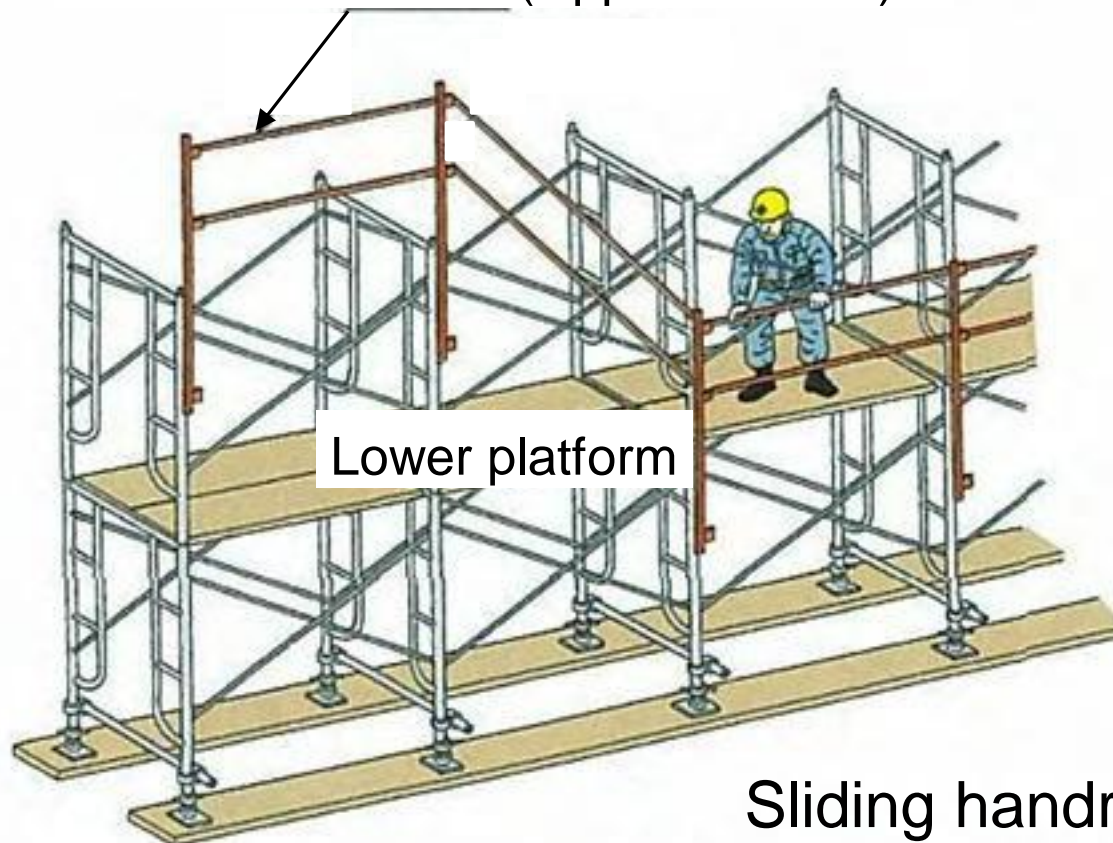
There are handrails at all times
Now, this methods

The MHLW established safety guidelines aimed to increase the adoption of this method in 2003.

The guidelines were amended in 2009 for the purpose of fostering enhanced safety in work environments.

Prefabricated scaffolds

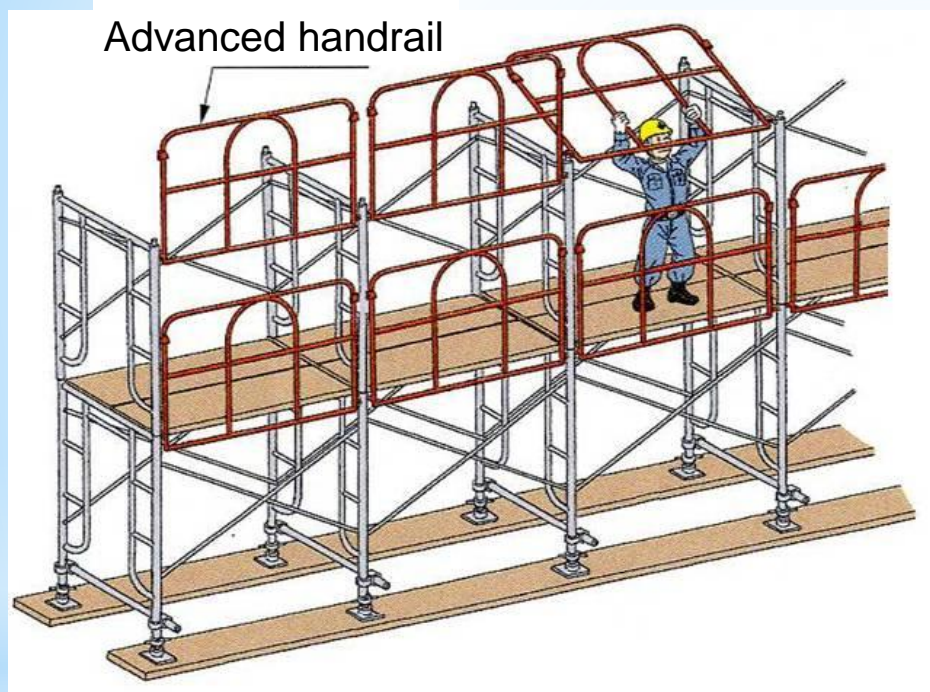
Advanced handrail (Upper handrail)



Sliding handrail method

In this method, upper handrails are always set from lower platforms using advanced handrails, and workers are constantly protected from falls by the advanced handrails at the top of a previously erected scaffold.

Prefabricated scaffolds



Fixed handrail method



Method to erect handrails first
using special scaffolding

Wedge joint scaffolds



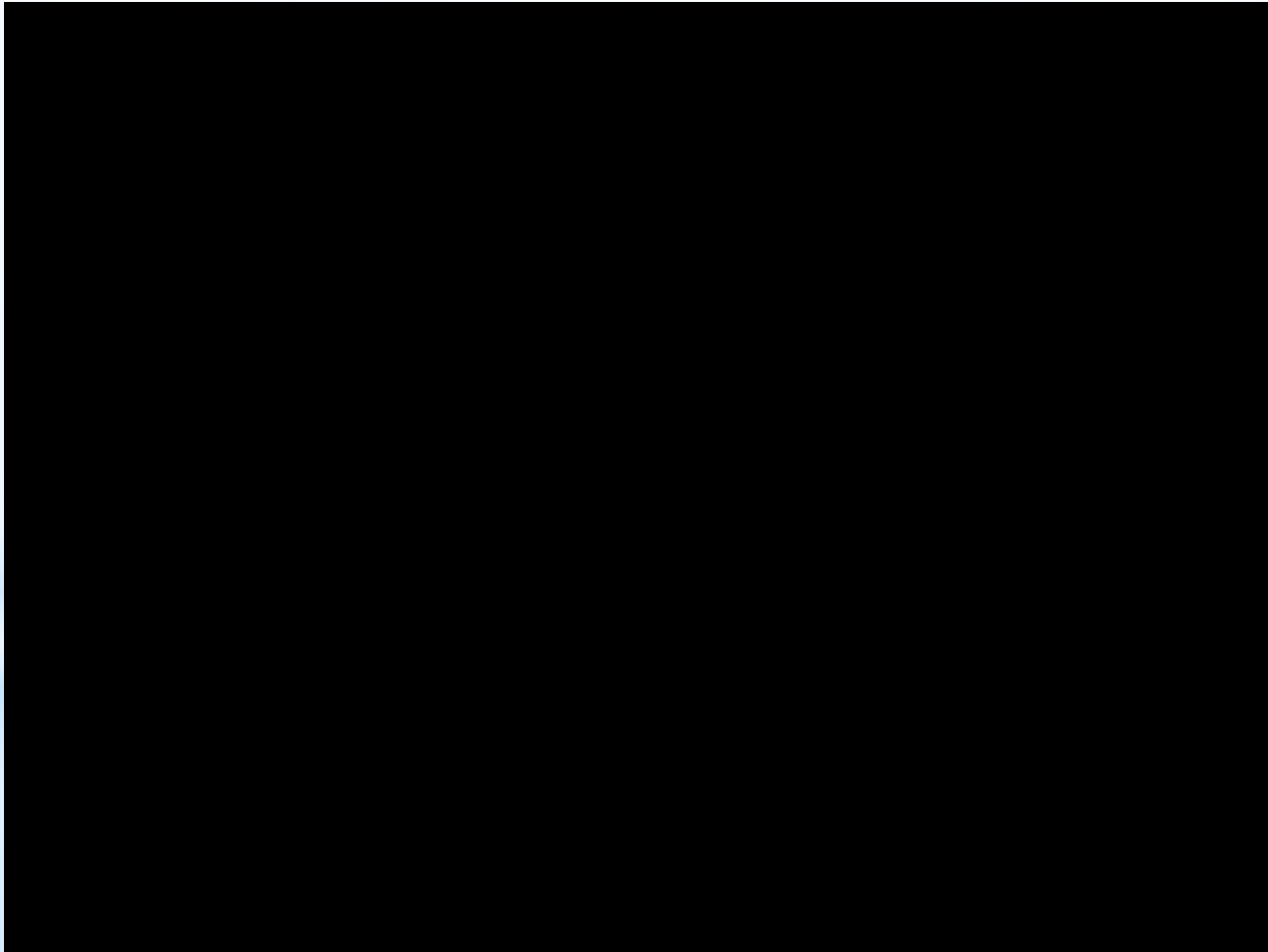
Support with handrail method



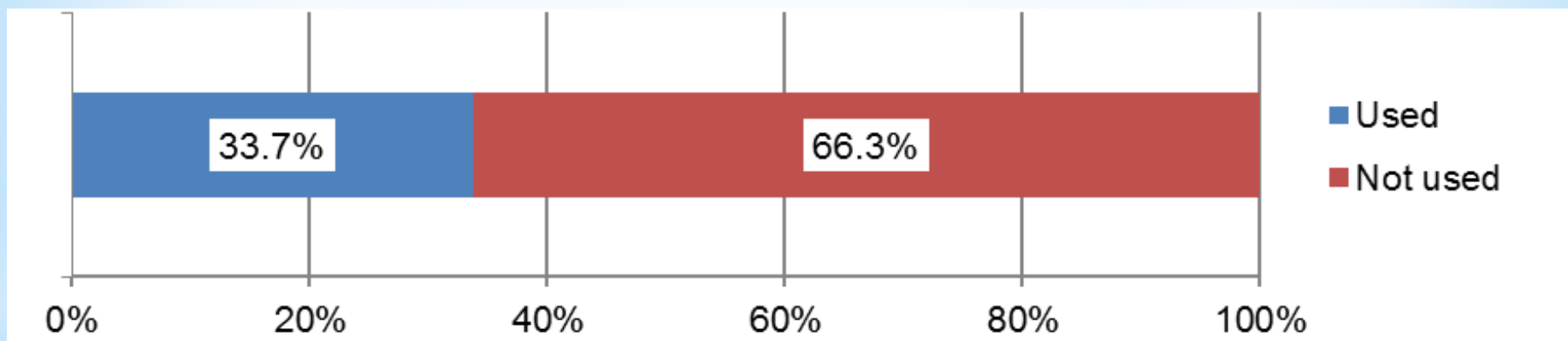
Fixed handrail method

Spread by budgetary provision

The MHLW gave the subsidy for using the methods, and send advisers to construction sites.

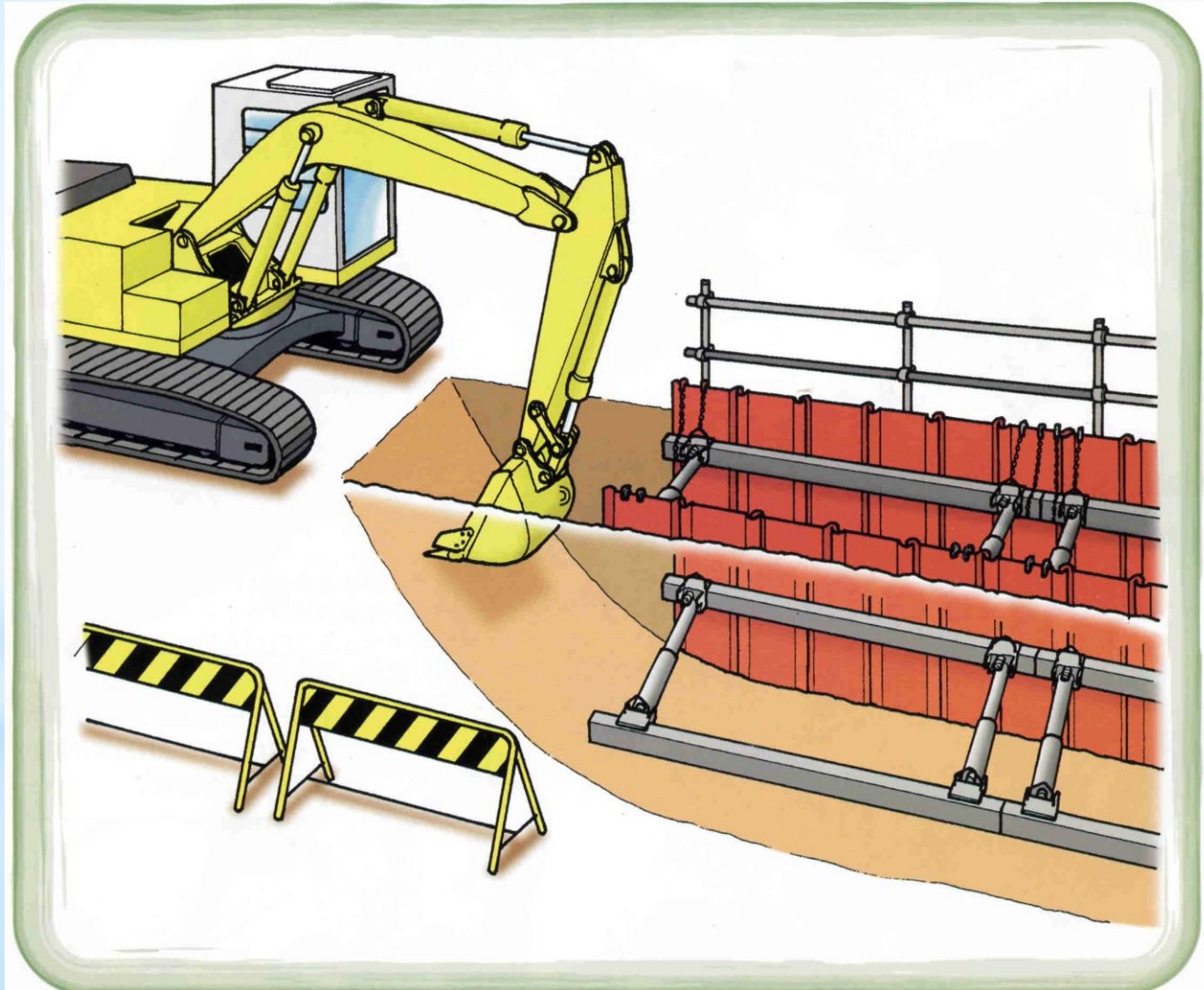


As the results, approximately 34% of construction sites use this method.



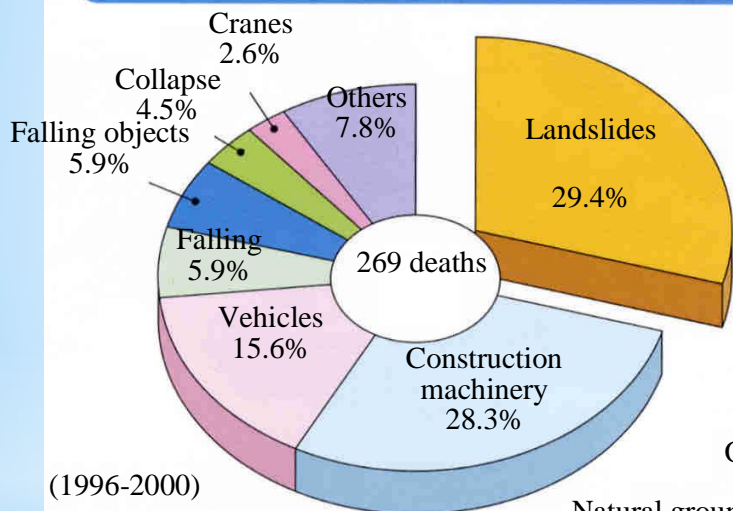
The use rate of this method on 3,657 construction sites in 2011

(3) Spread of Method to Install Trench Supports First

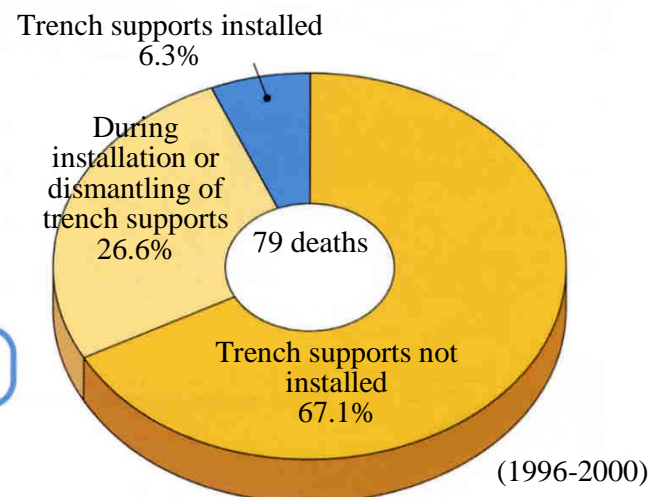


Accidents during the construction of water and sewerage works, etc., 1996-2000.

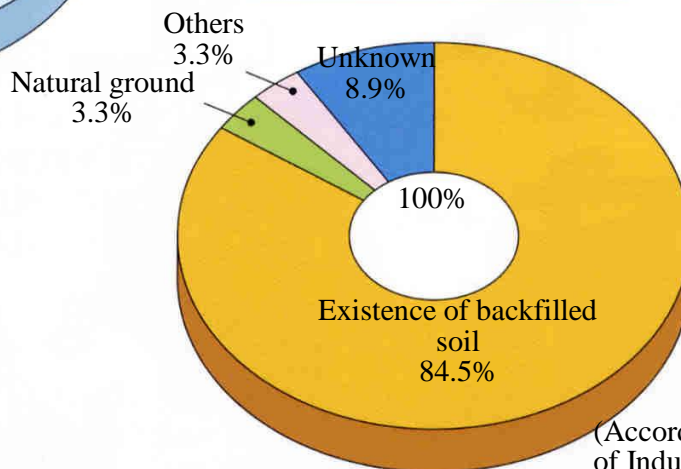
**Fatal accidents during the construction of water and sewerage works
(By type of accident)**



**Fatal accidents due to landslides
(By state of installation of trench supports)**



Soil quality of landslide area

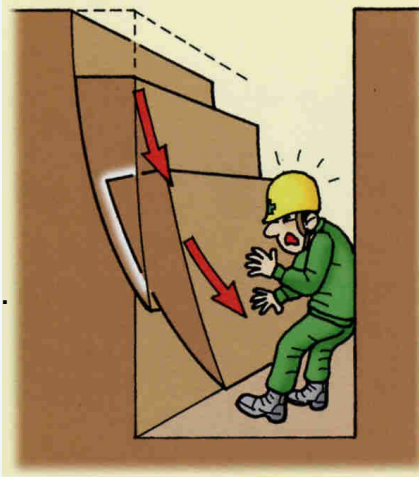


(According to surveys conducted by the National Institute of Industrial Safety)

Types of trench wall failure

Surface slip

A thin layer of earth on the trench wall slips.



Gravitational or arc sliding

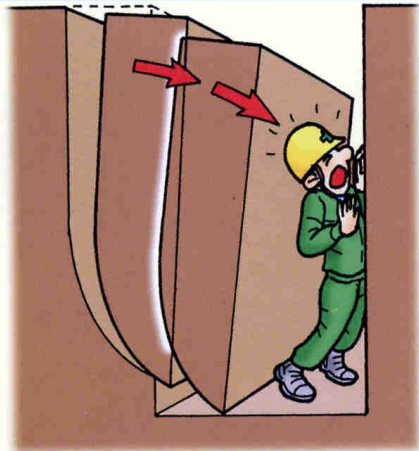
The clod of earth is larger and deeper than in surface slip.



Method to Install Trench Supports First

Exfoliation

A clod of earth exfoliates into the trench like a folding screen or a wall.



Fall

A part of a trench wall (tight earth, rocks, etc.) falls down.

