



REFERENCE LOSS COST RATES FOR HOME  
FIRE INSURANCE

# ADOPTION OF SEGMENTALIZED WATER DISASTER PREMIUM RATES

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June 2023

General Insurance Rating Organization of Japan

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# INTRODUCTION

In June 2023, General Insurance Rating Organization of Japan (GIROJ) filed revisions to the Reference Loss Cost Rates for the fire insurance to the Financial Services Agency (FSA).

While the same single premium rate has until now been used for water disaster coverage all over Japan, Reference Loss Cost Rates will be revised to adopt segmentalized premium rates for water disaster coverage (water disaster premium rates).

This has been discussed at the FSA's "Council of Experts on Determination of Fire Insurance Premium Rates Based on Exposure to Water Damage Risks" in fiscal year 2022, as natural disasters have been occurring more frequently, while the number of policies with water disaster coverage decreases.

We hope this material will help consumers understand the new framework of fire insurance.

June 2023

General Insurance Rating Organization of Japan

# THINGS TO BE NOTED

Issues that can be confusing

- Things to be noted regarding the “water disaster premium rates”
  - This material describes Reference Loss Cost Rates calculated by GIROJ. The regional unit and number of risk categories of regions we use may be different from those adopted by your insurance company. In addition, the percentage changes in premium rates may not be the same as those in the insurance products you purchase.
  - A municipality being located in a region categorized as of low risk implies that it faces a relatively lower water disaster risk than other municipalities. Be aware that water disasters may occur in any region of any risk category.
  - Risk categories of regions are determined based on overall water disaster risks, including fluvial flood as well as pluvial flood and landslides, so they may not correspond to those of flood hazard maps and other general risk information.
  - Because risk categories of regions are determined not only by the likelihood of occurrence of disaster but also by the severity of expected damages from the disaster, they do not necessarily indicate the likelihood of occurrence of disasters itself.

In the first place

# FIRE INSURANCE

What kind of accidents and disasters are covered?  
How are premiums determined?

## ■ Fire insurance

Generally, your fire insurance policy covers damages caused by a wide range of events, such as **fire**, **natural disasters** (wind, water, snow, etc.), water **leaks** from plumbing, **theft**, and others.



Fire



Natural disasters



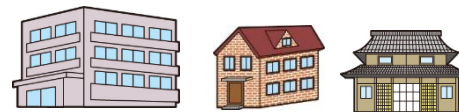
Leaks



Theft

## ■ How fire insurance premiums are determined

When your insurance company determines how much fire insurance premium you should pay, they take into account the conditions of the building, such as **structure**, **location**, and other factors so that the premiums correspond to the risks of the damage described above.



Building structure



Building location

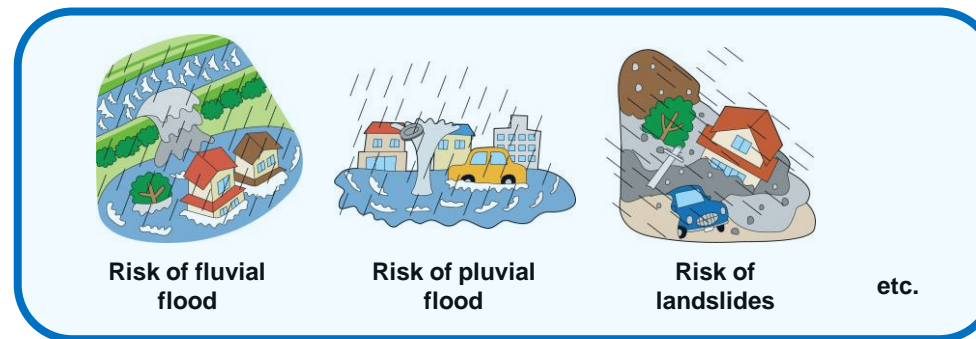
# WATER DISASTER RISKS

What are the  
“anticipated disaster risks”?

## ■ Water disaster risks

One of the natural disaster risks covered by fire insurance is the risk of water disasters. These include:

- The risk of **fluvial flood** (rivers overflowing)
- The risk of **pluvial flood** (sewer backups due to heavy rains that overload sewer system)
- The risk of **landslides** (e.g., due to heavy rain)



For the purpose of fire insurance, all these risks together are defined as water disaster, while the potential losses caused by each risk are considered separately.

# WATER DISASTER PREMIUM RATES

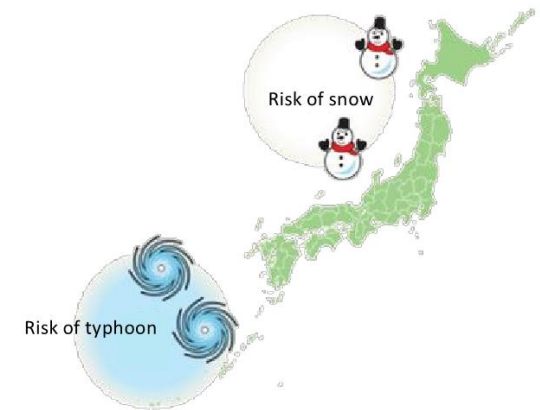
How are water disaster risks  
incorporated into the premium  
rates (insurance premiums)?

## ■ Water disaster premium rates

The rate used as the basis for calculating premiums is called “premium rate.” When calculating the fire insurance premiums, the “water disaster premium rate” corresponds to factors in the risk of water disasters.

In case of wind (including typhoons) or snow disasters, different premium rates are used for different regions.

As to water disasters, however, **the same rate** has been used **all over Japan**, because data by region were insufficient.



# SEGMENTALIZED WATER DISASTER PREMIUM RATES

Why different rates?

## ■ Background

As fire insurance premiums increase due to more severe damages caused by water disasters, we have been discussing revising the water disaster premium rates for the following reasons:

- (1) It is important to ensure the water disaster premiums are fairly determined among different regions in light of different levels of water disaster risks
- (2) While more information on water disaster risks, such as hazard maps, is now available to policyholders, if they think their water disaster risks are low, they tend to remove water disaster coverage from their fire insurance policies to save on premiums. This leads to higher premiums for water disaster coverage as a whole, possibly making it unaffordable for some customers.

Based on this situation and the discussions at the Financial Services Agency's "Council of Experts on Determination of Fire Insurance Premium Rates Based on Exposure to Water Damage Risks," we have decided to use segmentalized water disaster premium rates.



**Water disaster risk is not limited to fluvial (river) flood. A risk exists that the damage caused by an unexpected water disaster is not covered.**

For example, there are actually cases in which buildings of a certain height, such as high-rise apartment, were damaged by water backup from a drain caused by heavy rain. In some areas far from the rivers, people experienced landslides and other damages.



# DETAILS OF SEGMENTALIZED WATER DISASTER PREMIUM RATES

What is the gist?

## ■ Which regional unit will be used?

Segmentalized rates will be decided on a **municipality** basis.

## ■ How many risk categories, and what is the premium differential?

- Municipalities all over Japan will be divided into **five risk categories**, from “Category 1” (the lowest premium group) to “Category 5” (the highest premium group).
- The premium for Category 5 will be approximately **1.2 times**<sup>\*1,\*2,\*3</sup> of that for Category 1.



\*1 This differential is for overall premiums (total of coverage for fire, wind disasters, snow disasters, water disasters, etc.).

\*2 Measures are being taken to mitigate drastic changes in premiums so that they do not rise significantly.

\*3 This differential is based on Reference Loss Cost Rates calculated by GIROJ. The actual differentials in premiums of your policy may be different.

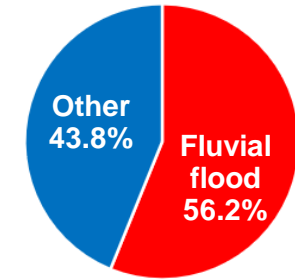
More details are provided on the next page.

# REGIONAL UNIT

Why by municipality?

## ■ Which data are used?

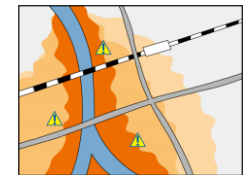
- **Fluvial flood** accounts for **approximately 60%** of the total water disaster damage, while **pluvial flood** and **landslides** account for the remaining **40%**.



Cause of water disaster damage\*<sup>1</sup>

In order to assess the risks by region,

- For fluvial flood, “**flood inundation area maps**” \*<sup>2</sup> (flood hazard maps) are used.\*<sup>3</sup>
- For pluvial flood and landslides, “**flood damage statistics**” \*<sup>4</sup> and “**topographical data**” \*<sup>5</sup> are used.



\*<sup>1</sup> Compiled from MLIT flood damage statistics (2011-2020 totals)

\*<sup>2</sup> MLIT Hazard Map Portal Site (<https://disaportal.gsi.go.jp/>)

\*<sup>3</sup> This information source is acknowledged as comprehensive, objective, reliable and also widely recognized among consumers.

\*<sup>4</sup> MLIT: Statistics by municipality

\*<sup>5</sup> National Research Institute for Earth Science and Disaster Resilience (NIED)

## ■ Rationale for a regional unit

We have chosen **municipality** as a regional unit because the data we use to differentiate the premium rates are based on municipalities, and it is convenient for the purpose of insurance policies, etc.\*<sup>6</sup>

\*<sup>6</sup> Increased convenience can reduce the cost of premium calculation.

# NUMBER OF RISK CATEGORIES AND PERCENTAGE CHANGES IN PREMIUMS

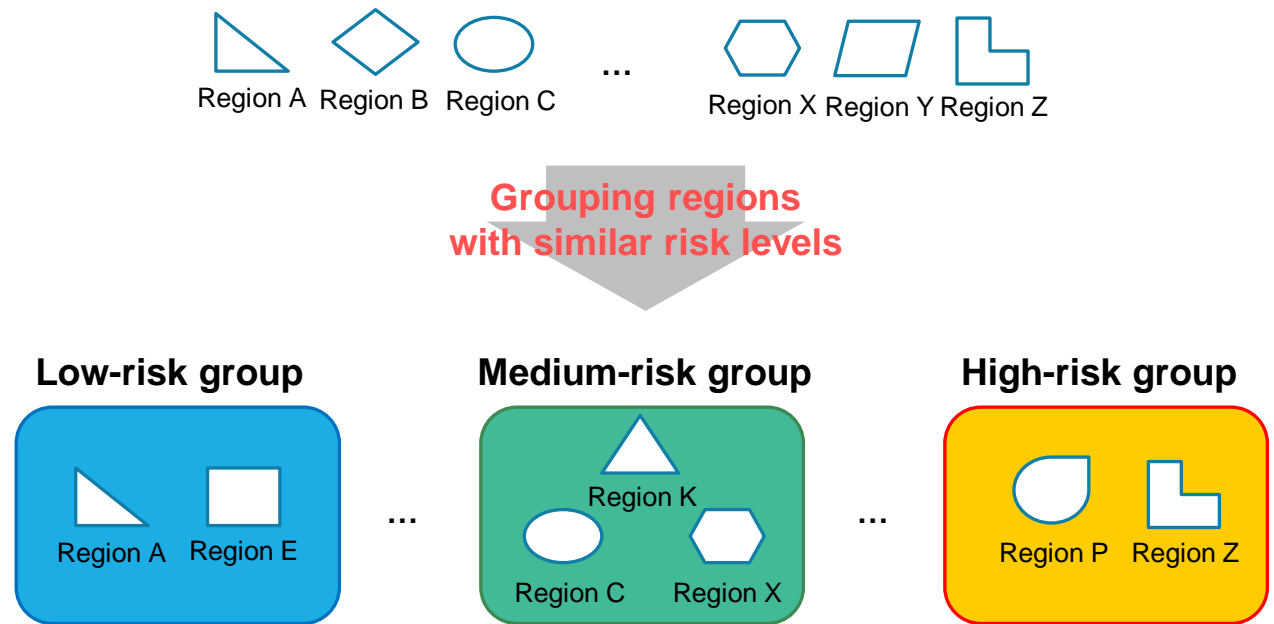
How are the different premium rates determined?

## ■ Rationale for adopting segmentalized rates

When using different premium rates by region, the most common way of doing so is grouping regions with similar risk levels and determining the premium rates based on the risk level of each group.

The advantage of this method is that it will simplify the calculation of premium rates and, thus, helps reduce costs for insurance companies. In case of water disaster premium rates, we use the same method.

(Image)



Different premiums are used based on the degree of risk each group faces.

# NUMBER OF RISK CATEGORIES AND PERCENTAGE CHANGES IN PREMIUMS

What points need to be considered when using segmentalized rates?

## ■ Rationale for adopting segmentalized rates (cont.)

The following points need to be taken into consideration when grouping regions as explained on the previous page. These are also pointed out by the FSA's "Council of Experts on Determination of Fire Insurance Premium Rates Based on Exposure to Water Damage Risks."

- The greater the number of groups (the number of risk categories), the greater the premium differentials between the highest and lowest risk groups.
- This could result in higher premiums for those who live in the municipalities categorized in higher-risk groups, making it more difficult for them to buy insurance policies.

Based on this consideration,

- We have decided the number of categories to be **five**, from "Category 1" (the lowest premium group) to "Category 5" (the highest premium group).
- The premium for Category 5 will be approximately **1.2 times**<sup>\*1,\*2,\*3</sup> of that for Category 1.

\*1 This differential is for overall premiums (total of coverage for fire, wind disasters, snow disasters, water disasters, etc.).

\*2 Measures are being taken to mitigate drastic changes in premiums so that they do not rise significantly.

\*3 This differential is based on Reference Loss Cost Rates calculated by GIROJ. The actual differentials in premiums of your policy may be different.

# NUMBER OF RISK CATEGORIES AND PERCENTAGE CHANGES IN PREMIUMS

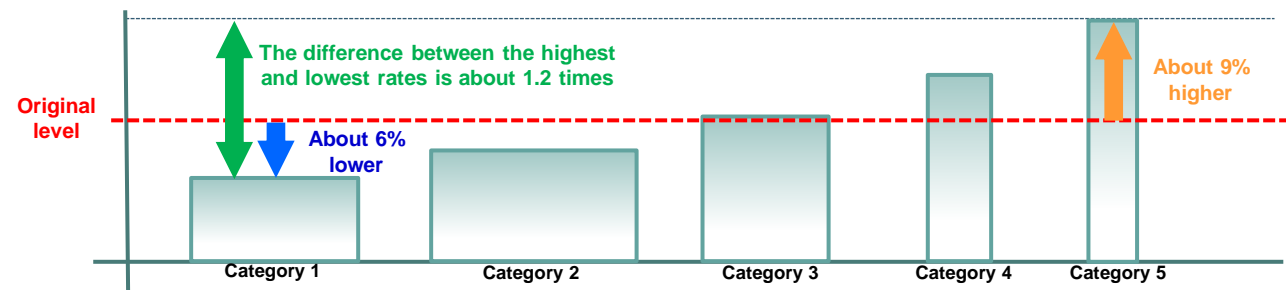
How do segmentalized rates affect my premium rate?

## ■ Illustration of percentage changes in premiums

**Compared with using a single water disaster premium rate**, if segmentalized rates are used, your rate will be

- **Approximately 6% lower** in Category 1 areas on average.<sup>\*1\*2\*3</sup>
- **Approximately 9% higher** in Category 5 areas on average<sup>\*1\*2\*3</sup>

When segmentalized rates are used, the premiums in Category 5 areas will be approximately **1.2 times**<sup>\*1,\*2,\*3</sup> higher than that in Category 1 areas.



The vertical axis of the graph shows the level of premiums, the horizontal axis shows the categories, and the width of the bars represents the number of policies. (Regional Categories 1 and 2 are the largest, and Regional Categories 4 and 5 are the smallest)

- \*1 This differential is for overall premiums (total of coverage for fire, wind disasters, snow disasters, water disasters, etc.).
- \*2 Measures are being taken to mitigate drastic changes in premiums so that they do not rise significantly.
- \*3 This differential is based on Reference Loss Cost Rates calculated by GIROJ. The actual differentials in premiums of your policy may be different.

# OTHERS

Which risk category does my neighborhood belong to?

- Find your neighborhood's risk category for water disaster premium rate.

Information on the risk categories for water disaster premium rates calculated by GIROJ\* can be found at the following website. (Select your municipality, and you will see the risk category.)

**[Water Disaster Risk Category Search System URL]**

<https://www.giroj.or.jp/ratemaking/fire/touchi/>

- \* These risk categories are defined for the purpose of calculating Reference Loss Cost Rates for the water disaster premium rates of the fire insurance. They may be different from those defined by your insurance company.

Please contact your insurance company to find which risk category your neighborhood belongs to.