Fire Prevention

1. Fire Prevention Inspection

(1) On-site Inspections

On-site inspections are based on the Fire Service Act. Firefighters visit buildings and HAZMAT facilities to conduct inspections from the viewpoint of fire prevention.

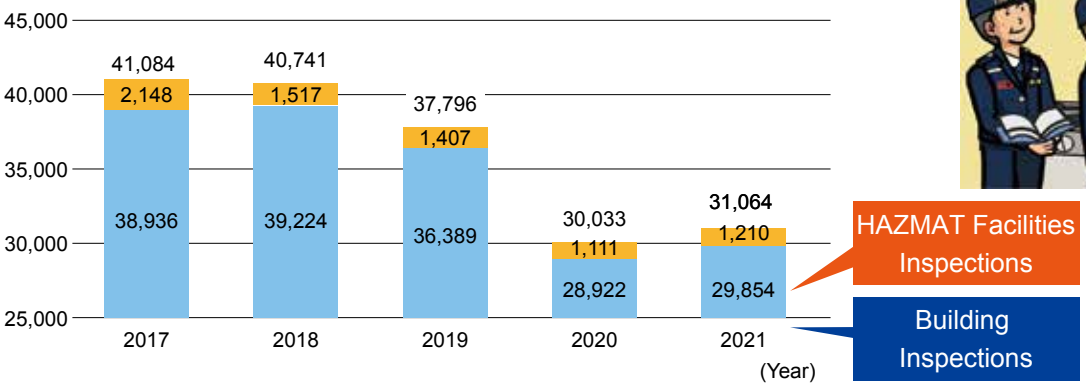
The number of on-site inspections conducted at buildings (excluding residences and tenements) and HAZMAT facilities (e.g., gas stations) was 31,064 in 2021.

Due to the building fire that occurred in Kita-ward, Osaka City, on the 17th of December, 2021, claiming a number of deaths and the injured, the TFD conducted on-site inspections and gave guidance to similar buildings in its jurisdiction together, to ensure safe measures for evacuation facilities.

The inspections such as post-firefighting operations, 11,964, confirmation, 1,331, downtown, 1,753, and venue management (e. g. , events), 702, were conducted.

On-site inspections were conducted by 719 inspectors and 1,131 pumper teams.

Chart 1-1. On-site Inspections



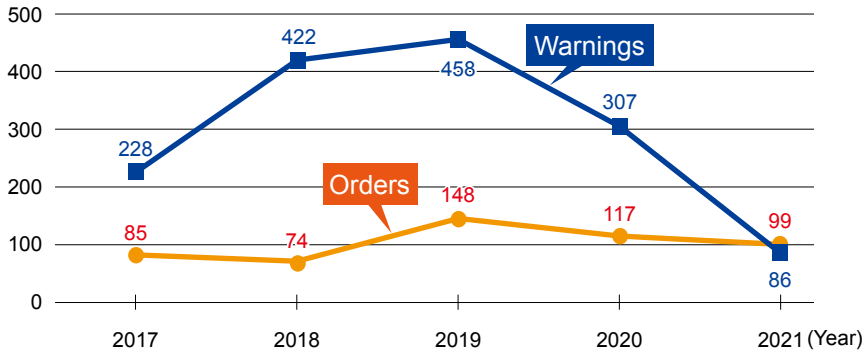
(2) Issued Warnings and Orders

When the TFD confirms the violation of the Fire Service Act at the buildings or HAZMAT facilities that have undergone on-site inspections, the TFD instructs the violators to correct the buildings or facilities.

The TFD strongly instructs and warns the violators who are not willing to refurbish their buildings or facilities as necessary, and issues orders in accordance with the Fire Service Act.

The graph below shows the changes in the number of warnings and orders issued. In 2021, the TFD issued 86 warnings and 99 orders.

Chart 1-2-1. Issued Warnings and Orders

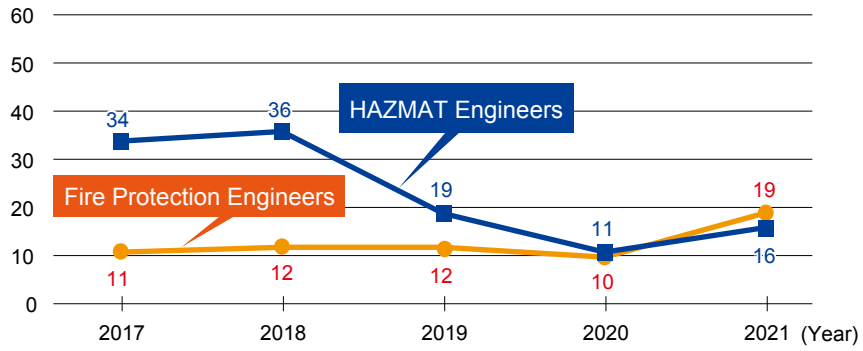


1 Licensed HAZMAT and Fire Protection Engineers in Receipt of Violation Notifications

If the TFD has confirmed that licensed HAZMAT/ fire protection engineers engaged in acts in violation of the Fire Service Act, the TFD shall notify them of the violations and instruct them not to reoccur.

The graph below shows the changes of the licensed engineers in receipt of violation notifications.

Chart 1-2-2. Licensed Engineers in Receipt of Violation Notifications

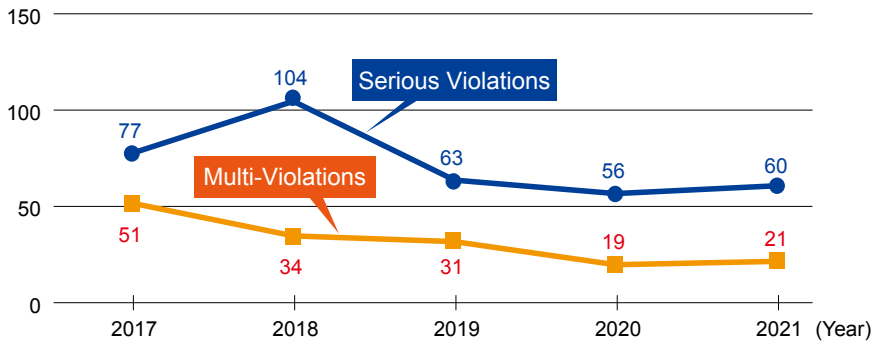


2 Buildings with Publicly Announced Violations

The public announcement system provides information on the violations that the TFD found through on-site inspections so that the people who will use the buildings (excl. residences and tenements) can obtain safety information and see their safety before its use. The violations subject to public announcements are serious violations and multiple maintenance obligation violations. Serious violations are violations of installation obligations such as the absence of indoor fire hydrants, sprinklers, or automatic fire alarms. Multiple maintenance obligation violations are repeated violations for building and fire equipment maintenance by building owners.

The graph below shows the changes in the number of the buildings publicly announced each year. The TFD provides thorough guidance to urge quick correction of the announced violations, and the number of buildings in violation is decreasing.

Chart 1-2-3. Change in Number of the Buildings with Publicly Announced Violations



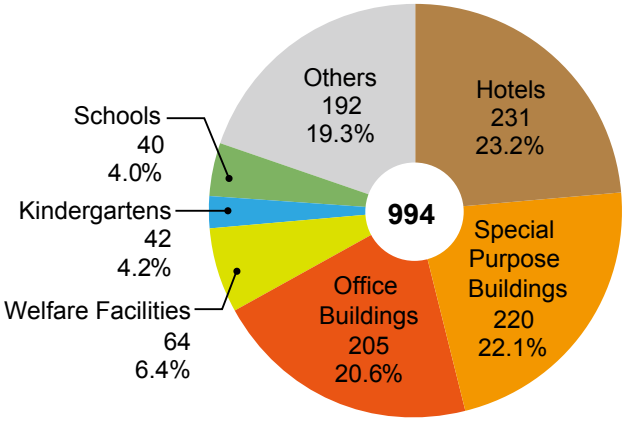
(3) Fire Safety Building Certificate (Excellence Mark)

The fire safety building certification (Excellence Mark) system issues a fire safety building certificate to be displayed on a building . It can be issued if Fire Station Chief recognizes the high fire safety level of the building based on the application from the party concerned with the building.

As of December 31, 2021, there were 994 buildings with certification, and the graph below shows a breakdown of the buildings classified by usage.

Fire Safety Building Certificate

Chart 1-3. Fire Safety Buildings



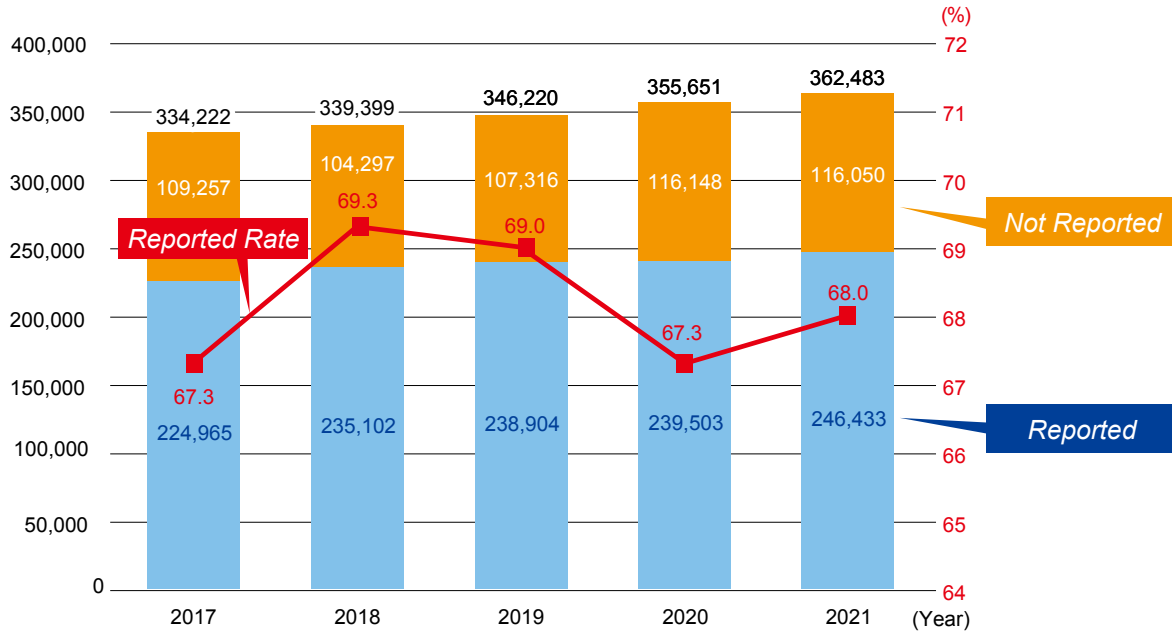
*Due to statistical rounding, the summation may not be 100%.

(4) Inspection Reporting

1 Fire Protection Equipment Inspection Report System

The inspection reporting system for firefighting equipment obligates the parties concerned with buildings to inspect or have qualified personnel inspect firefighting equipment, such as fire extinguishers, automatic fire alarms, and the sprinklers installed in the buildings, and to report the results to the Fire Station Chief.

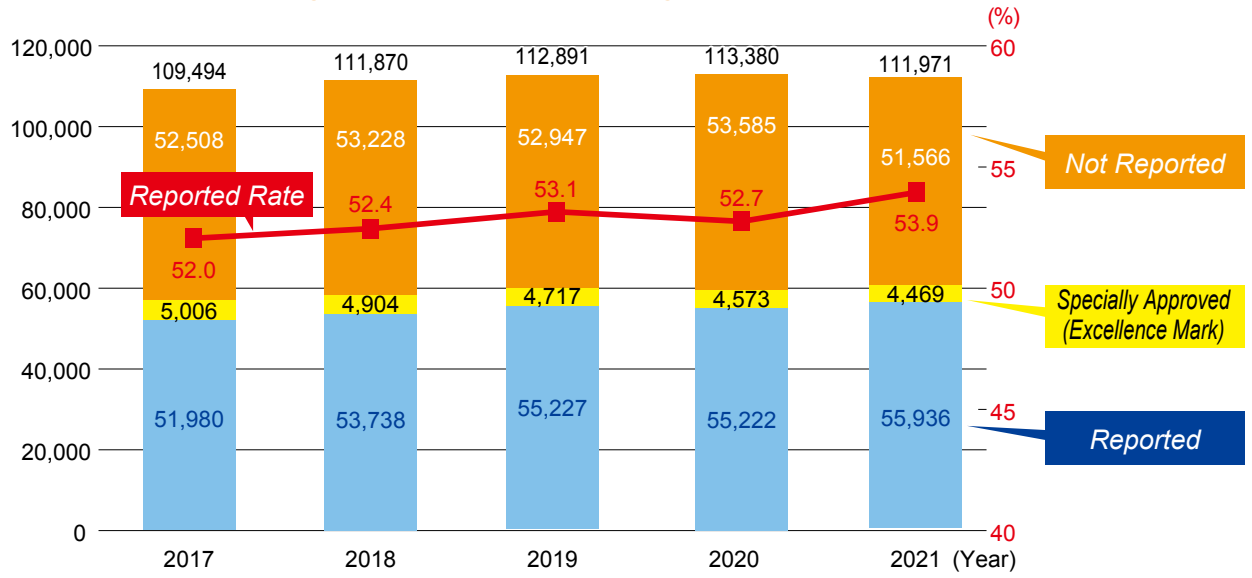
Chart 1-4-1. Report Results



2 Fire Prevention Property Inspection and Report System

The system was established with lessons learned from the building fire in Kabuki-cho, Shinjuku in 2001. The system requires the tenant manager to have the qualified inspector check how the building has been managed in terms of fire protection. The result is to be reported to the local fire station chief. The building showing successful achievement for three years can be exempted from inspection for three years from then or through the authorities' judgement. ("Specially Approved")

Chart 1-4-2. Building Inspection Reporting

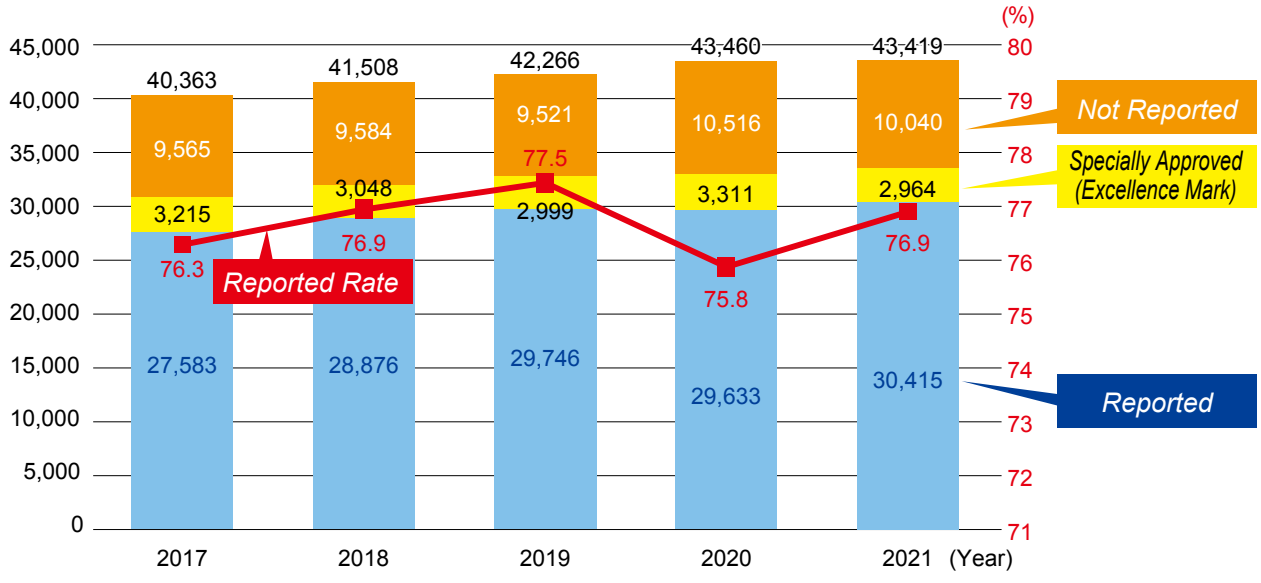


Reported Rate includes *Specially Approved*.

3 Disaster Protection Management Inspection and Report system

The System requires the tenant manager (of a law-stated "large" building) to have the qualified inspector check how the building has been managed in terms of earthquake and terrorism preparedness. The result is to be reported to the local fire station chief. The building showing successful achievement for three years can be exempted from inspection for three years from then on through the authorities' judgement. ("Specially Approved")

Chart 1-4-3. Disaster Protection Management Inspection Reporting



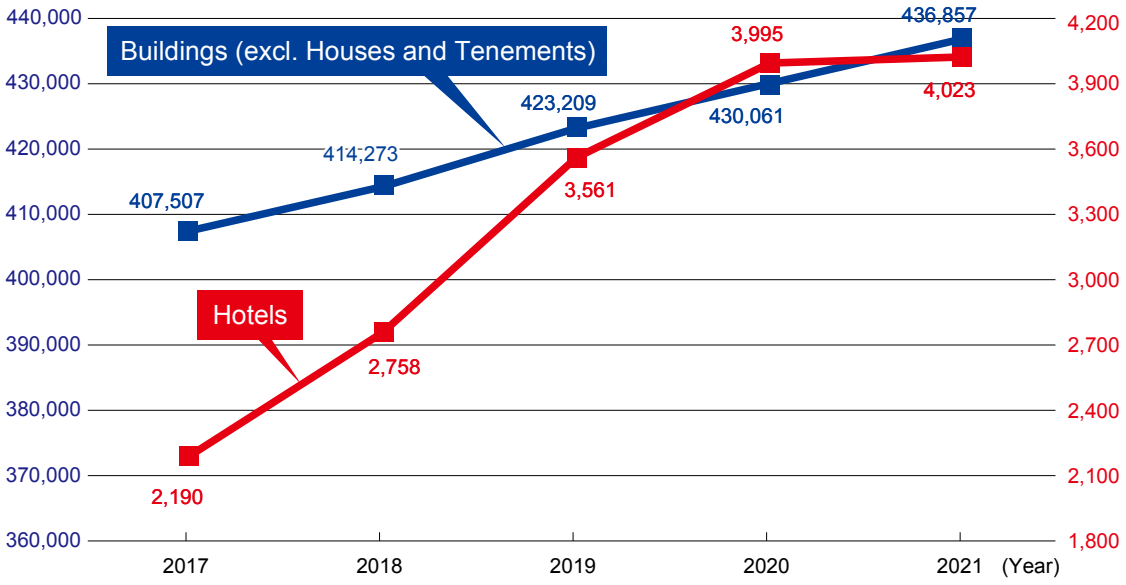
Reported Rate includes *Specially Approved*.

2. Change in Number of Buildings and Fire Prevention Managers

(1) Change in Number of Buildings

As of the end of December 2021, there were 436,857 buildings (excl. houses and tenements) and 4,023 hotels within the TFD jurisdiction. Compared with 407,507 buildings and 2,190 hotels in 2017, the number of buildings, 29,350 (7.2%), and that of hotels, 1,833 (83.7%), are both increasing.

Chart 2-1-1. Buildings (excl. Houses and Tenements) and Hotels

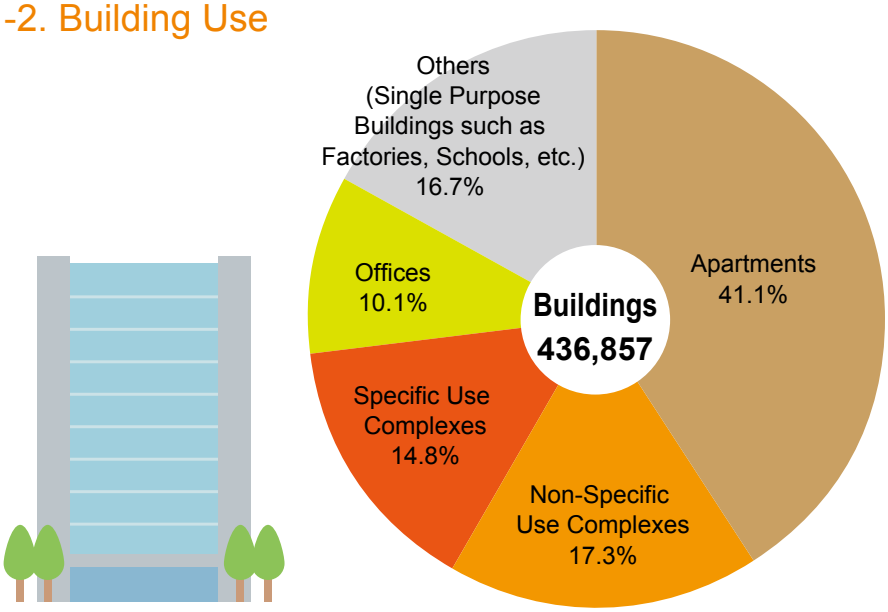


*The hotels are counted under Table 1, Fire Service Ordinance.

Recently the number of hotels has been increasing because the foreign inbounds was expected to increase by the Tokyo 2020 Games and sightseeing.

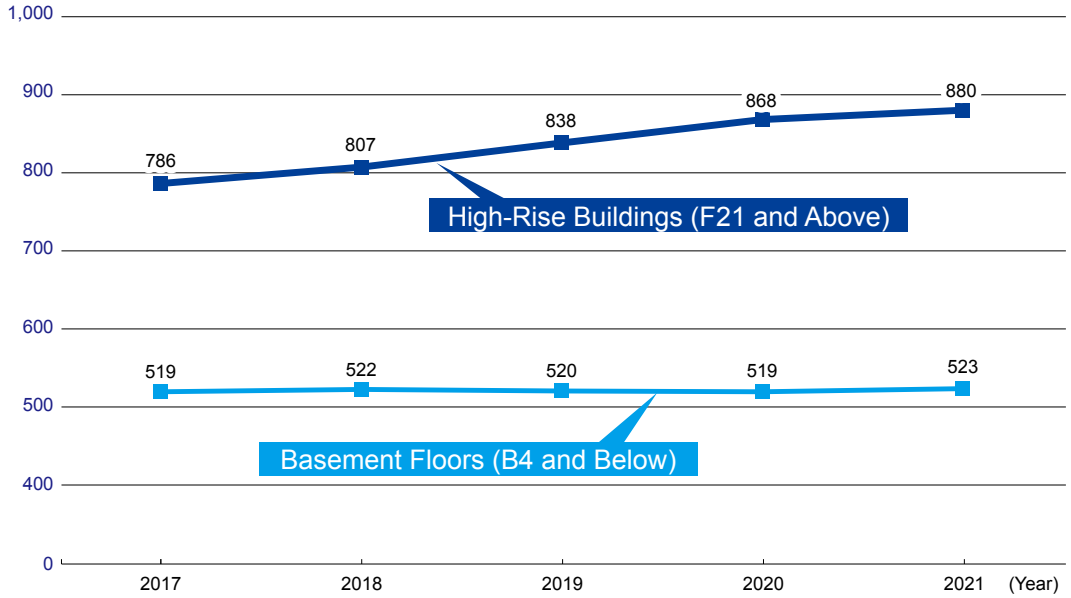
70% of the total budling (436,857) occupies Apartments (179,514, 41.1%), Non-Specific Use Complexes(75,776, 17.3%), e.g. apartment and office combined buildings and Specific Use Complexes (64,502, 14.8%), e.g. commercial facility and restaurant combined buildings.

Chart-2-1-2. Building Use



*Due to statistical rounding, the summation may not be 100%.

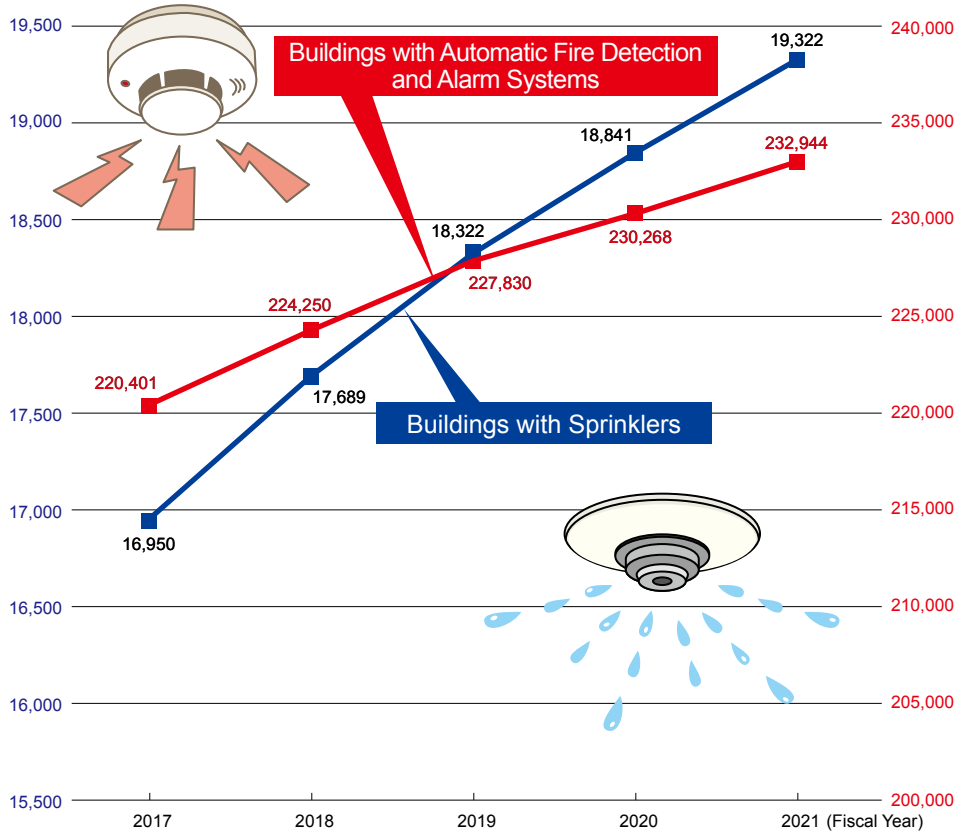
Chart 2-1-3. High-Rise Buildings (F21 and Above) and Buildings with Basement Floors (B4 and Below)



Buildings within the TFD jurisdiction are getting high-rised, large-scaled and deeper in ground. Still today, the urban redevelopment is in progress and large-scale buildings are under construction.

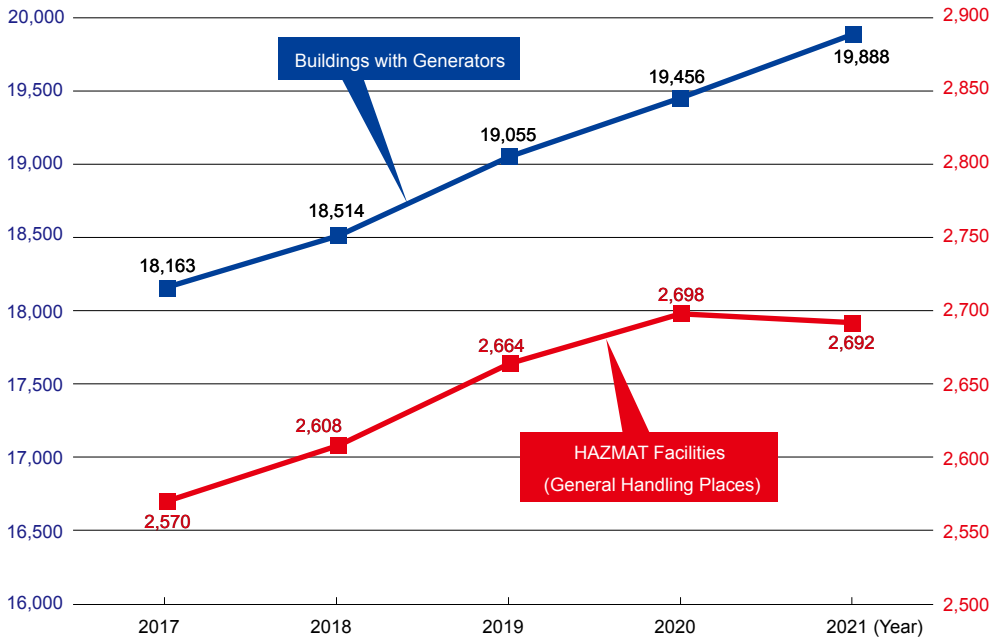
*31m and higher buildings are defined as high-rise under the Fire Service Law; however, to express buildings higher, we sum up the ones with 21 stories (roughly 60m) and higher.

Chart 2-1-4. Buildings with Sprinkler and Automatic Fire Detection and Alarm Systems



The increase of buildings installed sprinkler and automatic fire detection and alarm systems is because 11-story and higher or 31m and higher buildings in which those systems are required to install has accelerated constructed more. Also, the Fire Service Law was revised in 2015. The automatic fire detection and alarms and sprinkler systems are required installations for small-scale social welfare facilities, the automatic fire detection and alarm system for hotels and the sprinkler system for clinics. These are the factors for the increase.

Chart 2-1-5. Buildings with Generators and HAZMAT Facilities (General Handling Places)



*The number of HAZMAT facilities (General Handling Places) are as of the end of each year.

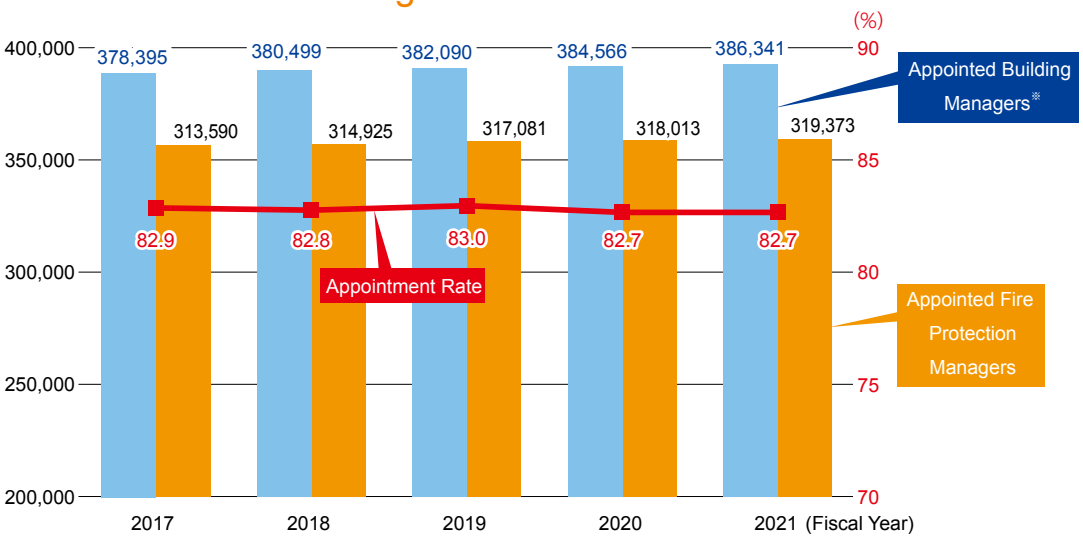
General Handling Facilities are where designated quantity or larger amount of hazardous materials at power plants, boiler facilities and paint plants or paintings are consumed.

After the East Japan Earthquake, companies tend to install backup power supply systems and fuel storage tanks for the BCP and earlier recovery.

(2) Fire Protection Managers

As of the end of fiscal 2021, there were 386,341 establishments obligated to appoint fire protection managers. In recent years, the number of establishments has been increasing. The rate of the appointment of fire protection managers at the end of fiscal 2021 was 82,7%. In recent years, the appointment rate has been around 83%.

Chart 2-2. Fire Protection Managers



**Appointed Building Managers* have authority over the buildings under Article 8 of the Fire Service Law.

3. Private Fire Brigade Training

Private Fire Brigade training is mandatory at least twice a year at business establishments where an unspecified number of people visit, such as department stores, hospitals, hotels, theaters and underground station buildings.

Due to COVID-19, the number of trainings as well as the TFD's on-site guidance decreased in 2020. However, it revived up to the annual average in 2021. It is most likely that business establishments adapted to the "New Normal" and independently conducted their training efforts.

Chart 3. Private Fire Brigade Training

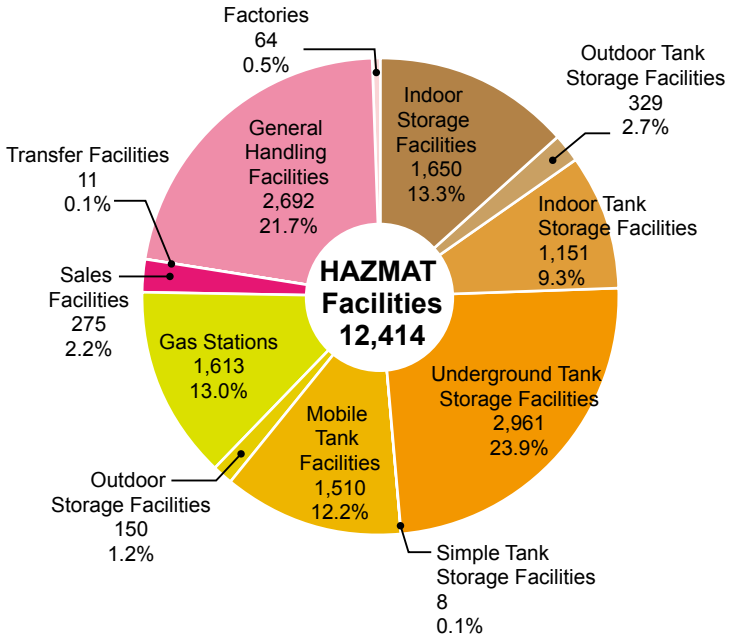
	Total (Cumulative Number of Times)	Comprehensive Training	Partial Training			Others	Training Participants (Hundred)	Trainers (People)
			Emergency Call Procedures	Firefighting	Evacuation			
2017	137,723	94,792	2,713	10,800	21,335	8,083	81,668	45,631
2018	144,096	99,515	2,781	11,572	22,159	8,069	84,740	45,287
2019	151,860	105,656	2,397	11,191	21,714	10,902	86,205	40,611
2020	134,831	91,987	2,306	10,375	20,680	9,483	68,200	10,956
2021	150,828	97,447	2,388	13,375	25,035	12,583	81,853	12,327

4. HAZMAT Administration

(1) HAZMAT Facilities by Category

HAZMAT facilities are classified according to each facility type. In terms of each facility type, the number of underground tank storage facilities was the largest with 2,961 facilities, followed by 2,692 general handling facilities and 1,650 indoor storage facilities as of the end of fiscal 2021.

Chart 4-1. HAZMAT Facilities



(2) HAZMAT Accidents by Category

The number of HAZMAT accidents was 124 in 2021, up 1 from the previous year. There were 33 fires (up 9 from the previous year), 20 leaks (up 1 from the previous year), and 71 other accidents (down 9 from the previous year). Although there were no deaths in these HAZMAT accidents, 3 people were injured (down 8 from the previous year).

Chart 4-2. HAZMAT Facilities Accidents by Category

Year	Total	Fires	Leaks	Others	Deaths	Injuries
2017	107	21	20	66	0	9
2018	114	30	32	52	0	16
2019	122	28	23	71	0	16
2020	123	24	19	80	0	11
2021	124	33	20	71	0	3
Change from 2020	1	9	1	▲9	0	▲8

(3) HAZMAT Accidents by Factor

The HAZMAT Accidents by Factor shows that 76 physical factors, 61.3% of the total, was the highest in numbers and 31 human factors, 25.0%, was the second highest. Followed by those, there were 17 Others, 13.7%.

Chart 4-3-1. Accidents

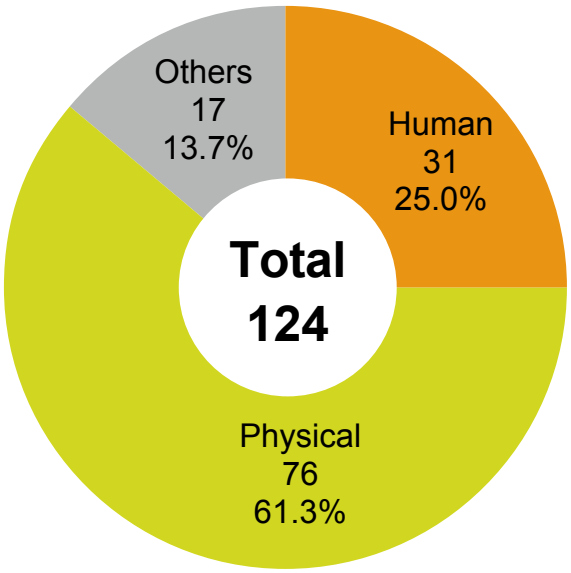


Chart 4-3-2. Factors and Causes

Factor	Cause
Human Factor	Inadequate Maintenance Incorrect Operation Inadequate Operation Checking Operation Undone Inadequate Monitoring
Physical Factor	Deterioration Defective Design Disorder Defects in Workmanship Breakage
Other Factor	Arson Traffic Accident Catch Fire Disaster (e.g. earthquake) Unknown (under investigation)

Chart 4-3-3. Fires

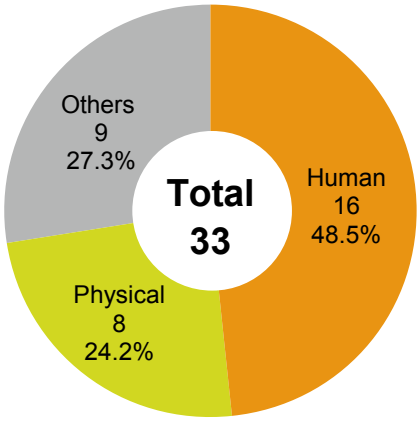


Chart 4-3-4. Leaks

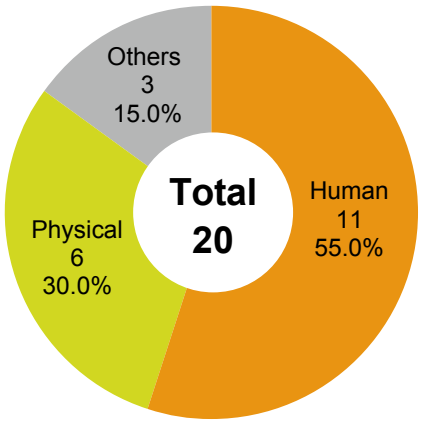
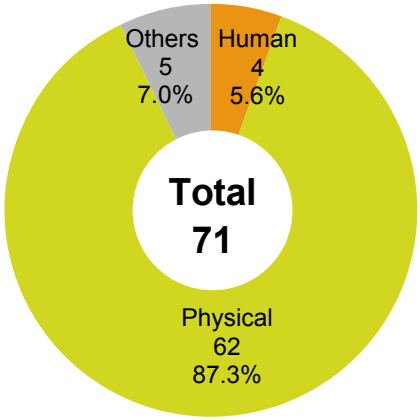


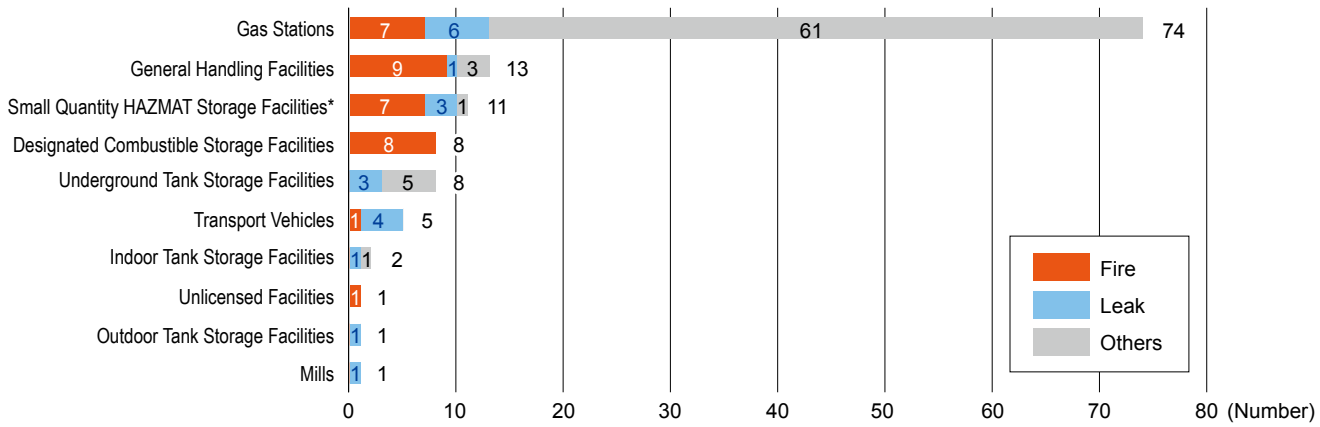
Chart 4-3-5. Other Accidents



(4) HAZMAT Facilities Accidents

In terms of the occurrence of accidents by facility types in 2021, there were 74 gas stations, up 1 from the previous year, and accounted for about half the total, followed by 13 general handling facilities, up 1 from the previous year, 11 designated combustible storage facilities, up 7 from the previous year, and 8 underground tank storage facilities, up 1 from the previous year. Many accidents at gas stations are caused by property damage accidents caused by driving mistakes. Be sure to drive safely on the premises of gas stations.

Chart 4-4-6. HAZMAT Facilities Accidents



* 2 fires of the unregistered Small Quantity HAZMAT Storage Facilities included.