



GEMEENTE ARNHEM

STADSTHEATER

ARNHEM, Netherlands

Underwriting information

PROPERTY DAMAGE

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1 GENERAL

1.1 General

1.1.1 Group Description

This plant location is part of the municipality of Arnhem.

Stadstheater Arnhem has a large theatre with 750 seats, two small halls with 200 and 60 seats.

Furthermore Stadstheater Arnhem has several foyers and a theatre.

The activities in the theatre comprise various sorts of performances like classic orchestra's theatre companies, etc. Theatre productions are bought in and put on display here

On January 1, 1997 Musis Sacrum and Arnhem City Theatre have been brought under one management, with the mission "the beating cultural heart 'to the city.

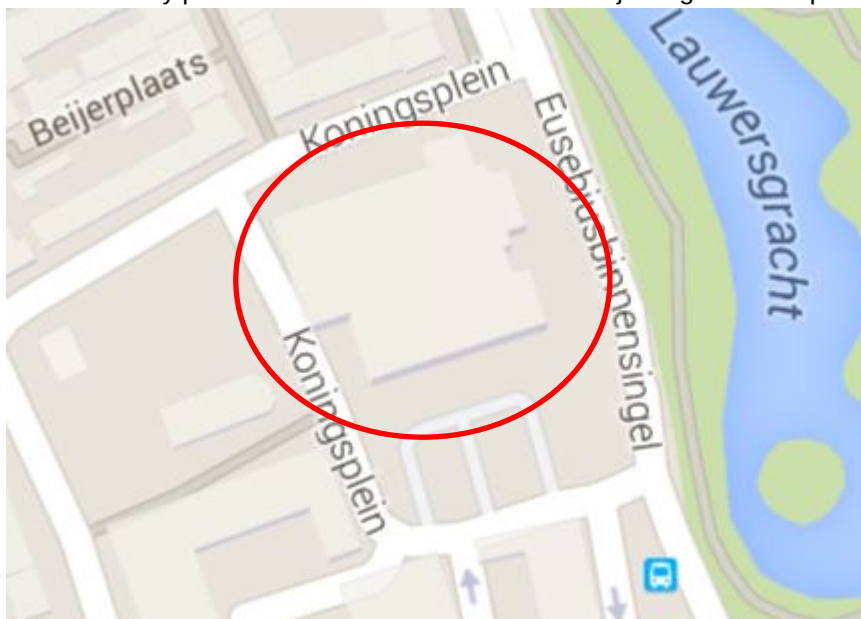
1.1.2 Employees

Approx. 60 persons are employed (Stadtheater and Musis Sacrum) There is no real shift work, but the presence of the employees is divided over the applicable hours on the present theatre productions.

During performances extra employees are present

1.2 Location

The theatre is located close to the centre of Arnhem. The site is easily accessible. There is actually only one building in the site. The gross floor space is approx. 7,500 m². The building is free standing surrounded by public streets. There are no direct adjoining's. The exposure hazard is slight.



1.3 Management Issues

1.3.1 Risk Management Policy

Maintenance in general is corrective. A calamity plan is in place, consisting of the following parts: alarming, plan of attack, evacuation, Once a year emergency exercises are held.

1.3.2 Security

A continuously present security guard service is not available. The total perimeter of the site has been provided with exterior lighting. The site is freely accessible. Burglary alarm systems are in place in the building.

1.4 Recent Changes & Future Plans

A large renovation is planned for 2017, in general comprising the renewing of the installations, upgrading entrance, recover overdue maintenance, removing of asbestos, etc.
Estimate costs are approx. EUR. 15-20 million.

2 PROPERTY DAMAGE

2.1 Construction

The theatre is designed by the architect: Fred. M. A. brass and was original built in the year: 1938
Renovations have taken place in 1951 (restoration after severe war damage), 1962 (renovation interior), 1978 (construction of small hall), 1987 (renovation stage tower).

The construction of the buildings consists of a concrete structure with walls of masonry. The extended part has partly a steel structure with aluminium curtain walls.

The upper side of the stage tower has a steel structure with steel walls. For this part applied wall insulation material is unknown. Floors and roofs are made of concrete.

100 % class II (Non-Combustible (N.C.))

2.2 Activities

2.2.1 Process

The building comprises in general: two auditoria, ticket area, reception area, theatre- cafe (coffee corners), foyers, offices, stage, attributes rooms, comfort rooms, maintenance shop.

The stage of the theatre has a raising floor (orchestra pit).

In the foyer for the artists a small electrical deep fat fryer is available.

The installation ("Trekterswand") has been installed for hoisting of stage screens/curtains. Operated by electric motors which have been installed at the upper part of the stage tower.

Reportedly the used decoration materials and theatre chairs are fire retardant impregnated.

In general the activities are not specific fire hazardous

In the maintenance workshop a very small amount of wood, solvent and paint is stored. The fire load can be classified as moderate.

A maintenance workshop is situated in the basement of the building. All kind of maintenance work can be carried out in general comprising:

- Metalworking including welding activities.
- Electrical maintenance of equipment,
- Woodworking. Some small woodworking machines are available provided with a decentralized dust collector.
- Painting by brush and/or aerosols.

Due to the activities the fire risk in this part of the building can be classified as somewhat enhanced.

2.2.2 Storage

Small stores for food and beverages, small equipment are available spread out the building, mainly situated in the cellars.

Some temporary storage of decors and equipment can take place next to the stage.

In the maintenance workshop a very small amount of wood, solvent and paint is stored. Main stock of paints and solvents are stored in a fire resistant cabinet.

In general the storage conditions needs some improvements.

The fire load in the storage areas is rather high.

2.2.3 Internal Transport

Some overhead travelling cranes are available in the area next to the stage.

Internal transport equipment is not available. Trucks can be un(loaded) outside the building. There are 2 loading docks next to the stage.

2.3 Utilities

2.3.1 Locality Heating

Locality heating is done with the aid of warm water, which is obtained from the district heating system via a heat exchanger. The areas are heated by warm air.

Locality heating hardly represents a fire hazard.

2.3.2 Electricity

The public utility grid supplies electricity via several transformers. External specialists maintain the electrical installation. Third parties do not inspect the electrical installation. Thermographic scanning of the electrical installations does not taken place. The electrical installation will be renewed during the renovation totally.

2.3.3 Process Control

The hoisting installation ("Trekkerswand") is provided with a process control system (PLC). For administration, tickets sale and printing of tickets, PC's are used.

2.3.4 Gas

Natural gas is not used.

2.3.5 Oil

Fuel oil is not used for locality-and process heating purposes

2.3.6 Ventilation

The building is provided by a central ventilation system.

Vent ducts have been constructed of metal. On crossing points with partition walls fire dampers have been installed. Activating the fire dampers is done by the fusible links.

2.4 Fire Protection

2.4.1 Public Fire Brigade

The nearest fire station to be alerted is the fully paid fire brigade of Arnhem. The fire station is at a driving distance of approximately 1,5 km. Impediments on the route which may cause delay are not present. Anticipated is that the fire brigade will be able to start their first attack within 15 minutes after being alarmed. A plan of attack is available and is regularly evaluated. The fire brigade is acquainted with the situation due to regular surveying visits.

2.4.2 Alarming

The fire brigade has to be alarmed by telephone. The fire brigade can also be alarmed by the automatic fire detection system installed in the building. A fire alarm can also be given by push buttons, installed in the building. A fire alarm is made clear to plant's employees by means of acoustic signals and is also made visible on the main alarm panel located in the entrance for the artists.

2.4.3 Water Supply

Regarding the public water supply sufficient quantities of water for firefighting purposes can be obtained from public hydrants in the surrounding streets and nearby open water ("Lauwersgracht") in front of the theatre.

2.4.4 Private Fire Brigade

The plant disposes of an emergency response team trained in the use of portable extinguishers and hose reels. The squad consists of a sufficient number of members and practises regularly.

2.4.5 Hose Reels

Hose reels are installed in the building in general fully covering the mentioned buildings. The hose reels are fed by a 3/4" water supply.

The supplier maintains the hose reels yearly.

2.4.6 Hand Held Appliances

A sufficient number of hand extinguishers is installed in the buildings. The supplier maintains the hand extinguishers yearly.

2.4.7 Automatic Sprinkler Systems

The fire screen in between the stage tower and the auditorium is provided by a automatic operated sprinkler system, supplied by an electrical pump from the public water main.

2.4.8 Automatic Fire Detection System

The buildings are covered by an automatic smoke/fire detection system (>95%). The installation is not inspected. The installer maintains the installation annually.

The detection system will also automatically close the fire doors and stops the air circulation.

Alarms are automatically transmitted, via a guarded transmission system to a private alarm centre of the fire brigade.

The probability of a substantial (property) loss limiting effect due to the presence of the smoke/fire detection system is considered being substantial.

2.4.9 Partitions

Real firewalls have not been provided, however low-rated fire separations are available in the building. The building is divided into several fire compartments (fire resistant approx. 30-60 minutes). The fire doors in the building are from the automatically self-closing type.

A metal screen (sprinklered) can separate the stage and the main auditorium.

2.4.10 Smoke And Heat Venting

The stage tower is provided with smoke and heat vents, which can be opened manually.

2.5 Management Aspects

2.5.1 Smoking Regulations

There is a formalized smoking ban in the public and not public areas of the theatre. "No smoking signs" are present to indicate the formalized rules. In some areas (only accessible for employees) smoking is allowed. The smoking ban is well observed.

2.5.2 Waste Handling

The collected waste is located in outside the building and is stored in metal containers (closed with chains). The containers are situated close to the wall of the building. An outside contractor removes waste at notice. Waste handling is well taken care of and storage thereof is well organised.

2.5.3 Hot Work Permit System

There is no formalized procedure for hot work activities, like welding, cutting and roof repair.

2.5.4 Self-Inspection

There are no regular self-inspections.

2.5.5 Emergency Organisation

A part of the employees are member of the emergency response team and are trained in emergency response activities as firefighting, evacuation, first aid and assistance to local authorities in case of an emergency.

2.6 Other Perils

2.6.1 Explosion

There is no real possibility for explosion within the facility.

2.6.2 Impact, Collision

Trucks can be (un) loaded outside the building.

2.6.3 Burglary

Burglary prevention is based on organizational and electronic measures. The electronic burglary/intruder alarm system comprises a/o door contacts on all exterior doors and passive infrared detection.

Alarms are transmitted to the alarm centre of a private security organisation, via a telephone dialler on a regular telephone line.

Alarm follow-up is arranged by a private security organisation.

Own personnel make closing rounds.

2.6.4 Riot, Civil Commotion, Vandalism, Malicious Mischief

The theatre is located in a quiet area close to the centre of Arnhem. No specific measures have been taken against vandalism

2.6.5 Aircraft

There are no airports in the direct vicinity of the theatre.

2.6.6 Collapse

Buildings did not show any features indicating a collapse potential.

2.6.7 Windstorm

Buildings generally are constructed according to local building standards and have a common susceptibility to the windstorm hazard.

2.6.8 Earthquake

According to report of C.K. Stiff (July 1970)/ H.F. Lewis (October 1977), the facility is situated in a 'Zone 1000' which indicates the return periods in years for earth quakes.

2.6.9 Flooding

The site is located at an altitude of+ 13,4 meters related to sea level. There's no flooding exposure related to a sea. The site is located at 600 m from the river "Nederrijn". There is no flooding history related to river/lake etc

2.7 Values And Loss Estimates

2.7.1 Breakdown Of Values

The theatre actually forms one single fire area and a breakdown of values therefore is not relevant.

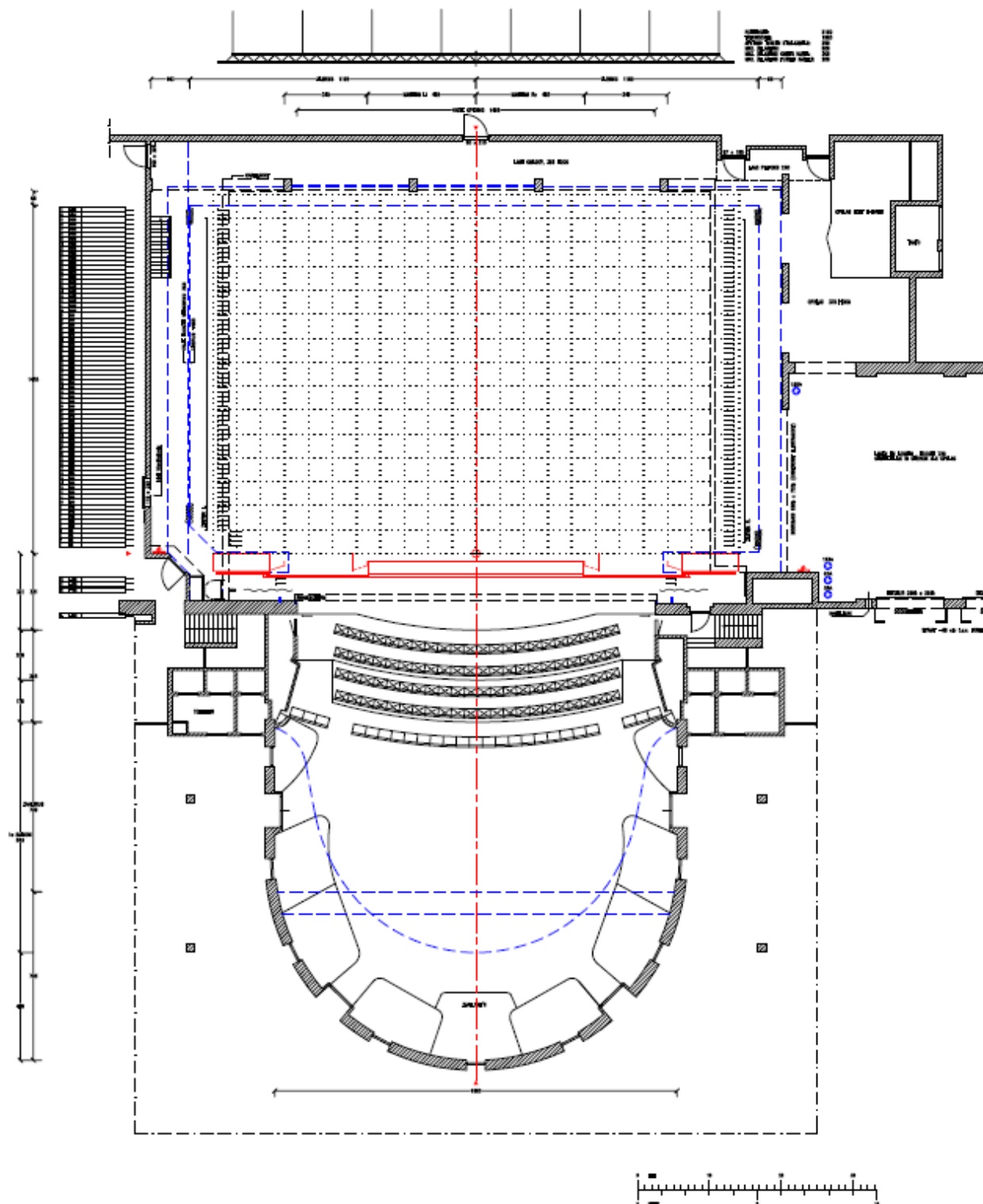
2.7.2 Loss Estimates

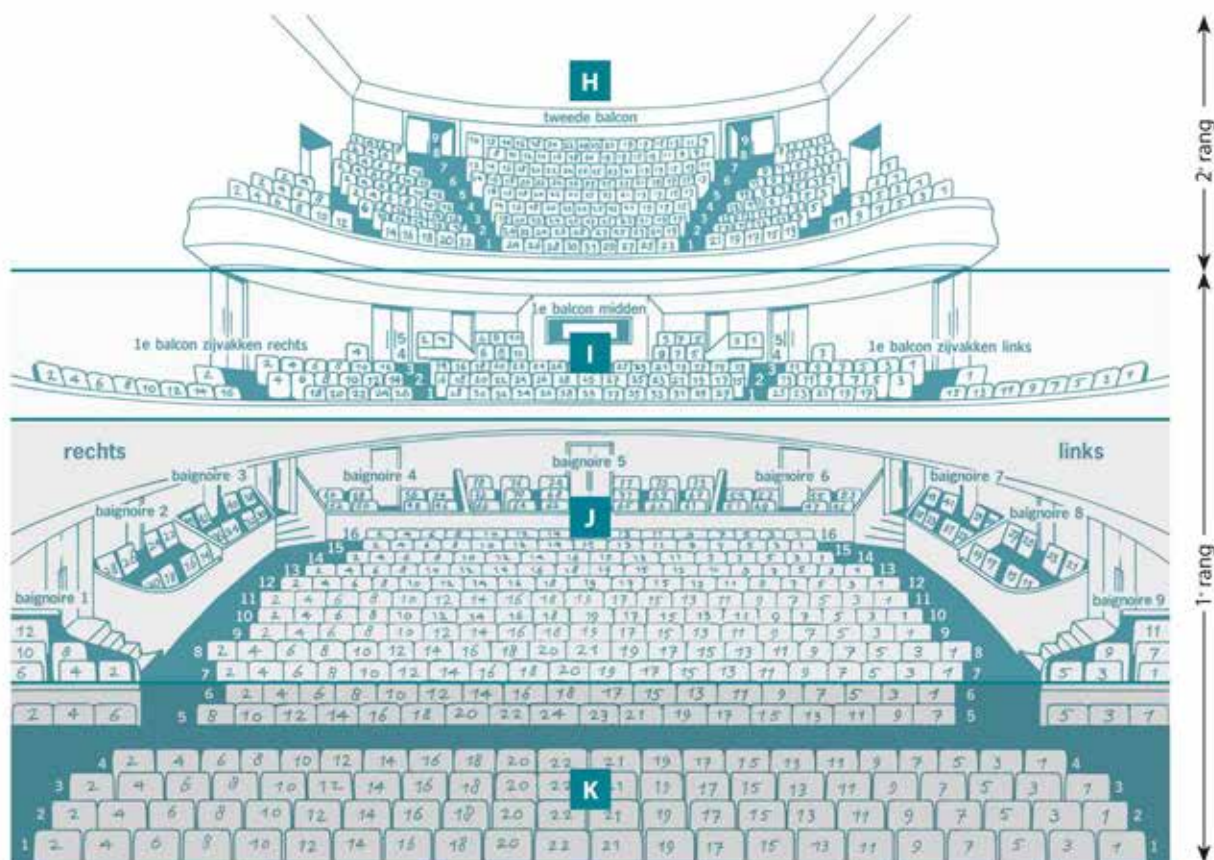
Line	Section	Value	Currency	Value Source	EML (%)	MPL (%)	LE Source
Property	Buildings	20,135,000	EUR	Aon policy	30	100	Aon Risk Control
Property	Equipment	2,282,000	EUR	Aon policy	30	100	Aon Risk Control
Property	Total	22,417,000					

Section	EML (%)	MPL (%)
Material Damage	30	100
Business Interruption	N.A.	N.A.
Combined (Property)	30	100

Name	Definition	Scenario
EML (%)	EML=Estimated Maximum Loss (CEA, 1999) The Estimated Maximum Loss is that which could reasonably be sustained from the contingencies under consideration, as a result of a single incident considered to be within the realms of probability taking into account all factors likely to increase or lessen the extent of the loss, but excluding such coincidences and catastrophes which may be possible but remain unlikely.	It is estimated that a fire and/or explosion originating in the buildings could result in an EML of approx. 30 percent of the total plant value which figure is based on the following assumptions: - Automatic fire detection over the total complex. - Very solid construction. - Adequate intervention of the professional fire brigade.
MPL (%)	MPL = Maximum Possible Loss (CEA 1999) The Maximum Possible Loss is that which may occur when, the most unfavourable circumstances being more or less exceptionally combined, the fire is only stopped by impassable obstacles or lack of substance.	Excluding catastrophic loss conditions (e.g. plane crash) it is estimated that a fire and/or explosion originating in the buildings could result in a MPL of approx.100 percent of the total plant value which is based on: - One building. - No perfect firewalls. - Presence of fire load.

3 Drawings





4 Photo's





 [wikimapia.org](https://www.wikimapia.org)



Stadstheater - ARNHEM
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Standard Classification	
Introduction The objective of the Standard Classification Building Construction is to categorize major types of construction primarily on their relative fire hazard and resistance. The classification, into six classes, offers a view of the building's fire resistance, combustibility, and contribution to fire spread and its additional fuel loading to the contents of the building. The majority of buildings fit in one of the six classes. In exceptional cases where a construction type does not fit neatly into one of the six classes, its characteristics are expressed by a combination of the two nearest classes (E.g. class III/IV). The six classes are defined below, including examples of type of constructions fitting in the particular category.	
CLASSIFICATION	EXAMPLES
Class I: Fire Resistive (F.R.) Completely non-combustible building construction of which the walls and roof(s) including the load-bearing construction will withstand a fire to be expected - under MPL circumstances - within the building for at least two hours without structural failure. If applicable, building insulation is non-combustible. In principle all (storey) floors and partition walls are non-combustible and have fire resistance ratings of not less than two hours.	Brick and/or (cellular) concrete walls. Roofs of reinforced (cast) concrete or prefab (cellular) concrete slabs. Cast-in-place or pre-stressed concrete columns and beams or laminated timber columns and beams having at least a two hours fire rating. Where pre-stressed concrete elements or protected steel-frame construction is used, a sufficient thick concrete cover over respectively the preloaded cables and the structural steel is applied to achieve at least two hours fire rating. Where steel tension rods are fitted, these are protected to withstand a fire for at least two hours without structural failure. (Storey) floors and partition walls are concrete or brick. A limited quantity of combustible and/or less fire resistive material in floors, partition walls, ceilings etc. is allowed if this will have no effect on the overall fire resistance of the building.
Class II: Non-Combustible (N.C.) Building construction according to class I, however with a load-bearing construction which will <u>not</u> withstand a fire to be expected - under MPL circumstances - within the building for two hours. Combustible insulation material <u>on top</u> of the roof(s) is permitted in those cases where a fire originating on the roof cannot in any way spread into the building concerned or to any adjacent roofs/buildings.	Walls and roofs according to class I, however a load-bearing construction of exposed steel (or fire resistively encased) or laminated timber, of less than two hours fire resistance.
Class III : Light Non-Combustible (L.N.C.) A (almost entirely) non-combustible construction of which the building materials do not (or hardly) contribute to fire spread. It does not contribute significantly to a fire originating in the contents of the building. The construction will not withstand fire temperatures for more than a few minutes without damage or structural failure. In principle all (storey) floors and partition walls are non-combustible. A limited quantity of combustible material in floors, partition walls, ceilings etc. are allowed, only if it has hardly any effect on fire spread in the building.	Walls of brick, (cellular) concrete, steel/aluminium panels with non-combustible insulation. A roof of corrugated asbestos, steel/aluminium sheets or plain wood wool-cement etc. Roofs insulated with non-combustible insulation on top or underneath the roof do fall in this category. (Exposed) steel load-bearing construction.
Class IV: Masonry (M) A building construction of which the walls are non-combustible and the roof is made of combustible material. Also a non-combustible roof <u>with combustible insulation</u> having fire behaviour at least comparable to a plain combustible roof falls in this category. (Storey) floors, partition walls, etc. may be of wood. Where in view of overall combustibility and fire spread, the configuration of combustible building interior is a dominating factor to an extent comparable with class VI construction, the building construction is classified as class VI.	Walls of brick, cellular concrete or (non-combustible insulated) steel/aluminium sheets. A roof made of timber or steel/aluminium sheets provided on top with combustible insulation material. (Exposed) steel or timber load-bearing construction. Also one or more wooden floors/mezzanines can be present. In this classification the combustible roof and possible wooden floors are the major differences in comparison with class III.
Class V: Light/Combustible (M/C) Building construction according to class IV, however in which <u>in</u> the walls <u>unexposed</u> (in cavity or intermediate layer in steel/aluminium sandwich panels) combustible insulation is present.	Similar to class IV, however in which the walls have also combustible elements, but shielded off by non-combustible cladding or wall panel.
Class VI: Frame (F) All other type of building construction, such as (almost) entirely wooden buildings or those buildings in which exposed combustible insulation contributes to a rapid fire spread comparable to completely wooden buildings.	Entirely wooden frame buildings and interior. Within this category are also buildings of which walls and roof are insulated with <u>exposed</u> combustible material, like in cold stores, in spite of their actual building construction.

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