

3.14 Portuguese regulation for define the building fire resistance requirements (short version)

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Portuguese regulation to define the building fire resistance requirements
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Portuguese regulation for Fire Safety in Buildings

- Juridical Regime for Fire Safety in Buildings**
(Decreto Lei nº 220/2008) ⇒ **Classification of the buildings**
- Technical Regulation for Fire Safety in Buildings**
(Portaria n.º 1532/2008) ⇒ **Fire resistance requirements function of the building classification**
- Technical Criteria for Determining the Modified Fire Load Density**
(Despacho n.º 2074/2009)

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Juridical Regime for Fire Safety in Buildings
Decreto Lei nº 220/2008

Standard fire resistance classification

Classification for members with load bearing function and without separating function
Application: walls, floors, roofs, beams, columns, balconies, stairs, passages
Norms EN13501-2; EN1365-1, 2, 3, 4, 5, 6 ; EN1992-1-2; EN1993-1-2; EN1994-1-2; EN1995-1-2; EN1996-1-2; EN1999-1-2

Classification	Time (min)									
R	15	20	30	45	60	90	120	180	240	360

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Juridical Regime for Fire Safety in Buildings
Decreto Lei nº 220/2008

Standard fire resistance classification

Classification for members with load bearing function and separating function
Application: walls
Norms EN13501-2; EN1365-1; EN1992-1-2; EN1993-1-2; EN1994-1-2; EN1995-1-2; EN1996-1-2; EN1999-1-2

Classification	Time (min)									
RE		20	30		60	90	120	180	240	
REI	15	20	30	45	60	90	120	180	240	
REI-M		20	30		60	90	120	180	240	
REW		20	30		60	90	120	180	240	

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Juridical Regime for Fire Safety in Buildings
Decreto Lei nº 220/2008

Standard fire resistance classification

Classification for members with load bearing function and separating function
Application: floors and roofs
Norms EN13501-2; EN1365-2; EN1992-1-2; EN1993-1-2; EN1994-1-2; EN1995-1-2; EN1996-1-2; EN1999-1-2

Classification	Time (min)									
RE		20	30		60	90	120	180	240	
REI	15	20	30	45	60	90	120	180	240	

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Juridical Regime for Fire Safety in Buildings
Decreto Lei nº 220/2008

Characterization of the buildings

- **Utilization-types:**
 - Type I «Dwelling»
 - Type II «Car parks»
 - Type III «Administrative»
 - Type IV «Schools»
 - Type V «Hospitals and nursing homes»
 - Type VI «Theatres/cinemas and public meetings»
 - Type VII «Hotels and restaurants»
 - Type VIII «Shopping and transport centres»
 - Type IX «Sports and leisure»
 - Type X «Museums and art galleries»
 - Type XI «Libraries and archives»
 - Type XII «Industrial, workshops and storage»

Note: if the building cannot be classified in one of these 12 Utilization-Types it can be classified as "atypical danger" and **Fire Safety Engineering** can be used as well as **Performance Based Design**.

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Juridical Regime for Fire Safety in Buildings Decreto Lei nº 220/2008

- Characterization of the buildings
 - Each utilization-type should be classified according one of the four risk category:

- 1st category - low risk
- 2nd category - moderate risk
- 3rd category - high risk
- 4th category - very high risk

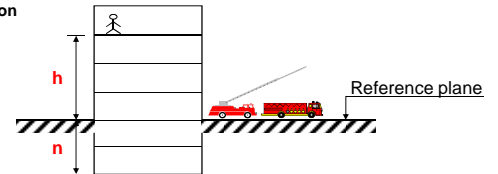
Note: this categories are based on some risk factors

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Juridical Regime for Fire Safety in Buildings Decreto Lei nº 220/2008

- Risk factors:

- Height of the last occupied storey in the building (h) over the reference plane
- Number of storeys below the reference plane (n)
- Total gross floor area
- Number of occupants (effective)
- Modified fire load density
- Risk location



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- Characterization of the buildings

- Classification of the risk locations:

- There are 6 type of risk locations:
Location of risk A; Location of risk B; ...; Location of risk F.

- EXAMPLE: Location of risk A — place that does not present special risk, where the following simultaneous conditions are verified:

- i) The number of occupants does not exceeds 100;
- ii) The number of public occupants does not exceeds 50;
- iii) More than 90 % are not limited mobility or capabilities of perception and reaction to an alarm

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Juridical Regime for Fire Safety in Buildings Decreto Lei nº 220/2008

- Characterization of the buildings

Table I
Risk categories of the utilization-type I «Dwelling»

Category	Criterion referring to the utilization-type I	
	Height of the UT I	Number of levels occupied in the UT I below the reference plane
1.º	≤ 9 m	≤ 1
2.º	≤ 28 m	≤ 3
3.º	≤ 50 m	≤ 5
4.º	> 50 m	> 5

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Juridical Regime for Fire Safety in Buildings Decreto Lei nº 220/2008

- Characterization of the buildings

Table II

Risk categories of the utilization-type II «Car parks»

Category	Criterion referring to the utilization-type II, when inside of a building			At open air
	Height of the UT II	Total gross floor area occupied by UT II	Number of levels occupied in the UT II below the reference plane	
1.º	-	-	-	Yes
1.º	≤ 9 m	≤ 3200 m ²	≤ 1	No
2.º	≤ 28 m	≤ 9600 m ²	≤ 3	No
3.º	≤ 28 m	≤ 32000 m ²	≤ 5	No
4.º	> 28 m	> 32000 m ²	> 5	No

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National Annexes from Parts 1-2 (fire) of the Eurocodes

- Advanced Calculation Models

- All the National Annexes allow for the use of advanced calculation models.

Note: Projects are approved by the National Authority of Civil Protection

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