

## Summary of Legislative Incentives for Fire Sprinklers in New Buildings+

Construction Alternatives are in red

|                | Major airports sprinklered? | Places of assembly   | Shopping Centres  | Industry   | Warehouses   | Hotels   | Care Homes  | Hospitals   | Teaching Establishments  | Residential Accommodation   | Offices   | Car Parks  |
|----------------|-----------------------------|--|---|--|--|--|---|---|--|---|---|--|
| Austria        | No                          |  | >2,400m <sup>2</sup> across 3 or more storeys; >3,000m <sup>2</sup>   | >5,000m <sup>2</sup> or >7,500 m <sup>2</sup> with fire resistance   | >1800m <sup>2</sup> or stored goods height > 9m  | >32m<br>>22m reduced fire resistance   |   | >32m<br>>22m reduced fire resistance  |  | >32m high<br>>22m reduced fire resistance   | >32m high<br>>22m reduced fire resistance   | >1,600m <sup>2</sup> with natural ventilation instead of fire detection or to reduce air changes by 75% with mechanical ventilation; >4800m <sup>2</sup>                   |
| Belgium        | Yes                         | >3,500m <sup>2</sup><br>>2,500m <sup>2</sup> if Floor >10m   | >2,000m <sup>2</sup>  | >25,000m <sup>2</sup> and < 350 MJ/m <sup>2</sup><br>>10,000m <sup>2</sup> and > 350 MJ/m <sup>2</sup><br>>5,000m <sup>2</sup> and > 900 MJ/m <sup>2</sup>   | >5,000m <sup>2</sup>   | >3,500m <sup>2</sup><br>>2,500m <sup>2</sup> if >10m   |   | >3,500m <sup>2</sup><br>>2,500m <sup>2</sup> & >10m   |  |   |   | Automatic enclosed with LPG vehicles   |
| Croatia        | Yes                         | As in NFPA 101<br><br>Reduction of 30' in compartment fire resistance and one grade in fire reaction class | As in NFPA 101 or TRVB 138<br><br>Reduction of 30' in compartment fire resistance and one grade in fire reaction class  | Depending on the area and number of connected floors   | >9m storage;<br>>1,000 m <sup>2</sup> and >2GJ/m <sup>2</sup><br>>3,000 m <sup>2</sup> and >1 GJ/m <sup>2</sup><br><br>Alternative to detection and/or smoke ventilation in smaller areas and lower fire loads | >800 m <sup>2</sup><br>>300 people<br>Extend two-way travel from 35 m to 55m<br><br>Extend one-way travel from 10 m to 15m | As in NFPA 101<br><br>30 min less fire resistance and one class lower reaction to fire                        | As in NFPA 101 or TRVB 132<br><br>30 min less fire resistance and one class lower reaction to fire    | If building designed to NFPA 101 rather than Austrian OIB 2.<br><br>30 min less fire resistance and one class lower reaction to fire | 30 min less fire resistance and one class lower reaction to fire  | 30 min less fire resistance and one class lower reaction to fire                                    | As for NFPA 88a or OIB 2.2<br><br>Beneath hotels   |
| Czech Republic | No                          | Exhibition halls with compartment > 5,000m <sup>2</sup>  | >1,000m <sup>2</sup>  | >20m <sup>3</sup> of flammable liquids   | Postal stores >800m <sup>2</sup><br>>50m <sup>3</sup> of flammable liquids   | >30m   |   |   |  | >8 storeys;<br>>4 storeys & >50 apartments<br>semi-combustible structure & >5 storeys & >30 apartments<br>combustible structure & >3 storeys & >20 apartments |   | Automatic underground;<br>From 2nd underground floor if >50 vehicles;<br><br>Capacity >200 vehicles & below assembly buildings   |
| Denmark        | Yes                         | >2,000m <sup>2</sup><br>>1,000 m <sup>2</sup> without smoke extraction                                     | >2,000m <sup>2</sup><br>>1,000 m <sup>2</sup> without smoke extraction  | >2,000m <sup>2</sup> and >200MJ/m <sup>2</sup><br>>5,000m <sup>2</sup> other fire load   | >2,000m <sup>2</sup> and >200MJ/m <sup>2</sup><br>>5,000m <sup>2</sup> other fire load   |  | >1,000m <sup>2</sup> sleeping area multi-floor  | >1,000m <sup>2</sup> sleeping area multi-floor  |  |   | Alternative to fire alarm if compartment >2,000m <sup>2</sup>                                       | >2,000m <sup>2</sup> except residential  |
| Finland        | Yes                         | 2,400 m <sup>2</sup>   | 2,400 m <sup>2</sup>  | 2,000 m <sup>2</sup> if no structural fire resistance; 4,000 m <sup>2</sup> with R30 structural fire resistance  | 2,000 m <sup>2</sup> if no structural fire resistance; 4,000 m <sup>2</sup> with R30 structural fire resistance  | >56 m; >28 m with R90 structural fire resistance instead of R120; timber-framed hotels 3-8 storeys                         | Usually required in new & existing care homes following risk assessment; timber-framed care homes 3-8 storeys | >56 m; >28 m with R90 structural fire resistance instead of R120; timber-framed hospitals 3-8 storeys | 2,400 m <sup>2</sup>   | >56 m; >28 m with R90 structural fire resistance instead of R120; timber-framed apartment buildings 3-8 storeys   | >56 m; >28 m with R90 structural fire resistance instead of R120; timber-framed offices 3-8 storeys | Underground >1,500 m <sup>2</sup> ; above ground enclosed >3,000 m <sup>2</sup> ; above ground open 4,500 m <sup>2</sup>   |
| France         | No                          |  | >3,000m <sup>2</sup> or with restaurant or >10,000kg paint<br>Can increase storage of dangerous goods from 1,000 m <sup>3</sup> to 2,000 m <sup>3</sup>                                   |  | >3,000m <sup>2</sup> and less than 12,000m <sup>2</sup><br>>12,000m <sup>2</sup> with risk assessment and approval from Prefect  | >200m<br>or >480 MJ/m <sup>2</sup>   |   |   |  |   | >200m<br>or >480 MJ/m <sup>2</sup>  | R90 instead of R120 structural fire resistance R60 if no building above<br>Reduce smoke ventilation by a third<br>>3,000 m <sup>2</sup> per floor<br>>2 underground levels |
| Germany        | Yes                         | >3,600m <sup>2</sup> + total with rooms >400m <sup>2</sup><br>or >22m high or below ground                 | >3000m <sup>2</sup> or underground floors >500m <sup>2</sup><br>60 minutes less fire resistance for walls and ceilings; no need for smoke extraction; can increase travel distance by 35m | Increase compartment area 3-10 times depending on fire resistance and number of storeys<br>1,800m <sup>2</sup> to 10,000m <sup>2</sup> ; single storey<br>3,000m <sup>2</sup> to 10,000m <sup>2</sup> ; single storey with 30' fire resistance | >1,200m <sup>2</sup> require 5m aisle >4,500 m <sup>2</sup><br>Storage > 7.5m high   | >3,600m <sup>2</sup> + total with rooms >400m <sup>2</sup><br>or >22m high   |   |   | >22m high<br>or >32m high with balconies to prevent external fire spread and rooms <400m <sup>2</sup>                                | >22m high or >32m high with balconies to prevent external fire spread and rooms <400m <sup>2</sup>  | >22m high or >32m high with balconies to prevent external fire spread and rooms <400m <sup>2</sup>  | Floors 4m below ground<br>Car parks under other use buildings  |
| Greece         |                             | >50 people and >23m  | >1,000m <sup>2</sup> per storey<br>Total area >2,500m <sup>2</sup><br>basement >250m <sup>2</sup>   | >2,000 MJ/m <sup>2</sup> or >1,000 MJ/m <sup>2</sup> and >2,000m <sup>2</sup>  | >2,000 MJ/m <sup>2</sup> or >1,000 MJ/m <sup>2</sup> and >2,000m <sup>2</sup>  | >28m   | >100 beds<br>>12m   | >100 beds<br>>12m   | Basements >250m <sup>2</sup><br>Boiler rooms   | >28m  | >20m and >400 people  | Underground and >300m <sup>2</sup> or multi-storey   |
| Hungary        |                             | Cinemas > 13.65m or >1,000 people  | >8,000m <sup>2</sup><br>>13.65m height  |  | >7,000m <sup>2</sup>   | >14m   | >3 storeys  | If beds >13.65m   | >30m   | >13.65m   | >30m  | Multi-floor underground; >13.65m height closed; >20 cars per compartment   |
| Ireland        | No                          |  | Single storey >4000m <sup>2</sup><br>All shopping centres   |  | Single storey 14,000m <sup>2</sup> normal and >1,000m <sup>2</sup> high hazard   | >30m and phased evacuation   |   |   |  |   | >30m and phased evacuation  |  |
| Italy          | No                          | >16,000 m <sup>2</sup><br>Longer travel distances and narrower escape routes                               | >16,000 m <sup>2</sup><br>Longer travel distances and narrower escape routes  | >32,000 m <sup>2</sup><br>Longer travel distances and narrower escape routes   | >16,000 m <sup>2</sup><br>Longer travel distances and narrower escape routes   | >1,000 beds<br>>8,000 m <sup>2</sup><br>Longer travel distance, narrower escape route                                      | >8,000 m <sup>2</sup><br>Longer travel distance, narrower escape route  | >8,000 m <sup>2</sup><br>Longer travel, narrower escape route   | Basements with fire loading >30 kg/m <sup>2</sup>  |   | Archives >200m <sup>2</sup> or >60kg/m <sup>2</sup> fire load                                       | Multi-floor underground<br>Above ground:<br>'4 floors closed<br>'5 floors open<br>Automatic car parks  |
|                |                             |  |   |  |  |  |   |   |  |   |   | Underaround & >25cars  |

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|                 | Major airports sprinklered? | Places of assembly  | Shopping Centres  | Industry  | Warehouses  | Hotels   | Care Homes  | Hospitals                                       | Teaching Establishments  | Residential Accommodation  | Offices   | Car Parks  |
|-----------------|-----------------------------|---|---|---|---|--|---|---|--|--|---|--|
| Lithuania       | Yes                         | >5000 people  | >1,500m <sup>2</sup>  | >2,000m <sup>2</sup> if combustible goods stored  | >2,000m <sup>2</sup> or > 5.5m storage height   | >26.5m   | ≥ 42 m or >5000 people  | ≥ 42 m or >5000 people                          | ≥ 42 m or >5000 people   | > 75m  | ≥ 42 m  | Above ground >7m<br>Automatic car parks  |
| Luxemburg       |                             |   | >3,000m <sup>2</sup> or >3 storeys and >1,000m <sup>2</sup><br>Single storey no need for 90' structural fire resistance<br>No need for 60' separation between units in centre   |   |   | >60m high<br>Closed car parks with >20 cars<br>Double compartment to 1,600m <sup>2</sup> | If living areas open onto corridors   |   |  | >60m high<br>Youth accommodation >3 storeys with rubbish stored in building  | >225MJ/m <sup>2</sup><br>>60m high<br>Archives >600m <sup>2</sup><br>Double compartment: 1,600m <sup>2</sup> one storey<br>3,200m <sup>2</sup> multi-storey | Closed or underground with >50 cars<br>Increase travel distance 30m to 40m if >20 cars   |
| Netherlands     | Yes                         |   | Firework sales or storage >1000m <sup>2</sup> fire compartment  | >1000m <sup>2</sup> fire compartment<br>>10,000 kg dangerous goods  | Firework storage<br>>2,500m <sup>2</sup> fire compartment<br>>10,000 kg dangerous goods   | >70m high  |   |   |  | >70m high<br>Reduce fire resistance from 30 to 60 minutes or increase travel distance and compartment size or fit fewer hydrants   | >70m high   | If >1,000m <sup>2</sup>  |
| Norway          | Yes                         | >1800m <sup>2</sup> one floor   | >1,200m <sup>2</sup> multi-floor  | >800m <sup>2</sup> unless unusually low fire load   | >800m <sup>2</sup> unless unusually low fire load   | All new hotels   | All new care homes  | All new hospitals                               |  | All new dwellings with more than two storeys   | Compartment >1800m <sup>2</sup>   | >1800m <sup>2</sup> one floor  |
| Poland          |                             | >600 people or sports stadia >3000 people   | >10,000m <sup>2</sup> one floor<br>>2,500m <sup>2</sup> multi-floor   |   |   | >55m high  |   |   |  | >55m high  | >55m high   | Underground & >100 cars  |
| Portugal        | No                          | >28m high<br>>1,000 people<br>>15,000m <sup>2</sup>   | >28m high<br>>1,000 people<br>>2 storeys  |   |   | >9m high<br>>100 people<br>>50 sleeping guests   |   |   |  |  | >28m high<br>>1,000 people  | >9m, >3,200m <sup>2</sup><br>>1 underground storey   |
| Serbia          | Yes                         | >1,500 m <sup>2</sup>   | >2,000 m <sup>2</sup>   | Tycally >1,500 m <sup>2</sup> , depending on many factors   | Flammable goods   | >30m   |   | All new hospitals                               |  | >30m   | >30m  | Enclosed if >1,500 m <sup>2</sup>  |
| Slovak Republic |                             | Exhibition halls with compartment > 5,000m <sup>2</sup>   | >2,000m <sup>2</sup> one floor<br>>1,000m <sup>2</sup> multi-floor  |   | Yes, depending on many factors  | >300 guests  | >800 patients   | >800 patients                                   |  | >500 residents   |   |  |
| Spain           | Yes                         | Increase travel distance 25%  | Compartment >1,500m <sup>2</sup> and fire load >500 MJ/m <sup>2</sup><br>Compartment >2,500m <sup>2</sup><br>Increase travel distance 25%   | Max. compartment sizes further reduced with higher fire loads or the building adjoins other buildings<br>Double compartments and reduce structural fire resistance  | >6,000m <sup>2</sup><br>>2,000m <sup>2</sup> & fire load >850 MJ/m <sup>2</sup><br>Maximum compartment sizes further reduced if the fire load is higher or the building adjoins other buildings   | Required if top floor >28m<br>Increase travel distance 25%                               | Required if top floor >28m<br>Increase travel distance 25%                              | Increase travel distance 25%                    | Increase travel distance 25%   | Top floor >80m   | Top floor >80m<br>Increase travel distance 25%  | In automatic car parks   |
| Sweden          | Yes                         | Performance-based code  | Performance-based code  | >5,000m <sup>2</sup>  | >2,500m <sup>2</sup> and >800 MJ/m <sup>2</sup><br>>5,000 m <sup>2</sup>  | Performance-based but many hotels sprinklered  | All new care homes  | All new hospitals                               | Performance-based code   | >16 storey buildings and others for performance  | >16 storey buildings and others for performance   | Performance-based code   |
| Switzerland     |                             | Reduction of 30' in compartment fire resistance   | Required in department stores and shopping centres >2,400m <sup>2</sup>   | Reduction of 30' in compartment fire resistance for multi-storey buildings  | Frequently required if storage is higher than 7.5 m   | Reduction of 30' in compartment fire resistance  | Reduction of 30' in compartment fire resistance   | Reduction of 30' in compartment fire resistance | Reduction of 30' in compartment fire resistance  |  | Atria >11m, or >3 storeys, or forming compartment >3,600m <sup>2</sup>  | Underground compnt: >4,800m <sup>2</sup> single level<br>>2,400m <sup>2</sup> multi-level<br>Above ground: >4,800m <sup>2</sup> closed<br>>9,600m <sup>2</sup> per level open<br>Automatic car parks with >50 cars |
| Turkey          |                             | Museums, entertainment, eating and drinking places >4,000m <sup>2</sup> ; other assembly places >6,000m <sup>2</sup>  | Multi-storey with area >2,000m <sup>2</sup> (new); multi-storey with area >3,000m <sup>2</sup> (existing)   | >15,000m <sup>2</sup> , or with easily ignitable and flammable materials >6,000m <sup>2</sup>   | >5,000m <sup>2</sup> , or with easily ignitable and flammable materials >1,000m <sup>2</sup>  | >21.50m (new); or multi-storey with 100 bedrooms (new) or 200 beds (new and existing)    | If higher than 30.50m or >1,500m <sup>2</sup>   | If higher than 30.50m or >1,500m <sup>2</sup>   | If higher than 30.50m  | If higher than 51.50m  | If new offices higher than 30.50m and in existing offices higher than 51.50m  | Enclosed car parks >600m <sup>2</sup> (new) or >1,000m <sup>2</sup> (existing); or if >10 cars brought in by elevator  |
| United Kingdom  | No                          | If top floor >30m with phased evacuation<br>Multi-storey compartment doubled to 4,000m <sup>2</sup><br>Structural fire resistance reduced 30' if height <5m or 18m< height <30m.<br>Scotland entertainment compartment >2,000m <sup>2</sup> | In England and Wales for compartments >2000m <sup>2</sup><br>Sprinkler store room or separate from retail area.<br>Structural fire resistance reduced 30' if height <5m or 18m< height <30m.<br>Required in all Scottish shopping centres | Double max. area per level in multi-floor building to 14,000m <sup>2</sup> if <18m high<br>4,000m <sup>2</sup> if >18m high.<br>Instead of fire resistance for gallery >10m wide.<br>Structural fire resistance reduced 30' if height <30m. | >20,000m <sup>2</sup> or >18m height<br>Double max. volume per level in multi-floor building to 40,000m <sup>3</sup> (<18m ht.)<br>8,000m <sup>3</sup> (>18m ht.)<br>30' less structural fire resistance<br>Scotland >14,000 m <sup>2</sup> | If top floor >30m with phased evacuation   | Scotland, Wales all care homes<br>England if >1 bed in a room; instead of door closers. | England must consider sprinklers                | Schools: all of Wales; all of Scotland;<br>England: very common after risk analysis in England | Wales all housing<br>Scotland in buildings above 18m high<br>England in: -buildings above 30m<br>-3 storey house with open plan ground floor<br>-four-storey house without 2nd staircase | If top floor >30m with phased evacuation<br>Reduce structural fire resistance by 30' (5m< height<30m)   |  |

+ Turkey has some requirements in existing buildings

\* Not places of worship, educational establishments, museums