

# Fire Safety Regulations

## Part B

According to DIN 14096

**Published by:**

Section 4.5 – Construction, subject area fire safety  
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**As of:** January 2020

**Scope:**

University of Bonn  
(exclusive of University Hospital Bonn and the Faculty of Medicine)

## **General**

These Fire Safety Regulations Part B are intended for all individuals (employees, students, interns, visiting researchers, etc.) not tasked with special fire safety and who are using the building regularly.

Fire Safety Regulations Part B includes rules for preventing fires, instructions for how to behave and the measures for when a fire starts.

These Fire Safety Regulations comprise of a Part A and a Part B described above. Part A of the Fire Safety Regulations (see pp. 4 and 5) must be posted by the building operator in all University of Bonn buildings and facilities clearly visible.

All individuals listed above shall participate in effective fire prevention, act according to these rules, and promptly report any fire to the entities responsible listed in these Fire Safety Regulations.

In order to ensure appropriate response in case of a fire, the rules and conduct listed in these Fire Safety Regulations shall be disseminated by the persons responsible in a suitable format. Prior to starting employment, when changing the area of work and thereafter, employees should receive a briefing at least once a year. The briefing must be documented.

In addition, subject area fire safety (Section 4.5 – Construction) offers fire drills for the individual University facilities during which the correct conduct in case of fire, the use of fire extinguishers, and evacuation from the building are taught.

## **Responsibilities**

All persons responsible (including, but not limited to, executive directors, (adjunct) professors, heads of working groups and shops, directors and department heads of the administration) shall initiate and supervise all necessary measures, and in individual cases further measures, within their areas of responsibility.

All persons responsible must prohibit actions in their workplace that may result in a fire, and/or take all precautionary measures that are apt to prevent fires.

## **Effective date:**

Fire Safety Regulations Part B (BIN 14096) of the University of Bonn shall take effect on 01/01/2020.

The Provost

## **Contents:**

1. Fire Safety Regulations Part A
2. Fire prevention
3. Fire and smoke behavior
4. Escape and rescue routes
5. Fire alarm and extinguishing equipment
6. Conduct in case of fire
7. Reporting a fire
8. Complying with alarm signals and instructions
9. Getting to safety
10. Making attempts to extinguish the fire
11. Special rules of conduct

Appendix I: Hot work permit, template

## 1. Fire Safety Regulations Part A

These Fire Safety Regulations must be posted in all access areas and other central areas of buildings. Available from: subject area fire safety (Section 4.5 – Construction), Phone: 5800.

- Template -

### Preventing fires



No naked flames; fire, unshielded ignition sources  
and smoking prohibited

### Behaviour in the event of a fire

Keep calm

Report the fire



Actuate the manual fire alarm



Emergency number 112

Get to safety

Warn persons at risk / actuate  
the fire alarm

Assist others in need of help

Close doors



Follow the destined  
emergency exits



Do not use the lift

Go to the assembly point

Follow instructions

Attempt to  
extinguish the  
fire



Use the fire extinguisher

## 2. Fire prevention

### **General fire prevention principles**

- 2.1 In all buildings of the University of Bonn, smoking is prohibited throughout the building and in all building areas.
- 2.2 Work on electrical systems must be performed by skilled personnel only.
- 2.3 Any and all so-called mobile electrical equipment, including coffee makers, water kettles, immersion heaters must be inspected periodically. Faulty machines, equipment and connecting cables must be removed from use immediately. Repairs must be performed by skilled personnel only (s. safety information "Prüfung ortsveränderlicher elektrischer Geräte").
- 2.4 If possible, electrical equipment should be unplugged after hours. This shall apply in particular for coffee makers.
- 2.5 Fire extinguishers and manual fire alarms are provided in various locations. Their locations are marked by pictograms. All persons not in the building temporarily only shall inform themselves where these devices are in their work area, and how to use them.

### **Special fire prevention principles**

- 2.6 So-called hot work (welding, cutting, soldering and cut-off grinding) must not be performed outside the shops, except with a written permit. When performing hot work, the procedure required at the University of Bonn (see third party guidelines and Annex I) must be complied with.
- 2.7 Highly flammable and flammable substances must be stored only in the cabinets and rooms specifically marked for and dedicated to this purpose.
- 2.8 In labs, flammable liquids may be kept at hand at the workplace only in containers of no more than 1-liter capacity. The number of containers shall be limited to the absolutely necessary. For labs that require large amounts of flammable liquids on an ongoing basis, breakable containers for up to 5 liters and/or non-breakable containers for up to 10 liters may be kept in a protected location; e.g., a safety cabinet for flammable liquids. The safety cabinet doors must be closed after hours. Additional supplies of flammable liquids must be stored in storage rooms dedicated to this purpose. Highly flammable jetting liquids kept at hand must never be stored in thin-wall glass containers.
- 2.9 Flammable waste must be stored only in a dedicated storage room. The collection or transportation containers must only be kept in locations dedicated for this purpose, such as in under-counter cabinets. The lids of such containers must be kept closed at all times.
- 2.10 Heating, cooking and warming equipment must be placed on nonflammable, mineral pads.
- 2.11 After work has been completed, gas points of use such as taps and Bunsen burners must be shut off.
- 2.12 There must be no ignition sources in the interiors of refrigerators and freezers in which hazardous explosive atmospheres may develop. Retrofitted refrigerators must be identified by a label.

### 3. Fire and smoke behavior

- 3.1 Fire compartment and smoke doors must be kept closed. They must not be propped open by using wedges or other objects.
- 3.2 Doors with so-called permissible opening mechanisms (e.g., holding magnets with smoke alarms) may be open during hours. Depositing objects within the pivoting angle of the door leaves shall be prohibited. After hours, these doors shall be closed, but not locked. These doors shall be inspected periodically according to their certificate. The inspection results shall be documented.
- 3.3 In case of a fire or smoke, all doors shall be promptly closed, but not locked.
- 3.4 Flammable materials such as paper, furniture etc., as well as electrical work equipment (e.g. copiers, beverage machines) must not be placed or operated on escape and rescue routes.
- 3.5 Existing smoke and heat exhaust systems shall be operated by the firefighters, if necessary.
- 3.6 Inspection doors must be opened by authorized persons only.

### 4. Escape and rescue routes

- 4.1 There are generally two rescue routes (common areas) available.
- 4.2 Emergency exits, emergency hatches and other escape and rescue routes are marked. The signage must not be blocked from view. Signs may be obtained from subject area fire safety (Section 4.5 – Construction,), Mr. Weber, Phone: 5800).
- 4.3 Lighted escape route signage must be checked periodically, defective signs must be reported. In case of problems, a service application should be filed via the Web portal.
- 4.4 Emergency exits, emergency hatches, corridors, access and egress ways, staircases and escape balconies must be kept free of objects at all times.
- 4.5 Doors must be kept unlocked and freely accessible at all times as long as individuals need these escape doors in case of danger. Doors may only be locked if equipped with panic handles or other permissible devices that can be used by individuals at all times without special difficulties. In case of problems, a service request (Dienstleistungsantrag) should be filed via the Web portal.
- 4.6 Windows which serve as a second escape route must not have grates. If a grate is necessary to prevent burglaries, it must be installed so that it can be opened from the inside without using a tool (e.g. a key). In case of problems, a service application (Dienstleistungsantrag) should be filed via the Web portal.
- 4.7 Sign-posted fire lanes, staging areas for fire engines and rescue vehicles as well as fire hydrants must be kept freely accessible. Encroachment of any kind from parked vehicles or other deposits is prohibited in these areas. Informational signs and markings must be complied with.
- 4.8 Safety warnings and devices must not be blocked from view or access by objects.
- 4.9 All individuals must inform themselves about escape and rescue routes in their buildings. Existing escape and rescue plans must be complied with.

## 5. Fire alarm and extinguishing equipment

Fire alarm and extinguishing equipment must not be disabled.

### **Fire alarm equipment**

- 5.1 In the buildings, phones are available. **The fire emergency call number is: 112.** It can also be dialed from phones that do not have access to an outside line.
- 5.2 Where buildings are equipped with an automated fire alarm system, everyone must educate themselves on the locations of the related manual fire alarms.
- 5.3 In case of fire, the firefighters must be notified by phone—independently of whether there is a fire alarm system.
- 5.4 Only authorized personnel is allowed to disable fire alarm systems (e.g. in order to prevent false alarms during hot work). The framework condition for this case must absolutely be complied with.

### **Fire extinguishing equipment**

- 5.5 Everyone must thoroughly educate themselves on the locations of fire extinguishing devices.
- 5.6 The fire extinguishing devices are located in the corridor and staircase areas, as well as in certain work areas (labs, shops, etc.). Everyone must educate themselves on the exact locations and operation of the fire extinguishing devices. The locations of the fire extinguisher must not be changed.
- 5.7 In special work areas where experiments are conducted, containers with sand for extinguishing metal fires are provided.
- 5.8 In some areas (labs) emergency showers (full-body showers) are available.
- 5.9 In some buildings or special parts of building (e.g. hazardous material storage), built-in, automated gas fire extinguishing systems (e.g. carbon dioxide) with alarm and trigger devices are available. The person responsible for these areas must instruct employees about these.
- 5.10 After any use, fire extinguishers must be checked by Section 4.3 Technical Services. This also applies for fire extinguishers with a broken seal.
- 5.11 After a fire, activities must generally not be resumed until approved by subject area fire safety (Section 4.5 – Construction,). Before such approval can be given, the required number of fire extinguishers must be available and operational again.

Notices that Section 4.3 – Technical Services posts above fire extinguishers.

# How to Use Fire Extinguishers

## First:

**Call 112** to notify firefighters!

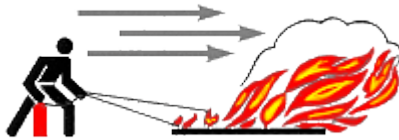
Warn persons in danger and rescue them, if necessary!

Call for additional assistance!

Make sure you are safe!

## Then:

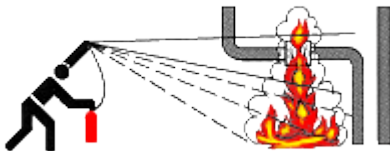
Try to extinguish the fire!



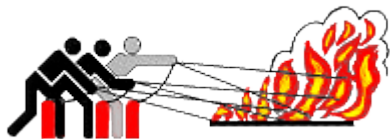
Take the direction of the wind into account and keep a safe distance. Do not aim directly at the flames; extinguish the burning substances.



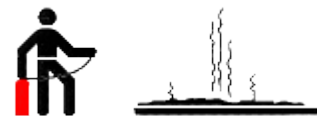
Extinguish areal fires from front to back. Do not aim directly at the flames; extinguish the burning substances.



Extinguish fires dripping or flowing from above from the top (exit location) down (burning puddle).



Always use a sufficient number of fire extinguishers simultaneously, not one after the other!



Watch for reignition! Do not leave the location of a fire; keep watch!



Never put used fire extinguishers back where they came from; they must be refilled and tested by Section. 4.3 - Technical Services!



## 6. Conduct in case of fire

- 6.1 Remain calm! Impulsive action may result in doing the wrong thing and/or panic!
- 6.2 Report the fire!
- 6.3 Close doors, but do not lock them!
- 6.4 Warn people! Assist and help invalids get out!
- 6.5 In case of fire, do not use elevators!
- 6.6 Rescuing people takes precedence over fighting the fire!
- 6.7 Whatever you do, your own safety should come first!
- 6.8 If possible, turn OFF energy carriers, equipment, machines and experiments before leaving a room. Use emergency-OFF push-button, if applicable.
- 6.9 Only interrupt the water supply if it is not required for cooling etc. Check with someone first.
- 6.10 Make attempts to extinguish the fire (using fire extinguishers)!
- 6.11 Provide guides/pilots for the firefighters!
- 6.12 Notify those responsible and subject area fire safety (Section 4.5 – Construction).

## 7. Reporting a fire

### EMERGENCY CALL

**112** Ambulance, fire department

**110** Police

**019240** Poison information center

(Only telephones with an outside line can call this number)

**88-33211** Poison information center

(Number can be called from any telephone)

### INFORMATION TO BE GIVEN

#### Where did it happen?

Institute \_\_\_\_\_

Street, house no. \_\_\_\_\_

City \_\_\_\_\_

Floor \_\_\_\_\_

Room \_\_\_\_\_

#### What happened?

Short description of the situation e.g. fire, accident

**How many are injured?** Indicate number of injured

#### What kind of injuries?

e.g. burns, scalds, chemical burn, cuts

### Wait for further questions!

**Do not hang up until the person you called tells you to.**

This notice must be visible from each phone and must be put up at least once in each room. Location details are to be added accordingly.

## **8. Complying with alarm signals instructions**

- 8.1 Some buildings have detection systems, PA systems or megaphones. When these transmit an alarm, you must leave the building immediately please.
- 8.2 Posted or other area specific instructions must absolutely be complied with.
- 8.3 In some buildings or special parts of building (e.g. hazardous material storage) with built-in, automated gas fire extinguishing systems (e.g. carbon dioxide) these building areas must be promptly evacuated due to the asphyxiation hazard!
- 8.4 Upon arrival of firefighters, their instructions shall be followed exclusively.
- 8.5 In case of a fire, administrative employees may assume the authority to issue directives.

## **9. Getting to safety**

- 9.1 Remain calm!
- 9.2 Use the marked rescue routes! Leave hazardous areas in the fastest way possible; do not use elevators.
- 9.3 There are generally two rescue routes (common areas) available. If the first rescue route (e.g. staircase) is not usable, use the second rescue route. If this leads via a window suited for a fire escape ladder, make yourself seen/heard to rescue personnel.
- 9.4 Assist endangered, handicapped or injured individuals out!
- 9.5 Crawl along the floor in smoke-filled rooms.
- 9.6 Go to your designated fire assembly point (where applicable) and follow the instructions of the fire warden (where applicable). Has everyone left the building? If not, report this to the firefighters!

## **10. Making attempts to extinguish the fire**

- 10.1 Only attempt to extinguish the fire if you are not in danger!
- 10.2 Rescuing individuals takes precedence over fighting the fire!
- 10.3 If possible, fight the fire with the available fire extinguishing equipment until firefighters arrive.
- 10.4 If possible, fight the fire with several fire extinguishers at the same time. This works better than using them one after another.
- 10.5 Make individuals whose clothes have caught fire drop to the floor, do not let them run away! Then use emergency showers or fire extinguishers to put out the fire.
- 10.6 Educate yourself about existing fire extinguishers and their operating conditions (instructions for use are on the fire extinguisher)

## 11. Special rules of conduct

- 11.1 The firefighter command central must be notified of special hazards. Special hazards can result e.g. from the following being present:
1. Flammable liquids;
  2. Compressed gas cylinders of any kind including in their dedicated
  3. storage cabinets;
  4. Radioactive substances;
  5. Toxic substances;
  6. Microbiological/genetically engineered organisms.
- 11.2 If there are several institutes in one building, the person responsible must ensure that all adjacent institutes are also notified of potential hazards as fast as possible.

### **After a fire, the following measures will be necessary:**

- 11.3 The location of the fire must be secured against access by unauthorized persons.
- 11.4 Subject area fire safety (-5800 or -1935) must be notified of a fire as soon as possible, the following working day at the latest. Required measures following a fire (e. g. closures, cleaning, remediation, recommissioning) will be coordinated by subject area fire safety (Section 4.5 – Construction) of Division 4 as applicable.  
Fire extinguishing systems, fire extinguishers, equipment and devices must immediately be made operable again.
- 11.5 Electrical systems and equipment as well as other supply lines must be tested before recommissioning. Your contact for testing is Section 4.3 – Technical Services, central disturbance desk, Phone 7600.
- 11.6 After a fire, in principle, activity may only be resumed following approval by Section 4.5 – Construction, subject area fire safety.

## Appendix I Hot work permit

**Hot work permit** for welding, cutting and related processes in areas with fire- and explosion risks valid within the University of Bonn (except University Hospital Bonn (UKB) facilities), as of 09/2019

1.	Building (floor/room)	
2.1	Customer (AG)/ Subject area Contact	<input type="checkbox"/> University of Bonn – Section 4.3 – Technical Services <input type="checkbox"/> Bau- und Liegenschaftsbetrieb NRW Niederlassung Bonn <input type="checkbox"/> _____
2.2	Contractor (AN) Name, address, phone	
3.	Work order	
4.	Process	<input type="checkbox"/> Welding <input type="checkbox"/> Soldering <input type="checkbox"/> Warming <input type="checkbox"/> Cutting <input type="checkbox"/> Flame straightening <input type="checkbox"/> _____
5.	Work duration	Date _____ from _____ until _____ h
6.	Measures for eliminating fire and explosion risks to be taken by Contractor before start of work	<input type="checkbox"/> 6.1 Removing movable flammable substances and objects – if applicable, also dust deposits – in an area with a diameter of _____ m and – if necessary, also in adjacent rooms. <input type="checkbox"/> 6.2 Covering immovable flammable substances and objects (e.g. wooden beams/walls/floors/objects, plastic parts) by suitable means and moistening them, if necessary. <input type="checkbox"/> 6.3 Sealing openings such as joints, cracks, wall penetrations, pipe openings, channels, chimneys, shafts, against adjacent spaces by means of clay, plaster, mortar, damp soil, etc. <input type="checkbox"/> 6.4 Removing wall/ceiling cladding, such as dampening mats and insulation material. <input type="checkbox"/> 6.5 Removing any and all explosive substances and objects – incl. dust deposits and containers with hazardous contents or residue. <input type="checkbox"/> 6.6 Removing explosion hazards in piping. <input type="checkbox"/> 6.7 Sealing immovable containers, equipment or piping containing flammable liquids, gases or dust, or which used to contain same, in conjunction with ventilation measures. <input type="checkbox"/> 6.8 Ventilation measures according to Explosion Protection Guidelines (ExRL) in conjunction with measuring & monitoring. <input type="checkbox"/> 6.9 Other measures: _____ _____ <input type="checkbox"/> <b>Addition / variance / special notes see „Additional Notes“</b>
7.	Extinguishing agent to be kept at hand by Contractor at worksite	_____ x _____ kg fire extinguishers with <input type="checkbox"/> powder or <input type="checkbox"/> CO <sub>2</sub> <input type="checkbox"/> ext. blanket <input type="checkbox"/> mounted water hose <input type="checkbox"/> bucket filled with water
8.	Fire alarm system (turned off by AG at Contractor's request)	<input type="checkbox"/> Turning off of line(s) _____ of the fire alarm system required – Requested by (Name): _____ at _____ h – Performed by (Name): _____ at _____ h
9.	Fire watch to be provided by Contractor (turned on by AG at Contractor's request)	<input type="checkbox"/> Not necessary since automated fire alarm system present, turning on of line(s) _____ – Requested by (Name): _____ at _____ h – Performed by (Name): _____ at _____ h <input type="checkbox"/> Necessary during work; performed by (Name): _____ <input type="checkbox"/> Necessary after work; performed by (Name): _____ until _____ h
10.	Alarm triggered	<b>Fire emergency phone: 112</b> Location of nearest alarm _____ Location of nearest phone _____
11.	<p><b>Permit:</b>  <u>Work must not be started/performed until the above precautionary measures and the user-specific requirements of the onsite contact listed in the "Additional Notes" have been implemented/complied with onsite.</u> The instructions printed on the reverse have been acknowledged.            AG instructs the Contractor to perform the work according to the requirements listed.</p> <p>Name of person responsible at AG (in print): _____</p> <p>Date and signature of person responsible at AG: _____            Contractor (AN) warrants performance of the work according to the requirements listed.</p> <p>Name of person responsible at AN (in print): _____</p> <p>Date and signature of person responsible at AN: _____</p>	

### Additional Notes for the Hot Work Permit

Section \_\_\_\_\_ of the University of Bonn has named Mr./Mrs. \_\_\_\_\_ at the Institute \_\_\_\_\_ as the onsite contact for Customer. The onsite contact is authorized to give the contractor instructions if required for avoiding potential hazards. Work must not be performed unless the contact is available, it must be scheduled with the contact in advance.

Customer and Contractor have been instructed by the onsite contact regarding the following potential user-specific hazards, as well as the corresponding safety measures and behaviors before the start of work:

- In gene-technology facilities (from Level S2) and work areas according to Radiation Protection Ordinance, express written permission is required before the start of work.
  - All signs containing warnings, prohibitions and instructions as well as escape and rescue routes, optical and/or acoustical alarms and signals must be complied with.
  - Eating, drinking and smoking are prohibited in labs, practice rooms and shops.
  - In case of accidents or contact with substances that have resulted in malaise or skin reactions, a physician must be seen or called via the emergency number; the contact must be notified accordingly.
  - Irregularities or potential hazards in the work area, such as spilled liquids, strong odors, escaping gas, etc. caused by damage, regardless of type, must promptly be reported to the onsite contact.
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In addition to / in variance from No. 6, the following measures have been agreed on that must be performed by contact before hot work begins:

- Chemicals (hazardous substances), compressed gas cylinders or equipment will be removed according to No. 6.1
  - Piping will be emptied, flushed, if necessary rendered inert, cf. No. 6/6.
  -
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Date and signature of the above contact: \_\_\_\_\_

### General rules for hot work

When welding or performing other hot work in areas with fire and explosion hazards, certain measures must be complied with and implemented. Hot work includes welding, cutting, soldering, warming, hardening, metal spraying and similar processes for working on metal using combustion gas, as well as electrical welding and cutting processes and thermite welding. Hot work also includes thawing, burning off, heating and other work using an open flame, tar boiling, grinding, cut-off grinding, working with hot air blowers and other work processes involving high temperatures. If the fire risk has not been completely eliminated for structural or operational reasons, work must not be started until Customer has issued a so-called hot work permit and the safety measures specified therein have been implemented. This can include e.g.

- Hot work in areas with a high fire load; e.g., dust deposits, paper, cardboard, packaging material, textiles, fibers, insulation, wood wool, fiber board, wood parts; in case of longer heat exposures, also wooden beams;
- Hot work in areas with explosion risk; i.e. in areas that can have a hazardous atmosphere constituting an explosion risk; e.g., if there are flammable liquids (labs, hazardous substance storage), gases or dusts;
- Hot work outside the shops and welding stations equipped for the purpose.

### Process steps

For hot work falling under the above conditions, the hot work permit printed on the reverse must be completed. The decision whether a hot work permit is required shall be made by Customer. Before the work is performed, it will be coordinated between Customer, Contractor and the named contact from the University. Customer will decide whether the University must name a contact.

1. Work location (floor/room): Enter floor and room
- 2.1 Customer (subject-area contact)
- 2.2 Contractor: Company name and address, names of company workers
3. Work order: Brief description of work to be done
4. Work process: Check or add process
5. Work duration: Day and duration in hours or minutes
6. Measures for eliminating fire or explosion hazard: These measures shall be performed by Contractor before the start of work. For areas at particular risk, e.g., areas where experiments are conducted, or hazardous substance storage areas, Institutes will name an onsite contact (see below).
7. Extinguishing agents: These must be kept at hand by Contractor at the place of work. Extinguishing agents provided by the University must not be used for this purpose.
8. Fire alarm system: Turning off of alarm loops; the fire alarm system will be turned off by Customer (subject-area contact) at Contractor's request.
9. Fire watch: Must be provided by Contractor; requirement is waived if there is an automated fire alarm system.
10. Alarm triggered: Location and type of triggers
11. Permit           Name/signature of Customer's employee responsible  
                          Name/signature of Contractor's employee authorized to sign

### Hot work permit retention

Customer shall keep all hot work permits issued ready in a centralized location until further notice; a copy shall automatically be submitted to subject area fire safety (Section 4.5 – Construction,) of the University. Subject area fire safety (Section 4.5 – Construction) of the University of Bonn will randomly monitor their implementation by inspecting the hot work permits as part of the University Provost's control responsibility.