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SARS-CoV-2 occupational health and safety regulation

This SARS-CoV-2 occupational health and safety regulation fleshes out the occupational health and safety requirements relating to SARS-CoV-2 for the duration of the epidemic situation of national importance (henceforth referred to as the epidemic) as determined pursuant to Section 5 of the German Protection Against Infection Act (IfSG).

The SARS-CoV-2 occupational health and safety regulation is defined or adapted by the advisory occupational health and safety committees at the Federal Ministry of Labour and Social Affairs (BMAS) in tandem with the Federal Institute for Occupational Safety and Health (BAuA) and published by BMAS in the Joint Ministerial Gazette.

The SARS-CoV-2 occupational health and safety regulation further specifies the requirements of the ordinances pursuant to the German Safety and Health at Work Act (ArbSchG). By complying with these detailed provisions, the employer can assume that it will have met the requirements of the ordinances. If the employer opts for another solution, he or she must ensure at least the same level of safety and health protection for employees. Other potential solutions may be prioritised where the federal states (*Länder*) have different legal provisions governing the protection of employees. In terms of the level of protection afforded by these legal provisions, it is recommended that the requirements set forth in this government regulation be taken as the basis.

The regulation furthermore reflects the state of the art in technology, occupational healthcare and hygiene as well as other reliable ergonomic findings which the employer must take into account in the occupational health and safety measures pursuant to Section 4(3) ArbSchG during the epidemic. The physician within the meaning of Section 7 of the Ordinance on Preventive Occupational Healthcare (ArbMedVV) must take the SARS-CoV-2 occupational health and safety regulation duly into account as a regulation reflecting the state of the art in occupational healthcare (Section 6(1) Sentence 1 ArbMedVV).

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1 Scope of application

(1) This SARS-CoV-2 occupational health and safety regulation fleshes out the Federal Ministry of Labour and Social Affair's [1] SARS-CoV-2 occupational health and safety standard on the basis of the German Safety and Health at Work Act (ArbSchG) and the ordinances relating thereto (occupational health and safety ordinances).

(2) This regulation's objective is to safeguard the health of employees effectively during the SARS-CoV-2 epidemic by means of occupational health and safety measures. Implementing these measures at plants, facilities and offices will also contribute to protecting the general population by interrupting chains of infection.

(3) The temporal scope of application of the SARS-CoV-2 occupational health and safety regulation is limited to the duration of the epidemic situation of national importance as determined pursuant to Section 5 of the German Protection Against Infection Act. If new scientific findings come to light which impact the requisite protective measures, the regulation will be adapted.

(4) This regulation also applies to work and activities which are subject to the Biological Agents Ordinance (BioStoffV), unless they are subject to equivalent or stricter regulations (including Technical Rules for Biological Agents (TRBA), recommendations or resolutions) for the protection of employees. The Committee on Biological Agents (ABAS) recommendations relating to the SARS-CoV-2 outbreak must continue to be duly taken into account [2].

2 Definitions

2.1 SARS-CoV-2

(1) The Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) is part of the coronavirus family. Infection with SARS-CoV-2 can lead to the respiratory disease COVID-19. Given its high molecular biology similarity and the data available on the epidemiology and clinical symptoms of the infection, ABAS has classified SARS-CoV-2 as risk group 3, as is also the case for SARS-CoV-1 and the Middle East Respiratory Syndrome Coronavirus (MERS-CoV) [3]. In addition to the initial lack of a vaccine to prevent the disease, treatment and its efficient spread among the population, the potential seriousness of the illness was specifically taken into account in this classification. Not all those infected went on to suffer serious symptoms, for instance. Furthermore, it is to be assumed that a considerable proportion of those infected with SARS-CoV-2 do not develop any illness or only a mild, cold-like illness.

(2) SARS-CoV-2 is transmitted primarily and at a high rate of infection via airborne droplets (aerosols) from the respiratory tracts of those infected to other persons. The entry points are exposed mucous membranes of the recipient (mouth, nose, eyes). Transmission takes place first and foremost if a person is in close physical proximity to a virus emitter, for example if they are closer than the minimum safety distance. It has been shown that in enclosed spaces in particular the viruses are transmitted very efficiently from person to person by droplets and aerosols and then spread in the population. Transmission from contaminated surfaces and hands is also possible, albeit to a lesser extent, and must also be taken into account.

(3) Not only those who have contracted COVID-19 but also people who have been infected but do not have any symptoms can transmit the virus. The virus can already be transmitted one or two days before symptoms start. The risk of infection increases with the number, length and closeness of unprotected contacts with people infected with SARS-CoV-2.

2.2 Working from home as a form of mobile work

(1) Mobile work is a form of work that is not performed at a workplace as defined under Section 2(1) German Workplace Ordinance (ArbStättV) or at a telework station installed permanently in the worker's private sphere as per Section 2(7) ArbStättV, but where employees work at any other location (e.g. at the customer, on transport, in a home).

(2) Electronic or non-electronic work equipment is used to perform mobile work.

(3) Working from home is a form of mobile working. It enables employees to work temporarily for the employer in their private sphere, for example using portable IT systems (e.g. notebooks) or data carriers, after prior agreement with the employer.

(4) This is without prejudice to teleworking provisions.

2.3 Mouth and nose coverings

Mouth and nose coverings (MNCs) are textile garments that cover at least the nose and mouth and are suited to significantly reducing the speed of respiratory flow or the ejection of saliva/mucous/droplets. MNCs protect others against infection. They constitute neither medical devices nor personal protective equipment (PPE).

NB:
A mouth and nose covering is no substitute for mouth and nose protection/medical face masks (MNP) or protective respiratory masks.

2.4 Mouth and nose protection/medical face masks

Mouth and nose protection /medical face masks (MNP, for example in accordance with the DIN EN 14683 standard) are medical devices and are therefore subject to medical devices legislation. They offer others defined protection from exposure to potentially infectious droplets coming from the person wearing the MNP. MNP products are required to have undergone a certification procedure.

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2.5 Protective respiratory masks

(1) Protective respiratory masks are filtering half-face masks and protective respiratory masks with replaceable particle filters.

(2) Filtering half-face masks (e.g. FFP in accordance with the DIN EN 149 standard, see Annex 2) may or may not be fitted with an exhalation valve. As personal protective equipment, they are designed to protect the wearer from droplets and aerosols (self-protection). Filtering half-face masks with no exhalation valve also provide certain protection for others against infection. Protective respiratory masks with an exhalation valve only protect the wearer. Filtering half-face masks are differentiated between *inter alia* by their filtering capacity, allowing them to be categorised into different equipment classes as their filtering capacity increases. Filtering half-face masks are required to have undergone a certification procedure.

(3) Protective respiratory masks with a replaceable particle filter (e.g. in accordance with the DIN EN 140 standard and in combination with the DIN EN 143 Protective respiratory masks with a replaceable particle filter (e.g. in accordance with the DIN EN 140 standard and in combination with the DIN EN 143 standard, see Annex 2) constitute personal protective equipment. The air is inhaled through the particle filters. The exhaled air flows through exhalation valves or other fittings into the surrounding atmosphere. These protective

respiratory masks have no protective effect for others. Protective respiratory masks with replaceable particle filters protect the wearer from droplets and aerosols. Protective respiratory masks with a replaceable particle filter are required to have undergone a certification procedure.

NB:

The terms "respirators" and "filtering half-face masks" have been subsumed under the term "protective respiratory masks" for the sake of ease of reading. This is without prejudice to other definitions.

2.6 Face protectors

Face protectors, face shields/visors (e.g. in accordance with the DIN EN 166 standard) constitute personal protective equipment. They usually consist of a suitable headband, forehead guard, helmet/head guard, protective hood or other suitable fixing. Face protectors are designed to protect the wearer from external hazards such as drips and splashes. Face protectors are required to have undergone a certification procedure.

2.7 Distancing rule/minimum distance

A distance of at least 1.5 m between employees or between employees and other people (e.g. customers, suppliers, other employers' employees) reduces the risk of SARS-CoV-2 transmission. For certain types of work generating higher aerosol emissions, such as professional singing, larger distances may be required.

2.8 Brief contacts/Brief encounters

The guidance on contact tracing for respiratory diseases resulting from SARS-CoV-2 provided by the Robert Koch Institute (RKI) defines people who have had unprotected contact (without protective measures) while being in closer proximity than the minimum safety distance of 1.5 m or have had contact in rooms and spaces with a high concentration of aerosols, each situation lasting longer than 10 minutes as having a heightened risk of infection. This regulation therefore defines brief contact as the sum of all personal contacts that throughout the entire day does not cumulatively exceed 10 minutes in total, e.g. brief encounters on the corridor. Irrespective of the length of the contact, if persons are closer than the minimum distance of 1.5 m, this is not considered a brief contact if speaking takes place without protective measures.

2.9 Disinfectants

SARS-CoV-2 is an enveloped virus. Disinfectants within the meaning of this regulation are those classified as at least having "limited spectrum virucidal activity", so as being sufficiently effective against enveloped viruses [4].

3 Risk assessment

(1) In light of the epidemic and the publication of the BMAS SARS-CoV-2 occupational health and safety standard, Sections 5 and 6 ArbSchG require the employer to review and, where necessary, update the existing risk assessment and occupational health and safety

measures defined to include any additional measures required for protection against infection at work. The detailed sector-specific provisions set out by the statutory occupational accident insurance schemes for protecting against SARS-CoV-2 can serve as an aid here [5].

(2) The employer should involve the occupational health and safety specialist and the occupational physician when reviewing and updating the risk assessment and subsequently defining specific measures to prevent infection. Furthermore, the process must be implemented in a participatory manner involving the employee representatives or, if these are not in place, with the employees. Suitable bodies for exchange and coordination are the occupational health and safety committee or any epidemic or crisis management teams put in place.

(3) During the risk assessment, the design and structuring of work tasks, working times and the integration of employees working from home into work processes as well as the additional psychological stress factors to be considered as a result of the epidemic situation must be duly taken into account. Managers have a special role to play here.

(4) Under Section 15 ArbSchG, employees have a duty to cooperate. As their cooperation is required for the implementation of and compliance with behaviour-related measures, they need to develop and maintain a safety awareness. The same applies to employees from external companies, temporary workers and employees working under contracts for specific services or work (*Dienst- oder Werkverträge*).

(5) If work is performed with a special risk of SARS-CoV-2 infection (e.g. work involving direct personal contact with persons suspected of being or known to be infected, work in laboratories), the relevant provisions on risk assessment under BioStoffV and TRBA apply.

(6) In addition to collective measures, it must be examined whether and to what extent individual measures need to be taken for particularly vulnerable employees to protect them from being infected by employees or customers. In relation to the protection of pregnant women, please refer to Section 10 of the German Act on the Protection of Working Mothers which stipulates the inclusion of protection for working mothers in the general risk assessment under Section 5 ArbSchG and the new individual risk assessment once the employer is informed of a pregnancy [6].

(7) How the measures may impact or be impacted by other occupational health and safety measures and any conflicts of aims must be duly taken into account (e.g. problems from wearing MNP or protective respiratory masks under climatically difficult conditions or due to the intensity of the work).

4 Protective measures

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4.1 Basic measures

(1) The order of priority applying to the protective measures based on the principles set out under Section 4 ArbSchG also applies to measures to protect people against infection at work, with technical measures having priority over organisational measures, and these in turn having priority over personal measures – this is known as the TOP principle. The various measures must be properly dovetailed (Section 4(4) ArbSchG). Which of these measures make sense and are appropriate in the specific work setting depends on the assessment of the risks that exist on site.

(2) The employer must especially take measures to reduce the number of unprotected contacts between people (including indirect contact via surfaces) and the concentration of airborne viruses in the working environment as far as possible. Suitable measures for this are, for example, compliance with the physical distancing rule, lowering room occupancy, working in set teams, technical measures to separate people's breathing areas, using remote contact possibilities, increased ventilation or airing, isolating sick people, increased cleaning of surfaces and additional hand hygiene.

(3) If the nature of the work means the distancing rule cannot be complied with and technical measures such as partitions between workstations or suitable organisational measures are not practicable, employees must wear at least MNP for their mutual protection. If the risk assessment finds that wearing MNP does not provide sufficient protection for employees and masks providing self-protection for the wearer are necessary, the protective respiratory masks defined in Annex 2 must be provided. This applies in particular if

1. for the work being performed, a risk of heightened aerosol emission is to be expected (for instance speaking loudly or singing or other activities that lead to a considerably higher volume of breath due to the intensity of the work) or
2. for work activities involving contact with other people, one of the persons present does not have to wear a mask.

(4) If MNP or protective respiratory masks have to be worn, these must be made available in sufficient quantities by the employer. The employees are required to wear these [7].

(5) The following aspects in particular must be taken into account for the basic technical, organisational and personal occupational health and safety measures:

1. Design and structuring of the working environment, e.g. the arrangement of workstations to ensure distancing, sufficient airing or ventilation, apparatuses such as partitions, barriers and, where appropriate, the definition of internal circulation routes,
2. Reducing contact, e.g. by using digital communications, defining minimum surface areas per person for rooms and spaces to lower occupancy, forming and maintaining working groups, how working hours are organised, working from home,
3. Hygiene and cleaning, e.g. washing hands regularly and thoroughly; if this is not possible, providing suitable hand disinfectants and rehydrating skincare products, adjusting cleaning intervals,
4. General rules of conduct, e.g. keeping one's distance; refraining from forms of greeting involving direct physical contact; coughing and sneezing into the crook of one's arm or into a paper handkerchief; staying at home in the case of symptoms of illness.

4.2 Further-reaching protective measures

4.2.1 Workstation design

(1) Areas for movement must always be provided for at workstations in accordance with Annex No. 3.1 of the German Workplace Ordinance (ArbStättV). The Technical Regulation for Workplaces (ASR) "Room dimensions and movement areas" A1.2 further specifies these basic requirements for movement areas. This notwithstanding, workstations at workplaces should be arranged in such a way that a distance of at least 1.5 m can be maintained between the employees present to perform work tasks in compliance with the distancing rule. The following measures in particular may be implemented to achieve this:

1. Changing furniture or how it is arranged,
2. Use of other areas and rooms suitable for the work.

(2) If the distancing rule between workstations cannot be observed for operational reasons and if individual contact is necessary not only for a brief time between persons employed at these workstations to perform the work, partitions must be installed as a technical measure. Partitions made of transparent material are preferable to ensure the necessary eye contact and adequate lighting conditions.

(3) Partitions must not cause additional risks. For example, sufficient stability must be ensured and sharp corners or sharp edges must be avoided.

(4) Partitions are used to separate breathing areas between employees or between employees and customers (e.g. at cashier workstations or service counters). The upper edge of the partition must not be lower than the following minimum heights above the floor:

1. 1.50 m between seated persons,
2. 1.80 m between sitting persons and standing persons opposite each other (e.g. customers),
3. 2.00m between standing persons.

(5) When measuring the width of the partition, the breadth and/or depth of the movement area of the employee must be taken into account. An additional safety margin of 30 cm should be added to this on the left and right. If necessary, the partition may include openings outside of the breathing area (e.g. for payment or to use the card reader, if necessary also for handing over goods). Both sides of the partition must be cleaned each working day with a commercially available cleaning agent.

4.2.2 Sanitary facilities, canteens and break rooms

(1) General requirements applying to the installation and operation of sanitary facilities and break rooms at workplaces are laid down in Annex No. 4.1 and 4.2 ArbStättV. These are spelled out in detail in ASR A4.1 "Sanitary facilities" and A4.2 "Break and stand-by rooms". The arrangements laid down in this technical regulation (ASR) are at present not sufficient to duly protect employees against infection with SARS-CoV-2 in accordance with the current state of occupational healthcare and hygiene. Therefore, in addition to the requirements specified therein, measures have to be taken to ensure compliance with the distancing rule when using facilities.

(2) To implement hand hygiene, easily accessible washing facilities with running water, sufficient liquid soap that is gentle on the skin and facilities for hygienic drying of hands (disposable paper or textile towels) must be provided. Suitable skin protection and skin care products must be provided if determined necessary in the risk assessment. The rules for washing hands must be displayed. Like for the use of secondary air units, (see point 4.2.3 (9)) when using warm air dryers, the air-channelling effect of these units must be factored into the risk assessment and increased airing and ventilation as stipulated under ASR A4.1 "Sanitation facilities" must be ensured.

(3) Hygienic hand cleaning and drying must also be ensured at mobile and remote workstations, for example by providing hand-washing stations or canisters of water, liquid soap and disposable towels or suitable hand disinfectants. Towels used by several people are not permitted under ASR A4.1 and do not meet hygienic requirements.

Sanitary facilities

(4) In changing rooms and washrooms, technical and organisational measures must be taken to ensure that employees have sufficient space to comply with the distancing rule, for example by means of distance markings on floors, limiting the number of people or use being staggered over time.

(5) Sanitary facilities must be cleaned at least once every working day.

Break rooms

(6) Compliance with the distancing rule must be ensured in break rooms and areas, tea kitchens and cooking facilities as well as in stand-by rooms and areas. Measures include in particular the adjustment of seating arrangements, the application of floor markings and the staggered organisation of working and break times with the aim of reducing the occupancy rate.

(7) Hand hygiene facilities must be provided before entering and using break rooms and areas.

Canteens

(8) Compliance with the distancing rule is to be ensured by arranging or reducing the number of tables and seats as well as by other technical measures, e.g. distance markings on the floor or the installation of barrier tapes at the food dispensing point, tray return point and at the cashier's desk, and by means of organisational measures, such as limiting the number of persons or extending the canteen and food dispensing times to avoid queues or a staff member to instruct and organise canteen-goers. Cutlery and crockery should be handed out by the canteen staff.

(9) Hand hygiene facilities must be made available before entering and using the canteen.

4.2.3 Airing and ventilation

(1) In the rooms of workplaces, sufficient healthy respiratory air must be available in accordance with Annex No. 3.6 ArbStättV. ASR A3.6 "Airing and ventilation" specifies the basic requirements applying to airing and ventilation in detail (both for general airing and ventilation and also by means of air conditioning equipment).

(2) Increased airing and ventilation, meaning replacing the room air through the direct or indirect introduction of fresh air from outside, can reduce the concentration of any aerosols carrying virus present in room air. Airing and ventilation can be increased in particular by increasing the frequency at which rooms are aired, by extending airing or ventilation times or by increasing the amount of air flowing.

NB:

This is assuming that the outside air is not contaminated with SARS-CoV-2.

(3) Measuring instruments do not directly display the aerosol contamination from SARS-CoV-2. The quality of airing and ventilation can be checked by measuring the CO_2 concentration. Simple measuring equipment (e.g. CO_2-meters with a traffic light display) suffice for this. Under ASR A3.6, anything up to a CO_2 concentration of 1,000 ppm is acceptable. During the epidemic, the actual concentration must be kept as far below this level as possible. How often airing and ventilation needs to take place can also be calculated, in particular factoring in the cubic metres of the room, occupancy, physical activity and air

exchange. ASR A3.6 point 4.2 (3) and (4) contain information on measuring and assessing the CO_2 concentration.

NB:

Here are some examples of tools for calculating the required airing intervals:

1. *BGN airing and ventilation calculator [8],*
2. *IFA CO_2 app (calculator and timer) [9],*
3. *FBHM-114 "Fachbereich AKTUELL" of the German Statutory Accident Insurance (DGUV) Surfaces Technology and Welding Unit "How to assess airing and ventilation on the basis of the CO_2 concentration"[10].*

(4) The simplest form of ventilation is airing out a space (general airing), usually by opening windows. Rooms are to be aired out using windows at the start of work and thereafter at regular intervals. ASR A3.6 recommends a time interval for airing of every 60 minutes in offices, for example, and every 20 minutes in meeting rooms. This frequency should be increased as much as possible during the epidemic. Brief, intensive airing by fully opening the windows should be performed. If possible, this should be done as cross-ventilation. When determining the length of airing and ventilation the temperature difference between indoors and outdoors and the prevailing wind pressure have to be taken into account. In summer, the airing-out period should be at least 10 minutes and in winter at least 3 minutes. Continuous airing by leaving windows slanted open may make sense in addition to brief, intensive airing in order to avoid a sharp increase in a potential concentration of virus-contaminated aerosols in the room air. Please refer to ASR A3.4 for further information.

(5) Meeting rooms must be aired out additionally before use as per (4).

(6) The risk of transmission of SARS-CoV-2 via ventilation and air-conditioning systems can be classified as low overall if these are properly installed, operated and maintained (cleaning, filter changes etc.) and

1. supply the room with a sufficiently high proportion of fresh air so that the requirements pertaining to the CO2 concentration in the room air are met as defined in (3) or
2. otherwise, there are suitable filters or other apparatuses to lower potential virus concentrations from the air recirculation from the air conditioning system.

NB:
Suitable filters for filtering out viruses and aerosols contaminated with viruses are class H13 or H14 High Efficiency Particulate Air Filters (HEPA filters) according to DIN EN 1822-1:2019 [11]. Additionally, ISO ePM_1 > 70% (previously F8) or ISO ePM_1 > 80% (previously F9) particulate matter filters can also lower the concentration of aerosols containing viruses.

(7) The recirculation of air from air conditioning systems that do not have a suitable filtration system to lower potential concentrations of aerosols containing viruses in the room must be avoided, so as to ensure that aerosols carrying viruses are not channelled back into the room. The proportion of fresh air generally available for air conditioning systems that recirculate air should be stepped up wherever technically feasible in order to reduce the proportion of recirculated air. If the recirculation of air cannot be avoided for technical or technological reasons and the CO_2 concentration requirements for the room air as set out in (3) cannot be met, suitable fittings (e.g. filters) must be added to lower the concentration of aerosols that may contain viruses. Here it must be taken into account that the parameters of the systems may change when new fittings are added. In particular, the volume of air able to flow may be reduced due to the increased loss of pressure caused by the filter. It must be ensured that

after adding fittings, sufficient incoming air is supplied to guarantee the air in the room is healthy to breathe. If it is not possible to retrofit a system for technical or technological reasons, alternative protective measures must be taken in the scope of a risk assessment.

NB:
Please refer to the Federal Government's recommendation on "Airing and ventilation for Infection Control" [12], the BAuA's advice and measures for airing and ventilation for Infection Control [13] and FBVW-502 "SARS-CoV-2: Recommendations for airing and ventilation at indoor workstations" issued by the German Statutory Accident Insurance (DGUV) Indoor Climate Unit [14].

(8) Air conditioning systems should not be switched off during operating or working hours, as this may lead to an increase in the concentration of aerosols contaminated with viruses in room air and in turn to an increased risk of infection. If air conditioning units are not operated continuously, their operating times must be extended before and after rooms are used (e.g. by two hours for offices). Air conditioning systems in sanitary facilities should be operated continuously during workplace operating hours.

(9) When using secondary air units which only recirculate the air in the room and do not feed any fresh air from outside into the rooms to lower the concentration of aerosols, it needs to be ensured that the air is sufficiently replaced with fresh air. This concerns devices such as fans (e.g. standing floor fans), personal cooling systems (e.g. mobile air conditioners and split air conditioning systems) or heating devices (e.g. fan heaters). As the way these devices work means they may rechannel droplets or aerosols contaminated with viruses to other persons, prior to their use in rooms or spaces occupied by multiple persons, a risk assessment needs to be conducted, taking into account the specific parameters, e.g. the room or space's geometrics, the workplace layout, the location of the device or devices and how the room air flows. Further requirements are set out in ASR A3.6 "Airing and ventilation" (e.g. avoidance of drafts), ASR A3.7 "Noise" (e.g. avoidance of background noise) and ASR A3.5 "room temperature" (e.g. avoidance of overheated rooms in summer).

(10) Secondary air units with suitable fittings to lower the concentration of aerosols containing viruses (e.g. air purifiers) are also only permitted to be used in addition to the airing and ventilation measures stipulated in this regulation in order to lower the risk of infection through viruses or aerosols containing viruses in the room air. It must be ensured that their performance metrics and the specific parameters are factored in and that they are properly installed, operated and maintained (cleaning, filter changes etc.). Devices of this kind must be equipped with filters and must not release any hazardous substances or reaction products. Further requirements for the use of air purifiers are set out in ASR A3.6 "Airing and ventilation" (e.g. avoidance of drafts), ASR A3.7 "Noise" (e.g. avoidance of background noise) and ASR A3.5 "room temperature"" (e.g. avoidance of overheated rooms in summer).

NB:

Further information is available in

1. *"German Statutory Accident Insurance (DGUV) expert paper on mobile room air purifiers to protect against SARS-CoV-2" (status: 27.10.2020) [15]*
2. *"German Statutory Accident Insurance (DGUV) information on the supplementary use of air purifiers for infection control during the SARS-CoV-2 epidemic" (04.03.2021) [16]*
3. *baua: Focus "Extended infection protection through the use of mobile indoor air purification devices?" (March 2021) [17]*

4. Opinion of *the Indoor* Air Hygiene Commission at the Federal Environment Agency: "Use of mobile air purifiers to support airing and ventilation in schools during the SARS-CoV-2 pandemic" (16.11.2020) [18]

5. BMAS/BAuA brochure: *"*Mobile air purifiers – Guide to their Selection and Operation*"* (March 2021) *[*18a*]*

4.2.4 Working from home

(1) Working from home as a form of mobile work is a way to reduce the number of employees present at the workplace at the same time and to support compliance with distancing rules. This is particularly true if office space would otherwise have to be used by multiple employees not observing the distancing rule.

(2) The ArbSchG and the Working Hours Act (*Arbeitszeitgesetz*) also apply to working from home. Arrangements regarding working hours and availability should be defined. Employees must be briefed regarding the working hours to be observed, breaks, the necessary documentation thereof, ergonomic workplace design and the use of work equipment, e.g. correct position of the computer screen, separate keyboard and mouse if possible, correct and alternating sitting posture and movement breaks.

(3) The employer must organise work in such a way to ensure that employees who do not currently have access to the appropriate technical facilities for working from home are able to carry out their work and have sufficient access to work communications and information, taking into account point 4.2.12.

4.2.5 Work trips and meetings

(1) The number of employees exposed to an additional risk of infection through work trips or meetings (e.g. in regions with high infection rates) must be confined to what is necessary to perform their work. Factoring in the epidemic situation on the ground, it must be examined to what extent work trips or meetings can be replaced or reduced using electronic means of communication.

(2) The minimum distance must also be respected when vehicles are shared on work trips. The number of persons in vehicles must be limited accordingly. If the distancing rule cannot be implemented, partitions must be installed or personal protection measures (MNP at least) implemented. If this is not possible for the driver due to legal requirements, for example in the area of traffic law, protective respiratory masks without exhalation valves must be worn by passengers not complying with the distancing rule while travelling.

(3) If hand hygiene using water and soap is not ensured during the work trip, alternative measures must be provided for, such as suitable hand disinfectants.

(4) In the case of meetings, compliance with the distancing rule must be ensured in the meeting room. This can be achieved, for example, by reducing the occupancy rate. On airing and ventilation, see point 4.2.3(4) and (5).

4.2.6 Ensuring sufficiently safe distances

(1) The use of circulation routes should be adapted in such a way that the distancing rule between employees and between employees and other persons can be observed, e.g. by

defining and marking additional circulation routes such as one-way routes or setting up special pathways (in accordance with the general requirements of ASR A1.8 "Circulation Routes"), if frequency of use and density of persons indicate that regular encounters can be expected on circulation routes. As an alternative, to provide protection against droplet infections MNP must be worn as a minimum when using circulation routes, as far as brief contacts as defined under point 2.8 are not given. In addition to this, if circulation routes are highly frequented, the need for increased airing or ventilation (see point 4.2.3) should be examined to avoid high concentrations of aerosols.

(2) At waiting and standing areas (e.g. central printing and copying rooms) and in the event of unavoidable crowds of employees and other persons (e.g. customers), the distancing rule must be observed. Adequate ventilation must be provided in these areas.

(3) Markings must be made to aid compliance with the distancing rule. These can be applied, for example, as floor markings or using barrier tape.

(4) Given their limited airing and ventilation possibilities, the use of lifts is to be restricted in terms of the number of persons and for compliance with the distancing rule. If this is not possible, MNP must be worn as a minimum.

4.2.7 Work equipment/tools

(1) Generally, work must be organised to ensure that work equipment is used by only one person if possible, e.g. by providing additional work equipment, so as to reduce the risk of smear infections.

(2) If personal use of work equipment is not possible, it must be cleaned with commercially available (household) cleaning agents before being passed on. In particular, surfaces that have come into contact with employees, for example through droplet emissions from speaking, must be included in cleaning. Such surfaces include e.g. tabletops, IT devices, telephone receivers, steering wheels, gear levers and tools. Control panels of work equipment that has to be used by different employees must be cleaned regularly. Preventive surface disinfection is not considered necessary.

4.2.8 Organisation of working time and breaks

(1) In light of the additional strain caused by the lack of infrastructure to support the home sphere and the general insecurity and associated psychological stress situation faced by many employees, the organisation of working time is of particular importance.

(2) At the beginning and end of working time and when placing breaks, suitable organisational measures must be taken to avoid, as far as possible, several employees coming into close contact (e.g. in break rooms, canteens, changing rooms, washrooms and showers), difficulties in implementing the distancing rule or considerable delays for employees.

(3) When drawing up shift schedules and assigning working groups, where possible the same persons should be assigned to the same shifts or working groups in order to further reduce the number of new personal contacts at work. The number of persons on a shift or in a working group should be reduced to the necessary minimum.

(4) In all measures aiming to lower the concentration of the workforce, any additional risk caused by more difficult working conditions due to the placement of working time (e.g. night

work) or the length of working time (e.g. extension of shifts or reduction of rest periods) must be taken into account in the risk assessment. The effectiveness or the consequences of these measures with regard to the health of employees, the occurrence of accidents or hygiene errors must be reviewed and the risk assessment revised if necessary.

4.2.9 Storage of work clothing and personal protective equipment

(1) The exclusive personal use of PPE and work clothing must be ensured. PPE which can be used by several persons without increasing the risk of infection, e.g. fall protection equipment, can be exempt from this. The employer must allow employees to store work clothing and PPE separately from their everyday clothes if separate storage has been deemed to constitute a necessary protective measure in a risk assessment.

(2) If the personal use of work clothes is not possible, they must be cleaned before being passed on.

4.2.10 Access to workplaces and premises by external persons

(1) The following measures must be taken to reduce the risk of infection when external persons enter the workplace:

1. Use of electronic media to contact each other wherever possible to complete the work task,
2. Use of partitions if the distancing rule cannot be observed between people (for example transparent partitions if dealing with members of the public),
3. Limiting the number of external persons present at the same time so that the distancing rule can be observed between people (including the distance to employees),
4. Use of MNP if the distancing rule cannot be observed and there is no effective, uninterrupted partitioning of persons.

(2) Save for only brief contact, external persons must be informed on site by the employer in a suitable manner about special protective measures at the workplace. This must include local conditions as well as possibilities to use sanitary facilities and for hand hygiene for external persons, where appropriate.

4.2.11 Instructions for action to be taken in the event of suspected cases

(5) Persons with symptoms of respiratory disease suspected of SARS-CoV-2 infection must stay away from the workplace. If there is a suspicion of SARS-CoV-2 infection, which may arise in particular in the case of fever, coughing and difficulty breathing, the employer must ask the persons concerned to leave the workplace immediately and seek medical treatment, if necessary.

4.2.12 Consideration of psychological stress

(1) In order to protect employees from infection with SARS-CoV-2 to the greatest extent possible, new and redesigned workstations and processes are necessary at many workplaces. In some cases, this involves far-reaching changes in the organisation of work, design and structuring of workstations and working times and the way in which communication and cooperation take place at work, which in turn can lead to psychological stress.

(2) Other aspects of work having an impact on the psychological strain on employees that need to be taken into account include possible conflicts with customers, high workloads over the long term in system-relevant sectors and the effects of restrictions on contact such as social isolation when working from home.

(3) These additional psychological strains need to be taken into account when assessing the stress situation faced by employees and, based on this, appropriate measures need to be taken [19].

(4) Acute consequences of the increase in psychological stress factors can include unsafe behaviour, an increasing risk of accidents and an increasing health risk.

(5) Managers in particular must be made aware of the need for continuous monitoring of the effects of work processes on health and safety at work. If necessary, occupational health and safety experts, such as occupational health and safety specialists and occupational physicians as well as other competent persons are to be consulted.

4.2.13 Mouth and nose protection, protective respiratory masks and face protectors

(1) If technical and organisational protective measures cannot minimise the risk of infection at work, individual protective measures must be taken. These are to be defined in the scope of a risk assessment and may also include the use of MNP, protective respiratory masks, and where appropriate additional face protectors. The respective product-specific instructions for correctly putting on, wearing, taking off and on the maximum frequency of use and proper disposal of these are to be adhered to and the persons concerned instructed on this.

NB:
Mouth and nose coverings, clear face masks and face shields are no substitute for mouth and nose protection or protective respiratory masks.

(2) In the case of work where the persons involved are not able to wear MNP, equivalent alternative measures must be devised and implemented as part of the risk assessment. For this purpose, the sector-specific instructions issued by the statutory occupational accident insurance schemes are to be used.

(3) If regular use of protective respiratory masks is unavoidable as a workplace infection control measure, the employer must ascertain whether the wearing of masks entails risks. Here, in addition to the greater strain specifically from wearing the mask (e.g. greater breathing resistance due to the filter resistance of filter materials or thermal strain due to the greater thermal insulation of the masks) the employer must take into account the following conditions of use in particular:

1. The type of work to be performed in terms of the length of work, physical posture, and intensity of work (low, medium or high physical strain),
2. The surrounding conditions (in particular, the room temperature, heat, cold, high or low humidity, pollution/dirt),
3. The duration of the performance of work during a work shift and the possibility to limit this time,
4. Additional strains from wearing other personal protective equipment,
5. The possibility in terms of the organisation of the work flow to briefly interrupt the requirement to wear a mask or to perform other work that does not require the employee to wear a mask,

6. Pre-existing health conditions (for instance respiratory illnesses) or individual factors (e.g. pregnancy).

When identifying and assessing potential risks to employees from wearing a mask as well as when assessing time limits for wearing a mask, the individual disposition of the employees may play a role. Please refer to the comments on preventive occupational healthcare (point 5.2).

This must then lead to the definition and practical implementation of rules on maximum wearing times which reduce the health strain from wearing protective respiratory masks to an acceptable level. To this end, the work to be performed is to be organised so as to be as varied as possible (e.g. with different levels of strain or risk of infection) and with the possibility of interrupting the time spent wearing a mask by performing other work or regular breaks from wearing a mask.

NB:

1. *Information on time limits for the wearing of masks is available in the AfAMed opinion on the use of FFP2 masks of 24.03.2021 [20].*
2. *MNP can also increase breathing resistance or thermal strain depending on the work in question.*

(4) To ensure their continued effectiveness, MNP and protective respiratory masks should be changed at the latest once they are wet through.

(5) The purpose of a face protector is to protect the wearer against external hazards (self-protection). Proof of protection for others (external protection) is not part of the certification procedure. There is no filtering effect. However, face protectors can be used as PPE for spray protection in accordance with regulations, especially in combination with protective respiratory masks (at least FFP2 or comparable) for aerosol-producing activities, thus supplementing the personal protection of the wearer.

4.2.14 Instruction and pro-active communication

(1) Occupational health and safety instruction under Section 12 ArbSchG and specific occupational health and safety regulations must also be carried out during an epidemic. Corresponding general and special requirements applying to instruction continue to apply as before (e.g. with regard to documentation). In the epidemic situation, instruction can be performed using electronic means of communication. It must be ensured that the instructor tests the comprehension of employees and that questions can be asked at any time.

(2) If the updated risk assessment shows that there is a risk of infection at the workplace due to the epidemic situation and that additional measures to protect against infection need to be implemented, employees must be instructed in this respect before starting work and at regular intervals thereafter, as well as in the event of significant changes.

(3) When preparing instruction, the employer can seek advice from the occupational health and safety specialist or the occupational physician. Such advice is particularly necessary if, due to the risk of SARS-CoV-2 infection, special precautions for particularly vulnerable employees may be necessary (see point 5.4). In order to counteract uncertainty and fears among employees due to the large amount of partly contradictory information relating to the risk of SARS-CoV-2, pro-active communication on possible health risks and protective measures taken is required as early as possible.

(4) To ensure protection against work-related risks from SARS-CoV-2, it is important for all persons employed at the place of work to be constantly instructed on transmission risks and possibilities and to participate in the implementation of the measures. An enterprise using temporary workers is directly responsible for their instruction. The relevant contents of the instruction for employees working within the scope of contracts for specific services and work must be agreed by the employer with the employers at the external companies, and implementation of the instruction by the external company must be ensured.

(5) Protective measures must be explained and made comprehensible by means of information (e.g. signs, notices, floor markings). Instruction must be provided in an understandable form and language.

(6) In the case of work subject to the Biological Agents Ordinance (BioStoffV), general occupational health advice must also be provided as part of the instruction. The physician responsible for preventive occupational healthcare (as a rule the occupational physician) is to be involved.

(7) Instruction includes information on the current state of knowledge, the risk of infection and the risk of new illness upon the return of recovered workers who have previously taken ill with COVID-19 (see also point 5.5(5)).

5 Preventive occupational healthcare

5.1 General preliminary remarks

During the epidemic, requirements applying to population-related infection control overlap with occupational health and safety measures at places of work. Occupational physicians advise employers on the implementation of their obligations in the context of occupational safety and health, and support employers in devising appropriate operational instructions for action, including ways to access tests for SARS-CoV-2.

5.2 Individual preventive occupational healthcare

5.2.1 General information on individual preventive occupational healthcare

(1) In the epidemic situation, the requirements of the Ordinance on Preventive Occupational Healthcare (ArbMedVV) continue to apply to personal information and advice for employees on individual work-related health risks. When using PPE (e.g. protective respiratory masks) in particular, tailoring this to the individual is important. The topic should be part of individual preventive occupational healthcare.

(2) In addition to the existing tasks of occupational physicians, including the provision of preventive services, elective healthcare plays an important role. This must be made possible for all work activities, unless, based on the assessment of working conditions and the protective measures taken, no damage to health is to be expected. The following can be addressed in this context, for example: risks of infection, pre-existing conditions, individual dispositions towards using respiratory protection and where applicable how long this is worn for, as well as anxiety and psychological stress.

(3) The periods laid down in Occupational Healthcare Regulation (AMR) 2.1 "Time periods for initiating/offering preventive occupational healthcare" continue to apply. Preventive healthcare appointments that are postponed for personal or organisational reasons during a SARS-CoV-2 epidemic must be caught up promptly and the previous intervals defined for them

returned to. If the risk assessment results in multiple preventive measures for employees, the preventive occupational healthcare should be provided during one appointment.

(4) Individual preventive occupational healthcare can be performed as a telephone/telemedical interview and consultation on medical history. In order to relieve the occupational physician and in turn avoid possible chains of infection, it is recommended that other medical consultations which are not required by law be carried out by telephone/telemedical means, if possible or postponed.

(5) The employer is obligated to provide the physician responsible for preventive occupational healthcare with the necessary information about workplace conditions. In the event of an epidemic, this also includes the epidemic plan for the particular workplace in question. The physician must take into account all working conditions and work-related risks in the work-related anamnesis.

(6) The occupational physician must evaluate the individual preventive occupational healthcare at suitable intervals in order to identify particular risks and, if necessary, recommend protective measures.

(7) The general requirements laid down in point 4 of AMR 3.2 "Preventive occupational healthcare" are to be taken into account.

5.2.2 Individual preventive occupational healthcare in connection with work involving a risk of infection by SARS-CoV-2

(1) Individual preventive occupational healthcare must be offered for specific work with SARS-CoV-2 in accordance with the Biological Agents Ordinance (BioStoffV). In the case of non-specific work, this applies if the work is assigned protection level 3. In the case of work at protection level 2, the risk assessment must review whether there is a risk of infection despite the protective measures taken; if there is a risk of infection, preventive occupational healthcare services are to be offered. Preventive consultations and measures apply above all to employees having contact with patients in the health service and in care facilities.

(2) Work in which the risk of infection arises solely from work-based contact with other employees or customers is not deemed to constitute work which comes under the scope of BioStoffV. It therefore does not constitute grounds for compulsory or optional preventive services under Annex Part 2 ArbMedVV.

(3) Elective healthcare is to be made possible (see point 5.2.1(2)).

5.2.3 Individual preventive occupational healthcare for work requiring the wearing of respirators

If the risk of infection makes it necessary to wear group 1 respirators (e.g. protective respiratory masks) (Annex Part 4(2)(2) ArbMedVV; AMR 14.2 "Classification of respirators into groups"), preventive occupational healthcare is to be offered if this is worn for more than 30 minutes per day. Preventive occupational healthcare must be provided in the case of work requiring the wearing of group 2 or 3 respirators. The risk of infection by SARS-CoV-2 in connection with work that does not come under the scope of BioStoffV does not normally require group 2 or 3 respirators to be worn.

5.2.4 Individual preventive occupational healthcare as a result of mobile working due to the epidemic

(1) Mobile working in the context of the epidemic often takes place under difficult conditions (e.g. reduced social contacts, juggling family tasks at the same time, etc.). Psychosocial stress caused by working from home can constitute a work-related health risk and therefore a reason to provide elective healthcare.

(2) If work is carried out on screens, employers must offer optional healthcare services (Annex Part 4(2)(1) ArbMedVV).

5.3 Evaluation of SARS-CoV-2 infections among employees

Occupational physicians evaluate SARS-CoV-2 infections among employees that have come to their attention with the aim of identifying areas of work which could be associated with a greater risk in order to subsequently define recommendations for measures where appropriate.

5.4 Dealing with particularly vulnerable employees

(1) The procedure for particularly vulnerable employees is based on the following:

1. Review and update the risk assessment, taking into account specific risks for particularly vulnerable groups of employees (following the guidance of the Robert Koch Institute) and initiation of appropriate measures (see point 3(6)),
2. Implement the TOP principle,
3. Priority for situational prevention over behavioural prevention,
4. Optimised occupational health and safety so the employee can continue to work,
5. Inclusion of individual protection needs within the framework of individual preventive occupational healthcare [21].

(2) The individual measures prepared (point 3(6)) are to be activated when individual risk characteristics that trigger these come to light, for example presentation of a medical certificate. In unclear cases, a consultation with the occupational physician should be offered.

(3) Within the scope of individual preventive occupational healthcare, employees can obtain occupational medical advice regarding their individual risks. If individual protective measures are required, the physician will notify the employer without mentioning diagnoses or findings. If the recommendation is a change in the work performed, such notification requires the consent of the employee.

(4) Even in the case of work with a very high risk of exposure, there is no justification for the employer to collect data on individual risk characteristics from its employees for occupational health and safety reasons, and there is no obligation on the part of employees to disclose medical risks in the context of occupational health and safety.

5.5 Return to work after a SARS-CoV-2 infection or COVID-19 illness

(1) Employees returning to work after suffering from COVID-19 need special support in coping with work-related physical and psychological stress due to potentially severe repercussions of the illness.

(2) Returning staff must receive information on the protective measures that have been taken at the place of work in response to the SARS-CoV-2 epidemic before resuming their work.

(3) In the case of a period of work incapacity lasting more than six weeks in the last 12 months, the employer is also obligated to offer these employees an occupational integration management service in accordance with Section 167(2) German Social Code IX (SGB IX).

(4) As a general rule, employees do not have to disclose diagnoses or symptoms of illness to the employer in the event of illness. Any information required for the employer will be provided by the public health department as part of the quarantine order. If the employer becomes aware of an employee being infected, the employee's identity must be protected to the greatest extent possible to prevent stigmatisation of those affected.

(5) If specific cases of infection have become known, individual employees may be unsure as to how to interact with returning employees and may be afraid of becoming infected at work. Information on the current state of knowledge, in particular on the risk of infection or the risk of a new illness, can help to reduce fears. The persons to contact in case of questions or concerns of employees regarding their health at the workplace are in particular occupational physicians, occupational health and safety specialists or, if necessary, an employee counselling service.

Annex 1: Protective measures for special workplaces, workstations and special work facilities

1 Construction sites

(1) At every construction site, there must be facilities for hand hygiene, and the requirements of ASR A4.1 must be implemented at all times. Hand-washing facilities or washing facilities and toilets must be available near workstations. Washing facilities and hand-washing facilities are to be equipped with running water, liquid soap and disposable towels and a closed water drainage system (in drains or tanks) in accordance with point 3.11 or point 5.4(2) ASR A4.1 to enable workers to clean themselves in accordance with hygienic requirements. If supplying water from the drinking water network is not possible, water of drinking water quality must be provided in suitable containers (e.g. canisters, tanks). If closed water drainage systems are not possible, waste water must be disposed of in an alternative way that is hygienic and environmentally sound. In addition, suitable hand disinfectants are to be provided, for example to immediately ensure the requisite hand hygiene in the event of limited availability of washing facilities or hand-washing facilities.

(2) Due to the current infection situation, portable, stand-alone toilet cubicles with no external connections must be equipped with at least one hand-washing facility with running water, liquid soap and disposable towels and, if necessary, with disinfectants. If this is not possible, a hand-washing facility in accordance with (1) must be provided in the immediate vicinity of the toilets.

(3) At construction sites, toilet rooms and washrooms must be provided in accordance with points 8.2 to 8.4 ASR A4.1, for example in containers. If no washrooms are provided at construction sites, washing facilities are to be provided in accordance with point 6.1(2) ASR A4.1. If facilities are used outside the premises of a construction site in accordance with point 8.2(5) ASR A4.1, it is to be ensured and demonstrated (e.g. by means of usage agreements) that these are available during working hours, are equipped in accordance with (2) and are cleaned in compliance with hygienic requirements.

(4) It must be ensured that the filling and emptying schedule for the tanks used is adjusted and aligned with the increased water consumption.

(5) Within the scope of application of the Construction Site Ordinance (BaustellV), sanitary rooms and sanitary facilities should be coordinated at construction sites whenever employees of several employers work together, if necessary as jointly used facilities, in accordance with the rules on occupational health and safety at construction sites (RAB) "Suitable Coordinator" (RAB 30) and the "Safety and Health Protection Plan - SiGePlan" (RAB 31).

(6) Sanitary rooms and facilities are to be cleaned in compliance with hygienic requirements; at constructions sites at least daily in derogation from point 8.1(2) ASR A4.1, if necessary, several times daily.

(7) With regard to coordination pursuant to Section 3 BaustellV, infection risks from SARS-CoV-2 are to be considered cross-trade risks under point 3.2 RAB 31 or cross-enterprise risks. Additional coordination obligations for employers result from Section 8 ArbSchG and point 6 of the "Principles of Prevention" accident-prevention regulation (German Statutory Accident Insurance (DGUV) Rule 1).

2 Agriculture, forestry

In addition to the scope of application of Section 1(2) ArbStättV, hand hygiene facilities must also be available outside the premises of a workplace. If the brief nature of the work does not warrant making hand-washing facilities or washing facilities available, employees must be provided with a suitable means of hand disinfection to ensure the requisite hand hygiene. For work involving biological agents, the provisions of TRBA 230 "Protective Measures for Activities Involving Biological Agents in Agriculture, Forestry and Comparable Activities" apply.

3 Field and delivery services, internal transportation and travel, public transport

(1) Employees working in the field and delivery service as well as in public transport must be provided with suitable means of hand disinfection due to the limited availability of hand-washing facilities or washing facilities for them. Furthermore, company vehicles must be additionally equipped with hand hygiene and disinfection utensils as well as with paper towels and waste bags that can be sealed. Employees must be given the opportunity to use sanitary facilities. This is to be taken into account when planning tours.

(2) If portable, stand-alone toilet cubicles are made available for employees, for example in the area of local public transport, toilet cubicles without any hand-washing facilities do not meet hygienic requirements. A hand-washing facility should be integrated into the toilet cubicle. Under point 5.4(2) ASR A4.1, hand-washing facilities (sinks with running water and closed waste-water system) are to be equipped with liquid soap and disposable towels.

(3) Minimum distances must also be observed to the greatest extent possible in the case of work-related (customer) contacts outside the workplace. If the distancing rule cannot be adhered to, MNP must be worn as a minimum. The work procedures for these activities must be reviewed to see whether individual work is possible. This must not result in any additional risks.

(4) As far as possible, customers and contracting parties are to be informed about necessary protective measures in the case of work-related (customer) contacts; if necessary (e.g. if there are persons from the place of work in officially ordered isolation at home or with symptoms of a respiratory disease with suspected SARS-CoV-2 infection that have yet to be clarified), protective measures are to be agreed with customers, contracting parties and, if necessary, other employers involved in the work.

(5) In the case of travel required for work reasons, simultaneous use of vehicles by several employees should be avoided to the greatest extent possible. In addition, the group of persons sharing a vehicle - simultaneously or consecutively - should be restricted as much as possible, for example by assigning a vehicle to a specified group. The interiors of vehicles used for work purposes must be cleaned on a regular basis, especially if several people use the same vehicle, every time the users change.

4 Accommodation

(1) Requirements applying to the establishment and operation of accommodation at workplaces are set out in Annex No. 4.4 ArbStättV; these are spelled out in detail in ASR A4.4 "Accommodation". The setting up and operation of sanitary rooms and sanitary facilities is to take place in accordance with ASR A4.1 in conjunction with point 4.2.2.

(2) The provisions contained in ASR A4.4 and ASR A4.1 are at present insufficient to reflect the state of the art in occupational healthcare and hygiene with regard to the protection of workers from infection with SARS-CoV-2. Additional measures need to be implemented, especially when operating accommodation.

(3) Before starting their work, employees must be divided into fixed working groups having a maximum of four people. Larger groups of up to 15 persons are only possible if the technology used (e.g. sorting facilities, harvesting machines, weighing and packaging machines, formwork and reinforcement work, and tunnel boring machines) demonstrably requires this.

(4) The basic principle of "Living together - Working together" (*Zusammen Wohnen – Zusammen Arbeiten - ZWZA*) applies.

(5) A fixed room/apartment must be assigned at the accommodation for the entire duration of the stay. Different working groups should, if possible, be accommodated in separate facilities or, if this is not possible, at least in separate areas of the facility.

(6) Employees from different working groups living in the same accommodation should be able to keep the minimum distance from each other (see point 4.2.6). In order to ensure this, normal occupancy should be reduced and furniture should be arranged or reduced accordingly.

(7) It can be assumed that hygienic requirements are met if each employee has his or her own bedroom. This means single occupancy of bedrooms must be provided for as a general rule.

(8) If the principle laid down in (4) cannot be implemented, the space required to be made available to each person in the sleeping area under ASR A4.4 is to be doubled from 6 m² to 12 m² when shared rooms are occupied. As a result, the occupancy density otherwise customary under ASR A4.4 is reduced by half. A maximum of four persons may be accommodated in a sleeping area and a maximum of two in a container. Exemptions apply in the case of partners or family members.

(9) Where persons from different teams are accommodated in a shared room, the beds must be arranged in such a way that the distancing rule can be observed. Only one person may occupy a bunk bed. Exemptions apply in the case of partners or close family members.

(10) In order to ensure the safety distance in common areas as well (point 5.4(6) ASR A4.4), the area for free movement may need to be increased.

(11) It is recommended that, if possible, each working group should be provided with the necessary sanitary and social facilities for separate use. If this is not possible, use by different working groups must not be simultaneous. Between uses, the facilities must be cleaned and the rooms adequately aired or ventilated.

(12) The accommodation and its facilities must be cleaned on a daily basis and as needed.

(13) It must be ensured that liquid soap and disposable paper or textile towels are always available in sanitary and kitchen areas.

(14) Suitable disinfectants for hand disinfection (see point 2.9 on this) must be made available in sufficient quantities (at least one dispenser per room, bathroom, toilet, kitchen).

(15) A cleaning schedule must be posted to ensure that regular and thorough cleaning is maintained and checked. This schedule must be signed by the assigned cleaning personnel to confirm each cleaning operation carried out.

(16) Washing machines and dishwashers must be provided to ensure that laundry and dishes are washed at a temperature of at least 60°C.

(17) It must be ensured that work clothes and personal clothing can be cleaned regularly and that rooms for drying laundry are available or tumble dryers are provided.

(18) Spare containers or accommodation for quarantining workers suspected of being or who have become infected with COVID-19 must be provided in sufficient numbers and it must be ensured that these are easily accessible on a stretcher and have separate sanitary areas. Drinking water or non-alcoholic beverages must be provided in this area. The location of these facilities must be made known to employees.

(19) As a precautionary measure, plans (e.g. with reference to epidemic plans) must be drawn up for the case of infections in the accommodation. In particular, preparations must be made for the separate accommodation of sick persons (e.g. if cold symptoms appear) (see point 4.2.11). In the provisions relating to the use of the accommodation to be drawn up in accordance with point 4(6) ASR A4.4 (e.g. cleaning, behaviour in case of fire, alarm plan), additional provisions on how to behave and proceed in the event of illness and the outbreak of an epidemic situation must be included (in particular distancing rules, cough/sneezing etiquette and hand hygiene, see point 4.1) and employees must be instructed in a manner comprehensible to them.

Annex 2: Protective respiratory masks approved for use

The following types of masks can be selected and used:

Mask type	Standard (part of label)	Other ID characteristics	Target countries
FFP2 or comparable[1]	Regulation (EU) 2016/425 DIN EN 149:2001+A1:2009 or comparable	CE label with subsequent ID of the notified body e.g. protection class FFP2 Length of use Manufacturer information EU declaration of conformity Instructions and information	EU
Full-face masks, powered masks, hoods or helmets with replaceable particle filter [2]	Regulation (EU) 2016/425 Full-face masks: EN 12942 or comparable; Powered hoods: EN 12941 or comparable EN 136 or comparable particle filter: EN 143 or comparable	CE label with subsequent ID of the notified body Manufacturer information EU declaration of conformity Instructions and information	EU
N95[1]	NIOSH-42CFR84	Model number Batch number Mask type Manufacturer information TC approval number	USA and Canada
P2[1]	AS/NZS 1716-2012	ID number or logo of the conformity assessment bodies	Australia and New Zealand
DS2[1]	JMHLW Notification 214, 2018	https://www.baua.de/DE/Themen/Arbeitsgestaltung-im-Betrieb/Coronavirus/pdf/Kennzeichnung-Masken.pdf?__blob=publicationFile&v=10 https://www.jaish.gr.jp/horei/hor1-y/hor1-y-13-11-3_1.pdf https://www.jaish.gr.jp/horei/hor1-y/hor1-y-13-11-3_2.pdf	Japan
CPP[1]	Testing principles for corona SARS-CoV-2 pandemic protective respiratory masks (CPP)	Certificate from the market surveillance authority as per Section 9(3) MedBVSV issued prior to 1.10.2020.	Germany

NB:

The contents of the above table tallies with the Annex to the SARS-CoV-2 occupational health and safety ordinance of 14.04.2021.

[1] Without exhalation valve; masks with an exhalation valve are only allowed to be worn if all contact persons are also wearing a protective respiratory mask. Corona SARS-CoV-2 pandemic protective respiratory masks (CPP) may be e.g. certified KN95-masks tested in accordance with the testing principles of the Central Authority of the *Länder* for Safety (ZLS).
[2] These systems provide no protection to persons other than the wearer. They are therefore only allowed to be used if all contact persons are wearing a protective respiratory mask.

References

1 Referenced in the text

[1] SARS-CoV-2 occupational health and safety standard of the German Federal Ministry of Labour and Social Affairs (BMAS)

[2] Committee on Biological Agents (ABAS) recommendation on organisational measures for occupational health and safety in connection with the outbreak of SARS-CoV-2 and on the resource-saving use of protective equipment:
https://www.baua.de/DE/Themen/Arbeitsgestaltung-im-Betrieb/Coronavirus/pdf/Empfehlungen-organisatorische-Massnahmen.pdf?__blob=publicationFile

[3] ABAS decision on the provisional classification of the virus SARS-CoV-2 in risk group 3 and recommendations on non-specific work (laboratory diagnostics) and specific work with SARS-CoV-2:
https://www.baua.de/DE/Aufgaben/Geschaeftsfuehrung-von-Ausschuessen/ABAS/pdf/SARS-CoV-2.pdf

[4] Opinion of the Working Group on Virucidal Activity at the Robert Koch Institute (RKI), of the Expert Committee on Virus Disinfection of the German Association on Virus Disease Control (DVV) and the Society for Virology (GfV) and the Disinfectants Commission of the Association for Applied Hygiene (VAH): "Testing and declaration of effectiveness of disinfectants against viruses for use in human medicine", Federal Health Gazette 201760:353-363; DOI 10.1007/s00103-016-2509-2, *https://edoc.rki.de/handle/176904/183*

[5] German Statutory Accident Insurance (DGUV) overview:
https://www.dguv.de/de/praevention/corona/informationen-fuer-beschaeftigte/index.jsp - with table for download

[6] Current information on protection of working mothers and SARS-CoV-2:
https://www.ausschuss-fuer-mutterschutz.de/informationen-zum-mutterschutz-des-bmfsfj-2
and FAQs on assessments of risks from SARS-CoV-2 from a working mothers protection perspective: *https://www.ausschuss-fuer-mutterschutz.de/arbeitsergebnisse/faq-zu-mutterschutz-und-sars-cov-2/*

[7] Recommendations of the Federal Institute for Occupational Safety and Health (BAuA) on the use of protective masks in connection with SARS-CoV-2:
https://www.baua.de/DE/Themen/Arbeitsgestaltung-im-Betrieb/Coronavirus/pdf/Schutzmasken.pdf

[8] BGN airing and ventilation calculator – calculate the right airing intervals: *https://www.bng.de/lueftungsrechner/*

[9] CO_2 app (calculator and timer):
https://www.dguv.de/ifa/praxishilfen/innenraumarbeitsplaetze/raumluftqualitaet/co2-app/index.jsp

[10] FBMH-114 Current Affairs Department of the German Statutory Accident Insurance (DGUV) Surfaces Technology and Welding Unit "How to assess airing and ventilation on the basis of the CO2 concentration"
https://publikationen.dguv.de/widgets/pdf/download/article/3985

[11] DIN EN 1822 Part 1: High efficiency air filters (EPA, HEPA and ULPA) - Part 1: Classification, performance testing, marking; German version EN 1822-1:2019

[12] Recommendation of the Federal Government "Airing and ventilation for infection control": *https://www.bmas.de/SharedDocs/Downloads/DE/Thema-Arbeitsschutz/infektionsschutzgerechtes-lueften.pdf*

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2 Additional literature

- VDSI-SARS-CoV-2 (Coronavirus) - Effects on day-to-day work routines: *https://vdsi.de/corona* (VDSI notes on the implementation of the BMAS SARS-CoV-2

occupational health and safety standard: *https://vdsi.de/start/corona/vdsi-hinweise-zur-umsetzung-des-bmas-sars-cov-2-arbeitsschutzstandards/)*

- INQA - Tips on organisation and communication when working from home: *https://inqa.de/DE/wissen/schwerpunkt-covid/home-office/organisation-kommunikation-home-office.html*
- Certo - Magazine for health and safety of the Verwaltungsberufsgenossenschaft (VBG): How to Homeoffice: *https://www.certo-portal.de/arbeit-gestalten/artikel/zuhause-arbeiten-how-to-homeoffice/*
- Joint German Health and Safety Initiative (GDA) psychological stress portal: *https://www.gda-portal.de/DE/Betriebe/Psychische-Belastungen/Psychische-Belastungen_node.html*

3 State occupational health and safety provisions, and rules and regulations of the occupational accident insurance schemes

- TRBA 500 Basic measures to be taken for activities involving biological agents
- ASR A1.2 Room dimensions and movement areas
- ASR A1.8 Circulation routes
- ASR A3.6 Airing and ventilation
- ASR A4.1 Sanitary rooms
- ASR A4.2 Break rooms and stand-by duty rooms
- ASR A4.4 Accommodation
- ASR V3 Risk assessment
- TRBS 1111 Risk assessment
- RAB 30 Suitable coordinator (further specification of Section 3 BaustellV)
- RAB 31 Health and safety plan - SiGePlan
- AMR 2.1 Periods for initiating/providing occupational health care
- AMR 3.2 Preventive occupational healthcare
- AMR 14.2 Classification of respirators into groups
- DGUV (German Statutory Accident Insurance) Rule 1 "Principles of Prevention"
- DGUV (German Statutory Accident Insurance) Rule 112-190 "Use of respiratory protective equipment"

Reference sites: *www.baua.de/trba, www.baua.de/asr, www.baua.de/trbs, www.baua.de/rab, www.baua.de/amr, https://www.dguv.de/de/praevention/vorschriften_regeln/index.jsp*