The National Profile of the Occupational Safety and Health System in Germany

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Abstract: The German Occupational Safety and Health (OSH) System dates back to its beginnings to the times of the 19th century industrial revolution and the social reformations of the Prussian chancellor Bismarck. It has been adapted to economic and political changes several times, lately in the 1990ies to the European Council regulation. German OSH matters are dealt with under the authority of the Ministry of Labor and Social Affairs. Most prominent peculiarity is the so-called “Dual System” of Federal OSH legislation and statutory accident insurance regulation as well as of enterprise inspection by the federal state inspection authorities and the technical inspection services of the statutory accident insurances. Accident insurance is financed exclusively by the employers. Current challenges are the increase of musculoskeletal disorders and stress due to working conditions and also the general labor market situation, all in combination with a steadily aging population.

Keywords: occupational safety and health, legislation, social system, accident insurance, statistics, occupational diseases, musculoskeletal disorders, stress

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I  Indicators of occupational safety and health

A  Basic country information

1  General Information

Germany is a densely populated and highly industrialized country in the heart of Europe with more than 82 million inhabitants living in an area of 357,021 km², half of them in urban areas, with an average population density of 230 persons per km², which is about twice the European average. The population contributes 16.5 % to the EU 25 population. Nearly 20 % of the population has foreign roots of origin, including the by far largest ethnic minority of an estimated more than 4 million Turks (from Turkey and Balkan countries) many of whom are by now nationalized. The live expectancy at birth is 77.2 years for newborn boys and 82.4 year for girls. The average number of children per woman - at 1.37 in 2007 and continuously decreasing since the 1970s¹ - is not enough to ensure a stable population size. The only mildly negative population growth of currently - 0.06 is owed to considerable immigration with a current net migration rate of 0.6 percent. The present population development is not sufficient to reverse the trend to a more balanced situation between old and young, working population and retirees as would be desirable for workforce composition and pension fund stability.

Germany has a strong federal tradition and has in its long history rarely been united. The modern nation state has been created by Chancellor Bismarck in the 19th century under the exclusion of Austria which till then had formed part of the Empire. Also developed under the aegis of Bismarck were most elements of the current German Social System including the first legislative measures of occupational safety and health (1839), in order to contain the negative effects of the Industrial Revolution and to ensure a healthy working population and social stability and peace. Detailed statistical information on Germany is available from the Federal Statistical Office².
2 Economy

Germany has a social-market economy that combines free enterprise and competition with a high level of social services. The economy is the world’s third largest, when measured at market exchange rates, and the fifth largest, when using purchasing power parity. The performance of the German economy has improved in recent years, with indisputable strengths in exports and manufacturing, accompanied by improvements in the labor market and fiscal balance. Exports are responsible for...
one-third of total economic output, and at the prevailing dollar–euro exchange rate, no country exports more merchandise. Complementing a strong export sector, previously weak domestic demand has rebounded in recent years, contributing to 3 percent gross domestic product (GDP) growth in 2006. Relatively rapid economic growth combined with fiscal discipline enabled Germany to comply in 2006, for the first time in five years, with the European Union’s Stability and Growth Pact requirement that a member nation’s budget deficit not exceed 3 percent of GDP. In fact, Germany’s budget deficit amounted to only 1.7 percent of GDP in 2006. In 2007 Germany even achieved a slight budget surplus. The current global economic downturn, however, will most likely result in a budget deficit exceeding the 3 percent of GDP.

In March 2008 the number of unemployed in Germany totaled about 3.5 million people or 8.4 percent of the workforce. Unemployment, however, remains in the high teens in much of the East, where 17 years of massive investment from the West have failed to produce prosperity. This enormous inter-German transfer of wealth, which totaled US$1.6 trillion cumulatively from 1991 to 2004, or about US$130 billion per year, has exceeded the growth rate of the states in the West and its projected continuation till 2019 is under discussion.

In 2007 Germany’s gross domestic product (GDP) was about US$2.8 trillion on a purchasing power parity (PPP) basis and nearly US$3.3 trillion at current exchange rates. Per capita GDP was US$34,400 using PPP. In 2007 services constituted 69.5 percent of GDP; industry and construction, 29.6 percent; and agriculture, the remaining 0.9 percent.

Inflation is under control with a rate of 0.3 percent in November 2009.

In 2007 agriculture, forestry, and fishing accounted for only 0.9 percent of Germany’s GDP and employed only about 2 percent of the population. However, agriculture is extremely productive, and Germany is able to cover 80 percent of its nutritional needs with domestic production. In fact, Germany is the third largest agricultural producer in the European Union (EU) after France and Italy. Germany’s principal agricultural products are potatoes, wheat, barley, sugar beets, fruit, and cabbages. Despite Germany’s high level of industrialization, roughly one-third of its territory is covered by forest. The forestry industry provides for only about two-thirds of domestic consumption of wood and wood products, so Germany is a net importer of these items. In 2005 the forestry industry’s production equaled 56.9 million cubic meters of roundwood and 21.1 million cubic meters of sawnwood. As of 2007, an estimated 25 percent of trees in Germany showed serious signs of environmental damage, according to an annual report by the federal government. Germany’s ocean fishing fleet is active in the North Sea, the Baltic Sea, and the Atlantic Ocean between the United Kingdom and Greenland. The fleet, which has diminished in size in recent decades, contends with overfishing, extended exclusive fishing zones claimed by neighboring countries, and quotas imposed by the European Community Common Fisheries Policy. In 2005 the fishing industry’s total catch was 330.4 million tons.

Coal is Germany’s most important energy resource, although government policy is to reduce subsidies for coal extraction. Coal production has declined since 1989 as a result of environmental policy and the closing of inefficient mines in the former East Germany. As of 2004, recoverable coal reserves were estimated at 7.4 billion short tons, the largest amount of any country in the then 15-member European Union (EU). The two main grades of coal in Germany are “hard coal” and lignite, which is also called “brown coal.” In 2005 Germany produced 24.9 million metric tons of hard coal and 177.9 million metric tons of brown coal. Unfavorable geological conditions make the mining of hard coal economically uncompetitive, but a slight increase has occurred in lignite production since 1999. Despite its considerable reserves, environmental restrictions have led Germany to become a net importer of coal. Non-energy-related mining recovers potash for fertilizer and rock salt for edible salt and the chemical industry. As of January 2006, proven oil reserves were 367 million
barrels, a modest amount by international standards but still the fourth largest reserves in the EU. Also as of January 2006, proven natural gas reserves were 9.1 trillion cubic feet, the third largest in the EU. Germany is the EU’s third largest producer of natural gas after the United Kingdom and the Netherlands. Nearly 90 percent of Germany’s natural gas production takes place in the state of Lower Saxony. In 2004 Germany imported 3.0 trillion cubic feet of natural gas, or 83 percent of its requirements. In the same year, the most important source of natural gas imports was Russia, with a 46 percent share, followed by Norway at 33 percent, and the Netherlands at 23 percent. Germany is the world’s third largest consumer of natural gas.

**Industry and construction** accounted for 29.6 percent of gross domestic product in 2007, a comparatively large share even without taking into account related services. The sector employed nearly 26 percent of the workforce. Germany excels in the production of automobiles, machine tools, and chemicals. With the manufacture of 6.2 million motor vehicles in 2007, Germany was the world’s fourth largest producer of automobiles after the United States, Japan, and China. In 2007 Germany enjoyed the second largest world market share in machine tools (18.1 percent). German-based multinationals such as Daimler, BMW, BASF, Bayer, and Siemens are marquee names throughout the world. What is less well known is the vital role of small- to medium-sized manufacturing firms, which specialize in niche products and often are owned by management. These firms employ two-thirds of the German workforce.

In 2004 Germany was the world’s fifth largest consumer of energy; total consumption totaled 14.7 quadrillion British thermal units. The majority of its primary energy, including 90 percent of its crude oil demand, was imported. Also in 2004, Germany was Europe’s largest consumer of electricity; electricity consumption that year totaled 524.6 billion kilowatt-hours. Government policy emphasizes conservation and the development of renewable sources of energy, such as solar, wind, biomass, hydro, and geothermal, and Germany has become a world leader in alternative energy technology. In fact, in 2006 Germany produced an estimated one-third of all solar cells and half of all wind turbines worldwide. In 2006 energy consumption was met by the following sources: oil (35.7 percent), natural gas (22.8 percent), coal (13.0 percent), nuclear (12.6 percent), lignite (10.9 percent), renewable energy (5.3 percent), and others (0.3 percent).

In 2007 services constituted 69.5 percent of gross domestic product (GDP), and the sector employed about 72 percent of the workforce. The subcomponents of services, as a percentage of total economic output, were financial, renting, and business activities (29.5 percent); trade, hotels and restaurants, and transport (18 percent); and other service activities (22 percent).

By tradition, Germany’s financial system is bank-oriented rather than stock market-oriented. Recent stock market volatility has discouraged the development of an equity or shareholder culture, where individuals view stocks and mutual funds as promising alternatives to bank savings accounts or bonds as investments. In fact, as of 2007 only 18 percent of the German population owned stock, down from 21 percent in early 2001, but up from 16.4 percent in mid-2004.

Domestic and international tourism currently accounts for about 3.2 percent of gross domestic product and 2.8 million jobs.

Germany’s foreign economic relations are consistent with the policy of the European Union (EU) to expand trade among the 27 member states and also with the goal of global trade liberalization through the latest Doha Round of the World Trade Organization (WTO). Germany uses its position as the world’s leading merchandise exporter—a fact that partially reflects the strength of the Euro—to compensate for subdued domestic demand. German companies derive one-third of their revenues from foreign trade. Therefore, Germany is committed to reducing trade restrictions, whether involving tariffs or non-tariff barriers, and improving the transparency of foreign markets, including access to public works.

![Foreign trade balance – Germany 2005 - 2009](Source: Federal Statistical Office (Destatis), 2009-11)
projects. In 2007 Germany conducted 65 percent of its trade within the 27-member EU, followed by Asia with a share of 11 percent and “America,” meaning the Western Hemisphere, with a share of 10 percent. France is Germany’s top trade partner for both imports and exports. The current economic crisis has strongly affected Germany’s trade balance.

3 Labor market

The present German economy is characterized by 3.6 million enterprises, the majority of which (approximately 90%) are small and medium sized enterprises (SMEs). Roughly 60% of the German labor force of 40 millions are working in SMEs and approximately 40% in large scale enterprises (2006). The distribution of Germany’s workforce by sector is very similar to the relative output of each sector. In 2006 the workforce was distributed as follows: agriculture, 2.2 percent; industry, 25.5 percent; and services, 72.3 percent. The subcomponents of services are financial, renting, and business activities (30.5%); trade, hotels and restaurants, and transport (18%); and other service activities (21.7%). Nearly half of the German workforce are females.

Unemployment rates have been steadily rising over the last 30 years. In September 2007, the unemployment rate declined to 8.4 percent, a 12-year low, and rest currently at 7.7 percent. However, unemployment remains in the high teens in some states in the East, where high wages are not matched by productivity.

An international comparison is difficult since Germany’s national unemployment rate includes a significant share of part-timers, who work less than 15 hours a week. Everyone working less than 15...
hours a week, who is seeking and available for a job with full social security insurance (normally full-time job or part-time above 15 hours a week), can be registered as unemployed. Around one quarter of Germany’s national unemployment are underemployed part-timers. At the start of 2005, the seasonally adjusted number of registered unemployed persons initially showed another sharp increase, reaching a rate of 12.6%, with more than 5.2 million Germans out of work. The considerable rise in the unemployment figures is largely due to the fact that former recipients of income support who now receive the new class-II unemployment benefit are registered as unemployed. This means that people who used to be numbered among the latent manpower reserve are now shown as registered unemployed persons. In particular, the labor-market statistics now include more unemployed young, older and low-skilled people.

In November 2008, the economy contracted more than expected by economists in the 3rd quarter, confirming entry to its worst technical recession in at least 12 years. The GDP fell 0.5% from the 2nd quarter. The German industrial output dropped to 3.6% in September vis-a-vis August. While it is still difficult to assess more lasting effects of the current global economic crises on employment and on their influence on health and safety at work, it seems certain that the trend of the last decades to temporary work, part-time work, short working hours, temporary lay-offs and unemployment will increase.

Self-employment rates seem recently again to decrease since government start up funding is discontinued.
There is marked difference in the unemployment rates (and hence in state tax income) between the federal states. The difference is balanced by a transfer mechanism between all federal states; the “new” federal states in Eastern Germany receive in addition transfer subsidies till 2020.

Germany has no legal **minimum wage**, except in construction and a few other specific services. However, wages are generally agreed by the social partner organizations at industrial sector, not enterprise level; therefore approximately 70% of employees are covered by collectively agreed minimum wages agreements.
4 Social security and health care

The German social security system is comprehensive consisting of the classical five pillars of health, pension, accident, long-term care and unemployment insurance and covers more than 90 % of the population. In addition, the welfare lifeline offers tax-financed services such as the family services equalization scheme (child benefit, tax concessions) or basic provisions for pensioners and those unable to work. Currently 27.6 percent of GCP are channeled into public welfare spending; in comparison, the USA invests 16.2 percent, while the OECD average is 20.7 percent. Detailed information on the German social security system is available from the common website of the German social insurances.

Germany does not have a national health care system; the system is administered through several autonomous bodies and associations such as the roof organization of the public health insurances (GKV), the association of physicians in contract with the GKV (i.e. all non-private primary and secondary care physicians) the association of hospitals and others. German citizens are automatically and compulsorily insured on entering employment if the regular income before deductions does not exceed €400 per month and remains below a set annual limit. The annual income limit up to which employed people are automatically and compulsorily insured officially ceased to be linked to pension insurance on 1 January 2003 and is now a general annual income limit (in 2010: 49,950 EUR). The contributions are deducted directly from income and wages. Family members and dependants are also covered by the insurance policy. A variety of public and private health insurances are available. Schemes for long-term care usually parallel the health insurance schemes. Recipients of social assistance who lack statutory health insurance receive equal care through funding of the social assistance agencies.

Primary care is provided by general practitioners, although not exclusively. They provide care on a private basis or more often in contract with the GKV. They provide most of the ambulatory care. The GKV negotiates fees and payments with the health care providers. Hospitals operate either in private, public (usually community or county) or charity organization ownership, roughly one third each. University hospitals are always under state authority. Hospital physicians are salaried employees, but extra fees can be charged on a patient fee-for-service basis. Only in cases of pregnancy or emergency do patients have direct access to hospital care; else referral from a local practitioner or specialist is required.

At current (2008), 319,697 physicians are practising in Germany; the ratio physician: population is 1:257 inhabitants. 55.7 % physicians are general practitioners, 45.3 % are specialists. Less than 1 % are fully trained occupational physicians, ca. 3.7 % of the physicians has occupational medicine training. Occupational physicians may practice in private practice; they are, however, not part of the public health care system in contract with the GKV. The situation, however, is different for specialists with
additional training in occupational medicine. Competition between health care physicians and occupational physicians may occasionally create difficulties in information flow and cooperation, even though occupational physicians are not allowed to perform tasks of curative medicine. A close cooperation is necessary, especially in secondary prevention and rehabilitation, and especially also for employees in smaller enterprises.

The health service system operates under the Ministry of Health. Broad access to all health and health sector related information is provided through the health reporting of the federal government that includes all other relevant data sources.

Whereas all other insurances of the social security system are funded jointly by employer and employee, the **occupational accident insurance** is funded solely by the employer. Membership in the statutory accident insurance is obligatory for all enterprises. Employees are immediately covered and eligible for compensation even without a valid work contract.

Differences between accident and health insurances schemes include the following:

- **Sick leave payments due to non-occupational diseases and injuries** have to be paid for 6 weeks by the employer, with the beginning of the 7th week. In general 80% of the salary (there are deviations in some branches, e.g. public services) are paid by the statutory health insurance. After generally 1.5 or 2 years it will be checked, whether a return to work is possible; if not, the deceased will be retired (retirement benefits to be covered by pension insurance scheme).

- **Compensation of sick leave due to occupational diseases and injuries** is covered by the statutory accident (and occupational health) insurance scheme. The full salary (100%) is paid from the first day of sick leave. After generally 1.5 or 2 years it will be checked, whether a return to work is possible; if not, the deceased will be retired (retirement benefits to be covered by statutory accident insurance scheme).

**B Administrative structure and occupational safety and health system**

1 **Structure and background**

Germany is a federal democracy, with rights guaranteed by the Basic Law, or constitution. The federal government shares power with 16 states (Länder). The dual executive consists of a chancellor, who is head of government, and a president, who is head of state. Two federal legislative bodies form the national parliament: the Bundesrat (Federal Council, or upper house), consisting of 69 members appointed by Länder governments in proportion to the size of their population; and the Bundestag (Federal Diet, or lower house), the main legislative body, consisting of 612 popularly elected members. The Bundestag is responsible for passing federal laws, which are then implemented by the government. Germany has an independent judiciary, with most judges appointed for life. The Federal Constitutional Court resolves issues relating to the Basic Law and conflicts between the branches of government. Germany has five types of courts: ordinary courts for criminal and civil matters, labor courts for employment disputes, administrative courts to provide protection against government acts, social courts for social security cases, and fiscal courts for tax-related disputes.

Germany’s constitution, known as the Basic Law (Grundgesetz), was enacted on May 23, 1949. The Basic Law recognizes fundamental human rights, such as the freedoms of speech and the press, the right of equality before the law, the right of asylum, and – basis also for safety and health at work – the right of physical integrity (Basic Law, Art. 2). These basic rights are legally binding and apply equally to the three branches of government: executive, legislative, and judicial. Any individual who believes that his or her rights have been violated may file a complaint with the Federal Constitutional Court. In addition to codifying human rights, the Basic Law stipulates the structure of the German government, including the Bundestag (lower house of parliament), the Bundesrat (upper house of parliament), the president (chief of state), the executive branch and administration, the independent judiciary, the financial system, and the relationship of the states to the federal government. It also specifies the requirements for a declaration of war. The Basic Law requires that Germany work toward a unified Europe under the aegis of the European Union (EU). In May 2005, Germany’s Bundestag and Bundesrat ratified the EU constitution.

Administratively, Germany is divided into 16 federal states (Länder; sing., Land), including five that belonged to the former East Germany until reunification in 1990. The states enjoy limited autonomy,
particularly in the areas education, the environment, implementation of OSH legislation (i.e. labor inspection authorities), police, media, social assistance, and other local issues, within a federal system. Each state has its own elected parliament (Landtag or Bürgerschaft). Depending on size, states are subdivided into up to three levels of local government: districts; Landkreise (sing., Landkreis), or counties; and Gemeinden (sing., Gemeinde), or municipal government authorities.

Germany has a complete national OSH system as required by ILO Conventions 155 and 187. Germany was a member of ILO from 1919-35 and again from 1951 onwards. By now 82 Conventions are ratified, 72 of which are in force. Ratification of the Convention 187 is expected for the near future. EU harmonized legislation is in place, national strategies are developed, implemented and evaluated (through the Joint German OSH Strategy), all required infrastructural elements are present and have actors in sufficient number. OSH Management Systems are in wide-spread use in large and also medium enterprises on a voluntary basis.

Safety and health at work is administered under the Ministries of Labor and Social Affairs at Federal and at State level thus reflecting the federal structure of Germany. This favors the treatment of OSH issues in labor context, but also creates difficulties in bridging health at work and general (non-work-related) health issues which are supervised by the Ministry of Health and regional health offices. Easy interaction between occupational physicians and general practitioners or other medical specialists is equally impaired as is the communication between occupational accident insurance and health insurances, although there are increasing provisions and activities to bridge the systematic gap, e.g. the Initiative Gesundheit und Arbeit (Health and Work Initiative).

The German OSH system reflects the history of more than a century’s growth. A systematic approach to occupational medicine and to workers’ health did only start when severe damage to health and life expectancy of workers was recognized as a consequence of the Industrial Revolution. Therefore in the middle of the 19th century, the first steps were undertaken with the Youth Employment Act (Jugendarbeitsschutzgesetz), soon to be followed by the Working Time Ordinance (Arbeitszeitordnung), statutory accident insurance legislation, the National Insurance Code (Reichsversicherungsordnung), establishment of sick funds and the Industrial Code (Gewerbeordnung). As result of the historical development, today legislation on OSH can be found in both public and private law (e.g. German Civil Code (Bürgerliches Gesetzbuch), Section 618; Sections 823 ff.).

Another result of the historical development is the dual system in German OSH legislation and control. While regulations on OSH are set in the national regulations on OSH, for which the Federal Government with its concurrent legislative power is responsible (Basic Law, Art. 74, No. 12), the statutory accident insurance institutions are commissioned by law (on the basis of the National Insurance Code, Section 708) to adopt accident prevention regulations, developed by expert committees and approved by the Federal Ministry for Labor and Social Affairs.

The implementation and control of compliance with national regulation on OSH are under the individual responsibility of the 16 federal states through their labor inspection authorities (Gewerbeaufsichtsamt or similar). The implementation of accident prevention regulation is duty of the inspection services of the accident insurance institutions. State labor inspection authorities coordinate their independent activities in a common platform, the Länderausschuss für Arbeitsschutz und Sicherheitstechnik (LASI). The individual branch-oriented accident insurance institutions have formed a common umbrella organization, the Deutsche Gesetzliche Unfallversicherung (DGUV; German Social Accident Insurance). An overall coordination of German OSH strategic approaches and activities is achieved through the Joint German OSH System.
**German OSH Strategy** *(Gemeinsame Deutsche Arbeitsschutzstrategie; GDA)* a codified alliance of federal government, regional governments and accident insurance institutions, consulted by representatives of social partners, and with a permanent secretariat in the Federal Institute for OSH *(BAuA)*. The partners meet and decide regularly on national planning, coordination, execution and evaluation of OSH measures *(Nationale Arbeitsschutzkonferenz)* and regularly exchange information with social insurance institutions *(health, pension)*, professional associations, institutes and university departments dealing with OSH or training in OSH and other stakeholders *(Deutsches Arbeitsschutzforum)*.

Core issues of the GDA are: the development of common OSH goals, the agreement on priority fields of action and the cornerstones of an action program as well as its execution along uniform principles; the evaluation of OSH goals, fields of action and action programs; the definition of a coordinated procedure for enterprise OSH council and inspection between state and accident insurance inspection services; the production of an understandable, discernible and coordinated body of regulation and rules.

Agreed **programmatic priorities** for the period till 2012 are:
- Reduction of occupational accidents in frequency and severity;
- Reduction of musculoskeletal workloads and diseases *(MSD)* in frequency and severity;
- Reduction of skin diseases in frequency and severity.

### 2 Government authorities and main stakeholders in OSH

#### 2.1 Federal and state government

- **Bundesministerium für Arbeit und Soziales (BMAS)**
The Federal Ministry of Labor and Social Affairs is the part of the German government responsible for safety and health on the federal level with responsibility for health and safety laws and ordinances. The BMAS conducts the transposition of EU OSH directives into corresponding German laws. The Ministry is supported by advisory committees on occupational health (occupational diseases, hazardous chemical substances, biological agents etc.) where all main stakeholders, social partners and scientists are represented.

[www.bmas.de](http://www.bmas.de) (partially in English); [www.osha.de](http://www.osha.de) (bilingual German - English)

- **Bundesanstalt für Arbeitsschutz und Arbeitsmedizin (BAuA)**
The Federal Institute for Occupational Safety and Health *(BAuA)*, with seat at Dortmund, operates directly under the Federal Ministry for Labor and Social Affairs. The BAuA advises the BMAS in all matters of safety and health and of the humane design of work; performs tasks on direct request; operates, initiates and co-ordinates research and development with the aim of improving safety and health at work and the humane design of work; evaluates scientific and practical developments in the area of its tasks; examines the effects of working conditions on safety and health of workers in companies and administrations; develops and tests suggestions for preventive occupational safety and health and for workplace health promotion; promotes the transfer of knowledge and proposed solutions in terms of corporate practice; participates in national, European and international bodies for the establishment of regulations and standardization; propagates the results among the general public; and maintains the
German Occupational Safety and Health Exhibition (DASA). The BAuA has a staff of 694 employees and a total budget of 45.8 million EUR. The BAuA is advised by a tripartite board. www.baua.de (partially in English)

- Länderministerien für Arbeit und Soziales; Gewerbeaufsichtsämter or Staatliche Ämter für Arbeitsschutz of the 16 Länder

While OSH legislation is drafted at federal level by the Ministry of Labor as the responsible representative of the executive. The federal states can influence in most cases legislation through their representation in the second chamber, the Bundesrat. The implementation of OSH legislation is controlled at state level through the state labor inspectoration authorities (Gewerbeaufsichtsämter or Staatliche Ämter für Arbeitsschutz) which operate under the state ministries of labor and social affairs. Labor inspectorates are usually maintain a headquarter with several departments for technical OSH inspection, social inspection focused on the protection of vulnerable groups, assessment of occupational diseases, market surveillance, working time of truck drivers, and in some cases environmental or health-related issues; as well as several regional offices, depending on state size. The OSH supervision of the mining industry is historically separated from the inspection of all other industry. Mining inspections are carried out on state side by the regionally organized mining authorities (Bergaufsicht), nowadays in cooperation with the statutory accident insurance institution for the mining industry (Bergbau-Berufsgenossenschaft). Implementation and control of labor relation issues is not task of German labor inspectorates. Coordination between the Federal States is ensured through common legislation and through their common platform the Länderausschuss für Arbeitsschutz und Sicherheitstechnik (LASI). Their individual state websites can be accessed via http://lasi.osha.de

2.2 Statutory accident insurance institutions in OSH

Accident insurance is provided through an autonomous body and not under private enterprise contract as in Anglo-Saxon countries. The Statutory (occupational) accident insurance was established in 1884 at the time of Bismarck. The institutions in charge of providing this form of social insurance are the industrial and agricultural (Berufsgenossenschaften - BGs) as well as the public-sector accident insurance institutions (Unfallkassen - UKs); the last-mentioned include both municipal accident insurance associations (Gemeindeunfallversicherungsverband - GUVV) and other accident institutions such as the regional ones for fire brigades. While the Berufsgenossenschaften are organized nationwide according to industry and trade, the public-sector accident insurance institutions are for the most part organized regionally corresponding with the Länder boundaries (except the institutions for post and telecommunications, railways and employees of the federal administration). They are autonomous public administrations and self-administered bodies with management boards composed of employer and employee representatives in equal proportion.

Organizational Structure of the German statutory accident insurance institutions

Based on two principles: Autonomous administration and equal representation.
The German approach of workers’ compensation is a compulsory, no-fault system with self-governed statutory accident insurance institutions funded solely by employers’ contributions, providing a comprehensive prevention, rehabilitation and compensation service. Contributions are, however, appropriate to the industrial and trade sector and are weighted according to risk class, size of the payroll and the number and severity of accidents. With regard to accident prevention, an incentive to do well is provided in the form of the so-called ‘Bonus Malus System’, whereby the employer receives a rebate on his contributions if the accident rate is below the average for that particular industrial sector. The accident insurance institutions’ tasks range from employing all suitable means to prevent occupational accidents and diseases as well as work-related health risks to ensuring effective first aid is in place. Commuting accidents are also covered by statutory accident insurance institutions. In addition to the state labor inspectorates, the inspection services of the statutory accident insurance institutions also monitor health and safety at the workplace. Under a federal law on statutory accident insurance, the Social Code Volume VII, all employees are compulsorily insured against occupational accidents and diseases. Students and school children are automatically covered by the same legal basis, too.

The Berufsgenossenschaften and Unfallkassen (BGs/UKs) have set up supervisory (inspection) services to implement prevention activities, advice employers and employees and to perform health and safety activities in enterprises. They also have to care for effective first aid on operational level and to provide preventive medical surveys for distinct economic sectors (construction, metal industry). Another major task is the training and qualification of institutional health and safety inspectors and operational OSH experts (Fachkraft für Arbeitssicherheit) and representatives (Sicherheitsbeauftragter). In this context the statutory accident insurance institutions train more than 400,000 participants of seminars. These activities under the accident insurance law are in addition to the enforcement of state laws and ordinances by the state labor inspection authorities. The interplay between the state inspection authorities and the inspection and supervision services of the accident insurance institutions forms the so called “dual OSH system of Germany”.

In addition to their prevention activities, the accident insurance institutions also work in medical and occupational rehabilitation and compensation for people injured at work, on their way to or from work (commuting accidents) or for people suffering from occupational diseases. The BGs/UKs provide their own medical treatment and medical care facilities, including highly specialized and advanced accident clinics and hospitals, for industrial accidents and occupational diseases. Financed solely by the employers and managed jointly by employers’ and workers’ representatives (joint self-administration), the accident insurance institutions are entitled in particular to issue accident prevention regulations, which are legally binding on their members. The accident insurance institutions’ prevention services are responsible for monitoring compliance with these regulations, investigating accidents and advising employers. Additionally on the legal basis of an agreement with the state authorities the BG and UK inspectors can supervise all state laws and ordinances, but cannot fine infringements of state regulations; this can only be executed by state labor inspectors.

- **Deutsche Gesetzliche Unfallversicherung (DGUV)**
  The German Social Accident Insurance DGUV is the federation of the statutory accident insurances of the industrial (Berufsgenossenschaften; BGs) and the public (Unfallkassen; UKs) sector. DGUV takes over superior and common tasks and duties for all statutory accident insurance institutions which are members of the DGUV excluding the agricultural sector. [www.dguv.de](http://www.dguv.de)

- **Gewerbliche Berufsgenossenschaften (BGs)**
  The Berufsgenossenschaften are statutory accident insurance institutions for industry and trade with health and safety inspection services of their own. The membership to these economic sector-oriented statutory accident insurance institutions is compulsory for all enterprises and organisations which are registered in Germany. Contributions are paid solely by the employers. 14 different websites, access via [www.dguv.de](http://www.dguv.de) (partially in English)

- **Unfallkassen (UKs)**
  The Unfallkassen are statutory accident insurance institutions for the public sector (public services such as railways, post and telecommunications, fire brigades) with health and safety inspection services of their own. The Unfallkassen are additionally insuring children of day care centers, schools and students of universities. The contributions for the pupils accident insurance are paid by the hosting institutions, e.g. the schools.
27 different websites, access via www.dguv.de (partially in English)

- **Landwirtschaftliche Berufsgenossenschaften (LBG)**
  The regionally organized agricultural Berufsgenossenschaften and the nationwide Berufsgenossenschaft for horticulture are statutory accident insurance institutions for the agricultural sector with health and safety inspection services of their own. The membership to the statutory accident insurance institutions’ is compulsory for all enterprises and organisations which are active in German economy. The contributions are paid predominantly by the employers but the agricultural system is subsidised by the state. The LBGs are working under their own umbrella organization *Spitzenverband der landwirtschaftlichen Sozialversicherung* (LSV).

  9 different websites, access via www.lsv.de (partially in English)

- **Institut für Arbeitsschutz (IFA)**
  The Institute for Occupational Safety and Health of the German Social Accident Insurance IFA (former BGIA) is responsible for applied and case-related research on safety technique, chemical and biological risks. The solution-oriented research is mostly ordered by the statutory accident insurance institutions.

  www.bgia.de (partially in English)

- **Institut für Prävention und Arbeitsmedizin (IPA)**
  The Institute for Prevention and Occupational Medicine of the German Social Accident Insurance IPA (former BGFA) is in charge of basic and case-related applied research on occupational diseases and work-related health hazards.

  www.bgfa.de (partially in English)

- **Institut Arbeit und Gesundheit (IAG)**
  The Institute Work and Health of the German Social Accident Insurance IAG (former BGAG) is responsible for the training and qualification of health and safety inspectors of BGs and UKs and the safety representatives of enterprises. Additionally the IAG executes applied and basic research in the field of psychosocial risks and economic aspects on occupational safety and health.

  www.dguv.de/bgaq

- **DGUV TEST - Prüf- und Zertifizierungssystem**
  The DGUV TEST (former BG-PRUEFZERT) testing and certification bodies in the service of occupational health and safety group 18 testing and certifying bodies. Product testing and certification helps to ensure safe and health-friendly products in order that product defects are detected as early as possible, enabling them to be remedied before any incidents occur.

  http://www.dguv.de/bg-pruefzert/en/index.jsp (English)

2.3 Partly mandated bodies and institutions in OSH

- **Technischer Überwachungsverein (TÜV)**
  The close supervision of dangerous plants and installations is partially assigned to specialized technical inspection agencies such as the TÜV. In Germany the TÜV is responsible for the regular supervision and control of e.g. nuclear power plants, waste incineration plants, high pressure vessels and pipelines. The legal responsibility, however, remains in the hands of the appropriate state authorities for OSH and environmental protection.

2.4 OSH coordination at national level

- **Nationale Arbeitsschutzkonferenz (NAK)**
  The "National Occupational Safety and Health Conference" (Nationale Arbeitsschutzkonferenz NAK) is established as a central body for planning, coordination, evaluation and decisions in the framework of the Joint German Occupational Safety and Health Strategy. Members are the federal government, the Länder and the accident insurance institutions. The social partners participate in the NAK meetings, acting as advisors in developing occupational safety and health objectives. The NAK guarantees the necessary commitments to jointly implementing the objectives and common fields of action of the GDA.
• Arbeitsschutzforum
  The systematic dialogue between the partners of the Joint German OSH Strategy and all relevant German stakeholders is conducted in the Occupational Safety and Health Forum (Arbeitsschutzforum) whose task is to advise the National OSH Conference. Generally, the OSH Forum is held once a year in the form of a workshop. Participants of the OSH Forum are the social partners, professional and industrial associations, health insurance and pension insurance funds, national networks in the area of OSH and representatives from the corresponding academic world.

2.5 Health insurance

• Gesetzliche Krankenkassen Vereinigung (GKV)
  The GKV is the roof organization of all public health insurers. Over the last years the number of public health insurers has decreased to 184 at present. They take care of ca. 90 % of the population (ca. 70 million insured). The preventive tasks of the health insurance are largely focused on the prevention of common general diseases (CVD, Cancer, Diabetes, MSD etc.). Since the early 2000 the health insurance are legally obliged to offer health promotion measures. These workplace health promotion activities are executed in co-operation with the statutory accident insurance institutions which have the closest contact to the workplaces.
  https://www.gkv-spitzenverband.de/Statutory_health_insurance.gkvnet (English)

• Private Krankenkassen Vereinigung (PKV)
  The PKV is the roof organization of the 47 private health insurers; in addition, the health insurances of federal civil servants and of postal services are associated. They represent the health interest of ca. 10 % of the population (ca. 8.6 million insured).
  http://www.pkv.de/

2.6 Other stakeholders in OSH

♦ Social partner organizations
  - Bundesverband Deutscher Arbeitgeber (BDA);
    http://www.arbeitgeber.de/www/arbeitgeber.nsf/id/EN_Home
  - Bundesverband der Deutschen Industrie (BDI);
    http://www.bdi.eu/ (German)
  - Zentralverband des Deutschen Handwerks;
    http://www.zdh.de/index.php?id=56
  - Handwerkskammern
    access via http://www.zdh.de/handwerksorganisationen/handwerkskammern.html
  - Deutscher Gewerkschaftsbund (DGB);
    http://www.dgb.de/sprachen/englisch/dgb.htm
  - Deutsche Dienstleistungsgewerkschaft (ver.di);
    http://international.verdi.de/ver.di_fremdsprachig/was_ist_ver_di_-_eine_einfuehrung_auf_englisch
  - Christlicher Gewerkschaftsbund Deutschland (CGB);
    http://www.cgb.info/aktuell/imblickpunkt.php (German)
  - Deutscher Beamtenbund (DBB);
    http://www.dbb.de/ (German)
  - Deutscher Führungskräfteverband (ULA);
    http://www.deutscher-fuehrungskraefteverband.de/index.php?option=com_content&task=view&id=103&Itemid=140

♦ Chambers
- Bundesärztekammer (BÄK)
  (Chamber of Physicians; private non-government organization with a committee on Occupational Medicine);
  http://www.bundesaerztekammer.de/page.asp?his=4.3569

- Research and development institutes, training institutes, associations
  (a) Universities:

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b) Research Institutes: 
− Bundesanstalt für Arbeitsschutz und Arbeitsmedizin (BAuA) 
− Bundesanstalt für Materialforschung und -prüfung BAM) 
− Bundesanstalt für Straßenwesen (BAST) 
− Bundesinstitut für Berufsbildung (BIBB)
- Physikalisch-Technische Bundesanstalt (PTB)
- Institut für Arbeit und Gesundheit der DGUV (IAG)
- Institut für Prävention und Arbeitsmedizin der DGUV (IPA)
- Institut für Arbeitsschutz der DGUV (IFA)
- Kommission und Normung (KAN) (consisting of: entrepreneurs’ and workers’ representatives, Federal and State OSH representatives, DIN, DGUV)
- Deutsche Forschungsgesellschaft mit MAK-Werte-Kommission (DFG; setting of exposure limits)
- Forschungsgesellschaft für angewandte Systemsicherheit und Arbeitsmedizin e.V. Mannheim
- Berufsbildungsinstitut Arbeit und Technik (BiAT)
- Fraunhofer-Institut für Arbeitswirtschaft und Organisation (IAO)
- Fraunhofer-Institut für Toxikologie und Aerosolforschung (ITA)
- Hans-Böckler-Stiftung Referat Betrieblicher Arbeits- und Umweltschutz
- Institut für Arbeits- und Sozialhygiene Stiftung Karlsruhe
- Institut für Arbeitswissenschaften der Ruhrkohle Aktiengesellschaft
- Institut für Gefahrstoff-Forschung (IGF)
- Institut zur Erforschung elektrischer Unfälle

c) Associations and Societies, contributing to research and development:
- Bundesarbeitsgemeinschaft für Sicherheit und Gesundheit bei der Arbeit (BASI)
- Bundesverband freiberuflicher Sicherheitsingenieure und überbetrieblicher Dienste (BFSI)
- Deutsche Gesellschaft für Arbeits- und Umweltmedizin (DGAUM)
- Deutsche Gesellschaft für Arbeitshygiene (DGAH)
- Fachvereinigung Arbeitssicherheit (FASI)
- Gesellschaft für Arbeitswissenschaft (GfA)
- Gesellschaft für Sicherheitswissenschaft (GfS)
- REFA-Verband für Arbeitsgestaltung, Betriebsorganisation und Unternehmensentwicklung
- Verband Deutscher Betriebs- und Werksärzte (VDBW)
- Verband Deutscher Elektrotechniker (VDE)
- Verband Deutscher Rentenversicherungsträger (VDR)
- Verband Deutscher Sicherheitsingenieure (VDISI)
- Verein Deutscher Gewerbeaufsichtsbeamten (VDGAB)
- Verein Deutscher Ingenieure (VDI)
- Verein Deutscher Revisionsingenieure (VDR)
- Vereinigung Deutscher Staatlicher Gewerbeärzte

Scientific work is also carried out by the plant medical services of several large companies.

3 Relevant OSH legislation

German OSH legislation corresponds to EU legislation and is largely an adaptation of previous legislation. European Council legislation has been transposed into national law as follows:

<table>
<thead>
<tr>
<th>Council Directive</th>
<th>Abbreviation</th>
<th>Corresponding German Legislation</th>
</tr>
</thead>
<tbody>
<tr>
<td>89/391/EEC</td>
<td>Framework directive</td>
<td>Gesetz zur Umsetzung der EG-Rahmenrichtlinie Arbeitsschutz und weiterer Arbeitsschutz-Richtlinien (Arbeitsschutzgesetz)</td>
</tr>
<tr>
<td>89/654/EEC</td>
<td>Workplace</td>
<td>Arbeitsstättenverordnung</td>
</tr>
<tr>
<td>89/655/EEC (95/63/EEC)</td>
<td>Work equipment</td>
<td>Verordnung über Sicherheit und Gesundheitsschutz bei Benutzung von Arbeitsmitteln bei der Arbeit</td>
</tr>
<tr>
<td>89/656/EEC</td>
<td>Personal protection</td>
<td>Verordnung über Sicherheit und Gesundheitsschutz bei der Benutzung persönlicher Schutzausrüstungen bei der Arbeit</td>
</tr>
<tr>
<td>90/269/EEC</td>
<td>Manual handling of loads</td>
<td>Verordnung über Sicherheit und Gesundheitsschutz bei der manuellen Handhabung von Lasten (Lastenhandhabungsverordnung)</td>
</tr>
<tr>
<td>Directive</td>
<td>Law Title</td>
<td>Description</td>
</tr>
<tr>
<td>-----------</td>
<td>-----------</td>
<td>-------------</td>
</tr>
<tr>
<td>89/279/EEC</td>
<td>Display screens</td>
<td>Verordnung über Sicherheit und Gesundheitsschutz bei der Arbeit an Bildschirmgeräten (Bildschirmarbeitsschutzverordnung)</td>
</tr>
<tr>
<td>90/394/EEC</td>
<td>Carcinogens</td>
<td>Verordnung zum Schutz vor gefährlichen Stoffen (Gefahrstoffverordnung)</td>
</tr>
<tr>
<td>80/1107/EEC</td>
<td>Chemical agents</td>
<td>Gesetz zum Schutz vor gefährlichen Stoffen (Chemikaliengesetz); Verordnung zum Schutz vor gefährlichen Stoffen (Gefahrstoffverordnung)</td>
</tr>
<tr>
<td>90/679/EEC</td>
<td>Biological agents</td>
<td>Verordnung zur Umsetzung von EG-Richtlinien über den Schutz der Beschäftigten gegen Gefährdungen durch biologische Arbeitsstoffe bei der Arbeit (Biostoffverordnung)</td>
</tr>
<tr>
<td>92/57/EEC</td>
<td>Construction sites</td>
<td>Verordnung über Sicherheit und Gesundheitsschutz auf Baustellen (Baustellenverordnung)</td>
</tr>
<tr>
<td>92/58/EEC</td>
<td>Safety &amp; health signs</td>
<td>Verordnung zum Schutz vor gefährlichen Stoffen (Gefahrstoffverordnung); Unfallverhütungsvorschrift &quot;Sicherheits- u. Gesundheitsschutzkennzeichnung am Arbeitsplatz&quot; (VBG 125) &lt;accident prevention regulation&gt;</td>
</tr>
<tr>
<td>92/85/EEC</td>
<td>Pregnant workers</td>
<td>Gesetz zum Schutz der erwerbstätigen Mutter (Mutterschutzgesetz)</td>
</tr>
<tr>
<td>92/91/EEC</td>
<td>Drilling in mineral-extraction industries</td>
<td>Allgemeine Bergbauverordnung</td>
</tr>
<tr>
<td>92/104/EEC</td>
<td>Surface and underground mineral-extraction industries</td>
<td>Allgemeine Bergbauverordnung</td>
</tr>
<tr>
<td>93/103/EEC</td>
<td>Fishing vessels</td>
<td></td>
</tr>
<tr>
<td>98/24/EEG</td>
<td>Chemical agents</td>
<td>Verordnung zum Schutz vor gefährlichen Stoffen (Gefahrstoffverordnung);</td>
</tr>
<tr>
<td>83/477/EEC</td>
<td>Asbestos</td>
<td>Verordnung zum Schutz vor gefährlichen Stoffen (Gefahrstoffverordnung);</td>
</tr>
<tr>
<td>78/610/EEC</td>
<td>Vinyl chloride monomer</td>
<td>Verordnung zum Schutz vor gefährlichen Stoffen (Gefahrstoffverordnung);</td>
</tr>
<tr>
<td>86/188/EEC</td>
<td>Noise</td>
<td>Unfallverhütungsvorschrift &quot;Arbeitsmedizinische Vorsorge&quot; (VBG 100) &lt;accident prevention regulation&gt;</td>
</tr>
<tr>
<td>93/104/EEC</td>
<td>Organization of working time</td>
<td>Gesetz zur Vereinheitlichung und Flexibilisierung des Arbeitszeitrechtes (Arbeitszeitrechtsgesetz)</td>
</tr>
<tr>
<td>93/383/EEC</td>
<td>Temporary employment</td>
<td>Gesetz zur Umsetzung der EG-Rahmenrichtlinie Arbeitsschutz und weiterer Arbeitsschutz-Richtlinien (Arbeitsschutzgesetz)</td>
</tr>
<tr>
<td>96/29/EEC</td>
<td>Euratom</td>
<td>Strahlenschutzverordnung</td>
</tr>
<tr>
<td>89/336/EEC</td>
<td>Electromagnetic radiation</td>
<td>Gesetz über die elektromagnetische Verträglichkeit</td>
</tr>
<tr>
<td>94/33/EEC</td>
<td>Young persons</td>
<td>Jugendarbeitsschutzgesetz</td>
</tr>
<tr>
<td>90/385/EEC</td>
<td>Implants, medical products</td>
<td>Gesetz über Medizinprodukte</td>
</tr>
<tr>
<td>93/42/EEC</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 3.1 Selected laws

- "Arbeitsschutzgesetz" (Gesetz über die Durchführung von Maßnahmen des Arbeitsschutzes zur Verbesserung der Sicherheit und des Gesundheitsschutzes der Beschäftigten bei der Arbeit; Occupational health and safety act)\(^8\,^9\)
  
  The Arbeitsschutzgesetz is the primary German law on OSH and is a direct transposition of the European Council Directive 89/391/EEC on the introduction of measures to encourage improvements in the safety and health of workers at work\(^10\). The law emphasizes the preventive approach, the coverage of all employees in all enterprises of all sizes and in the public sector, describes in detail the duties and rights of the employers and employees with regard
to health and safety in general. Core employer duties are the overall responsibility for OSH at work, specified as risk assessment and management and the provision of access to preventive occupational health services for his employees. The so-called Daughter Directives of the Framework Directive, focusing on individual hazards and exposures, are all transposed, largely by adaptation of previous corresponding legislation.

- **“Arbeitssicherheitsgesetz”** (Gesetz über Betriebsärzte, Sicherheitsingenieure und andere Fachkräfte für Arbeitssicherheit (ASiG); Act on occupational physicians, safety engineers and other occupational health and safety specialists)

The law is the previous German Labor Code of 1974 and became annexed to the Arbeitsschutzgesetz of 1996. Together with the corresponding (secondary) accident prevention regulation of the statutory accident insurance funds (BGV A 2 respectively GUVV A 2; see below), the law the employer duties regarding the provision and occupational health service including the minimum annual working time of occupational physician and safety specialist for enterprises of various sectors and sizes.

- "*Arbeitszeitgesetz*" (Working hours act)

This act regulates the maximum working time.

- "*Chemikaliengesetz*" (Chemicals act)

Regulation concerning the handling and packaging of chemicals.

- "*Geräte- und Produktsicherheitsgesetz (GPSG)*" (Equipment and product safety act)

The GPSG regulates the general provisions on the safety of equipment and products. Its 14 related ordinances rule the special safety necessities of electrical equipment, toys, simple pressure vessels, gas appliances, personal protective equipment, machinery [transposition of the EU directive on machine safety], explosion protection, lifts, aerosol packaging and pressure vessels.

- "*Jugendarbeitsschutzgesetz*" (Act on the protection of young persons at work)

- "*Mutterschutzgesetz*" (Act on the legal protection of working mothers and maternity protection)

- “*Bundesberggesetz*” (Federal Mining Act, with related ordinances on the special OSH requirements in mining)

- „*Sozialgesetzbuch VII ‘Gesetzliche Unfallversicherung’ (SGB VII)*“, (Law on statutory accident insurance, seventh volume of the code of social law)

This law describes the legal mandate of the statutory accident insurance institutions in the fields of prevention, rehabilitation and compensation very detailed.

### 3.2 Selected ordinances

- "*Arbeitsstättenverordnung*” (Workplace Ordinance) with *Arbeitsstättenrichtlinien (ASR)* (Workplace regulations)

This ordinance rules the constructional and organizational requirements concerning the design of workplaces.

- "*Baustellenverordnung*” (Construction site ordinance) with *Regeln zum Arbeitsschutz auf Baustellen (RAB)* (Rules on occupational safety and health on construction sites)

The construction site ordinance regulates OSH at construction sites and especially the responsibilities and organizational requirements when more then one company is active at the construction site including the role and tasks of the health and safety co-ordinator, who is then to be appointed.

- "*Berufskrankheitenverordnung*” (Ordinance on occupational diseases)

This ordinance describes the responsibilities in notification, assessment and compensation of occupational diseases. The German list of recognized occupational diseases is annexed.
• "Betriebssicherheitsverordnung" (Ordinance on industrial safety and health)\textsuperscript{22} with several technical rules for industrial safety and health (\textit{Technische Regeln für Betriebssicherheit} (TRBS))
  The organization of operation and prerequisites for machinery and equipment for operational use are regulated in this ordinance.

• "Bildschirmarbeitsverordnung" (Ordinance on visual display unit work)\textsuperscript{23}

• "Biostoffverordnung" (Ordinance on biological agents)\textsuperscript{24} with several technical rules for biological agents (\textit{Technische Regeln für Biologische Arbeitsstoffe} (TRBA)).
  Regulation concerning the handling and packaging of biological agents and on leveled intervention causes.

• "Geräte- und Maschinenlärmschutzverordnung" (Ordinance on equipment and machinery noise emission)\textsuperscript{25}

• "Druckluftverordnung" (Ordinance on compressed air)\textsuperscript{26}
  The handling and circumstances when using compressed air are regulated within this ordinance.

• "Gefahrstoffverordnung" (Ordinance on hazardous substances)\textsuperscript{27} with several technical rules for hazardous substances (\textit{Technische Regeln für Gefahrstoffe} (TRGS))
  Regulation concerning the handling and packaging of hazardous substances with several special technical rules on several groups of chemicals.

• "Lastenhandhabungsverordnung" (Ordinance on the handling of loads)\textsuperscript{28}

• "Lärm- und Vibrations-Arbeitsschutzverordnung" (Noise and vibration protection ordinance)\textsuperscript{29}

• "PSA-Benutzungsverordnung" (Ordinance on the use of personal protection equipment)\textsuperscript{30}

A list of OSH regulations passed by the German government is given on the internet in German language, including the implementation dates and the amendment dates:
4 Human resources in occupational safety and health

Safety and health at work is ensured by adequate legislation, by the responsible employer who acts in accordance with the appropriate regulation, by external inspection services who supervise the implementation of applicable law at enterprise level and provide preventive counsel, and by preventive occupational health services who assess workplace safety and workers' health and provide proactive or corrective counsel to individual employee and employer. Available human resources for inspection and occupational health service are listed in the table as far as available.

**Human resources in OSH in Germany 2006**

<table>
<thead>
<tr>
<th></th>
<th>Ratio per employees</th>
<th>Ratio per enterprises</th>
<th>Total number</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Enterprises</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt; 250</td>
<td>n.a.</td>
<td>n.a.</td>
<td>11,221</td>
</tr>
<tr>
<td>50 – 249</td>
<td>n.a.</td>
<td>n.a.</td>
<td>65,059</td>
</tr>
<tr>
<td>10 – 49</td>
<td>n.a.</td>
<td>n.a.</td>
<td>286,366</td>
</tr>
<tr>
<td>0 - 9</td>
<td>n.a.</td>
<td>n.a.</td>
<td>3,301,860</td>
</tr>
<tr>
<td><strong>Workforce</strong></td>
<td></td>
<td></td>
<td>38,536,000</td>
</tr>
<tr>
<td><strong>Occupational physicians</strong></td>
<td>1 / 3,138</td>
<td>1 / 298</td>
<td>12,280</td>
</tr>
<tr>
<td><strong>Safety professionals</strong></td>
<td>1 / 358</td>
<td>1 / 34</td>
<td>ca. 107,850</td>
</tr>
<tr>
<td>Occupational assistance staff</td>
<td></td>
<td></td>
<td>?</td>
</tr>
<tr>
<td>Other professionals</td>
<td></td>
<td></td>
<td>?</td>
</tr>
<tr>
<td>Labor inspectors (State)</td>
<td>1 / 10,945</td>
<td>1 / 1,041</td>
<td>3,521</td>
</tr>
<tr>
<td>Technical inspectors (BG)</td>
<td>1 / 12,940</td>
<td>1 / 1,231</td>
<td>2,978</td>
</tr>
<tr>
<td>OSH inspectors (State and BG combined)</td>
<td>1 / 5,930</td>
<td>1 / 564</td>
<td>6,499</td>
</tr>
</tbody>
</table>

(Bundesärztekammer; BÄK) in the Musterweiterbildungsordnung\(^{31}\) and in the accordingly adapted Weiterbildungsordnungen of the 16 Federal States since matters of education are under state sovereignty. The specialization in Occupational Medicine requires five years of training. Requirements for board certification are as follows:

- 24 months training in internal medicine or general medicine
- 36 months training in occupational medicine
- 360 hours of theoretical instruction (as part of the five year education period) at one of the seven licensed training institutes (Academy for Occupational Medicine)\(^ {32}\).

In addition, a minor qualification model (Betriebsmedizin) is recognized for specialists in other areas of patient care such as Internal or General Medicine. Here only 24 months of training in occupational medicine, including 360 theoretical course hours have to be completed.

The theoretical training provided by the Academies follows the curriculum (Muster-Kursbuch\(^ {33}\)) developed under the auspices of the Federal Chamber of Occupational Physicians.
The younger generation of occupational physicians tends to follow the full five year training course. The overall number of medical specialists with postgraduate training in occupational medicine, however, is steadily decreasing; the number of new colleagues will not suffice to replace the retiring generation of company doctors.

**Occupational medical assistants**
Prerequisite is the successful graduation in a medical profession (e.g. nurse, medical secretary, technical medical assistant). Specialization requires participation in six weeks of training according to the recommendations of the Bonner Arbeitsgemeinschaft zur Förderung des arbeitsmedizinischen Fachpersonals. The training is not regulated.

**Occupational hygienists**
“Occupational Hygiene” postgraduate education was available in the former German Democratic Republic. It was the equivalent of “Occupational Medicine” and as such available for graduates in physics, chemistry, psychology, sociology and other sciences. The education does no longer exist as an independent qualification. Additional training in occupational hygiene is available for medical specialists, usually occupational physicians.

**Occupational safety engineers and other safety professionals**
The education of safety professionals (Sicherheitsfachkraft; Sifa; in DGUV diction usually: OSH professional) takes in average several months; the absolute minimum are six weeks. For industry and trade the education process takes six weeks of presence in seminars and additionally several weeks of self training phases including computer-based and web-based training. The education is accompanied by standardized test and a final examination after each phase. The prerequisite for becoming an OSH professional are either an university degree in engineering, a degree of a technician (Techniker) or a degree as a master craftsman including several years of professional experience. Additional key qualifications can be essential for specific branches and economic sectors. In the public sector the distant learning is possible.

**State labor inspectors**
The education of state labor inspectors is under federal state authority and therefore not entirely uniform. However, there are generally three levels of state inspectors, depending on level of professional education. Most federal states require a university degree for entrance into public service, a university degree in applied sciences or a master craftsmanship and several years of experience in industry. The newly recruited inspectors then undergo a two year education program (preparatory service, Vor-
bereitungsdienst), including legislation, OSH organization, industrial hazards and prevention, modern inspection techniques and social skills as well as supervised inspections, in order to become fully qualified inspectors.

Inspectors of statutory accident insurance institutions
The education of the inspectors of the BGs and UKs is recently based on two models of training rules, one for industry and trade (BG) and the other for the public sector (UK). In consequence of the recent merge of the umbrella organizations to DGUV, there will be only one education and training model left in the near future. The curriculum is approved by the Federal Ministry of Labor (BMAS). The inspectors of the statutory accident insurance institutions have to have a university degree or a degree of a university of applied sciences, mostly in engineering or natural sciences. In some economic sectors such as construction the education as a technician or a master craftsman is also accepted; but these inspectors have less power. During the last century, especially due to the expanded prevention tasks including the prevention of work-related health hazards, inspectors accrue more and more from other disciplines, too, such as biology, psychology and medicine. Before starting active work as an inspector with full powers, the candidate has to undergo a two years lasting training on the job and to pass a final examination. As a prerequisite for becoming an inspector candidate she or he has to have a professional experience record of several years (3 to 5 in average).

5 Compliance with regulatory action

5.1 Occupational health services (OHS)

Scope and tasks
In accordance with international law (ILO Conventions C 155 “Occupational Safety and Health” and C 161 “Occupational Health Services”), relevant EU legislation (“Framework” Directive 89/391/EEC) and with previous German legislation (ASiG) German employers are obliged to contract the counsel of specialists in occupational safety and health. BG legislation (BGV A2) specifies the amount of specialist time to be provided per employee according to risk category of the enterprise. Occupational physician and safety professional, though employed or contracted by the company, are independent in their opinion. Their common tasks include the following:

♦ Advise the employer and any person responsible for OSH as well as accident prevention, especially
  - When planning, constructing and maintaining company-owned installations and social and sanitary rooms,
  - When procuring technical equipment and introducing new work processes and working materials,
  - When selecting and testing full body protection,
  - When dealing with questions of work physiology, work psychology and further questions of ergonomics and work hygiene, especially working rhythms, working time and breaks, the structuring of work places, the organization of work and the working environment,
  - When organizing first aid in the company,
  - Questions related to change of job as well as the integration and re-integration of handicapped people into work;

♦ Inspect plant premises and technical working equipment (especially before first use) and working procedures (especially before their implementation) from the point of view of safety;

♦ Observe the implementation of OSH and accident prevention regulations and in this context
  - Inspect places of work regularly, report on deficiencies noted to the employer or to the person normally responsible for OSH and accident prevention, propose measures for the elimination of such deficiencies and work towards their implementation,
  - Pay attention to the use of full body protection,
  - Investigate the causes of occupational accidents, collect the results of such investigations and propose to the employer measures for the prevention of such accidents;

♦ Work towards a situation where every employee conducts himself in accordance with the requirements of OSH and accident prevention, instruct them in particular on accident and health risks to which they are exposed during their working as well as on installations and measures for the prevention of such risks, and participate in the training of safety commissioners.
The occupational physicians have the additional task of examining employees, evaluate their health from an occupational medicine point of view and giving them advice, collecting and evaluating the results of such examinations, and to participate in the schedule and training both of employees in first aid and of the medical auxiliary staff.

**Service models and quality assurance**

Germany recognizes a broad variety of OHS models. While larger companies usually have a multidisciplinary in-house staff, often consisting of several physicians, safety engineers, psychologists, physiotherapists, medical assistance personnel etc., smaller ones will contract these services by the hour from outside. Outside service provider can be physicians or safety engineers in private practice or (supra-) regional multidisciplinary OHS in private or BG ownership. The Federal Ministry of Labor has initiated the development of quality assurance measures for OHS.

In 1995 the Federal Ministry for Labor and Social Order opened the discussion on quality assurance of OHS under inclusion of and with broad support from all sectors of the German OSH community. The initiative lead to the development of quality criteria, a quality assurance audit instruments, the training of auditors, and the foundation of two audit associations, the **Association for Quality Assurance in Occupational Health Care** (Gesellschaft zur Qualitätssicherung in der betriebsärztlichen Betreuung mbH, GQB) and the **Association for Quality in Occupational Safety** (Gesellschaft für Qualität im Arbeitsschutz mbH, GQA). The GQB was founded in 1999 by the professional association of company physicians VDBW. GQB quality assurance concept, audit and criteria were developed in cooperation between VDBW, Federal Chamber of Physician and Federal Institute for Occupational Safety and Health) and modeled on approved international examples (Canada, USA, Australia). The audit consists of the assessment of structure, process and outcome quality of an OHS by the use of 85 criteria through a trained and experienced external auditor, and in case of a positive audit result a quality seal valid for 3 years is granted, which also is deemed useful for marketing. Audit participation is voluntary. The association is supervised by a board where all relevant stakeholders are represented. The GQB instrument has found international recognition. The GQA has evolved along similar lines and the resulting procedures and audit instruments are comparable. OHS participation in these audits is voluntary.

Another option for small enterprises is the so-called **Employer Model** offered by several accident insurance institutions. Employer models make use of the opening clause of Article 7.7 of the Framework Directive where it states: “Member states may define, in the light of the nature of the activities and the size of the undertakings, the categories of undertakings in which the employer, provided he is competent, may himself take responsibility for the measures referred to in paragraph 1”. This includes the provision to provide access to occupational medical service as needed. BGs offering the employer model alternative provide intensive training on risk assessment and management for these employers, consult and support them on request, and also supervise their responsible OSH conduct more closely.

5.2 **Occupational Safety and Health Committee**

The occupational safety and health committee (Arbeitsschutzausschuss; ASA) is a compulsory company organ which has to be established in enterprises with 20 or more employees (§ 11 ASiG). The ASA is composed of the employer or his representative(s), the safety professional (Fachkraft für Arbeitssicherheit), the company doctor, the safety representatives, two representatives of the works council, and, if necessary, external OSH experts. The ASA has to advise the employer in matters of OSH and convenes at least once per quarter.

5.3 **Company inspection by state authorities and statutory accident insurance institutions**

The German “Dual” OSH system rests on two pillars - state-provided OSH services and activities and those performed by the statutory accident insurance institutions. The statutory accident insurance institutions in Germany have a well developed sectoral focus in addition to regionalization, while the labor inspectorates are mainly regionally organized. The implementation of legislation is surveyed and executed by both inspection services comprising of circa 3,500 state labor inspectors and approximately 3,000 inspectors of the statutory accident insurance institutions. State labor inspectors are responsible for ensuring compliance with federal legislation, and accident insurance inspectors of the Berufsgenossenschaften and Unfallkassen ensure that the autonomous accident prevention regula-
tions issued by the statutory accident insurance institutions are implemented. Additionally the accident insurance inspectors are caring for the implementation of the state laws and regulations excluding the possibility to give a fine on violations of the state laws and ordinances.

State and insurance inspectors will usually coordinate their work, avoid duplication, keep each other informed by written record exchange and often personal communication; in cases of severe enterprise non-compliance and major and fatal accidents, however, they will investigate together. Due to the legal changes in connection with the Joint German OSH Strategy an internet based data system will become available to both inspection services in 2010 for easier coordination of inspection work.

**OSH legislation application and enforcement level in Germany – employers’ duties**

The overall responsibility for organizational safety and health on the operational level rests with the employer. Employers may delegate some of these responsibilities to supervisors and safety delegates in terms of operational oversight and application, but all OSH provisions are aimed at the employers themselves, and it is they who are responsible for the health and safety of their employees in the workplace. Even though the German OSH laws, ordinances and regulations are aligned with the German transposition of the European framework directive, the occupational health and safety act (*Arbeitsschutzgesetz*), and the corresponding transposed single directives, the application and enforcement of this legal base on the workplace level can vary widely, and be dependant on the OSH culture within enterprises and indeed different sectors of industry and trade and especially the size of the enterprises. The most advanced safety level in Germanys industries is achieved in the large scale chemical industry with an index of less than 15 accidents per 1,000 workers. Most problematic OSH situations generally appear in small and medium sized enterprises. This is the same for all other European countries. Since 1973, employers have been required by law to take advice on OSH-related matters from company doctors and occupational safety officers. The requirements of company doctors and occupational safety officers, their job descriptions, and their duty to cooperate with various other parties are laid down in the law on occupational physicians, safety engineers and other occupational health and safety specialists (*Arbeitssicherheitsgesetz*).

**Power of state labor and statutory accident insurance inspectors**

The state labor inspectors have to control and consult the enterprises and their representatives. The labor inspector has – derived from several laws - the power to:

- Enter, inspect and examine workplaces and business premises during working hours and to inspect business documents;
- Examine plant, work equipment and personal protective equipment, as well as working procedures and processes;
- Perform measurements and, in particular, identify work-related health risks and investigate the causes of an occupational accident, disease or injury;
- Require the employer or a person designated by the employer to accompany them;
- Issue enforcement notices to have certain measures taken to eliminate or reduce a hazard where employers are not complying with their obligations under the law. The employer is generally given a deadline to comply. These notices are given in writing, and a copy is sent to the work council. The employer has the right to appeal against a notice, which is then suspended unless it has immediate effect;
- In the event of imminent danger, enforcement notices must be implemented with immediate effect. This may mean ordering work to be stopped, the shutdown of a plant or process, or a ban on the further use of substances; in such cases, employers may apply to the administrative courts to restore the suspensive effect of an appeal;
- Impose fines for administrative offences. The amount of the fine depends on the limits set by the law and on whether the infringement was deliberate or merely negligent. The economic advantage gained by the employer in committing the offence is also taken into account in setting the fine. The employer can appeal against a fine. If the appeal is rejected by the Industrial Inspectorate it will be heard before the competent district court;
- Prohibit manufacturers or importers from selling or displaying equipment or plant which the State inspectors consider to be unsafe (pursuant to the Equipment and Product Safety Act);
- Report to the public prosecutor cases where they suspect a criminal offence has been committed;
- Call in the police if they are hindered in their work.

In case of law infringement labor inspectors have a variety of legal measures at their disposal, ranging from mere counsel and repeat visit to sanctions and fines (up to 25,000 EUR) complete or partial closure of the undertaking and the initiation of prosecution under criminal law. There is no legal provision which relates a certain infringement to a corresponding fine. The labor inspector will evaluate the ac-
tual infringement in its context and fine accordingly. The so-called appreciation right is derived from the ILO Convention Nr 81, Art 17-2, stating: “It shall be left to the discretion of labour inspectors to give warning or advice instead of instituting or recommending proceedings”. Accident insurance inspectors have comparable sanction measures at their disposal (fines up to 10,000 EUR); they have in addition the power to raise a firm’s insurance premiums in cases where the OSH performance is constantly bad or even getting worse.

In the 1990ies there was a shift in the labor inspection approach in line not only with the adaptation of previous German OSH regulation to EU legislation, but also with socioeconomic changes and the increasing fragmentation of industry. The new inspection approach gave the inspectors the possibility to use their own judgment (appreciation right) in inspecting enterprises. Inspections were to be conducted goal-oriented, the goal being a functioning enterprise OSH organization. Check-list were still regarded as helpful (and were therefore supplied to employers for their own use), but there was no longer an obligation to inspect all visited companies to the last item of the checklist. Rather should more time be allotted to the counseling of employers or the planning and conduction of campaign in order to reach a larger section of the target population. State and accident insurance inspectors had to act from then on also and in the first place as initiators, moderators and coordinators of OSH, without letting go of their previous role when and where needed. The new inspection approach requires from the inspector: system control of OSH organization within the enterprises; support of the employer, the employees and OSH responsible persons in improving the knowledge on OSH; awareness raising in OSH and support in the improvement of occupational health on the workplace level; and management of public relations. A major outcome of the new approach is a higher level of understanding and acceptance of OSH measures among the employers who also clearly had to live up to their role as responsible guarantor of company OSH. The developing partnership and collaboration for better OSH takes also care of the misbalance of limited inspection resources and the steadily increasing number of small enterprises.

Prevention activities of the statutory accident insurance institutions
The tasks of the accident insurance institutions within the industrial and public sectors include consultation and inspection, initial and further training, and public information. In 2007, the technical inspectorates visited over 325,000 companies; in over 900,000 cases, cause was found for complaint. Almost 367,560 persons (excluding the pupil accident insurance) attended initial and further training relating to safety and health at work. Up to 47,823 accidents and 23,622 diseases were investigated in 2007.

Case law
Due to the fact that Germany has an extended, detailed and advanced legislation on occupational safety and health, case law does not play such an important role in the German system as in legal systems of other countries. But there are of course case decisions which could serve as examples of the tendencies in German case law dealing with OSH matters. Remarkable is that both, employers and employees, could be sentenced for the violation of OSH regulations.

What kind of cases have to be taken into account? The following main situations of liability should be considered:
- Criminal liability of responsible persons
- Liability according to civil laws in cases of occupational accidents and diseases including regress of statutory accident insurance against violators of OSH regulations
- Liability of employees to third persons and to employers in cases of damage to property
- Labour legislation liability of employees (dissuasion, cancellation)
- Liability of employers, claims of employees concerning the enforcement of OSH regulations
- Liability in cases of engagement of external companies (service contracts, supply of temporary workers)

Employees’ liability – general principles
In Germany employees could be sentenced in cases of medium and gross negligence and of course intention when acting deliberately (e.g. case number: OLG Celle, 08.03.2004, Az 9 U 208/03). The employers’ liability is entitled to the statutory accident insurance institutions in all cases of medium or less grave negligence due to the fact that the employers solely pay for the accident insurance system. The definition of medium negligence, its start and end, is a result of the adjacent grades. Slight negligence is in legal practice defined by “misspeaking”, “mishearing”, “mixing something up”, and an employee deviance which can happen to anyone. Acting with gross negligence is the infringement of due diligence on a high level, that means for example ignoring safety measures which are obvious to everybody. Medium negligence is between of these two grades, meaning that the necessary diligence is
disregarded ("can happen"). The level of shared responsibility of an employee is acting in accordance with reasonability. Due to the fact that the mentioned grades are based on undefined legal terms these cases are normally judged with regard to reasonability and equity in individual cases. Criteria for judging are the severity of a risk level in a concrete working situation, the level of damage, the rank of the employee in operational hierarchy, the amount of salary, the length and the course of the employment, the age, the family situation and the calculability and insurability of a risk by the employer. In several individual case decisions labour courts have limited the financial liability of employees to one or two monthly salaries. It is always an individual decision of the court in all cases where third persons are hurt.

Employers' liability - precedent

Employers are responsible for their employees' safety and health at work. They have a duty to implement the necessary OSH measures, taking into account the circumstances which affect employees' safety and health at work. Employers must review the effectiveness of the measures and, if needs be, adjust them to changes in the prevailing conditions. It is also part of their duty to strive to improve employees' safety and the protection of their health. Employers must appoint safety specialists and company physicians to support them and advise them on OSH questions.

With regard to OSH employers are liable in all cases of gross negligence and intention, when acting deliberately. As an example of a more or less typical case decision in which gross negligence plays a role might serve the following case. An employer was found liable by the court because he had given insufficient instructions to a foreign worker. A foreign worker had to paint a windowless room with a bituminous prime coat. Later the worker should waterproof the walls with bituminous sheetings by use of flaming equipment. When the worker entered the room with the flaming equipment in order to continue his work the gas-air mixture inflamed explosively. The worker suffered from serious burn injuries. The BG claimed compensation from the employer for the reimbursement of rehabilitation costs amounting to € 53,000 and additionally all expected future expenditures on the grounds that the employer had violated his instruction duties through gross negligence. He should have instructed the worker that bitumen is a hazardous substance which can produce a potentially explosive atmosphere when processed. The employer argued against that the worker did not follow the safety sheet instructions and the included warning notices for bitumen which the employer handed over. The court adjudged the position of the BG in full extent and stated that the handover of the bitumen data sheet was not proven and that the injured worker was obviously not able to understand the safety instructions properly due to lacking proficiency in German. Therefore the worker did not know what kind of danger he was exposed to when working with bitumen under the described circumstances. The employer acted grossly negligent, a contributory negligence of the worker was denied (case number: OLG Frankfurt, 9.11.2004, Az. 16 U 112/04)

The importance and high regulatory level of the accident prevention regulations of the statutory accident insurance institutions in occupational safety and health was established as final and absolute in several court decisions. In a decision of a regional court it was stated explicitly, that „Especially accident prevention regulations [UVVs] of the Berufsgenossenschaften capture exactly typical and grave risks at the workplace, so that a breach of these regulations has to be treated in most cases as a gross violation of obligations.” (case number: LG Osnabrück, 12.12.1995, Az. 7 O 79/94).

Oftentimes German courts are stating a joint and several liability, so to speak a collective guilt of all who have managerial responsibility and who are involved in an accident. A precedent: An industrialized building enterprise had to assemble roof and wall panelling within a concrete hall. A roofer overbalanced and fell for unexplained reasons from the roof, because he was unsecured. The Berufsgenossenschaft took the enterprise, the individually liable shareholder and the group leader and site foreman to court in order to reimburse the costs in connection with the accident. The group leader and site foreman was found guilty for ignoring the corresponding safety provisions, which are fixed in the appropriate UVV, and allowing his workers to act often completely unsecured. The individually liable shareholder was found guilty for not fulfilling his supervision and control duties through gross negligence. (case number: OLG Köln, 20.01.1998, Az. 15 U 51/96).

5.4 Industrial and labor market relations

Labor contract relations such as payments and dismissals are not under state or insurance surveillance in Germany. Collective bargaining takes place at sector level with nearly annual adjustments. The mechanism has taken care of workers' and trade union interest so far well enough in order to ensure a comparatively low level of industrial conflict.
C  Indicators on working conditions

Indicators on working conditions are assessed primarily by the enterprise in the context of the obligatory risk assessment which form the base of OSH action in EU member states, and in addition also externally by state authorities or accident insurers in the frame of enterprise inspection. Information on soft factors is mostly collected by interview or questionnaire. The information is available from enterprises, is published by labor inspectorates, BGs and in aggregated format by the Federal Government in the annual report on working conditions and health of the workforce (Sicherheit und Gesundheit bei der Arbeit).

Detailed information on work and working conditions is collected through periodical representative public surveys since 1979 by the Federal Institute for Vocational Training (BIBB; http://www.bibb.de/en/index.htm) and the Institute for Employment Research (IAB; http://www.iab.de/en/iab-aktuell.aspx/Search). The Federal Institute for Occupational Safety and Health (BAuA) participates in the survey preparation since 1998/1999 in order to better assess the changing world of work. The BIBB/BAuA Survey of 2005/06 was a representative survey of 20,000 employees of age 15 years and more, working at least 10 hours per week, including foreigners with sufficient German language skills; persons undergoing first vocational training were excluded. The survey was conducted by telephone interview.

### Detail results:

- **5.8%** of the workforce under investigation have a migrant family background.
- **45%** earn less than 2,000 EUR gross income; **15%** less than 1,500 EUR, including **5.8%** holding a so-called mini-job off less than 400 EUR.
- **55%** of interviewees worry about the economic situation of the company with more than **10%** acutely fearing job loss.

About two thirds work far longer hours than specified by contract; **5.5%** hold a second employment which then leads to a weekly working time of more than 48 hours.

The **working time** of self-employed exceeds by far the hours of employees in regular employment.

However, there is little difference in the working time of German nationals, those with migratory background and foreigners.

A quarter of interviewed works at least occasionally shift work, **70%** at least occasionally on Saturdays and **40%** on Sundays or Public Holidays. Occasional night work and work on call is also not uncommon.
Heavy lifting or carrying of loads, exposure to smoke or dust, working in hot or cold climate, vibration, poor lighting and noise were most commonly mentioned as strain; however less than a quarter of interviewed were exposed to these adverse working conditions. Continuous sitting or standing as usual working position is not commonly perceived as a strain.

Exposure to smoking at work was equally less common (often: 17.0 %; occasionally: 9.3 %; seldom: 8.9 %), but then perceived clearly as strain by the non-smokers (53.9 – 58.2 %).

Most questioned did not feel under- or over-challenged by the requested workload or skills (workload demand - rather too little: 6.4 %; just right: 76.0 %; rather too heavy: 17.4 %; skill demand - rather too little: 13.7 %; just right: 81.5 %; too much: 4.6 %).
Three quarters of interviewees feel strained if left uniformed and out of control; however lack of decision power on planning of own work procedure and load is not a common cause of complaint.

<table>
<thead>
<tr>
<th>Demand and strain caused by demand</th>
<th>Frequency (%)</th>
<th>Perceived strain (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of information about decisions</td>
<td>12.9</td>
<td>73.5</td>
</tr>
<tr>
<td>Incomplete information</td>
<td>8.0</td>
<td>78.6</td>
</tr>
<tr>
<td>No possibility to plan own work</td>
<td>14.0</td>
<td>13.4</td>
</tr>
<tr>
<td>No influence on work load</td>
<td>40.1</td>
<td>19.3</td>
</tr>
<tr>
<td>No decision about own pause regime</td>
<td>28.9</td>
<td>17.4</td>
</tr>
</tbody>
</table>

The importance of good working climate, collaboration and support by peers and supervisors is increasingly well recognized; its absence is perceived as considerable strain. However, at current, working relationships seem to be of fairly good quality.

<table>
<thead>
<tr>
<th>Resource</th>
<th>Mostly present (%)</th>
<th>Mostly lacking (%)</th>
<th>Perceived strain (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Being part of the workplace community</td>
<td>74.6</td>
<td>9.5</td>
<td>25.2</td>
</tr>
<tr>
<td>Good collaboration with colleagues</td>
<td>83.3</td>
<td>3.0</td>
<td>51.7</td>
</tr>
<tr>
<td>Good colleague support when needed</td>
<td>69.7</td>
<td>6.1</td>
<td>37.7</td>
</tr>
<tr>
<td>Good supervisor support when needed</td>
<td>51.5</td>
<td>16.3</td>
<td>40.2</td>
</tr>
</tbody>
</table>

Working climate is an important component of overall job satisfaction and has as such protective value. In general the interviewed workforce appears to be quite content with working conditions and environment, with the exception of restricted career prospects.

**Job satisfaction in Germany 2005/06 (BIBB/BAuA)**

<table>
<thead>
<tr>
<th>Job satisfaction</th>
<th>Mean *</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income</td>
<td>2.71</td>
</tr>
<tr>
<td>Career possibilities</td>
<td>2.11</td>
</tr>
<tr>
<td>Working time</td>
<td>2.93</td>
</tr>
<tr>
<td>Working climate</td>
<td>3.17</td>
</tr>
<tr>
<td>Direct supervisor</td>
<td>3.10</td>
</tr>
<tr>
<td>Job content</td>
<td>3.20</td>
</tr>
<tr>
<td>Facilities</td>
<td>3.01</td>
</tr>
<tr>
<td>Skill use possibilities</td>
<td>3.09</td>
</tr>
<tr>
<td>Training possibilities</td>
<td>2.81</td>
</tr>
<tr>
<td>Work means (including software and furniture)</td>
<td>2.96</td>
</tr>
<tr>
<td>Physical working conditions</td>
<td>2.98</td>
</tr>
<tr>
<td><strong>Overall satisfaction</strong></td>
<td>3.20</td>
</tr>
</tbody>
</table>

* 4 = very satisfied; 3 = satisfied; 2 = less satisfied; 1 = dissatisfied

When asked to describe their general health during or shortly after work, most of them responded positive. While only 10 % viewed their general health negative, more than 40 %, however, stated to suffer from lower back pain, shoulder-neck pain and/or general fatigue, with many of them having already undergone medical or physiotherapeutic treatment in the past.

**Self-employed**  
While the results of the BIBB/BAuA representative survey show a largely satisfactory picture of working conditions and perceived work strain, data on self-employed as for the first time extensively reported in the Annual Report on Safety and Health at Work 2007 of the Federal Government.
In 2007, more than 10% of the German workforce were self-employed. The group is inhomogeneous, consisting of freelancers and self-employed with (44.2%) and without (55.8%) employees. Their number has been increasing over the last years.

The perceived stress and strain patterns of self-employed differ considerably from employees in regular employment, especially where mental strain is concerned. Still, their work-related health complaints are generally lower, not so however for heart sensations (self-employed: 7.4%; regular employees: 5.7%), irritability (self-employed with: 29.3%; self-employed without: 22.8%; regular employees: 28.5%) and burn-out (self-employed with: 10.4%; self-employed without: 7.9%; regular employees: 6.9%). Also general fatigue (self-employed with: 41.7%; self-employed without: 36.7%; regular employees: 45.1%) and musculoskeletal complaints are prominent (lower-back pain - self-employed with: 38.1%; self-employed without: 40.6%; regular employees: 44.7%; shoulder-neck pain - self-employed with: 41.1%; self-employed without: 40.0%; regular employees: 45.7%).

**Work-related health complaints by working status in Germany 2005/06 (BIBB/BAuA)**

<table>
<thead>
<tr>
<th>Demand and strain caused by demand</th>
<th>Self-employed with employees (%)</th>
<th>Self-employed without employees (%)</th>
<th>Employees in regular employment (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time and performance pressure</td>
<td>a 71.1 b 57.1</td>
<td>60.3 a 55.5 b 58.3</td>
<td>58.7 a 54.9 b 55.8</td>
</tr>
<tr>
<td>Multitasking</td>
<td>a 72.9 b 26.6</td>
<td>56.6 a 17.6 b 26.2</td>
<td>60.4 a 26.6 b 26.2</td>
</tr>
<tr>
<td>Work disturbance (phone, poor work material or machinery etc.)</td>
<td>a 51.4 b 62.8</td>
<td>33.3 a 61.3 b 49.7</td>
<td>49.7 a 60.1 b 60.1</td>
</tr>
<tr>
<td>New task challenges</td>
<td>a 51.2 b ?</td>
<td>48.2 a ? b ?</td>
<td>40.5 a 14.9 b 14.9</td>
</tr>
<tr>
<td>Task improvement, experimenting</td>
<td>a 28.9 b 68.9</td>
<td>21.7 a 59.0 b 70.1</td>
<td>18.4 a 70.1 b 70.1</td>
</tr>
<tr>
<td>Working at own limits</td>
<td>a 28.9 b 68.9</td>
<td>21.7 a 59.0 b 70.1</td>
<td>18.4 a 70.1 b 70.1</td>
</tr>
<tr>
<td>Fast work</td>
<td>a 53.0 b 37.1</td>
<td>42.4 a 35.2 b 44.0</td>
<td>46.2 a 44.0 b 44.0</td>
</tr>
<tr>
<td>Considerable financial loss through slight mistakes</td>
<td>a 22.9 b 57.5</td>
<td>18.4 a 53.7 b 42.2</td>
<td>18.2 a 42.2 b 42.2</td>
</tr>
<tr>
<td>Emotional strain</td>
<td>a 15.0 b ?</td>
<td>8.6 a ? b ?</td>
<td>11.3 a ? b ?</td>
</tr>
</tbody>
</table>

a = % under stress; b = % of these perceiving strain; ? = question not posed or numbers too small
The working time of self-employed is largely free of shift work, but else in comparison to regular employees considerably more demanding, and family life is far less taken care of. Family interest is at most times accommodated for self-employed with employees at 38.8 %; for self-employed without employees at 49.2 %; and for regular employees at 55.7 %.

While consequently their satisfaction with working hours is comparatively low, their satisfaction with all other elements of job satisfaction is markedly higher, this even although they worry considerably more about the economic situation of their employment (self-employed with: 37.1 %; self-employed without: 40.2 %; regular employees: 17.5 %) and fear job loss or close down (self-employed with: 10.2 %; self-employed without: 15.4 %; regular employees: 11.7).

Job satisfaction in Germany 2005/06 (BIBB/BAuA)

<table>
<thead>
<tr>
<th>Job satisfaction</th>
<th>Self-employed with employees (%)</th>
<th>Self-employed without employees (%)</th>
<th>Employees in regular employment (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income</td>
<td>72.2</td>
<td>61.1</td>
<td>69.6</td>
</tr>
<tr>
<td>Working time</td>
<td>66.8</td>
<td>74.9</td>
<td>80.0</td>
</tr>
<tr>
<td>Working climate</td>
<td>97.8</td>
<td>92.3</td>
<td>84.3</td>
</tr>
<tr>
<td>Job content</td>
<td>96.0</td>
<td>95.7</td>
<td>93.1</td>
</tr>
<tr>
<td>Facilities</td>
<td>86.7</td>
<td>85.5</td>
<td>79.9</td>
</tr>
<tr>
<td>Skill use possibilities</td>
<td>94.9</td>
<td>89.8</td>
<td>87.7</td>
</tr>
<tr>
<td>Training / further education possibilities</td>
<td>86.0</td>
<td>81.0</td>
<td>68.5</td>
</tr>
<tr>
<td>Work means (including software and furniture)</td>
<td>92.0</td>
<td>85.7</td>
<td>81.1</td>
</tr>
<tr>
<td>Physical working conditions</td>
<td>88.9</td>
<td>87.0</td>
<td>81.9</td>
</tr>
<tr>
<td>Overall satisfaction</td>
<td>95.3</td>
<td>91.9</td>
<td>91.7</td>
</tr>
</tbody>
</table>
D Indicators on occupational and work-related health

1 Statistics on accidents and occupational diseases

Statistics on occupational and commuting accidents are recorded by the various accident insurance institutions. Their umbrella organizations (DGUV and LSV) publish the statistics in their annual reports. The Federal Ministry of Labor and Social Affairs (BMAS) lists the figures from the accident insurance institutions' annual reports and the statistics provided by the Gewerbeaufsichtsamt labor inspectorates and the federal states' Amt für Arbeitsschutz offices (responsible for OSH matters), in its annual "Bericht zum Stand von Sicherheit und Gesundheit bei der Arbeit" (Report on the Current Level of Safety and Health at Work), formerly published under the title Unfallverhütungsbericht (Accident Prevention Report). Definitions of terms used in this statistics section are given on http://www.dguv.de/content/facts_figures/begriffe/index.jsp.

Additionally all statistical figures on occupational accidents and diseases are given by the statutory accident insurance institutions. They are available via their websites which can be accessed via the websites of their umbrella organizations www.dguv.de (the key data is given in http://www.dguv.de/content/facts_figures/index.jsp) and www.lsv.de.

Health data from statutory health insurance is collected and provided by the German health insurance institutions. The data is derived from more than 100 different sources, among which there are many statistics from the Statistical Offices of the Länder and the federation. There are also data from numerous other institutions from the health sector.

2 Occupational accidents

In 2008 over 73 million people in Germany were insured against occupational, commuting and school accidents and against occupational diseases. This figure includes around 17,058,553 children in schools, nursery schools and after-school care centers, and students in higher education. Approximately 3.6 million enterprises and institutions fell within the responsibility of the DGUV members in 2008, including 3,504,709 companies in the industrial, trade and service sector and 126,771 institutions covered by the pupil accident insurance. The equivalent “full time employees” was up to 36,259,598 persons. In 2008 about 971,620 work-related and 176,608 commuting accidents (1,148,228 accidents in total) with three or more days off work, 22,452 new pensions and 1,030 fatalities in total (572 fatal work-related accidents; 458 fatal commuting accidents) were reported. The quota per 1,000 equivalent full time employees reached an average of 26.80 for reportable work-related accidents. This quota ranged from less than 15 in the chemical industry up to less than 70 in the construction industry. More details are given on internet at http://www.dguv.de/inhalt/zahlen/documents/dguvstatistiken2008e.pdf.
Including data from the new federal states from 1991 onwards (German unification)

Fatal accidents in Germany 1960 – 2008 by sector

(Source: SUGA 2008)
3 Occupational diseases

In 2008 about 60,624 notifications of suspected cases of occupational diseases were recorded, 59,468 were decided in 2008; for 23,028 cases the occupational causation was confirmed. 2,391 fatalities due to occupational diseases were registered. 4,312 new occupational disease pensions were considered. Most cases of ODs were recognized in the metal industry, followed by the construction sector.

**Occupational diseases in Germany 1960 - 2008**

![Graph showing occupational diseases in Germany from 1960 to 2008.](image)

(Source: SUGA 2008)

4 Rehabilitation and compensation expenditures of statutory accident insurance

In 2007, the accident insurance institutions responsible for the industrial and public sectors paid compensation amounting to € 8.170 billion following insurance claims on occupational accidents and diseases. These payments encompassed services, cash payments and payments in kind to victims of accidents and occupational disease and to surviving dependants. € 2.805 billion were paid for curative treatment and for medical, occupational and social rehabilitation measures. This figure was 0.6% lower than in the previous year. A further € 5.365 billion were paid in the form of pensions, lump-sum benefits, allowances and similar expenditure (-1.3%). In the area of pupil accident insurance, compensation payments totaling a further € 405 million were made in 2007. Of this, € 322 million were accounted for by curative treatment and rehabilitation measures (2.1% less than in the previous year) and € 84 million by pensions and similar payments (+4.0%).

5 Work-related health problems

Work-related health problems are not officially recorded in Germany. Hints on the incidence of these problems are given in the reports of the statutory health insurance institutions.

Additionally further information on work-related health problems can be extracted from the regularly executed surveys on working conditions of the European Foundation for the Improvement of Living and Working Conditions (Eurofound), European Union agency, one of the first to be established to work in specialized areas of EU policy. To date, Eurofound has carried out four European working conditions surveys (EWCS 1991, 1995, 2000/2001 and 2005). The evolution of the EWCS follows the changes in the EU itself over the last 15 years. In 1991, it covered just 12 countries; 15 in 1995 and 16 in 2000 (EU15 and Norway). The 2000 survey was extended in 2001 to cover the 10 candidate countries for EU membership. The fourth survey, carried out in 2005, covered all 27 EU Member States plus Croatia, Turkey, Switzerland and Norway.
6 Periodical health examinations

Successful prevention requires the surveillance of working conditions and of workers' health. Health examinations are part of workers' health surveillance. The following types of health examinations are conducted depending on exposure and individual situation of the employee.
- Pre-employment health examinations
- Special health examinations for workers in hazardous jobs
- Health examinations when returning to work after a long sick leave
- Health examinations for assessment of work ability
- Health examinations after retirement from especially hazardous jobs, e.g. asbestos work.

Periodical health examinations are obligatory for employees exposed to hazardous substances. The legal obligation is laid down in a variety of specific laws and ordinances and in the new (in force since 18.12.2008) uniform ordinance on occupational medical prevention (Verordnung zur arbeitsmedizinischen Vorsorge (ArbMedVV)).

Recommendations and guidelines on the performance of health examinations according to exposure are available from Federal Ministry of Labor (Merkblätter zur arbeitsmedizinischen Vorsorge; annex 1 to the ordinance on Occupational Diseases)\textsuperscript{10}, the German Society of Occupational Medicine and Environmental Medicine (Leitlinien der DGAUM für arbeitsmedizinisch und umweltmedizinisch relevantes ärztliches Handeln)\textsuperscript{11} and from the accident insurance institutions(BG Grundsätze zur arbeitsmedizinischen Vorsorge)\textsuperscript{12}.

The preventive medical health examinations are currently under review in the newly established “Committee on occupational medicine” (Ausschuss für Arbeitsmedizin), which is recently still in the constitutional phase.

II Prevention and compensation approaches to work-related health problems

A Compensation of Occupational diseases

Compensable occupational diseases are listed in the annex to the Occupational Diseases Ordinance (Berufskrankheitenverordnung; BeKV). The list contains the following 73 occupational diseases:

<table>
<thead>
<tr>
<th>No.</th>
<th>German List of Occupational Diseases (2009)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Diseases caused by chemical agents</td>
</tr>
<tr>
<td>11</td>
<td>Metals and metalloids</td>
</tr>
<tr>
<td>1101</td>
<td>Diseases caused by lead or its compounds</td>
</tr>
<tr>
<td>1102</td>
<td>Diseases caused by mercury or its compounds</td>
</tr>
<tr>
<td>1103</td>
<td>Diseases caused by chromium or its compounds</td>
</tr>
<tr>
<td>1104</td>
<td>Diseases caused by cadmium or its compounds</td>
</tr>
<tr>
<td>1105</td>
<td>Diseases caused by manganese or its compounds</td>
</tr>
<tr>
<td>1106</td>
<td>Diseases caused by thallium or its compounds</td>
</tr>
<tr>
<td>1107</td>
<td>Diseases caused by vanadium or its compounds</td>
</tr>
<tr>
<td>1108</td>
<td>Diseases caused by arsenic or its compounds</td>
</tr>
<tr>
<td>1109</td>
<td>Diseases caused by phosphorus or its inorganic compounds</td>
</tr>
<tr>
<td>1110</td>
<td>Diseases caused by beryllium or its compounds</td>
</tr>
</tbody>
</table>
12 **Asphyxiating gases**
1201 Diseases caused by carbon monoxide
1202 Diseases caused by hydrogen sulphide

13 **Solvents, pesticides and other chemical agents**
1301 Mucosal changes, cancer or other neoplasms of the urinary tract caused by aromatic amines
1302 Diseases caused by halogenated hydrocarbons
1303 Diseases caused by benzene and its homologues or by styrene
1304 Diseases caused by nitro or amino compounds of benzene or its homologues or their derivatives
1305 Diseases caused by carbon disulphide
1306 Diseases caused by methyl alcohol (methanol)
1307 Diseases caused by organic phosphorus compounds
1308 Diseases caused by fluorine or its compounds
1309 Diseases caused by nitric acid esters
1310 Diseases caused by halogenated alkyl oxide, aryl oxide or alkyl aryl oxide
1311 Diseases caused by halogenated alkyl sulphide, aryl sulphide or alkyl aryl sulphide
1312 Dental diseases caused by acids
1313 Lesions to the cornea of the eye caused by benzoquinone
1314 Diseases caused by p-tert-butylphenol
1315 Diseases caused by isocyanates, which have forced the person to discontinue all activities that caused or could cause the development, worsening or recurrence of the disease.
1316 Liver diseases caused by dimethyl formamide
1317 Polyneuropathy or encephalopathy caused by organic solvents or their mixtures
1318 Diseases of blood, blood generating and lymphatic system caused by Benzol

Nos. 1101 to 1110, 1201 und 1202, 1303 to 1309 and 1315: Skin diseases are excluded. They are regarded as diseases within the meaning of this annex only if they are symptoms of a general disease which have been caused by the absorption of the harmful agents or which must be compensated pursuant to number 5101.

2 **Diseases caused by physical impact**

21 **Mechanical impact**

2101 Diseases of the tendon sheaths or diseases of the peritendinous tissue or of the insertions of tendons or muscles which have forced the person to discontinue all activities that caused or could cause the development, worsening or recurrence of the disease
2102 Meniscus lesions caused by excessive physical load on the knee joints either sustained or repeated over several years
2103 Diseases caused by vibration during work with pneumatic or similar tools or machines
2104 Circulatory disturbances of the hands caused by vibration, which have forced the person to discontinue all activities that caused or could cause the development, worsening or recurrence of the disease
2105 Chronic diseases of the mucous bursae caused by constant pressure
2106 Pressure-induced nerve damage
2107 Strain fracture of the spinous processes
2108 Disc-related diseases of the lumbar spine caused by the lifting or carrying of heavy loads over many years or by performance of work in an extremely bent posture over many years which have forced the person to discontinue all activities that caused or could cause the development, worsening or recurrence of the disease
2109 Disc-related diseases of the cervical spine caused by the carrying of heavy loads on the shoulder over many years which have forced the person to discontinue all activities that caused or could cause the development, worsening or recurrence of the disease
2110 Disc-related diseases of the lumbar spine caused by the predominately vertical impact of whole-body vibration in a seated position over many years which have forced the person to discontinue all activities that caused or could cause the development, worsening or recurrence of the disease
| 2111 | Excessive dental abrasion caused by silica dust exposure over several years |
| 2112 | Osteoarthritis of the knee caused by kneeling or comparable knee straining activities with a cumulative exposure period in the whole working life at least of 13,000 hours and a minimum exposure time per shift of 1 hour |
| 22  | Compressed air |
| 2201 | Diseases caused by work in compressed air |
| 23  | Noise |
| 2301 | Hearing impairment caused by noise |
| 24  | Radiation |
| 2401 | Cataract caused by heat radiation |
| 2402 | Diseases caused by ionizing radiation |
| 3   | Diseases caused by infectious agents or parasites including tropical diseases |
| 3101 | Infectious diseases in cases where the insured person worked in health care, welfare or laboratories or was particularly exposed to a similar risk of infection in the context of another activity |
| 3102 | Diseases transmitted to humans by animals |
| 3103 | Miner’s vermination caused by Ancylostoma duodenale or Strongyloides stercoralis |
| 3104 | Tropical diseases, typhus |
| 4   | Diseases of the respiratory tract, lungs, pleura and peritoneum |
| 41  | Diseases caused by inorganic dust |
| 4101 | Silicosis |
| 4102 | Silicosis combined with active pulmonary tuberculosis (silicotuberculosis) |
| 4103 | Asbestosis or diseases of the pleura caused by asbestos dust |
| 4104 | Lung or larynx cancer -combined with asbestosis, -combined with diseases of the pleura caused by asbestos dust or -if there is evidence of cumulative exposure to asbestos dust in the workplace of at least 25 fiber years \(25 \times 10^6 \text{ ([fibre/m}^3\text{] x years})\] |
| 4105 | Mesothelioma of the pleura, the peritoneum or the pericardium caused by asbestos |
| 4106 | Diseases of the lower respiratory tract and the lungs caused by aluminum or its compounds |
| 4107 | Pulmonary fibrosis caused by metallic powder present in the production or processing of hard metals |
| 4108 | Diseases of the lower respiratory tract and the lungs caused by dust from basic slag (Thomas phosphate) |
| 4109 | Malignant neoplasms of the respiratory tract and the lungs caused by nickel or its compounds |
| 4110 | Malignant neoplasms of the respiratory tract and the lungs caused by crude coke oven gas |
| 4111 | Chronic obstructive bronchitis or emphysema in underground hard coal miners if there is evidence of exposure to a cumulative dose of generally 100 fine dust years \([(\text{mg/m}^3\text{]) x years}]\ |
| 4112 | Lung cancer caused by silica dust where there is accompanying silicosis or silicotuberculosis |
| 4113 | Lung cancer caused by polycyclic aromatic hydrocarbons if there is evidence of exposure to a cumulative dose of generally 100 Benzo[a]pyren years \([(\mu\text{g/m}^2\text{]) x years}]\ |
| 4114 | Lung cancer caused by simultaneous exposure to asbestos fiber dust and polycyclic aromatic hydrocarbons if there is evidence of exposure to a cumulative dose corresponding to a causative probability of at least 50 % according to annex 2 |
| 4115 | Lung fibrosis caused by extreme and long-lasting exposure to welding fumes and gases (Siderofibrosis) |
| 42  | Diseases caused by organic dust |
| 4201 | Exogenous allergic alveolitis |
| 4202 | Diseases of the lower respiratory tract and the lungs caused by raw cotton, raw flax or raw hemp dust (byssinosis) |
| 4203 | Adenocarcinoma of the nasal cavities and sinuses caused by oak or beech wood dust |
| 43  | Obstructive diseases of the respiratory tract |
| 4301 | Obstructive diseases of the respiratory tract (including rhinopathy) caused by allergic agents which have forced the person to discontinue all activities that caused or could cause the development, worsening or
4302 Obstructive diseases of the respiratory tract caused by chemical irritants or agents with a toxic effect which have forced the person to discontinue all activities that caused or could cause the development, worsening or recurrence of the disease

5 Skin diseases

5101 Severe or recurrent skin diseases which have forced the person to discontinue all activities that caused or could cause the development, worsening or recurrence of the disease

5102 Skin cancer or skin alterations showing a cancerous tendency caused by soot, paraffin sludge, tar, anthracene, pitch or similar substances

6 Diseases caused by other factors

6101 Miner’s nystagmus

The administrative criteria for legal recognition are laid down in the Social Code VII (Sozialgesetzbuch VII). Included is the right of the insured within the process of the recognition of his disease as work-related and therefore compensable to go to social court free of charge.

Generally the appropriate insurance institution will assess the diagnosis with confirmation of the labor inspection authority. The insured has the right to disagree and call for a second expert opinion through the social court free of charge.

The employer is legally obliged to perform risk assessment and management as appropriate; he further has to contract occupational health services or – as in the case of the employer model – provide access. Employer non-compliance is subject to fines. Fines up to € 25,000 can be imposed by state labor inspectorates, up to € 10,000 by inspectors of the statutory accident insurance institutions. In case of severe infringement persecution under criminal law may result.

1 Priorities in the prevention of occupational diseases

Current national strategic priorities are – besides a further accident reduction - the prevention of musculoskeletal workloads and disorders and the prevention of skin diseases. These two topics are main targets within the Joint German OSH Strategy (GDA, first period from 2008 - 2012) and especially the

Most common occupational diseases in 2008

(Number of German occupational disease list in brackets)
related work programs. The targets correspond to the predominant German occupational disease burden as visible from the national statistics as well as to the increasingly aging (working) population.

Most common occupational diseases in Germany 2008

(B) Work-related musculoskeletal disorders

Musculoskeletal occupational diseases recognized by the law

Occupational diseases regarding musculoskeletal disorders (MSD) are recognized by law in the German list of occupational diseases annexed to the German Ordinance on Occupational Diseases. Most musculoskeletal disorders are covered in the list in section 2 “Diseases caused by physical impact” subsection 21 “Mechanical impact”:

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 2101:</td>
<td>Diseases of the tendon sheaths or diseases of the peritendinous tissue or of the insertions of tendons or muscles which have forced the person to discontinue all activities that caused or could cause the development, worsening or recurrence of the disease</td>
</tr>
<tr>
<td>No. 2102:</td>
<td>Meniscus lesions caused by excessive physical load on the knee joints either sustained or repeated over several years</td>
</tr>
<tr>
<td>No. 2103:</td>
<td>Diseases caused by vibration during work with pneumatic or similar tools or machines</td>
</tr>
<tr>
<td>No. 2105:</td>
<td>Chronic diseases of the mucous bursae caused by constant pressure</td>
</tr>
<tr>
<td>No. 2107:</td>
<td>Strain fracture of the spinous processes</td>
</tr>
<tr>
<td>No. 2108:</td>
<td>Disc-related diseases of the lumbar spine caused by the lifting or carrying of heavy loads over many years or by performance of work in an extremely bent posture over many years which have forced the person to discontinue all activities that caused or could cause the development, worsening or recurrence of the disease</td>
</tr>
<tr>
<td>No. 2109:</td>
<td>Disc-related diseases of the cervical spine caused by the carrying of heavy loads on the shoulder over many years which have forced the person to discontinue all activities that caused or could cause the development, worsening or recurrence of the disease</td>
</tr>
<tr>
<td>No. 2110:</td>
<td>Disc-related diseases of the lumbar spine caused by the predominately vertical impact of whole-body vibration in a seated position over many years which have forced the person to discontinue all activities that caused or could cause the development, worsening or recurrence of the disease</td>
</tr>
<tr>
<td>No. 2112: (new since 2009)</td>
<td>Osteoarthritis of the knee caused by kneeling or comparable knee straining activities with a cumulative exposure period in the whole working life at least of 13,000 hours and a minimum exposure time per shift of 1 hour</td>
</tr>
</tbody>
</table>
Some special MSD, not caused by high mechanical strain, but caused by chemical substances, high pressure, ionization or Infectious diseases, are covered in the context of other occupational diseases:

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1101</td>
<td>Diseases caused by lead or its compounds</td>
</tr>
<tr>
<td>1104</td>
<td>Diseases caused by cadmium or its compounds</td>
</tr>
<tr>
<td>1109</td>
<td>Diseases caused by phosphorus or its inorganic compounds</td>
</tr>
<tr>
<td>1308</td>
<td>Diseases caused by fluorine or its compounds</td>
</tr>
<tr>
<td>2201</td>
<td>Diseases caused by work in compressed air</td>
</tr>
<tr>
<td>2402</td>
<td>Diseases caused by ionizing radiation</td>
</tr>
<tr>
<td>3101</td>
<td>Infectious diseases in cases where the insured person worked in health care, welfare or laboratories or was particularly exposed to a similar risk of infection in the context of another activity</td>
</tr>
<tr>
<td>3102</td>
<td>Diseases transmitted to humans by animals</td>
</tr>
</tbody>
</table>

Administrative criteria for legal recognition of MSD

There are administrative criteria for legal recognition of musculoskeletal related occupational diseases. Depending on the special occupational diseases in this field specific leaflets, scientific statements and/or consensus criteria and also are court decisions are available.

Responsibility for the confirmatory diagnosis of occupational and work-related diseases for legal recognition and compensation

In Germany, the statutory accident insurance is responsible for the management of the procedure of confirmatory diagnosis of occupational and work-related diseases for legal recognition and compensation. The state labor inspection authorities need to be involved and have to agree.

Employer duty to perform risk assessment for work hazardous to musculoskeletal system

The relevant German legislation is based on the implementation of the following European Directives:
- Directive 90/269/EEC (Manual handling)
- Directive 90/270/EEC (work with display screen equipment)
- Directive 2002/44/EC (vibrations)

The following three Federal Regulations correspond directly related to these EU Directives:

Employers are obligated by the above mentioned laws to perform risk assessment for hazardous work. Risks regarding the musculoskeletal system are included. The regulations define rights and obligations for employers as well as for employees (for example to perform risk assessment, information and training of employees, medical surveillance).

Numerous other national regulations in the field of occupational safety and health are indirectly related to prevention of work-related MSD.

All Federal Regulations related to OSH are published on the web site of the Federal Ministry of Labor and Social Affairs. Since 2000, several regulations have been newly implemented or revised. With respect to MSD, the following are important:

New:
The Arbeitsstättenverordnung (Ordinance on Workplaces) which is an amendment of the former ordinance. It is related to the Directive 89/654/EC and has been enacted on 25 August 2004.

The Richtlinie 2006/42/EG des Europäischen Parlaments und des Rates vom 17.Mai 2006 über Maschinen und zur Änderung der Richtlinie 95/16/EG (short: New ordinance on machinery) relating to the implementation of the Directive 2006/42/EC. It is an amendment of the Directive 98/37/EC and includes basic safety and health requirements for machinery. The newly implemented paragraph on ergonomics is of particular importance for the prevention of MSD by avoiding or reducing of disturbances, fatigue, and physical overload. The transfer into German law is under discussion.

**Risk assessment**

There are no cycles defined to perform risk assessment. But, the employer has to assure, that the risk assessment is up to date for all work places. Risk assessments must be renewed if relevant changes in work places, tasks, used tools, work organization and so on are made. Risk assessment is required for all workplaces independent of the size of the undertaking.

**Compliance tools**

EU legislation and also their translation into member state legislation is often quite general and requires guidance instruments to provide for easier implementation. These instruments are largely developed by working groups of the labor inspectorates or the statutory accident insurance funds. They often contain checklists for risk assessment and risk management.

**Preventive measures**

The employer has to assess and control risk, but is not obliged to perform preventive programs targeting MSD.

**Statistics on MSD**

Statistical information is given for all above listed occupational diseases and published by the statutory accident insurance [http://www.dguv.de/content/facts_figures/bk/index.jsp](http://www.dguv.de/content/facts_figures/bk/index.jsp). Reported are the numbers of notification, recognition, compensation and death (not relevant in the case of musculoskeletal disorders) cases per disease. The compensable MSD contained in the German List of Occupational Diseases are specified above.

<table>
<thead>
<tr>
<th>Occupational disease (OD)</th>
<th>OD no. ODO¹</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tendon sheats</td>
<td>2101</td>
<td>749</td>
<td>841</td>
<td>877</td>
</tr>
<tr>
<td>Meniscus lesions</td>
<td>2102</td>
<td>1,607</td>
<td>1,288</td>
<td>1,467</td>
</tr>
<tr>
<td>External friction (pneumatic tools)</td>
<td>2103</td>
<td>419</td>
<td>370</td>
<td>416</td>
</tr>
<tr>
<td>Mucous bursae</td>
<td>2105</td>
<td>496</td>
<td>477</td>
<td>440</td>
</tr>
<tr>
<td>Spinous processes</td>
<td>2107</td>
<td>4</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Lumbar spine, lifting and carrying</td>
<td>2108</td>
<td>5,515</td>
<td>5,555</td>
<td>5,259</td>
</tr>
<tr>
<td>Cervical spine</td>
<td>2109</td>
<td>1,031</td>
<td>930</td>
<td>914</td>
</tr>
<tr>
<td>Lumbar spine, mainly vertical vibration of the entire body</td>
<td>2110</td>
<td>300</td>
<td>290</td>
<td>316</td>
</tr>
<tr>
<td>Total (all notified OD)</td>
<td></td>
<td>59,919</td>
<td>61,457</td>
<td>61,150</td>
</tr>
</tbody>
</table>

¹ ODO: Occupational diseases ordinance (Berufskrankheitenverordnung)
Recognized cases of MSD, Germany 2005-07

<table>
<thead>
<tr>
<th>Occupational disease (OD)</th>
<th>OD no. ODO¹</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tendon sheaths</td>
<td>2101/72</td>
<td>17</td>
<td>12</td>
<td>15</td>
</tr>
<tr>
<td>Meniscus lesions</td>
<td>2102/71</td>
<td>281</td>
<td>248</td>
<td>233</td>
</tr>
<tr>
<td>External friction (pneumatic tools)</td>
<td>2103</td>
<td>105</td>
<td>101</td>
<td>68</td>
</tr>
<tr>
<td>Mucous bursae</td>
<td>2105/74</td>
<td>145</td>
<td>138</td>
<td>152</td>
</tr>
<tr>
<td>Spinous processes</td>
<td>2107/75</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Lumbar spine, lifting and carrying</td>
<td>2108/70</td>
<td>182</td>
<td>189</td>
<td>203</td>
</tr>
<tr>
<td>Cervical spine</td>
<td>2109</td>
<td>1</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Lumbar spine, mainly vertical vibration of the entire body</td>
<td>2110</td>
<td>12</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>Total (all recognized OD)</td>
<td></td>
<td>15,920</td>
<td>14,156</td>
<td>13,383</td>
</tr>
</tbody>
</table>

¹ ODO: Occupational diseases ordinance (Berufskrankheitenverordnung)

Programs to prevent work-related musculoskeletal disorders provided or supported by the government
Programs exist on federal, state and BG level.

- National programs and Campaigns
The Modellprogramm zur Bekämpfung arbeitsbedingter Erkrankungen (National program on combating work-related diseases) was founded by the Ministry of Labour and Social Affairs and launched as an ongoing program in Germany in 2000. The aim of the activities within the program is to assist enterprises in the implementation of preventive measures, to build up an infrastructure and networks, and to support the information flow and the exchange of know-how, especially between SMEs. Each year 2-4 projects are launched and funded for a time period of 2-3 years. The activities have always been done in close cooperation with companies in different sectors. Some of the programs are focusing on WHP and the improvement of ergonomics in different branches.

Examples are:
- „CCall“ dealing with call-centers and the prevention of psychosocial, ergonomic and organizational risk [http://www.ccall.de/index.htm](http://www.ccall.de/index.htm)
- “NAGU” (Nachhaltige Arbeits- und Gesundheitspolitik in Unternehmen/ Sustainable policy on OSH in enterprises) is focusing on car industry, public administration and sweets industry. [http://www.nagu-projekt.de/](http://www.nagu-projekt.de/)
- Alter(n)sgerechte Arbeitsgestaltung (Age related work design and organization). This program has started in September 2006 and is carried out by partners aiming at the development of effective and adequate solutions for the design of work equipment and work places, the organization of work and working time according to an ageing personnel in enterprises. A Website will be available soon.
- “UBEG - Unternehmensgewinn durch betriebliche Gesundheitspolitik” is based on the scientific based knowledge that the economic success of enterprises is closely related to healthy, motivated and engaged employees. [http://www.ubeg.net/](http://www.ubeg.net/)
- A new project specifically concerned with the prevention of MSD is running since 2007 until 2010: Arbeitsbezogene Belastungen des Muskel-Skelett-Systems - innovative und integrative Präventionsansätze (Work-related strain on the musculoskeletal system – innovative and integrative approaches of prevention). The aim is to overview the current situation and trends in the field of prevention of MSD and to help the enterprises in exemplary implementation of effective and efficient integral solutions.
- **IPAG - Integrationsprogramm Arbeit und Gesundheit der Unfallkrankenkassen** is an initiative of the social insurance companies in Germany. The lead has been taken by DGUV. Aim of this co-operation is to develop instruments and solutions for the assessment and prevention of work-related diseases. MSD is one of the targets. It is divided into several projects with different concepts and partners. They will build up a network within branches for the provision of advice and guidance for the improvement of prevention.

- A further national campaign is the **Initiative Neue Qualität der Arbeit (INQA)** (New Quality of Work Initiative). It is a joint project of the Federal Government, the Länder, social insurance funds, foundations, companies and social partners. All members intend to bring together people's interest in positive, healthy and personality enhancing working conditions and the need for competitive jobs. The slogan is "Acting together - all partners within their own responsibilities". The members of the Initiative are pursuing their goal in a situation of rapid structural change in economy and society where the demographic development leads to an ageing labor force and where far-reaching societal concerns need to be addressed in the world of work. This requires: challenging job contents, co-operation between employers and workers on the basis of partnership, vocational training and further training, health protection and adjustment of working conditions to human needs, more flexible work organization and better reconciliation of family and work. The aim is to prompt a broad societal debate on the future of work, to increase public awareness of the necessary re-organization of the world of work, and to develop joint concepts and measures to improve the quality of work. In suitable areas of work design, procedures and instruments as well as examples of "good practice" will be collected or developed and disseminated.

The fields of the initiative are given on a specific web site. In 2003/2004 there was a particular branch on prevention of MSD where 8 projects were realized. Thematic aspect were assessment, evaluation, prevention and health promotion in musculoskeletal disorders and complaints due to physical, psychosocial and combined workload. The projects were performed in close cooperation with enterprises and resulted in practical solutions directly applied in the companies. The results were adopted by the Good Practice-Data base of INQA and presented on a special web site www.inqa.de/Inqa/Navigation/Themen/Physische-Belastung/projekte.html

Another field of the Initiative is concerned with Office work – **INQA Büro**. One of the main points of this campaign is the reduction of musculoskeletal complaints by means of practical recommendations and guidelines. There have been brochures on ergonomic and behavioral measures at the workplace, checklists and assessment tools for healthy and efficient work, campaigns for sensitization of the public, a Good Practice-program on exemplary solutions, and others. By organizing the activities as a network it is aimed clearly to improve the implementation of the up to date-knowledge on prevention of MSD in office work.

In 2007, a new National initiative **50 plus** was initiated by the Federal Ministry of Labor and Social Affairs. It will be particularly engaged in work and employability of elderly workers. The New Quality of Work Initiative will be integrated in this new Initiative and will be continued as a substantial activity for improvement of health and well-being at work in connection with healthy and competitive workplaces.

- **Federal states (Länder)**

All Federal States in Germany promote projects and programs which focus on the implementation of preventive measures at workplace. Prevention of work-related MSD and prevention of low back pain is mostly related to the setting "enterprises" in health promotion programs. Information and actions are also provided on specific web platforms.

- For example, the **Landesanstalt für Arbeitsschutz des Landes Nordrhein-Westfalen** (Regional office for occupational safety and health of North Rhine-Westphalia) - edited a CD-ROM 30g **Gesünder Arbeiten** (30g healthier working) in close co-operation with institutes, enterprises, social partners, BGs and health insurance bodies. It contains a package of databases, examples of good practice, guidelines and offline web portals around work and health. Of particular importance are guidelines for interactive evaluation and design of work processes, guidance on planning and implementation of service centers, advanced training of assessment and design of manual handling tasks, and a database on Good Practice of work design in enterprises and administrations.

- Further examples of the activities of the German Länder are: KomNet (North Rhine-Westphalia),
A special form to support new and creative solutions and projects in occupational health and safety is the so-called Präventionspreis (Prevention award). The awards are offered in the last years and today by different institutions, e.g. HVBG, sectoral BGs, the Länder and others.

- **Berufsgenossenschaften**
  The statutory accident insurance institutions for the construction industry (BG BAU) distributes a lot of information in the field of ergonomics and about prevention programs. Special working procedures, methods, products and tools which can help to reduce the physical load are presented as well as tools for ergonomic risk assessment, projects and programs for rehabilitation of workers in this sector. http://www.bgbau.de/d/ergonomie/index.html

- **Health insurance institutions**
  Most of the health insurance companies provide a wide range of work-place related information (how to avoid low back pain, stress at work, office work, fit at work etc.). They carry out, support and mediate health promotion projects and courses by itself or in the enterprises (e.g. IKK “Fit im Beruf” or BKK).

  In addition, there is a close cooperation between the Confederation of health insurance companies and the Association of accident insurance carriers in the field of prevention of work-related health risks. The co-operation is based on a regulation from the German social law (§ 20 SGB V and §14 SGB VII). The aim is to develop common measures of interventions and prevention at work. Both Associations work together in the Initiative Gesundheit und Arbeit (IGA) which was founded in 2002. The prevention of MSD is part of projects like “enterprises in movement” or “ageing work-force”. Another important component of prevention performed by the health insurance companies are the annually published data on sick leave in Germany. The data are differentiated by diseases and by occupations or sectors. The sick leave data reports are available online.

- **Public sector**
  There are some other networks and associations in Germany who are dealing with different aspects of primary prevention of MSD. The Deutsches Forum Prävention und Gesundheitsförderung - DFPG (German Forum for Prevention and Health Promotion) is an association of more than 70 organizations aligned in a national alliance since 2002. Prevention of work-related MSD is included in topics like office work where problems of low back pain or how to avoid slips and falls were communicated. The association Aktion Gesunder Rücken (Healthy back campaign) informs about the prevention of back problems and allocates a special label for ergonomically and back-friendly designed products. The professional association of orthopedists promotes the campaign Orthofit, a program for orthopedic screening examination on musculoskeletal health of children. The association Bundesarbeitsgemeinschaft für Haltungs- und Bewegungsförderung e.V. (BAG) presents information to motivate children to sports and mobility. The German Association of Orthopedics and Orthopedic Surgery runs a campaign Orthopädie bewegt (Orthopedics is moving) which is in the context of the WHO Bone-and-Joint Decade with special focus on low back pain, motivation for movement and reduction of adiopsitas. The Deutscher Verband der Rückenschulen e.V. (German Alliance of Back Schools)
published a standardized editorial for Back exercise programs with the need for all providers of certification and binding the programs also in the enterprise setting.

- **Enterprises**
  
  Last but not least, strategies for prevention of MSD are part of the enterprise’s strategy for occupational safety and health in many cases. Examples of Good Practice are published in the national networks for occupational safety and health as well as in the INQA data base as referred above.

**Manpower and budget dedicated**

It is difficult to specify manpower and budget dedicated to the prevention of work-related musculoskeletal disorders since many levels and actors are involved. However, the area is of high priority and hence correspondingly equipped.

C  **Cardiovascular disorders**

The prevention of CVD is in the domain of the Ministry of Health. There is no specific regulation on the prevention of cardiovascular disorders (CVD) in employment context. Cardiovascular parameters will be generally assessed by occupational physicians in the context of health examinations. Prevention of CVD may be targeted also in Workplace Health Promotion programs. There are also preventive initiatives offered by public health insurance and accident insurance institutions in cooperation. The Federal Institute of Occupational Safety and Health has defined the multifactorial genesis of CVD as research target.

D  **Work-related stress and psychosocial risks**

As in most EU countries, there are no specific legal regulations on work-related stress and/or mental workload in Germany. However, legal regulations, in particular the labor protection law [Arbeitsschutzgesetz] specify the obligation for employers to consider factors such as working time design and work organization in the context of risk assessment [§ 5 Beurteilung der Arbeitsbedingungen; § 4 Allgemeine Grundsätze] which means that factors relating to job stress and/or mental workload are implicitly covered. In the ordinance on work at video display terminals [Bildschirmarbeitverordnung], § 3 on risk assessment [Beurteilung der Arbeitsbedingungen] explicitly refers to mental workload as a factor to be considered.

Legal obligations in this context are in principle enforceable. However, the legal requirements in the labour protection law (§§ 25 and 26) do not immediately stipulate penalties to noncompliant employers in case they do not perform risk assessment including factors relating to job stress. Employer liability is a complex issue which requires the evidence of a close link of illness or disease with stressful factors of the working environment. In this context, various legal regulations and court rulings are relevant (e.g. Podehl; J: Haftung des Arbeitgebers wegen Stress am Arbeitsplatz ?; DER BETRIEB, No, 38/2007, pp. 2090-2093 ). In general, it can be said that increasing research into workplace stress over the last years has highlighted the possibility of legal claims.

**Scope of activities provided by the employers to assess and manage job stress**

In absence of binding legal obligation voluntary activities in the context of workplace health promotion take place, mainly in larger enterprises.

An indicator of the relatively low level of activities by employers to assess and manage job stress are recent survey data (still unpublished; ESENER Establishment Survey on Psychosocial Risks at Work) according to which in Germany only about 15 % of establishments have a procedure to deal with work-related stress.

**Periodical health examinations**

Specific periodical health examinations do not exist.

**Government programs or services to prevent job stress**

As a part of the Initiative New Quality of Work (www.inqa.de), the German government created a network where various partners are engaged offering recent research results, recommendations and examples of good practice on the prevention of work-related stress.
Performing workplace health promotion (WHP), whether work- or lifestyle-related, is not mandatory for German employers. Accordingly, there are no particular legal obligations to prevent job stress in that context.

The institutional responsibility for providing WHP rests entirely with the statutory health insurance funds (not with the occupational safety and health authorities of the state or other public agencies). As determined in Volume V of the German Social Security Code [Sozialgesetzbuch], the health insurance funds have to deliver WHP services by (a) investigating the health situation in companies (including both health risks and health resources), (b) developing proposals for the improvement of the companies’ health situation, and (c) supporting the implementation of the suggested measures. For these purposes, the health insurance funds have a wide range of instruments available, such as company-specific surveys and data analyses, moderated focus groups engaged in problem solving (“health circles”), or advisory and training programmes dealing with various health-related topics (e.g. back pain prevention, stress management, leadership behaviour).

As for the companies, making use of the health insurance funds’ WHP services is completely voluntary. In order to encourage companies in this respect, the health insurance funds may employ financial incentives. These consist of reduced health insurance contributions admitted to companies that carry out WHP according to standards determined by the health insurance funds. Premium reductions may account for a twelfth of the regular annual amount payable to the fund. As contributions are paid in equal shares by the employer and the employees, both sides would benefit from a reduction. Usually this kind of financial bonus is being granted on a temporary basis, with an option to renew it if the company has a steadily good WHP performance.

The financial resources invested in WHP services have considerably increased over the years. In 2008 the health insurance funds spent roughly 36 million Euros which is two-and-a-half-times the expenditure in 2000. However, WHP-expenditure per capita (i.e. per insured employee) is still rather low (a bit more than one Euro per year). According to the latest survey of the health insurance funds’ prevention services, approximately 7000 companies have been involved in WHP activities organised or supported by the funds during the year 2007. Of these activities, about 70% have taken place in medium-sized and large enterprises employing more than 50 workers. Further, WHP is still concentrated to a large extent (almost 50%) in the manufacturing sector (including construction industry), whereas the service sector is clearly underrepresented here.

By now, only a minority of WHP activities is purely behavior- or lifestyle-related. In 67% of the documented cases, WHP measures are (at least partly) aimed at the improvement of working conditions. Work organisation, layout of tasks and responsibilities (job autonomy/control) as well as quality of information and communication are important issues here (56%, 39% and 34% of the cases, respectively), all of which being highly relevant with regard to job stress.

III History of Occupational Health and Safety System

The German OSH System dates back to the times of the Industrial Revolution in Germany and was step by step developed as a measure to mitigate human suffering, to ensure better public health and to stabilize the society. First legislation was the so-called Prussian Regulative on the prevention of child labor by Chancellor Bismarck in 1839. During the following decades, the Industrial Code and legislation on social insurance, including the accident insurance were established. Legislation on child labor and on industrial establishments lead to the development of labor inspectorates, while accident insurance regulation was the origin of the accident insurance institutions with their technical inspection services. Both systems form the so-called Dual System. With the inclusion of employees and civil servants, workmen protection changed to work protection. The first clinic for occupational diseases was established in 1924 in Berlin and expanded 1933 into an university department.

In 1974 the first comprehensive OSH legislation (Arbeitssicherheitsgesetz) was enforced. In principle, all employees were to be covered by the law; however, de facto smaller enterprises below the size of 30 employees were exempted through secondary legislation.
True preventive and comprehensive OSH legislation came with the transposition of the EC Council Directive 89/391 (Framework Directive) and the so-called Daughter Directives.

In the same decades the impact of global market competition on the world of work became increasingly noticeable. The process of company fragmentation through outsourcing, down-sizing and other forms of externalization began, and deregulation lead to an enormous increase of flexible working contracts and irregular employment such as temporary work, part-time work, work on call, precarious work (mini-jobs), self-employment and unemployment.

Work-related stress became increasingly an issue, and uncertain future work life perspectives and loss of stability probably contribute to postponement of child wish and decreasing fertility, which together with the continuously rising life expectancy due to good health care results in a demographic shift towards older ages. Ever fewer young persons in employment will not be able to sustain the growing number of retirees. Hence a modification of the retirement benefit system is needed, which includes a partial privatization of the insurance and also a prolongation of active work life beyond the previous retirement age of 65 years. To enable work life extension, healthy elderly workers are needed, and consequentially workplace health promotion and maintenance of workability become of growing importance.

The recent economic downturn adds to the challenge. Effects are still difficult to assess; however, it seems that timely government intervention and wide-spread enterprise response of opting for short-hour work instead of large-scale dismissal has contained the labor market crises at least to some extent. Nevertheless, a further rise of unemployment is to be expected through bankruptcies.

Statistical illustrations on the current situation have been provided in the introductory part and also throughout the text.
## SUMMARY OF THE HISTORICAL DEVELOPMENT OF OSH SYSTEM

<table>
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<tbody>
<tr>
<td>Accident prevention, compensation, social protection</td>
<td>Accident prevention, compensation, social protection</td>
<td>-Adaptation of work to worker -Replacement of hazards by non-hazardous substances</td>
<td>-System approach -Evaluation (input, process, and output indicators) -Integration of OSH into processes -Continuous improvement, benchmarking -Economic dimension, incentives -Quality management -OSH management systems -Qualification of OSH actors, employers and employees -Workplace health promotion -Self-empowerment -Information management</td>
<td></td>
<td></td>
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<tr>
<td>Focus of policy actions</td>
<td>Social inclusion</td>
<td>Protection</td>
<td>Humanization of labor (&quot;Humanisierung der Arbeitswelt&quot;)</td>
<td>-Adaptation of OSH regulation to EU regulation -Deregulation</td>
<td>-Demographic change (maintenance of workability, lifelong learning) -Sickness absence, early retirements, MSD, Stress -Migration, social inclusion -Qualification</td>
<td></td>
</tr>
<tr>
<td>Description of main developments</td>
<td>-Industrial Revolution (ca. 1750-1850) -Major demographic changes (population increase, pauperism, underemployment, migration), ca. 1800 -Worker organizations (parties, trade unions), ca. 1860 -Labor inspection, ca. 1840 -Company physicians and nurses in</td>
<td>-Post-world war II economic development -“Baby boom” -“Guest workers” -Further development of OSH infrastructure -OSH research and applied OSH research -Further differentiation and specialization in OSH knowledge, preventive</td>
<td>-Rapid technology development, especially ITC -Increasing corporatization and global market competition -Rapid increase of SMEs through outsourcing and new-establishment -Deregulation, flexibilization of working time and working contracts -Rise of “atypical” employment (part-time work, temporary employment, self-employment) -Rising unemployment</td>
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</tbody>
</table>

- 55 -
<table>
<thead>
<tr>
<th>Key legislations, administrative structure, financing, services, campaigns, etc.</th>
<th>Key achievements</th>
<th>Comments on lessons learnt</th>
</tr>
</thead>
</table>
| - General obligatory school attendance (1794)  
- Prohibition of child labor (1839)  
- Health insurance (1883)  
- Accident insurance (1884)  
- Pension insurance (1889)  
- Industrial Code (1891)  
- Insurance Code (1911)  
- Company obligation to employ disabled persons (1923)  
- Inclusion of 11 occupational diseases into the accident insurance (1925)  
- Unemployment insurance (1927)  
- Working time ordinance (1938) | Protection, adaptation of work to worker, obligatory occupational health service for enterprises with > 30 employees | Protection pays |
| Extensive detailed regulation on the basis of the previous basis legislation | Act on occupational physicians, safety engineers and other occupational health and safety specialists (1973)  
- Accident prevention regulations of the individual accident insurances (35 industrial), exempting small enterprises from the obligation to contract occupational physician and safety specialist | Better knowledge and focus in legislation and action | Better cooperation and complementary action of all OSH actors |
- Transposed FD Daughter Directives  
- Modification of accident prevention regulation  
- “Employer model”  
- Discontinuation of asbestos use (1993) | Preventive risk-factor oriented OSH regulation, access to occupational health service for all | Prevention pays |
IV Lessons and recommendations for developing countries

The German occupational safety and health system had a long tradition of more than 100 years by the times it was adapted to EU provisions. Since these provisions provide only minimum criteria for compliance, the resulting legislation left ample room for national traditions. Consequentially, the differences between the various adapted national systems are considerable, but all of them seem to work at its best in their countries. This implies by the same token, that OSH systems have to be understood in context; it also explains the difficulty of cross-country comparison and evaluation, and makes responsible advice to countries with different conditions and traditions difficult.

The specific strengths, resilience and adaptability of the German OSH system throughout changes rests probably to a large extent in the close cooperation and convergent action of the various relevant actors in occupational health, especially of the strong (and also in own interest) preventive-minded occupational accident insurance institutions and the state labor inspection authorities, supported and flanked especially by very active social partner associations. Networking and collaboration in areas of shared interest of the various bodies, institutions, associations and networks provides the basis for mainstreaming OSH information throughout the society and seems to be the best way to empower employees (most of them working in small enterprises) in facing OSH challenges at work.

The best advice to developing countries hence would be, to combine best national traditions with universally accepted guidance as provided by the ILO in Convention C 187 “Promotional Framework for Occupational Safety and Health Convention, 200667. The C 187 describes the necessary elements of an OSH system – national policy, national system for OSH, national program for OSH, national preventive safety and health culture – including the required infrastructure. The ILO recommends to countries an assessment of the overall OSH situation, to be followed by the determination of available means and most urgent need. Based on these data, strategic priority setting and procurement of broad political support, a step-by-step development of the ILO advised infra-structure should follow. Progress should be evaluated periodically and adjustment in planning and execution should be made as needed.

Annex (Questions and answers)

Most information has been used in the appropriate sections of the document, but it is given again to provide the information in requested format:

1. Prevention of occupational diseases

1.1. Which occupational diseases are recognized by the law?

- Is there a list of occupational disease?
Yes, fixed in a federal ordinance; recently containing of 73 recognized diseases, available from: (http://www.gesetze-im-internet.de/bkv/BJNR262300997.html).

- Are there administrative criteria for legal recognition of occupational diseases?
yes, fixed in a law (SGB VII); within the process the of recognition an insured claiming for the acceptance of his disease as work-related and therefore compensable has the right to go to social court free of charge for him.

- Who is responsible for the confirmatory diagnosis of occupational and work-related diseases for legal recognition and compensation?
In the first step it is the appropriate statutory accident insurance institution. In controversial cases the insured person can claim for the participation of independent experts to give expertise on his individual case. If there is no agreement on the recognition, each individual case can be send to social courts, which are free of charge for insured persons.

1.2. Are there occupational diseases specified by law for which employers are mandated to provide preventive services? (If yes, what are they?)
- Are the employers mandated to provide preventive services targeting the occupational diseases listed as compensable by the insurance?
Yes, in the framework of their overall responsibility for OSH on the enterprise level. Especially with regard to individual risks of people and branches these have to be taken into account during the risk assessments of the workplaces.

- Is there a separate regulation on the prevention services?
No, only indirectly through the description of the duties for the employers to fulfill.

1.3. **How are the employers obligated for preventive services?**

- Does the law mention "general duty clause" only?
No, detailed sub legislation exists; see chapter 1.2.2.

- Are there penalties against the employers not providing obligatory preventive actions?
Yes, to be judged on the individual case.

- Are there only recommendations for the employers without penalty?
No, see next Annex chapter 1.4.

1.4. **What are the penalties against the employers who did not comply with the obligatory preventive actions by law?**

- Criminal penalty (imprisonment, etc.):
Yes, possible, dependant on individual case-related court decisions;

- Fine:
Yes, up to € 25,000 can be imposed by state labor inspectorates; up to 10,000 can be imposed by statutory accident insurance institutions;

- Administrative actions (warnings, orders, etc.):
Yes, to be imposed by state labor inspectors and inspectors of statutory accident insurance.

For more detailed information on the legal background of fines and the power of labor inspectors see chapter: 1.2.4. - 3.

1.5. **What are the priorities in the prevention of occupational diseases?**
Recently the priorities are focused on the prevention of musculoskeletal workloads and disorders and on the prevention of skin diseases. These two topics are main targets within the Joint German OSH Strategy (GDA, first period from 2008 - 2012) and especially the related work programs. 6 of the 11 GDA work programs are focusing on MSD and skin diseases.

2. **Comparison of prevention of musculoskeletal disorders**

2.1 **Is it mandatory for the employers to perform risk assessment for work hazardous to musculoskeletal system?**
According to the WRMSD risks factors, our national legislation is based on the implementation of the following European Directives:
- Directive 90/269/EEC (Manual handling)
- Directive 90/270/EEC (work with display screen equipment)
- Directive 2002/44/ EC (vibrations)

In Germany, the following Federal Regulations related to OSH are directly related to this European Directives:


Employers are obligated by the above mentioned laws to perform risk assessment for work hazardous. Risks regarding the musculoskeletal system are included.

A lot of other national regulations in the field of occupational safety and health are indirectly related to prevention of WRMSD.

- the year started, background, positions of employers and employees
Dates see in the above mentioned regulations. The regulations define rights and obligations for employers as well as for employees (for example to perform risk assessment, information and training of employees, medical surveillance).

- recent changes, if any, and the reasons for change
In Germany, all Federal Regulations related to OSH are published on the web site of the Federal Ministry of Labour and Social Affairs (http://www.bmas.bund.de/BMAS/Navigation/Arbeitsschutz/gesetze.html). Since 2000, several regulations have been newly implemented or revised. With respect to MSD, the following are important:

New:
The “Arbeitsschutz-, Lärm- und Vibrationsverordnung – Ordinance on Safety and Health at Noise and Vibration”. It relates to the implementation of the Directives 2002/44/EC and 2003/10/EC. According to the demands of the directive, there is a direct relation to health risk of workers. Employers are obliged to measure exposure and to assess health risk of noise and vibrations. In case of risk they have the duty to take preventive measures like avoiding or reducing the risk. At the time, there is the acclamation procedure in the Bundestag.

Revised:
- The “Arbeitsstättenverordnung – Ordinance on Workplaces” is an amendment of the former ordinance. It is related to the Directive 89/654/EC and has been enacted on 25 August 2004.

- The “Richtlinie 2006/42/EG des Europäischen Parlaments und des Rates vom 17.Mai 2006 über Maschinen und zur Änderung der Richtlinie 95/16/EG - in short: New ordinance on machinery” relates to the implementation of the Directive 2006/42/EC. It is an amendment of the Directive 98/37/EC and includes basic safety and health requirements for machinery. The newly implemented paragraph on Ergonomics is of particular importance for prevention of MSD by avoiding or reducing of disturbances, fatigue, and physical overload. The transfer into German law is under discussion.

- the cycles of periodical risk assessment
There are no cycles defined to perform risk assessment. But, the employer has to assure, that the risk assessment is up to date for all work places. Risk assessments must be refreshed if relevant changes in work places, tasks, used tools, work organization and so on are made.

- Are all workplaces requested for risk assessment? Yes.

- Are there different approaches depending on the size of the workplaces? No.
2.2 Is there a law or regulation specifying types of work hazardous to musculoskeletal system?
Yes, see comments above.

2.3 Is it mandatory for the employers to perform preventive programs targeting musculoskeletal disorders?
No.

2.4 How is the work-related musculoskeletal disorders classified in the statistics on occupational diseases?
Statistical information is given for all above listed occupational diseases and published by the statutory accident insurance. [http://www.dguv.de/content/facts_figures/bk/index.jsp](http://www.dguv.de/content/facts_figures/bk/index.jsp)
The statistics include the number of announcement (notification) of an occupational diseases, the number of acclaimed diseases, the number of new accident benefits and the number of death due to occupational diseases (not relevant in the case of musculoskeletal disorders section 21).

2.5 Are there programs to prevent work-related musculoskeletal disorders provided or supported by the government?
Yes, see attached papers (Enclosure B Paper 1 – “Regulation and risk assessment regarding prevention of Work-related MSD” and Enclosure B Paper 2 – “Policies, regulations, guidelines, standards and actions in Germany regarding prevention of work-related musculoskeletal disorders”).

2.6 What is the manpower and budget in the government dedicated to the prevention of work-related musculoskeletal disorders?
Not specified.

3 Laws and regulations related to the prevention of cardiovascular diseases
Not known

3.1 Is the obligation of the employers to prevent cardiovascular diseases of the employees mentioned in the law or regulations?
- If yes, is it an enforceable requirement or only a recommendation?
  - legislation, instruction, or guidance?
  - Penalty to noncompliant employers? Exemplary case?
  Not applicable.
  - If no, is the general duty clause applicable to prevention of cardiovascular diseases?
  No.
  - If periodical health examinations are performed to prevent cardiovascular diseases by law, what are the responsibilities of the employers to follow-up?
  Not specified.

3.2 Are there programs or services to prevent cardiovascular diseases provided or supported by the government?
The BAuA has defined the multifactorial aetiology of CVD as a new research area. Health insurance and accident insurance offer prevention programs in cooperation.

3.3 Which authority in the government is responsible for the prevention of cardiovascular diseases?
The prevention of CVD is under the responsibility of the Ministry of Health.

4 Laws and regulations related to the prevention of job stress

4.1 Is the obligation of the employers to prevent job stress of the employees mentioned in the law or regulations?
As in most EU countries, there are no specific legal regulations on work-related stress and/or mental workload in Germany. However, legal regulations, in particular the labor protection law [Arbeitsschutzgesetz] specify the obligation for employers to consider factors such as working time design and work organization in the context of risk assessment [§ 5 Beurteilung der Arbeitsbedingungen; § 4 Allgemeine Grundsätze] which means that factors relating to job stress and/or mental workload are implicitly covered. In the ordinance on work at video display terminals [Bildschirmarbeitsverordnung], § 3 on risk assessment [Beurteilung der Arbeitsbedingungen] explicitly refers to mental workload as a factor to be considered.

- If yes, is it an enforceable requirement or only a recommendation?
The above mentioned regulations are legally binding; so they are enforceable in principle.
  - legislation, instruction, or guidance?
  - Penalty to noncompliant employers? Exemplary case?
The legal requirements in the labor protection law (§§ 25 and 26) do not immediately stipulate penalties to noncompliant employers in case they do not perform risk assessment including factors relating to job stress. Employer liability is a complex issue which requires the evidence of a close link of illness or disease with stressful factors of the working environment. In this context, various legal regulations and court rulings are relevant (e.g. Podehl; J: Haftung des Arbeitgebers wegen Stress am Arbeitsplatz ?; DER BETRIEB, No, 38/2007, pp. 2090-2093). In general, it can be said that increasing research into workplace stress over the last years has highlighted the possibility of legal claims.

- If no, is the general duty clause applicable to prevention of job stress?
Not applicable.

- What is the scope of activities provided by the employers to assess and manage job stress?
See 5) on voluntary activities in the context of workplace health promotion.

An indicator of the relatively low level of activities by employers to assess and manage job stress are recent survey data (still unpublished; ESENER Establishment Survey on Psychosocial Risks at Work) according to which in Germany only about 15 % of establishments have a procedure to deal with work-related stress.

- If periodical health examinations are performed to prevent stress or stress-related diseases by law, what are the responsibilities of the employers to follow-up?

4.2 Are there programs or services to prevent job stress provided or supported by the government?
As a part of the Initiative New Quality of Work (www.inqa.de), the German government created a network where various partners are engaged offering recent research results, recommendations and examples of good practice on the prevention of work-related stress.

5 Are there laws or regulations mandating the employers to provide preventive services to promote healthy lifestyle of the employers?

5.1 Is the obligation of the employers to prevent job stress of the employees mentioned in the law or regulations?

5.2 Are there governmental programs providing incentives to the employers to encourage the workplace health promotion?

- What are the contents and forms of incentives, government agency providing incentives, and health promotion service delivery system?
Performing workplace health promotion (WHP), whether work- or lifestyle-related, is not mandatory for German employers. Accordingly, there are no particular legal obligations to prevent job stress in that context.
The institutional responsibility for providing WHP rests entirely with the statutory health insurance funds (not with the occupational safety and health authorities of the state or other public agencies). As determined in Volume V of the German Social Security Code [Sozialgesetzbuch], the health insurance
funds have to deliver WHP services by (a) investigating the health situation in companies (including both health risks and health resources), (b) developing proposals for the improvement of the companies’ health situation, and (c) supporting the implementation of the suggested measures. For these purposes, the health insurance funds have a wide range of instruments available, such as company-specific surveys and data analyses, moderated focus groups engaged in problem solving (“health circles”), or advisory and training programmes dealing with various health-related topics (e.g. back pain prevention, stress management, leadership behaviour).

As for the companies, making use of the health insurance funds’ WHP services is completely voluntary. In order to encourage companies in this respect, the health insurance funds may employ financial incentives. These consist of reduced health insurance contributions admitted to companies that carry out WHP according to standards determined by the health insurance funds. Premium reductions may account for a twelfth of the regular annual amount payable to the fund. As contributions are paid in equal shares by the employer and the employees, both sides would benefit from a reduction. Usually this kind of financial bonus is being granted on a temporary basis, with an option to renew it if the company has a steadily good WHP performance.

The financial resources invested in WHP services have considerably increased over the years. In 2008 the health insurance funds spent roughly 36 million Euros which is two-and-a-half-times the expenditure in 2000. However, WHP-expenditure per capita (i.e. per insured employee) is still rather low (a bit more than one Euro per year). According to the latest survey of the health insurance funds’ prevention services, approximately 7000 companies have been involved in WHP activities organised or supported by the funds during the year 2007. Of these activities, about 70% have taken place in medium-sized and large enterprises employing more than 50 workers. Further, WHP is still concentrated to a large extent (almost 50%) in the manufacturing sector (including construction industry), whereas the service sector is clearly underrepresented here.

By now, only a minority of WHP activities is purely behaviour- or lifestyle-related. In 67% of the documented cases, WHP measures are (at least partly) aimed at the improvement of working conditions. Work organisation, layout of tasks and responsibilities (job autonomy/control) as well as quality of information and communication are important issues here (56%, 39% and 34% of the cases, respectively), all of which being highly relevant with regard to job stress.

6 Additional questions Request from the donor country (2009-10-13):

1. In the main body of the report, concrete examples of government activities are welcome for the readers from developing world who may not understand the welfare states very well. In the developing countries, employers do not initiate prevention or compensation of occupational diseases unless there are explicit laws on incentives or punishments. To show the commitments of the government in your country, examples can be provided about legal and administrative cases against the employers which had happened to implement laws and recommendations of the government in recent years.

In Germany legislation on occupational health and safety is in existence since the late more than 150 years. The most important regulations in connection with occupational diseases (ODs) are the

- Ordinance on occupational diseases (Berufskrankheitenverordnung), which includes a list of 73 accepted diseases (last update 11.06.2009), and the

- Law on statutory accident insurance -7th volume of the German code of social law (SGB VII), which defines occupational diseases (last update 17.07.2009).

The institutions for statutory accident insurance (BGs/UKs) are responsible for the assessment, recognition, treatment and compensation of ODs. Generally the BGs/UKs follow the list of ODs. But they have the possibility to recognise diseases, which are not on the official list as an OD, if the general requirements for an OD are fulfilled according to the state of the medical science. This is laid down in SGB VII.

An insured persons assuming that he or she is suffering from an OD, although the GS/UKs have not recognised his or her disease as an OD, has the right to bring his or her case to social court, which is free of charge for the insured. Court decisions start on the local level, proceed on the regional level and may be finalised on the federal level.

2. In the historical trends of OSH policies, please include a paragraph on the impacts of neoliberalization, privatization, and globalization on OSH and OSH policies in the past dec-
ades. If there are reports available, please also mention about the impacts of economic crisis of 2008-2009.

Rapid developments on the ICT sector have enabled increased global market competition and lead to increased merging of multinational global players and outsourcing of non-core business. The process has resulted in the rapid increase of SMEs, irregular work, migration, unemployment and migration. Further outcomes of the process are deregulation, diminishing social protection, relocation of production (and often hazards) to countries with low labor cost. Job insecurity contributes to the current MSD and stress epidemic and likely also to decreasing birth rates, especially in the industrial countries. The life expectancy in these countries is high because of widely available good medical care. Result of combined longevity and decreasing fertility is the demographic change towards aging societies. The development has considerable impact on health care, workability and pension systems.

The recent global economic downturn has had so far less impact than expected. The employment indicators are largely unchanged. Many enterprises operate short-working hours in agreement with the workforce. Instead of retreating to lay-offs, many enterprises make use of government supported qualification measures for their employees. Clearly related negative effects on OSH are not visible.

3. At the end of the report, please provide the following information on the actions of the government in the enforcement for prevention activities by answering to the question and filling in the table below.

Question: Are there legal or administrative actions if the employer did not provide prevention services such as risk assessment? Please specify whether they are criminal litigation (jail terms, fine, etc), administrative action (payments, orders, etc) if yes.

Table: Various legal and administrative actions against employers not providing preventive actions

<table>
<thead>
<tr>
<th>Situation</th>
<th>Actions</th>
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<tr>
<td></td>
<td>Criminal litigation</td>
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<tr>
<td>If yes, please also provide information on the criteria for action, monetary amounts, or related punitive actions.</td>
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<tr>
<td>Failure to perform risk assessment on musculoskeletal disorders</td>
<td>yes possible, if the failure leads to damages to persons</td>
</tr>
<tr>
<td></td>
<td>yes</td>
</tr>
<tr>
<td>Failure to perform risk assessment on cardiovascular disorders</td>
<td>not applicable, no legal obligation</td>
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<tr>
<td>Failure to perform risk assessment on job stress</td>
<td>not applicable, no legal obligation</td>
</tr>
<tr>
<td>Failure to perform risk assessment on hazardous chemicals</td>
<td>yes possible, if the failure leads to damages to persons</td>
</tr>
<tr>
<td></td>
<td>yes</td>
</tr>
<tr>
<td>Risk Assessment Failure</td>
<td>Possible, if the Failure Leads to Damages to Persons</td>
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<td>------------------------</td>
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<tr>
<td>Noise-Induced Hearing Loss</td>
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<tr>
<td>Asbestos-Related Diseases</td>
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</tr>
<tr>
<td>Pneumoconiosis</td>
<td>Yes</td>
</tr>
<tr>
<td>Other Disorders/Injuries</td>
<td>Yes</td>
</tr>
</tbody>
</table>

6 Available from: [http://www.hvbg.de/e/bgz/koop/national/kopag.html](http://www.hvbg.de/e/bgz/koop/national/kopag.html) [cited: 02.12.09]