SAFETY DATA SHEET

CEM II/A-M (S-LL) 52,5 N, CEM II/B-M (S-LL) 52,5 N

The safety data sheet is in accordance with Commission Regulation (EU) 2020/878 of 18 June 2020 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

SECTION 1: Identification of the substance / mixture and of the company / undertaking

Date issued	27.01.2023
Revision date	24.01.2024

1.1. Product identifier

Product name	CEM II/A-M (S-LL) 52,5 N, CEM II/B-M (S-LL) 52,5 N
UFI	5S10-Y05U-900A-XNYN

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance / mixture	A binder used in the production of concrete, mortar, putty and plaster.
Main intended use	PC-CON-1 Cement
Industrial use	Yes
Professional use	Yes
Consumer use	Yes

1.3. Details of the supplier of the safety data sheet

Company name	SCHWENK Suomi Oy
Postal address	Fiskarsinkatu 7 A 2. krs
Postcode	20750
City	Turku
Country	Finland
Telephone number	0207 121 430
Enterprise No.	FI0415417-0

1.4. Emergency telephone number

Emergency telephone	Telephone number: 112 Description: Emergency telephone number Open 24 hours a day.

	Telephone number: +358 800 147 111 or +358 9 471 977 Description: Poison Information Centre (in Finland), P.O. Box 790 (Tukholmankatu 17), 00029 HUS Open 24 hours a day.
Identification, comments	Please contact the Emergency Centre in your own country, e.g. 112 in European Union countries.

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [CLP / GHS]	Skin Irrit. 2; H315 Eye Dam. 1; H318 STOT SE 3; H335
CLP classification, notes	Due to the use of reducing agent, the concentration of water-soluble chromium (VI) compounds in the cement is below the level of 2 mg / kg of the total dry weight of the cement.

2.2. Label elements

Hazard pictograms (CLP)

Composition on the label	Portland cement 65 - 100 %
Signal word	Danger
Hazard statements	H315 Causes skin irritation. H318 Causes serious eye damage. H335 May cause respiratory irritation.
Precautionary statements	P260 Do not breathe dust. P280 Wear protective gloves / protective clothing / eye protection / face protection. P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P310 Immediately call a POISON CENTER or doctor / physician. P302+P352 IF ON SKIN: Wash with plenty of soap and water. P333+P313 If skin irritation or rash occurs: Get medical advice / attention. P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. P362+P364 Take off contaminated clothing and wash it before reuse. P501 Dispose of contents / container to an approved waste recipient.

2.3. Other hazards

PBT / vPvB	Not classified as PBT/vPvB by current EU criteria.
Physicochemical effects	Wet cement, fresh concrete or mortar can damage aluminium and other metals that do not have resistance against corrosion.

Health effect	When cement reacts with water, for example in the production of concrete or mortar, or when cement becomes wet, a strong alkaline solution is produced, which can cause skin and eye irritation. Contact with wet cement, fresh concrete or mortar can cause irritation or corrosion.
Other hazards	Endocrine disrupting properties: No endocrine disrupting properties known.

SECTION 3: Composition / information on ingredients

3.2. Mixtures

Substance	Identification	Classification	Contents	Notes
Portland cement	CAS No.: 65997-15-1 EC No.: 266-043-4	Skin Irrit. 2; H315 Eye Dam. 1; H318 STOT SE 3; H335	65 - 100 %	
Blast furnace slag	CAS No.: 65996-69-2 EC No.: 266-002-0	CLP classification, notes: Not classified.	0 - 20 %	
Limestone	CAS No.: 1317-65-3 EC No.: 215-279-6	CLP classification, notes: Not classified.	0 - 20 %	
Bypass dust	CAS No.: 68475-76-3 EC No.: 270-659-9	Skin Irrit. 2; H315 Eye Dam. 1; H318 STOT SE 3; H335	0 - 5 %	

Description of the mixture	Contains other naturally occuring minerals that are not classified as dangerous.
Substance comments	The full text for all hazard statements is displayed in point 16. A reducing agent has been used to lower the chromium (VI) content. Chromium (VI) content: <0.0002%. The decrease in the chromium (VI) content should be effective approximately 6 months. If the product is stored incorrectly or the storage period is exceeded, the reducing effect can weaken and the cement can cause an allergic skin reaction.

SECTION 4: First aid measures

4.1. Description of first aid measures

General	If the situation is unclear or symptoms persist, seek medical attention. Those giving first aid should avoid contact with dry or wet mixture. Show this safety data sheet, product container or label to the doctor in attendance.
Inhalation	If inhaled, remove the victim to fresh air. Get medical attention if symptoms persist or are severe.
Skin contact	Powder: Brush the powder away. Immediately wash contaminated skin thoroughly with soap and water. Wet mixture: Remove contaminated clothing immediately. Immediately wash contaminated skin thoroughly with soap and water. If skin irritation or rash occurs: Get medical advice/ attention.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes, holding eyelids open. Remove contact lenses, if present and easy to do, and continue rinsing. Get medical advice/attention. Avoid rubbing eyes to prevent damage to the cornea by mechanical stress.
Ingestion	Do NOT induce vomiting. Rinse mouth with water and then drink plenty of water. Contact the poison information centre or a doctor immediately.

4.2. Most important symptoms and effects, both acute and delayed

Acute symptoms and effects	Risk of serious eye damage. Causes skin irritation. May irritate airways.
Delayed symptoms and effects	In the long run, repeated breathing of dust may increase the risk of lung diseases. Long-term contact with wet cement can cause burn injuries since they develop without pain. Wet and dry cement can cause serious eye damage, which can become permanent.

4.3. Indication of any immediate medical attention and special treatment needed

Other information	No specific instructions. Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	Use an extinguishing agent suitable for the surrounding fire.

5.2. Special hazards arising from the substance or mixture

Fire and explosion hazards	No specific hazards. The product is not flammable. The product does not promote or maintain the combustion of other materials. High content of dust can cause a dust explosion.
Hazardous combustion products	No hazardous combustion products known. Provided that the fire is extinguished by water, the potential of strong alkaline reaction with water must be considered. Extinguishing water can be corrosive.

5.3. Advice for firefighters

Personal protective equipment	Wear appropriate protective equipment and self-contained breathing apparatus.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures	Avoid generation and spreading of dust. Keep unnecessary and unprotected people from entering.
Personal protection measures	Avoid contact with skin, eyes and clothes during cleaning. Wear appropriate personal protective equipment.

6.2. Environmental precautions

Environmental precautionary measures	Avoid release into drains, sewers or waterways.

6.3. Methods and material for containment and cleaning up

Clean up	Collect the dry product using a vacuum cleaner and move to a tightly sealer container to be used or disposed. Do not sweep since it creates dust. Avoid generation and spreading of dust. Wet cement: Small splatters can be wiped away with a damp cloth. Collect the wet cement into a container and let it dry and harden before disposal. Cement mixed with water hardens. Sweep up and place into an appropriate container.

6.4. Reference to other sections

Other instructions	Safe handling: see point 7. Personal protective equipment: see point 8. Waste disposal: see point 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Handling	Use appropriate personal protective equipment while handling the product (see point 8). Avoid contact with skin and eyes. Ensure that eyewash stations and safety showers are close to the workstation location for immediate emergency use.

Protective safety measures

Preventitive measures to prevent aerosol and dust generation	Prevent formation of dust. Do not sweep the dry product. Use dry-methods, such as vacuum cleaning to avoid the production of dust.
Advice on general occupational hygiene	Take off contaminated clothing immediately and wash before reuse. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Wash hands and exposed skin areas before breaks and after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage	Keep out of reach of children. Store away from food and drink. Do not use aluminium containers.
Conditions to avoid	For incompatible materials see point 10.5.

Conditions for safe storage

Technical measures and storage conditions	Store in cool and dry area.
Advice on storage compatability	For retail, the products are packed in 25, 35 and 40 kg paperbacks. Bulk products can be delivered to wholesale, for example using car tanks. Loose cement is kept in a dry, waterproof and clean silos in which the contamination of cement can be avoided. Packed cement is kept in unopened bags in a cool and dry place protected by the wind and away from the ground. Potential risks: Loose cement can stick or create a shell inside the walls of closed spaces where it can suddenly separate and fall. To avoid accidents and suffocation (the risk of drowning), do not go to closed spaces, such as bunkers, car tanks or other warehouse spaces without a proper safety measures. Warehouse storage, such as strength and solidity must be considered while storing the packed products. The effect of the reducing agent in cement for the water-soluble chromium (Cr VI) decreases over time. Cement sacks has the information of packing date, storage conditions and storage time to make sure that the effectiveness of the reducing agent is maintained and the content of soluble chromium stays under the limit of 0,0002 % (EN 196-10). The storage instructions must be followed to maintain the effectiveness of the reducing agent.

7.3. Specific end use(s)

Specific use(s)	The use stated in section 1.2.

SECTION 8: Exposure controls / personal protection

8.1. Control parameters

Substance	Identification	Exposure limits	TWA Year
Portland cement	CAS No.: 65997-15-1	Country of origin: United Kingdom Limit value (8 h) : 10 mg/m³ Particle fraction: Inhalable Country of origin: United Kingdom Limit value (8 h) : 4 mg/m³ Particle fraction: Respirable Country of origin: Finland Limit value (8 h) : 5 mg/m³ Comments: Cement dust Particle fraction: Inhalable Country of origin: Finland Limit value (8 h) : 1 mg/m³ Comments: Cement dust Particle fraction: Respirable	

Control parameters comments	DNEL/PNEC: Not available. The dry mixture is fine material <80 µm. Dust with a diameter of 4-10 µm (cement) can be produced while working. Particles with a diameter of >50 µm can be seen by humans. It is not possible to visually estimate the amount dust.

8.2. Exposure controls

Safety signs

Precautionary measures to prevent exposure

Appropriate engineering controls	There are several procedures to prevent the formation of dust and its spreading to the environment, for example dust collection, ventilation, local removal and dry-cleaning methods that do not cause the dust to spread in the air. Technical control measures (appendix 1 table 1) and single protection methods (appendix 1 table 2) are recommended for all recognized use (section 1.2) For every single PROC, companies can choose between A or B from the two tables depending on which option is the best for their need. Respirator: only combinations A) - A) and B) - B) are possible. PROCs (process classes) are recognized uses and they are defined in the appendix 1.

Technical measures to prevent exposure	Ensure adequate ventilation. Use local exhaust ventilation if necessary. Emergency eyewash equipment must be available at workplace. Avoid kneeling on a fresh mortar or concrete while working. If the work requires kneeling, wear adequate waterproof personal protective equipment.

Eye / face protection

Suitable eye protection	Use tight-fitting safety goggles (EN 166).

Hand protection

Suitable gloves type	Use tight protective gloves that are lined with cotton and are resistant to rubbing and alkaline.
Required properties for hand protection	Protective gloves with resistance to alkaline.
Hand protection, comments	Apply cream before working with cement, and reapply a new layer regularly. Follow the manufacturer's instructions in the use of protective gloves.

Skin protection

Suitable protective clothing	Wear appropriate protective clothing and footwear. Long sleeved clothing. In certain conditions, for instance applying concrete or mixture, wear waterproof clothing or knee protectors.
Additional skin protection measures	Wash contaminated skin after exposure. Remove contaminated clothing and shoes and wash/clean them before reuse.
Skin protection remark	Apply cream before working with cement and reapply a new layer regularly. Ensure that wet cement can not get inside boots.

Respiratory protection

Respiratory protection necessary at	If dust forms, wear a respirator.
Recommended type of equipment	Reusable half masks and respirators: wear P2 dustmask and filter (EN 143) Single-use half masks: wear FFP1 or FFP2 (EN 149) If the mixture is mixed by hand: FFP3 half mask. Consult with respirator manufacturer to determine respirator selection, use, and limitations.

Appropriate environmental exposure control

Environmental exposure controls	Avoid discharge to the aquatic environment or the drain.
Environmental exposure controls, comments	The environmental exposure assessment for the release of cement particles into the air must be in accordance with available technology and current regulations for the release of general dust particles Do not let the cement to drains or aquatic environments because it can cause an increase in the pH. If the pH is over 9, ecotoxiological effects are possible.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Powder.

Colour	Grey.
Odour	Odourless or mild odor.
Odour limit	Comments: Not determined.
pH	Status: In aqueous solution Value: 11 - 13,5 Comments: Water:powder 1:2
Melting point / melting range	Value: > 1250 °C
Boiling point / boiling range	Comments: Not determined.
Flash point	Comments: Not applicable.
Evaporation rate	Comments: Not applicable.
Flammability	Unknown.
Explosion limit	Comments: Not applicable.
Vapour pressure	Comments: Not applicable.
Vapour density	Comments: Not applicable.
Relative density	Value: 2,75 - 3,20
Bulk density	Comments: Not determined.
Solubility	Medium: Water Value: 0,1 - 1,5 g/l Comments: Slightly water-soluble.
Partition coefficient: n-octanol/ water	Comments: Not determined.
Auto-ignition temperature	Comments: Not self-igniting.
Decomposition temperature	Comments: Not determined.
Viscosity	Comments: Not determined.
Explosive properties	Not classified as explosive (but see point 5.2).
Oxidising properties	Not classified as oxidising.

9.2. Other information

9.2.2. Other safety characteristics

Comments	No information.

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity	Cement reacts with water forming calcium hydroxide, which creates a high a pH (12,5-13,5) and hardens afterwards. Hardened material is not reactive in normal circumstances.

10.2. Chemical stability

Stability	Chemically stable under normal storage conditions.

	Wet cement is alkaline and not compatible with acids, ammounium salts, aluminium and other metals. Cement dissolves into hydrofluoric acid and produces corrosive silicon tetrafluoride gas. Cement reacts with water producing silicates and calcium hydroxide. Silicates in cement reacts with strong oxidizers, such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride and oxygen trifluoride.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions	The usage of aluminium powder with cement causes the production of hydrogen gas. Wet cement is alkaline and not compatible with acids, ammounium salts, aluminium and other metals. Cement dissolves into hydrofluoric acid and produces corrosive silicon tetrafluoride gas. Cement reacts with water producing silicates and calcium hydroxide. Silicates in cement reacts with strong oxidizers, such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride and oxygen trifluoride.

10.4. Conditions to avoid

Conditions to avoid	Protect from moisture. Moist conditions during storage may cause clumping and a decrease to the quality of the product.

10.5. Incompatible materials

Materials to avoid	Acids, ammonium compounds. Aluminium and other base metals. Hydrofluoric acid.

10.6. Hazardous decomposition products

Hazardous decomposition products	No hazardous decomposition products known.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity	Effect tested: LD0 Route of exposure: Dermal Value: 2000 mg/kg Species: Rabbit
Other toxicological data	The product is not classified as acutely toxic.

Other information regarding health hazards

Assessment of skin corrosion / irritation, classification	Causes skin irritation. Cement that has come into contact with moist skin can cause thickening and cracks. Long-term contact combined with abrasions can cause serious injuries due to corrosion.
Eye damage or irritation other information	Portlandcement gave a contradictory image on the effects on eyes and the calculated irritation index was 128. Ordinary cement contain usually portlandcement, fly ash, blast furnace slag, plaster, natural pozzolanic ash, burned slate, silica dust and limestone in varying amounts. Direct contact with

	cement can damage the cornea by mechanical rubbing, acute or delayed irritation or infection. Direct contact to large amounts of cement or spatters of wet cement may cause all kinds of irritation (for instance, conjunctivitis or blepharitis) to chemical corrosion and blindness.
Assessment of eye damage or irritation, classification	Causes serious eye damage.
Sensitisation	Chromium (VI) may cause skin sensitization. A reducing agent has been added to cement sacks, which maintains the content of chromium (VI) <0,0002%. The product is not classified as a respiratory or skin sensitiser.
Mutagenicity	The product is not classified as a mutagen.
Carcinogenicity, other information	The product is not classified as a carcinogen.
Reproductive toxicity	The product is not classified as toxic to reproduction.
Assessment of specific target organ toxicity - single exposure, classification	May cause respiratory irritation. Single exposure: The dust from cement may cause respiratory irritation. If the occupational exposure limit values are exceeded notably, it may cause coughing, sneezing and respiratory difficulties. Repeated exposure: The repeated breathing of cement dust can complicate the already existing respiratory illnesses.
Assessment of specific target organ toxicity - repeated exposure, classification	The product is not classified as toxic to specific target organs at repeated exposure.
Assessment of aspiration hazard, classification	The product is not classified as an aspiration hazard.

Symptoms of exposure

In case of skin contact	Causes skin irritation.
In case of inhalation	May cause irritation to the respiratory system.
In case of eye contact	Eye damage

11.2 Other information

Endocrine disruption	No data available about the product as such. Ingredients: no endocrine disrupting properties reported.

SECTION 12: Ecological information

12.1. Toxicity

Ecotoxicity	The product is not classified as hazardous to the environment. Large amounts of the product may affect the acidity (pH-factor) in water with possible risk of harmful effects to aquatic organisms.

12.2. Persistence and degradability

Persistence and degradability description/evaluation	No data available.

12.3. Bioaccumulative potential

Bioaccumulation, evaluation	No data available.
Bioaccumulation, comments	Not relevant for inorganic substances. No toxic hazard after hardening.

12.4. Mobility in soil

Mobility	Dust may spread to the environment during handling. Mobility in the soils is not relevant. No toxic hazard after hardening.

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment	Not relevant for inorganic substances. No toxic hazard after hardening.

12.6. Endocrine disrupting properties

Endocrine disrupting properties	There is no toxicological data available about the product as such. Ingredients: no endocrine disrupting properties reported.

12.7. Other adverse effects

Additional ecological information	Hydroxides are formed when the mixture reacts with water, which can increase the pH of water. This can have an effect on the aquatic organisms and wastewater treatment plant. Prevent entry into drains, sewers, waterways or soil.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Appropriate methods of disposal for the chemical	Inorganic cement based mixtures are recyclable. Prevent entry into drains, sewers, waterways or soil. Deliver the product to a company that handles dangerous wastes and has the permit from the environmental administration to collect, transport, process, sort, storage and recycle wastes. Cement that has exceeded the storage time (and contains over 0,0002 % of soluble chromium VI), can not be used or sold, except in controlled and completely automated processes or it must be processed again with the reducing agent or disposed of as waste. Uncured cement is dangerous waste. Hardened cement is not dangerous waste.
EWC waste code	EWC waste code: 101314 waste concrete and concrete sludge EWC waste code: 170101 concrete EWC waste code: 200115 alkalines
EWL packing	EWC waste code: 150101 paper and cardboard packaging EWC waste code: 150102 plasticpackaging
Other information	Dispose of in compliance with local and national regulations.

SECTION 14: Transport information

14.1. UN number

Comments	Not classified as hazardous for transport (ADR, RID, ADN, ICAO/IATA, IMDG)

14.2. UN proper shipping name

14.3. Transport hazard class(es)

14.4. Packing group

14.5. Environmental hazards

IMDG Marine pollutant	No.
Comments	The product is not classified as hazardous to the environment.

14.6. Special precautions for user

14.7. Maritime transport in bulk according to IMO instruments

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations / legislation specific for the substance or mixture

Restriction of chemicals according to Annex XVII (REACH)	Entry: 47
Legislation and regulations	No specific regulations.

15.2. Chemical safety assessment

Chemical safety assessment performed	No
Chemical safety assessment	No information available because the product is exempt from registration.

SECTION 16: Other information

List of relevant H-phrases (Section 2 and 3)	H315 Causes skin irritation. H318 Causes serious eye damage. H335 May cause respiratory irritation.
Training advice	Read safety data sheet.
Key literature references and sources for data	SDS by product manufacturer 11.05.2021 EH40/2005 Workplace exposure limits (4th ed, 2020)
Abbreviations and acronyms used	HTP: Concentrations known to be Hazardous. DNEL: Derived No-Effect Level PBT: Persistent, Bioaccumulative and Toxic substance. PNEC: Predicted No-Effect Concentration vPvB: very Persistent and very Bioaccumulative substance
Information added, deleted or revised	24.01.2024: Revised product name.
Last update date	24.01.2024
Version	1
Prepared by	Sweco Finland Oy
Comments	The information of this safety data sheet is based on existing public information

sources, such as current legislation, available at the time of publication of the completed safety data sheet, and information on the Customer's products that has been provided by the Customer to Sweco. The Customer is responsible that the information provided to Sweco is accurate and up to date.

Annex 1.

Table 1.

Use	PROC*	Exposure	Measures	Effect
Industrial production/formulation of hydraulic construction and installation materials	2, 3	The duration of exposure is not limited (up to 480 minutes per shift, 5 shifts per week)	Not required	-
	14, 29		A. not required or B. local exhaust ventilation	- 78 %
	5, 8b, 9		A. general ventilation or B. local exhaust ventilation	17 % 78 %
Industrial use of dry hydraulic construction and installation materials (indoor, outdoor)	2		Not required	-
	14, 22, 26		A. not required or B. local exhaust ventilation	- 78 %
	5, 8b, 9		A. general ventilation or B. local exhaust ventilation	17 % 78 %
Industrial applications of wet suspension of hydraulic construction and installation materials	7		A. not required or B. local exhaust ventilation	- 78 %
	2, 5, 8b, 9, 10, 13, 14		Not required	-
Professional use of dry hydraulic construction material (indoor, outdoor)	2		Not required	-
	9, 26		A. not required or B. local exhaust ventilation	- 72 %
	5, 8a, 8b, 14		A. not required or B. mechanically controlled local ventilation	- 87 %
	19		Measures are not applicable, use only in ventilated areas or outdoors	50 %
Professional use of wet hangers for hydraulic construction and installation materials	11		A. not required or B. local exhaust ventilation	- 72 %
	2, 5, 8a, 8b, 9, 10, 13, 14, 19		Not required	-

*PROC (PROcess Category)

Table 2.

Use	PROC*	Exposure	Classification of respiratory protective equipment (RPE)	Effectiveness of respirators (specified protection factor, APF)
Industrial production/formulation of hydraulic construction and installation materials	2, 3	The duration of exposure is not limited (up to 480 minutes per shift, 5 shifts per week)	Not required	-
	14, 29		A. P1 mask (FF, FM) or B. not required	APF = 4 -
	5, 8b, 9		A. P2 mask (FF, FM) or B. P1 mask (FF, FM)	APF = 10 APF = 4
Industrial use of dry hydraulic construction and installation materials (indoor, outdoor)	2		Not required	-
	14, 22, 26		A. P1 mask (FF, FM) or B. not required	APF = 4 -
	5, 8b, 9		A. P2 mask (FF, FM) or B. P1 mask (FF, FM)	APF = 10 APF = 4
Industrial applications of wet suspension of hydraulic construction and installation materials	7		A. P1 mask (FF, FM) or B. not required	APF = 4 -
	2, 5, 8b, 9, 10, 13, 14		Not required	-
Professional use of dry hydraulic construction material (indoor, outdoor)	2		P1 mask (FF, FM)	APF = 4
	9, 26		A. P2 mask (FF, FM) or B. P1 mask (FF, FM)	APF = 10 APF = 4
	5, 8a, 8b, 14		A. P3 mask (FF, FM) or B. P1 mask (FF, FM)	APF = 20 APF = 4
	19		P2 mask (FF, FM)	APF = 10
Professional use of wet hangers for hydraulic construction and installation materials	11		A. P2 mask (FF, FM) or B. P1 mask (FF, FM)	APF = 10 APF = 4
	2, 5, 8a, 8b, 9, 10, 13, 14, 19		Not required	-

*PROC (PROcess Category)

An overview of the protection factors determined for different respirators (in accordance with standard EN 529:2005) can be found in the MEASE glossary. The defined respirators above should only be used if the following principles are implemented in parallel: The duration of the work ("exposure" in table 2) should reflect the additional physiological strain on the worker caused by breathing resistance and weight from the respirators, which is due to the increased heat load caused by head encapsulation.

In addition, it must be considered that the employee's ability to use tools and communicate is impaired when wearing respirators. For the above reasons, the worker must therefore be (I) healthy (especially with regard to medical conditions that may affect the use of respirators), (II) have suitable facial features that reduce leakage between the face and the mask (regarding scars and facial hair).

The devices recommended above, which are based on the close fit of the respirator on the face, do not provide the necessary protection if they do not fit the shape of the face properly and tightly enough. The employer and the entrepreneur have a statutory responsibility for the maintenance and distribution of respirators and their correct use in the workplace. Therefore, they should define and document an appropriate policy for a respirator program, including employee training.