

Instruction

Doc. No: 2018-42281

## **Personal Protective Equipment**

Scope RWE Generation NL

**Department** Safety GES-NL

**Next review** 01-09-2027

### **Document information**

Version	Version date	Authorisation		
3.3	01-06-2024	Manager Safety - R. Kamst		
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Consent of	Works Council		Feature BR	2020-087

### Changes compared to previous version

- Tightening policy on choice of gloves against cut protection, requirements for performance standards adjusted, see hand protection requirements section.
- Various (blue) pictograms adapted to the latest standard.

### **Purpose instruction**

Ensure that all employees have access to appropriate PPE when carrying out work on the RWE site and are obliged to use it where prescribed, thus preventing health damage or injury if exposure to hazards cannot be avoided despite applying the occupational hygiene strategy.

### **Related documents**

Type of document	Title	Code
process	Maintain installations	P080
instruction	Work permits	1001
process	General RI&E, Installation RI&Es	
process	Operate and monitor	P033
instruction	Operation of electrical installations	I012
Toolbox	Toolbox training dependent respiratory protection	
instruction	TRA	1002



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## **Terminology and abbreviations**

Term or abbreviation	Description
PPE	Personal protective equipment
NEN	Dutch standard
EN	European standard
RI&E	Risk Identification & Evaluation
LMRA	Last Minute Risk Analysis
FFP	Filtering Facepiece
CE	CE marking (Conformité Européenne)
TRA	Task Risk Analysis

### **Introduction**

From the general RI&E, it has been established that residual risks are always possible at workplaces, which necessitate work clothing and other personal protective equipment. Therefore, at RWE Generation, it is **compulsory to wear** the prescribed personal protective equipment within the designated PPE zones, recognisable by blue lines and signs.

Furthermore, the following applies:

- When working outside the PPE zones for which a work permit is required, standard PPE must also be worn;
- Mandatory use of additional/ supplementary PPE in accordance with the prepared TRA, work permit, LMRA or work instructions;
- Mandatory use of additional/ supplementary PPE where indicated by signs or signage;
- Mandatory use of additional or supplementary PPE if (changed) circumstances warrant it.

Of course, the idea always applies here that the performer and client first try to do everything possible to eliminate or shield the hazards and risks, and that prescribing PPE is the last step in the occupational hygiene strategy.

#### Managers (internal and external):

- Are responsible to explain this instruction;
- Are responsible for providing required PPE;
- Address their employees on the wearing and condition of PPE.

#### **Employees (internal and external):**

- Employee is obliged to wear the prescribed PPE;
- Employee is obliged to have them maintained in a timely manner;
- Employees speak to each other about the wearing and condition of PPE.

Please note that because **juveniles should not be exposed to hazardous substances or high risks**, additional PPE against high-risk/hazard exposure does not apply to juveniles and therefore they should **not perform relevant high-risk work either!** 

As a responsible client, RWE Generation actively encourages the correct and consistent use of PPE.



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RWE Generation has further set some clear requirements for PPE. Furthermore, RWE Generation allows for a number of alternative PPE variants (named and standardised), depending on the risks of the workplace in question.

Replacement or new types of PPE may only be purchased after approval from the SAFETY department.

If unclear about the use of special or abnormal PPE, the SAFETY department can advise.

### **Standard PPE**

RWE Generation applies within clearly marked areas and outside them, in work for which a work permit is required, a standard wearing requirement for some general standard PPE that complies with the specifications described in this document, namely:

- A Safety Helmet;
- High safety shoes;
- Workwear;
- Safety glasses with side shields.

Work clothes should be covering (arms/legs/body) and should be worn closed. Dangerous items such as scarves, ties, jewellery or badges must not hang loose outside work clothes as this poses a risk near rotating parts or getting caught behind something. RWE policy is that no jewellery should be worn on the wrist, neck and fingers as it poses a risk when carrying out work on our premises.

By default, it is further subject to a carry-on obligation:

- · Work gloves;
- · Hearing protection.

The above requirements apply to everyone, own employees as well as employees of contractors and visitors.

The requirements/standards that PPE should meet are further described below.

## **Maintenance and purchase of PPE**

#### **Purchase and provision**

Contractors are responsible for purchasing, providing and replacing PPE to their own employees.

RWE employees can access the RWE Generation workwear catalogue via the link below on the intranet and order it via the request procedure. Here they can also find how specific PPE such as prescription safety glasses and otoplasty's (in-ear, custom-made hearing protection) can be ordered via a service request.

### Services (rwe.com)

- The clothing range is included in the central procurement system;
- Other PPE can also be ordered through this system or through so-called vending machines at a number of locations;
- It is not allowed to order individually from other suppliers.

#### **Ordering customisation**

Ordering custom-made PPE is also possible for RWE employees, using a request form via the link above. It concerns in each case:



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- Safety glasses with corrective lenses;
- Screen glasses;
- · Otoplasty's;
- Deviant footbed/ shoe (provided podological advice demonstrates necessity).

#### Washing of workwear

- Self-washing of outer shell workwear is not allowed;
- Washing of RWE GENERATION workwear is done by a specialised company;
- Clothing should be handed in at locations determined by branch;
- Special washing and impregnation methods ensure that the clothing remains compliant;
- This company also randomly monitors the state of maintenance and current requirements after x washes to ensure everything is up to standard;

#### Cleaning/maintaining special PPE (such as respiratory protection)

According to instructions for use by specialised firms.

#### Replacement

- Every user should regularly check PPE for defects and validity dates;
- PPE that is defective or past its expiry date should be replaced immediately;
- RWE GENERATION ensures the collective (safe/responsible) disposal of its own old and replaced PPE (workwear with company name must not end up in public domain).

### **Workwear requirements**

#### Workwear:

- Workwear must protect against possible mechanical and fire/heat influences. The standards are defined with this document;
- For <u>locally specific workplaces</u>, risk-based deviations from wearing the standard workwear may be made, if explicitly stated on the released work permit;
- Clear reflective stripes that are always clearly visible and conspicuous to the surroundings (especially traffic). Reflections on both lower and upper parts of the workwear. The RWE workwear meets this requirement. Minimum requirement is at least top or bottom reflective;
- If stripes on workwear are (still) missing, a fire-retardant vest with **reflective** stripes may be worn temporarily;
- Depending on the weather conditions, alternatives are possible, provided they meet the standards according to the following tables and made available in the catalogue (for RWE employees).

#### **Antistatic properties:**

- These are particularly required in ATEX environments or for substances with a fire and explosion hazard;
- RWE Generation applies this clothing requirement by default everywhere for its own employees;
- For contractors, the requirement only applies work/environmentally. The work permit should clarify this.



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#### **Electrical work**

Protection against Electrical Hazards in accordance with I012 and electrical RI&E mandatory for the electrical system on which or in its vicinity is worked. Based on the site-specific and situation-dependent risks, the specific and possibly additional PPE to be used in addition to or instead of standard PPE must be determined. Arc resistance as well as insulating PPE are of great importance when protecting against electrical hazards.

**Light chemical-resistant** properties (EN-13034 type 5/6) are particularly required in environments with chemicals. RWE Generation applies this clothing requirement as standard everywhere for its own employees. For contractors, the requirement only applies work/environmentally. Areas where these risks may occur are marked by pictograms.

For **heavier chemical** risks, even protection class EN-14605 type 3/4 or even better may be necessary. This should be prescribed on a work permit (TRA mandatory). Often these are **coveralls**, ensure correct use. Note, for instance, the lesser flame-retardant properties of these coveralls. These must be disposed of after use in accordance with the instructions for use and type of (possible) contamination with care for hygiene and safety (as chemical waste).

**Liquid metal splash** protection is particularly mandatory when welding/cutting/firing and or grinding.

The clothing provided by RWE for the benefit of its own employees complies with:

General (Size requirements); Flame retardant; Reflective; Anti-static; Chemical-resistant and Arc resistance Class 1.

The table below shows the requirements/standards and symbols used.

Workwear	NEN-EN- ISO 11612 Flame retardant	NEN-EN- ISO 20471 Reflective bands	NEN-EN 343-3 Water- proof	NEN-EN- ISO 11611 Liquid metal splashes	NEN-EN 1149-5 Antistatic	NEN-EN 13034 type 5/6 Chemical resistant	NEN-EN- IEC 61482- 1-2 class 1 or 2 Arc resistance
*Commitmen t	v	v	A	A	A	A	A

<sup>\*</sup>V = mandatory A = work/environmental risk dependent



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## Requirements for eye and face protection

Safety glasses should always fit the face properly and should also be worn as snugly as possible against the face. Be sure to replace in good time if damaged and according to the instructions in the user manual.

Make sure you have the right tools, if, for example, specific work or some individuals transpire a lot, there are condensation-free glasses for this or anti-condensation spray. Safety glasses with dark tinted lenses are only allowed outdoors with bright sun conditions, and provided they cannot cause any risks (such as insufficient vision, or eye contact essential for work). Indoor/outdoor non-tinting (lightly tinted lenses) safety glasses may also be used indoors under the same conditions.

The table below shows the requirements/standards and symbols used.

Eye protection	Working with chemicals	Mechanical work	Electrical work	Cleaning
EN-166 F Safety glasses		V (With side caps)	<b>V</b> (With side caps)	V (With side caps)
Dark Safety Glasses c.q. indoor/outdoor (Sunglasses) NEN-EN 166 F DIN-EN 170 UV filter		Outdoors only or with frequent indoor-outdoor transitions Not if it reduces eye contact or vision	Not allowed	Only outside!
Goggles Standard: EN 166 F made of a chemical-resistant material Such as polycarbonate or tempered glass. No ventilation holes allowed	Goggles protect the wearer's eyes from Splashes of acids or chemicals and offers increased resistance Against particle impact this together with face shield See below			A
Goggles glasses		A In dusty conditions with risk of dust in the		



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Eye protection	Working with chemicals	Mechanical work	Electrical work	Cleaning
Goggles Standard: EN 166 Strength B (grinding work) Strength F (normal work, dusty environment)		eyes (such as when the boiler is walked on with fly ash residues here and there)		
Face shield NEN-EN 166 F Face shield, foldable, with clear polycarbonate window and intended for use when working with corrosive substances (paint strippers) or working with high- pressure sprayers.	V Face shields, depending on the type, offer protection against impact of particles, radiant heat , aggressive chemical substances or a combination thereof. Can be worn in combination with safety helmet	V In case of flying particles (grinding)	V Live parts See I- 012 Face protection meeting the specifications of EN IEC 62819	When working with chemicals
Brushcutter mesh visor/face shield EN 1731 S Face shield, foldable, fitted with plastic mesh screen. Forms part of a forestry helmet		<b>V</b> Mandatory During mowing and pruning work		

**V** = Always mandatory **A=** Depending on the situation



= not allowed



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### **Head protection requirements**

Standard helmet: within the PPE marked area.

**Climbing safety helmet:** may be used as an ordinary safety helmet. It is lighter, fits securely thanks to the chin strap and has better ventilation so is less hot than the regular helmet. It has no visor, which gives a better view upwards, making it less likely to collide with objects and therefore, depending on the work and risks, a good alternative. Accessories on the helmet must be suitable for this, with no gap at the visor.

**Alternative head protection:** Depending on the type of work, alternative head protection can be worn more favourably and safely such as a safety bump cap in confined spaces, this is only allowed (risk-dependent) if it is included on the released work permit and only at the relevant workplace.

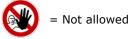
For employees of RWE and Contractors, the employee's name and company name should preferably appear on the helmet.

Finally: Helmets have an expiry date. See expiry date in the helmet.

The table below shows the requirements/standards and symbols used

Helmets	EN-397 Safety helmet OPINION: with chinstrap	Safety helmet standard EN 50365  1000 V	Climbing safety helmet With chinstrap EN 12492	Safety bump cap Advice with chinstrap Standard EN 812
Standard within PPE area	V	-	V	Α
Mechanical work	V	-	V	Α
Electrical work	V	-		Α
Cleaning work	V	-	V	Α

**V** = Always mandatory **A** = Depending on the situation





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## **Requirements for safety shoes**

Wearing high work shoes is mandatory on RWE premises. Low work shoes only by exception with the manager's permission or demonstrably on the advice of the company doctor. A safety boot is less sturdy for the ankles and therefore not a solution for reducing omzwik risk.

The table below shows the requirements/standards

Shoes and boots	NEN-EN-ISO 20345 Type S3 Closed safety shoe with reinforced toecap and impermeable sole	NEN-EN-ISO 20345 Type S3 and S5 Waterproof safety boot with reinforced toecap and impermeable sole
Standard within PPE area	V	A
Mechanical work	V	Α
Electrical work	V	Α
Cleaning	V	A

**V** = mandatory

A = dependent on work/environmental risks

## **Hand protection requirements**

### Obligated to carry in PPE zone.

For electrically insulating and/or arc-protective hand protection, what is necessary must be determined per situation. Gloves must all meet the general requirements for design, comfort, etc. as laid down in the standard **NEN-EN-ISO 21420**:2020

The table below shows the requirements/standards and symbols used.

Hand protection Obligated to carry In PPE zone	EN-388 Protection against mechanical risks, such as abrasion, cutting (number of times), tearing, perforation, cut resistance (force) and impact resistance. See figure 1 performance standards	EN- 388+407+1247 7 Protection for welding and fires Type A (better against heat) or Type B (more flexible)	EN-374 A/B/C Protection against chemicals	EN-16350 Anti-static (ATEX)	EN-407 Protection against heat	EN-511 Protection against cold
V	V	Α	A	A	Α	Α

**V** = mandatory

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To reduce the risk of cuts, work gloves should **also** protect **the back of the hand** and meet **at least** cut resistance performance level **D** according to **EN 388:2016 category E cut resistance** (force).

For example: **4X43D** (order A-P, see also figure 1)

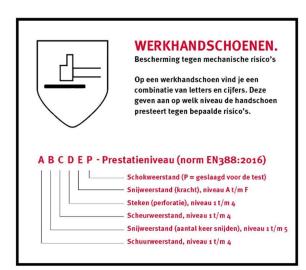




Figure 1 Performance standards work gloves according to EN 388

If no tests are performed on the glove or are not applicable, X is indicated instead of a number/letter. Shock resistance rating: **P** = Passed, F = Failed. A 0 may be displayed if performance level 1 is not achieved.

## **Hearing protection requirements**

**Obligated to carry in PPE zone**. Wearing duty where indicated, in operating plants, at noise levels > 80dB(A). Consider appropriate attenuation factor and timely cleaning or replacement.



EN-352-3 Hearing protection muffs on safety helmet EN-352-2 Earplugs and Otoplastics

## Requirements for personal fall protection

Work at height where one is not (fully) protected from fall hazards.

**See also Instruction I111.** Users must be trained in the use of personal fall protection equipment. Safety steps are a mandatory part of the harness belt. Rapid rescue of persons must be ensured after a fall.

The table below shows the requirements/standards and symbols used.



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Fall protection	EN-361 Harness belt with damper EN-355 Including safety steps	EN-361 EN-358 EN-355 Combination with 2 lines	EN-358 Positioning belt	EN-353 Runner for harness belt
Personal fall protection is protective equipment at an individual level to work safely at heights.	Work at height, where one is not (fully) protected from falling hazards	For scaffolding and construction/ Retraction mechanism, 1 damper or 2 dampers check execution	When working at height without edge protection	When used in combination with rails in (cage) ladders
	V	V	V	V

**V** = mandatory

**A** = dependent on work/environmental risks

## Requirements for protection when welding and cutting

Welding and cutting activities are subject to PPE requirements and standards. The table below shows these.

PPE when welding and cutting	NEN-EN-ISO 11611 Workwear for welding	NEN-EN 12477:2021 Hand protection for welding	EN-171 Protective goggles for IR light in oxyfuel welding and cutting torches	EN-175 Welding caps EN-166 AND- 169 AND- 170 Welding windows	EN-12942 Blown-in breathing air filter with suitable filter cartridge
Oxyacetylene welding	v	v	v	-	V: in the case of toxic material
Arc welding	v	V		v	V: in the case of toxic material
Cutting fires	v	V	V	-	V: in the case of toxic material
Gouging and plasma cutting	v	v		v	V: in the case of toxic material

V = Always



mandatory = not allowed



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## **Electricity protection requirements**

For work on or near live parts, it is necessary to carry out a proper risk analysis via a TRA and then determine the PPE measures. Here, source measures should always be carried out first to eliminate or reduce the risk.

Note: "new" standard of EMRA clothing will be included in this instruction at the next, interim review, when the pilot conducted is completed with reference to the EMRA PPE catalogue as soon as it is ready.

## Requirements for protection in case of drowning

Work near or above water involves additional risks and specific requirements and measures have been drawn up.

- The use of a life jacket is mandatory at a distance of 4 m from the unfenced framework edge or bank
- **Crotch strap** to prevent the lifejacket from slipping up if it enters the water!

The table below shows the requirements/standards.

	Swim jacket Lifejacket EN-399 with a buoyancy of 275N
Life-/ swim jacket with drawstring	
Work above/near open water	Mandatory + TRA
Work in basements, cooling towers and ducts with risk	Mandatory + TRA
of water entry	



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## **Respiratory protection requirements**

Appropriate sealing of the respiratory protection around the edges is very important for proper functioning (so beware of beard growth, etc.). Dust filters only protect against solid particles, fibres, micro-organisms, mists and aerosols. So not against vapours from paint, for example.

There are 3 dust protection classes indicated by P1, P2 and P3. From RWE policy, only the use of FFP3 filters is allowed.

The table below clearly shows the requirements/standards and symbols used

Dependent substance respiratory protection: Dust caps and filter masks	Disposable mask FFP3 Standard EN-149
Coarse harmless dust	Mandatory
Entering areas where radionuclides may be present. In the case of hardwood and hardwood dust	Mandatory
Where presence of aerosols (solid particles/liquid droplets) is expected that may be small enough to be respirable	Mandatory

#### Beware of substances that may be generated by the work!

For additional supplement and possible explanation for the choice of filter equipment and protection, please refer to the following links with information from the Firma Draeger.

http://www.milieu-extra.com/wp-content/uploads/2013/12/overzicht keuze filterapparatuur br nl.pdf

https://www.draeger.com/Library/Content/protection-infoflip-2961-nl.pdf

### Breathing filters (dependent breathing protection)

For use with gases and vapours with the condition that sufficient oxygen is still present in the prevailing air conditions.

The hazards of the environment you will be working in must be known beforehand, the prevailing air conditions and, in particular, the oxygen content and the presence of toxic and oxygen scavenging gases must be determined and measured beforehand. These data will determine which type and class of respiratory protection to choose. Substances released during the work should also be determined in advance as these can also adversely affect air conditions.



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The table below shows the requirements/standards and symbols used.

Breathing filters	T Y P E	Application	Restriction	Standard (Only colour marking and type are standardised)
Breathing inters	A	Organic gases and vapours, boiling point >65 C°	Maximum concentration: Class 1: 1,000 ml/m3 (0.1 vol%) Class 2: 5,000 ml/m3 (0.5 vol%) Class 3: 10,000 ml/m3 (1 vol%)	EN - 14387
	В	Inorganic gases and vapours (not CO)		
	E	Sulphur dioxide and corrosive gases and vapours		
	K	Ammonia and Ammonia products		
	AX	Organic gases and vapours, boiling point <65 C°	See manual	
	NO-P3	Nitrogen oxides NO, NO2, NOx	Maximum 20 minutes usage time	
	Hg-P3	Mercury vapour	Maximum 50 hours usage time	
	СО	Carbon monoxide	See manual	EN -14387
	React or P3	(Isotopes of) Iodine		EN -14387
(White)	Р3	Dust particles and aerosols	P3: inhalable (respirable) particles	EN -14387

Risk and measures should be prescribed by experts. The above table should only be considered as a guide.

#### **Independent respiratory protection**

The hazards of the environment you will be working in must be known beforehand, the prevailing air conditions and, in particular, the oxygen content and the presence of toxic gases or vapours must be determined and measured beforehand. These data will determine which type of respiratory protection should be chosen. If the oxygen content is insufficient or the concentration of toxic gases or vapours is too high, self-contained breathing protection should be chosen. Substances released during the work should also be determined in advance as these may also adversely affect air conditions.



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The table below shows the requirements/standards and symbols used insightfully.

Risk and measures should be prescribed by expertise firm. The table below is to be considered a guide only. Persons using independent respiratory protection must be trained and educated to do so.

Ambient-independent respiratory protection	Fresh-air hood, filtered (breathing) air and safety unit EN-14594	Compressed air unit with positive pressure full facepiece and breathing valve EN-136 EN- 14593	Pressure relief full facepiece, breathing valve and breathing air compressor EN - 136 NEN-EN14593 - 1	Safety unit (monitoring breathing air and communication equipment) EN-136 NEN- EN14593- 1
Grit blasting	V, protective equipment EN-ISO- 14877	-	-	A
Work under asbestos regime	V	Α	A	A
Welding of highly toxic materials in confined spaces	v	Α	A	Α
In case of (possible) oxygen deficiency	A	Α	A	A
If the concentration prescribed for filters is (potentially) exceeded	-	v	A	A
In case of activated CO <sub>2</sub> fire extinguishing system	-	V	-	-
When fighting fire (indoors)		Q: available on site	-	-

**V** = Always mandatory **A** = Depending on the situation



Not allowed



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## **Special PPE and body protection**

For all PPE in accordance with instructions for use. For special work and associated PPE in accordance with work instructions and supplier's instructions for use, this may include work such as:

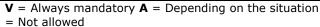
- High-pressure cleaning;
- Climbing work;
- Chainsaws;
- Extinguishments, Fire Brigade etc.

NB not everything can be included in this description.

For special body protections deployed for special work and/or with special machines, etc., please refer to the RI&E and H&S plan of the relevant firms that will perform this work.

The table below shows some examples of these clothes in requirements/standards and symbols used.

Special body protection	Protective clothing EN-340 NEN-EN-ISO 11611 and 11612 and 14116	Spraying suit for high- pressure cleaning NEN-EN-ISO 17491-3	Abseiling equipment EN-341	Equipment for power chainsaw EN 381-7 Class 3 = chainsaw speed up to 28 m/sec.
Very dirty environment	V Fireproof (disposable) coveralls	-	-	-
Abseiling/climbing	-	-	V	-
High-pressure cleaning		v	-	-
Chainsaws	-	-	-	V - with machines.







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### **Deviations and additions**

Exceptions from partial PPE requirement for simple Facility work **outside the PPE zone** can be defined on a site-by-site basis. In any case, safety shoes and body-covering clothing are always required.

#### Normal cleaning in the offices, refilling coffee machines, canteens etc.:

- Clearly recognisable workwear provided by the contractor and with a company logo;
- No standard PPE, only those suitable for the task and according to the performing firm's RI&E.

#### **Green maintenance:**

• Depending on use of machine equipment (always work permit required) and standard PPE, only PPE suitable for the task according to the performing company's RI&E.

#### **Civil works:**

· Always record agreements on work permit

#### **Excursions:**

Special rules are in place for excursions, with the requirement that the routes laid down for excursions are followed and participants are accompanied by designated tour guides.

The attendant, both RWE employees and temporarily appointed attendants must wear the standard established PPE as prescribed under the heading "standard PPE" while accompanying visitors and participants in excursions.

For safety reasons, visitors must wear clothing that covers arms and legs. The wearing of closed footwear with flat heel, no higher than 1.5cm, is mandatory within the stipulated PPE zones.

Each visitor is obliged to wear the personal protective equipment (green safety helmet and safety glasses) provided to him/her by RWE.