



UV-technology

Protective measures according to DGZfP leaflet
EM6



The following table describes the necessary protective measures depending on the risk classes. The information applies to an 8 h working day and a typical crack inspection workflow. If this is deviated from, a workplace-specific radiation exposure analysis must be carried out. In addition to the daily exposure limit value, the annual exposure limit value must also be taken into account.

Risk class	E_{eff} [W/m ²]	$E_{\text{UV-A}}$ [W/m ²]
0	0 to $0,1 \times 10^{-3}$	0 to 1
1	$0,1$ to $1,0 \times 10^{-3}$	1 to 10
2	$1,0$ to 10×10^{-3}	10 to 100
3	10 to 31×10^{-3}	100 to 300
4	$> 31 \times 10^{-3}$	> 300



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Risk class	Personal protective measures	Technical protective measures
0	No protective measures are necessary	
1	Note: UV lamps of these risk classes are usually insufficient for materials testing due to the irradiance required for defect detection	
2	<ul style="list-style-type: none"> • Access only for instructed personnel • Body-covering work clothes and gloves (UV-impermeable) • Eye protection by UV safety goggles, from 2-1.4 according to EN 170 	<ul style="list-style-type: none"> • Positioning of the UV lamp below eye level to prevent looking directly into the lamp • Labelling of the lamp with <ol style="list-style-type: none"> 1. Danger sign: "Caution: Ultraviolet radiation". 2. Warning sign: "Caution: Dangerous optical radiation". 3. Indication of the risk class • Marking of the workplace with <ol style="list-style-type: none"> 1. Prohibition sign: "No entry for unauthorised persons". 2. Warning sign: "Caution: Dangerous optical radiation". 3. Danger sign "Caution: Ultraviolet Radiation"
3	<ul style="list-style-type: none"> • Access only for instructed personnel • Body-covering work clothing and gloves (UV-impermeable) • Eye protection by UV safety goggles for all persons in the work area (bystander) 	<ul style="list-style-type: none"> • Positioning of the stationary UV lamp below eye level to prevent direct viewing of the lamp. • Labelling of the lamp with <ol style="list-style-type: none"> 1. Danger sign "Caution: Ultraviolet radiation". 2. Warning sign: "Dangerous optical radiation". 3. Indication of the risk class 4. Mandatory sign "Wear eye protection"
4	<ul style="list-style-type: none"> • Access only for instructed personnel • Body-covering work clothes and gloves (UV-impermeable) • Full face protection (visor) is required 	<ul style="list-style-type: none"> • Marking of the workplace with <ol style="list-style-type: none"> 1. Prohibition sign: "Access for unauthorised persons prohibited" 2. Warning sign: "Caution: Dangerous optical radiation". 3. Danger sign: "Caution: Ultraviolet radiation". 4. Mandatory sign "Wear eye protection" • Secure the workplace against unauthorised access; the marking can be made e.g. on the door or on a barrier chain. For mobile testing, it is sufficient to place the signs at a distance of approx. 3 m from the radiation source.