

**TECHNICAL SHEETS FOR COORDINATION
VERTICAL RECOMMENDATION FOR USE SHEETS (RfUs)
STATUS ON SEPTEMBER 2011**


Number CNB/P/ (1)	Revision (Rev)	Reference - Keywords	Approval Vertical Group of NBs (2)	Approval Standing Committee “PPE”
Vertical Group 2		Respiratory Protective Equipment		
Vertical Group 3		Eye and Face Protection		
03.003	03	EN 167 clause 6 - Transmittance, uncertainty	20/06/94	15/12/05
03.004	03	EN 170 table 1 - Transmittance, band width, scanning speed	20/06/94	15/12/05
03.009	02	EN 166 clause 7.2.6 - Damage by fine particles, sand, reference lenses	15/04/96	15/12/05
03.010	02	EN 166, 167, 168 - Paint ball	15/04/96	15/12/05
03.011	02	EN 175 - Samples, welding protection	15/04/96	15/12/05
03.012	02	EN 166, EN 168 article 13 - Large dust particles	08/10/02	15/12/05
03.013	03	EN 167 clause 3.2.2 - Refractive power, laser, achromatic lens	20/06/94	15/12/05
Vertical Group 4		Hearing Protection		
04.001	03	EN 352-1:2002 clause 4.3.8, EN 13819-1:2002 clause 4.4 - Ear-muffs with different wearing modes, headband force	14/09/93	15/12/05
04.003	03	EN 352-4:2001, EN 352-1/2/3/5/6/7:2002 clause 6 - Wearer information	14/09/93	15/12/05
04.004	03	Product modification	06/09/94	15/12/05
04.005	03	Testing of HPD without harmonised standards	06/09/94	15/12/05
04.006	03	EN 352, EN 13819-2:2002 clause 4.2, ISO 4869-1 - HPD of particular size, sound attenuation measurement	06/09/94	15/12/05
04.007	03	EN 13819-1:2002 clauses 4.6, 4.7 - Ear-muffs, drop test	06/09/94	15/12/05
04.008	03	EN 13819-2:2002 clause 4.2, ISO 4869-1 - Sound attenuation, ear plugs in different colours	28/11/95	15/12/05
04.009	03	EN 13819-2:2002 clause 4.2, ISO 4869-1 - Sound attenuation, custom-moulded ear-plugs	28/11/95	15/12/05
04.011	03	EN 352-2:2002 clause 4.2.2.4 - Re-usable ear-plugs, storage-packaging	28/11/95	15/12/05
04.012	03	EN 352-3:2002 clause 4.3.4 - Helmet-mounted ear-muffs	28/11/95	15/12/05
04.014	04	EN 352-4:2001 clause 4.3.2, ISO 4869-4 - Level-dependent ear-muffs, criterion levels	25/10/99	15/12/05
04.015	05	EN 352-4:2001 clause 4.3.3, EN 13819-2:2002, ISO 4869-4 - Level-dependent ear-muffs, MIRE, measurement noise, volume control	19/10/01	15/12/05
04.016	05	EN 352-4:2001 clause 4.3, EN 458 - Impulse noise, level-dependent ear-muffs with sound restoration system	19/10/01	15/12/05
04.017	04	EN 352-2:2002 - Custom-moulded ear plugs	25/10/99	15/12/05
04.019	04	EN 352-4:2001, EN 352-8:2002 - Level-dependent ear-muffs with integrated broadcast-receiver	25/10/99	15/12/05
04.020	07	EN 352-6:2002 - Communication ear-muffs with an audio input (by wire)	19/10/01	15/12/05
04.021	04	EN 352-8:2002 - Ear-muffs with broadcast-receivers	25/10/99	15/12/05
04.022	04	EN 352-6/8/11:2002 - Hearing protection device with audio communication	25/10/99	15/12/05
04.023	06	EN 352-5:2002 clause 4.3.2, 6 and Annex B - Testing of active noise reduction ear- muffs	19/10/01	15/12/05
04.027	04	EN 352-8:2002 - Wireless complete hearing protection systems with reproduced sound for entertainment	26/10/99	15/12/05
04.029	04	EN 352-3:2002 clause 4.1, EN 13819-1:2002 clause	25/10/99	15/12/05

Number CNB/P/ (1)	Revision (Rev)	Reference - Keywords	Approval Vertical Group of NBs (2)	Approval Standing Committee "PPE"
		4.2.3.2 - Adjustability and size-ranges for ear-muffs attached to an industrial safety helmet		
04.031	04	EN 352-11:2002 - Communication ear-muffs receiving and transmitting wireless	11/09/00	15/12/05
04.032	05	EN 352-7:2002 - Ear-plugs with audio communication	19/10/01	15/12/05
04.034	03	EN 352-4:2001 clause B.3 (Annex B) - MIRE-technique, interpolation, extrapolation, criterion level, level-dependent ear-muffs	19/10/01	15/12/05
04.035	04	EN 13819-2:2002 clauses 4.2.2, 4.3.2, ISO 4869-1 - Test site, reverberation time, level-dependent hearing protector, active noise reduction (ANR) hearing protector	19/10/01	15/12/05
04.036	03	EN 13819-2:2002 clause 4.1.4 - Insertion loss, asymmetric design, electronic ear-muffs	26/06/01	15/12/05
04.037	04	EN 13819-1:2002 clause 5.2.3 - Nominal size designation, flanged ear-plugs	26/06/01	15/12/05
04.039	05	Ear plugs, special use, risk in water	17/09/04	15/07/08
Vertical Group 5 Protective Clothes and Gloves				
Contamination EN 421		Protective gloves against ionizing radiation and radioactive - EN 421, clause 5.2: gloves; radioactive; requirements - EN 421, clause 6.3.4: water vapour permeability	07/02/07	30/04/09
EN 469		Requirements and test methods for protective clothing for fire fighting - Clause 1: certification, separate clothing items - Clause 4.6: closure systems - Clause 4.9: neck protection - Clause 5.2: pre-treatments - Clause 5.3 and 6.1: flame spread of materials - Clause 5.4: flammability, number of washing cycles, durability - Clause 6.1: accessories (threads, embroideries, seams) - Clause 6.1.6: hardware - Clause 6.4 and 7.5: radiant heat, residual strength - Clause 6.5: heat resistance of materials - Clause 6.5: testing of braces - Clause 7.4: dimensional change, knitted fabrics - Clause 7.4.2: performance marking - Clause 7.5: liquid penetration	24/08/07	30/04/09
EN 470-1		General requirements for protective clothing for use in welding and allied processes - Clause 1: combination of items - Clause 4.1: molten metal, accumulation in pleats - Clause 4.1: design, electrical conduction - Clause 4.3: design, pockets - Clause 5.1 and 5.3: breaking strength, textile, leather - Clause 5.2: tear resistance - Clause 5.3: dimensional change, knitted fabrics - Clause 5.3: dimensional changes, leather - Clause 5.5: Chromium (VI) content - Clause 6.1: accessories (threads, embroideries, seams) - Clause 6.2: high visibility garments for welding - Clause 6.2: PPE; sticking of molten metal	07/02/07	30/04/09
EN 531		Protective clothing for industrial workers exposed to heat - Categorisation - Socks - Clause 1: undergarments, certification - Clause 1: neck protector, certification - Clause 5.2: dimensional change, knitted fabrics - Clause 6: performance levels, test method - Clause 6.1: outer material, clothing assembly - Clause 6.2: accessories (threads, embroideries, seams) - Clause 6.2: flammability, washing, durability - Clause 6.5 and 6.6: large metal molten splashes, ignition - Clause 7: quick release fastening - Clause 7: pockets, pocket closures - Clause 7: molten metal, accumulation in pleats - Clause 7: zippers	18/08/06	30/04/09
EN 532-533 - prEN		Protective clothing against heat and flame - EN 533, clause	24/08/03	30/04/09

Number CNB/P/ (1)	Revision (Rev)	Reference - Keywords	Approval Vertical Group of NBs (2)	Approval Standing Committee "PPE"
ISO 14116		1: materials, CE type examination - EN 533, clause 4: other garment features (threads, embroideries, seams) - EN 533, clause 4.1: materials next to the skin, incompatible properties - EN 532: flammability index, hole formation - prEN ISO 14166, clause 6.2: mechanical testing of knitted materials		
Electrostatic charges EN 1149 series		Electrostatic properties - Clause 4: attachments - Clause 4 and 5: requirements, core conductor fibres - Clause 4.1: non homogeneous materials, resistivity - Clause 4.2: skin contact, incompatible properties - Clause 4.2: skin contact, earthing - prEN 1149-5: ATEX situations, fire behaviour - prEN 1149-5: requirements, materials and design - prEN 1149-5: requirements, design - prEN 1149-5: EC type examination certificate - General: durability, washing	07/02/07	30/04/09
Gloves		Barbecue gloves (EN 407) - Fire fighters' gloves (EN 659, cl. 3) - Fire fighters' gloves, marking (EN 659) - Gloves, chemical protection (EN 374) - Gloves, entanglement moving parts (no standard available) - Gloves, length (EN 374-420) - Gloves, length (EN 420) - Gloves, natural rubber, protein content (EN 420) - Gloves; protection from contact heat (EN 407) - Marking, reference to general standards (EN 420) - Mechanical testing (EN 388) - Protective clothing and gloves, pictogram ionising radiation (EN 420) - Protective devices against cold and heat (no specific standard)	24/08/07	30/04/09
High visibility EN 471 - 1150 - 13356		Clause 4.1: classification, combination of items - Clause 4.1: classification, Jacket with removable sleeves - Clause 4.1: classification, minimum area - Clause 4.1: classification, use of smallest size - Clause 4.1: classification, harnesses - Clause 4.1 and 5.1: classification, perforated materials - Clause 4.1: classification, combined performance materials - Clause 4.1 and 6.1: classification, markings on reflective trimmings - Clause 4.2: design, items not covered by the enumeration in EN 471 - Clause 4.2: design, retroreflective bands, extra trimming - Clause 4.2: design, reflective bands, arrangement - Clause 4.2: design, reflective bands, patterns - Clause 4.2: design, background material, minimum area (legs) - Clause 4.2.2: reflective bands, width and homogeneity - Clause 4.2.3: bands encircling the torso - Clause 5.1: luminance factor, washing - Clause 5.1: colour test, orientation - Clause 5.1 and 6.1: background fabric, logos - Clause 5.3: colour fastness - Clause 5.3.3: marking, bleaching - Clause 5.6.3: background material, wvp-index - Clause 6.2: washing, maximum number of cycles - Clause 8: marking, number of washing cycles - Clause 8: marking, combined performance - High visibility accessories (EN 13356) - High visibility accessories, cape for horse riders (EN 13356) - High visibility accessories, minimum area (EN 13356)	24/08/07	30/04/09
Chemical (includes biological and radio- active risks)		EN 1073-2 clause 4.2: radioactive contamination, puncture resistance - EN 13034: additional features - EN 13034 clause 4.1: repellency, penetration - EN 13034 clause 4.2: chemical penetration, seams etc. - EN 13034, EN 468: low level spray test - EN 13982-1 clause 6e: instructions for use; test results - EN 14126 clause 4.1.4: infective agents -	07/02/07	30/04/09

Number CNB/P/ (1)	Revision (Rev)	Reference - Keywords	Approval Vertical Group of NBs (2)	Approval Standing Committee "PPE"
		EN 368 clause 1: certification, use of EN 368 - EN 368 clause 5.5: volatile liquids penetration - EN 369 clause 5.2 - permeation, collecting medium - EN 463 clause 5: test liquid - EN 463 clause 8.2: test points - EN 466 clause 6.3: jet test - EN 467: partial body protection - General: abrasion, flex cracking, breakthrough - General: abrasion, flex cracking, pressure pot - General: attached gloves and boots - General: cleaning, preconditioning for testing - General: cold protection combined with chemical protection - General: instructions for use - General: limited protection - General: pockets - General: repellency - General: test methods		
General		Abrasion testing (EN 530) - Abrasive blasting, categorization of PPE (EN ISO 14877) - Combination of clothing items (EN 340) - Comfort, practical performance testing (EN 340) - Cool environments (EN 14058) - Dimensional Change (EN 340) - Dimensional change, knitted materials (EN 340) - Electric arc (based on CLC/TS 50354) - Fire hoods, practical performance test (EN 13911) - Identification of materials (all clothing standards) - Innocuousness, plastic clothing (EN 340) - Innocuousness, azo colourants (EN 340) - Marking, reference to general standards (EN 340) - Marking, compliance with several standards (EN 533) - Paint booth clothing (no standard) - Protective clothing and gloves, pictogram ionising radiation (EN 420-340) - Reference to standards (EN 343) - Test report, reference to directive (in the absence of a standard) - Various performance levels in one garment (several standards) - Water penetration, rainwear (EN 343) - Water vapour resistance (all clothing standards) - Wildland firefighting clothing (ISO 15394) - Working garments (not protective)	24/08/07	30/04/09
Vertical Group 9		Protective Clothing for Motorcycle Riders and Sports Impact Protectors		
09.001	02	EN 1621-1:1997 clause 6.3 - Impact protectors in motorcyclists' protective garments	05/11/97	15/12/05
09.002	02	EN 1621-1:1997 clause 4.1 - Impact protectors for motorcyclists	05/11/97	15/12/05
09.003	02	EN 1621-1:1997 clause 6.3 - Impact protectors for motorcyclists	14/12/00	15/12/05


- (1) : CNB/P/xx.xxx RERev yy = Coordination of Notified Bodies/PPE/Numbering of the RfUs
R: Recommendation for Use E: English version Rev: Revision yy: index of the Revision
(2) : NBs = Notified Bodies

	CO-ORDINATION OF NOTIFIED BODIES PPE-Directive 89/686/EEC + amendments RECOMMENDATION FOR USE		CNB/P/03.003 Revision 03 Language : E
	Number of pages : 1	Date : 21/04/2006	Approval by :
Origin : VG3 Eye and Face Protection		<input checked="" type="checkbox"/> Vertical Group20/06/1994 <input type="checkbox"/> Horizontal Committee <input checked="" type="checkbox"/> Standing Committee 15/12/2005	
Question related to :	EN/prEN : EN 167	Other :	
Annex :	Article :	Clause : 6	
Key words : transmittance, uncertainty			
Question : Transmittance measurements : Has the relative uncertainty on the transmittance value to be calculated on the value of the measure or on the maximum value of the range of values in which the measure is carried out ?			
Solution : The relative uncertainty which is applicable to a measured transmittance value in the one which corresponds to the maximum value of the range of values in which the measure is carried out accordingly with table n° 1 of EN 167.			
Sent for information to : <input type="checkbox"/> members of the VG <input type="checkbox"/> other VG(s) <input type="checkbox"/> HC (2) <input type="checkbox"/> TC (3) <input type="checkbox"/> SC (4) <input type="checkbox"/> other (5)			

(1) Essential safety requirement
 (2) HC = horizontal committee

(3) N° of CEN/TC (Secretary & Chairman)
 (4) EEC Standing Committee 89/392


(5) To be specified

	CO-ORDINATION OF NOTIFIED BODIES PPE-Directive 89/686/EEC + amendments RECOMMENDATION FOR USE		CNB/P/03.004 Revision 03 Language : E
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Origin : VG3 Eye and Face Protection		<input checked="" type="checkbox"/> Vertical Group20/06/1994 <input type="checkbox"/> Horizontal Committee <input checked="" type="checkbox"/> Standing Committee 15/12/2005	
Question related to :	EN/prEN : EN 170	Other :	
Annex :	Article :	Clause : Table 1	
Key words : transmittance, band with, scanning speed			
Question : Transmittance measurements : - for $210 \text{ nm} < \lambda < 313 \text{ nm}$, the maximum transmittance value does not exceed $3 \cdot 10^{-4}$. Depending on the scanning speed and the wave range with used, the results are not always the same (especially for the sharp peaks) which can exceed $3 \cdot 10^{-4}$ or not. What are the spectrophotometer settings to apply ?			
Solution : - Measure so slowly that a further reduction of speed does not change the result. Better : stop at the wavelength to be measured. - Reduce spectral band which until a further reduction does not change the results.			
Sent for information to : <input type="checkbox"/> members of the VG <input type="checkbox"/> other VG(s) <input type="checkbox"/> HC (2) <input type="checkbox"/> TC (3) <input type="checkbox"/> SC (4) <input type="checkbox"/> other (5)			

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	CO-ORDINATION OF NOTIFIED BODIES PPE-Directive 89/686/EEC + amendments RECOMMENDATION FOR USE		CNB/P/03.009 Revision 02 Language : E
	Number of pages : 1	Date : 21/04/2006	Approval by :
Origin : VG3 Eye and Face Protection		<input checked="" type="checkbox"/> Vertical Group 15/04/1996 <input type="checkbox"/> Horizontal Committee <input checked="" type="checkbox"/> Standing Committee 15/12/2005	15/04/1996 15/12/2005
Question related to :	EN/prEN : EN 166	Other :	
Annex :	Article :	Clause : 7.2.6	
Key words : damage by fine particles, sand, reference lenses			
Question : Choice of the reference (sand and lenses) used to measure the resistance to damage by fine particles ?			
Solution : Sand Ref. : P 0,5 to 0,7 - use the sand supplied by : VALENTIN BUSCH - SCHNAITTENBACH 8454 (Germany) Tel. (49) 96 22 17 61 - and the references lenses supplied by Mr SEIFFERT DESAG 31073 GRÜNENPLAN (Germany) Tel. (49) 51 87 771 315			
Sent for information to : <input type="checkbox"/> members of the VG <input type="checkbox"/> other VG(s) <input type="checkbox"/> HC (2) <input type="checkbox"/> TC (3) <input type="checkbox"/> SC (4) <input type="checkbox"/> other (5)			

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 (4) EEC Standing Committee 89/392


(5) To be specified

	CO-ORDINATION OF NOTIFIED BODIES PPE-Directive 89/686/EEC + amendments RECOMMENDATION FOR USE		CNB/P/03.010 Revision 02 Language : E
	Number of pages : 1	Date : 21/04/2006	Approval by :
Origin : VG3 Eye and Face Protection		<input checked="" type="checkbox"/> Vertical Group 15/04/1996 <input type="checkbox"/> Horizontal Committee <input checked="" type="checkbox"/> Standing Committee 15/12/2005	
Question related to :	EN/prEN : EN 166, 167, 168	Other :	
Annex :	Article :	Clause : All	
Key words : paint ball			
Question : What are the test to carry out on the painting ball eye protectors ?			
Solution : A painting ball protectors can be assimilate to a face shield. The tests to carry out are the ones which are defined in EN 166 - EN 167 - EN 168 for this type of eye protectors and for resistance to high speed particles specification (medium energy - 120 m/s). Verifying impact test could be also perform, using the painting ball gun and painting balls at a very short distance of the face shield.			
Sent for information to : <input type="checkbox"/> members of the VG <input type="checkbox"/> other VG(s) <input type="checkbox"/> HC (2) <input type="checkbox"/> TC (3) <input type="checkbox"/> SC (4) <input type="checkbox"/> other (5)			

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 (4) EEC Standing Committee 89/392


(5) To be specified

	CO-ORDINATION OF NOTIFIED BODIES PPE-Directive 89/686/EEC + amendments RECOMMENDATION FOR USE		CNB/P/03.011 Revision 02 Language : E
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Origin : VG3 Eye and Face Protection		<input checked="" type="checkbox"/> Vertical Group 15/04/1996 <input type="checkbox"/> Horizontal Committee <input checked="" type="checkbox"/> Standing Committee 15/12/2005	
Question related to :	EN/prEN : EN 175	Other :	
Annex :	Article :	Clause : All	
Key words : samples, welding protection			
Question : What sample quantities should be used when testing to those standards for which no sample quantities are detailed ? e.g. pr EN 175 - "Personal protection - Equipment for eye and face protection during welding and allied processes"			
Solution : Make reference to similar requirements in EN 166 In the cases where similar requirements do not exist, e.g. "Electrical insulation", assess three samples			
Sent for information to : <input type="checkbox"/> members of the VG <input type="checkbox"/> other VG(s) <input type="checkbox"/> HC (2) <input type="checkbox"/> TC (3) <input type="checkbox"/> SC (4) <input type="checkbox"/> other (5)			

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 (4) EEC Standing Committee 89/392


(5) To be specified

	CO-ORDINATION OF NOTIFIED BODIES PPE-Directive 89/686/EEC + amendments RECOMMENDATION FOR USE		CNB/P/03.012 Revision 02 Language : E
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Origin : VG3 Eye and Face Protection		<input checked="" type="checkbox"/> Vertical Group08/10/2002 <input type="checkbox"/> Horizontal Committee <input checked="" type="checkbox"/> Standing Committee15/12/2005	
Question related to :	EN/prEN : EN 166- EN 168	Other :	
Annex :	Article :	Clause : EN 168 article 13	
Key words : Large dust particles			
Question : In conclusion of the round robin test concerning the test of protection against large dust particles, this sheet give some explanations concerning the test method and propose some modifications.			
Solution : 1- Direction of the air flow in dust chamber : upwards (EN 168 § 13-1-1) 2- The reference of the suitable agitator must be deleted (EN 168 § 13-1-1) 3- A suitable blotting paper is one that has a minimum water absorptivity of 2.0 g/dm ² . This measurement is made after the removal of excess water following one of the two methods bellow : <ul style="list-style-type: none"> - squeezing the paper with a roller, - hanging up the paper to drip about 5 minutes. It is considered that there is no more excess of water when, if the paper is hanging up, no droplets are falling within the 60 seconds. 4- Before the first reflectance measurement of the blotting paper (EN 168 § 13-2), the excess of water must be removed (see above) 5- As it is impossible to quantify directly the amount of coal dust circulating within the chamber, the reflectance of the blotting paper outside the goggle has to be measured after the test. This could be done on a second piece of blotting paper, attached vertically on the headform or on any support near the headform (EN 168 § 13-2). A reflectance value of less than 30% would appear to indicate when sufficient coal dust is circulating. The numerical value of the air flow (2.8 m ³ /min) and pressure (2250Pa) are only indicative (EN 168 § 13-1-1).			
Sent for information to : <input type="checkbox"/> members of the VG <input type="checkbox"/> other VG(s) <input type="checkbox"/> HC (2) <input type="checkbox"/> TC (3) <input type="checkbox"/> SC (4) <input type="checkbox"/> other (5)			

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(5) To be specified

	CO-ORDINATION OF NOTIFIED BODIES PPE-Directive 89/686/EEC + amendments RECOMMENDATION FOR USE		CNB/P/03.013 Revision 03 Language : E
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Origin : VG3 Eye and Face Protection		<input checked="" type="checkbox"/> Vertical Group20/06/1994 <input type="checkbox"/> Horizontal Committee <input checked="" type="checkbox"/> Standing Committee 15/12/2005	
Question related to :	EN/prEN : EN 167	Other :	
Annex :	Article :	Clause : 3.2.2	
Key words : Refractive power, laser, achromatic lens			
Question : - If the light source is a laser, is it still necessary to use an achromatic lens ? (It seems unnecessary)			
Solution : - ILEE group agrees that it is not necessary.			
Sent for information to : <input type="checkbox"/> members of the VG <input type="checkbox"/> other VG(s) <input type="checkbox"/> HC (2) <input type="checkbox"/> TC (3) <input type="checkbox"/> SC (4) <input type="checkbox"/> other (5)			

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(5) To be specified

		CO-ORDINATION OF NOTIFIED BODIES PPE-Directive 89/686/EEC + amendments RECOMMENDATION FOR USE		CNB/P/04.001 Revision 03 Language : E	
Number of pages : 1		Date : 21/04/2006		Approval by :	
Origin : VG 4		<input checked="" type="checkbox"/> Vertical Group 13./14.09.1993 <input type="checkbox"/> Horizontal Committee <input checked="" type="checkbox"/> Standing Committee 15.12.2005		Approved on :	
Question related to :		EN/prEN : 352-1:2002/ 13819-1:2002		Other :	
Annex :		Article :		Clause : 4.3.8 of EN 352-1, 4.4 of EN 13819-1	
Key words : Ear-muffs with different wearing modes, headband force					
Question : The test procedure (measurement of headband force) for ear-muffs in different wearing modes has not been specified in sufficient details in EN 352-1 and EN 13819-1. How shall the testing of 'headband force' and 'change of headband force' be performed for ear muffs with different wearing modes?					
Solution : 1. When the change in headband force is checked during mechanical tests, the tests shall be performed only with one headband mode. 2. When measurements of the headband force have to be repeated the ear-muff shall be allowed to recover for at least 4 hour.					
Sent for information to : <input type="checkbox"/> members of the VG <input type="checkbox"/> other(s) VG <input type="checkbox"/> HC (2) <input type="checkbox"/> TC (3) <input type="checkbox"/> SC (4) <input type="checkbox"/> other (5)					

(1) Essential safety requirement
 (2) HC = horizontal committee

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 (4) EEC Standing Committee 89/392


(5) To be specified

	CO-ORDINATION OF NOTIFIED BODIES PPE-Directive 89/686/EEC + amendments RECOMMENDATION FOR USE		CNB/P/04.003 Revision 03 Language : E
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Origin : VG4 Hearing Protection		<input checked="" type="checkbox"/> Vertical Group <input type="checkbox"/> Horizontal Committee <input checked="" type="checkbox"/> Standing Committee	13./14.09.1993 15.12.2005
Question related to : Directive 89/686/EEC Annex : II, 1.4 Article :		EN/prEN : 352-1/2/3/4/5/6/7 Other : Clause : 6 (of EN 352-1/2/3/5/6/7:2002, of EN 352-4:2001)	
Key words : Wearer information			
Question : In which language shall the draft of the wearer information be submitted?			
Solution : It was agreed that 1. the manufacturer's draft wearer information shall be made in a language acceptable to the test laboratory. The laboratory may assist the manufacturer to write the final wearer information in the test laboratory's official language and 2. that the manufacturer, by signing the application form, undertakes to provide an identical translation to the official language(s) of the country of destination in Europe.			
Sent for information to : <input type="checkbox"/> members of the VG <input type="checkbox"/> other(s) VG <input type="checkbox"/> HC (2) <input type="checkbox"/> TC (3) <input type="checkbox"/> SC (4) <input type="checkbox"/> other (5)			

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(5) To be specified

	CO-ORDINATION OF NOTIFIED BODIES PPE-Directive 89/686/EEC + amendments RECOMMENDATION FOR USE		CNB/P/04.004 Revision 03 Language : E
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Origin : VG4 Hearing Protection		<input checked="" type="checkbox"/> Vertical Group <input type="checkbox"/> Horizontal Committee <input checked="" type="checkbox"/> Standing Committee	5./6.09.1994 15.12.2005
Question related to :	EN/prEN :	Other :	
Annex :	Article :	Clause :	
Key words : Product modification			
Question : Which tests are necessary for the EC-type examination of a modified existing CE marked HPD?			
Solution : The VG 4 agrees that, for the EC-type test of a modified existing CE marked HPD, it is the responsibility of the notified body to decide on what, if any, further testing is necessary. In case of doubt the notified body may seek guidance through the VG. Such decisions should be recorded by the notified body and presented at the subsequent VG-meeting.			
Sent for information to : <input type="checkbox"/> members of the VG <input type="checkbox"/> other(s) VG <input type="checkbox"/> HC (2) <input type="checkbox"/> TC (3) <input type="checkbox"/> SC (4) <input type="checkbox"/> other (5)			

(1) Essential safety requirement
 (2) HC = horizontal committee

(3) N° of CEN/TC (Secretary & Chairman)
 (4) EEC Standing Committee 89/392


(5) To be specified

	CO-ORDINATION OF NOTIFIED BODIES PPE-Directive 89/686/EEC + amendments RECOMMENDATION FOR USE		CNB/P/04.005 Revision 03 Language : E
	Number of pages : 1	Date : 21/04/2006	Approval by :
Origin : VG4 Hearing Protection		<input checked="" type="checkbox"/> Vertical Group <input type="checkbox"/> Horizontal Committee <input checked="" type="checkbox"/> Standing Committee	05./06.09.1994 15.12.2005
Question related to : Directive 89/686/EEC	EN/prEN :		Other :
Annex :	Article :	Clause :	
Key words : Testing of HPD without harmonised standards			
Question : How to test HPDs for which no harmonised standard exists?			
Solution : VG 4 agrees that, for the EC-type test of an HPD for which no harmonised standard exists:- a) Use the most recent prEN, or, if not available, b) use the most recent committee working document, or, if not available, c) approach VG 4 and request suggestions/solutions from other members.			
Sent for information to : <input type="checkbox"/> members of the VG <input type="checkbox"/> other(s) VG <input type="checkbox"/> HC (2) <input type="checkbox"/> TC (3) <input type="checkbox"/> SC (4) <input type="checkbox"/> other (5)			

(1) Essential safety requirement
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(3) N° of CEN/TC (Secretary & Chairman)
 (4) EEC Standing Committee 89/392


(5) To be specified

	CO-ORDINATION OF NOTIFIED BODIES PPE-Directive 89/686/EEC + amendments RECOMMENDATION FOR USE		CNB/P/04.006 Revision 03 Language : E
	Number of pages : 1	Date : 21/04/2006	Approval by :
Origin : VG4 Hearing Protection		<input checked="" type="checkbox"/> Vertical Group <input type="checkbox"/> Horizontal Committee <input checked="" type="checkbox"/> Standing Committee	05./06.09.1994 15.12.2005
Question related to :	EN/prEN : 352 (all parts), 13819-2	Other : ISO 4869-1	
Annex :	Article :	Clause : 4.2 (of 13819-2:2002)	
Key words : HPD of particular size, sound attenuation measurement			
Question : How to test hearing protectors of particular size in accordance with EN 13819-2:2002, clause 4.2.			
Solution : VG 4 agrees that, when HPDs of a particular size (e.g. large, small) under EN 352 (all parts), the following protocol should be used:- „In the case of an HPD which does not fit all size ranges given in the standard, each test subject shall be asked if the specimen fits. If it does, the test shall be performed. If it does not, the subject shall be rejected from the panel and replacement provided.			
Sent for information to : <input type="checkbox"/> members of the VG <input type="checkbox"/> other(s) VG <input type="checkbox"/> HC (2) <input type="checkbox"/> TC (3) <input type="checkbox"/> SC (4) <input type="checkbox"/> other (5)			

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(3) N° of CEN/TC (Secretary & Chairman)
 (4) EEC Standing Committee 89/392


(5) To be specified

	CO-ORDINATION OF NOTIFIED BODIES PPE-Directive 89/686/EEC + amendments RECOMMENDATION FOR USE		CNB/P/04.007 Revision 03 Language : E
	Number of pages : 1	Date : 21/04/2006	Approval by :
Origin : VG4 Hearing Protection		<input checked="" type="checkbox"/> Vertical Group <input type="checkbox"/> Horizontal Committee <input checked="" type="checkbox"/> Standing Committee	05./06.09.1994 15.12.2005
Question related to :	EN/prEN : 13819-1:2002	Other :	
Annex :	Article :	Clause : 4.6 and 4.7	
Key words : Ear-muffs, drop test			
Question : How shall ear-muffs be examined for damage after drop test?			
Solution: When examining an HPD for damage after drop test, if necessary, the cushions and/or liners should be removed before examination and then replaced.			
Sent for information to : <input type="checkbox"/> members of the VG <input type="checkbox"/> other(s) VG <input type="checkbox"/> HC (2) <input type="checkbox"/> TC (3) <input type="checkbox"/> SC (4) <input type="checkbox"/> other (5)			

(1) Essential safety requirement
 (2) HC = horizontal committee

(3) N° of CEN/TC (Secretary & Chairman)
 (4) EEC Standing Committee 89/392


(5) To be specified

	CO-ORDINATION OF NOTIFIED BODIES PPE-Directive 89/686/EEC + amendments RECOMMENDATION FOR USE		CNB/P/04.008 Revision 03 Language : E
	Number of pages : 1	Date : 21/04/2006	Approval by :
Origin : VG4 Hearing Protection		<input checked="" type="checkbox"/> Vertical Group <input type="checkbox"/> Horizontal Committee <input checked="" type="checkbox"/> Standing Committee	27./28.11.1995 15.12.2005
Question related to :	EN/prEN : 13819-2:2002	Other : ISO 4869-1	
Annex :	Article :	Clause : 4.2	
Key words : Sound attenuation, ear plugs in different colours			
Question : Shall sound attenuation measurements be repeated in case a plug is supplied in different colours?			
Solution : If possible, one measurement should be performed and the samples used for that measurement should include all of the colours.			
Sent for information to : <input type="checkbox"/> members of the VG <input type="checkbox"/> other(s) VG <input type="checkbox"/> HC (2) <input type="checkbox"/> TC (3) <input type="checkbox"/> SC (4) <input type="checkbox"/> other (5)			

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(3) N° of CEN/TC (Secretary & Chairman)
 (4) EEC Standing Committee 89/392


(5) To be specified

	CO-ORDINATION OF NOTIFIED BODIES PPE-Directive 89/686/EEC + amendments RECOMMENDATION FOR USE		CNB/P/04.009 Revision 03 Language : E
	Number of pages : 1	Date : 21/04/2006	Approval by :
Origin : VG4 Hearing Protection		<input checked="" type="checkbox"/> Vertical Group <input type="checkbox"/> Horizontal Committee <input checked="" type="checkbox"/> Standing Committee	27./28.11.1995 15.12.2005
Question related to :	EN/prEN : 13819-2:2002	Other : ISO 4869-1	
Annex :	Article :	Clause : 4.2	
Key words : Sound attenuation, custom moulded ear-plugs			
Question : Some types of custom moulded ear-plugs are offered with a special cream intended to ease the insertion of the plug into the ear-canal. Shall sound attenuation measurements be performed using such cream?			
Solution : The sound attenuation measurements shall be performed <u>without</u> the use of such cream.			
Sent for information to : <input type="checkbox"/> members of the VG <input type="checkbox"/> other(s) VG <input type="checkbox"/> HC (2) <input type="checkbox"/> TC (3) <input type="checkbox"/> SC (4) <input type="checkbox"/> other (5)			

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(3) N° of CEN/TC (Secretary & Chairman)
 (4) EEC Standing Committee 89/392


(5) To be specified

	CO-ORDINATION OF NOTIFIED BODIES PPE-Directive 89/686/EEC + amendments RECOMMENDATION FOR USE		CNB/P/04.011 Revision 03 Language : E
	Number of pages : 1	Date : 21/04/2006	Approval by :
Origin : VG4 Hearing Protection		<input checked="" type="checkbox"/> Vertical Group <input type="checkbox"/> Horizontal Committee <input checked="" type="checkbox"/> Standing Committee	27./28.11.1995 15.12.2005
Question related to :	EN/prEN : EN 352-2:2002	Other :	
Annex :	Article :	Clause : 4.2.2.4	
Key words : Re-usable ear-plugs, storage-packaging			
Question : How should a storage-packaging for re-usable ear-plugs be designed?			
Solution : No recommendation can be given. This must be decided by each notified body from case to case.			
Sent for information to : <input type="checkbox"/> members of the VG <input type="checkbox"/> other(s) VG <input type="checkbox"/> HC (2) <input type="checkbox"/> TC (3) <input type="checkbox"/> SC (4) <input type="checkbox"/> other (5)			

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 (4) EEC Standing Committee 89/392


(5) To be specified

	CO-ORDINATION OF NOTIFIED BODIES PPE-Directive 89/686/EEC + amendments RECOMMENDATION FOR USE		CNB/P/04.012 Revision 03 Language : E
	Number of pages : 1	Date : 21/04/2006	Approval by :
Origin : VG4 Hearing Protection		<input checked="" type="checkbox"/> Vertical Group <input type="checkbox"/> Horizontal Committee <input checked="" type="checkbox"/> Standing Committee	27./28.11.1995 15.12.2005
Question related to :	EN/prEN : EN 352-3:2002	Other :	
Annex :	Article :	Clause : 4.3.4	
Key words : Helmet-mounted ear-muffs			
Question : A helmet-muff combination fulfilling the requirements "Adjustability" for M- and L-size has a headband force <14N for the M-size, but >14N for the L-size. Can this combination be tested and sold as a M-size combination only?			
Solution : It was agreed that such a combination can be tested and sold as an M-size combination only.			
Sent for information to : <input type="checkbox"/> members of the VG <input type="checkbox"/> other(s) VG <input type="checkbox"/> HC (2) <input type="checkbox"/> TC (3) <input type="checkbox"/> SC (4) <input type="checkbox"/> other (5)			

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(3) N° of CEN/TC (Secretary & Chairman)
 (4) EEC Standing Committee 89/392


(5) To be specified

	CO-ORDINATION OF NOTIFIED BODIES PPE-Directive 89/686/EEC + amendments RECOMMENDATION FOR USE		CNB/P/04.014 Revision 04 Language : E
	Number of pages : 1	Date : 21/04/2006	Approval by :
Origin : VG4 Hearing Protection		<input checked="" type="checkbox"/> Vertical Group <input type="checkbox"/> Horizontal Committee <input checked="" type="checkbox"/> Standing Committee	25/10/99 15.12.2005
Question related to :		ENprEN : 352-4:2001	Other : ISO 4869-4
Annex :	Article :	Clause : 4.3.2	
Key words : Level-dependent ear-muffs, criterion levels			
Question : Should the criterion level (defined in prEN 352-4:1994) be the mean values minus one standard deviation?			
Solution : Yes. This is to get the same level of protection as established in EN 352-1, -2 and -3.			
Sent for information to : <input type="checkbox"/> members of the VG <input type="checkbox"/> other(s) VG <input type="checkbox"/> HC (2) <input type="checkbox"/> TC 159 <input type="checkbox"/> SC (4) <input type="checkbox"/> other (5)			

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(3) N° of CEN/TC (Secretary & Chairman)
 (4) EEC Standing Committee 89/392


(5) To be specified

		CO-ORDINATION OF NOTIFIED BODIES PPE-Directive 89/686/EEC + amendments RECOMMENDATION FOR USE		CNB/P/04.015 Revision 05 Language : E	
Number of pages : 1		Date : 21/04/2006		Approval by :	
Origin : VG 4 Hearing protection		<input checked="" type="checkbox"/> Vertical Group <input type="checkbox"/> Horizontal Committee <input checked="" type="checkbox"/> Standing Committee		Approved on : 19.10.2001 15.12.2005	
Question related to :		EN/prEN : 352-4:2001/13819-2:2002		Other : ISO 4869-4	
Annex :		Article :		Clause : .../ 4.3.3	
Key words : Level-dependent ear-muffs, MIRE, measurement noise, volume control					
Question : 1. Which test method should be used for the testing? Should MIRE(microphone in real ear)- or HATS(head and torso simulator)- or ATF(acoustic test fixture)-technique be used? 2. Which tolerances shall be aimed at for the generation of the L-orientated, M- , and H-orientated noise described in EN 352-4? 3. Which adjustment of the volume control shall be used for the testing of the level-dependent function of the ear muff?					
Recommended solution : 1. The MIRE-technique as described in Annex B of EN 352-4 (2001) should be used. In the area of the concha the microphone, including supporting elements and electrical leads, shall occupy an area not exceeding 25 mm ² in the plane perpendicular towards the centre axis of the ear canal (this differs from ISO/DIS 11904-1). The microphone position shown in Figure 1 a) of ISO/DIS 11904-1:2000 shall be used. , i.e. open ear canal and the port of the microphone shows towards the ear drum and the position is in between the ear canal entrance and the ear drum, preferable near by the ear canal entrance in a distance of a few mm. 2. M-noise: $L_C - L_A = + 2 \pm 0,2$ dB; H-orientated noise: $L_C - L_A = - 1.2_{-0,2}^{+0,1}$ dB; L-orientated noise: $L_C - L_A = + 6_{-0,2}^{+0,4}$ dB. Measure in one-third octave bands and calculate the $L_C - L_A$ value. 3. Adjust to maximum volume.					
Sent for information to : <input type="checkbox"/> members of the VG <input type="checkbox"/> other(s) VG <input type="checkbox"/> HC (2) <input type="checkbox"/> TC 159 <input type="checkbox"/> SC (4) <input type="checkbox"/> other (5)					

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(3) N° of CEN/TC (Secretary & Chairman)
 (4) EEC Standing Committee 89/392


(5) To be specified

	<p>CO-ORDINATION OF NOTIFIED BODIES PPE-Directive 89/686/EEC + amendments</p> <p>RECOMMENDATION FOR USE</p>	<p>CNB/P/04.016 Revision 05 Language : E</p>	
Number of pages : 1	Date : 21/04/2006	Approval by :	Approved on :
Origin : VG 4 Hearing protection (submitted by BIA, Germany)		<input checked="" type="checkbox"/> Vertical Group <input type="checkbox"/> Horizontal Committee <input checked="" type="checkbox"/> Standing Committee	19.10.2001 15.12.2005
Question related to :	EN/prEN : 352-4:2001	Other : 458	
Annex :	Article :	Clause : 4.3	
Key words : Impulse noise, level dependent ear-muffs with sound restoration system			
Question : In which way shall the peak attenuation of level-dependent ear-muffs with sound restoration system be tested?			
Recommended solution : Note that EN 352-4:2001 does not cover the assessment of protection of ear muffs against the risk of exposure to high peak levels, i.e. $L_{peak} \geq 140$ dB. Check first on the ATF (artificial test fixture, EN 24869-3:1993) that the ear-muff works properly. Check with steady noise that the ear-muff is properly fitted onto the subjects head (with electronic switched off). Then measure - using an appropriate noise source i.e. a starting pistol with a peak level of 155-160 dB - the peak attenuation by MIRE-technique (see ISO 11904-1, 2002). If not applicable a suitable HATS (head and torso simulator) or ATF can be used but check the validity of the results.			
Sent for information to : <input type="checkbox"/> members of the VG <input type="checkbox"/> other(s) VG <input type="checkbox"/> HC (2) <input type="checkbox"/> TC 159 <input type="checkbox"/> SC (4) <input type="checkbox"/> other (5)			

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(3) N° of CEN/TC (Secretary & Chairman)
(4) EEC Standing Committee 89/392


(5) To be specified

	CO-ORDINATION OF NOTIFIED BODIES PPE-Directive 89/686/EEC + amendments RECOMMENDATION FOR USE		CNB/P/04.017 Revision 04 Language : E
	Number of pages : 1	Date : 21/04/2006	Approval by :
Origin : VG 4 Hearing protection (submitted by BIA, Germany)		<input checked="" type="checkbox"/> Vertical Group <input type="checkbox"/> Horizontal Committee <input checked="" type="checkbox"/> Standing Committee	25.10.1999 15.12.2005
Question related to :		EN/prEN : 352-2:2002	Other :
Annex :	Article :	Clause :	
Key words : Custom moulded ear-plugs			
Question : Which qualification is required for a person, who makes impressions of the concha and external ear-canal of the test subjects?			
Recommended solution : It should be carried out by a trained specialist for hearing aids or adequately trained personal.			
Sent for information to : <input type="checkbox"/> members of the VG <input type="checkbox"/> other(s) VG <input type="checkbox"/> HC (2) <input type="checkbox"/> TC 159 <input type="checkbox"/> SC (4) <input type="checkbox"/> other (5)			

(1) Essential safety requirement
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(3) N° of CEN/TC (Secretary & Chairman)
 (4) EEC Standing Committee 89/392


(5) To be specified

	CO-ORDINATION OF NOTIFIED BODIES PPE-Directive 89/686/EEC + amendments RECOMMENDATION FOR USE		CNB/P/04.019 Revision 04 Language : E
	Number of pages : 1	Date : 21/04/2006	Approval by :
Origin : VG 4 Hearing protection (submitted by BIA, Germany)		<input checked="" type="checkbox"/> Vertical Group <input type="checkbox"/> Horizontal Committee <input checked="" type="checkbox"/> Standing Committee	25.10.1999 15.12.2005
Question related to : PPE-directive 89/686/EEC		EN/prEN : 352-4:2001, 352-8:2002	Other :
Annex : II	Article : 1.2, 2.3	Clause :	
Key words : Level-dependent ear-muffs with integrated broadcast-receiver			
Question : How should level-dependent ear-muffs with built-in broadcast-receivers be tested?			
Recommended solution : Level-dependent ear-muffs with built-in broadcast-receivers should be tested in the following way: 1. as a level-dependent ear-muff according to EN 352-4:2001 and 2. as a broadcast ear-muff using either signal generators or public broadcast stations applying the MIRE-technique according to prEN 352-8:2002. Within a final test all functions of the ear-muff shall be set to maximum volume while the test subject is exposed to a diffuse sound field (according to EN 352-4:2001) at criterion level and simultaneously a public broadcast station or a corresponding signal of a signal generator is received by the specimen under test. The maximum sound level achieved in this test situation has to be determined and assessed. The manufacturer has to give a warning in the user information: "The audibility of warning signals at a specific workplace may be impaired.".			
Sent for information to : <input type="checkbox"/> members of the VG <input type="checkbox"/> other(s) VG <input type="checkbox"/> HC (2) <input type="checkbox"/> TC 159 <input type="checkbox"/> SC (4) <input type="checkbox"/> other (5)			

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(3) N° of CEN/TC (Secretary & Chairman)
 (4) EEC Standing Committee 89/392


(5) To be specified

		CO-ORDINATION OF NOTIFIED BODIES PPE-Directive 89/686/EEC + amendments RECOMMENDATION FOR USE		CNB/P/04.020 Revision 07 Language : E	
Number of pages : 1		Date : 21/04/2006		Approval by :	
Origin : VG 4 Hearing protection (submitted by BIA)		<input checked="" type="checkbox"/> Vertical Group <input type="checkbox"/> Horizontal Committee <input checked="" type="checkbox"/> Standing Committee		Approved on : 19.10.2001 15.12.2005	
Question related to :			EN/prEN : 352-6:2002		Other :
Annex :		Article :		Clause :	
Key words : Communication ear-muffs with an audio input (by wire)					
Question : How should communication ear-muffs be tested? Which requirements shall be fulfilled by these HPDs?					
Recommended solution : One way system: 1. In addition to the requirements found in EN 352-6:2002, Annex B, clause B.3 input voltages shall be given in Vrms. 3. Assessment: - In case of a SPL-limitation test the limiter; the mean plus one standard deviation of the equivalent diffuse field SPL shall not exceed the level equal to 85 dB(A) minus 3dB(A). - In case of no SPL-limitation test the specification of the manufacturer delivered for the user (e.g. „criterion input voltage level“) in order not to exceed the daily exposure limit. Two warnings have to be given in the user information like „When exceeding the specified limits a risk of hearing impairment exists“ and „This hearing protector may not be used to restore entertainment.“.					
Two way system: Check the additional contribution to the SPL by the transmission via the microphone use an artificial mouth according ITU-T Recommendation P.50 (03/93) and P.51 (08/96) with speech simulating noise according to IEC 268-1 from 60 to 100 dB(A) in 5 dB-steps. The manufacturer has to give a warning in the user information: "The audibility of warning signals at a specific workplace may be impaired.".					
Sent for information to : <input type="checkbox"/> members of the VG <input type="checkbox"/> other(s) VG <input type="checkbox"/> HC (2) <input type="checkbox"/> TC 159 <input type="checkbox"/> SC (4) <input type="checkbox"/> other (5)					

(1) Essential safety requirement
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(3) N° of CEN/TC (Secretary & Chairman)
 (4) EEC Standing Committee 89/392


(5) To be specified

	CO-ORDINATION OF NOTIFIED BODIES PPE-Directive 89/686/EEC + amendments RECOMMENDATION FOR USE		CNB/P/04.021 Revision 04 Language : E
	Number of pages : 1	Date : 21/04/2006	Approval by :
Origin : VG4 Hearing protection		<input checked="" type="checkbox"/> Vertical Group <input type="checkbox"/> Horizontal Committee <input checked="" type="checkbox"/> Standing Committee	25.10.1999 15.12.2005
Question related to :		EN/prEN : 352-8:2002	Other :
Annex :	Article :	Clause :	
Key words : Ear-muffs with broadcast-receivers			
Question : Which test method should be applied for the broadcast receiving function of a protective ear-muff i) using that public broadcast station which results in the highest sound pressure level or ii) using a signal generator in the laboratory? What is the allowable maximum sound pressure level for the broadcast restoration of an ear-muff with broadcast-receiver?			
Recommended solution : The decision referring to the selection of the signal source made should refer to the sound pressure level at the user's ear under typical or worst conditions. If the test laboratory provides typical or worst case conditions method i) should be preferred. Using method ii) the relationship between the sound pressure level produced by the signal generators and typical or worst case conditions must be determined. The mean values plus one standard deviation - obtained out of 16 measured diffuse field related sound pressure levels (s. Annex B of prEn 352-8:2002) (at 16 ears) - shall be lower than 82 dB(A) for the broadcast restoration.			
Sent for information to : <input type="checkbox"/> members of the VG <input type="checkbox"/> other(s) VG <input type="checkbox"/> HC (2) <input type="checkbox"/> TC 159 <input type="checkbox"/> SC (4) <input type="checkbox"/> other (5)			

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 (2) HC = horizontal committee

(3) N° of CEN/TC (Secretary & Chairman)
 (4) EEC Standing Committee 89/392


(5) To be specified

		CO-ORDINATION OF NOTIFIED BODIES PPE-Directive 89/686/EEC + amendments RECOMMENDATION FOR USE		CNB/P/04.022 Revision 04 Language : E	
Number of pages : 1		Date : 21/04/2006		Approval by :	
Origin : VG 4 Hearing protection		<input checked="" type="checkbox"/> Vertical Group 4 <input type="checkbox"/> Horizontal Committee <input checked="" type="checkbox"/> Standing Committee		Approved on : 25.10.1999 15.12.2005	
Question related to : 89/686/EEC			EN/prEN : 352-6/-8/-11:2002,		Other :
Annex : II		Article : 3.5		Clause :	
Key words : Hearing protection device with audio communication					
Question : i) Is a hearing protection device (HPD) with audio communication a hearing protector within the meaning of directive 89/686/EEC? ii) Is it possible to certify a communication hearing protector without sound pressure limiter limiting the total exposure of the user according to the requirement given in the PPE-Directive?					
Recommended solution : i) It is an HPD if the manufacturer declares it and it should meet the requirements of the directive. ii) From the technical point of view it is possible to produce every communication hearing protector with a sound pressure level limiter. Therefore in general it should not be possible to certify communication hearing protectors without limiter. In case a specific need exists for no limitation or a limitation at higher values of L_{Aeq} (equivalent continuous A-weighted sound pressure level) than those values of L_{Ard} (rating level) given by the basic health and safety requirement „Protection against the harmful effects of noise“, clause 3.5 of Annex II of the Council Directive of 21 Decemner 1989 on the approximation of the laws of the Member States relating to personal protective equipment (89/686/EEC) the use has to be restricted to specific applications. These applications have to be specified in the user information and on the packaging. In addition an appropriate warning and a description of the measures to be taken by the user is required in the user information in order not to exceed the daily limit value.					
Sent for information to : <input type="checkbox"/> members of the VG <input type="checkbox"/> other(s) VG <input type="checkbox"/> HC (2) <input type="checkbox"/> TC 159 <input type="checkbox"/> SC (4) <input type="checkbox"/> other (5)					

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 (4) EEC Standing Committee 89/392


(5) To be specified

		CO-ORDINATION OF NOTIFIED BODIES PPE-Directive 89/686/EEC + amendments RECOMMENDATION FOR USE		CNB/P/04.023 Revision 06 Language : E
Number of pages : 1	Date : 21/04/2006	Approval by :	Approved on :	
Origin : VG 4 Hearing protection (submitted by BIA)		<input checked="" type="checkbox"/> Vertical Group <input type="checkbox"/> Horizontal Committee <input checked="" type="checkbox"/> Standing Committee	19.10.2001 15.12.2005	
Question related to :		EN/prEN : EN 352-5:2002	Other :	
Annex :	Article :	Clause : 4.3.2, 6 and Annex B		
Key words : Testing of active noise reduction ear-muffs				
Question : 1. In which way APVs (assumed protection values, ISO 4869-2:1994) should be determined: Using i) a combination of passive and active attenuation data or ii) only active data resulting from MIRE(microphone in real ear)-measurements? 2. How to consider the spread of active attenuation (s. prEN 352-5, clause 4.3.3)? 3. Which noise shall be used for the testing and how to determine the relevant attenuation data?				
Recommended solution : 1. A combination of passive and active attenuation data as specified in EN 352-5:2002. The combined mean and standard deviation shall be calculated as follows (this is not specified in EN 352-5:2002): $m_{combined,f} = m_{passive,f} + m_{MIRE,active-passive,f}$ $sd_{combined,f} = \sqrt{sd_{active,f}^2 + sd_{passive,f}^2}$ m: mean attenuation; f: midband frequency of the octave band Sd: standard deviation. 2. The spread of active attenuation is not to be considered (the corresponding paragraph in the draft standard was cancelled by the CEN TC 159/WG 2 responsible). 3. Pink noise or similar noise as described in EN 352-5:2002, Annex B, clause B.2 shall be used. The relevant attenuation data (for H-,M-,L-value; H:high, M:medium and L:low frequency) shall be determined by use of the octave band levels calculated from the one-third octave band levels measured with the test noise present and the hearing protector in i) active and ii) passive mode (active/passive mode: s. EN 352-5, clause 3). $APV_f = m_{passive,f} + m_{MIRE,active-passive,f} - \sqrt{(sd_{passive,f})^2 + (sd_{MIRE,active-passive,f})^2}$				
Sent for information to : <input type="checkbox"/> members of the VG <input type="checkbox"/> other(s) VG <input type="checkbox"/> HC (2) <input type="checkbox"/> TC 159 <input type="checkbox"/> SC (4) <input type="checkbox"/> other (5)				

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 (4) EEC Standing Committee 89/392


(5) To be specified

	CO-ORDINATION OF NOTIFIED BODIES PPE-Directive 89/686/EEC + amendments RECOMMENDATION FOR USE		CNB/P/04.027 Revision 04 Language : E
	Number of pages : 1	Date : 21/04/2006	Approval by :
Origin : VG4 Hearing protection (submitted by BIA, Germany)		<input checked="" type="checkbox"/> Vertical Group 4 26.10.1999 <input type="checkbox"/> Horizontal Committee <input checked="" type="checkbox"/> Standing Committee 15.12.2005	
Question related to :		EN/prEN : 352-8:2002	Other :
Annex :	Article :	Clause :	
Key words : Wireless complete hearing protection systems with reproduced sound for entertainment			
Question : These systems transmit signals for example via local induction loops. How should such products be tested?			
Recommended solution : They should be tested as ear-muffs with broadcast-receivers. (s. prEN 352-8:2002, Annex B, clause B.3)			
Sent for information to : <input type="checkbox"/> members of the VG <input type="checkbox"/> other(s) VG <input type="checkbox"/> HC (2) <input type="checkbox"/> TC 159 <input type="checkbox"/> SC (4) <input type="checkbox"/> other (5)			

(1) Essential safety requirement
 (2) HC = horizontal committee

(3) N° of CEN/TC (Secretary & Chairman)
 (4) EEC Standing Committee 89/392


(5) To be specified

		CO-ORDINATION OF NOTIFIED BODIES PPE-Directive 89/686/EEC + amendments RECOMMENDATION FOR USE		CNB/P/04.029 Revision 04 Language : E	
Number of pages : 1		Date : 21/04/2006		Approval by :	
Origin : VG4 Hearing protection (submitted by BIA, Germany)		<input checked="" type="checkbox"/> Vertical Group 4 25.10.1999 <input type="checkbox"/> Horizontal Committee <input checked="" type="checkbox"/> Standing Committee 15.12.2005		Approved on :	
Question related to :		EN/prEN : 352-3:2002, 13819-1:2002		Other :	
Annex :		Article :		Clause : 4.1 of 352-3 and 4.2.3.2 of 13819-1	
Key words : Adjustability and size-ranges for ear-muffs attached to an industrial safety helmet					
Question : A helmet-muff-combination does not satisfy the requirements of EN 13819-1, clause 4.2.3.2, for any size-range. On the other hand it fits well for a panel of test subjects with different head sizes. How to handle this case?					
Recommended solution : The topic has to be discussed together with Vertical group 1. Contact the convenor.					
Sent for information to : <input type="checkbox"/> members of the VG <input type="checkbox"/> other(s) VG <input type="checkbox"/> HC (2) <input type="checkbox"/> TC 159 <input type="checkbox"/> SC (4) <input type="checkbox"/> other (5)					

(1) Essential safety requirement
 (2) HC = horizontal committee

(3) N° of CEN/TC (Secretary & Chairman)
 (4) EEC Standing Committee 89/392


(5) To be specified

		CO-ORDINATION OF NOTIFIED BODIES PPE-Directive 89/686/EEC + amendments RECOMMENDATION FOR USE		CNB/P/04.031 Revision 04 Language : E	
Number of pages : 1		Date : 21/04/2006		Approval by :	
Origin : VG4 Hearing protection (submitted by BIA, Germany)		<input checked="" type="checkbox"/> Vertical Group 11.09.2000 <input type="checkbox"/> Horizontal Committee <input checked="" type="checkbox"/> Standing Committee 15.12.2005		Approved on :	
Question related to : Directive 89/686/EEC			EN/prEN : 352-11:2002		Other :
Annex : Annex II		Article :		Clause :	
Key words : Communication ear muffs receiving and transmitting wireless					
Question : How shall these HPD's be tested and assessed?					
Recommended solution : Test according to EN 352-11:2002. (Original RfU of CNB/P/4.031, Revision 02, was included in the draft standard prEN 352-11:2002.)					
Sent for information to : <input type="checkbox"/> members of the VG <input type="checkbox"/> other(s) VG <input type="checkbox"/> HC (2) <input type="checkbox"/> TC 159 <input type="checkbox"/> SC (4) <input type="checkbox"/> other (5)					

(1) Essential safety requirement
 (2) HC = horizontal committee

(3) N° of CEN/TC (Secretary & Chairman)
 (4) EEC Standing Committee 89/392


(5) To be specified

	CO-ORDINATION OF NOTIFIED BODIES PPE-Directive 89/686/EEC + amendments RECOMMENDATION FOR USE		CNB/P/04.032 Revision 05 Language : E
	Number of pages : 1	Date : 21/04/2006	Approval by :
Origin : VG4 Hearing Protection (submitted by BIA)		<input checked="" type="checkbox"/> Vertical Group <input type="checkbox"/> Horizontal Committee <input checked="" type="checkbox"/> Standing Committee	19.10.2001 15.12.2005
Question related to :		EN/prEN : 352-7:2002 (partly)	Other :
Annex :	Article :	Clause :	
Key words : Ear-plugs with audio communication			
Question : How shall ear plugs with audio communication be tested and assessed?			
Recommended solution : i) An IEC-711 coupler with an ear canal extension may be used following the procedures given for hearing aids in the relevant standards (Recent recommendation of the PTB-expert).			
Sent for information to : <input type="checkbox"/> members of the VG <input type="checkbox"/> other(s) VG <input type="checkbox"/> HC (2) <input type="checkbox"/> TC 159 <input type="checkbox"/> SC (4) <input type="checkbox"/> other (5)			

(1) Essential safety requirement
 (2) HC = horizontal committee

(3) N° of CEN/TC (Secretary & Chairman)
 (4) EEC Standing Committee 89/392


(5) To be specified

	CO-ORDINATION OF NOTIFIED BODIES PPE-Directive 89/686/EEC + amendments RECOMMENDATION FOR USE	CNB/P/04.034 Revision 03 Language : E	
Number of pages : 1	Date : 21/04/2006	Approval by :	Approved on :
Origin : VG4 Hearing Protection (submitted by TNO)		<input checked="" type="checkbox"/> Vertical Group <input type="checkbox"/> Horizontal Committee <input checked="" type="checkbox"/> Standing Committee	19.10.2001 15.12.2005
Question related to :	EN/prEN : EN 352-4 (2001)	Other :	
Annex :	Article :	Clause : B.3 (Annex B)	
Key words : MIRE-technique, interpolation, extrapolation, criterion level, level-dependent ear muffs			
<p>Question :</p> <p>For 3 types of external noises (high frequency orientated noise, medium frequency noise and low frequency orientated noise) at stepwise increased (external) levels the level under the level-dependent ear muff is obtained for 16 ears (8 test subjects) according to EN 352-4 using MIRE-technique (MIRE: Microphone in real ear, s. ISO DIS 11904-1:2000). The external level which corresponds to the level of 85 dB(A) under the hearing protector shall be determined. This external level (minus one standard deviation - as specified in RfU CNB/P/04.014) is called the criterion level.</p> <p>1. Because of the level steps and individual characteristics of the test subjects a graphical interpolation is necessary to find this external level as recommended by EN 352-4. But this graphical interpolation is not specified in EN 352-4. What is meant by "graphical interpolation" in EN 352-4 to find the external A-weighted SPL?</p> <p>2. Because the H-noise specified in ISO 4869-2 shows an $L_C-L_A = -2$ dB and the L-noise an $L_C-L_A = 10$ dB but the H orientated noise of EN 352-4 shows (because of technical reasons) an $L_C-L_A = -1.2$ dB and the L-noise an $L_C-L_A = 6$ dB an extrapolation is necessary. What procedure to follow in calculating criterion levels for H-value of -2 dB and L-value of 10 dB? The phrase "assuming a linear relationship" in EN 352-4 is very fuzzy. If the external SPLs for H-noise with $L_C-L_A = -1,2$ dB, M-noise with $L_C-L_A = 2$ dB, and L-noise with $L_C-L_A = -6$ dB are not on a straight line (as will almost always be the case), extrapolation may lead to large errors (particularly for L-noise).</p> <p>3. In finding the external A-weighted SPL (X) at which the mean A-weighted equivalent diffuse field SPL equals 85 dBA (Y), what procedure to follow?</p> <p>i. Find X_i belonging to Y for each of 16 cups and calculate mean criterion level $(X_1+X_2+\dots+X_{16})/16$. Note that X_i will nearly always be a calculated (interpolated) value, not measured directly.</p> <p>ii. Calculate the mean Y-curve for all 16 cups. Given fixed measurement values for X (regular 5-dB intervals), the mean criterion level can be obtained by interpolation.</p> <p>4. The MIRE-technique (MIRE: Microphone in real ear) proposed for use of testing level dependent ear-muffs by EN 352-4 is described in DIS 11904-1:2000. The sound level under hearing protector shall be measured when the test subject is exposed to an external sound field - according to EN 352-4. EN 352-4 refers to ISO DIS 11904-1:2000.</p> <p>Is it really necessary to have long measurement periods as described in ISO/CD 11904-1, clause 8.1? For a one-third-octave frequency band with midband frequency of 100 Hz, this results in a period of 50 s for each measurement.</p>			
<p>Solution : 1. Use a point-to-point linear interpolation for each ear to get 16 individual criterion levels.</p> <p>2. Report the criterion levels as determined by measurements for (L_C-L_A)-values of $-1,2$ dB for H and $+6$ dB for L, and determine by linear extrapolation the criterion level for -2 dB and $+10$ dB, respectively.</p> <p>3. Take procedure i.</p> <p>4. Use a measurement period of 20 s for a wideband sound (100 Hz – 10 kHz).</p>			
Sent for information to : <input type="checkbox"/> members of the VG <input type="checkbox"/> other(s) VG <input type="checkbox"/> HC (2) <input type="checkbox"/> TC 159 <input type="checkbox"/> SC (4) <input type="checkbox"/> other (5)			

(1) Essential safety requirement
 (2) HC = horizontal committee

(3) N° of CEN/TC (Secretary & Chairman)
 (4) EEC Standing Committee 89/392


(5) To be specified

	CO-ORDINATION OF NOTIFIED BODIES PPE-Directive 89/686/EEC + amendments RECOMMENDATION FOR USE		CNB/P/04.035 Revision 04 Language : E
	Number of pages : 1	Date : 21/04/2006	Approval by :
Origin : VG4 Hearing Protection (submitted by INRS, France)		<input checked="" type="checkbox"/> Vertical Group <input type="checkbox"/> Horizontal Committee <input checked="" type="checkbox"/> Standing Committee	19.10.2001 15.12.2005
Question related to :	EN/prEN : 13819-2:2002	Other : ISO 4869-1	
Annex :	Article :	Clause : 4.2.2 and 4.3.2	
Key words : test site, reverberation time, level-dependent hearing protector, active noise reduction (ANR) hearing protector			
<p>Question : For testing level-dependent ear muffs according to EN 352-4:2001 or ANR-ear muffs according to EN 352-5:2002 MIRE-technique (MIRE: microphone in real ear) shall be used. When applying MIRE technique, is it necessary to limit the reverberation time of the test site under 1,6 s in each of the test bands used as required by 24869-1 ?</p> <p>EN 13819-2 : 2001, requires :</p> <p>1. in 4.2.2. the required apparatus, including test sites and sound field, is specified in EN 24869-1: 1992 which defines the reverberation time of the room.</p>			
<p>Solution :</p> <p>The compliance of reverberation time of the test site with the requirement of ISO 4869-1 and the necessity of the use of a reverberating room to obtain the high levels (particularly for the L noise) seems to be incompatible or at least needs special acoustical equipment.</p> <p>Therefor the sound field used shall comply with the requirements of ISO 4869-1 except clause 3.11 reverberation time.</p>			
Sent for information to : <input type="checkbox"/> members of the VG <input type="checkbox"/> other(s) VG <input type="checkbox"/> HC (2) <input type="checkbox"/> TC 159 <input type="checkbox"/> SC (4) <input type="checkbox"/> other (5)			

(1) Essential safety requirement
 (2) HC = horizontal committee

(3) N° of CEN/TC (Secretary & Chairman)
 (4) EEC Standing Committee 89/392


(5) To be specified

	CO-ORDINATION OF NOTIFIED BODIES PPE-Directive 89/686/EEC + amendments RECOMMENDATION FOR USE		CNB/P/04.036 Revision 03 Language : E
	Number of pages : 1	Date : 21/04/2006	Approval by :
Origin : VG4 Hearing Protection (submitted by BIA, Germany)		<input checked="" type="checkbox"/> Vertical Group <input type="checkbox"/> Horizontal Committee <input checked="" type="checkbox"/> Standing Committee	26.06.2001 15.12.2005
Question related to :	EN/prEN : En 13819-2:2002	Other :	
Annex :	Article :	Clause : 4.1.4	
Key words : insertion loss, asymmetric design, electronic ear muffs			
<p>Question :</p> <p>The insertion loss is used to test variations of sound attenuation of the test specimen and to test the effect of conditioning (drop test, head band flexing, water immersion, ...) because conditioned and non-conditioned specimen are tested together. PrEN 13819-2 does not separate between left and right cups. For specific purposes manufacturers produce electronic ear muffs which show different sound attenuation what is intended by the manufacturer, e.g. left cup with lower sound attenuation and right cup with higher attenuation and restored communication signals. The mean is taken from all cups and the criterion is given in EN 352-1, -3 as follows: The standard deviation shall not be greater than 4,0 dB in four or more adjacent one-third octave bands, and not greater than 7,0 dB in any individual one-third octave band. This criterion may be not fulfilled by the mentioned special ear muff although the product shows a good design for a specific purpose.</p>			
<p>Solution :</p> <p>The criterion of EN 352-1,-3 to be used within the insertion loss may be applied separately to left and right cups in specific cases. In such a case the manufacturer has to include a statement (warning) in the user information specifying the special purpose of his product together with all the impacts on the users' safety resulting from the asymmetrical design of the hearing protector.</p>			
Sent for information to : <input type="checkbox"/> members of the VG <input type="checkbox"/> other(s) VG <input type="checkbox"/> HC (2) <input type="checkbox"/> TC 159 <input type="checkbox"/> SC (4) <input type="checkbox"/> other (5)			

(1) Essential safety requirement
 (2) HC = horizontal committee

(3) N° of CEN/TC (Secretary & Chairman)
 (4) EEC Standing Committee 89/392

(5) To be specified

	CO-ORDINATION OF NOTIFIED BODIES PPE-Directive 89/686/EEC + amendments RECOMMENDATION FOR USE		CNB/P/04.037 Revision 04 Language : E
	Number of pages : 1	Date : 21/04/2006	Approval by :
Origin : VG4 Hearing Protection		<input checked="" type="checkbox"/> Vertical Group <input type="checkbox"/> Horizontal Committee <input checked="" type="checkbox"/> Standing Committee	26.06.2001 15.12.2005
Question related to :	EN/prEN : 13819-1:2002	Other :	
Annex :	Article :	Clause : 5.2.3	
Key words : nominal size designation, flanged ear-plugs			
Question : "In order to assign a nominal size designation to each ear-plug, the dimensions of that part or those parts of the ear-plug that are intended to seal the ear canal are assessed using a gauge comprising a set of circular holes" (EN 13819-1:2002, clause 5.2). Which flanges shall seal the circular hole?			
Solution : At least that flange showing the smallest and that one with the largest diameter shall seal one circular hole.			
Sent for information to : <input type="checkbox"/> members of the VG <input type="checkbox"/> other(s) VG <input type="checkbox"/> HC (2) <input type="checkbox"/> TC 159 <input type="checkbox"/> SC (4) <input type="checkbox"/> other (5)			

(1) Essential safety requirement
 (2) HC = horizontal committee

(3) N° of CEN/TC (Secretary & Chairman)
 (4) EEC Standing Committee 89/392

(5) To be specified



CO-ORDINATION OF NOTIFIED BODIES PPE
Vertical Group 5: Protective clothing and gloves

RECOMMENDATION FOR USE

EN 421

Rev.: 2007-02-07

Approval by:

Horizontal Committee
 Standing Committee

Approved on:

19.11.2007
 30.04.2009

This Recommendation for Use sheet contains questions and answers discussed and approved at VG 5 meetings concerning issues addressed in the following standards:

- EN 421:1994 Protective gloves against ionizing radiation and radioactive contamination

Standard and clause	Key words	Question	Proposed solution	Comments																								
421, 5.2	Gloves; radioactive; requirements	It is not clear which properties are compulsory and which are optional in both cases (radiation or contamination).	<p>Properties shall be checked as follows:</p> <table border="1" data-bbox="952 815 1659 1139"> <thead> <tr> <th>Property</th> <th>Ionising radiation</th> <th>Radioactive contamination</th> </tr> </thead> <tbody> <tr> <td>5.1.- Lead equivalent thickness</td> <td>mandatory</td> <td>not mandatory</td> </tr> <tr> <td>5.2.- Integrity</td> <td>mandatory</td> <td>mandatory</td> </tr> <tr> <td>5.3.- Water vapour permeab. (1)</td> <td>optional</td> <td>optional</td> </tr> <tr> <td>5.4.- Ozone influence (2)</td> <td>optional</td> <td>optional</td> </tr> <tr> <td>5.5.- Mechanical strength</td> <td>mandatory</td> <td>mandatory</td> </tr> <tr> <td>5.6.- Chemical</td> <td>optional</td> <td>optional</td> </tr> <tr> <td>5.7.- Specific requirements</td> <td>optional</td> <td>optional</td> </tr> </tbody> </table> <p>(1): only required for work in containment enclosure in anhydrous atmosphere (2): as the mechanisms of action of ozone and ionising radiation are different, there is no obvious correlation of their influence. Specific studies should be undertaken to check if influence is similar.</p>	Property	Ionising radiation	Radioactive contamination	5.1.- Lead equivalent thickness	mandatory	not mandatory	5.2.- Integrity	mandatory	mandatory	5.3.- Water vapour permeab. (1)	optional	optional	5.4.- Ozone influence (2)	optional	optional	5.5.- Mechanical strength	mandatory	mandatory	5.6.- Chemical	optional	optional	5.7.- Specific requirements	optional	optional	
Property	Ionising radiation	Radioactive contamination																										
5.1.- Lead equivalent thickness	mandatory	not mandatory																										
5.2.- Integrity	mandatory	mandatory																										
5.3.- Water vapour permeab. (1)	optional	optional																										
5.4.- Ozone influence (2)	optional	optional																										
5.5.- Mechanical strength	mandatory	mandatory																										
5.6.- Chemical	optional	optional																										
5.7.- Specific requirements	optional	optional																										

421, 6.3.4	Water vapour permeability	<p>There is a mistake in the formula (clause 6.3.4).</p> $\frac{240 * X}{A * y * z}$ <p>The thickness z should be in the upper part of the equation.</p>	<p>In order to harmonize EN 420 and EN 421 it is proposed to delete z and to use only the absolute value for the material under test.</p> $\frac{240 * X}{A * y}$	
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CO-ORDINATION OF NOTIFIED BODIES PPE
Vertical Group 5: Protective clothing and gloves

EN 469
Rev: 2007-08-24

RECOMMENDATION FOR USE

Approval by:
 Horizontal Committee
 Standing Committee

Approved on:
 19.11.2007
 30.04.2009

This Recommendation for Use sheet contains questions and answers discussed and approved in VG 5 meetings concerning issues addressed by the following standards:

- . **EN 469:2005 Protective clothing for firefighters - Performance requirements for protective clothing for firefighting**

Clause	Key words	Question	Proposed solution	Comment
1	Certification, separate clothing items	Is it possible to certify trousers (without the corresponding jacket) and jackets (without the corresponding trousers), if it is specified in the informative leaflet and in the certificate that they have to be worn with a jacket (resp. trousers) that fulfils the requirements of EN 469?	This is possible. The wording of the informative leaflet shall be very clear and precise.	
4.6	Closure systems	A suit has lower insulation where the zipper is placed. How low may this be, before the garment is rejected?	The lower insulation value at the place of the zipper normally generally does not cause problems and hence has not to be considered.	
4.9	Neck protection	EN 469:1995, clause 4.9, states that "the clothing shall also protect the wearer's neck". Should the collar have the same minimum performance level as the tunic?	The manufacturer shall give advice in the informative leaflet that the level of protection in the collar is lower. The user shall take that situation into account.	Original discussion on EN 469:1995; remains valid for edition 2005

5.2	Pre-treatments	<p>§ 5.2. describes that the pre-treatment shall be carried out by washing or dry cleaning according to the manufacturer's instructions. How many washing cycles shall be carried out? The standard is not clear on that point.</p> <p>§ 6.8 and § 6.10 refer explicitly to 5.2. for pre-treatment whereas § 5.2. already indicates which tests should be carried out on pre-treated samples and which tests on original.</p> <p>If the manufacturer indicates the article shall be impregnated every 5 washing cycles, shall we test surface wetting after 4 cycles to check his statement?</p>	<p>The following tests (reference to EN 469:2005 clauses):</p> <ul style="list-style-type: none"> 6.1 Burning behaviour 6.2 Thermal transfer - flame 6.3 Thermal transfer - radiation 6.4 Remaining material strength after thermal radiation 6.9 Dimensional changes 6.11 Watertightness 6.12 Water vapour transfer resistance <p>shall be performed after 5 care treatment cycles (washing and drying) in accordance with the manufacturer's instructions.</p> <p>Reimpregnation shall not be carried out, even if the manufacturer's instructions state that that the impregnation is no longer effective after 5 cycles. If the manufacturer stipulates a higher number of care treatment cycles, then the tests shall be performed after the stated number of care treatment cycles.</p> <p>The following tests (reference to EN 469:2005 clauses):</p> <ul style="list-style-type: none"> 6.8 Surface wetting 6.10 Resistance to penetration of liquid chemicals <p>shall be performed after the number of care treatment cycles (washing and drying), for which the manufacturer guarantees the impregnation, e.g. if the instructions state "reimpregnation during the third care treatment cycle", the tests shall be performed after the second care treatment cycle, i.e. before reimpregnation.</p> <p>If the instructions state "reimpregnation after each care treatment cycle", the tests shall be performed on new items.</p> <p>The PPE manufacturer shall give the following additional instructions:</p> <ul style="list-style-type: none"> - The impregnating agent to be used and instructions on how to carry out reimpregnation - The number of washing cycles during which the reimpregnation remains effective. <p>A statement regarding the innocuousness of the reimpregnation of firefighters' clothing</p>	
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5.3, 6.1	Flame spread of materials	How should internal materials which are not part of the main assembly be tested to Clause 6.1 (Flame Spread). Examples include felt and foam used for padding. Are they included in the definition of 'component assembly' (clause 3.4).	Internal materials which are not part of the main assembly are part of a 'component assembly' (clause 3.4) and should be tested to Clause 6.1 (Flame Spread) as part of an assembly, as presented in the garment, with the test flame applied to the outer surface.	
5.4	Flammability, number of washing cycles, durability	A manufacturer claims e.g. 50 washing cycles for the flame retardancy of the fabric. Shall the fabric be washed 50 times and the flame spread tested before the certification?	<p>Testing may be omitted if an audit by an independent third party of the fabric manufacturer's quality system proves the manufacturer monitors frequently and adequately the permanency of the fire retardancy.</p> <p>If this quality control and documentation is missing, appropriate numbers of washings shall be carried out before testing the flame spread.</p> <p>However, it remains the Notified Body's decision whether or not this documentation is acceptable</p>	
6.1	Accessories (threads, embroideries, seams)	<p>1. The standard does not require flammability testing of accessories such as closure systems (e.g. zips), badges/logos or seams. -----</p> <p>2. Should the thread used for seams in protective clothing against heat and flame meet special requirements? -----</p> <p>3. When and under which conditions can embroideries be applied on the garment? Should we limit the surface? Are there requirements that the yarn should fulfil? -----</p> <p>4. Should the seams of garments meet the same requirements for flammability as the main fabric?</p>	<p>1. The accessories have to be tested in accordance with EN 532 if they are not properly covered. -----</p> <p>2. If the material of the threads used for seams is the same as the one used for clothing it isn't necessary to test. If not the sewing thread shall be tested. -----</p> <p>3. Embroideries in FR yarn should be accepted without restriction. Separate embroideries with non-FR yarn could be stitched to the garment afterwards. There is still a safe background. For embroideries with non-FR material, a test according EN 532 should be carried out to check if the sample fulfils the criteria. -----</p> <p>4. Yes.</p>	<i>NOTE: see also EN 531 and EN 470</i>

6.1.6	Hardware	<p>Clause 6.1.6 (testing and performance of “hardware”) is not clear as to how to apply it. If an attempt to apply it as written is undertaken, the result is likely to be that it is not possible to certify typical firefighter clothing!</p> <p>3.7 hardware non-fabric items used in protective clothing including those made of metal or plastic, e.g. fasteners, rank markings, buttons, zippers</p> <p>4.7 Hardware Hardware penetrating the outer material shall not be exposed on the innermost surface of the component assembly.</p> <p>6.1.6 If hardware is used in protective clothing, this shall be tested separately applying the flame to the outer surface of the hardware items, according to EN ISO 15025:2002. The hardware shall function after the test.</p>	<p>The wording of EN 469, clause 6.1.6 has proven to be impracticable and therefore it is recommended that hardware be tested by applying the flame to the outer surface of the region of the clothing containing the hardware, e.g. a closure system. If the hardware is a closure system, it shall function after the test.</p> <p>If there is hardware inside the clothing that might be exposed to flame, for example within 10 cm of the hem of the jacket, this system shall be tested by exposing the item directly to the flame. The item shall not give molten or flaming debris and shall give an afterflame time of not more than 2 s.</p>	Refers to EN 469:2005
6.4, 7.5	Radiant heat, residual strength	Is it acceptable to approve a textile according to EN 469 without testing the residual strength of material to radiant heat (EN 366 method A) (6.4) and penetration by liquid chemicals (EN 368), in particular to “white spirit” (7.5), i.e. are this basic requirements?	No. The product shall comply with <u>all</u> essential requirements [of EN 469 in order to be marked with EN 469].	
6.5	Heat resistance of materials	<p>Are internal and external materials, which are not part of the main assembly, part of the ‘clothing assembly’, and should they be tested to Clause 6.5 (Heat Resistance).</p> <p>Examples include felt and foam used for padding, kneepad fabric, loops and webbing, and reinforcement fabric on hems.</p>	These materials are part of the ‘clothing assembly’ and should be tested to Clause 6.5 (Heat Resistance)	
6.5	Testing of braces	<p>Should trouser braces be tested to EN 469?</p> <p>If they should be tested, are they a ‘material’ (clause 3.11) or ‘hardware’ (clause 3.7).</p>	<p>Braces, which will not be exposed to flame in use, do not need to be tested to EN 469, 6.1.</p> <p>Braces should be tested to Clause 6.5 (Heat Resistance).</p>	

7.4	Dimensional change, knitted fabrics	The 3% maximum change quoted in these specifications is neither appropriate nor accurately measurable for knitted fabrics.	The 3% figure is maintained as a rule. The notified body may judge as an expert opinion that the knitted material is stretchable enough not to affect the protective properties, and a higher shrinkage is acceptable. The real shrinkage should be mentioned in the information for use.	See also EN 531 and EN 470
7.4.2	Performance marking	When an EN 469:2005 garment meets Level 2 for Radiant and Convective Heat for all assemblies, should it be marked: Xf2 Xr2 Or can it be marked: X2	Both solutions may be used, but X2 may only be used if both Xf2 and Xr2 levels are obtained. According to WG 2 the notion Xf2Xr2 is to be preferred. WG 2 will be asked for clarification in the next amendment or revision of the standard.	
7.5	Liquid penetration	How can one perform an EN 368 test on retroreflective elements?	The liquid penetration test should not be performed on retroreflective material.	



CO-ORDINATION OF NOTIFIED BODIES PPE
Vertical Group 5: Protective clothing and gloves

EN 470-1

Rev.: 2007-02-07

RECOMMENDATION FOR USE

Approval by:

Horizontal Committee

Standing Committee

Approved on:

19.11.2007

30.04.2009

This Recommendation for Use sheet contains questions and answers discussed and approved at VG 5 meetings concerning issues addressed in the following standards:

- . EN 470-1:1995 Protective clothing for use in welding and allied processes - Part 1: General requirements

Clause	Key words	Question	Proposed solution	Comment
1	Combination of items	A manufacturer produces a vest, sleeves that can be attached to the vest or can be used separately, apron and gaiters for welders, all made of the same material. Can he submit one technical file containing designs, etc for all of them? In such a case, should each garment, separately bear the CE marking	It is possible to submit one technical file for all products. This depends on the intended use. If the manufacturer points out in the information leaflet that they must always be used all together, then one certification shall be carried out. If not, several separate certifications are possible.	Will remain valid when EN ISO 11611 is approved – not addressed, but generally applicable to PPE clothing
4.1	Molten metal, accumulation in pleats	Can a garment have open pleats in the back? At the bottom of the pleat, a diagonally stitch could prevent entrapment. Is this sufficient and/or necessary?	Yes, if measures like diagonal stitches are provided to avoid molten metal to be entrapped.	Will remain valid when EN ISO 11611 is approved
4.1	Design, electrical conduction	1. Shall metal fasteners be covered on both sides, the inner side and the outer side? ----- 2. In case a zipper is used: should it be covered when made of metal to prevent electrical conduction (as per EN 470-1) or should it be treated as to prevent sticking of the molten metal (as per EN 531 D and E).	1. Covering the metal parts from one side (outside or inside) is sufficient. ----- 2. The outside of the zippers shall be covered	Item 1 will become superfluous when prEN ISO 11611 is accepted – addressed by 4.1 Item 2 will remain valid when EN ISO 11611 is approved – draft has no requirement to cover zip

4.3	Design, pockets	<p>1. What is actually meant by “not be capable of being tucked into pocket”?</p> <p>----</p> <p>2. Clause 4.3 states "If trousers have pockets, these shall be side pockets only ...". Does this also apply to the trousers part of a one-piece coverall?</p> <p>----</p> <p>3. The standard includes requirements for the pockets, but what about the pass-through.</p>	<p>1. The additional garment requirements given in EN 531 (clause 3) could also be applied also for the welders' clothing. It specifies that the external pockets on jackets and overalls shall be covered by flaps at least 20 mm wider than the pockets to avoid the flap being tucked into the pocket.</p> <p>-----</p> <p>2. Pockets on the back of the trousers are acceptable, if they have flaps (except the rule-pocket) and if the proper user's information is given.</p> <p>-----</p> <p>3. It shall be possible to close all openings to avoid molten metal to enter.</p>	<p>Items 1 and 2. will become superfluous when prEN ISO 11611 is accepted (addressed by 4.3 (EN 470-1 amd.1998) and 4.3 of prEN ISO 11611)</p> <p>Item 3 will become superfluous when prEN ISO 11611 is accepted – addressed by 4.3</p>
5.1, 5.3	Breaking strength, textile, leather.	Two methods are specified: ISO 5081 for textile ISO 3376 for leather. The width of test specimens is 5 cm for textile and 1 cm for leather. Breaking strength requirements should be correlated to the width of the sample.	The results obtained with the ISO 3376 method for leather should be multiplied by 5.	<p>Will become superfluous when prEN ISO 11611 is accepted – addressed by 6.1 and 6.5</p> <p>Note: ISO 5081 has been superseded by EN ISO 13934-1</p>
5.2	Tear resistance	The tear resistance is measured in accordance with ISO 4674 but the method to use is not specified. Is it A ₁ or A ₂ ?	Method A ₁ should be used in accordance with the document WG1/PG3/N40.	Will become superfluous when prEN ISO 11611 is accepted – addressed by 6.2
5.3	Dimensional change, knitted fabrics,	The 3% maximum change quoted in these specifications is neither appropriate nor accurately measurable for knitted fabrics.	The 3% figure is maintained as a rule. However the notified body may judge as its expert opinion that the knitted material is stretchable enough not to affect the protective properties and a higher shrinkage is acceptable. This should be mentioned in the information for use.	<p>Will become superfluous when prEN ISO 11611 is accepted – addressed by 6.4</p> <p>See also EN 469 and EN 531</p>
5.3	Dimensional changes, leather	Dimensional stability is determined after exposure to 200°C for 15 min. These conditions of tests are not proportional to the conditions of use and the essential requirements.	1. We propose 100°C during 15 min. The shrinkage shall be < 5%.	Will become superfluous when prEN ISO 11611 is accepted – addressed by 6.1 and 6.5

5.5	Chromium (VI) content	<p>1. Chromium content of gloves has to be measured even if the glove has a liner. For an apron or jacket in leather there is no requirement for chromium content. A glove with a liner however is a similar situation as a jacket worn over a shirt. -----</p> <p>2. A welders' jacket and apron was found to contain more than 10 ppm Cr⁺⁶. EN 470-1 doesn't refer to Cr⁶⁺. Can this jacket bear the CE marking?</p>	<p>1. This is clearly an omission. The text of prEN ISO 11611 (6.11.2) corrects this and makes Cr(VI)-determination mandatory -----</p> <p>2. No, this is a general requirement, common to all types of protective clothing. Protective clothing should not contain harmful substances</p>	<p>Will become superfluous when prEN ISO 11611 is accepted – addressed in 6.11.2, but limit needs altering from 2 to 10</p>
6.1	Accessories (threads, embroideries, seams)	<p>1. The standard does not require flammability testing of accessories such as closure systems (e.g. zips), badges/logos or seams. -----</p> <p>2. Should the thread used for seams in protective clothing against heat and flame meet special requirements? -----</p> <p>3. When and under which conditions can embroideries be applied on the garment? Should the surface be limited? Are there requirements for the yarns? -----</p> <p>4. Should the seams of garments meet the same requirements for flammability as the main fabric?</p>	<p>1. The accessories have to be tested in accordance with EN 532 if they are not covered. -----</p> <p>2. If the material of the threads used for seams is the same as the one used for clothing it isn't necessary to test. If not, the sewing thread shall be tested. -----</p> <p>3. Embroideries in FR yarn should be accepted without restriction. Separate embroideries with non-FR yarn could be stitched to the garment afterwards. There is still a safe background. For embroideries with non-FR material, a test according EN 532 should be carried out to check if the sample fulfils the criteria. -----</p> <p>4. Yes.</p>	<p>Items 1,2,3 will remain valid when EN ISO 11611 is approved – seams are tested (6.6) but no other items</p> <p>Item 4 will become superfluous when prEN ISO 11611 is accepted – addressed by 6.6, seams are tested. See also EN 469 and EN 531</p>
6.2	High visibility garments for welding.	<p>Should the retroreflective material be tested to EN 348 (Molten metal) as well as to EN 532 (burning behaviour) for high visibility garments used for welding operations?</p>	<p>Yes, they shall fulfil the requirements for welder's protective clothing.</p>	<p>Will remain valid when EN ISO 11611 is approved</p>

6.2	PPE; sticking of molten metal	How to classify a garment when it ignites when drops of molten metal stick on the material?	This material shall be considered not suitable for use in a protective garment or glove for welding.	Will become superfluous when prEN ISO 11611 is accepted – addressed by 6.7 See also EN 348 and EN 407
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CO-ORDINATION OF NOTIFIED BODIES PPE
Vertical Group 5: Protective clothing and gloves

EN 531

Rev.: 2007-02-07

RECOMMENDATION FOR USE

Approval by:

Horizontal Committee

Standing Committee

Approved on:

19.11.2007

30.04.2009

This Recommendation for Use sheet contains questions and answers discussed and approved at VG 5 meetings concerning issues addressed in the following standards:

- . **EN 531:1995 Protective clothing for industrial workers exposed to heat (excluding firefighters' and welders' clothing)**

Clause	Key words	Question	Proposed solution	Comment
-	Categorisation	Under which conditions shall products complying with EN 407, EN 469 or EN 531 belong to category 3?	It is a manufacturer's decision which should be in accordance with the intended use and the risk. The notified body has the right to disagree with the manufacturer's decision (see Annex to this sheet for guidance) The information leaflet shall contain the appropriate information	Will remain valid after approval of EN ISO 11612
-	Socks	Is it possible to certify socks according to EN 531, protective clothing against heat and flame?	Socks can not be certified against EN 531, which is a standard for complete clothing. Certification of these PPE against the basic requirements of the PPE directive is always possible. In the certification process relevant elements and test methods quoted in EN 531 may be used.	
1	Undergarments, certification	According to the scope EN 531 applies to outer garments. How should the undergarments, tested according to this standard, be certified?	Certification to be done according to the essential safety requirements of the Directive. The classification of performance levels according to EN 531 can be given in the user's information. It shall be indicated that the undergarment must not be used alone, but in combination with outer garments.	Will remain valid after approval of EN ISO 11612

1	Neck protector, certification	Can a neck protector be certified as a PPE against thermal risks?	In principle yes, but the interface between neck protector and garment (and other PPE) shall be checked. Elements from EN 531 may be used to assess the thermal behaviour, although neck protectors are not included in the scope of EN 531, like e.g. hoods.	Will remain valid after approval of EN ISO 11612
5.2	Dimensional change, knitted fabrics	The 3% maximum change quoted in these specifications is neither appropriate nor accurately measurable for knitted fabrics.	The 3% figure is maintained as a rule. The notified body may judge as an expert opinion that the knitted material is stretchable enough not to affect the protective properties, and a higher shrinkage is acceptable. The real shrinkage should be mentioned in the information for use. See also EN 469 and EN 470	Will become superfluous after approval of EN ISO 11612 (addressed in 6.4.2)
6	Performance levels, test method.	One of the components of flame and heat protective clothing, including specialised fire fighter's clothing, is a hood incorporating a visor. However the standards make no reference to tests (optical and thermal) or performance levels for the visor. The same applies to some respiratory requirements, like dead space. What shall be checked by the notified body?	The notified body shall conduct the necessary tests for these respiratory and optical protection components to establish conformity with the basic health and safety requirements (in accordance with the intended use).	Will remain valid after approval of EN ISO 11612
6.1	Outer material, clothing assembly	How can we consider a trouser with an inner lining? Is the lining considered a part of the outer material, or a clothing assembly? Shall this inner lining be non-flammable or can a flammable lining be acceptable?	This lining shall in principle be non flammable and shall not melt in order to be in accordance with the essential requirements (Annex II, clause 3.6.1 of EC directive 89/686). But if, in use, the liner does not represent a flammability risk, then a flammable liner may be used	Will become superfluous after approval of EN ISO 11612 (addressed in 6.3.3.1.4 or 6.3.3.2.4)
6.2	Accessories (threads, embroideries, seams)	1. The standard does not require flammability testing of accessories such as closure systems (e.g. zips), badges/logos or seams. ----- 2. Should the thread used for seams in protective clothing against heat and flame meet special requirements? ----- 3. When and under which conditions can embroideries be applied on the garment? Should	1. The accessories have to be tested in accordance with EN 532 if they are not properly covered. ----- 2. If the material of the threads used for seams is the same as the one used for clothing it isn't necessary to test. If not the sewing thread shall be tested. ----- 3. Embroideries in FR yarn should be accepted without restriction.	Items 1 to 3 will remain valid after approval of EN ISO 11612 (Annex B is informative) Item 4 will become superfluous after approval of EN ISO 11612 (addressed by 6.3.1).

		<p>we limit the surface? Are there requirements that the yarn should fulfil?</p> <p>-----</p> <p>4. Should the seams of garments meet the same requirements for flammability as the main fabric?</p>	<p>Separate embroideries with non-FR yarn could be stitched to the garment afterwards. There is still a safe background.</p> <p>For embroideries with non-FR material, a test according EN 532 should be carried out to check if the sample fulfils the criteria.</p> <p>-----</p> <p>4. Yes.</p> <p><i>NOTE: see also EN 469 and EN 470</i></p>	
6.2	Flammability, washing, durability	<p>1. Why is flame behaviour verified only after 5 washing cycles, and not in accordance with the number of cycles claimed by the manufacturer's notice of use? What about flame retardant treatments which are efficient for only a limited number of cycles</p> <p>-----</p> <p>2. Manufacturer claims e.g. 50 washing cycles for the flame retardancy of the fabric. Shall the fabric be washed 50 times and the flame spread tested before the certification?</p>	<p>1. If the notified body knows that cleaning doesn't affect the properties of the materials, then 5 cleaning cycles are sufficient.</p> <p>If the notified body. doesn't know the effect of cleaning then the number of cleaning cycles, stated by the manufacturer, shall be applied before testing</p> <p>-----</p> <p>2. Testing may be omitted if an audit by an independant third party of the fabric manufacturer's quality system proves the manufacturer monitors frequently and adequately the permanency of the fire retardancy.</p> <p>If this quality control and documentation is missing, appropriate numbers of washings shall be carried out before testing the flame spread.</p> <p>However, it remains the Notified Body's decision whether or not this documentation is acceptable</p>	Will remain valid after approval of EN ISO 11612
6.5, 6.6	Large metal molten splashes, ignition	Shall we accept samples when large metal molten splashes stick on the material and set the material on flame?	During the large metal molten splashes test, the material shall not ignite.	Will remain valid after approval of EN ISO 11612
7	Quick release fastening.	<p><i>“Quick release fastening shall be provided to enable rapid removal in an emergency”.</i></p> <p>What is meant with a quick release fastening? Can a zipper be regarded as a quick release fastening?</p>	<p>For these kinds of garments other closing/opening techniques shall be used.</p> <p>If the manufacturer proposes clothing with zippers, the Notified Body shall check if the opening time of the zipper is in relation with the risk.</p> <p>The manufacturer has to specify in the instruction for use how the quick release system works.</p>	Will remain valid after approval of EN ISO 11612 (Annex B is informative)

7	Pockets, pocket closures	<p>1. All external pockets in jackets and coveralls need a flap 20-mm wider than the pocket. Is this also required for vertical pockets in the trousers of a coverall</p> <p>-----</p> <p>2. Can a zipper be used for closing a pocket?</p> <p>-----</p> <p>3. Trousers pockets with vertical openings do not need flaps. If jackets have vertical pockets, they do need flaps. Some manufacturers propose flaps as an extension of the opening. Is this useful?</p> <p>-----</p> <p>4. Are the pocket requirements also valid for a pass-through? Does it need to be closed over its entire length?</p> <p>-----</p> <p>5. Can an antenna (e.g. of a cell phone or walkie-talkie) stick out of the pocket flap through an opening?</p>	<p>1. For performance categories D and E the pockets shall be closeable. The recommendations in EN 470 should be taken into account.</p> <p>-----</p> <p>2. Yes, if covered by a flap.</p> <p>-----</p> <p>3. The flap should be in the opposite direction or perpendicular to the opening</p> <p>-----</p> <p>4. It shall be possible to close all openings fully to avoid molten metal to enter.</p> <p>-----</p> <p>5. No, the pocket shall be closed over all its length</p>	<p>Will remain valid after approval of EN ISO 11612 (Annex B is informative)</p> <p>See also EN 470</p>
7	Molten metal, accumulation in pleats	<p>Can a garment have open pleats in the back? At the bottom of the pleat, a diagonally stitch could prevent entrapment of molten metal.</p> <p>Is this sufficient and/or necessary?</p>	<p>Yes, if measures like diagonal stitches are provided to avoid molten metal to be entrapped.</p>	<p>Will remain valid after approval of EN ISO 11612 (Annex B is informative)</p>
7	zippers	<p>The standard requires that metal zippers are covered or treated in order to prevent molten metal to stick to the zipper. Does this mean that plastic zippers can remain uncovered?</p>	<p>For this type of intended use zippers shall always be covered.</p>	<p>Will remain valid after approval of EN ISO 11612 (Annex B is informative)</p>

Annex to question "categorisation": category III (underlined)

Property ® - Product standard	Burning behaviour - Afterflame time (s) - Afterglow time (s)	Convective heat (EN 367) - HTI (s)	Radiant heat (20 kW/m ²)	Contact heat - Contact temp (°C) - Parn threshold time (s)	Welding drops - Number of drops	Molten metal splashes mass (g) - Aluminium - Iron
EN 469 Protective clothing for firefighters (category 3)		HTI>13	>22 (40 Kw/m ²)			
EN 531 Protective clothing for industrial workers exposed to heat (category 2 or 3) Levels	A	B	<u>C</u>			D/E
		<u>≥31</u>				
		21-30	<u>>151</u>			
	<2 <2	13-20	<u>91-150</u>			<u>≥201</u> <u>≥351</u>
		7-12	<u>31-90</u>			<u>121-200</u> <u>201-350</u>
		3-6	8-30			60-120 100-200
EN 407 Protective gloves against thermal risks (category 2 or 3) Levels	< 2 < 5	<u>≥ 18</u>	<u>≥ 150</u>	<u>500</u> <u>≥ 15</u>	> 35	<u>200</u>
	< 3 < 25	> 10	<u>≥ 90</u>	350 > 15	> 25	<u>120</u>
	< 10 <120	> 7	<u>≥ 30</u>	250 > 15	> 15	60
	< 20	> 4	> 5	100 > 15	> 5	30



CO-ORDINATION OF NOTIFIED BODIES PPE
Vertical Group 5: Protective clothing and gloves
RECOMMENDATION FOR USE

EN 532-533 –
prEN ISO 14116

Rev.: 2007-08-24

Approval by:

Horizontal Committee
 Standing Committee

Approved on:

19.11.2007
 30.04.2009

This Recommendation for Use sheet contains questions and answers discussed and approved at VG 5 meeting concerning issues addressed in the following standards:

- . EN 532:1994 Protective clothing – Protection against heat and flame – Test method for limited flame spread (superseded by EN ISO 15025:2002)
- . EN 533:1997 Protective clothing – Protection against heat and flame – Limited flame spread materials and material assemblies

Standard and Clause	Key words	Question	Proposed solution	Comment
EN 533, 1	Materials, CE type examination	EN 533 is a performance specification for materials only. Is it possible to obtain a CE type examination certificate for protective garments against flames, based on EN 533?	A protective garment against flames has to fulfil the essential safety requirements. Based on the risk assessment the relevant harmonised standards should be applied (EN 340, EN 1149, EN 531, EN 533, etc.). If the material has to be tested, EN 533 applies and can/should be mentioned on the marking/information for use (materials tested according to EN 533).	Will become superfluous after approval of prEN ISO 14116, which addresses both materials and garments
EN 533, 4	Other garment features (threads, embroidery, seams)	1. The standard does not require flammability testing of <u>accessories</u> such as closure systems (e.g. zips), badges/logos or seams. ----- 2. Should the <u>thread</u> used for seams in protective clothing against heat and flame meet special requirements?	1. The <u>accessories</u> have to be tested in accordance with EN 532 if they are not covered. ----- 2. If the material of the <u>threads</u> used for seams is the same as the one used for clothing it isn't necessary to test. If not the sewing thread shall be tested.	Item 4 will become superfluous after approval of prEN ISO 14116, which provides for a seam test Items 1 to 3 will remain valid

		<p>-----</p> <p>3. When and under which conditions can <u>embroideries</u> be applied on the garment? Should we limit the surface? Are there requirements that the yarn should fulfil?</p> <p>-----</p> <p>4. Should the seams of garments meet the same requirements for flammability as the main fabric?</p>	<p>-----</p> <p>3. <u>Embroideries</u> in FR yarn should be accepted without restriction.</p> <p>Separate embroideries with non-FR yarn could be stitched to the garment afterwards. There is still a safe background.</p> <p>For embroideries applied on non-FR material, a test according EN 532 should be carried out to check if the sample fulfils the criteria.</p> <p>-----</p> <p>4. Yes.</p> <p><i>NOTE: see also EN 469, EN 470 and EN 531 (where applicable)</i></p>	
EN 533, 4.1	Materials next to the skin, incompatible properties	<p>EN 533 forbids contact between the skin and an index 1 material.</p> <p>EN 1149-1 on the other hand requires a sufficient contact between the antistatic side of the fabric and the skin.</p> <p>Does this mean that e.g. a PU-coated antistatic material can not be used for a combined protection against both risks.</p>	<p>An other material which meets the index 2 requirement of EN 533 and the dielectric requirements of EN 1149-1 should be used to ensure continuity (e.g. at wrists, ankles and neck)</p>	Will remain valid after approval of prEN ISO 14116
EN 532	Flammability index – hole formation	<p>When tested in accordance with EN 532 (or EN ISO 15025) some materials show a discontinuous hole, i.e. a hole crossed by fragments or threads of remaining fabric. In the case of some coated fabrics the coating burns away and leaves a charred scrim of fabric behind.</p> <p>Is it possible to qualify this type of material with an index higher than 1?</p>	<p>A discontinuous hole (larger than 5x5 mm) is a hole and such materials can not be characterized as index 2 or 3 materials. They should not be compared with real index 2 or 3 materials and their use should be limited to parts of the clothing, which do not come into contact with the skin.</p> <p>In the instructions for use clear warning should be given not to wear these materials in contact with the skin.</p>	

<p>prEN ISO 14116, 6.2</p>	<p>Mechanical testing of knitted materials</p>	<p>prEN ISO 11611 and prEN ISO 11612, which will replace EN 470 and EN 531, both include tensile, tear, and seam strength tests and also burst strength tests for knitted materials. The related draft prEN ISO 14116, which will replace EN 533, includes tensile, tear, and seam strength tests, but does not include burst strength for knitted materials (FDIS dated 2006). We have often been told that harmonised standards should include at least one basic mechanical requirement. The tensile, tear and seam strength tests are not suitable for knitted materials</p>	<p>When EN ISO 14116 is adopted, we propose to test knitted materials for burst strength to EN ISO 13938-1, to align the standard with EN ISO 11611 and EN ISO 11612. The minimum requirement should be Class 1 of EN 14325, Table 5, i.e. a minimum of 40 kPa. Seams of knitted materials shall also be tested for burst strength and classified in the same way. This will be brought to the attention of WG 2 in view of an amendment to EN ISO 14116.</p>	
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CO-ORDINATION OF NOTIFIED BODIES PPE
Vertical Group 5: Protective clothing and gloves

RECOMMENDATION FOR USE

Electrostatic charges
EN 1149 series

Rev.: 2007-02-07

Approval by:

Horizontal Committee
 Standing Committee

Approved on:

19.11.2007
 30.04.2009

This Recommendation for Use sheet contains questions and answers discussed and approved at VG 5 meetings on issues addressed in the following standards:

- **EN 1149-1: Protective clothing - Electrostatic properties - Part 1: Test method for measurement of surface resistivity (editions 1995 and 2006)**
- **EN 1149-2:1997 Protective clothing - Electrostatic properties - Part 2: Test method for measurement of the electrical resistance through a material (vertical resistance)**
- **EN 1149-3:2004 Protective clothing - Electrostatic properties - Part 3: Test methods for measurement of charge decay**
- **prEN 1149-5:2005 Protective clothing – Electrostatic properties – Part 5: Performance requirements**

Standard and Clause	Key words	Question	Proposed solution	Comment
EN 1149-1, 4	attachments	What are the requirements for external attachments (e.g. badges, reflective stripes) larger than 4 cm for electrostatic dissipative protective clothing according to EN 1149-1?	<p>The external attachment materials have to meet the same requirements of EN 1149-1 as the clothing material.</p> <p>This is recommended as a clear and safe solution in order to avoid a solution depending on the size of attachment, hazardous area clothing material, etc.</p> <p>In other cases special assessment is necessary, e.g. reflective stripes are allowed if directly applied on an antistatic material.</p>	

4, 5	Requirements, core conductor fibres	<p>EN 1149-1 specifies a test method and requirements for surface resistivity but the test method is not applicable to materials with core conducting fibres, which can be tested in accordance with EN 1149-3.</p> <p>What are the requirements for these materials?</p>	<p>Use requirements in prEN 1149-3:2001-05, annex A</p> <p>Note: EN 1149-3:2004 does not specify these requirements anymore. They will be included in the future EN 1149-5.</p>	
4.1	Non homogeneous materials, resistivity	<p>EN 1149-1 clause 4.1 states following maximum resistivity requirements:</p> <ul style="list-style-type: none"> - for homogeneous materials: lower than $5 \cdot 10^{10}$ <ul style="list-style-type: none"> • according to clause 5 (test method). - for non-homogeneous coated or laminated materials: resistivity must be almost on one surface, according to requirements for homogeneous materials. - for non-homogeneous materials with conductive threads: not exceed 10^9 • almost on one face of the material. <p>How should we interpret the resistivity requirement for non-homogeneous materials with conductive threads: as an exact value, i.e. $1.0 \times 10^9 \Omega$ or as a range, i.e. between 1.10^9 and $1.10^{10} \Omega$?</p>	<p>The revised version of EN 1149-1 is exclusively a test method and does not contain any requirement provisions anymore.</p> <p>prEN 1149-5 is being developed as a product specification standard. The final draft of this standard (version 2006/05) quotes following material requirements: An electrostatic dissipative material shall meet at least one of the following requirements:</p> <ul style="list-style-type: none"> — $t50\% < 4 \text{ s}$ or $S > 0,2$ tested according to EN 1149-3, test method 2 (induction charging) or — a surface resistance of less than or equal to $2,5 \times 10^9 \Omega$, • on at least one surface, tested according to EN 1149-1. <p>For a material containing conductive threads in a stripe or grid pattern the spacing of the conductive threads in one direction shall not exceed 10 mm in any part of the garment.</p>	
4.2	Skin contact, incompatible properties	<p>EN 1149-1 requires a sufficient contact between the antistatic side of the fabric and the skin.</p> <p>EN 533 on the other hand forbids contact between skin and an index 1 material.</p> <p>This means a typical PU coated antistatic material could not be used for a combined protection against both risks.</p>	<p>An other material which meets the index 2 requirement of EN 533 and the dielectric requirements of EN 1149-1 should be used to ensure continuity (e.g. at wrists, ankles and neck)</p>	
4.2	skin contact, earthing	<p>The standard specifies that skin contact is necessary. In case this is not possible the garment should be earthed directly.</p> <p>Skin contact is only relevant in case the</p>	<p>Yes, this should be part of the instructions.</p> <p>Permanent earthing of the person requires dissipative footwear <u>and</u> a dissipative and earthed floor.</p>	

		<p>garment is combined with the right type of footwear.</p> <p>Shouldn't it be necessary to add this in the instructions, as the standard does not require it?</p>	<p>Note: This requirement is intended to be part of a future EN 1149-5 (product standard for protective clothing to prevent accumulation of electrostatic charges).</p>	
prEN 1149-5	ATEX situations, fire behaviour	<p>Clothing meets the requirements of prEN 1149-5 with regard to its design and electrostatic dissipation properties and will be used in an ATEX situation (possible risk of explosion and fire). Can this clothing be certified even when it offers no protection against flames, i.e. can prEN 1149-5 alone be used for certification in this case?</p>	<p>prEN 1149-5 addresses only the issue of electrostatic dissipation. When other risks are likely to occur in conjunction with electrostatic accumulation (which is almost always the case) the requirements of prEN 1149-5 shall be completed by the requirements of (an) other relevant product standard(s).</p> <p>In this specific case because the intended use includes a clear risk of fire. In such case the garment should offer a protection against that risk (cfr. directive art. 10.4.b). In addition the scope of prEN 1149-5 refers to the risk of "incendiary discharges".</p>	
prEN 1149-5	Requirements, materials and design	<p>Could we take pr EN 1149-5 (2004) as the basis for type examination of electrostatic properties of antistatic clothing made of textile with metal core yarn? Especially that in EN 1149-3 (2004) no material and design requirements are included.</p> <p>Some notified bodies take the standard prEN 1149-3 (2001) as the basis for type examination, where requirements for material and design are included.</p>	<p>prEN 1149-5 has been developed to deal with the design and material requirements. At this moment it is the most up-to-date document available.</p> <p>prEN 1149-3:2001 has been superseded by EN 1149-3:2004 and should no longer be used.</p>	
prEN 1149-5	Requirements, design	<p>According to prEN 1149-5, clause 4.2.1 (material requirements) an electrostatic dissipative material shall have a surface resistance of less than or equal to $2,5 \times 10^9 \Omega$, on at least one surface, tested according to EN 1149-1.</p> <p>According to prEN 1149-5, clause 4.2.2 (design requirements), the outermost material of an electrostatic dissipative protective clothing, which comprises multiple layers, shall meet the material requirements.</p>	<p>The dissipative layer shall meet the material requirements and can be used as the outer face or as the inner face of the outer layer of a material assembly.</p>	

		However, the placing of the dissipative surface is not specified. Shall the dissipative surface of the material be oriented towards the outside, i.e. the side exposed to the risk?		
prEN 1149-5	EC type examination certificate	Is it allowed to indicate compliance with prEN 1149-5 (at present a prEN) on an EC type examination certificate, if clothing with antistatic properties after testing according to EN 1149-3 conforms to requirements of pr EN 1149-5 ?	Yes, this is possible. Certificates are issued against the basic requirements of the Directive. Reference to the technical documents (harmonised standards and others) used to prove compliance with these basic requirements can be made on the certificate.	
general	Durability, washing	If the producer declares in the manufacturer's information that the electrostatic properties of clothing made of metal core yarn are maintained after 50 cycles of treatment (washing), does the notified body have to check if the material has been tested after declared number of cycles?	Yes, according to the labelling instructions of EN 340. It is the notified body's task to verify this, either by requiring proof from the manufacturer or by testing it in its own laboratory.	



CO-ORDINATION OF NOTIFIED BODIES PPE
Vertical Group 5: Protective clothing and gloves

RECOMMENDATION FOR USE

Gloves

Rev.: 2007-08-24

Approval by:

Horizontal Committee
 Standing Committee


Approved on:

19.11.2007
 30.04.2009


This Recommendation for Use sheet contains questions and answers discussed at VG 5 meetings concerning issues addressed in the following standards:

- EN 420:2003 Protective gloves - General requirements and test methods
- EN 407:2004 Protective gloves against thermal risks (heat and/or fire)
- EN 374-1:2003 Protective gloves against chemicals and micro-organisms - Part 1: Terminology and performance requirements
- EN 511-2006 Protective gloves against cold
- EN 388-2003: Protective gloves against mechanical risks
- EN 659:2003: Protective gloves for firefighters

Standard and Clause	Key words	Question	Proposed solution	Comments
EN 407	Barbecue gloves	Are gloves for use at a barbecue PPE category 2, if they are intended for professional use? If yes, what shall we test? Whole EN 407 or just parts of it?	This type of glove should be considered PPE cat 2 (see also recommendation for use sheet to EN 531) As there is no specific product standard for this, following elements from EN 407 could be used for testing: <ul style="list-style-type: none"> - flame resistance; - resistance to contact heat - resistance to convective heat. 	-

EN 659, 3	Fire fighters' gloves	<p>The general requirements (clause 3.1) demand separate tests if the material in front and/or back of the glove is different.</p> <p>Clause 3.8 (convective heat) requires sampling from palm and back.</p> <p>Clause 3.9 (radiant heat) requires sampling from the back.</p> <p>Can we accept a reduced protection at the side of the fingers because it's neither front nor back ?</p> <p>If the assembly construction in these parts is different from front/back, a different (reduced ?) protection performance can be expected.</p>	<p>The assembly at the side part of the glove's fingers should be tested on convective heat insulation, if it deviates from the assembly at the front/back of the gloves.</p>	
EN 659	Fire fighters' gloves, marking	<p>The EN 659 requires the marking of the gloves :</p> <p>Every protective glove must be marked with the number of this standard, EN 659, and the pictogram</p>  <p>Furthermore the marking must be carried out according to the requirements of EN 420</p> <p>•</p> <p>The EN 420 says in 7.2.1.1. e :</p> <p>“The number of the specific standard and the performance levels must be indicated .”</p> <p>Does it mean we have to put all performance levels on the gloves ?</p>	<p>Only the pictogram and the number of the standard should be on the gloves. Performance levels shall be explained in the user's information</p>	
EN 374	Gloves, chemical protection	<p>We have certified a chemical protective glove using standard EN 374-1: 1993 a few years ago.</p> <p>For this certification, a few chemical products representative of the real conditions of use of the equipment were tested (nitric acid, tributylphosphate, hydrogen peroxide and</p>	<p><u>Solution 1</u>: keep the EC type certificate as it is and don't use EN 374-1 (2003) to assess the glove.</p> <p>or</p> <p><u>Solution 2</u>: certify the glove according to EN 374-1 (2003) but for "low chemical protection".</p>	

		<p>caustic soda). Today, the manufacturer of this equipment wishes to have a certification according to the revised version of EN 374-1 (version 2003). But the problem is that the glove isn't able to get a class 2 for 3 of the 12 chemical products listed in annex A of the standard.</p>	<p>The term "low chemical protection" should be clearly explained in the information for use, as it could be interpreted as low level protection. In the context of the standard it just means "protection against a narrow range of chemicals"</p> <p>NOTE: The wording of the standard is not clear for the end-user. "Low chemical protection" means "not protecting against a broad range of chemicals". It could mean protection against specific very harmful chemicals. To be communicated to WG 8 for consideration when revising or amending EN 374-1.</p>	
no standard available	Gloves, entanglement moving parts	<p>No standard has taken into account this risk for protective gloves. Gloves made with high tensile strength fibres could be very dangerous because they will not easily tear when caught by a moving machine.</p>	A warning shall be given in the information leaflet	
EN 374-420	Gloves, length	<p>EN 374-1 clause 5.1 states that minimum liquid proof glove length shall be at least equal to the minimum length specified in EN 420. Can clause 5.1.3 of EN 420:2003 be applied i.e. "...gloves designed for special applications may not conform to the values of table 3" (minimum lengths)? Medical examination gloves are made to a 240 mm length specified in EN 455. They do not comply with EN 420 lengths above size 8 but are clearly for a "special application" and are increasingly submitted for certification to EN 374-1 claiming categories of chemical and/or micro-biological protection.</p>	Medical examination gloves that are claimed to protect against chemicals should meet the requirements of both standards. The exemption clause of EN 420 can not be applied here.	
EN 420	Gloves, length	<p>Is it possible to issue a (positive) Test Report of EC Type-Testing and the subsequent EC Type-Certificate for gloves shorter than the minimum length as given in EN 420:2003, 5.1.2, Table 3.; if the opinion of the Notified Body is that this does not have an impact on the intended use of the gloves?</p>	<p>PPE Guidelines (p. 27 commenting art. 10.4) states: The information to be supplied by the manufacturer must specify the intended use of the PPE and the risks covered. It is up to the manufacturer to indicate clearly the areas of use and the nature and scale of the risks to be covered. EN 420, 5.1.3 states that a shorter glove length is only justified by a specific use of the glove. It is up to the manufacturer to prove that the risks associated with the intended use of the glove are such a specific use, which justifies a shorter glove length.</p>	

EN 420	Gloves, natural rubber, protein content	<p>EN 420 (2003) foresees the determination of extractable protein content for natural rubber latex gloves in section 4.3.4.</p> <p>Is this mandatory for natural rubber gloves that are worn with under-gloves (this is the case of containment enclosure gloves)?</p>	<p>Strictly spoken the test should be carried out, but it gives no useful information. Therefore warnings should be given in the information for use:</p> <ul style="list-style-type: none"> - A warning mentioning that this glove is liable to cause allergies due to the natural rubber - A wording indicating that this glove has to be worn with under-gloves of at least the same length as the rubber glove 	
EN 407	Gloves; protection from contact heat	Which category of PPE is the most appropriate one for gloves of performance level “I” (test at 100°C)	<p>Category II</p> <p>The manufacturer is responsible for product categorisation.</p>	
EN 420	Marking, reference to general standards	Is it possible to use EN 340 (EN 420) alone, when no EN product standard is applicable and to put the EN 340 number on the marking?	Marking with the general standards EN 340 or EN 420 is not possible. If there is no product standard, then no normative reference should appear on the marking.	
EN 388	Mechanical testing	<p>How should one test and evaluate the mechanical protection level according to EN 388:2003 of the following gloves? (see photographs of gloves a to d below). What should be on the pictogram?</p> <p>a) Gloves with reinforcement patches almost completely covering the palm and thumb:</p> 	<p>The results obtained on the weakest parts of the structure should be considered for the marking. This is sometimes in contradiction with taking the specimens from the palm of the glove. The informative notice shall give clear information on the meaning of the markings.</p> <p>Glove a) Abrasion resistance: test on the complete structure, not on the separate materials. Tear strength of the reinforcement patches should be tested and taken into account if higher than that of the other materials in the palm structure. Puncture and cut resistance should be tested on the weakest spots.</p> <p>Glove b) For cut, tear and puncture see solution a) For abrasion use solution a) if the fingers are reinforced and solution c) if they are not.</p> <p>Glove c) Test without taking into account the reinforcement patches, but make a note in the consumer information</p>	

b) Gloves with reinforcement patches almost completely covering the palm but not the thumb:



c) Gloves with reinforcement patches covering some places on the palm and thumb:



d) Gloves with only the palm reinforced by stitches. The abrasion and cut resistance of the complete structure is clearly higher than that of the component materials (outer layer and lining):



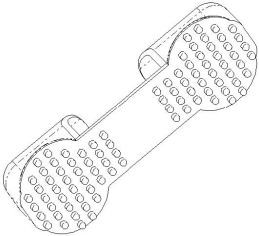
brochure stating that the areas covered by reinforcement patches may have a higher protection level.

Glove d)

Abrasion and cutting: test with the stitches, it will be impossible to take test specimens otherwise.

Tear: on separate layers.

Puncture: on all layers together.

EN 420	Protective clothing and gloves, pictogram ionising radiation	<p>EN 420 (2003) foresees a pictogram for protective gloves against ionising radiation whereas EN 340 (2003) doesn't foresee any pictogram against this risk.</p> <p>How do we have to proceed for protective clothing providing protection against ionising radiations?</p>	<p>Use for protective clothing against ionising radiations the same pictogram as for gloves.</p> <p>The meaning of the pictogram shall be explained in the information for use.</p>	
no specific standard	Protective devices against cold and heat	<p>Is the device shown in the figure a PPE? It is a silicone rubber mitt used for carrying hot or cold objects, mainly in laboratories.</p> <p>The device withstands temperatures from -57 to 260 deg C. Thumb and fingers fit into end pockets. The gripping surface is equipped with multiple concave tipped studs..</p> <p>Which are the relevant test methods?</p>	<p>This is a PPE since it meets the definition of a PPE as specified in the Directive.</p> <p>A certification is possible according to the Directive. Elements from EN 420 and EN 407 and 511 (heat and cold contact insulation) can be used for the testing.</p>	



CO-ORDINATION OF NOTIFIED BODIES PPE
Vertical Group 5: Protective clothing and gloves

RECOMMENDATION FOR USE

High visibility

EN 471 – 1150 - 13356

Rev.: 2007-08-24

Approval by:

Horizontal Committee

Standing Committee

Approved on:

19.11.2007

30.04.2009

This Recommendation for Use sheet contains the questions and answers, discussed and approved at VG5 meetings, on issues addressed in the following standards:

- EN 471:2003 High-visibility warning clothing for professional use - Test methods and requirements
- EN 1150:1999 Protective clothing - Visibility clothing for non-professional use - Test methods and requirements
- EN 13356:2001 Visibility accessories for non-professional use - Test methods and requirements

Standard and Clause	Key words	Question	Proposed solution	
EN 471, 1.	Multi-purpose high visibility garments (Shall retroreflective material for high visibility garments used in welding operations or firefighting be tested to the provisions of EN 469 or 470-1?	<p>Yes, they shall fulfil <u>all</u> relevant criteria of <u>both</u> EN 471 and EN 469 or 470</p> <p>If this is not the case (e.g. because not all EN 471 requirements are met), then certification can still be done based on the Directive, but without any reference to EN 471.</p> <p>High-visibility materials shall not affect the heat protective performance of the garment, i.e. the criteria imposed by EN 469 shall be met, including flammability, tensile strength etc..</p> <p>If these high-visibility materials are only applied as a strip on top of the garment, only flammability and heat shrinkage shall be considered</p>	

4.1	Classification, combination of items	Is it possible to classify a trousers and jacket combination in class 3, when the separate items obtain only class 1 or 2?	Yes, it is possible. The fluorescent material of the part of the trousers, which is covered by the jacket in-service, shall be excluded when determining the performance class. It shall be stated in the instructions for use that they have to be worn together to obtain class 3.	
4.1	Classification, Jacket with removable sleeves	How to certify/classify a jacket with removable sleeves (class 3 with sleeves and class 2 without)?	The class indication in the marking could be replaced by an "i" referring to the instruction for use. An alternative is to mention the highest class in the marking, accompanied by a warning (in full text and in the language of the country of use) that this ranking can not be obtained if the garment is worn without sleeves. The choice is left to the manufacturer but everything has to be fully explained in the instructions for use, which are an integral part of the technical file.	
4.1	Classification, minimum area	What is the meaning of minimum areas of visible materials in m ² of table 1 of EN 471? What shall be counted to determine the performance class?	Table 1 has to be interpreted as: the area (of materials <u>visible on both front and back</u>) It means that only those parts of background material which <u>fully encircle</u> the torso etc. shall be counted for defining the area that determines the performance class. Otherwise said: Parts of fluorescent material not fully encircling shall not be counted. The exception to this rule is a tabbard. It means also that only the visible part shall be measured. The overlapping part must not be considered.	
4.1	Classification, use of smallest size	Is it necessary to ask for the smallest size of a range of clothing to certify high visibility clothing?	Yes, because the EN 471 classification system is based on material surface, i.e. clothing size, always the smallest size of a group of articles shall be checked. Notified Bodies and their customers have the freedom to determine if this "group" covers the full available range of sizes or if the smallest size(s) are considered as a group on its own, subject to separate certification.	
4.1	Classification, harnesses	Is table 1 of EN 471 fully applicable to harnesses?	Yes, table 1 is also applicable to harnesses. Figures B.8 and B.9 give some examples.	

4.1, 5.1	Classification, perforated materials	<p>1. How shall the minimum required area (performance class) be determined in the case of perforated materials?</p> <p>2. Shall the minimum luminance factor be applied also to perforated background materials?</p>	<p>1. EN 471 requires an area of 0.5 m² for the visible non-perforated background material class 2. Thus the visible area of the waistcoat should reach this class after deduction of the perforated area.</p> <p>2. Size and distance of perforation influence the test results. The luminance factor shall be measured on the material as used (i.e samples with perforation). The requirements for the luminance factor (clause 5) shall be fulfilled.</p>	
4.1	Classification - combined performance materials	Is it possible to certify all types of garments with combined performance material in class 1?	Combined materials can be used for all types of high visibility garments in class 1	
4.1, 6.1	Classification, markings on reflective trimmings	In several cases, the retroreflective strip has some markings or non retroreflective lettering on it. Is this acceptable?	It is possible to accept markings or non retroreflective lettering on the retroreflective strips, provided the minimum area and the same safety level are reached.	
4.2	Design, items not covered by the enumeration in EN 471	Can items, not literally listed in EN 471 be certified according to EN 471?	<p>Yes, this is possible, as long as they meet the technical requirements.</p> <p>Examples: shorts, T-shirts with short sleeves, jackets with $\frac{3}{4}$ length sleeves, long-sleeved shirts without background material in the sleeves, trousers with background material not reaching to the bottom of the trousers-leg,</p> <p>A T-shirt can be seen as a waistcoat and can be certified without reflective bands on the sleeves</p>	
4.2	Design, retroreflective bands, extra trimming	Can extra retroreflective bands be added if the design requirements are fulfilled without taking these bands into account?	<p>Extra reflective trimming is allowed if the requirements of EN 471 are fulfilled without them.</p> <p>These "extra" bands could e.g. contain discontinuities or be not fully encircling. However they should not be included in the calculation to determine the performance class.</p>	


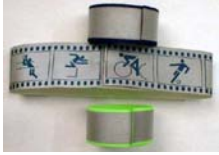


4.2	Design, reflective bands, arrangement	<p>Can retroreflective bands be arranged in another way than described in EN 471, in order to make them <u>more visible</u> in a given end-use, e.g. retroreflective bands positioned on the legs when there is a risk the bands are hidden by fixed or moving items present in the work situation?</p> <p>Can these items still be considered as complying with EN 471 (cfr. marking), if accompanied by a reference to the deviation and the reasons for it?</p>	<p>In case of deviation from a harmonized standard to suit a particular end-use, it should be proven from the risk analysis of that particular application that the proposed modification is justified, i.e. the PPE still meets the basic health and safety requirements of the Directive.</p> <p>No. Compliance with an EN standard means to comply with the whole standard.</p>	
4.2	Design, reflective bands, patterns	<p>Is it possible to introduce different patterns of retroreflective striping as variants as long as the specification (classification and performance requirements) is met?</p> <p>Same rationale for various background colours?</p>	<p>It is possible to accept these variants if they are clearly explained in the technical documentation and if all possibilities are included in the test report</p> <p>Idem.</p>	
4.2	Design, background material, minimum area (legs)	<p>For a coverall with fluorescent background material and non-fluorescent material, what minimum area of fluorescent background material should be located on the legs?</p>	<p>It is difficult to impose criteria for the distribution of the fluorescent background material on a coverall, apart from the general criteria specified in EN 471 (minimum surface, distribution front/back). Actually such criteria would depend on the typical intended use of the garment. If this is not clear, we suggest to use the criteria of the harmonised standard.</p>	
4.2.2	Reflective bands, width and homogeneity	<p>The manufacturer, who made the request, produces several types of retro-reflective trimmings. Due to the production technology used, the reflective elements need to be protected by a transparent plastic sheet. This plastic sheet is attached to the support material of the reflective layer by a pattern of welded lines. At these lines the reflectance is less than in the rest of the material. Does this comply with the requirements of EN 471:2003, where homogeneous reflectance of materials is not mentioned as such?</p>	<p>EN 471:2003 is a harmonized standard, which confers presumption of conformity. The requirements specified in EN 471:2003 shall be met.</p> <p>To ensure the visibility of a person from a distance at night-time strips shall have a minimum width of 50 mm and the material shall meet the minimum reflection requirements of EN 471, measured in accordance with the method specified in that standard. These normative provisions supersede the VG 5 sheet of 1998 and the compiled RfU sheet shall be modified accordingly.</p>	

		<p>EN 471:2003 states that:</p> <ul style="list-style-type: none"> - retro-reflective bands shall have a width of at least 50 mm (4.2.2). - the retro-reflection measured under different angles shall reach the values specified in tables 5 to 7 (6.1). - the measurement itself shall be carried out in accordance with CIE 54.2 on a specimen of 10 cm x 10 cm (7.3). <p>Previously (a RfU sheet from 1998) VG 5 has taken the following position</p> <p><i>Question: There is a 50 mm wide retroreflective band including a border of plastic material at each side. These borders don't meet the minimum reflection required by EN 471, although the average coefficient of reflection for the whole band is within the range required. Is this type of material acceptable for certification?</i></p> <p><i>Answer: No. The strip shall show sufficient retroreflection over a width of at least 50 mm.</i></p> <p>The producer of the reflective material objects that this interpretation is not in line with the provisions of EN 471:2003, in particular the measuring procedure, and hence should be revised or withdrawn.</p>	<p><u>Additional information:</u></p> <p><i>It became clear from the discussion that this is a complex issue.</i></p> <p><i>For some materials, e.g. the case of two layers bound together with a regular pattern of thin welded lines, the less reflecting surface represents only a relatively small part of the total reflective area and even contributes to the durability of the reflective properties. Here the interpretation of the standard in the sense described above seems acceptable.</i></p> <p><i>However this is less clear for other structures. In some products, although they are 50 mm wide and meet the overall reflectance requirements, the less reflective part is much larger (more than 30% of the total area) and here it is questionable whether the above interpretation of the standard is adequate to demonstrate compliance with the basic requirements of the directive or if it rather leads to confusion and misuse of the normative provisions.</i></p> <p><i>This situation will also lead to an unstable situation where notified bodies will come to contradicting conclusions. We will request CEN/TC 162 WG 7 to address this issue as soon as possible and to consider all types of products present in the market.</i></p>	
4.2.3	Bands encircling the torso	<p>EN 471:2003, clause 4.2.3 a) states that coveralls shall have retroreflective bands "encircling the torso". According to the dictionary a torso is the trunk of the human body, without head or limbs.</p> <p>There is no problem to verify this requirement if the bands are put low enough (under the armpit) to encircle the torso fully. But what if the upper band is placed almost at shoulder</p>	<p>VG 5 confirms the solution given in sheet 05.348 (2002). The band shall be put low enough to encircle the torso.</p> <p>Other configurations may be used if justified by specific work situations and on the condition that the reflective trimming remains sufficiently visible in all work postures.</p>	

		<p>height and hence can not encircle the torso fully?</p> <p><i>Note: This question has been raised before (sheet 05.348-2002.04-05), but the sheet was removed from the new compilation, because NBs assumed the text of EN 471:2003 was clear enough.</i></p>		
5.1	Luminance factor, washing	<p>Is it possible to accept a garment with a reduced luminance factor (below the performance requirement) after "x" washing cycles?</p>	<p>No, the luminance factor (and the chromatic coordinates) shall still meet the requirements after "x" washing cycles, if the manufacturer's instructions indicate that performance is retained for at least this number of cycles.</p> <p>This also applies to commercial laundering, if claimed by the manufacturer's instructions</p>	
5.1	Colour test, orientation	<p>If the colour test results depend significantly on the direction of the measurement, which value shall be given as test result?</p>	<p>At least four measurements shall be carried out in four perpendicular directions and the mean value shall be given as test result.</p>	
5.1., 6.1	Background fabric, logos	<p>A manufacturer has printed a repeating logo on a background fabric. The logo has retroreflective properties, which do not comply with EN 471. This logo comes in addition to the required areas of retroreflective material and just improves night-time conspicuousness.</p> <p>Is this repeating logo allowable?</p>	<p>Yes, it is actually an example of "extra" trimming (see above sub 4.2 - design, retroreflective bands, extra trimming)</p>	
5.3	Colour fastness	<p>For which kind of non-fluorescent materials are the colour fastness / staining requirements in clause 5.3 applicable?</p>	<p>The colour fastness / staining requirements in clause 5.3 are applicable for the non-fluorescent material layers; e.g. additional (contrast) material layers on the outside of a garment or lining(s) inside the garment. Also non-fluorescent material layers are mentioned in the revised title of clause 5.3 in EN 471/ prA1 (instead of (all kinds of) non-fluorescent material).</p> <p>The colourfastness / staining requirements in clause 5.3 are therefore not applicable for the non-fluorescent materials which aren't (garment) layers: e.g. embroideries, textile material of zipper, elastic strips,</p>	

			<p>small marking tags, sewing threads etc.</p> <p>Small areas of non-fluorescent materials (e.g. < 2% of fluorescent material area) as labels, (knitted) stretch bands for jackets or trousers, fashion stripes (e.g. 3 mm chest braid), pocket flaps etc need special consideration (e.g. large area? dark colour? industrial washing? etc) and may require testing .</p> <p>Washing of the whole garment can be used as a screening test to assess the influence of these small area materials. For other materials the colour fastness shall be assessed. Clarification in the next revision of EN 471 is requested .</p>	
5.3.3	Marking, bleaching	Is it necessary to perform a colour fastness test to bleaching with hypochlorite on a material (according EN 471 :2003 p. 5. 3 . 3), if in the care label of the garment bleaching is not indicated and/or allowed?	If the care labelling excludes certain care treatments, the corresponding tests should not be performed	
5.6.3	Background material, wvp-index	<p>The water vapour resistance of textile background materials shall not exceed 5 (m² Pa/W) and the water vapour permeability index (imt) shall be not lower than 0.15 (EN 471, clause 5.6.3).</p> <p>When testing water vapour resistance (EN 31092) and water vapour permeability index for eight woven PES/CO fabrics (from 160 to 295 g/m²) all materials passed the requirement for water vapour resistance, but only two of them passed the requirement for water vapour permeability index.</p>	<p>The requirement is not applicable to this kind of thin materials, but only to thicker materials for which the requirement of water vapour resistance cannot be applied. The combination of WVP resistance and WVP index leads to the exclusion of materials on the basis of their mass per unit area, which is not relevant for their comfort properties.</p> <p>The WVP index should therefore not be required for non-coated woven or knitted fabrics which have a sufficiently low WVP resistance.</p>	
6.2	Washing, maximum number of cycles	<p>Nowadays in the market there are reflective bands that only last three washes.</p> <p>Is it possible to certify high visibility clothing under the Directive 89/686/CEE, and to EN 471 and EN 340 standards, if the care labelling shows that the maximum number of washes is only three?</p>	Yes, this is possible, but the accompanying information (leaflet, marking) should be very explicit and unambiguous about this.	

8	Marking – number of washing cycles	<p>EN 471:2003 refers completely to EN 340 for "marking" requirements.</p> <p>EN340 mentions that the number of washing cycles shall be mentioned on the label if required by the specific standard.</p> <p>Washability is one the main requirements of high-visibility clothing, since washing is one of the main reasons for garments losing their fluorescent and retroreflective properties.</p> <p>Does this mean that the label of EN 471 shall mention, close to the wash symbol, the maximum number of washing cycles (as it has always been the case), or not?</p>	The maximum number of washing cycles shall be mentioned	
8	Marking combined performance	<p>EN 471 allows the use of combined performance material for Class 1 garments. These materials are classified according to Table 7, and do not meet Table 5 (Level 2) or Table 6 (Level 1).</p> <p>How should such garments be marked? The intended marking of ‘Y’ for retroreflective performance is either (Level) 1 or (Level) 2.</p>	Use an X and put ‘Combined performance material’ below the pictogram or explain in the instructions for use.	
EN 13356	High visibility accessories	<p>(Attached were some pictures of accessories, per type as defined in EN 13356.)</p> <p>Type 1: Free hanging accessories: dangle-tags, for children's clothing (on the side pockets, on the sleeves, on the zipper.) used in a lot in Scandinavian countries. (see picture 1)</p> <p>Type 2: Removable accessories The classical product is the slap-wrap. It can be applied on ankles or on wrists for cycling or jogging. (see picture 2)</p> <p>Type 3: Mounted accessories These are all the applications manufactured to be permanently fixed. (see picture 3)</p>	All three types are considered to be PPE, category II	

		<p>Are these items PPE in the sense of Directive 89/686/EEC?</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>Picture 1</p> </div> <div style="text-align: center;">  <p>Picture 2</p> </div> </div> <div style="text-align: center; margin-top: 20px;">  <p>Picture 3</p> </div>		
EN 13356	High visibility accessories, cape for horse riders	<p>Is it possible to certify <u>the reflective striping</u> on a cape for horsemen (grey colour) according to EN 13356 ? The width of reflective stripes is less than 5 cm . The information leaflet clearly declares that it isn't a warning vest and for use by horsemen only.</p> <p>The standard EN 13356 is fixed at the label. The material of the cape doesn't comply with either EN 471 or EN 1150.</p> <div style="text-align: center; margin-top: 10px;">  </div>	<p>The argument given in favour of certification of this product was that it was only an accessory (EN 13356), comparable to a reflective sticker or hang tag. The cape is then merely a piece of normal clothing, to which the reflective stripes are attached.</p> <p>However, most notified bodies did not follow this argument and were of the opinion that such type of garment gives the user a false sense of safety, even if the information for use explains that only the striping and not the vest should be considered as a PPE.</p>	

EN 13356	High visibility accessories, minimum area	<p>What is the meaning of the term "minimum area" in the text underneath table 2 of EN 13356. Does it mean the reflective area of the test specimen or does it refer to the area of 15 cm² which type 2 & 3 accessories should exceed (see clause 4.1).</p> <p>If "minimum area" does refer to 15 cm² then surely the requirements in table 2 are meaningless. A type 2 or 3 reflector needs to meet R' values at specific entrance and observation angles. However if a reflector only just meets these levels then it will not meet the minimum R value of 400 mcd/lx.</p> <p>We have a reflector which meets table 2 but fails to meet this 400 mcd/lx value.</p>	Both requirements shall be met. The 15 cm ² are necessary for the visibility from a distance. On the other hand the material shall also meet the 400 mcd/lux requirement.	
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CO-ORDINATION OF NOTIFIED BODIES PPE
Vertical Group 5: Protective clothing and gloves
RECOMMENDATION FOR USE

CHEMICAL

**(includes biological and
radio-active risks)**

Rev.: 2007-02-07

Approval by:

Horizontal Committee

Standing Committee

Approved on:

19.11.2007

30.04.2009

This Recommendation for Use sheet contains questions and answers discussed and approved at VG 5 meetings on issues addressed by the following standards:

- . **EN 1073-2:2002 Protective clothing against radioactive contamination - Part 2: Requirements and test methods for non-ventilated protective clothing against particulate radioactive contamination**
- . **EN 13034: 2005 Protective clothing against liquid chemicals - Performance requirements for chemical protective clothing offering limited protective performance against liquid chemicals (Type 6 and Type PB [6] equipment)**
- . **EN ISO 13982-1:2004 Protective clothing for use against solid particulates - Part 1: Performance requirements for chemical protective clothing providing protection to the full body against airborne solid particulates (type 5 clothing) (ISO 13982-1:2004)**
- . **EN 14126:2003 Protective clothing - Performance requirements and tests methods for protective clothing against infective agents**
- . **EN 368: 1992 Protective clothing – Protection against liquid chemicals – Test method: resistance of materials to penetration by liquids**
- . **EN 369:1993 Protective clothing – Protection against liquid chemicals – Test method: resistance of materials to permeation by liquids**
- . **EN 463:1994 Protective clothing - Protection against liquid chemicals - Test method: Determination of resistance to penetration by a jet of liquid (Jet Test)**
- . **EN 466:1995 Protective clothing – Protection against liquid chemicals – Performance requirements for chemical protective clothing with liquid-tight connections between different parts of the clothing (type 3 equipment)**
- . **EN 467:1995 Protective clothing – Protection against liquid chemicals – Performance requirements for garments providing protection to parts of the body**
- . **EN 468:1994 Protective clothing - Protection against liquid chemicals - Test method: Determination of resistance to penetration by spray (Spray Test)**

Standard and clause	Key words	Question	Proposed solution	Comment
1073-2, 4.2	Radioactive contamination – puncture resistance	Can a material, which obtains a level 1 for puncture resistance (EN 863), be used for non-ventilated protective clothing against particulate radioactive contamination (EN 1073-2)?	<p>The requirements, as specified in EN 1073-2, are somewhat ambiguous. The introductory sentence to clause 4 states that at least level 1 shall be reached, whereas Table 1 (clause 4.2) specifies level 2 as a minimum. Guidance should be taken from this table.</p> <p>Hence materials that obtain only level 1 can not be used for this type of protective clothing.</p>	
13034	Additional features	Can embroideries be put on a garment?	The embroidered garment shall pass the low level spray test	
13034, 4.1	Repellency, penetration	<p>EN 13034:2005 Clause 4.1 states that chemical protective clothing materials shall be tested and classified to Clauses 4.12 and 4.13 of EN 14325:2004.</p> <p>Clause 4.12 and 4.13 of EN 14325:2004 state that the material shall be tested against <u>all four</u> chemicals listed in Table 9.</p> <p>Clause 7g of EN 13034 states that the User Information must give the performance levels for <u>all</u> of the chemicals tested.</p> <p>Should the material be tested against the four chemicals listed in EN 14325 Table 9, and should the User Information list the results against these four chemicals?</p>	<p>In order to be conform with EN 13034:2005, chemical protective clothing materials must be tested to Clause 4.12 and 4.13 of EN 14325:2004 using all four chemicals listed in Table 9.</p> <p>The User Information must list the levels obtained for all four chemicals listed in Table 9, even if unclassified, plus any other chemicals the manufacturer has tested against.</p>	
13034, 4.2	Chemical penetration, seams etc.	<p>EN 13034:2005 Clause 4.2 states that seams for chemical protective clothing materials shall prevent penetration of liquid.</p> <p>For type 6 suits, the standard specifies that the whole suit spray test (according clause 5.2) should be performed, but is it enough to evaluate the resistance to liquid penetration of</p>	<p>Garments covering the whole body (coverall, jackets and trousers) shall be subjected to a whole suit spray test to assess the (limited) spray tightness of the garment construction.</p> <p>This is not applicable to partial body protection items.</p>	

		<p>seams?</p> <p>A specific method to test the resistance to liquid penetration of seams for all kind of type 6 items (Type 6 suits or type PB 6) is not specified in EN 13034:2005. Should the seams be tested against the four chemicals listed in EN 14325 Table 9?</p>		
13034, 468	Low Level Spray Test	<p>There is not enough information about the calibration. We use different, nozzles and a different surface tension as in EN 468.</p> <p>Which volume should be in the beakers after the calibration?</p>	Proposal to collect data results from different test laboratories (see annex for form)	EN 468 rev will describe both types of spray tests in detail
13982-1, 6e	instructions for use; test results	Should a manufacturer be allowed to indicate in the instructions for use the real values of test results obtained in EC type examination testing, when the requirement of these tests is expressed as a pass/fail criterion only?	<p>No, according to sheet nr CNB/P/00.077, which is an explanation of the directive - annex II – item 1.4, the instructions for use must not be misleading for the user.</p> <p>Mentioning a measured value in addition to the conformity statement could make the user suppose that this value can be used to express the real performance of the equipment, and to determine the choice of the most suitable equipment and its conditions of use (for example wear period) taking into account the risk analysis.</p> <p>This is not acceptable since the standardisation working group - after evaluation of the test method - only retained a pass/fail criteria instead of classes.</p>	
14126, 4.1.4	Infective agents	<p>1.) For chemical protective clothing, which meets the requirements of. EN 943-1, protection against infective agents is claimed. Shall this clothing meet all requirements (tests), specified in EN 14126, clause 4.1.4, or just part of them?</p> <p>2.) Is it necessary to perform the same material tests on clothing materials, gloves and boots?</p>	<p>1.) The intended use and the corresponding risks and levels of protection shall clearly be stated. From this it should become clear if all or just some of the requirements are relevant and which tests should be performed. It should be noted that EN 14126 was developed with a very wide range of clothing types in mind.</p> <p>2.) Yes, all constituent materials, exposed to the risk, shall be tested</p>	

368, 1	Certification, use of EN 368	Is it possible to certify a PPE (CE type examination) by combining EN 340 and EN 368, without use of a specific harmonized product standard?	No, a combination of EN 340 and EN 368 is not sufficient. There are other essential requirements to be met also. The relevant product standard will probably be prEN 13034 (final draft)	
368, 5.5	Volatile liquids penetration	The run off and penetration parameters are determined by means of the weight of fabrics and filter paper. How can such a procedure be carried out with volatile products (e.g. white spirit)?	The results of tests with volatile liquids may not be reproducible unless validated procedures are followed to control losses by evaporation to a constant definable level. The measurements of penetration, absorption and repellency may be facilitated conveniently however by the solution of an analysable substance (e.g. fluorescent or visible dye tracers) in the volatile liquid, provided it does not influence the performance of the test specimen (i.e. its resistance to penetration and repellency).(text from prEN ISO 6530:2004 – final draft)	To be withdrawn when EN ISO 6530 is approved.
369, 5.2	permeation, collecting medium	<p>According to EN 369 (and EN ISO 6529) the collecting medium shall be:</p> <p><i>"Water or any other liquid having no influence on material permeation resistance".</i></p> <p>This may be very difficult since the liquid collecting medium shall comply with 3 requirements:</p> <ul style="list-style-type: none"> - to dissolve the test chemical; - to be inert with regard to the material to be tested, and not modify its permeation properties. - to allow the chemical product to be detected with the sensitivity mentioned in paragraph 6.6 ($1\mu\text{g}\cdot\text{cm}^{-2}\cdot\text{mm}^{-1}$) <p>Combination of the three requirements will sometimes be impossible, e.g. extraction of plasticizers from PVC gloves or detection problems with a paraffine type mineral oil</p>	<p>It is necessary to verify before testing that the collecting medium has no influence on the tested material and the blank shall be zero.</p> <p>Suggestion: a guide to collecting medium selection should be produced</p>	EN 369 superseded by EN ISO 6529

463, 5	Test liquid	Is it necessary to use de-mineralised water at 20 ± 2 °C to prepare the liquid for application in the jet test?	Use of fresh tap water at ambient temperature is adequate as long as specifications for the detection characteristics are met. Reason : - No unnecessary use of expensive de-mineralised water - Harmonisation with EN 468 (spray test)	The preparation of the test liquid will be explicitly described in the revision of EN 463. De-mineralised water will not be required.
463, 8.2	Test points	It is stated in 8.2 that the jet nozzle shall be positioned 1 m from the test spot at an angle that is more likely to cause penetration by the liquid jet. We think that this angle should be more clearly specified because it has a great influence in the test result and can make a suit pass or fail.	The angle shall be such that it makes the penetration of the liquid jet easier. A "worst case" scenario should be followed (see annex)	This will be explicitly included in the revision of EN 463, e.g.: <i>"The jet nozzle shall be positioned in a horizontal line and at an angle which is most likely to cause penetration by the liquid jet. If a test spot is e.g. located in a zip covered by a flap, the jet shall come from the side that gives it possibility to come under the flap."</i>
466, 6.3	jet test	Are two-piece suits, for example jacket and trousers, able to pass the jet test? Can the suit meet the requirements of EN 466 if the suit protects only parts of the body, for instance a garment without protection of the head? What design shall a garment have according to EN 466?	Experience shows a two-piece garment can pass the jet-test. Partial body protection is not within the scope of EN 466. A suit without head, hand and foot protection is considered full body protection.	EN 466 will soon be superseded by EN 14605. The scope of this revised standard includes Type 3 and Type 4 clothing and partial body protection. It describes various types of garments that can meet the Type 3 or 4 requirements. Head, hand and foot protection is not necessarily included. Two-piece suits are explicitly mentioned
467	Partial body protection	Is it correct to certify a suit (combination of jacket, trouser, shirt) as full body protection and as well as partial body protection if there are no explicit design requirements in the relevant standard or partial body protection is not mentioned?	Yes, this is possible	EN 467 to be superseded by prEN 14605 (final draft)

general	Abrasion, flex cracking, breakthrough	<p>It is not specified, whether Method 1 or 2 of EN 530 shall be taken.</p> <p>What is the definition of breakthrough? In several standards the breakthrough detection for abrasion or flex cracking test is required but no clear end point criteria are specified.</p>	<p>Method 2 shall be used. Breakthrough shall be determined by use of the pressure pot method.</p> <p>If this is not possible, a hole of 1 mm diameter shall be considered as breakthrough for abrasion.</p> <p>For flex cracking, the hole is considered to be a crack of 1-mm length through the complete coating.</p>	
General	Abrasion, flex cracking, pressure pot	<p>When testing coated fabrics, laminates and membranes to Clauses 4.4, 4.5 and 4.6 of EN 14325:2004, there can be significant differences in classification between visual assessment and when using the pressure pot. Many fabrics that have previously passed using visual inspection have failed when assessed with the pressure pot.</p> <p><i>Now that EN 13034, EN ISO 13982-1 and EN 14605 have been ratified, what should be done regarding Certificates that have been issued where the fabric was assessed visually?</i></p>	<p>The notified bodies shall draw the manufacturers' attention to the changes induced by EN 14325 and their impact on material classification and recommend the manufacturers to have their materials assessed against the new test procedures.</p> <p>However, this should not be presented as mandatory.</p>	
general	attached gloves and boots	<p>There are no requirements to test gloves, boots, etc attached to a chemical suits for resistance to permeation against the same chemicals as the main part of the suit.</p>	<p>Glove materials shall be tested to either EN 374-3 or EN 369 using the same battery of chemicals the main part of the suit has been tested against.</p> <p>There is no permeation standard for boots. The notified body shall conduct all necessary tests to establish the conformity for the same battery of chemicals.</p> <p>The user information should include test data for the individual components of the clothing assembly.</p>	
general	Cleaning, preconditioning for testing	<p>How should chemical protective suits e.g. prEN 943-1 type 1, be cleaned, if they can not be cleaned according to a standard (ISO 6330...) but according to specific instructions for use?</p> <p>The interpretation of the description in the instruction for use can be very different in the different test laboratories.</p>	<p>The instruction for use should be followed. They should be clear and unambiguous. If this is not the case, the notified body should ask the manufacturer to provide the necessary clarifications.</p> <p><i>NOTE This is applicable to all types of garments</i></p>	

general	cold protection combined with chemical protection	<p>What are the requirements, test methods, and categorisation of a cold protective suit worn over a chemical protective suit?</p> <p>It is used to protect the user of a chemical protective suit against cold of gases liquefied under pressure to – 60°C, and to protect also the devices against these “cold” chemicals.</p>	<p>General requirements of the directive (design principles, innocuousness of PPE and comfort and efficiency) shall be checked.</p> <p>This includes testing of strength, puncture, tear, seam strength, flex cracking at low temperature and resistance to ignition.</p> <p>Requirements of EN 943-2 shall be used for evaluating the level of performance.</p> <p>The whole suit when used with the chemical protective clothing and devices shall pass the work simulation test at low temperatures as specified in EN 943-2, clause 8.1.1.2.</p> <p>The chemical protective suit itself shall fulfil the permeation requirements</p> <p>This is category III equipment.</p>	See also EN 342
general	instructions for use	<p>Should NB’s agree on essential harmonised formulations, which are not covered/required by the (pr)EN-standards, to be included into the “instructions for use” for specific types of CPC?</p>	<p>Yes, they should.</p> <p>This is an approach to improve equal treatment of the manufacturers by the European test houses.</p> <p><i>1. CPC Types 1, 2, 3, 4, 6</i> <i>“This clothing gives protection against specific named chemicals.”</i> <i>“The test results found under laboratory conditions are only to be regarded as an orientation for practical applications.”</i></p> <p><u>CPC Types 3,4,6 that are used in connection with respiratory protective devices (RPD)</u> <i>“No general statements can be given for the leak tightness of RPD in connection with the approved suit different from those used under test.”</i></p>	
general	limited protection	<p>In categorisation of PPE for protective clothing and gloves the definition is: "PPE providing only limited protection against chemical attack".</p> <p>What is meant by chemical attack?</p>	<p>The moment the chemical reaches the skin, i.e. the first contact with the skin. Since there is no perfect and lasting barrier, all chemical protective clothing and gloves should fall into this category.</p>	EN 369 superseded by EN ISO 6529

general	pockets	Are open pockets (without pocket flap) especially rule pockets, allowed for this kind of protective clothing?	Open pockets should not be used. All pockets, including pockets with a vertical opening, shall be covered to prevent penetration of liquids	
General	repellency	Several manufacturers include in their instructions for use the procedure to be followed for reapplication of the fluor carbon finish. Does the NB need to verify these instructions?	No, the NB only needs to verify that the manufacturer gives the instruction.	
general	Test methods	<p>The level of performance of CPC material when tested for abrasion and flex cracking resistance is determined through a leak tightness test.</p> <p>The apparatus for this purpose is a pot test which dimensions are specified in the standards.</p> <p>The abraded area of the sample after testing is larger than the one of the pressure pot test for examination. Similar problem happens with the area submitted to flexing test.</p> <p>That means that the test does not cover the examination of the whole area susceptible to be damaged.</p>	<p>The test specimen shall be placed with the damaged area on the centre of the pot.</p> <p>Dimensions of the pot test should be changed in order to examine the whole damaged area.</p>	

Annex to "low level spray test"

NOZZLES	Pressure (bar)	Flow (l/min)	BEAKERS	Volume (ml) collected per beaker. (after 3 min spraying)
1 (bottom)			1	
2			2	
3			3	
4 (top)			4	
Surface tension of the test liquid (N/m):				
Pressure at the pump (if not possible measurement at each nozzle):				



CO-ORDINATION OF NOTIFIED BODIES PPE
Vertical Group 5: Protective clothing and gloves
RECOMMENDATION FOR USE

GENERAL

Rev.: 2007-08-24

Approval by:

Horizontal Committee
 Standing Committee

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Standard and Clause	Key words	Question	Proposed solution	Comment
EN 530	Abrasion testing	<p>The testing procedure for method 1: “Determination of abrasion resistance”, needs better description. It is not clear whether or not foam shall be positioned between the metal insert and test specimen. The use of foam or felt backing for the abradant is also not properly described.</p> <p>This question was raised at the VG5 meeting in 2006 but was not resolved. Subsequent to this meeting, CEN/TC162 WG5, which is responsible for EN 530, met and discussed this question. The WG agreed to seek a preliminary work item for the amendment. They also agreed that the correct procedure for mounting of the test specimen and abradant, which is missing from EN 530:1994, is in EN ISO 12947-2:1998.</p>	<p><i>It may take some years to amend/revise EN 530 because of various other concerns. Therefore a VG 5 RfU sheet is needed for use during this unknown interim period</i></p> <p>When testing using EN 530 Method 1, undertake the procedures set out in Clause 7.6.2 “Mounting of the test specimen” and Clause 7.6.3 “Mounting of the abradant” of EN ISO 12947-2: 1998.</p> <p>The text of 7.6.2 says that “for test specimens having a mass per unit area less than 500 g.m² place the foam backing on the test specimen”.</p>	
EN ISO 14877	Abrasive blasting, categorization of PPE	To which category of PPE (according to directive 89/686/EEC) do abrasive blasting clothing of type 1 (no respiratory protection), type 2 (upper part of the body) and type 3 (whole body protection, including respiratory protection) belong?	<p>Type 1 is PPE of category II (independent of respiratory protection devices).</p> <p>Types 2 and 3 are category III, because they are used in combination with respiratory protection devices.</p>	

EN 340	Combination of clothing items	<p>A manufacturer produces a vest, sleeves that can be attached to the vest or used separately, apron and gaiters for welders, all made of the same material.</p> <p>Can he submit one technical file containing designs, etc for all of them?</p> <p>In such a case, can each garment, separately bear the CE marking?</p>	<p>It is possible to submit one technical file only for all products.</p> <p>This depends on the intended use. If the manufacturer points out in the information leaflet that they must always be used together, then one certification shall be carried out.</p> <p>If not, several separate certifications are possible.</p>	
EN 340	Comfort, practical performance testing	<p>What is the minimum requirement to meet clauses 1.2.1.2 and 1.2.1.3 of the Basic Health and Safety Requirements?</p>	<p>When there is no specific assessment procedure in the relevant product standard, Annex C of EN 340:2003 or a similar assessment shall be used.</p>	
EN 14058	Cool environments	<p>EN 342 covers category II and III PPE, but it's not very clear if scope of EN 14058 addresses category I or II.</p> <p>Some garments don't meet the requirements of EN 342 (thermal insulation with manikin $\geq 0.31 \text{ m}^2\text{K/W}$), nor these of EN 14058 (thermal resistance $R_{ct} < 0.25 \text{ m}^2\text{K/W}$). How can they be certified and classified? Or if we test the thermal insulation of fabrics according EN 31092 and we don't have the jacket to test on the thermal manikin. Is it possible to classify them according EN 14058 if the thermal insulation is higher than $0.25 \text{ m}^2\text{K/W}$?</p>	<p>EN 14058 was developed for protection in cool environments (higher than $-5 \text{ }^\circ\text{C}$), which corresponds to cat. I PPE. However, it contains also an optional manikin test. Depending on the results of the manikin test the garment can be cat I or cat II (see tables in annex B). Results should be interpreted in connection with the rest of the standard clothing used in the test.</p> <p>This case is not yet foreseen in either EN 342 or EN 14058. Certification according to the directive is possible. Should be taken up at the revision of the standards. A possible alternative is ISO 9920 (to be checked)</p>	
EN 340	Dimensional Change	<p>Is dimensional change in clothing only related to length and width or to seams too?</p>	<p>At the moment only shrinkage of materials shall be tested.</p>	
EN 340	Dimensional change, knitted materials	<p>Knitted garments often have a shrinkage higher than 3 percent.</p> <p>Can these garments be certified given the real shrinkage is indicated in the information leaflet?</p>	<p>Dimensional changes in knitwear should be considered against the fitness for use (and the protective properties) of the item.</p> <p>EN 471 and prEN ISO/FDIS 11612 allow for a maximum shrinkage of 5% for knitted materials. If shrinkage exceeds 5 % the manufacturer shall provide relevant information and advice in the informative notice and labelling (taken from ISO/FDIS 11612:2004).</p>	


<p>based on CLC/TS 50354</p>	<p>Electric arc</p>	<p>This standard does not specify whether the test has to be carried out on a garment or on a fabric. On what should we base our choice on? The requirement depends on the material tested: In the garment test, the requirements take the behaviour of the accessories and fasteners into account (after exposure, they shall be functional) but the heat flux is not to be measured, however, in the material test (obviously) the accessories are not evaluated but the heat flux does.</p> <p>Which method must be carried out in order to certify an PPE against thermal hazards of an electrical arc? Which requirements are the most important in order to evaluate the protective clothing? In order to evaluate the behaviour of the accessories (and/or other materials) against the exposition of an electrical arc, it is (maybe) not enough to consider the results obtained on fabric.</p>	<p>The CLC/TS has been superseded by IEC 61482-1-2 since January 2007. This standard is a test method which contains provisions which can be evaluated easily and make it possible to assess the protective properties of the whole garment.</p> <p>Another standard IEC 61482-2 which contains product requirements is in preparation.</p> <p>Both fabric and garment shall be tested and evaluated.</p> <p>Note: an other test method is described in IEC 61482-1-2.</p>	
<p>EN 13911</p>	<p>Fire hoods, practical performance test</p>	<p>The paragraph 6.2 refers to annex B (a normative annex). This annex describes a practical performance test which shall be conducted with a fire-fighter equipment: firehood, clothing, breathing apparatus, helmet, and gloves. As this test is depending on the type of each equipment used and as it is the responsibility of the fire-fighter to associate the correct equipment depending a risk assessment (and not the notified body): Is it possible for a notified body to issue an EC type examination based on EN 13911 without carrying out the practical performance test defined in annex B but with a warning which explains that the fire fighter shall conduct the test before selecting a firehood ?</p>	<p>No, as the annex B is normative, no EC type examination based on EN 13911 should be issued without carrying out the practical performance test. Compatibility of the hood with other PPE items shall be checked. It is the responsibility of the manufacturer to propose a set of PPE to be used with the hood. This set can later be extended.</p>	

all clothing standards	Identification of materials	<p>In test reports materials are often only referred to by a single, often commercial, reference name.</p> <p>In reality however this name can cover a variety of materials different by structure and weight (e.g. for fabrics) or by origin and thickness (e.g. for leather).</p> <p>Is it possible to have a uniform and clear "finger print designation" of materials in test reports in order to make an evaluation easier?</p> <p>To this purpose we propose to use the elements given above.</p> <p>Ex.: .aramid twill 2/1 - 270 g/m² .cow split 1.3 - 1.5 mm</p>	A unique ref. number or name should be enough to identify the material.	
Innocuousness, plastic clothing (EN 340)		<p>EN 340 (2003) mentions in section 4.2 that "Information claiming that the product is innocuous shall be checked". For materials such as plastics, this can lead to great difficulties to get precise information, because suppliers won't give accurate information enough to have the exact name of the constituents. In this case, how can we check innocuousness of such equipments and what do we have to do for an EC type examination?</p> <p>A specific problem deals with the case of ventilated or non-ventilated suits made of PVC where phthalates are included as plasticisers. The possible exposures are both by contact with the skin and by inhalation. Then, how can we assess the impact of such products on the health of the wearer?</p>	<p>RfU sheet 117 dd. 2003.08.22 of the HC describes the obligations of the manufacturer with regard to information on noxious substances present in the PPE. A group of noxious products is explicitly mentioned in EN 340, clause 4.2., a) to e). Their absence in the material should be proven.</p> <p>For further guidance, see also EU Directive 76/679 (and subsequent amendments) on the marketing and use of certain dangerous substances and preparations.</p>	
EN 340	Innocuousness, azo colourants	<p>EN 340: 2003 clause 4.2 Innocuousness, paragraph (e), states that Azo colourants, which release carcinogenic amines listed in EN14362-1, shall not be detected by the method in that standard.</p> <p>EN14362 – 1 is the method for the</p>	<p>EN14362-2 should be used for synthetic fibres and CEN ISO/TS 17234: 2003 used for dyed leathers</p> <p>For information:</p> <ul style="list-style-type: none"> • EN 14362-1 Textiles - Methods for the determination of certain aromatic amines derived from azo colorants - Part 1: 	

		determination of amines in <u>natural</u> fibres. This method is not suitable for <u>synthetic</u> fibres or for <u>leathers</u> .	<p>Detection of the use of certain azo colorants accessible without extraction</p> <ul style="list-style-type: none"> EN 14362-2 Textiles - Methods for determination of certain aromatic amines derived from azo colorants - Part 2: Detection of the use of certain azo colorants accessible by extracting the fibres <p>CEN ISO/TS 17234:2003 Leather -- Chemical tests -- Determination of certain azo colourants in dyed leathers</p>	
EN 340	Marking, reference to general standards	Is it possible to use EN 340 (EN 420) alone, when no EN product standard is applicable and to put the EN 340 number on the marking?	Marking with the general standards EN 340 or EN 420 is not possible. If there is no product standard, then no normative reference should appear on the marking.	
EN 533	Marking, compliance with several standards	How can the marking be made when only a part of garment complies with a standard? <i>Example:</i> The whole garment passes EN 533 level 3 and the requirements for CPC Type 6, but only the front of the garment can be categorized in class D3 for aluminium splashes. Can D3 be put on the marking?	It is possible to mark with the number of the standard, if in the information of use is clearly explained which part of the body is protected.	
no standard	Paint booth clothing	Which requirements should be met by clothing worn in such an environment? Which standard(s) can be used to assess?	Refer directly to the Directive, as there is no appropriate standard	
EN 340-420)	Protective clothing and gloves, pictogram ionising radiation	EN 420 (2003) foresees a pictogram for protective gloves against ionising radiation whereas EN 340 (2003) doesn't foresee any pictogram against this risk. How do we have to proceed for protective clothing providing protection against ionising radiations?	Use for protective clothing against ionising radiations the same pictogram as for gloves. The meaning of the pictogram shall be explained in the information for use.	
EN 343	Reference to standards	Can a garment label refer to e.g. EN 343 when the material does not fulfil the requirement for bursting strength?	One can only refer to a standard when <u>all</u> criteria of this standard are met. The pictogram is not protected and can be used	

in the absence of a standard	Test report, reference to directive	Is it allowed to mention in a test report that the tested fabric (not a garment) conforms to the safety requirements of directive 89/686?	No, the Directive addresses PPE, i.e. finished products, not materials	
several standards	Various performance levels in one garment	How can a garment be marked with different levels of performance in front and back (e.g. aluminised material in the front, and non-aluminised material in the back)?	<p>As a general principle the "worst case" approach shall be used, i.e. the lowest level shall be announced in the marking.</p> <p>This shall also be done in the information leaflet, but the attention may be drawn to the higher protection levels offered by some parts of the garment, in particular if they are exposed to higher degrees of risk.</p> <p>The higher performance level may however be announced in the marking and in the information leaflet if no mistake on behalf of the user is possible and if the product standard does not contain specific and conflicting provisions.</p> <p>Examples:</p> <ol style="list-style-type: none"> 1. IEC 61331-3 on X-ray protective aprons specifies that the protection levels in front and back may be different, but that both levels shall be indicated in the marking 2. EN 531 does not contain such provisions and e.g. in the case of someone working in front of an oven and wearing a long coat with an aluminized front and an open back for comfort, the protection level of the front should be announced. The "flame" pictogram on the garment should then be accompanied by the "i" pictogram to draw more attention to the information leaflet. 	
EN 343	Water penetration – rainwear	<p>EN 343: 2003 states that for water penetration after cleaning (dry-cleaning and/or washing clause 5.1.3.2) the material needs to be washed 5 times prior to testing.</p> <p>However, if the manufacturer is claiming that the garment has a maximum number of washes / cleaning cycles should we still only clean it 5 times (as per the standard) <u>OR</u> should we test it for water penetration after it has been exposed to the maximum number of cleaning cycles that have been claimed by the manufacturer.</p>	<p>Water penetration testing shall be performed after 5 cleaning cycles, as stated in EN 343.</p> <p>If the manufacturer claims a number of cleaning cycles superior to 5, he shall demonstrate his claim is correct.</p>	


all clothing standards	Water vapour resistance	Annex II,2.2 of Directive 89/686/CEE states that the PPE enclosing parts of the body, shall limit perspiration resulting from use. Is it necessary to test all kinds of clothing for water vapour resistance?	No, several other techniques (design, cooling garments, ventilation) can be used to meet that requirement	
ISO 15394	Wildland firefighting clothing	Does wildland firefighting clothing certified according to the current ISO project 15394 (for example coverall made of Nomex [®] III 185 g/sqm) belong to Category II or III	It's not the responsibility of the Notified Body to categorize the PPE . It is generally accepted that wildland firefighting clothing belongs to Category III	
	Working garments (not protective)	Are classical working garments considered as protective clothing?	A classical working garment which protects only against non-aggressive dust without any specific protection is not considered as protective clothing and is excluded from the scope of the PPE directive For a PPE intended use and the corresponding risks shall be described by the manufacturer. Sanctioning improper use is the responsibility of the market surveillance.	

	<p>CO-ORDINATION OF NOTIFIED BODIES PPE-Directive 89/686/EEC + amendments</p> <p>RECOMMENDATION FOR USE</p>	<p>CNB/P/09.002 Revision 02 Language: E</p>
Number of pages: 1	Date : 21/04/2006	Approval by : Approved on :
Origin : Vertical Group 9 'Protective Clothing for Motorcycle Riders and Sports Impact Protectors'		<input checked="" type="checkbox"/> Vertical Group 05.11.1997 <input type="checkbox"/> Horizontal Committee <input checked="" type="checkbox"/> Standing Committee 15.12.2005
Question related to:	EN/prEN: 1621-1:1997	Other:
Annex:	Article:	----- Clause: 4.1
<p>Key words:</p> <p>impact protectors for motorcyclists</p>		
<p>Question:</p> <p>The impact test area is equal the template size area (see clause 4.1). Is the minimum requirement of impact attenuation (≤ 35 kN) applicable also near to the edges ?</p>		
<p>Solution:</p> <p>Yes. Therefore the protector shall provide sufficient protection also near all edges and not only in the core area of the template shape.</p>		
<p>Sent for information to: <input type="checkbox"/> members of the VG <input type="checkbox"/> other(s) VG <input type="checkbox"/> HC (2) <input type="checkbox"/> TC (3) <input type="checkbox"/> SC (4) <input type="checkbox"/> other (5)</p> <p style="text-align: center;">(3): (5):</p>		

(1) Essential safety requirement
(2) HC = horizontal committee

(3) N° of CEN/TC (Secretary & Chairman)
(4) EEC Standing Committee 89/392

(5) To be specified

	<p>CO-ORDINATION OF NOTIFIED BODIES PPE-Directive 89/686/EEC + amendments</p> <p>RECOMMENDATION FOR USE</p>	<p>CNB/P/09.003 Revision 02 Language: E</p>
<p>Number of pages: 1</p>	<p>Date : 21/04/2006</p>	<p>Approval by : Approved on :</p>
<p>Origin : Vertical Group 9 'Protective Clothing for Motorcycle Riders and Sports Impact Protectors'</p>		<p> <input checked="" type="checkbox"/> Vertical Group 14.12.2000 <input type="checkbox"/> Horizontal Committee <input checked="" type="checkbox"/> Standing Committee 15.12.2005 </p>
<p>Question related to:</p>	<p>EN/prEN: 1621-1:1997</p>	<p>Other:</p>
<p>Annex: Article:</p>	<p>----- Clause: 6.3</p>	
<p>Key words: impact protectors for motorcyclists</p>		
<p>Question: Can protectors be approved if, for ergonomic reasons, they have gaps within the template area ?</p>		
<p>Solution: Yes, provided these gaps will be virtually closed when positioned according to the manufacturer's instructions.</p>		
<p>Sent for information to: <input type="checkbox"/> members of the VG <input type="checkbox"/> other(s) VG <input type="checkbox"/> HC (2) <input type="checkbox"/> TC (3) <input type="checkbox"/> SC (4) <input type="checkbox"/> other (5)</p> <p style="text-align: center;">(3): (5):</p>		

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