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## Marking table for CCTV systems installed to NCP 104 (Issue 2) including compliance with the requirements of BS EN 50132-7:1996

NSF 350 Issue 2

November 2021

This marking table is for use by NSI when inspecting CCTV Systems that have been installed by NSI NACOSS GOLD and NSI SYSTEMS SILVER approved companies to the requirements of NCP 104 (Issue 2) and BS EN 50132-7:1996. Demerit points may be given for non-compliance with clauses of NCP 104 (Issue 2) and BS EN 50132-7:1996 for which no specific reference has been made in the table of deviations listed in the pages below.

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The NSP 104 (Issue 2) marking table is divided into Sections A to T as listed below.

Section	Title	Maximum Points
A	Documentation	1
B	System operational criteria	1
C	Surveillance zone determination criteria	1
D	Camera location criteria	1
E	Camera and lens selection criteria	2
F	Ancillary equipment	2
G	Camera housings	1
H	Pan and tilt units	1
J	Towers and brackets	2
K	Evaluation of scene and illumination	2
L	Selection of video transmission system	2
M	Monitors	2
N	Control equipment	2
P	Control centre configuration	2
Q	Planning the installation / Power supplies	2
R	Cable installation	2
S	Warning signs / labels	1
T	Maintenance	1

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## Notes

1. Each Section of this marking table contains one or more Deviations (see pages 3 to 9 below).
2. Each Deviation is given a Clause reference (e.g. NCP 104/10: 7.4), a Code (e.g. E2) and a Point score (e.g. 2).
3. NSI Inspection Reports detail Deviations by Code, Clause, description of Deviation and Points.

Example:

E2, NCP 104/10: 7.4, Types of camera selected not suitable for the application, 2 Points

4. Points are awarded for each individual Deviation as shown in Note 3 above. However, the Maximum Points awarded in any Section are shown in the table above.

Example:

If two Deviations E1 (2 Points) and E2 (2 Points) are raised under Section E (Camera and lens selection criteria), a total of 2 Points (not 4 Points) are awarded against Section E.

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Clause	Code	Deviation	Points
<b>DOCUMENTATION</b>			
<b>System design specification</b>			
NCP 104/10: 7.11/9.4	A1	<p>The design proposal and/or system record for the proposed installation does not clearly state:</p> <ul style="list-style-type: none"> <li>a) Name and address of protected site and/or name and address of customer.</li> <li>b) Kind of camera (s); focal length of lens; area of coverage; location of camera, its associated hardware and/or intended purpose of surveillance.</li> <li>c) Pan, tilt, zoom functions; for zoom lenses, the maximum and minimum focal lengths and zoom ratio; any other automatic/remote control functions.</li> <li>d) Mounting arrangements; details of any cameras the customer has facility to manoeuvre or isolate.</li> <li>e) Location of control equipment; type and location of power supplies; type and location of monitors and any indicating/warning devices.</li> <li>f) Minimum light level limits (e.g. lux) for each camera/lens/ monitor combination; any ancillary lighting (if needed).</li> <li>g) Where detectors provide inputs to the CCTV system: location of detector including height; purpose/function of input; detector range and coverage.</li> </ul>	1

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Clause	Code	Deviation	Points
		<p>h) The need for the customer to be aware of the requirements of to the Data Protection Act (except where it clearly does not apply), and the CCTV Code of Practice as published by the information Commissioner's Office.</p> <p>i) The requirement for the customer to provide signs under the Data Protection Act (except where the Act does not apply).</p> <p>j) The need for the customer to be aware of the requirements of British Standard Code of Practice BS 7958 for the management and operation of CCTV, and where the document can be obtained from.</p>	
<b>COMMISSIONING/HANDOVER DOCUMENTATION</b>			
<b>Commissioning</b>			
NCP 104/10: 9.2	A2	No commissioning checklist; checklist does not record all visual and functional tests.	1
<b>Handover</b>			
NCP 104/10: 9.3	A3	No evidence that all aspects of the operation of the system have been demonstrated, and compliance with agreed requirements confirmed; no Handover Checklist; no Acceptance Document signed by the customer; no System Log Book supplied.	1
Reg: 13	A4	Correct NSI Certificate not issued within one month.	1

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Clause	Code	Deviation	Points
Operating Instructions			
NCP 104/10: 9.4	A5	a) Documentation does not include necessary manufacturers’ literature; make and model number of all items; instructions for the use of the system including testing and maintenance; details of possible sources of interference both from and to system equipment.	1
		b) Documentation does not include details in respect of operation,storage and/or recycling of recording media.	1
SYSTEM OPERATIONAL CRITERIA			
NCP 104/10: 6	B1	If more than one operator controlling equipment simultaneously system design does not cater for more than one operator controlling the same camera; one operator to pass control to another operator.	1
NCP 104/10: 6	B2	a) Where remotely controlled cameras can return automatically to a pre-programmed view, no arrangements in place whereby an operator wishing to observe the same scene on another camera can switch rapidly between selected pictures.	1
		b) Where remotely controlled cameras can return automatically to a pre-programmed view and a method of overriding the automatic programme is used, no reminder given warning the operator to return to automatic mode.	1

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Clause	Code	Deviation	Points
<b>SYSTEM DESIGN CRITERIA</b>			
<b>Surveillance zone determination criteria</b>			
NCP 104/10: 7.1a	C1	Where intrusion detection is within the area of coverage of CCTV cameras, no consideration given to the number of monitors required in relation to the number of detections zones to be monitored by operators.	1
NCP 104/10: 7.1b	C2	Where intrusion detection is within the area of coverage of CCTV cameras, no consideration given to the number of monitors required in relation to the speed of display of information on monitors in order to capture relevant information.	1
NCP 104/10: 7.1c	C3	Where intrusion detection is within the area of coverage of CCTV cameras, no consideration given to the number of monitors required in relation to the means for recording images.	1
<b>Camera location criteria</b>			
NCP 104/10: 7.2	D1	Cameras not located in serviceable positions and/or free from obstructions.	1
NCP 104/10: 7.2	D2	Cameras not located in positions that are free from bright lights in field of view or lights shining directly on lens.	1
NCP 104/10: 7.2	D3	Combined effective fields of views of cameras in a perimeter CCTV system do not cover entire detection zones of any associated intruder detection system.	1
<b>Camera and lens selection criteria</b>			
NCP 104/10: 7.3	E1	Cameras and lenses do not cover the area to be viewed taking into account the purpose of surveillance of any person or object.	2

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Clause	Code	Deviation	Points
		Note recommended target sizes: a) For <b>identification</b> of the object, target is less than 120 % of screen height. b) For <b>recognition</b> of the object, target is less than 50 % of screen height. c) For <b>detection</b> of the object, target is less than 10 % of screen height. d) For <b>crowd control</b> , target is less than 5 % of screen height.	
NCP 104/10: 7.4	E2	Types of camera selected are not suitable for the application.	2
NCP 104/10: 7.5	E3	Where lighting conditions dictate, no electronically or automatically controlled iris fitted to account for changing lighting conditions and to stabilise video signal.	2
<b>Ancillary equipment</b>			
NCP 104/10: 7.7	F1	Suitable housings affording appropriate protection have not been provided where expected environmental conditions could affect operational effectiveness.	2
NCP 104/10: 7.7 (BS EN 60529)	F2	Housings do not afford appropriate protection (IP rating) against penetration by solid objects/dust/water where required.	2
<b>Camera housings</b>			
NCP 104/10: 7.7.1	G1	Camera and supporting hardware not securely mounted.	1
NCP 104/10: 7.7.1	G2	Camera mounting bracket and fixings do not safely support weight and windage of camera and any associated hardware.	1
EN 50132-7/96: 7.7.1a	G3	Where relevant camera housing not resistant to vandalism.	1

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Clause	Code	Deviation	Points
EN 50132-7/96: 7.7.1d	G4	Camera housing provides inadequate access to camera and lens for maintenance purposes.	1
<b>Pan and tilt units</b>			
NCP 104/10: 7.7.3a	H1	Pan and tilt unit mechanisms do not take into account the maximum required pan and tilt rotations and any preset stops within these.	1
EN 50132-7/96: 7.7.2d	H2	Pan and tilt units: speed and range of movement requirements not met.	1
NCP 104/10: 7.7.2c	H3	Pan and tilt unit mechanisms do not adequately cater for platform loading and/or pan and tilt backlash.	1
NCP 104/10: 7.7.2	H4	Cameras do not pan and tilt as specified under prevailing environmental conditions.	1
EN 50132-7/96: 7.7.3g	H5	Pan and tilt units: clearance from adjacent objects is inadequate.	1
<b>Towers and brackets</b>			
NCP 104/10: 7.7.3	J1	Fixing positions do not allow for mechanical stability and/or future access and/or safe working.	1
NCP 104/10: 7.7.3	J2	Where towers can be lowered or pivoted or otherwise adjusted, inappropriate measures taken for safety and security of cables.	1
NCP 104/10: 7.7.3	J3	Towers and/or brackets, including fixings, inadequate taking into account environmental conditions (e.g. wind velocity, electrical interference, airborne particles, corrosion or contamination).	1
NCP 104/10: 7.7.3	J4	For line of sight transmissions insufficient account taken of method of alignment and rigidity of mounting (e.g. natural movement of building).	1
EN 50132-7/96: 7.7.3d	J5	Equipment mounted near overhead high voltage cables.	1

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Clause	Code	Deviation	Points
EN 50132-7/96: 7.7.3f	J6	Location of tower and/or bracket compromises site security.	2
<b>Evaluation of scene and illumination</b>			
EN 50132-7/96: 7.8	K1	Lighting not adequate to meet the intended purpose of surveillance as documented in the system design specification or system record.	2
EN 50132-7/96: 7.8i	K2	Lighting is positioned such that picture quality is impaired.	1
EN 50132-7/96: 7.8k	K3	Direction of illumination is such that it does not provide sufficient contrast for intruder detection	1
EN 50132-7/96: 7.8l	K4	If required for identification and/or recognition purposes, lighting is positioned such that there is not sufficient illumination to observe detailed features of the stated object.	1
<b>Selection of video transmission system</b>			
NCP 104/10: 7.9	L1	Transmission equipment used for exterior purposes does not meet the protection requirements of IP65.	2
NCP 104/10: 7.9	L2	Transmission methods do not have input/output impedances matching those of connected equipments.	1
NCP 104/10: 7.9	L3	Transmission is not effective over required distance because of signal losses due to cable and environmental effects.	1
NCP 104/10: 7.9.1a	L4	Cables not suitable for video transmission and/or environmental conditions.	1
EN 50132-7/96: 7.9.1a	L5	Coaxial cables not fitted with amplifying or equalising equipment where necessary for long runs.	1
NCP 104/10: 7.9.1b	L6	Twisted pair transmission lines have not been tested for satisfactory performance where use is made of existing cables.	1

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Clause	Code	Deviation	Points
NCP 104/10: 7.9.1c	L7	Microwave and radio frequency transmission systems do not meet Ofcom requirements and/or necessary licences not held.	1
EN 50132-7/96: 7.9.1d	L8	For infra-red and laser transmissions account not taken of objects (e.g. vegetation) that may interfere with transmission path.	1
EN 50132-7/96: 7.9.1d	L9	Infra-red and laser transmissions not designed to cater for range reduction due to adverse weather conditions such as rain, snow or fog.	1
EN 50132-7/96: 7.9.1d	L10	For infra-red and laser transmission systems necessary HSE precautions not taken.	1
EN 50132-7/96: 7.9.1e	L11	Fibre optic transmission system not designed with sufficient dynamic range to overcome likely losses and /or a minimum of 3 cable repairs.	1
NCP 104/10: 7.9.1f	L12	CCTV system connected to a telecommunications networks does not have relevant (e.g. BABT) approval.	1
<b>Monitors</b>			
NCP 104/10: 7.9.3	M1	Monitor resolution unacceptably limits system performance.	2
NCP 104/10: 7.9.3	M2	Monitor over-scanning exceeds 10%.	1
NCP 104/10: 7.9.3	M3	Consideration not given to environmental conditions under which monitor will operate especially with regard to manufacturer's recommendations.	1
<b>Control equipment</b>			
NCP 104/10: 7.9.4	N1	Control equipment not selected so that system meets the Operational Requirement.	2
NCP 104/10: 7.9.4	N2	Control equipment installed in environmental conditions outside manufacturer's specified tolerances.	1

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Clause	Code	Deviation	Points
NCP 104/10: 7.9.4	N3	Siting of control equipment does not allow for adequate ventilation, access, supervision and/or use.	1
<b>Control centre configuration</b>			
NCP 104/10: 7.10	P1	Multiple monitors mounted such that there is inadequate ventilation.	1
NCP 104/10: 7.10	P2	Multiple monitors mounted such that contrast, brightness and/or colour controls not readily accessible or such that there are no means to remove dust from monitor screen.	1
NCP 104/10: 7.10	P3	Change in level of brightness causes significant change in monitor picture size.	1
NCP 104/10: 7.10	P4	Highlights in monitor picture cause de-focussing.	1
NCP 104/10: 7.10	P5	Monitors positioned such that viewing conditions (e.g. reflections, highlights, excessive contrast) for scenes are not adequate.	1
EN 50132-7/96: 7.10.3	P6	Camera to Monitor ratio exceeds 10:1.	Note
EN 50132-7/96: 7.10.3	P7	Insufficient monitors to display max number of simultaneous alarms.	1
EN 50132-7/96: 7.10.6	P8	Video storage equipment and media not within a protected area and/or accessible to unauthorised persons.	2
<b>INSTALLATION</b>			
<b>Planning the installation / Power supplies</b>			
NCP 104/10: 8.1	Q1	Power supplies not capable of meeting the largest likely load.	1
NCP 104/10: 8.1	Q2	Power supplies not located within a secure area safe from tampering.	2
NCP 104/10: 8.1	Q3	Power supplies not provided with adequate ventilation.	1

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Clause	Code	Deviation	Points
NCP 104/10: 8.1	Q4	Voltage drop in cables causes operation of any connected devices to be impaired.	1
<b>Cable Installation</b>			
NCP 104/10: 8.2	R1	Signal cables and/or Extra Low Voltage cables run parallel with, or in same ducting/trunking as, mains cables without being suitably screened, insulated or segregated.	1
NCP 104/10: 8.2	R2	ELV cables enter equipment through same entry point as mains cables.	1
NCP 104/10: 8.2	R3	Interconnecting cables not correctly supported or fixed.	1
NCP 104/10: 8.2	R4	Interconnecting cables not mechanically protected where appropriate.	1
NCP 104/10: 8.2	R5	Interconnecting cables and cores not identified.	1
NCP 104/10: 8.2	R6	Interconnecting cables run underground not suitable for purpose.	1
NCP 104/10: 8.2	R7	Plastic or PVC components not suitable for the environment in which they are installed.	1
NCP 104/10: 8.2	R8	Cable runs not provided with adequate protection for the environment in which they are installed and/or operate.	1
NCP 104/10: 8.2	R9	Where joints or terminations occur in coaxial or fibre optic cables incorrect connectors and/or junction boxes used.	1
NCP 104/10: 8.2	R10	Cables not compatible with rate of data transfer, levels of electrical interference and/or voltage drop.	1
NCP 104/10: 8.4	R11	Cabling not clearly marked at distribution and control panels; cross-referencing chart not available.	1

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Clause	Code	Deviation	Points
<b>WARNING SIGNS / LABELS</b>			
<b>General</b>			
NCP 104/10: 8.1	S1	Equipment housings not clearly marked with operating or supplied voltages.	1
NCP 104/10: 7.9.1d	S2	For infra-red and laser transmission systems suitable labels warning of possible eye damage not fitted according to appropriate safety standards.	1
NCP 104/10: 7.7.2	S3	No notices prominently placed adjacent to PTZ cameras warning of sudden movement of camera positioning equipment.	1
	S4	Deleted	
<b>MAINTENANCE</b>			
EN 50132-7/96: 10	T1	No effective/agreed inspection and service routine identified. Inspection and service does not follow manufacturers' recommendations.	1
EN 50132-7/96: 10.1	T2	Insufficient spare parts are available to maintain the agreed level of service.	1
<b>Documentation following modification</b>			
EN 50132-7/96: 10.1	T3	Documentation not updated following modification.	1
EN 50132-7/96: 10.1	T4	No record of testing following modification of the system.	1

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