

CODE OF PRACTICE



Closed Circuit Television Surveillance Systems

FOREWORD

This Code of Practice defines the policies and procedures to be followed by members of the New Zealand Security Association involved in selling, installing and servicing Closed Circuit Television (CCTV) Surveillance Systems

The objective in preparing this document is to ensure that high professional standards are maintained, equipment performance is maximized, false alarms (via video motion detection) are minimised, legal responsibilities complied with and, consequently, enhancement of the industry's image and reputation.

The requirements of this Code are mandatory and compliance is a condition of membership of the New Zealand Security Association Inc.

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1 Glossary of Terms

Glossary Terms and Descriptions of Equipment			
Air Curtain	Curtain of air made to flow over and away from glass of housing so that dust, dirt and rain will not land on the glass.	Blower	A device to keep air moving inside a camera housing to distribute heat evenly. Also used in warm conditions to cool cameras.
Camera Control	May control functions of pan, tilt, zoom, focus, iris, washer, wiper, etc. as related to each camera.	CCTV Camera	A device for converting a visual picture into an electrical signal for transmission on wires or some other medium. Intensified - A camera which uses an image intensifier which amplifies the amount of light received from the scene. Silicon Target Tube - A camera using valve type technology now superseded by solid state devices. Solid State - A camera which uses CCD sensors. Vidicon Tube - A camera using valve type technology now superseded by solid state devices.
Closed Circuit Television	System for transferring pictorial information in the form of electrical signals from one place to another specific place (or places) where decoding takes place and the picture is again displayed on a cathode ray tube, or other scanning display. (Electrical signals in a Closed Circuit Television System are transferred on cables or fibre-optic circuits. Radio links, infra-red links or other radiated transmission systems can also be used.)	CCIR	The CCIR (Comite Consultatif International Radio Communications) set the standard for television format used in New Zealand which is based on 625 horizontal lines and 50 fields per second. This term applies to monochrome (black and white) systems.
Depth of Field	The area of the picture which is in sharp focus.	Detail	Ability to distinguish small objects, fine lines or writing
DVD	Digital Versatile Disk, similar in appearance to a CD but with a lot more capacity.	DVDRW	DVD Recordable disk, record many times.
DVDR	DVD Recordable Disk, record once only.	DVR	Digital Video Recorder. Any recorder that records in digital rather than analogue.

Glossary Terms and Descriptions of Equipment			
Environmental Housing	A camera housing inside which the environmental conditions are held within certain limits by weatherproofing, insulation, heaters and blowers, etc.	Field of View	The area which can be viewed on the screen of a monitor connected with a camera. (Determined by lens angle.)
Heater	A device to maintain a camera in dry operating condition and to eliminate misting of lenses or windows in a camera housing.	Illumination	Illumination is the amount of light on or reflected from an object or scene.
Incident Recording	This video recorder is normally not operating but commences to record on an alarm input. It continues to record for a preset time period after the reverting of the alarm contact to the normal condition.	Lens	This is an optical devise to focus the scene of interest onto the camera sensing element.
Monitor	Device which decodes the video signal and displays an image of the scene viewed by the camera, usually on a cathode ray tube at a remote point. It may display colour or monochrome pictures. A monitor is similar to a TV set but has no RF tuner so it cannot receive off air TV broadcasts.	Pan	To move a camera left or right.
Pan / Tilt Unit	Remote controlled or automatic device to move a camera left, right, up and down, around an axis.	Percentage of Cover	In most scenes, some parts of the area will not be seen on the monitor due to a combination of lens angle, obstruction, or the fact that a camera cannot “see” directly below its own mounting. To give a high percentage of cover more than one camera will normally be required in any single space.
Phase Alternation Line	This term refers only to colour systems and PAL is the colour system used in New Zealand.	Real Time	Indicates that the pictures being viewed will have the same fluid motion to the eye of the original subject. If recorded and played back the playback will take the same time as the original event.
Scanner (Pan Only)	Remote controlled, or automatic device to move a camera left and right.	Screen Splitter	Device for allowing the display of two or more pictures simultaneously on the same monitor.

Glossary Terms and Descriptions of Equipment			
Slow Scan	Picture information is transmitted more slowly than is necessary to obtain the same fluid motion of the received picture as was present in the original scene. Slow scan will provide either jerky movement or fully stationary pictures which may be gradually refreshed on screen, or instantaneously replaced by updates.	Sunshield	A cover for a camera housing designed to maintain a lower temperature inside the housing by casting a shadow on it, and also to minimise reflections of sunlight from the glass into the lens.
Tilt	To move a camera up or down.	Time Lapse Recorder	A video recorder which records one picture (frame or field) and then waits for a preset period before recording the next. Usually incorporates other features for security applications such as time/date display on picture, alarm input facility, security lock and audio recording. Time-lapse recorders are used to enable long recording times on a single tape or other form of storage media.
Vari-focal	Vari-focal lenses have an adjustable focal length (zoom) to frame the picture but require to be focused after each zoom adjustment. Vari-focal lenses are generally used on fixed cameras to adjust the field of view at time of installation.	Video	The electrical encoded signal containing picture information, synchronization pulses, and sometime a colour burst. (Also a slang term often used to refer to a video recorder.)
Video Intercom	Generally incorporates a camera and intercom, with call button for installation by a door or gate, and monitor screens with intercom handsets inside the premises, which have provision to operate a door opener or electric strike or lock. Often used in domestic applications, and for business premises, there are also types with multiple call buttons for apartment houses and blocks of flats.		

			Self-Audit	Auditor	Comments
2 General	2.1.1 Related Standards & Legislation's	<p>All CCTV Systems shall be carried out within all legal requirements of the law and any Authority having jurisdiction over the site of any part of the works. All relevant adapted NZ Standards or other internationally recognised standards applicable to the nature of these works shall also apply. The standards applicable include but are not limited to the following:-</p> <ul style="list-style-type: none"> • New Zealand Electricity Act 1992 • NZ Electrical Regulations 1997 and Associated Codes of Practice. • Electrical Wiring Regulations 1976 • New Zealand Building Act. • New Zealand Health & Safety in Employment Act 1992. • New Zealand Privacy Act 1993 • AS/NZS 4360: 2004 Risk Management. • NZ Radio Interference Regulations • AS/NZS 3000 Electrical Installations • AS/NZS 1768-1991 Lightning Protection • AS/NZS 6100-1998 Electromagnetic Compatibility. 			
	2.1.2 Manufacturers Specifications	<p>All CCTV security systems and associated equipment shall be installed within the limits of the manufacturers stated specification and conform to at minimum related New Zealand and Joint Standards as listed in 4.1.1.</p>			

			Self-Audit	Auditor	Comments
	2.1.3 Security of Information	All members shall recognize that information on security systems is confidential and should be protected. Details of closed circuit television security system shall not be divulged to anyone else unless that person has been authorized on a need to know basis. Those with a need to know may include the client’s insurers and the Police.			
	2.1.4 Staff Registration	All staff engaged in security work shall be licensed in accordance with the Private Investigators and Security Guards Act and shall carry such registration when on business and show it to clients when visiting them.			
	2.1.5 Staff Training	All staff (technicians and sales personnel) shall be adequately and properly trained, and competent, to do the work upon which they are engaged. The qualifications and training relevant to each position shall be a recognised NZQA qualification in the domain of Electronic Security or equal and equivalent through the process of ‘Recognition of Prior Learning/Experience’.			
	2.1.6 Courteous Behaviour	In the context of this code of practice, all staff visiting Client’s premises for whatever reason shall be courteous and respectful to the client and their employees/visitors. Each visiting staff member shall recognise that their performance and attitude will determine the Client’s image of his/her company and the security industry at large.			

			Self-Audit	Auditor	Comments
	2.2 CCTV Objectives	<p>The primary objective of deployment of CCTV equipment should be to:-</p> <ul style="list-style-type: none"> Ø Act as a deterrent against undesirable activities – criminal or otherwise. Ø Provide assurance, security and safety to people occupying the spaces covered. 			
	2.3 Limitations and Legal Requirements	<ul style="list-style-type: none"> (a) Covert application of CCTV systems is permissible for staff monitoring and surveillance. Its application should be limited to the time required to establish the cause of known or suspected criminal activity with monthly reviews up to a maximum deployment period of three months or as agreed with the client. (b) Staff should be informed of any CCTV use within their work areas. (Other than specific limited time covert operations) (c) Where video surveillance is installed for external security purposes, signs should be prominently displayed so that casual visitors/customers will know of the surveillance. (d) Audio recording of conversations is not permitted. (e) Record clearly the reason for the surveillance and ensure that it occurs at the relevant times or periods. 			

			Self-Audit	Auditor	Comments
		<p>(f) Determine in advance the period for which the recording will be kept and who will have access to it.</p> <p>(g) Only disclose the contents of the recording for the purpose of which it was obtained and erase as soon as possible, those parts of the recording, which are irrelevant to the investigation.</p> <p>(h) Where tapes or stored images are likely to be required for evidential use, then all current legal requirements should be taken into account. These include but are not limited to the following.</p> <ul style="list-style-type: none"> Ø Correct time and date; Ø Watermarking; Ø presentation of original/complete images; 			
3 Establishing the Clients Needs		<ul style="list-style-type: none"> Ø It is crucial to establish what the client expects and how the installation is to be used. The intended purpose, Client expectations and ongoing client obligations in terms of servicing, and operating costs, must be clearly identified and documented. Ø System limitations must also be explained to the Client 			

			Self-Audit	Auditor	Comments
	3.1 Nature of the Risk	<p>(a) The nature of the risk shall be the prime consideration in the design of the system. The risk from criminal attack should be established at an early stage to determine the correct layout of equipment and the degree of surveillance required. Protection of property, personal safety and vandalism each require to be considered in the perspective according to the level of risk involved. Refer AS/NZS 4360; 2004 Risk Management.</p> <p>(b) The client must initially state what areas should be observed; what should be recorded, how much detail should be visible and time of day/date information that should be available.</p> <p>(c) This specification must be available before any design commences, to enable correct choice of equipment to be made.</p>			
	3.2 Issues to be considered at each observed area	<p>(a) Detail to be observed. (This is affected by:- field of view, depth of field, distance from camera and percentage of coverage.)</p> <p>(b) Environmental conditions (natural light, artificial light, vegetation and weather.)</p>			

			Self-Audit	Auditor	Comments
		<ul style="list-style-type: none"> (c) Camera equipment; including Environmental Housings, Pan Tilt & Zoom, or Scanner, Lenses, and other site specific equipment. (d) Operational periods, and image placement of date & time references. (e) Alarm interfaces and associated recording action. (f) Equipment serviceability. (g) Power supplies 			
	<p>3.3 Issues to be considered at monitoring location</p>	<ul style="list-style-type: none"> (a) Staffed or un-staffed monitoring position. (b) Time schedules where different monitoring parameters are required. (c) Number of monitors and number of cameras per monitor. (d) Video imaging including; Screen Splitters, multiplexers, number of pictures to be displayed, and their relative positions on screen. (e) Camera Control systems including camera, lens, (manual or automatic), camera position washers and wipers, lighting, method of video and control transmission. 			

			Self-Audit	Auditor	Comments
		(f) Recording devices and media including; number of recorders, number of cameras per recorder and switching methods, recording duration per camera, requirements for audio, speed of recording, type of recorder (standard VCR, DVR, Time Lapse, or event recording.) (g) Alarm/Event driven interface to draw attention to an activity and/or record same, type of alarm detection method (intruder alarm system, video sensing). (h) Video reticulation systems (fibre optic cable, coaxial cable, twisted pair, microwave link, RF link or other technology). (i) Power supplies (j) Equipment serviceability (k) OSH compliance requirements			
4 SYSTEM SPECIFICATION, SURVEYING AND DESIGN	4.1 Schedule of Surveillance	When preparing a proposal for a CCTV security system the specifier shall draw up a Schedule of Surveillance sufficiently detailed to enable the client to fully understand the extent of surveillance which is being offered. This shall have due regard to the nature of the risk and any insurance cover by the client.			

			Self-Audit	Auditor	Comments
	4.2 Equipment positioning	<p>Ø Due consideration should be given to the possible interference of the field of view because area utilization has been altered (signage, vegetation, racking, partitions)</p> <p>Ø No CCTV camera should be deployed within toilet or change room facilities.</p>			
	4.3 Expansion of Premises	In designing the system due consideration should be given to accommodate future extensions to the clients business and/or premises in the short or medium forecasts.			
	4.4 Operational Routine	The normal routine of the client and their staff shall be considered to assist in bringing about good operational procedures between the staff and the system.			
5 EQUIPMENT SELECTION.		<p>(a) All equipment being proposed for installation must be suitable for the application for which it is intended.</p> <p>(b) Wherever equipment is likely to be exposed to adverse environments such as wet, damp, hot, dusty or corrosive conditions, then all practical steps must be taken to eliminate or minimize the impact by use of suitability selected equipment and installation methods.</p>			
Refer also to section 2.1.2					

			Self-Audit	Auditor	Comments
		<p>(c) Due consideration should be taken to counter the effects of sunlight, glare and low light conditions when choosing cameras, lenses and the siting of such equipment.</p> <p>(d) Where extreme low light conditions are encountered, use of additional lighting and/or infrared illuminators should be investigated. Colour rendering is an essential consideration.</p>			
6 SYSTEM INSTALLATION	6.1 Wiring Practice	<p>(a) Cable Installation and general wiring practice should be in accordance with relevant clauses of the Standards and Regulations as listed Section 4.1.1.</p> <p>(b) NZSA member companies are to ensure that responsible employees in their employ are familiar with the relevant requirements of the Electrical Wiring Regulations.</p> <p>(c) As far as practicable all power should be derived from a dedicated and secure circuit.</p> <p>(d) All video cable shall be selected to satisfy the transmission medium and to minimise video loss and interference. Installation and termination shall be in accordance with the manufacturer’s recommendations.</p> <p>(e) Where interference is detected, the installation shall include all necessary forms of isolation to effect isolation of the source</p>			

			Self Audit	Auditor	Comments
		<p>(f) Attention is also drawn to the Wiring Regulations covering the installation of cable and apparatus. Particular note should be taken of the requirements relating to the fixing and protection of cable.</p> <p>(g) The Electrical Code of Practice No 7 (NZECP 7), published by the Ministry of Commerce, provides other guidelines for installations powered by extra low voltage.</p>			
2 Testing and Commissioning	6.1 Test Equipment	To assist in defining the above specifications, three items of test equipment are necessary:- light level or lux meter, calibrated target and high quality portable CCTV monitor. The preferred target should be representative in dimensions of an average sized adult.			
	6.2 Commissioning tests	<p>(a) The primary outcome of commissioning tests shall be to satisfy the customer that they have been delivered a system which meets their expectations as agreed under Section 5.</p> <p>(b) For all cameras, tests should be conducted under a variety of lighting conditions ranging from darkness to bright sunlight (including direct sunshine where observed) to confirm overall acceptable performance.</p>			

			Self-Audit	Auditor	Comments
		<ul style="list-style-type: none"> (c) The above should also apply to internal cameras which face towards building perimeter windows. (d) The clarity of all video should be such as to readily identify the target object both for direct viewing and from any playback device. (e) Provide the client with a test tape/computer media/recording/photos of test pictures for future reference along with a complete set of 'As Built' documentation, product information and user instructions. (f) Provide the Client with all necessary training in the operation of the system and include telephone contact details for on-going support. 			
3 REQUIREMENTS FOR REGULAR MAINTENANCE	7.1 The System	<ul style="list-style-type: none"> (a) Make an inventory check of the system to ensure all components are present and in their correct location. Equipment serial number should be checked against the original record. (b) Check ventilation and security of all components. (c) Check the condition and security of cables and connections. Pay particular attention to connectors and ensure they are soundly fixed to the cable with no internal shorts or open circuit. 			

			Self-Audit	Auditor	Comments
		<p>(d) Note any environmental changes and the effect they have on the system.</p> <p>(e) For systems using time-lapse VCR's, make a comparison of the current recorded picture quality with the master tape recorded at the time of the system installation. (Master tape should be held on site in secure location, with the record tab removed.)</p>			
	7.2 Cameras	<p>(a) Reassess camera locations. Is the field of view still clear; is the camera vulnerable to interference?</p> <p>(b) Check for image burn and missing pixels on cameras and assess the expected service life until replacement will be required.</p> <p>(c) Make a visual inspection for any physical damage.</p> <p>(d) Check camera mountings for position, corrosion and rigidity.</p> <p>(e) Check lens focus, including back plane focus, aperture, scene illumination and optimum picture quality.</p> <p>(f) Clean all camera housings, windows, lenses, etc.</p>			

			Self-Audit	Auditor	Comments
		<p>(g) Ensure lenses and their connecting cables are correctly attached to the camera.</p> <p>(h) At the monitor, manually select each camera and note the clarity of the picture.</p> <p>(i) Check outdoor camera housings to ensure that:</p> <ul style="list-style-type: none"> Ø all cable entry points are adequately bushed, Ø there are no signs of condensation on the face plate of the housing, Ø the mounting is rigid, corrosion free and adequate to support the camera and housing, etc. without movement, Ø the front of the lens is as far as practicable 20-50mm from front of the housing, Ø the camera is operating within specified temperature range. Ø that all housing ventilation systems are operational and free from obstruction, Ø no insects have taken up residence. 			
	7.3 Controls	<p>(a) Check that all controls, manual and automatic, perform to manufacturer’s specifications.</p> <p>(b) Ensure that sequencing times meet the site’s needs, and that the process is clean and without picture roll.</p>			

			Self-Audit	Auditor	Comments
	7.4 Monitors	(a) Check for image quality on the monitors. Provide an assessment as to when replacement will be required. (b) Make a visual check for physical damage. (c) Check cabling and connectors. (d) Check operation of all controls and settings. (e) Clean monitor screen.			
	7.5 Recorder (VCR), DVD or DVR	(a) Remove dust from the equipment. (b) For VCR's Clean the video heads and the tape path. (Never use head cleaning tapes!). (c) Assess the head wear and estimate remaining life. (d) Assess video tapes for wear, and replace if necessary. (Oxide buildup, scratches, feathering, and lead track scaring are wear signs.) (e) Unserviceable tapes should be wiped fully or destroyed. (f) Correct the date/time settings on the VCR/DVD or DVR. (g) Check the clarity of recorded pictures on playback and frame freeze. Note that there is no distortion of the image. (h) Check that all equipment functions operate correctly. (STOP; PAUSE; SEARCH; FF; RW; etc).			

			Self-Audit	Auditor	Comments
	7.6 General	(a) Provide a general assessment of the system. (b) Check with those responsible for daily operation that they are sufficiently familiar with its operation. If there is any doubt arrange for training. (c) Provide a test tape or computer file of the systems current performance.			

Auditor Signature: _____

Date: _____

For the Company:

Name: _____ Signature: _____ Date: _____