APPROVED CODE OF PRACTICE FOR

ROLL OVER PROTECTIVE STRUCTURES ON TRACTORS IN AGRICULTURAL OPERATIONS

OCCUPATIONAL SAFETY & HEALTH SERVICE
TE RATONGA ORANGA

FEDERATED FARMERS
OF NEW ZEALAND (INC)

DEPARTMENT OF LABOUR
TE TARI MAHI

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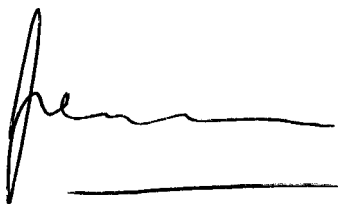
NOTICE OF ISSUE

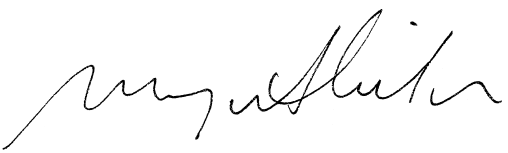
I have issued this *Approved Code of Practice for Roll Over Protective Structures on Tractors in Agricultural Operations* being a statement of preferred work practices or arrangements for the purpose of ensuring the health and safety of persons to which this code applies and persons who may be affected by the activities covered by this code.



J. M. Chetwin
Secretary of Labour
February 2001

FOREWORD

I have approved this statement of preferred work practices, which is an *Approved Code of Practice for Roll Over Protective Structures on Tractors in Agricultural Operations*, under section 20 of the Health and Safety in Employment Act 1992. When a code is approved, a Court may have regard to it in relation to compliance with the relevant sections of the Health and Safety in Employment Act. This means that if an employer in an industry or using a process to which an approved code applies can show compliance with that code in all matters it covers, a Court may consider this to be compliance with the provisions of the Act to which the code relates.



Hon. Margaret Wilson
Minister of Labour
February 2001

ABOUT THIS CODE

This code of practice has been prepared jointly by the Occupational Safety and Health Service and Federated Farmers of New Zealand (under the Federated Farmers' FarmSafe New Zealand programme), in consultation with the Tractor and Machinery Association and other users of agricultural tractors in New Zealand. It provides best practice measures for employers and users to consider when managing tractor roll over hazards in a way that meets the requirements of the Health and Safety in Employment Act 1992.

Any problems with the practical application or interpretation of this code should be reported to:

The General Manager,
Occupational Safety and Health Service,
Head Office,
PO Box 3705,
Wellington.

REVIEW

This code of practice will be reviewed within three years of approval under the Health and Safety in Employment Act 1992, to ensure it is providing the appropriate guidance on protection for operators of agricultural tractors if the machine rolls over.

ACKNOWLEDGEMENTS

The following organisations and personnel were members of the steering committee involved in developing this code of practice. Their contribution is appreciated.

Roger Barton	Federated Farmers of NZ
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I: INTRODUCTION

Every year, deaths and serious harm accidents result from the overturning of agricultural tractors.

The Health and Safety in Employment Act 1992 (HSE Act) promotes responsibility for the self-management of safety and health issues in industry, and requires employers to take "all practicable steps" to eliminate, isolate or minimise work place hazards. The HSE Act also places similar obligations on persons with control of places of work, principals and the self-employed towards other people in their workplace and towards themselves.

This code has been prepared to assist employers and others by providing acceptable means of complying with their obligations under the HSE Act. It aims to provide guidance to employers and others as to what is meant by all practicable steps in terms of fitting a roll over protective structure to agricultural tractors.

1.1 OBJECTIVE

The objective of this code is to provide designers, manufacturers, suppliers, owners, employers and users of agricultural tractors with guidance, and technical means, to minimise the risks to the health and safety of employees and others working with agricultural tractors, from the hazard of tractor roll over, by:

- Reducing the likelihood of injury and death should a tractor roll over occur;
- Ensuring that the protective structures used on agricultural tractors are constructed to the appropriate

standard; and

- Giving guidance to farmers about meeting the requirements of the HSE Act.

1.2 DEFINITIONS

Agricultural Operation means an operation carried out in the course of agricultural work, pastoral work, or horticultural work of any kind.

Agricultural Tractor means a vehicle propelled by mechanical power, controlled by a driver, that is designed exclusively or principally for the purposes of traction and not for the carriage of passengers (other than the driver) (unless there is a purpose-built design facility for carrying a passenger) or of goods, and used in an agricultural operation.

Engineer/Design Engineer is an engineer registered under the Engineers Registration Act 1924 or the Engineering Associates Act 1961, or a member of the Institution of Professional Engineers New Zealand (IPENZ) in the classes of Member or Fellow.

Performance Standard means an internationally recognised standard describing the performance of a structure or material in a defined series of tests. Examples are ISO, OECD, SAE, AS, and NZS standards.

Roll Over Protective Structure (ROPS) means a structure meeting an accepted performance standard or design specification, designed to be attached to, or form part of, a machine for the purpose of reducing the possibility of an operator from being injured should the machine roll over.

The terms safety frame, safety cab, protective structure, roll over protective structure, and ROPS are synonymous.

Roll over protective structures include two-post frames, four-post frames and full cabs.

Seatbelt Systems covers belt, buckles and anchorages and any other components which transfer seatbelt loads to the machine.

Supplier includes any person who sells or hires any plant or protective structure, or offers any plant or protective structure for sale or hire.

1.3 TRACTOR ROLL OVER

As noted in the introduction, a major work hazard associated with agricultural tractors is the risk of tractor roll over. There are a number of management measures that could be considered in managing this hazard.

For example:

(a) improving machine stability;

(b) restricting the places where the machine is to be used;

(c) restricting the speed at which the machine is to be operated;

(d) restricting the use of the machine on the basis of the operator's competence;

(e) using a different machine;

(f) hand-working the task;

(g) protecting the driver in the event of a possible roll over.

In considering whether all practicable steps are taken in respect to the protection of persons required to operate agricultural tractors, it is important that employers fully consider:

- the hazards associated with any particular operation/ task;

- the environment in which the machine will be required to work;
- the nature and harm that could occur to an operator should a protective structure not be fitted;
- whether or not because of the age or design of the machine, it is impracticable to fit a suitable protective structure;
- other means of eliminating, isolating or minimising the hazard.

Roll overs of agricultural tractors can occur on any topography. Therefore it is recommended that, irrespective of the topography where the agricultural tractor is used, all tractors used in agricultural operations should have a roll over protective structure. (See Section 2: Requirements for the Fitting of Roll Over Protective Structures on Agricultural Tractors).

2: REQUIREMENT FOR THE FITTING OF ROLL OVER PROTECTIVE STRUCTURES ON AGRICULTURAL TRACTORS

All agriculture tractors, except those excluded below, should be fitted with a roll over protective structure that meets the relevant design and manufacturing standards.

Section 2 of this Code of Practice will apply to all tractors used in agricultural operations (both tracked and wheeled) that have been purchased new after 1 September 1970, **with the following exclusions**:

(a) for tractors purchased new on or before 31 August 2001, crawler tractors, and wheeled tractors weighing under 762 kg or more than 4000 kg;

(b) for tractors purchased new after 31 August 2001, tractors weighing under 700 kg;

(c) tractors used in the following operations:
- operations connected with any orchard, hop garden, blue berry garden or greenhouse;
- operations in any vineyard carried out beneath vines supported overhead;
- operations in or adjacent to any building or structure used in the keeping and care of poultry for pecuniary gain.

Where it is considered that it is not practicable to fit a roll over protective structure to an agricultural tractor due to the nature of the operation, application may be made to:

The General Manager,
Occupational Safety and Health Service
P O Box 3705,
Wellington

for a notice in writing excluding tractors used in such operations from the requirements of this code of practice.

Where a tractor which is excluded from the requirement under this code to fit a ROPS is transferred to an operation requiring a ROPS to be fitted, a responsibility exists to ensure the tractor has the appropriate roll over protective structure before the tractor is used in that operation. This would be a "practicable step" to ensure the risk of injury or death resulting from a tractor roll over is minimised.

Under Clause 67 of the Health and Safety in Employment Regulations (Duties of manufacturers and suppliers of plant) there is also a responsibility on the supplier to ensure that the tractor, if used for the purpose for which it was designed, is "manufactured so that the likelihood that the plant will be a cause or source of harm is minimised as far as practicable". This would include ensuring that a tractor being sold is fitted with a roll over protective structure of the appropriate standard unless the tractor is excluded under this code from the requirement to be fitted with a roll over protective structure.

3: DESIGN REQUIREMENTS OF ROLL OVER PROTECTIVE STRUCTURES

All roll over protective structures fitted to tractors used in agricultural operations must comply with section 3 of this code of practice.

Roll over protective structures on agricultural tractors can be manufactured to one of two grades, depending on the method of design and its validation.

The two grades should be used in a prioritised manner. Where practicable, a Grade One protective structure should be used. Where a Grade One protective structure is not available, a Grade Two structure may be used.

Cost alone is not an acceptable reason for using a lower graded structure.

GRADINGS OF ROLL OVER PROTECTIVE STRUCTURES FOR AGRICULTURAL TRACTORS

Grade 1

A roll over protective structure that complies in all respects with an approved performance standard or code, including all frames approved under the provisions of the (repealed) Machinery Act 1950.

Grade 2

A roll over protective structure manufactured in New Zealand and certified by a suitably experienced professional engineer registered under the Engineers Registration Act. Type certification of a unique design for fitting to a number of identical machines is permitted.

For certification, a roll over protective structure must be the best practicable means of providing an appropriate level of protection for an operator. Full details of all design assumptions, computational models, calculations, and results, together with specifications, manufacturing and quality control procedures where applicable, are to be retained by the certifying engineer and made available for review if required.

4: PERFORMANCE STANDARDS

Roll over protective structures on agricultural tractors shall be designed and constructed to the appropriate performance standard.

Acceptable performance standards at the time of approval of this code of practice are shown in Appendix A.

The Occupational Safety and Health Service, Department of Labour, is responsible for evaluating additional standards, and maintaining a register of acceptable standards.

5: ASSESSMENT OF EXISTING ROLL OVER PROTECTIVE STRUCTURES ON AGRICULTURAL TRACTORS

Where a machine is already fitted with a roll over protective structure and concern exists as to its suitability as an acceptable protective structure under this code, the services of a suitably qualified engineer/designer should be engaged to assess the protective structure. A structure meeting the requirements of section 3 of this code shall display an identification plate as required in section 6.

Any structure that has identification that it has been previously tested to the performance standards in Appendix A or more stringent criteria, and has been well maintained, will meet the requirements of this code of practice.

6: IDENTIFICATION OF ROLL OVER PROTECTIVE STRUCTURES

In order to allow for identification of the type of protective structure being provided, a permanent-type label shall be displayed on all new tractors purchased after 31 August 2001, or for any existing tractor with a new frame after 31 August 2001.

It shall be permanently attached in a prominent location where it can be easily read and where damage by weather or abrasion is minimised.

The label shall contain the following information:

(a) the name and address of the structure's manufacturer;

(b) the structure's type and serial number, if any;

(c) the make and model of the plant that the structure is designed to fit;

(d) the number of the approved standard or code which the ROPS meets, its approval number under that code if applicable (e.g. OECD), and the name of the testing station; or, if the ROPS has been manufactured in New Zealand and certified by an authorised person, the name and address of the person who has provided certification;

(e) other such information as deemed appropriate (for example, installation date).

When any repairs or modifications are carried out, there should be an additional label put on the frame stating what

repairs or modifications were carried out, when, who carried them out, and who approved them.

7: DAMAGE TO ROLL OVER PROTECTIVE STRUCTURES

Where a protective frame has been damaged to the extent that the effectiveness of the structure and/or the mounting system has been impaired, which could include rust and wear and tear, then the owner of the machine to which the structure is fitted shall not be deemed to be taking all practicable steps until the machine is repaired or replaced by a structure that complies with this code of practice.

Roll over protective structures are designed to absorb energy and deform permanently in the case of a roll over. Repair of a damaged ROPS is seldom possible; the effect of the damage on the strength of the steel or on the adequacy of the attachment systems cannot be predicted.

(a) Where visible damage has been sustained (e.g. there are cracks, tears, or bends in any member or weld, or if doors or windows no longer fit correctly) then the ROPS must be assessed by the original designer or another suitably qualified registered mechanical or structural engineer experienced in this class of work.

(b) Structural damage e.g. damage to structural members, mounting components, attachment points on the tractor, or associated welds or fasteners:

(i) If the damage is limited to slight bending of the structure which is considered by the inspecting engineer not to impair its ability to successfully meet the compliance conditions required of its

original design, then the structure can be returned to service. Non-structural components such as windows and doors may be modified to fit. A report justifying the decision must be supplied to the owner and its reference noted on the identification label.

(ii) If the damage exceeds that described in (i) above, it may be repaired by replacing the damaged components with components having the design specifications of the original manufacture. If this cannot be done, the structure must be replaced.

(iii) If damage to any structural component is detected, it may be repaired by replacing the damaged components in a manner and with parts supplied and approved by the manufacturer. If this cannot be done, the structure should be replaced. In no circumstances is a damaged structure to be straightened.

(c) Non-structural damage e.g. damage to removable panels, doors, windows and attachments, may be repaired.

(d) Any repairs carried out should be certified by the manufacturer or a suitably qualified registered engineer.

(e) Identification of Repairs. When any repairs are carried out, there should be a label put on the frame stating what repairs were carried out, when, who carried them out, and who approved them. It shall be permanently attached in a prominent location where it can be easily read, and where damage by weather or abrasion is minimised.

8: MODIFICATION OF ROLL OVER PROTECTIVE STRUCTURES

Modifications to any **structural component** of a roll over protective structure for an agricultural tractor are not permitted.

Modifications to any **non-structural component** of a roll over protective structure for an agricultural tractor may be undertaken if approved and certified by the original designer or a suitably qualified registered engineer experienced in this class of work.

Unauthorised modifications to roll over protective structures on agricultural tractors are not permitted.

Identification of Modifications: When any modifications are carried out, there should be a label put on the frame stating what modifications were carried out, when, who carried them out, and who approved them. It shall be permanently attached in a prominent location where it can be easily read, and where damage by weather or abrasion is minimised.

9: SEATBELTS

Seatbelts act to hold the operator within the protective structure in the case of a roll over, and could substantially reduce the chance of injury as a result of a roll over. It is recommended that seatbelts should be provided and worn by operators of agricultural tractors where practicable, when the tractor is fitted with a roll over protective structure, and where there is a risk of roll over.

Not withstanding the above recommendation, seatbelts should be fitted on all new agricultural tractors purchased after 31 August 2001.

Seatbelt systems should be fitted in accordance with AS 2664 or an equivalent standard that encompasses the same or more stringent criteria.

Seatbelts and anchorages must be maintained and kept in an effective condition at all times.

A seatbelt warning sign should be prominently displayed in every protective structure, warning that if a roll over or other such hazard exists, then the operator should wear the seatbelt or other such device.

10: OPERATOR TRAINING

All operators should be provided with information on the working procedures of any machine they are expected to operate and any hazards they are likely to encounter, and should be closely supervised until they prove they are competent to work on their own.

It is recommended that operators should obtain appropriate NZQA qualifications for the class of tractor they are expected to operate.

APPENDIX A: PERFORMANCE STANDARDS FOR ROLL OVER PROTECTIVE STRUCTURES AND SEATBELT ASSEMBLIES ON AGRICULTURAL TRACTORS

This code is based on the following performance standards. Roll over protective structures and seatbelt assemblies that comply with standards approved by the Occupational Safety and Health Service, Department of Labour, will be accepted.

AS 1636.1 Australian Standard: Wheeled tractors - Roll over protective structures - Criteria and tests

Part 1*: Conventional tractors*

Part 2: *Rear mounted for narrow track tractors*

Part 3: *Mid mounted for narrow track tractors*

AS 2664 *Earth moving machinery - Seatbelts and seat anchorages*

AS 2294 *Earth moving machinery - Protective structures*

ISO 3463 *Agricultural and forestry wheeled tractors - Protective structures - Dynamic test methods and acceptable conditions*

ISO 3471 *Earth moving machinery - Roll over protective structures - Laboratory tests and performance requirements*

ISO 5700 *Agricultural and forestry wheeled tractors - Protective structures -static test method and acceptance conditions*

NZS 5101 *Specifications for safety frames and safety cabs for attachment to agricultural wheeled tractors*

OECD Standard codes for the official testing of agricultural and forestry tractors – *Official testing of protective structure: Code 3; Code 4; Code 6; Code 7; Code 8*

SAE J1040 *Performance criteria for roll over protective structures for construction, earth-moving, forestry, and mining machines, (ROPS)*

SAE J1194 *Roll over protective structures (ROPS) for wheeled agricultural tractors*

SAE J2194 *Roll over protective structures (ROPS) for wheeled agricultural tractors (ISO compatible).*

APPENDIX B: SUMMARY OF THE HEALTH AND SAFETY IN EMPLOYMENT ACT 1992

OBJECT OF THE ACT

The principal object of the Health and Safety in Employment Act 1992 (HSE Act) is to prevent harm to employees at work. To do this, it imposes duties on employers, employees, principals and others, and promotes excellent health and safety management by employers. It also provides for the making of regulations and codes of practice.

REGULATIONS

Regulations are promulgated from time to time under the HSE Act. The HSE Regulations 1995 impose duties on employers, employees, designers, manufacturers, suppliers and others relating to health and safety. These regulations apply to places of work, plant, processes or substances and have been made to deal with particular problems that have arisen. They provide minimum acceptable standards.

APPROVED CODES OF PRACTICE

"Approved codes of practice" are provided for in the HSE Act. They are statements of preferred work practice or arrangements, and may include procedures which could be taken into account when deciding on the practicable steps to be taken. Compliance with codes of practice is not

mandatory. However, they may be used as evidence of good practice in court.

EMPLOYERS' DUTIES

Employers have the most duties to perform to ensure the health and safety of employees.

Employers have a general duty to take all practicable steps to ensure the safety of employees at work. In particular, they are required to take all practicable steps to:

- Provide and maintain a safe working environment;
- Provide and maintain facilities for the safety and health of employees at work;
- Ensure that machinery and equipment is safe for employees;
- Ensure that working arrangements are not hazardous to employees; and
- Provide procedures to deal with emergencies that may arise while employees are at work.

Taking "all practicable steps", in relation to achieving any result in any circumstances, means all steps to achieve the result that it is reasonably practicable to take in the circumstances, having regard to:

(a) The nature and severity of the harm that may be suffered if the result is not achieved; and

(b) The current state of knowledge about the likelihood that harm of that nature and severity will be suffered if the result is not achieved; and

(c) The current state of knowledge about harm of that nature; and

(d) The current state of knowledge about the means available to achieve the result, and about the likely

efficacy of each; and

(e) The availability and cost of each of those means;

to ensure safety.

HAZARD MANAGEMENT

Employers must identify and regularly review hazards in the place of work (existing, new and potential), to determine whether they are significant hazards and require further action. Employers are required to record details of harm or situations that could have caused harm in their place of work. Employers are also required to investigate incidents where serious harm occurs to determine if it was caused by or arose from a significant hazard.

"Significant hazard" means a hazard that is an actual or potential cause or source of:

- Serious harm; or
- Harm (being more than trivial) where the severity of effects on any person depend (entirely or among other things) on the extent or frequency of the person's exposure to the hazard; or
- Harm that does not usually occur, or usually is not easily detectable, until a significant time after exposure to the hazard.

Where the hazard is significant, the HSE Act sets out the steps employers must take:

- Where practicable, the hazard must be eliminated.
- If elimination is not practicable, the hazard must be isolated.
- If it is impracticable to eliminate or isolate the hazard completely, then the employers must minimise the hazard to employees.

Where a hazard cannot be eliminated or isolated, employers must in addition, where appropriate:

- Ensure that protective clothing and equipment is provided, accessible and used;
- Monitor employees' exposure to the hazard;
- Seek the consent of employees to monitor their health; and
- With informed consent, monitor employees' health.

INFORMATION FOR EMPLOYEES

Before employees begin work, they must be informed by their employer of:

- Hazards employees may be exposed to while at work;
- Hazards employees may create which could harm other people;
- How to minimise the likelihood of these hazards becoming a source of harm to themselves and others;
- The location of safety equipment; and
- Emergency procedures.

Employers are also required to inform employees of the results of any health and safety monitoring. In doing so, the privacy of individual employees must be protected.

EMPLOYERS TO INVOLVE EMPLOYEES IN THE DEVELOPMENT OF HEALTH AND SAFETY PROCEDURES

Employers need to ensure that all employees have the opportunity to be fully involved in the development of procedures for the purpose of identifying hazards, dealing with significant hazards, and dealing with or reacting to emergencies and imminent dangers.

TRAINING OF EMPLOYEES

Employers must ensure employees are either sufficiently experienced to do their work or are adequately supervised by an experienced person. In addition, employees must be adequately trained in the safe use of equipment in the work place, including protective clothing and any safety equipment.

SAFETY OF PEOPLE WHO ARE NOT EMPLOYEES

Employers are also responsible for the health and safety of people who not employees. Employers must take all practicable steps to ensure that employees do not harm any other person while they are at work, including members of the public or visitors to the place of work.

EMPLOYEES' AND SELF-EMPLOYED PERSONS' DUTIES

Employees and self-employed persons are responsible for their own safety and health while at work. They must also ensure that their actions do not harm anyone else. However, their responsibilities do not detract from the employer's or principal's responsibilities.

DEFINITION OF EMPLOYERS IN RESPECT TO THE HEALTH AND SAFETY IN EMPLOYMENT REGULATIONS 1995 (REGULATIONS 19 & 20)

For the purposes of the regulations, the definition of the term employer in the Health and Safety in Employment Act 1992 has been extended to include a person who controls a place of work. In respect to self-propelled mobile mechanical plant, this would include the owner of such machines.

PRINCIPALS AND CONTRACTORS

In regards to principals, the HSE Act requires every principal to take all practicable steps to ensure that no employer of a contractor or subcontractor; and if an individual, no contractor or subcontractor; is harmed while doing work that the contractor is engaged to undertake.

ACCIDENTS AND SERIOUS HARM (RECORDS AND NOTIFICATION)

The HSE Act requires employers to keep a register of all work-related accidents and serious harm. This includes every accident that harmed or might have harmed a person.

Employers are also required to investigate all accidents, harm and near-misses to determine whether they were caused by a significant hazard.

Employers are required to notify serious harm that occurs to employees while at work to the Secretary of Labour (in practice, the nearest OSH office), as soon as possible. In addition, the accident must also be reported in the prescribed form within seven days. (Forms are included in the Workplace Accident Register, available from OSH offices and selected stationers).

If a person suffers serious harm, the scene of the accident must not be disturbed unless to:

- Save or prevent suffering;
- Maintain public access for essential services, e.g. electricity, gas or telecommunications;
- Prevent serious damage or loss of property;

or unless permission has been given by an OSH inspector.

The OSH office will advise whether it wishes to investigate the accident and what action may be taken in the meantime.

APPENDIX C: DUTIES OF DESIGNERS, MANUFACTURERS AND SUPPLIERS

The duties of designers, manufacturers, and suppliers of plant or protective structures are as set out in Regulations 66 and 67 of the Health and Safety in Employment Regulations 1992, which are reproduced below (for further information, refer to the regulations themselves).

A. DUTIES OF DESIGNERS OF PLANT

(1) Every designer of plant shall take all practicable steps —

(a) To design any plant or structure in accordance with applicable ergonomic principles, including (without limitation) any such principles in relation to the placement of any power controls; and

(b) To design any plant in such a way that, if the plant is —

(i) Manufactured in accordance with the design; and

(ii) Used for the purpose for which it was designed; and

(iii) Installed, adjusted, used, cleaned, maintained, repaired, or dismantled in accordance with the designer's instructions, —

there is no likelihood that the plant or structure will be a cause or source of harm to any person, or the likelihood that the plant will be a cause or source of harm is minimised as far as practicable.

(2) Every designer of plant shall take all practicable steps

to ensure that every manufacturer of the plant receives comprehensive and comprehensible information, including, where relevant, detailed instructions about —

(a) The use for which the plant has been designed; and

(b) How to install, adjust, use, clean, maintain, repair, and dismantle the plant in accordance with the designer's instructions; and

(c) Any other matters about which the manufacturer needs information from the designer in order to be able to carry out the manufacturer's duties under regulation 67 of these regulations.

B. DUTIES OF MANUFACTURERS AND SUPPLIERS OF PLANT

(1) Every manufacturer and supplier of plant shall take all practicable steps to ensure that any plant manufactured by the manufacturer or supplied by the supplier is so designed that, if the plant is —

(a) Manufactured in accordance with the design; and

(b) Used, for the purpose for which it was designed; and

(c) Installed, adjusted, used, cleaned, maintained, repaired, and dismantled in accordance with the designer's instructions, —

there is no likelihood that the plant will be a cause or source of harm to any person, or the likelihood that the plant will be such a cause or source of harm is minimised as far as practicable.

(2) Every manufacturer and supplier of plant shall take all practicable steps to ensure that any plant manufactured by that manufacturer or supplied by that supplier is so manufactured and tested that, if the plant is —

(a) Used for the purpose for which it was designed and

(b) Installed, adjusted, used, cleaned, maintained, repaired, and dismantled in accordance with the designer's instructions, —

there is no likelihood that the plant will be a cause or source of harm to any person, or the likelihood that the plant will be such a cause or source of harm is minimised as far as practicable.

(3) Every manufacturer of plant shall take all practicable steps to ensure that every supplier of the plant receives comprehensive and comprehensible information, including, where relevant, detailed instructions, about —

(a) The use for which the plant has been designed; and

(b) How to install, adjust, use, clean, maintain, repair, and dismantle the plant in accordance with the designer's instructions; and

(c) Any other matters about which the supplier needs information from the manufacturer in order to be able to carry out any duty of the supplier under this regulation.

(4) Every supplier of plant shall take all practicable steps to ensure that every purchaser or hirer of the plant receives comprehensive and comprehensible information, including, where relevant, detailed instructions, about —

(a) The use for which the plant has been designed; and

(b) How to install, adjust, use, clean, maintain, repair, and dismantle the plant in accordance with the designer's instructions; and

(c) Any other matters about which the purchaser or hirer needs information from the supplier in order to be able to carry out any duty of the purchaser or hirer under this regulation.