

## Construction Skills Certification Scheme

### Candidate Pack for – Tracked Type Tractor/Dozer

Please read this document carefully. Further information and clarification may be obtained from the CSCS Operations Unit, phone 01 533 2500

#### Guidance Notes for Candidates

The following documents are also attached:

- Part 1 – Skills Self-Analysis
- Part 2 – Applicant Details
- Part 3 – Endorsement of Operating Competence
- Part 4 – Practical Test Criteria

#### Aim of Programme

The CSCS plant training and assessment programme enables trained construction plant operators to gain recognition for their achievements by the way of certification and provide an opportunity for participants to demonstrate their skills, knowledge and attitudes associated with plant operations, which provides suitable certification.

#### Candidate Profile

Candidates for this programme must:

- Have at least six months full time experience operating as a trainee Tractor Dozer operator in construction in accordance with the 5th Schedule – of the Safety, Health and Welfare at Work (Construction) Regulations 2013 – S.I. No. 291 of 2013. The six months experience must be within the last two years.
- Possess a valid 'Safe Pass' registration card
- Be at least 18 years of age

Note: The above items must be verified by the current or previous employer (Part 3 of this pack)

#### Application Requirements

- Approved Training organisations must send the Candidate Pack and Course Notes to the Candidate at least five days prior to the course date.
- Sections A, B, and C of Part 2 need to be completed by the applicant with Part 3 completed by the employer.
- Section C of part 2 must list at least six months full time experience operating as a trainee Tractor Dozer operator.
- Part 1 - Skills Self-analysis, Part 2 Applicant Details and Part 3 - Endorsement of Operating Competence must be completed and submitted to the chosen Approved Training Organisation at least one-day prior to attending the one-day training and assessment programme. Failure to do so will result in the candidate being unable to complete the programme.

**Candidates must bring with them on the day:- a passport sized photograph, their Safe Pass card plus safety helmet, safety boots, reflective 'hi-viz' jacket and gloves.**

# Construction Skills Certification Scheme

## Candidate Pack for – CSCS Tractor Dozer

### One Day Programme Content

#### Induction

Registration and induction will be undertaken at the start of the day. Candidates **must** present their Safe Pass card and photograph to the assessor. Parts 1, 2 and 3 must be already submitted.

#### Skills Validation Session

Candidates will undertake a minimum of a 3 hour Skills Validation Session with the course instructor. The Skills Validation Session cannot give skills and knowledge not held but allows trained operators to eliminate 'bad habits' gained on site.

Please note that the instructor has the right to refuse the candidate access to the test if they have demonstrated dangerous operating skills that contravene any part of the Safety, Health and Welfare Regulations.

#### Theory Test

On completion of the Skills Validation Session, candidates are allowed 45 minutes to undertake a multi-choice question paper. Questions will be based on the following:

- Legislation and regulations
- Employer and employee responsibilities
- Safe working practices
- Machine components and functions
- Correct operating techniques
- Pre-use checks and basic maintenance
- Types and characteristics of materials and loads
- Site safety
- Shut down and securing procedures

Subjects that the questions will be based on will be covered during the Skills Validation Session.

To be successful on the theory test, candidates must achieve a minimum of 70% of the total available marks. Candidates who achieve a minimum of 85% will be awarded a credit.

#### Practical Test

On the test the candidate will demonstrate tasks with the Tractor Dozer. The tasks to be undertaken, equipment required, and a sample grading sheet is contained in Part 4 of this pack – Practical Test criteria. Part 4 of this pack details the equipment and resources needed for the test and the tasks the candidate will be expected to carry out with a Tractor Dozer.

The grading sheet is divided into essential items and scored marks. Scored marks allow a limited number of minor errors to be made. To succeed, the candidate must achieve all essential items and not exceed the maximum score. Candidates who score no penalty marks as well as all the essential marks will be awarded a credit. The practical test has a maximum time of 1 hour and 15 minutes in which all tasks must be completed.

# Construction Skills Certification Scheme

## Candidate Pack for – CSCS Tractor Dozer

### Feedback and Certification

If a candidate meets the required standard, the approved training organisation will send the relevant assessment documentation to SOLAS for certification and registration. The CSCS card is printed and posted to the training provider for distribution. A QQI certificate will also be awarded as a result of a pass on the one-day programme.

Candidates who achieve a credit in the theory test **and** practical test will be awarded an overall credit.

Candidates who are referred will receive written feedback from the assessor and may be advised to undertake further training and/or site experience.

If a candidate is successful in the theory but not the practical part of the test, then they may reattempt just the practical part. If the candidate has not been successful in the theory test, then they may **not** attempt the practical test.

This concession may only occur if the candidate returns to the same approved trainer and training organisation within 9 months. If they choose to go to a different organisation, they will have to do both the practical and theory parts again.

For learners who do not reach the required standard, a period of 5 days must elapse before they can retake the test.

### Registration Card Duration

CSCS registration cards are valid for five years and can be renewed up to six months before the expiry date

### Cancellation of Certificates and Cards

Where it is discovered that the information provided by the Candidate was incorrect or the programme was not delivered in accordance with SOLAS specifications the Certification and registration card may be withdrawn and the relevant authorities notified.

# DATA PROTECTION NOTICE

## PARTICIPANT AND EMPLOYER DATA PROTECTION NOTICE

### 1. PERSONAL DATA COLLECTED AND OBTAINED

This Data Protection Notice ("**Notice**") sets out the basis on which SOLAS ("**SOLAS**", "**we**", "**our**" or "**us**") of Block 1, Castleforbes House, Castleforbes Road, Dublin 1 will use the personal details ("Personal Data") provided when completing the application form (the "**Form**") to be registered as a CSCS/QSCS cardholder. This Notice also details how SOLAS will process this Personal Data for the purpose of assessing the Form and, if successful, issuing a CSCS/QSCS card to you ("**Card**"). The Personal Data we obtain from you will be held by SOLAS as a controller. SOLAS will collect and process the Personal Data that you provide in the Form.

**IMPORTANT:** where you provide Personal Data about other individuals (e.g. your existing/previous employer or endorsers), you agree that you are responsible for ensuring that such individuals know their Personal Data will be used by SOLAS accordance with this Notice.

### 2. HOW AND WHY WE PROCESS YOUR PERSONAL DATA

This section details how ("**legal basis**") and why ("**purposes**") we process your Personal Data:

**Legal basis:** it is necessary to process your Personal Data to enter into and perform our contract with you including for the following purposes: (a) to process your Form; (b) to issue you with a Card; (c) to verify your Card on an ongoing basis; (d) to renew your Card where you ask us to do so; and (e) to respond to you when we receive any correspondence from you. **IMPORTANT:** If you do not provide us with your Personal Data so that we can process it for the above purposes, we will not be able to assess or process your Form, issue you with or renew your Card and/or communicate with you as necessary in relation to your Form and/or your Card.

**Legal basis:** it is also necessary to process your Personal Data for the purpose of complying with legal obligations to which we are subject including to fulfil our statutory functions.

### 3. DISCLOSURE OF YOUR PERSONAL DATA

We may disclose some or all of your Personal Data to the following parties: SOLAS business units, SOLAS agents or service providers including CSCS/QSCS trainers, your existing or potential employers, government and state authorities including in particular the Construction Industry Federation (CIF), Credit Card Systems Ireland Ltd and Quality and Qualifications Ireland. We may also disclose your Personal Data to third parties if we are under a legal duty to disclose or share your Personal Data in order to comply with any legal or regulatory obligation or request or to perform a public function.

### 4. KEEPING YOUR PERSONAL DATA

We will keep your Personal Data for the period for which your Card is valid and/or renewed and for a period of 7.5 years from when your Card expires and/or is not renewed. In some cases, we will need to retain your Personal Data for longer periods for compliance with legal obligations imposed on us or where we are a party to legal proceedings with you, and to ensure you a continued client service. Such Personal Data will be securely retained in line with the SOLAS records retention and disposal Procedure.

### 5. YOUR RIGHTS

The following are your rights to address any concerns or queries regarding the processing of your Personal Data. You can exercise any of these rights by submitting a request to the Data Protection Officer, SOLAS, Block 1, Castleforbes House, Dublin 1. We will provide you with information on any action taken upon your request in relation to any of these rights without undue delay and at the latest within one month of receiving your request. We may extend this by up to 2 months if necessary, however we will inform you if this arises. You have the right to lodge a complaint with the Data Protection Commission with regards to our processing of your Personal Data.

- The Right to Access
- The Right to Rectification
- The Right to Erasure
- The Right to Restriction of Processing
- The Right to Object to Processing
- The Right to Withdraw Consent
- The Right to Data Portability
- The Right to Object Automated Decision Making

## **6. CHANGES TO THIS NOTICE**

We may amend this Notice from time to time, in whole or part, at our sole discretion. Any changes to this notice will be posted on the SOLAS CSCS/QSCS website at <http://www.solas.ie/Pages/CSCS.aspx>

If at any time we decide to use your Personal Data in a manner significantly different from that stated in this Notice, or otherwise disclosed to you at the time it was collected, we will notify you by e-mail, and you will have a choice as to whether or not we use your information in the new manner.

## **7. CONTACT US**

If you have questions or concerns about this Notice, please contact the SOLAS Data Protection Officer at SOLAS Data Protection Officer, SOLAS, Castleforbes House, Dublin 1

# Construction Skills Certification Scheme

## Part 1 - Skills Self-Analysis CSCS Tractor Dozer

### Introduction

The aim of this form is to allow applicants to measure their knowledge and experience on the safe use of Tractor Dozer against the questions below. This is to ensure that all those attending the One-day Trained Operator Programme have sufficient skills and knowledge to comfortably meet the required standards. This section **must** be completed and returned to the chosen Approved Training Organisation prior to attending the one-day training and assessment programme.

### Instructions to the Applicant

Please take your time and answer all questions honestly, as dishonest answers mean that you may be un-successful on the course programme. On completion, add up the total number of questions you have scored as 'yes' and refer to the Assessment Grading which will analyse your knowledge and experience.

### Assessment Questions

Please answer **all** questions as indicated:

	Yes	No
1. can you identify and use all the controls correctly?	<input type="checkbox"/>	<input type="checkbox"/>
2. can you extract information from the operators handbook?	<input type="checkbox"/>	<input type="checkbox"/>
3. do you correctly carry out all pre-use and running checks?	<input type="checkbox"/>	<input type="checkbox"/>
4. can you correctly configure the dozer for site and travel?	<input type="checkbox"/>	<input type="checkbox"/>
5. have you travelled over differing types of terrain including rough, undulating ground?	<input type="checkbox"/>	<input type="checkbox"/>
6. can you travel up & down steep substantial slopes correctly?	<input type="checkbox"/>	<input type="checkbox"/>
7. are you able to manoeuvre a dozer in confined and restricted area?	<input type="checkbox"/>	<input type="checkbox"/>
8. can you explain what 'contra-rotating'?	<input type="checkbox"/>	<input type="checkbox"/>
9. do you know what the purpose of 'feathering out'?	<input type="checkbox"/>	<input type="checkbox"/>
10. can you recognise and interpret site markings and contract information?	<input type="checkbox"/>	<input type="checkbox"/>
11. do you know why soils must be segregated when excavating/stripping?	<input type="checkbox"/>	<input type="checkbox"/>
12. do you know the minimum distance spoil should be kept from a trench and why?	<input type="checkbox"/>	<input type="checkbox"/>
13. do you know what the recommended minimum distance is when working near power lines?	<input type="checkbox"/>	<input type="checkbox"/>
14. do you know what is meant by slot dozing?	<input type="checkbox"/>	<input type="checkbox"/>
15. can you excavate materials to site tolerances?	<input type="checkbox"/>	<input type="checkbox"/>
16. do you know what the functions of a 'PAT' blade are?	<input type="checkbox"/>	<input type="checkbox"/>
17. have you carried out side-casting?	<input type="checkbox"/>	<input type="checkbox"/>
18. do you know the correct procedure when placing or unloading the dozer onto or from a vehicle bed or trailer?	<input type="checkbox"/>	<input type="checkbox"/>
19. can you shut down and secure the excavator correctly after work?	<input type="checkbox"/>	<input type="checkbox"/>

Yes Total \_\_\_\_\_

Candidate Name: ..... Date: .....

# Construction Skills Certification Scheme

## Part 1 - Skills Self-Analysis CSCS Tractor Dozer

### Assessment Grading

#### If you have scored 15 – 19

You appear to have a good understanding of Tractor Dozer operations to comfortably participate on the trained operator course programme.

#### If you have scored 10 – 14

Your understanding of Tractor Dozer operations is limited and we advise that you acquire further knowledge before attending the trained operator course programme. Remedial training and further site experience is advised.

#### Less than 9

Your supposed understanding of Tractor Dozer operations is very limited and we strongly advise you not to attend the course until you have undertaken remedial or full training.

### Assessment Requirements

Should a candidate have any particular assessment requirements i.e. need a translator or reader/writer or any other form of special needs, the approved training organisation **must** be informed well in advance of attending the one day programme so that the appropriate help may be sourced.

Information regarding a candidate's particular requirements will be treated with the strictest confidence by the approved training organisation.

#### REMINDER

Candidates must bring with them on the day:

- |                            |                          |
|----------------------------|--------------------------|
| Passport sized photograph  | <input type="checkbox"/> |
| Safe Pass card             | <input type="checkbox"/> |
| Safety helmet              | <input type="checkbox"/> |
| Safety boots               | <input type="checkbox"/> |
| Reflective 'hi-viz' jacket | <input type="checkbox"/> |
| Gloves                     | <input type="checkbox"/> |

Further information and clarification may be obtained from the CSCS Unit Office or phone 01 5332500

# Construction Skills Certification Scheme

## Part 2 - Application Details CSCS Tractor Dozer

### Section A Applicant Details

Surname ..... Forenames.....

Address .....

.....

Tel: ..... Date of Birth: .....

PPS Number ..... Safe Pass Expiry Date: .....

### Candidate Profile

Candidates for this programme must:

- Have at least six months full time experience operating as a trainee Tractor Dozer operator in construction in accordance with the 5th Schedule – of the Safety, Health and Welfare at Work (Construction) Regulations 2013 – S.I. No. 291 of 2013. The six months experience must be within the last two years.
- Possess a valid 'Safe Pass' registration card
- Be at least 18 years of age

### Section B Applicant Declaration

I confirm that the information detailed in this application, and any submitted information is valid, genuine and correct.

- I have as least six months full time experience operating as a trainee Tractor Dozer operator in construction within the last two years
- I am at least 18 years of age
- I am in possession of a valid 'Safe Pass' registration card

Please sign

Date: .....



# Construction Skills Certification Scheme

## Part 3 - Endorsement of Operating Competence Tractor Dozer

**Applicant Name**.....

This endorsement of operating competence must be completed by an existing or previous employer. This part can only be completed by a supervisor or line manager of the employer.

The endorsing individual should only initial the statements where they can confirm that the applicant can carry out the work. Some endorsements may require the initials of more than one endorser.

Copies of this form may be made if there are more than two endorsers signing.

Each statement must be initialled by the endorser. The applicant can only be considered competent providing **all** statements are signed by one or more endorsers in the Endorser's details section.

I consider that the above named applicant is able to competently:	Initials
1. Check, inspect and maintain a tractor dozer for efficient and safe use under construction site conditions	
2. Safely operate and control a tractor dozer over varying terrain and inclines	
3. Strip, excavate and stockpile a variety of materials with a tractor dozer	
4. Backfill and reinstate an area according to specification with a tractor dozer	
5. Park, shut down, secure and leave the tractor dozer in a safe condition	
6. Follow given instructions and manufacturers requirements when working with the tractor dozer	

### Endorser's Details

Full Name: .....

Company name and address: .....

Position: ..... Contact Tel no: .....

Relationship to Applicant.....

*The named individual signing this section must be in a supervisory or managerial position, nominated by the employer organisation.*

### Declaration

We/I the employer confirm that:

- the applicant has as least six months full time experience operating as a trainee tractor dozer operator in construction within the last two years
- the applicant is in possession of a valid 'Safe Pass' registration card
- the information detailed in this application, and any submitted information is valid, genuine and correct.

**Signature** \_\_\_\_\_ **Date** \_\_\_\_\_

# Construction Skills Certification Scheme

## Part 4 - Practical Test Specifications Tractor Dozer

### Equipment and Resources

- Serviceable tracked dozer that meets current legislation, fitted with a straight blade having a tilt facility, with the operator's manual.
- An area of ground, which must include a level area clear of hazards for excavating to a depth of 1 metre, with sufficient space to cover the exercises as outlined in the exercise specification.
- Cones/materials etc. to create restrictions for travelling and manoeuvring.
- Appropriate marking, sighting and lining equipment to ensure excavation levels and centres.

### Tasks

The Candidate needs to:

1. Carry out full pre-start and running checks as required by the manufacturer.
2. Prepare the dozer for travel and travel to the excavating area. The route is to include passing through a restriction being of no more than the width of the dozer plus 800mm.
3. Excavate by dozing an area 2.5 x blade width to a depth of 500 mm +/- 30mm for a length of not less than 20 metres stockpiling the surplus at one end.
4. Batter both sides of the excavation 1 x blade width.
5. Doze and shape the face of the stockpiled material from item 3 to form a mound with a battered face to an angle of not less than 30 degrees, traversing vertically or horizontally, leaving a tracked finish.
6. On completion of item 5, backfill the excavation to level from the stockpile by slot-dozing the material back into the base.
7. Spread the side cast material to blend with the surrounding area.
8. Travel the dozer to a park position, shut down and secure.

### Time

- The candidate must complete all tasks within 2 hours

### Example of practical assessment marking sheet

		Yes	No
1.	Carry out pre-start and running checks (verbal questions correctly answered if engine hot)		
2.	Clear any restrictions and hazards encountered whilst travelling		
3.	Ensure the allocated area was clear of hazards prior to excavating		
4.	Regulate the depth of cut		
5.	Ensure the excavated slot conforms to the stated sizes and tolerances		
6.	Operate using short working cycles		
7.	Reinstate ground to the original contours		
8.	Correctly carry out shut down and securing procedures		
9.	Conform with legislation and manufacturer's instructions		
10.	Complete the test in the given time		

**SOLAS**

An tSeirbhís Oideachais Leanúnaigh agus Scileanna  
Further Education and Training Authority



# Construction Skills Certification Scheme

## Safe Operation of Earthmoving Plant



**Tractor/Dozer**

# **Construction Skills Certification Scheme**

## **Safe Operation of Earthmoving Plant**

### **Tractor/Dozer**

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ISBN

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Printed in 2013

# Receipt

I have received a copy of the CSCS Safe Operation of Earthmoving Plant – Tractor/Dozer notes and agree to read it carefully and comply with all the guidance and advice on safety and good working practices which it contains.

Signature	
Full Name	
Date	

Name of Company or Organisation	
Address	

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## Acknowledgements

Extracts from BS 7121: Part 1 are reproduced with the kind permission of the British Standards Institution. Complete copies can be obtained by post from B.S.I. Sales, 389 Chiswick High Road, London W4 4AL.

Extracts and illustration by kind permission of CITB-Construction Skills

## Introduction

This guide for the safe operation of Tractor/Dozers has been produced for plant operators. It sets out to provide guidance in an easy to read form, paying particular attention to the duties of the Tractor/Dozer operator. It covers a wide range of operating conditions and activities, and aims to promote safe working practices which comply with current legislation and the precautions to be taken if accidents are to be avoided.

Specific sections on the preparation and operation of Tractor/Dozers contain readily accessible information in a checklist format with a simple **Do's** and **Don'ts** message.

This guide complements manufacturers' instructions and recommendations with regard to:

- general safety legislation and safe operating procedures for Tractor/Dozers
- safe and efficient use of Tractor/Dozers
- basic operator maintenance.

Manufacturer's operating manuals must always be used for the relevant machine and referred to as and when required. The manufacturer of the machine has no direct control over the operation of the machine – *it is the responsibility of the operator to work safely at all times.*

This guide does not attempt to try to cover every aspect of working conditions when using Tractor/Dozers and does not cover every make and model of Tractor/Dozer available.

## 1. Safety, the law and you

This section provides guidance for employers, employees and the self-employed who use mobile plant equipment. Minimum legal requirements are outlined which relate to the safe use of mobile plant. Various Acts of the Oireachtas and statutory requirements, examples of which are listed below, provide the definitive legislation to be followed.

### Legislation

Legislation to be followed includes the Safety, Health and Welfare at Work Act 2005 (SHAWWA). Parts of the Act and other regulations connected with the operation of plant include:

- *General Duties of Employer*
- *General Duties of Employee and Persons in Control of Places of Work*
- Protective and Preventive Measures
- Safety Representatives and Safety Consultation
- The Health and Safety Authority
- Offences and Penalties

*All Health and Safety rules also apply to self-employed persons.*

### Regulations and Codes of Practice

Regulations made under an Act of the Oireachtas are mandatory

#### **Safety, Health and Welfare at Work (Construction) Regulations 2013 S.I No. 291 of 2013 include**

- Design and Management
- General Duties of Contractors and others
- General Safety Provisions
- Excavations, Shafts, Earthworks, Underground Works and Tunnels
- Cofferdams and Caissons
- Compressed Air
- Explosives
- General Health Hazards
- Construction Work on or Adjacent to Water
- Transport, Earthmoving and Materials-Handling Machinery and Locomotives
- Demolition
- Roads
- Construction Site Welfare Facilities
- SCHEDULE 4 - Safety Awareness Scheme
- SCHEDULE 5 - Construction Skills Certification Scheme
- SCHEDULE 6 - Procedure for Selection of Site Safety Representatives
- SCHEDULE 7 - List of Machinery

- **The Safety, Health and Welfare at Work (General Application) Regulations 2007 S.I. No. 299** include:
  - Workplace and Work Equipment
  - Use of Work Equipment
  - Personal Protective Equipment
  - Manual Handling of Loads
  - Display Screen Equipment
  - Electricity
  - Work at Height
  - Control of Noise at Work
  - Control of Vibration at Work
  - Safety Signs at Places of Work
  - First-aid
  - Explosive Atmosphere at Places of Work

The introduction of the above legislation, which protects people at work and those who may be affected by their actions, has helped to improve our working environment.

The legislation concerns employers, employees and the self-employed, and makes people responsible for their actions, as well as their omissions, including others affected by their actions.

Regulations made under an Act of the Oireachtas are mandatory and may be supplemented by an Approved Code of Practice (ACoP), which advises organisations and their staff on how to comply with the law.

If the advice of the ACoP is followed then generally you are meeting the requirements and complying with the law. If you, or your organisation, are prosecuted for breaking a health and safety law and it is proven you did not follow the advice in the ACoP, you must prove you have complied with the law in another way.

*Penalties can be imposed on persons who are found guilty of a Health and Safety Offence (on summary conviction), which may include:*

- a fine
- a term of imprisonment.

*Penalties may be imposed for:*

- disobeying a Prohibition notice
- unauthorised disclosure of information
- a breach of the conditions of a licence.

## Duties of personnel

It is in the interest of every employer and employee involved in the use of mobile plant and equipment to promote safety within their workplace.

## Legal duties of employers

*'Every employer shall ensure, so far as is reasonably practicable, the safety, health and welfare at work of his or her employees.'* \*

Employers have a duty to:

- provide a safe working environment that is without risk to health
- provide and maintain safe plant and equipment and ensure it has been designed, constructed, tested and examined to be safe
- carry out risk assessments and provide their employees with clear and appropriate information on any risks that exist in the workplace and how they intend to reduce those risks
- prepare a safety statement based on the risk assessment
- provide suitable protective clothing and equipment (PPE) to ensure the health and safety at work of their employees. *'Every employer shall ensure that any measure taken by him or her relating to safety, health and welfare at work do not involve financial cost to his or her employees'* \*
- provide employees with any necessary information, including legal requirements, adequate instruction, training and supervision *'in a form, and manner and, as appropriate, language that is reasonably likely to be understood by the employee concerned'* \*
- obtain the services of a competent person for Health and Safety purposes
- provide adequate welfare facilities

**\*Source:** *Safety, Health and Welfare at Work Act 2005*

## Legal duties of employees

In general terms, the law says that you must:

- be responsible and as safe and careful as possible in your work, so as not to put the health and safety of yourself or others at risk, including members of the public
- co-operate with and assist your employer or any other person, as far as necessary, to enable them to carry out their legal duties in health and safety
- not interfere with or misuse any safety devices or equipment
- not intentionally or recklessly interfere with anything provided in the interest of health, safety and welfare
- follow your employer's procedures and the manufacturer's instructions which apply to the care and safe operation of the machine you are responsible for
- inform your employer, without unreasonable delay, of any work situation that you are aware of which presents a risk to the health and safety of yourself and others
- report (without delay) any defects in plant and equipment which might endanger safety.

*All Health and Safety rules also apply to self-employed persons.*

## 2. Accident prevention and control

Accidents are unplanned, unwanted events which can injure or kill people. Industry also pays a price with loss of working hours, loss of production and damage to plant and equipment and extra costs.

Remember that **you**, as an operator of plant equipment, **are the key to safety**: good safety practices not only protect you but also protect others around you.

Accidents can be caused by unsafe working practices and attitudes of people in the workplace. By following a safety programme and adopting safe working practices, unsafe conditions can be avoided. This contributes to improving safety in the workplace.

Prevention can remove or reduce the likelihood of an accident by following some basic rules, for example:

### Do

- Protect yourself – wear all protective clothing and personal safety equipment issued to you or required by your working conditions
- Follow a safety programme – understand and follow safety procedures when working on site and using plant and work equipment
- Assess your ability to do the job – ensure you are fully aware of the job requirements and how they need to be carried out
- Stay alert – know where to get help. Know the first aid and emergency procedures
- Make yourself aware – study the manufacturer's operator's manual for using your plant and equipment. If the manual is not provided, ask your supervisor or the suppliers of the plant/equipment to supply one
- Report faulty/unsafe plant or equipment and any dangerous occurrences and incidents
- Travel the plant equipment safely so as not to affect its stability
- Be careful – human error is caused by carelessness, fatigue, preoccupation and lack of concentration. Ensure you watch out for others who are affected by your actions
- Ensure all personal injuries, no matter how slight, are reported and entered in the accident book (or equivalent)
- Take advantage of any training programme offered by your employer or contractor. You are never too old to learn new practices or techniques.

## **Don't**

- Use plant or work equipment that you have not been trained to use
- Overload any plant or work equipment either by lifting or loading
- Operate plant and work equipment unsafely or at unsafe speeds
- Throw or drop objects from plant or work equipment
- Attempt to carry out work on moving parts of plant or work equipment with the safety guards removed
- Indulge in horseplay on plant or work equipment
- Attempt to operate any type of plant or work equipment if you are under the influence of drugs, alcohol or any other substance which affects your health or judgement
- Ignore warning instructions or safety signs.

### **3. Safe use of Tractor/Dozers**

If you are an operator of a Tractor/Dozer you are legally required to be responsible for your own safety and that of others who are working nearby.

Common sense plays a major part in the safe operation and working of a Tractor/Dozer. All operators should be aware of dangers and hazards, which could injure them or other site workers nearby, or cause damage to the machine.

Operators of Tractor/Dozers are responsible at all times for the safety of their machine and its load.

Simple measures taken by yourself, your employer and by following some basic rules can reduce the possibility of risk. For example:

#### **Do**

- Comply fully with instructions given by site managers and supervisors
- Follow the manufacturer's instructions (operator manuals) for the specific Tractor/Dozer you are operating
- Take safety precautions when using your machine prior to, during and after work
- Operate within the machine's capabilities.

#### **Don't**

- Operate any machine unless you have received appropriate training and are authorised to do so
- Ignore hazards
- Misuse, tamper or interfere with your machine and any associated safety equipment provided to you
- Endanger your own health and safety, or that of anyone else, through being negligent.

#### **Before use**

- Always check that the Tractor/Dozer is serviceable and safe to use
- Carry out daily checks and maintenance
- Check working areas for hazards and obstacles, which could affect the operation of the Tractor/Dozer.

## During operation

### Do

- Look out for people working and hazards such as trenches, potholes and cables
- Face the machine and use the steps and handholds when getting on or off. Ensure you maintain three points of contact
- Wear the seat belt.
- Keep the dozer blades as close to the ground as possible when travelling forward
- Travel slowly with the blade as close to the ground as possible when moving across steep slopes
- Reduce engine speed when you manoeuvre your machine in confined areas and when driving a tracked dozer over the point of balance e.g. a ramp
- Keep a safe distance from other plant or vehicles
- Ensure all cab doors are closed or are locked in the open position
- Raise the blade when approaching the edge of an excavation – this will leave a ridge of material to act as a barrier for the Tractor/Dozer
- Raise any attachments enough to clear any unanticipated obstructions
- Decelerate and brake when you change direction
- Select the appropriate gear range that is necessary before you start travelling uphill or downhill
- Take extra care when you are working on slopes or banks to avoid tipping the machine
- Maintain a windrow of material on the low side of the machine when you are working horizontally on a slope
- Before leaving the machine unattended: drive clear of the working area; stop and apply brakes; disengage drive and controls; stop engine and remove ignition key
- Keep your boots as clean as possible in wet/muddy conditions. Brakes become less effective in these conditions. Wet/muddy boots can cause your feet to slip off the foot controls at vital moments.

### Don't

- Allow anyone to hitch a ride in the cab
- Allow anyone to ride on the dozer blade
- Change gears when you are travelling downhill
- Work or drive too close to banks or trenches where there is danger of collapse
- Indulge in games or horseplay
- Push material directly into a deep excavation: leave material at the edge and use the next load to push the first load over instead
- Run the engine in an enclosed area for long periods
- Leave the machine unattended with the engine running.

## **After use**

- Park on firm, level ground; apply parking brake; ensure drive and controls are disengaged
- Stop engine and shut down in accordance with the manufacturer's recommendations
- Clean out any material from the track assembly
- Top up the fuel tank.

## **Additional precautions to be followed for Tractor/Dozers**

### **Do**

- Communicate regularly with your work colleagues and others, and keep them informed of what you will be doing
- Ensure that if signals are to be used to communicate they are approved and understood by everybody involved (see appendix A for illustration)
- Ensure the area where you will be working has been checked for the presence of any buried live services before commencing any excavations
- Ensure you work within the minimum clearance required for working near or beneath overhead power cables. Check with site management and the local electricity supplier
- Use the Tractor/Dozer's tilt control when the machine is under load to aid steering and maintain full power against the load
- Take extra care when travelling up and down hillsides and on embankments. Ground conditions can change dramatically due to weather conditions
- Set the rear view mirrors to give you a close view behind the machine when you are correctly seated
- Use the services of a signaller/banks-person to assist you if visibility is restricted or there are obstructions in the vicinity
- Ensure that when you are installing/changing an hydraulically operated attachment your machine is correctly set up to suit the attachment
- Take into account that cold weather can affect ground conditions, causing the tracks of your machine to freeze solid to the ground. Take effective measures to counteract the possibility of this happening.

### **For straight dozing:**

- Maintain a level cut for the best performance
- Ensure the dozer blade is full when pushing the load to the landfill area
- Avoid excessive spinning of the track
- If turning your machine with a load is necessary, use the Tractor/Dozer's tilt cylinders instead of the steering control in order to steer the machine
- Ensure when performing levelling work you maintain a full blade for maximum efficiency.

**For slot dozing:**

- Ensure the depth of the slot is not deeper than the top corner of the Tractor/Dozer blade
- Ensure when you are digging parallel slots, the centre is removed from the rear
- Ensure you select the safest and most efficient operating and loading technique for slot dozing.

**For 'V' ditching:**

- Be cautious of underfoot conditions. Position the corner of the Tractor/Dozer blade in the centre of the ditch and cut to the desired depth.

**For backfilling:**

- Push the material at a 90° angle to enable you to fill a trench
- Take care so as not to twist on new backfill
- Ensure you backfill in layers to match existing ground conditions
- Take care when you are cutting material on the side so that the material does not fall on the machine.

**Don't**

- Undercut a slope – undercutting a slope will increase the slope
- Overload your machine – this can damage it and make it unstable
- Attempt to use attachments that are uncertified and unsuitable to use with your machine
- Rely on the spoken commands, sites can be noisy. Follow approved signals
- Attempt to tip/push materials into excavations where there is no edge protection (e.g. berm of material)
- Attempt level dozing through an entire slot – this is inefficient due to the longer distance the Tractor/Dozer has to push the load.

**Note:**

*As an operator of a Tractor/Dozer you should be aware that there are regulations concerning the use of lifting appliances used with your machine. Your machine and the attachment (e.g. winch) you use will require certification to carry out winching operations. The regulations are quite clear on what items require certification. You or your company may be requested by your client to produce this certification before you commence work or during work activities on site. You should always comply with this request. If you are unsure what to do in this situation consult your supervisor for further guidance (see Appendix B for statutory certification requirements).*

## 4. Operator servicing and maintenance duties

The Operator's contribution to maintenance of the machine is of prime importance.

It is essential that adequate time and facilities are provided to carry out maintenance of your machine. Supplies of materials and substances (oils, greases, coolants etc.) should always be to hand, with suitable provision for storing them.

All maintenance should be carried out in accordance with the manufacturer's recommendations and your company's procedures.

Whatever system of maintenance and servicing is used, all operators have the responsibility to ensure the machine is in a safe condition for work.

**Pre-use checks:** It is estimated that the recommended pre-use checks of many manufacturers would include the checking and adjustments of the following:

- fluids – engine oil, coolant, transmission, brake, hydraulic
- tracks and track running gear
- hydraulic pipe/hose condition, security leakages
- hydraulic rams condition, security, leakages
- lights, warning and safety appliances, such as reversing devices, horn protective guards
- ROPS/FOPS, seat and seat belts, driving position, mirrors
- controls, gauges, warning lights and other types of safety devices.

### Running checks

- Hot/Cold starting methods
- Function of steering/brakes/hydraulic/electrical and mechanical systems
- During cold weather and extremely hot conditions always be aware of the operating temperature of the machine.

### Maintenance and servicing schedules

Apart from daily pre-start checks, servicing schedules are usually based on machine running hours, therefore regular checks need to be kept on the machine's hour-meter reading.

Operators are likely to carry out only basic servicing on their machine in accordance with the manufacturer's recommendations and company procedures. In addition to pre-start and running checks, operators would usually be responsible for:

- cleaning air filter dust bowls
- draining water and sediment/fuel/water separators
- replenishing coolants, lubricants and fluids
- greasing all greasing pins and pivot points
- checking battery levels and condition of their terminals and cables
- carrying out minor adjustments.

You should only carry out the servicing on your machine if you have been trained and have been authorised to do so.

**Do not** attempt any major maintenance, repairs or adjustments to your machine which you are not authorised to carry out. This must be done by a suitably qualified and competent person!

## **Do**

- Ensure the machine is on firm and level ground before attempting to carry out any operator maintenance
- Where practically possible, place signs on the machine to prevent accidental start up before carrying out your operator maintenance duties
- Carry out regular visual checks for any defects, damage, leaks
- Keep footplates and steps clean and free from mud, dirt, oil, ice and snow etc.
- Complete daily/weekly maintenance/defect sheets if your company issues them to you. All faults/defects should be reported immediately and corrected before the machine is used.

## **Don't**

- Attempt to carry out any operator maintenance on a machine with a hot engine
- Attempt to inspect or clean the machine with the engine running
- Attempt to refuel or top up lubricants and fluids while the engine is running
- Remove the hydraulic tank filler cap or cover plate while the engine is running, stop the engine and release the pressure
- Remove the radiator cap when the engine is hot
- Add coolant to a hot engine
- Overfill the engine oil or fuel tank.

## 5. Tractor/Dozer safety checklist

**S**afety starts with you. Remember! You, as a Tractor/Dozer operator are the key to safety. You are legally responsible for your own safety and that of others working nearby.

**A**ccidents are unplanned, unwanted events, which can injure or kill people. Simple measures taken by your employer and yourself can reduce the risk of them happening.

**F**ines can be imposed on your employer and yourself for breaching Health and Safety Regulations (in some instances it can also lead to imprisonment).

**E**nsure you wear all protective clothing and equipment and personal safety equipment (PPE) issued to you or required by your working conditions.

**O**nly operate a Tractor/Dozer that you have been trained to use and are familiar with.

**P**assengers should not be carried on your machine (even for the shortest of journeys).

**E**nlist the services of a signaller/banksperson to assist you if your vision is restricted or there are obstructions in the vicinity. Ensure you take extra care when tipping materials into excavations.

**R**eport all accidents (no matter how slight), faulty/damaged plant and equipment and any dangerous incidents. Stay alert, know where to get help, know the emergency procedures on site.

**A**lways drive your Tractor/Dozer with due consideration for others and adjust your speed to suit weather and site conditions.

**T**ravel your Tractor/Dozer safely, so as not to affect its stability. Take extra care when travelling on slopes or on hillsides.

**I**nspect your machine and working area at regular intervals before use to spot any defects, hazards or distractions. Take nothing for granted!

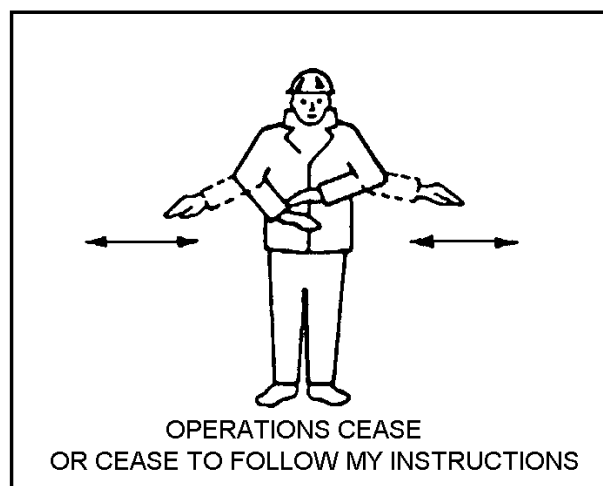
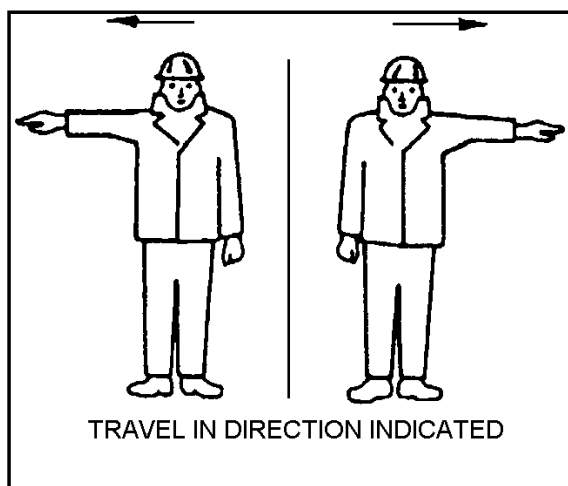
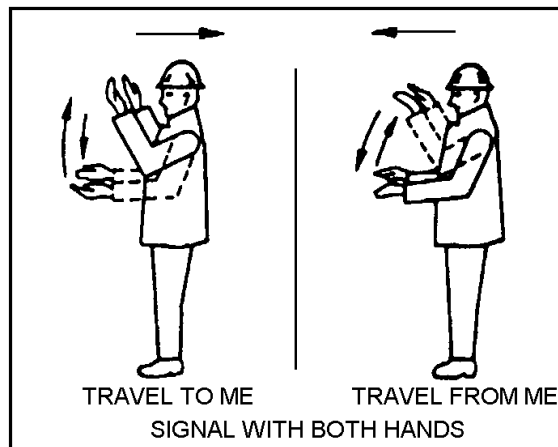
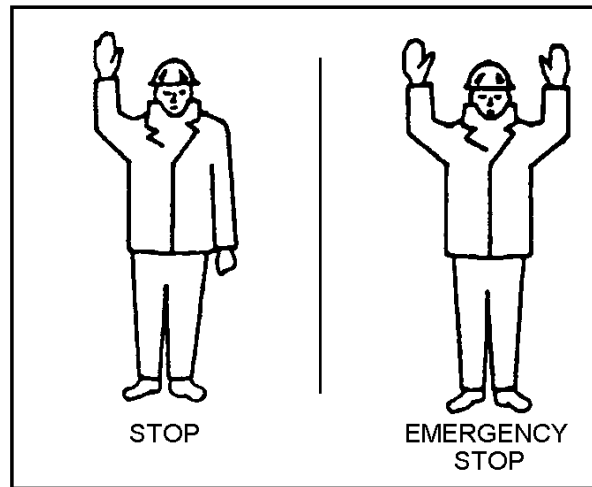
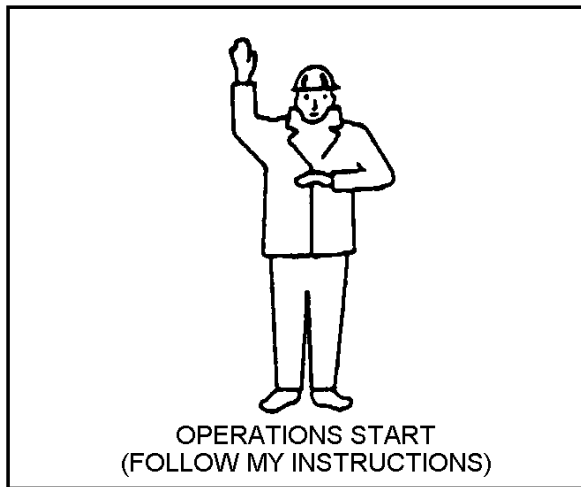
**O**bserve all warning/safety signs and traffic regulations on site.

**N**ever carry out a manoeuvre with your Tractor/Dozer if it is likely to endanger yourself and others (even if your work colleagues request it to try and cut corners on a job). If in any doubt seek guidance from your supervisor.

**S**hut down, secure and isolate your Tractor/Dozer in accordance with the manufacturer's recommendations and your company's procedures.

# APPENDIX A

## Recommended signals



### Note:

The signaller should stand in a secure position where he/she can see the load and can be seen clearly by the driver and should face the driver if possible. Each signal should be distinct and clear.

## Appendix B Statutory Certification Required for Contractors' Plant

- The Safety Health and Welfare at Work (General Applications) Regulations 2007 came into operation on 1<sup>st</sup> November 2007 and are quite clear on what items of plant require certification.
- Forms for recording Tests/Inspections are no longer prescribed. Any form can be used provided it contains the information specified in Part E of Schedule 1 of the Regulations

### Excavator or Loader used as a Crane

Regulation No	What is it	Who completes it	When is it required
55. [2] (a) [ii]	Certificate of Safe Working Load.	Competent Person.	Before machine is first used as a Crane or after substantial alteration /repair.
55. [2] (j)	Report of results of thorough examination.	Competent person	Every 12 months or after substantial alteration/repair.
43. [1] f)	Report of results of weekly inspection	User/Operator	Weekly
43. [2]	Report of the results of test and thorough examination	Competent person	After any substantial alteration or repair affecting its strength or stability.

#### Notes:

- An Excavator or Loader which is hydraulically-operated must be fitted with check valves on the cylinders used for lifting. (Except for machines with a maximum rated lift capacity of 1000kg or less.)
- Unless a machine is fitted with a Safe Load Indicator the Safe Working Load shall be the same for all radii at which the Jib or boom is operated and shall not be greater than the load which the machine is in its least stable configuration is designed to lift with that jib or boom.

### Lifting Accessories. (Chains, Ropes and lifting gear)

Regulation No	What is required	Who completes it	When is it required
57. [1] (a) (v)	Certificate of Test & Examination.	Manufacturer / Supplier.	When supplied and while Lifting Gear is in use.
57. [1] (a) (v)	Report of Results of thorough examination	Competent Person.	Every six months.
57. [1] (i)	Report of annealing or appropriate heat treatment.	Competent Person.	When Heat Treated and at intervals as specified by the Competent Person.

#### Notes:

- Lifting accessories include: chains, chain slings, rope slings (except a fibre rope sling), or similar gear, rings, links, hooks, plate clamps, shackles, swivels and spreader beams etc.
- A Certificate of Test and Examination is not required for a fibre rope or a fibre rope sling. Regulation 57 states "in the case of a fibre rope or a fibre rope sling, information from the manufacturer on its safe working load is available" and "it is marked in plain legible figures and letters with a Safe Working Load and a means of identification.