

CPCS renewal test factsheet



Introduction to the CPCS renewal test

The industry-led CPCS Management Committee has determined that key safety-related knowledge must be checked on each category prior to the renewal of a CPCS Competent Operator (blue) card. The CPCS renewal test is the means by which blue cardholders will be tested on topics that reflect safety issues identified through consultation, that occur regularly on site.

For each topic identified there is a set of questions, from which a number will be included in the test and for which supporting information is provided in this factsheet. Each test will ask a total of 15 questions selected randomly to ensure all topics are covered.

The test will cover all categories within the scheme through modules. Some modules have been devised to cover a range of similar CPCS categories.

The CPCS renewal test is available on the CITB-ConstructionSkills Testing Services platform alongside the Health, safety and environment test.

The questions and answers will not be published but factsheets are available for each module to cover the topics.

How to use this factsheet

Prior to taking the test, cardholders are advised to carefully study the factsheet, which will prepare them in deciding the correct answer or answers to each given question. Correct answers are based on legislation or good practice adopted, in the majority of cases, by the construction and allied sectors.

It is acknowledged that variations may occur depending on the nature of the operation or on how the machine is used. However the correct answer to each question is based on common practices or manufacturers' requirements for the majority of machine types within each module, and applies to this test irrespective of how a machine may be used within a particular activity or sector. It is important, therefore, that this factsheet is studied carefully.

The questions are selected randomly and will not appear in the order that topics appear in this factsheet.

If the card holder does not answer all the questions correctly, the score report issued after completing the test will indicate the topic areas in which the questions were answered incorrectly. The cardholder should, prior to retaking the test, re-study all topic areas.

Scoring the test

To be successful in this module, cardholders need to correctly answer a minimum of 12 out of the 15 questions presented. However, because many of the questions are safety-related, in the majority of cases, a minimum number of questions per topic need to be answered correctly. Failure to do so, even if the overall minimum number of correct answers has been reached, may mean that the cardholder is unsuccessful on the test.

The top of each topic states the number of questions that will be presented for each topic and the minimum number of questions that must be answered correctly in order to pass the test.

Concessions

To avoid duplication of questions where similar categories are held, booking concessions are provided. This means that, if several similar categories are held, only one module needs to be booked. The following chart indicates if there is a booking concession for this category.

Concessions are provided to holders of the category of Crawler – tractor/dozer.

Other categories held:

Tracked loading shovel

Needs only to book:

Crawler – tractor/dozer

Note: *The above concessions are an outline of what tests you may have to book; please refer to Module matcher for details of full concessions where more than one category is held.*

This factsheet has been designed to highlight only topics that have been identified through industry consultation area with safety issues or where good practice is often not complied with. The questions within the CPCS renewal test for this category also reflect this.

It is not intended as a training tool and cannot list all essential knowledge and understanding for this category. Operators must always follow manufacturers' requirements, industry good practice and be aware of their own limitations with the machine, and seek further guidance and help where needed.

Further information about the CPCS renewal test can be found at www.cskills.org/cpcs

Preparation and completing work *(Preparation)*

Topic scoring information: 1 correct answer required out of 3 questions presented to pass

- Tracked dozers undertake a variety of tasks associated with earthworks operations but are also used, in other sectors, for levelling and compacting, clearance or ground-breaking work, which naturally needs to be undertaken safely and efficiently. As with all plant, correct and proper checks and preparation are essential. Manufacturers provide guidance in the operator's manual or in other ways, such as in decals on the machine that show the regular checks that need to be carried out. These need to be complied with, otherwise the dozer could be unsafe to work. Failure to properly check the dozer before work could cause injuries because faults can affect the performance and safety of the machine.
- Any defects noted by a dozer operator, even if they consider them to be insignificant, must be reported immediately, otherwise the fault could get worse during the working day. The operator could incorrectly diagnose what they consider to be a minor fault, such a small leak from one of the drive motors, when in fact it could become severe and possibly cause a near miss or injury as the machine's performance may significantly deteriorate or a component may fail. Many dozers are equipped with a reversing alarm. This is an essential safety item and, before starting work, both its function and effectiveness should be checked, particularly the volume of the alarm. Incidents have occurred when the volume was insufficient to warn those in the path of a reversing dozer.
- Good visibility is naturally a key area for safe operations and regular cleaning of the cab glass should be undertaken before work starts. On some dozers, some of the cab glass is at difficult to reach areas, particularly the rear screen. Before attempting to clean any glass, the task needs to be planned as this can be considered working at height and to minimise a fall, access to hard to reach areas, such as using proper guardrail-equipped access steps should be considered. This also applies when checking the machine for work, as some checks may require the operator to climb onto parts of the machine, such as the rear ripper or blade, and again a slip or fall could occur.
- Dozers occasionally use equipment such as a towed roller. To avoid past issues where the roller has moved after becoming detached from the dozer following work, it should be parked on firm, level ground and chocked to prevent unplanned movement before the towing pin is removed. The roller manufacturer's recommendations should be followed accordingly. This also applies when a front blade is removed – the blade should be resting on the ground before the linkage pins are removed and chocked, again, to prevent any movement.
- As with any tracked machine, working in cold and wintry weather requires further consideration. At the end of the working day, the machine should be parked in a dry area and the tracks cleared of any mud. Frozen tracks can prevent the machine moving the following day.

Working safely and with others *(Working safely)*

Topic scoring information: 4 correct answers required out of 8 questions presented to pass

- To access the cab access of most dozers, the operator needs to climb up and onto a track then walk up the track to the cab door. Care must be taken by the operator as slips and trips, and resulting injury have occurred. Manufacturers are required to ensure that noise levels are below a set threshold to minimise operators having any long-term hearing issues but these noise levels only apply when the cab is sealed, that is, when the doors and windows are shut. As it is common practice for dozer operators to work with the cab doors or windows open, they should wear ear defenders if they choose to leave a door or window open.
- As dozers travel and work in areas where other vehicles and pedestrians are moving about, the planning of any travel routes needs to take into account pedestrian movement, and who needs to be segregated from the dozer's travel route to avoid any contact. Planning should also take into account changes in the type of ground being travelled and worked on, particularly in wet weather as firm ground can turn very quickly into soft ground.
- Dozers commonly and are capable of working on steep inclines and gradients. However, the limitations and maximum angle the dozer can work on, both sideways as well and up and down, must be checked in the

CRAWLER – TRACTOR/DOZER

operator's manual, or in other official sources. Where work may take place near to overhead power lines, guidance from the Health and Safety Executive recommends that a minimum distance of 9 metres is maintained from power lines mounted on wooden poles.

- Attachments such as rippers are used to break up ground with the tines penetrating below ground level. Before any below ground work can take place, a permit to work must have been issued following a check of the working area for underground services and hazards.
- Tracked dozers are sometimes used to extract stuck vehicles but which has resulted in injuries and deaths when not properly planned and co-ordinated. Before any stuck vehicle is recovered, a specific risk assessment and safe system of work must be devised so that all risks are taken into account, control methods are applied and the plans communicated to all those involved in the recovery operation. When the dozer is being reversed up to the stuck machine or vehicle, all personnel must be clear of the reversing path of the dozer, particularly when the towing chain or wire rope is being attached to each machine. When the stuck vehicle is being pulled, before any strain is taken by the dozer, the operator must ensure that all personnel are well clear of the potential chain or rope strike area in case of a failure.
- If a dozer is within a work area near to the edge of an embankment, a suitable barrier or earth bund should be provided that is sufficiently capable of preventing the machine from going over the edge. To prevent the dozer overturning when a load needs to be pushed over an edge, a wall of material should be formed and pushed over the edge, eliminating the need for the dozer to travel to the very edge of the trench or slope.

Reversing and visibility *(Travelling)*

Topic scoring information: 0 correct answers required out of 1 question presented to pass

- The reversing of vehicles is still a significant factor in accidents, injuries and fatalities in the workplace. Guidance recommends that the reversing of vehicles is, as the first course of action, eliminated. Where this is not reasonably practicable such as in the case of dozer operations, then other measures must be taken with the next step being the restriction of dozer operations to within a segregated, controlled area.
- Dozers, by the nature of their work, spend a high proportion of time reversing, sometimes within tight, confined areas where the movement of other plant and people can occur. Because of the design of a dozer, there can be limited vision from the operator's seat. Additional vision aids, such as mirrors and CCTV systems, can provide some assistance in providing all-round vision. However, each vision aid can have limitations and although CCTV systems are commonly used, can be ineffective in strong sunlight.
- Certain CCTV systems indicate the range of distance from an object, but this can be distorted if the correct vision mode is not selected. Some systems require settings to be changed to the reversing mode when reversing is to take place. Irrespective, operators must use all aids that are available at all times and not rely on a single system. Operators must also ensure before reversing after each pass that the path to be taken is clear of other vehicles, plant and personnel.

Working practices and attachments *(Working tasks)*

Topic scoring information: 1 correct answer required out of 3 questions presented to pass

- Dozers are, in many cases, high production machines and running costs form a major part of operating overheads. The operator can minimise the fuel used by working the machine efficiently without using maximum engine speed. In nearly all cases, manufacturers indicate in both the operator's manual and on the machine's rev counter the optimum engine speed or range that should be maintained to ensure efficient running of the engine, transmission and hydraulic systems. When the operator leaves the cab of the dozer, they must switch off the engine (unless there are specific operational reasons not to do so) which makes the machine safe, and prevents fuel from being wasted.
- Where a towed roller is being used, when approaching the end of the run, the operator needs to check that any umbilical cord between the dozer and roller will not be trapped when making a turn at the end of the pass.

CRAWLER – TRACTOR/DOZER

- For efficient working, it is normal when working on a diagonal side hill cut to angle and tilt the blade so that the leading edge is facing towards the hill, allowing the material to be cast downhill. The use of slot dozing can aid working efficiency during earthmoving operations by minimising material from being spilled over each side of the blade, so that more material to be pushed on each pass. Back blading, or dragging material when reversing, should be limited to light levelling or cleaning type operations as excessive use can cause wear on the non-wearing parts of the blade and/or frame.
- Winches are occasionally used on dozers. As with towing, the task should be properly planned before winching work begins, with reference made to the winch manufacturers' manual. The wire rope and winch, plus any accessories, need to be certificated and in date. The safe working load of the winch and rope must be established so that, when any load is winched, loads will not snag or be higher than expected, which may overload the rope and winch.