# Unit 108: Construction operations and civil engineering operations

# Worksheet 17: Drainage – testing (learner)

Testing should be carried out between manholes, inspection chambers or other suitable access points using the following steps.

**Task 1**

Put the sequence of operations in the correct order for carrying out the air test.

|  |  |
| --- | --- |
| Drainage activity | Number the sequence of activities |
| Connect a manometer to one of the plugs and a means of supplying air to another plug. |  |
| Adjust air pressure to 100mm or 50mm as appropriate. |  |
| Allow 5 minutes for stabilisation of air temperature. |  |
| Fit plugs into the ends of the pipeline and all associated branches. |  |

The test is deemed to be acceptable if, without further pumping, the head of water does not fall by more than 25mm in a period of 5 minutes for a 100mm water gauge or by more than 12mm for a 50mm water gauge.

**Task 2**

Procedure for carrying out the water test. Put the sequence of operations in the correct order.

Drains should be tested to a pressure of 1.5m head above the invert of the pipe at the high end of the pipe and not more than 4m head at the lower end. Testing should be carried out between manholes, inspection chambers or any other suitable access points and carried out using the following steps:

|  |  |
| --- | --- |
| Drainage activity | Number the sequence of activities |
| Also fit a stopper at the top end of the pipeline together with a standpipe or flexible tube leading from a container connected to the plug. |  |
| After 2 hours measure the loss of water by noting the quantity of water needed to maintain the test head in the apparatus over a 30-minute period. |  |
| Fill the pipeline with water, making sure there are no pockets of trapped air. |  |
| Fill the standpipe to a height of 1.5m above the pipe invert. |  |
| Fit stoppers at the lower end of the pipeline to seal off a section for testing. |  |
| Allow the pipeline to stand for 2 hours for absorption, topping up as required. |  |

The rate of water loss should not exceed 1 litre/hour per metre run, this is equivalent to 0.05 litres per metre run for a 100mm pipe if the test is satisfactory.