
EARTHING & LIGHTNING PROTECTION

Furse PT205

IEC/BS EN 62561-5 test report



1 Introduction

This report details the type testing of the Furse lightweight, heavy duty earth inspection pit (catalogue number PT205) for use as an earth inspection housing in an external Lightning Protection Systems (LPS).

The lightweight, heavy duty earth inspection pit was tested according to International Standard IEC 62561-5:2017.

NOTE: The UK implementation of International Standard IEC 62561-5:2017 is British Standard BS EN 62561-5:2017. The technical requirements of British Standard BS EN 62561-5:2017 are identical to those of the International Standard. Therefore, this test report is also considered valid for British Standard BS EN 62561-5:2017.

Three samples of the component were provided for analysis.

2 Abbreviations

CENELEC	-	European Committee for Electrotechnical Standardisation
LPS	-	Lightning Protection Systems
BS EN	-	British Standard European Norm

3 Test requirements and acceptance criteria

3.1 General

Tests shall be carried out with initially three (3) specimens according to IEC 62561-5:2017 *Clause 6.1*. After the completion of the relevant tests, if all three (3) specimens have been found to fulfil the standard acceptance criteria, it is assumed that the specific type of tested component is valid to be used in an LPS.

In the event that one (1) of the three (3) tested specimens does not satisfy a test criterion due an assembly or manufacturing fault, that test and any preceding one which may have influenced the results of the test shall be repeated and also the tests which follow shall be carried out in the required sequence on another full set of three (3) specimens, all of which shall comply with the requirements.

3.2 Required tests

The lightweight, heavy duty earth inspection pit was subjected to the following mechanical tests as detailed in IEC 62561-5:2017

- Test 6.2.2⁽¹⁾ - Load test
- Test 6.5⁽²⁾ - Marking test

NOTE 1: Formerly clause 5.2.2.

NOTE 2: Formerly clause 5.4.

These tests are referenced in detail in the present test report.

3.3 Preparation

The samples were prepared as follows:

- The inspection chamber body was cast into a concrete block.
- Marking of the specimens (lids), with the use of a marking tool, with the number of the specimen.
- The Furse lightweight, heavy duty earth inspection pit (catalogue number PT205) is rated to 5,000 kg and will be tested for compliance with 'heavy duty' in accordance with IEC 62561-5:2017

4 Performed tests

4.1 Load test (6.2.2)

4.1.1 Requirements

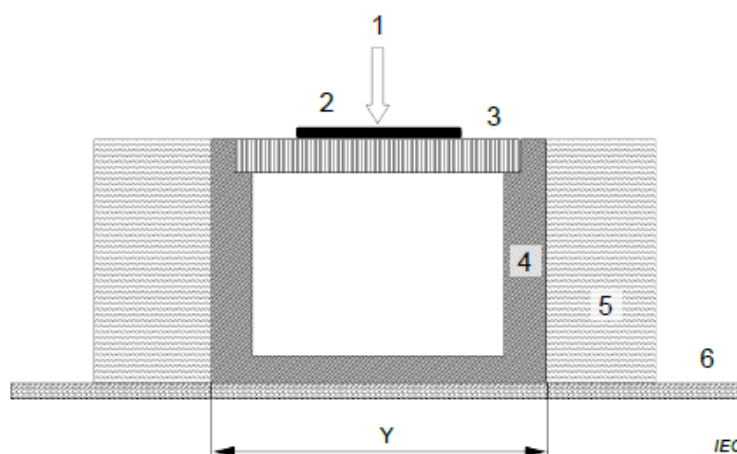
The specimens shall be tested after a curing period. In the case of concrete this shall be a minimum of 28 days and 7 days for all other materials.

The test is carried out on a complete assembly and prepared according to the manufacturer's instructions.

The housing of the specimen shall be cast in a concrete base following the manufacturer instructions.

The arrangement should be placed on a rigid support.

An example for an arrangement is shown in Figure 1.



Legend

1	Force	4	Housing
2	Circular steel plate	5	Surrounding material
3	Removable lid	6	Rigid support

Thickness of surrounding material (5) is equal to $0.5 \times Y$ up to $1 \times Y$.

Figure 1

Product Test Report
Furse PT205 to IEC 62561-5:2017

The product applicable for heavy duty usage i.e. vehicular traffic areas shall be subjected to a force of 30 kN vertically applied through a circular steel plate with a 170 mm \pm 0.5 mm diameter and a thickness of 20 mm \pm 1 mm with an edge radius of approximately 2 mm.

The centre of the circular plate should be positioned over the centre of the lid.

The force shall be gradually applied over 60 s \pm 10 s and maintained for 120 s \pm 5 s.

4.1.2 Acceptance criteria

After the test, the specimens shall show no signs of disintegration, nor shall there be any cracks visible to normal or corrected vision without additional magnification. One minute after the load has been removed, there shall be no permanent deformation exceeding 3 mm.

The product is deemed to have passed the tests if all specimens meet the above requirements.

4.1.3 Results obtained

Figures 2, 3 and 4 show the three specimens under load conditions as described in 4.1.1.

A plunger type dial indicator was used to record the deflection of each specimen at the full load condition. Table 1 shows the deflection of each specimen.

Specimen	Indicator reading – No load (mm)	Indicator reading – Full load (mm)	Deflection (mm)
A	1.75	9.16	2.59
B	0.00	8.55	1.45
C	0.00	8.60	1.40

Table 1

No specimen showed a deformation (during full load) greater than 3 mm and therefore no specimen showed a deformation following the removal of load greater than 3 mm.

On completion of the load testing the lid of each specimen was examined to look for any signs of disintegration, cracking or permanent deformation. No signs of disintegration, cracking or permanent deformation could be seen.

4.2 Marking test (6.5)

4.2.1 Requirements

The standard states 'Marking made by moulding, pressing or engraving is not subjected to this test'. Given that the markings on the top face of the inspection chamber lid are

produced by moulding, no testing is necessary.

5 Conclusions

The Furse lightweight, heavy duty earth inspection chamber (catalogue number PT205) has been subjected to and has successfully passed the criteria for heavy duty usage according to IEC 62561-5:2017.

6 Figures

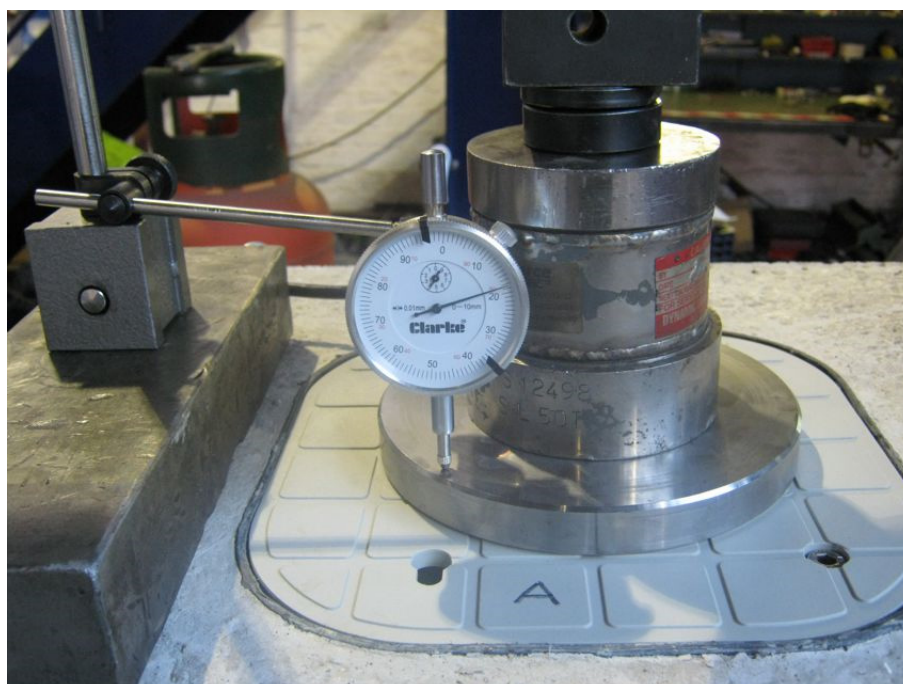


Figure 2

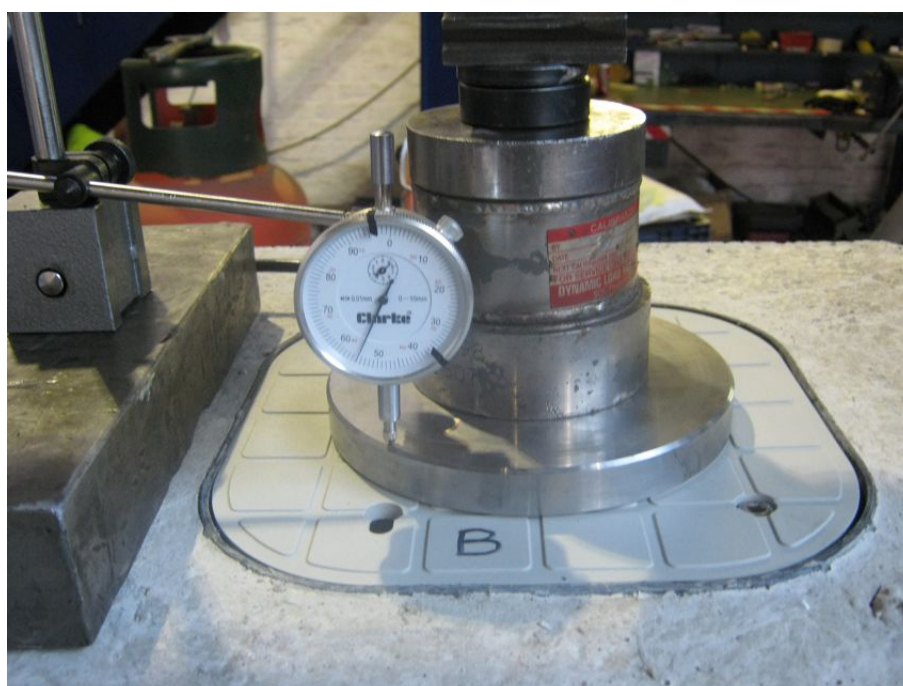


Figure 3

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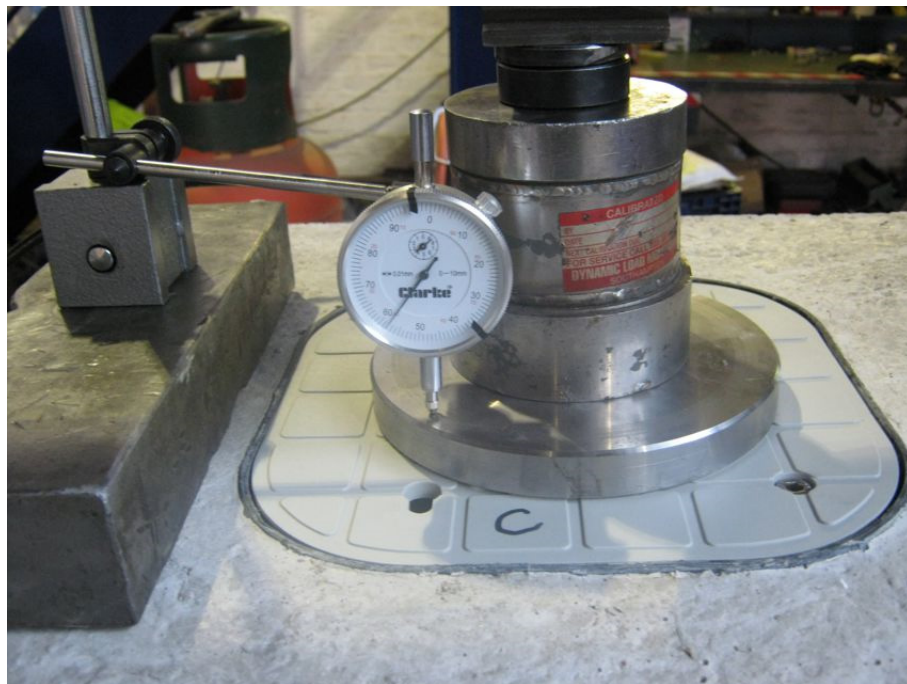


Figure 4

REVISION HISTORY

Rev.	Page	Change Description	Date / Initial
0	all	Initial release	2012-11-02 EPIP/ A. Merrill
1	All	Revised to reflect compliance with IEC 62561-5 Ed. 2.	2019-01-07 EPIP/ A. Merrill

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