

SERVICE DATA SHEET

Standard Penetration Trip Hammer Verification

Do you need your SPT automatic trip hammer (ATH) verified? As a result of our successful UKAS accreditation for the verification of automatic trip hammers, in accordance with BS EN ISO 22476-3: 2005, Annex B, we are ideally placed with the equipment and expertise to offer this service to the site investigation industry. The BS EN ISO standard states that, '*Energy losses occur e.g. due to friction at the hammer (velocity loss compared to the free fall). Therefore, the energy ratio E_r of the equipment used has to be known if the N -values are going to be used for the quantitative evaluation of foundations or for the comparison of results. A certificate of the E_r -value immediately below the driving head or anvil shall be available.*'

Our Chester-le-Street office has a two constructed 12m deep test and research boreholes where the calibration procedure is performed. There is no requirement for a cable percussion rig as a bespoke electrical test jig and frame is permanently in place for this specific purpose. In the simplest form of the procedure this avoids the requirement to bring along anything else other than the ATH which needs verification. Energy data is processed by computer and a certificate produced which verifies the E_r of the trip hammer mechanism. The service can also be undertaken on active sites where required at additional cost.

Verification Services

- ◆ Allied Exploration & Geotechnics Ltd (AEG) uses a system called SPTMAN[®] which is a rugged portable battery powered analyser which is able to accurately measure the energy transferred from the drive hammer to the drive rods using in-line accelerometer transducers. This is then used to calculate the energy coefficient by comparison with the theoretical potential energy of the impact system.
- ◆ The data is used on site to produce the verification certificate after readings from SPTMAN[®] are processed on a computer using specialist software.
- ◆ All of our in-house ATH units are regularly verified which includes the rods, hammer weight and associated mechanisms to ensure that the quality of the N -value derivation procedure is not compromised. This includes automated trip hammers attached to our rotary rigs or window sample mini-tracked rigs.
- ◆ Our drilling crews conduct simple checks on site prior to commencing an SPT test, and in addition to this, the N -value data is reported on a site certificate.

ALLIED EXPLORATION & GEOTECHNICS LIMITED

HEAD OFFICE

Unit 25, Stella Gill Industrial Estate
Pelton Fell, Chester-le-Street
County Durham, DH2 2RG.

Tel: 01913874700

Fax: 01913874710

Email: enquiries@alliedexploration.co.uk

REGIONAL OFFICE

Unit 20, Business Development Centre
Eanam Wharf, Blackburn
BB1 5BL.

Tel: 01772735300

Fax: 01772735999

Email: enquiries@alliedexploration.co.uk



No: OHS 599062



No: EMS 632523



No: FS 590911



No: 610



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Allied Exploration & Geotechnics
Unit 25 Stella Gill Industrial Estate
Pelton Fell
Chester-le-Street
County Durham
DH2 2RG

SPT Hammer

SPT Hammer
Test Date:
Report Date:
File Name:
Test Operat

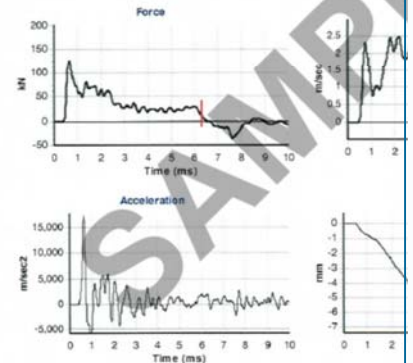
Instrumented Rod Data

Diameter d_r (mm): 67
Wall Thickness t_r (mm): 9.0
Assumed Modulus E_R (GPa): 208
Accelerometer No.1: 5665
Accelerometer No.2: 5666

SPT Hammer

Hammer Mass
Falling Height
SPT String Length

Comments



Calculations

Area of Rod A (mm²): 1640
Theoretical Energy E_{theor} (J): 473
Measured Energy E_{meas} (J): 311

Energy Ratio E_r (%): **66**

Signed: Key
Title: HS

Summary

Applying our expertise, bespoke test facilitates and forward investment in ground investigation best practice we can offer an ATH E_r verification service to the wider industry at minimal cost.

The Company is fully accredited by UKAS for; Site testing of SPT measurements in accordance with BS EN ISO 22476-3:2005 and, Site and Laboratory measurement of energy transfer of SPT hammers using the SPTMAN[®] instrument compatible with BS EN ISO 22476-3: 2005, Annex B.

We use the same system to verify all our in-house SPT hammer systems, including those built-in to our plant resources.

The service to the wider industry is cost effective, at only £100 per/ATH unit, and for an additional £0.55 p/mile can be undertaken on active sites where called upon.

Benefits

- An SPT ATH verification service that is cost effective, efficient and flexible to the Clients needs.
- The process uses a purpose built testing platform in order to promote consistency.
- Two set-up arrangements means that large rotary rig plant can be easily accommodated.
- Industry compliant certificate produced.