

Schedule of Accreditation

issued by

United Kingdom Accreditation Service

21 - 47 High Street, Feltham, Middlesex, TW13 4UN, UK

| | | |
|---|---|--|
|  <p style="margin: 0;">0518</p> <p style="margin: 0;">Accredited to ISO/IEC 17025:2005</p> | <h3 style="margin: 0;">Springfields Fuels Limited</h3> <p style="margin: 0;">Issue No: 017 Issue date: 08 October 2010</p> | |
| | <p>Chemical and Metallurgical Services Department Building A396 Springfields Salwick Preston PR4 0XJ</p> | <p>Contact: Mr R D Meadows Tel: +44 (0)1772 764550 Fax: +44 (0)1772 762075 E-Mail: bob.d.meadows@springfieldsfuels.com Website:</p> |

Calibration performed by the Organisation at the locations specified below

Locations covered by the organisation and their relevant activities

Laboratory locations:

| Location details | Activity | Location code | | | | |
|--|----------------------|----------------------|--|----------------|--|---|
| <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">Address</td> <td style="width: 50%;">Local contact</td> </tr> <tr> <td>Chemical and Metallurgical Services Department Building A396 Springfields Salwick Preston PR4 0XJ</td> <td>Mr R D Meadows</td> </tr> </table> | Address | Local contact | Chemical and Metallurgical Services Department Building A396 Springfields Salwick Preston PR4 0XJ | Mr R D Meadows | Dimensional: Length, Angle, Form, Measuring Instruments and Machines | A |
| Address | Local contact | | | | | |
| Chemical and Metallurgical Services Department Building A396 Springfields Salwick Preston PR4 0XJ | Mr R D Meadows | | | | | |

Site activities performed away from the locations listed above:

| Location details | Activity | Location code | | |
|---|-------------------------|----------------|-------------------|---|
| <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">Any Customer's Premises</td> <td style="width: 50%;">Mr R D Meadows</td> </tr> </table> | Any Customer's Premises | Mr R D Meadows | Dimensional: Form | B |
| Any Customer's Premises | Mr R D Meadows | | | |



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DETAIL OF ACCREDITATION

| Measured Quantity Instrument or Gauge | Range | Calibration and Measurement Capability (CMC) Expressed as an Expanded Uncertainty ($k=2$) | Remarks | Location Code |
|--|---------------------|--|--|------------------|
| RANGE IN MILLIMETRES AND UNCERTAINTY IN MICROMETRES UNLESS OTHERWISE STATED | | | | |
| LENGTH | | | NOTES | |
| Length Gauges, Flat and Spherical-ended (excluding length bars) | 0 to 1200 | 1.0 + (8.0 x length in m) | 1. All linear calibrations may be given in inch units. | A |
| Plain Plug Gauges (parallel) cylindrical setting standards and rollers | 1 to 50 diameter | 0.80 | 2. The uncertainty quoted is for the distance separating the two parallel plane lines which, just enclose the profile under consideration. | A |
| | 50 to 100 diameter | 1.0 | | |
| | 100 to 150 diameter | 1.5 | | |
| | 150 to 200 diameter | 2.0 | | |
| | 200 to 300 diameter | 3.0 | | |
| Plain plug gauges (taper) including check plugs | | | 3. Measuring instruments incorporating a digital scale may also be calibrated. | A |
| Parallel to 1 in 8 on diameter | 3 to 50 diameter | 4.0 | 4. Single start, symmetrical thread forms only. | A |
| | 50 to 100 diameter | 5.0 | | |
| | 100 to 200 diameter | 6.0 | | |
| 1 in 8 and up to 1 in 3 on diameter | 3 to 50 diameter | 6.0 | 5. Features and associated parts of these gauges can be measured to the uncertainties given for equivalent items listed in this schedule. | A |
| | 50 to 100 diameter | 7.0 | | |
| | 100 to 200 diameter | 8.0 | | |
| | | | | |
| Plain ring gauges (parallel) and setting standards | 2 to 10 diameter | 1.5 | | A |
| | 10 to 25 diameter | 0.80 | | |
| | 25 to 50 diameter | 1.0 | | |
| | 50 to 100 diameter | 1.5 | | |
| | 100 to 150 diameter | 2.0 | | |
| 150 to 250 diameter | | 3.0 | | |
| | | | | |
| Plain ring gauges (taper) | | | | |
| Parallel to 1 in 8 on diameter | 3 to 50 diameter | 4.0 | On diameter | A |
| | 50 to 100 diameter | 5.0 | | |
| | 100 to 200 diameter | 6.0 | | |
| 1 in 8 and to 1 in 3 on diameter | 3 to 50 diameter | 6.0 | | A |
| | 50 to 100 diameter | 7.0 | | |
| | 100 to 200 diameter | 8.0 | | |
| Plain gap gauges (parallel) | 2 to 50 diameter | 2.0 | | A |
| | 50 to 100 diameter | 5.0 | | |
| | 100 to 200 diameter | 8.0 | | |
| | 200 to 300 diameter | 12 | | |
| | 300 to 600 diameter | 15 | | |



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| RANGE IN MILLIMETRES AND UNCERTAINTY IN MICROMETRES UNLESS OTHERWISE STATED | | | | |
| LENGTH (cont'd) | | | | |
| Screw plug gauges (parallel) including check and setting plugs See Note 4 | 1 to 100 diameter | 3.0 | on pitch diameter | A |
| | 100 to 150 diameter | 4.0 | | |
| Screw ring gauges (parallel) See Note 4 | 6 to 100 diameter | 5.0 | | |
| | 100 to 150 diameter | 6.0 | | |
| Screw pitch | 0.2 to 8 | | | |
| Screw flank angle | 0° to 52° | | | |
| ANGLE | | | | |
| Squares Blade type | BS 939:2007 50 to 300 | 3.0 | | A |
| | 300 to 600 | 5.0 | | |
| Cylindrical | BS 939:2007 75 to 300 | 2.0 | On squareness See Note 2 | |
| | 300 to 600 | 4.0 | | |
| Block | BS 939:2007 50 to 300 | 3.0 | | |
| | 300 to 600 | 5.0 | | |
| Angle plates and box angle plates (See Note 2) | BS 5535:1978 50 to 600 | Squareness: 3.0 + (1.0 per 100 mm) Parallelism: 1.0 + (1.0 per 100 mm) | | A |
| Sine bars and tables | BS 3064:1978 0 to 500 | Linear dimensions: 1.0 + (10 x length in m) Overall performance: 3.0 seconds of arc | | A |
| Sine centres | 0 to 500 length or between centres | Linear dimensions: 1.0 + (10 x length in m) Overall performance: 5.0 seconds of arc | | A |
| Compound sine tables | With tables or equivalent 0 to 500 length | | | |



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| RANGE IN MILLIMETRES AND UNCERTAINTY IN MICROMETRES UNLESS OTHERWISE STATED | | | | |
| FORM | | | | |
| Surface plates Granite and Cast iron | BS 817:2008 160 x 100 to 1600 x 1000 | 1.5 + (0.80 x diagonal in m) See Note 2 | | A, B |
| Straightedges Cast iron, Steel and Granite | BS 5204:Part 1:1975 BS 5204:Part 2:1977 0 to 2000 | 1.0 + (2.0 x length in m) See Note 3 | | A |
| Balls (Steel, tungsten carbide and synthetic ruby) | 1 to 25 25 to 50 | 0.50 on diameter 1.0 | | A |
| MEASURING INSTRUMENTS AND MACHINES | | | | |
| Micrometers (see note 3) External | BS 870:2008 0 to 600 | Heads: 2.0 between any two points | | A |
| Internal | BS 959:2008 0 to 900 | Setting and extension rods 1.0 + (8.0 x length in m) | | |
| Depth | BS 6468:2008 0 to 300 | | | |
| Micrometer Heads | BS 1734:1951 0 to 100 | 1.0 | | A |
| Height Setting Micrometers (see note 3) | 0 to 300 | Heads: 1.5 between any two points Stepped column: 2.5 Overall performance: 3.0 | | A |
| Riser Blocks for Above Item | 150 300 600 | 2.5 3.0 5.0 | | A |
| Parallels | BS 906:Part 1:1992 5 to 50 x 100 x 400 | 1.5 to 5.0 | | A |
| Vee blocks | BS 3731:1987 20 to 150 | 3.0 to 5.0 | | A |
| Receiver, position and profile gauges, jigs, fixtures and reference artefacts (See note 5) | 0 to 600 x 600 x 300 | Minimum per co-ordinate 3.0 + (20 x length in m) | | A |



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| MEASURING INSTRUMENTS AND MACHINES (cont'd) | | | | |
| Vernier caliper (external, internal and depth) | BS 887:2008 0 to 1000 | Overall performance $10 + (30 \times \text{length in m})$ (See Note 3) | | A |
| Vernier height gauges | BS 1643:2008 0 to 1000 BS 6365:2008 0 to 600 | | | |
| Bevel protractors | As BS 1685:2008 0° to 360° | 6 0 minutes of arc | | A |
| Thread measuring vee pieces (prisms) | NPL Schedule MOY/SCM1/60 0 to 4.5 | 0.80 | | A |
| END | | | | |