

## FORCE METROLOGY LABORATORY

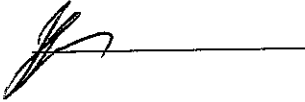

### Certificate of Calibration

No. 2332 AFS 612 - 1

This certificate is a correct record of measurements made. Copyright of this certificate is owned by the SABS. This certificate may not be reproduced other than in full, except with the prior written approval of the SABS.

NB: A statement likely to create the impression that the calibrated equipment has been otherwise approved by the SABS or that it complies with any of its specifications constitutes a punishable offence in terms of Section 21(1) of the Standards Act, 1993.

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Calibration of	: Universal testing machine
Manufacturer	: Schenk
Serial No	: PZV 1546
Max capacity	: 100 kN
Location	: On site at Pretoria
Calibrated for	: University of Pretoria HATFIELD 0028
Calibration procedure	: 801 - WI - 008
Traceability	: The calibration was performed using equipment which is traceable to national standards
Date of calibration	: 2007-06-27
Date of issue	: 2007-06-28
Calibrated by & Technical signatory	: J D Jacobs 
Manager: Metrology	: S Vowles 

#### STATEMENT

The South African National Accreditation System ( SANAS ) is a member of the International Laboratory Accreditation Cooperation ( ILAC ) Mutual Recognition Arrangement ( MRA ). This Arrangement allows for the mutual recognition of technical test and calibration data by the member accreditation bodies worldwide. For more information on the Arrangement please consult [www.ilac.org](http://www.ilac.org).

SANAS Accreditation Laboratory No. 801

1 Dr Lategan Road Groenkloof, Private Bag X191 Pretoria 0001, Tel: +27 (012) 428-7911,  
Fax: +27 (012) 344-1568.

This calibration was performed by SABS Commercial (Pty) Ltd.

NOTE: The values in this certificate are correct at the time of calibration. Subsequently the accuracy will depend on such factors as the care exercised in handling and use of the instrument and the frequency of use. Recalibration should be performed after a period which has been chosen to ensure that the instrument's accuracy remains within the desired limits.

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**EQUIPMENT USED** : load cell, s/n 107323  
: indicator, s/n 24027

**RESULTS**

**Compression**

Indicated load V	Converted load kN	True force kN				Average error on true load	
		Test 1	Test 2	Test 3	Average	kN	%
1,000	10	10,12	10,18	10,09	10,13	+0,13	+ 1,3
2,000	20	20,09	20,18	20,14	20,14	+0,14	+ 0,7
3,000	30	30,10	30,16	30,14	30,13	+0,13	+ 0,4
4,000	40	40,08	40,15	40,17	40,14	+0,14	+ 0,3
5,000	50	50,09	50,10	50,11	50,10	+0,10	+ 0,2
6,000	60	59,96	60,09	60,06	60,04	+0,04	< + 0,1
6,500	65	65,02	65,03	65,06	65,04	+0,04	< + 0,1

NB. : average error must be added to machine indicated force

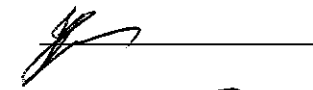
**UNCERTAINTY OF MEASUREMENT**

The reported uncertainty of measurement of  $\pm (0,2 \% + 1 \text{ digit})$  of full scale is based on a standard uncertainty multiplied by a coverage factor of  $k = 2$ , which, unless specifically stated otherwise, provides a level of confidence of approximately 95 %.

**TEMPERATURE**

22 ° C

Calibrated by &  
Technical signatory : J D Jacobs



Manager: Metrology : S Vowles

