

Calibration Report n°

TCCXXXXXXXX_65828

Issued

07/04/2026

Customer

Name CUSTOMER
Address ADDRESS
ADDRESS
Country COUNTRY

Order

Number ORDER MR. LARSEN

Instrument

Type TENSOR TESTER
Model TENSOR CHECK PROFILE - PC
Producer GIBITRE INSTRUMENTS SRL
Serial Number TCCXXXXXXXX

Calibration

Date of the measures **07/04/2026**
Technician **Alan Arsuffi** [Habilitation for Calibration](#)

Reference Standard

The calibration is made in accordance to the requirements of the following standards:

ISO 5893: Rubber and plastics test equipment — Tensile, flexural and compression types - Specification

ISO 7500-1: Tension/Compression testing machines - Verification and Calibration of the force-measuring system

The measurement uncertainties stated in this document have been determined according to the ISO/IEC Guide 98 and to EA-4/02. Usually they have been estimated as expanded uncertainty obtained multiplying the standard uncertainty by the coverage factor k corresponding to a confidence level of about 95%. Normally, this factor k is 2.

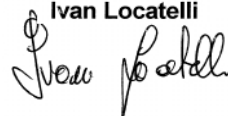
Calibration made by:

Alan Arsuffi



Calibration Report approved by:

Ivan Locatelli



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The measurement results reported in this Calibration Report were obtained following the procedures given in the following pages, where the reference standards or instruments are indicated which guarantee the traceability chain of the laboratory, and the related calibration certificates in the course of validity are indicated as well. They relate only to the calibrated item and they are valid for the time and conditions of calibration, unless otherwise specified.

Reference Instruments	Producer	Serial N.	Gibitre Code	Certificate N.	Calibration Laboratory	Issue Date	Due Date	Uncertainty	Unit
Chronometer	RS COMPONENT S	GBT.CN.01/13	CRO02 [0-60 s]	LAT 056 23-0199 2023	GAMMA MISURE	09/02/23	09/02/2028	0,10000	s
Calibrator + Load Cell 1000 N	Interface + Gibitre Instruments	781834	C1-GB3-CAL-1+C1-F-N1000-Tr	LAT 044 F240255	SOCIETA COOPERATIVA BILANCIAI	04/12/24	04/12/2026	0,05000	N
Calibrator + Load Cell 10 kN	Interface + Gibitre Instruments	784705	C1-GB3-CAL-1+C1-F-N10000-Tr	LAT 044 F240254	SOCIETA COOPERATIVA BILANCIAI	04/12/24	04/12/2026	0,10000	N
Calibrator + Load Cell 20 kN-Compression	Interface + Gibitre Instruments	784097	C1-GB3-CAL-1+C1-F-N20000-Co	LAT 044 F240253	SOCIETA COOPERATIVA BILANCIAI	02/12/24	02/12/2026	0,04000	N
Calibrator + Load Cell 20 kN-Traction	Interface + Gibitre Instruments	784097	C1-GB3-CAL-1+C1-F-N20000-Tr	LAT 044 F240253	SOCIETA COOPERATIVA BILANCIAI	02/12/24	02/12/2026	0,08000	N
Digital Caliper	Mitutoyo	1019218	CLB02	LAT 051 CT-CC-0227-2022	TRESCAL	23/05/22	23/05/2027	0,00720	mm
Digital Thickness Meter 13,5 mm.	Mitutoyo	16005914	COM02 [0.41-13.5 mm]	LAT 051 C12126B680	TRESCAL	29/08/21	29/08/2026	0,00080	mm
PT100 Thermoresistance + Calibrator	Gibitre Instruments srl	C1-T-PTA	C1-GB3-CAL-1 + C1-T-PTA	LAT 128T 141 7 22	ELLAB S.r.l.	25/09/22	25/09/2027	0,05400	°C
PT100 Thermoresistance + Calibrator	Gibitre Instruments srl	C1-T-PTA	C1-GB3-CAL-1 + C1-T-PTA(T<0°C)	LAT 128T 141 7 22	ELLAB S.r.l.	25/09/22	25/09/2027	0,05300	°C
Set of weights 1g - 5 Kg	Sartorius AG	PES01	PES01 [1-500 g]	LAT 117 23 M 143 7	CIBE	20/04/23	20/04/2026	0,00018	g
Set of weights 1g - 5 Kg	Sartorius AG	PES01	PES01 [1000-5000 g]	LAT 117 23 M 143 7	CIBE	20/04/23	20/04/2026	0,00300	g

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Calibrator + Load Cell 1000 N	Interface + Gibitre Instruments	781834	C1-GB3-CAL-1+C1-F-N1000-Tr	LAT 044 F240255	SOCIETA COOPERATIVA BILANCIATI	04/12/24	04/12/2026	0,05000	N
Calibrator + 1 kN Load Cell	Interface + Gibitre Instruments	1163767	C5-GB3-CAL-1 + C5-F-KN1	CAL105_32048	GIBITRE INSTRUMENTS	02/09/25	02/09/2026	1,98261	N
Calibrator + 10 kN Load Cell	Interface + Gibitre Instruments	784698	C5-GB3-CAL-1 + C5-F-KN10	CAL105_32048	GIBITRE INSTRUMENTS	02/09/25	02/09/2026	8,45465	N
Calibrator + 20 kN Load Cell	Interface + Gibitre Instruments	784095	C5-GB3-CAL-1 + C5-F-KN20	CAL105_32048	GIBITRE INSTRUMENTS	02/09/25	02/09/2026	11,78615	N
Digital Calliper	Mitutoyo	A16222743	C5-CL-200	CAL105_32048	GIBITRE INSTRUMENTS	02/09/25	02/09/2026	0,01478	mm
Thickness Block	Mitutoyo	162521	C5-L-1.5	CAL105_32048	GIBITRE INSTRUMENTS	02/09/25	02/09/2026	0,00080	mm
Thickness Block	Mitutoyo	165208	C5-L-2.0	CAL105_32048	GIBITRE INSTRUMENTS	02/09/25	02/09/2026	0,00080	mm
Chronometer + Calibrator	Gibitre Instruments srl	C5-CH-1	C5-GB3-CAL-1 + C5-CH-1	CAL105_32048	GIBITRE INSTRUMENTS	02/09/25	02/09/2026	0,16176	s
PT100 Thermoresistance + Calibrator	Gibitre Instruments srl	C5-T-PTA	C5-GB3-CAL-1 + C5-T-PTA	CAL105_32048	GIBITRE INSTRUMENTS	02/09/25	02/09/2026	0,06028	°C
PT100 Thermoresistance + Calibrator	Gibitre Instruments srl	C5-T-PTA	C5-GB3-CAL-1 + C5-T-PTA(T<0°C)	CAL105_32048	GIBITRE INSTRUMENTS	02/09/25	02/09/2026	0,08000	°C
Calibrator + 20 kN Load Cell	Interface + Gibitre Instruments	784095	C5-GB3-CAL-1 + C5-F-KN20-Comp	CAL105_32048	GIBITRE INSTRUMENTS	02/09/25	02/09/2026	11,78615	N
Thickness Block	Gibitre Instruments srl	C5-L-50	C5-L-50	CAL105_32048	GIBITRE INSTRUMENTS	02/09/25	02/09/2026	0,01361	mm
Thickness Block	Gibitre Instruments srl	C5-L-100	C5-L-100	CAL105_32048	GIBITRE INSTRUMENTS	02/09/25	02/09/2026	0,01361	mm
Thickness Block	Gibitre Instruments srl	C5-L-150	C5-L-150	CAL105_32048	GIBITRE INSTRUMENTS	02/09/25	02/09/2026	0,01361	mm
Thickness Block	Mitutoyo	162206	C5-L-1.31	CAL105_32048	GIBITRE INSTRUMENTS	02/09/25	02/09/2026	0,00080	mm
Thickness Block	Mitutoyo	175042	C5-L-1.33	CAL105_32048	GIBITRE INSTRUMENTS	02/09/25	02/09/2026	0,00080	mm

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Thickness Block	Mitutoyo	150188	C5-L-1.41	CAL105_32048	GIBITRE INSTRUMENT S	02/09/25	02/09/2026	0,00080	mm
Thickness Block	Mitutoyo	150303	C5-L-1.45	CAL105_32048	GIBITRE INSTRUMENT S	02/09/25	02/09/2026	0,00080	mm
Thickness Block	Mitutoyo	162521	C5-L-1.5	CAL105_32048	GIBITRE INSTRUMENT S	02/09/25	02/09/2026	0,00080	mm
Load Cell for Abrasion Tester + Calibrator	DS Europe	166166	C5-GB3-CAL-1 + C5-AB-1	CAL105_32048	GIBITRE INSTRUMENT S	02/09/25	02/09/2026	0,02998	N
Calibrator + 10 kN Load Cell	Interface + Gibitre Instruments	784698	C5-GB3-CAL-1 + C5-F-KN10	CAL105_32048	GIBITRE INSTRUMENT S	02/09/25	02/09/2026	8,45465	N

ENVIRONMENTAL CONDITIONS

Room Temperature	(23 ± 2) °C
Relative Humidity	(50 ± 10) %

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Calibration of: **Force Sensor**

Sensor Type: **Load Cell**
 Model **ST 200 KG**
 Serial n° **18.10218**
 Capacity **2000 N**
 Resolution **0,04 N**
 Force Application **Trazione**

Procedure: The certified force sensor is mounted in serie with the one of the instrument. After an adequate conditioning time, the force applied to the force sensors is increased by steps. The reading of the Reference Sensor and of the Sensor of the instrument are recorded. The cycle is repeated 3 times

Standard Reference: **ISO 7500-1**

Reference Instruments:
C5-GB3-CAL-1 + C5-F-KN10 Max Absol.Uncert: 8,4547 N Max. % Uncert.: 0,21 %

Measures

Reference Instrument	Force Applied	Force Applied	Instrument Reading 1	Instrument Reading 2	Instrument Reading 3
	/ g	/ N	/ N	/ N	/ N
	0	0,000	0,1	0,1	0,1
C5-GB3-CAL-1 + C5-F-KN10	2.038,74	20	20,0	20,0	20,0
C5-GB3-CAL-1 + C5-F-KN10	5.096,84	50	50,0	50,0	50,0
C5-GB3-CAL-1 + C5-F-KN10	10.193,68	100	100,0	100,0	100,1
C5-GB3-CAL-1 + C5-F-KN10	20.387,36	200	200,1	199,9	199,9
C5-GB3-CAL-1 + C5-F-KN10	50.968,40	500	500,0	499,9	499,7
C5-GB3-CAL-1 + C5-F-KN10	101.936,80	1000	999,9	999,6	999,8
C5-GB3-CAL-1 + C5-F-KN10	193.679,92	1900	1900,1	1900,1	1904,2

Results of the Verification

Force Applied	Mean of the measures	Accuracy	Repeatability	Relative Resolution	Uncertainty U_ext_95%	Uncertainty U_ext_95%	Resultanting Classification
N	N	%	%	%	N	%	
0,000	0,1	0,00					
20,000	20,0	-0,12	0,15	0,20	0,1	0,26	Class 0,5
50,000	50,0	-0,01	0,14	0,08	0,1	0,24	Class 0,5

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100,000	100,0	0,03	0,10	0,04	0,2	0,22	Class 0,5
200,000	200,0	-0,02	0,11	0,02	0,4	0,22	Class 0,5
500,000	499,9	-0,03	0,06	0,01	1,1	0,22	Class 0,5
1000,000	999,8	-0,02	0,03	0,00	2,1	0,21	Class 0,5
1900,000	1901,4	0,08	0,22	0,00	4,9	0,26	Class 0,5

The classification is made according to the table below (extracted from ISO 7500-1 standard)

Class of the Load Cell	Accuracy %	Repeatability %	Relative Resolution %	Error of Zero %
Classe 0,5	± 0,5	0,5	0,25	± 0,05
Classe 1	± 1,0	1	0,5	± 0,1
Classe 2	± 2,0	2	1	± 0,2
Classe 3	± 3,0	3	1,5	± 0,3

The formulas for the calculation of each parameter are described in the ISO 7500-1 standard

Note: Reversibility error is not measured

Calibration of: **Differential extensometer**

Sensor Type: **Encoder**

Resolution: 0,01 mm

Procedure: The calibration is performed by measuring the displacement of each extensometer while the other is fixed. The extensometer is moved to come in contact with different Reference Gauge Blocks. The reading of the instrument is compared with the real thickness of the reference Gauge Block.

Reference Standard: **ISO 5893**

Reference Instruments:

C5-CL-200	Uncertainty:	0,0148	mm	Deviation	0,01	mm
C5-L-50	Uncertainty:	0,0136	mm	Deviation	0,00	mm
C5-L-100	Uncertainty:	0,0136	mm	Deviation	0,00	mm
C5-L-150	Uncertainty:	0,0136	mm	Deviation	0,00	mm

Upper Extensometer

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Set Displacem.	Minimum Allowed	Maximum Allowed	Instrument Reading 1	Instrument Reading 2	Instrument Reading 3	Mean	Accuracy	Uncertainty U_ext_95%	Outcome
mm	mm	mm	mm	mm	mm	mm	mm	mm	
50	49	51	50,11	50,10	50,10	50,10	0,10	0,03	ok
150	147	153	150,00	150,00	150,00	150,00	0,00	0,02	ok

Lower Extensometer

Set Displacem.	Minimum Allowed	Maximum Allowed	Instrument Reading 1	Instrument Reading 2	Instrument Reading 3	Mean	Accuracy	Uncertainty U_ext_95%	Outcome
mm	mm	mm	mm	mm	mm	mm	mm	mm	
50	49	51	49,73	49,73	49,75	49,74	-0,26	0,03	ok
150	147	153	149,98	149,99	150,00	149,99	-0,01	0,03	ok

Reference Length

Nominal Value	Minimum Allowed	Maximum Allowed	Measure 1	Measure 2	Measure 3	Mean	Accuracy	Uncertainty U_ext_95%	Outcome
mm	mm	mm	mm	mm	mm	mm	mm	mm	
10	9,9	10,1	10,06	10,06	10,07	10,06	0,06	0,02	ok
20	19,8	20,2	20,04	20,06	20,05	20,05	0,05	0,02	ok
25	24,75	25,25	25,11	25,11	25,11	25,11	0,11	0,01	ok
50	49,5	50,5	50,07	50,09	50,09	50,08	0,08	0,02	ok

ISO 5893 - Accuracy classes for Elongation Measurement

Class	Maximum elongation ΔL on given Gauge length L	Maximum permissible error	Requested accuracy of verification device	Maximum measured error	Accuracy of verification device	Conformity with Class
		%	%	%	%	
A	5% on 25mm ($\Delta L = 1.25$ mm)	2	0,5	1,07	0,80	no
B	10% on 25mm ($\Delta L = 2.5$ mm)	2	0,5	1,07	0,40	ok
C	50% on 25mm ($\Delta L = 12.5$ mm)	2	0,5	1,07	0,08	ok
D	1200% on 20mm ($\Delta L = 240$ mm)	2	0,5	1,07	0,00	ok
E	1200% on 10mm ($\Delta L = 120$ mm)	2	0,5	1,07	0,01	ok

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Calibration of: **Crosshead displacemente and Crosshead speed**

Sensor Type: Encoder and internal Timer
Resolution Displacement: 0,01 mm
Resolution Speed: 0,01 mm/min

Procedure: The speed is measured by reading the time needed for the crosshead to move a set distance.
The calibration is made by measuring the distance and the time needed for the displacement

Reference Standard: **ISO 5893**

Reference Instruments:

C5-CL-200	Uncertainty: 0,0148 mm	Deviation 0,01 mm
C5-GB3-CAL-1 + C5-CH-1	Uncertainty: 0,1618 s	Deviation 0,00 s

Measures

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Set Speed mm/min	Set Displacement mm	Instrument: Measured Displacement mm	Calibrator: Measured Displacement mm	Calibrator: Measured Time s	Calibrator: Calculated Speed mm/min
100	100,00	100,57	100,57	61,41	98,25
200	100,00	100,84	108,40	32,35	201,08
500	100,00	103,29	120,60	14,21	509,15

Crosshead Displacement

Instrument: Measured Displacement mm	Calibrator: Measured Displacement mm	Deviation mm	Uncertainty U_ext_95% mm
100,57	100,57	0,00	0,01
100,84	108,40	-7,56	0,01
103,29	120,60	-17,31	0,01

Crosshead Speed

Set Speed mm/min	Minimum Allowed mm/min	Maximum Allowed mm/min	Calibrator: Calculated Speed mm/min	Deviation mm/min	Uncertainty U_ext_95% mm/min	Outcome
100	90,00	110,00	98,25	1,75	0,0029	ok
200	180,00	220,00	201,08	-1,08	0,0029	ok
500	450,00	550,00	509,15	-9,15	0,0033	ok

 Calibration of: **Thickness reading of Thickness meter**

Producer **Mitutoyo**
 Model **C1012CXB**
 Serial n° **16098147**
 Sensor Type: Thickness meter
 Resolution: 0,01 mm

Procedure: The reading of the thickness meter is compared with the thickness of certified thickness gauges

 Reference Standard: **ISO 23529**

Reference Instruments:

C5-L-1.5 Uncertainty: 0,0008 mm Deviation 0,00 mm
C5-L-2.0 Uncertainty: 0,00080 mm Deviation 2,000 mm

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Set Displacem. mm	Minimum Allowed mm	Maximum Allowed mm	Instrument Reading 1 mm	Instrument Reading 2 mm	Instrument Reading 3 mm	Mean mm	Accuracy mm	Uncertainty U_ext_95% mm	Outcome
1,50	1,49	1,51	1,51	1,51	1,51	1,51	0,01	0,006	ok
2,00	1,99	2,01	2,01	2,01	2,00	2,01	0,01	0,009	ok
3,50	3,49	3,51	3,51	3,51	3,51	3,51	0,01	0,006	ok

Calibration of: **Force applied by Thickness meter**

Producer **Mitutoyo**
 Model **C1012CXB**
 Serial n° **16098147**
 Sensor Type: Thickness meter
 Resolution: 0,01 mm

Procedure: The force applied by the thickness meter is measured using the reference load cell

Reference Standard: **ISO 23529**

Reference Instruments:

C5-GB3-CAL-1 + C5-AB-1 Uncertainty: 0,0300 N Deviation 0,11 N

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Expected Pressure kPa	Minimum Allowed kPa	Maximum Allowed kPa	Diameter of the Tip mm	Instrument Reading 1 N	Instrument Reading 2 N	Instrument Reading 3 N	Mean KPa	Accuracy KPa	Uncertainty U_ext_95% KPa	Outcome
22,00	17,00	27,00	5	0,33	0,33	0,35	17,15	-4,85	0,39	ok

Verification of instrument safety devices

✓	Verification that the instrument's safety devices are working properly
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✓	Final verification that the instrument is functioning properly with safety devices active
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