



# CERTIFICATE OF ACCREDITATION

## ANSI-ASQ National Accreditation Board

500 Montgomery Street, Suite 625, Alexandria, VA 22314, 877-344-3044

This is to certify that

**Industrial Research Institute  
Lebanese University Campus, IRI Building, Hadath (Baabda)  
Beirut, Lebanon 11-2806**

has been assessed by ANAB  
and meets the requirements of international standard

## ISO/IEC 17025:2005

while demonstrating technical competence in the fields of

## CALIBRATION AND TESTING

Refer to the accompanying Scope of Accreditation for information regarding the types of calibrations and/or tests to which this accreditation applies.

ACT-1898

Certificate Number

  
ANAB Approval

Certificate Valid: 09/25/2017-11/03/2018  
Version No. 003 Issued: 09/25/2017



This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).



**SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005  
Industrial Research Institute**

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**CALIBRATION AND TESTING**

Valid to: **November 3, 2018**

Certificate Number: **ACT-1898**

**I. Microbiological Testing**

ITEMS, MATERIALS OR PRODUCTS TESTED	SPECIFIC TESTS OR PROPERTIES MEASURED	SPECIFICATION, STANDARD METHOD OR TECHNIQUE USED	*KEY EQUIPMENT OR TECHNOLOGY
Food and animal feedstuffs, water for human consumption, waste water, cosmetics, wet wipes and baby diapers	Preparation of samples	IT-me/LMB/02 based on ISO 6887-1-2-3-4-5-6, NF EN ISO 6887-1-2-3-4-5-6, ISO 8199, ISO 20837	Filtration, Pour plate and Surface plating
	Total bacterial count	IT-me/LMB/01 & IT-me/LMB/09 based on ISO 4833-1, -2, NF ISO 7218-A1, NF V08-051, ISO 6222, NF EN ISO 6222, ISO 8199, NF EN ISO 8199, BAM ch.3, ISO 21149, NF ISO 21149, BAM FDA-8 <sup>th</sup> ed. AOAC International 2001 ch.23	Filtration, Pour plate, Surface plating and TEMPO TVC
	<i>Salmonella</i>	IT-me/LMB/08 & IT-me/LMB/09 based on ISO 6579, ISO 6579/A1, NF EN ISO 6579, NF EN ISO 6579/A1, NF EN 12824, NF V 08-052, ISO 19250, NF ISO 19250, BAM ch.5, ISO 6340, AFNOR-BRD-07/11, AFNOR-BRD 07/6, BAM FDA-8 <sup>th</sup> ed. AOAC international 2001 ch.23	Qualitative method PCR and VIDAS
	Staphylococci	IT-me/LMB/01 & IT-me/LMB/09 based on ISO 6888-1, ISO 6888-1/A1, NF EN ISO 6888-1, NF EN ISO 6888-1/A1, ISO 6888-2, NF EN ISO 6888-2, ISO 6888-2/ A1, NF EN ISO 6888-2/A1, ISO 6888-3, NF EN ISO 6888-3, XP T90-412, BAM ch.12, NF V08 057-1, ISO 22718, NF ISO 22718 BAM FDA-8 <sup>th</sup> ed. AOAC international 2001 ch.23	Filtration, surface plating, MPN techniques and TEMPO STA

ITEMS, MATERIALS OR PRODUCTS TESTED	SPECIFIC TESTS OR PROPERTIES MEASURED	SPECIFICATION, STANDARD METHOD OR TECHNIQUE USED	*KEY EQUIPMENT OR TECHNOLOGY
Food and animal feedstuffs, water for human consumption, waste water, cosmetics, wet wipes and baby diapers	Coliforms	IT-me/LMB/01 & IT-me/LMB/09 based on ISO 4832, NF ISO 4832, ISO 9308-1, ISO 9308-1 AC1, ISO 9308-1/ COR1, NF EN ISO 9308-1, NF V08-017, BAM ch.4, ISO 4831, NF ISO 4831, AFNOR BRD-07/1, NF V08 050, NF V08 060, NF T90-413, BAM FDA-8th ed. AOAC International 2001 ch.23	Filtration, pour plate, surface plating, MPN techniques and TEMPO CC
	Yeasts and molds	IT-me/LMB/01 & IT-me/LMB /06 and IT-me/LMB/09 based on ISO 21527-1-2, BAM ch.18, NF V08 059, ISO 6611, ISO 7954, NF ISO 7954, BAM FDA-8th ed. AOAC International 2001 ch.23, ISO 13681, NF ISO 13681	Filtration, surface plating pour plate techniques and TEMPO YM
	<i>Clostridium perfringens</i>	ISO 7937, NF V08-056, BAM ch.16	Pour technique
	Sulfite-reducing bacteria	IT-me/LMB/09 based on ISO 15213, NF ISO 15213, ISO 6461-2, ISO 6461-1, BAM FDA-8 <sup>th</sup> ed. AOAC Intl 2001 ch.23	Filtration and pour technique
	<i>Escherichia coli</i>	IT-me/LMB/01 & IT-me/LMB/09 based on ISO 16649-2, NF ISO 16649-2, ISO 9308-1, BAM ch.4, ISO 16649-1, ISO 7251, NF ISO 7251, NF ISO 16649-1, AFNOR-BRD-07/8, ISO 11866-2, NF ISO 11866-2, ISO 11866-3, NF ISO 11866-3, ISO 21150, NF ISO 21150, BAM FDA-8 <sup>th</sup> ed. AOAC Intl 2001 ch.23	Filtration, pour plate, surface plating techniques and TEMPO EC
	<i>Enterobacteriaceae</i>	IT-me/LMB/01, ISO 21528-2, NF V08 054, ISO 21528-1, ISO 7402, ISO 8523	Pour plate and surface plating MPN techniques and TEMPO EB
	<i>Pseudomonas</i> spp.	IT-me/LMB/03, IT-me/LMB/09 based on ISO 16266, NF EN ISO 16266, NF V04-504, ISO 13720, ISO 22717, NF ISO 22717, ASTM D 5246, EN 12780, NF EN 12780, BAM FDA-8 <sup>th</sup> ed. AOAC International 2001 ch.23	Pour plate and surface plating techniques
	<i>Listeria monocytogenes</i>	ISO 11290-1, NF EN ISO 11290-1, ISO 11290-1/A1, NF EN ISO 11290-1/A1, ISO 11290-2, ISO 11290-2/A1, NF EN ISO 11290-2, NF EN ISO 11290-2/A1, NF V08-055, NF V08-062, BAM ch.10-11, AFNOR BRD-07/4, AFNOR BRD-07/12	Qualitative and enumeration techniques

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Food and animal feedstuffs, water for human consumption, waste water, cosmetics, wet wipes and baby diapers	Mesophilic lactic bacteria	ISO 15214 NF ISO 15214	Enumeration technique
	Psychrotrophic microorganisms	ISO 17410 NF ISO 17410	Enumeration technique
	Intestinal enterococci	IT-me/LMB/05, IT-me/LMB/09 based on ISO 7899-2, NF EN ISO 7899-2, ISO 7899-1, ISO 7899-1 AC1, NF EN ISO 7899-1, BS 4285/ 3.11, NF T90-411	Filtration, pour plate MPN and surface plating techniques
	<i>E.coli</i> O157	ISO 16654, NF EN 16654	Qualitative technique
	Control of stability of preserved and assimilated products	NF V08-408	Filtration, pour plate and surface plating technique
	Non-specific microorganisms	IT-me/LMB/04, ISO 7218, ISO 7218-A1, XP V08-102, ISO 21148, NF ISO 21148, ISO/TS 20836, ISO 20838, NF ISO 7698, NF V 04-015, NF V08-301, NF V08-408, NF V08-501, NF T90-421	Filtration, pour plate and surface plating technique

## II. Chemical Testing

ITEMS, MATERIALS OR PRODUCTS TESTED	SPECIFIC TESTS OR PROPERTIES MEASURED	SPECIFICATION, STANDARD METHOD OR TECHNIQUE USED	*KEY EQUIPMENT OR TECHNOLOGY
Food and animal feedstuffs	Moisture	IT-me/CHI/06 (based on AOAC 931.04), AOAC 920.116, AOAC 920.151, AOAC 925.10, AOAC 925.23, AOAC 925.30, AOAC 925.40, AOAC 925.45A, B and D, AOAC 926.08, AOAC 926.12, AOAC 927.05, AOAC 930.04, AOAC 930.15, AOAC 934.06, AOAC 941.08, AOAC 950.46B, AOAC 969.38, AOAC 977.10, AOAC 984.20, AOAC 986.21	Gravimetric
	Ash	IT-me/CHI/08 (based on AACC 1995: Ash- basic method) AOAC 900.02, AOAC 920.48, AOAC 920.67, AOAC 920.153, AOAC 920.155C, AOAC 923.03, AOAC 925.11, AOAC 925.51, AOAC 930.22, AOAC 935.39B, AOAC 935.42, AOAC 940.12, AOAC 940.26 A, AOAC 945.38C, AOAC 945.46, AOAC 950.14A, AOAC 950.49, AOAC 969.36A, AOAC 972.15	Gravimetric
	Fat	IT-me/CHI/05 (based on ISO 1735), AOAC 905.02, AOAC 920.39 B, C, AOAC 920.111A, AOAC 922.06, AOAC 925.32, AOAC 932.06, AOAC 933.05, AOAC 935.38, AOAC 935.39D, AOAC 938.06, AOAC 945.18A, AOAC 945.38F, AOAC 948.22, AOAC 950.54, AOAC 952.06, AOAC 960.39, AOAC 963.15, AOAC 989.05	Gravimetric
	Fatty acid composition	IT-me/CHI/02 (based on ISO 5508) and Pearson's Chemical Analysis of foods 8 <sup>th</sup> ed., page 527)	GC
	Cholesterol	IT-me/CHI/07 (based on AOAC 941.09 and AOAC 994.10)	GC
	Protein	IT-me/CHI/11 (based on ISO 5983-1) AOAC 920.70, AOAC 920.87, AOAC 920.123, AOAC 920.152, AOAC 928.08, AOAC 930.25, AOAC 930.29, AOAC 930.33, AOAC 935.39C, AOAC 945.18B, AOAC 950.36, AOAC 950.48, AOAC 955.04, AOAC 970.22, AOAC 978.04, AOAC 984.13, AOAC 991.20, ICC standard No.105/2	Kjeldahl

ITEMS, MATERIALS OR PRODUCTS TESTED	SPECIFIC TESTS OR PROPERTIES MEASURED	SPECIFICATION, STANDARD METHOD OR TECHNIQUE USED	*KEY EQUIPMENT OR TECHNOLOGY
Food and animal feedstuffs, water for human consumption, waste water	Sodium	IT-me/CHI/03 (based on AOAC 975.03 and AOAC 985.35), Standard Methods of Chemical Analysis, F.J.Welcher; 6 <sup>th</sup> ed.,vol.2, Part A, page1120	AAS
	Carbohydrates	IT-me/CHI/13 (based on AOAC 906.03, AOAC 930.36 and AOAC 968.28) AOAC 920.65, AOAC 920.82, AOAC 920.184, AOAC 925.35, AOAC 925.49J, AOAC 925.52 AOAC 939.03, AOAC 950.29, AOAC 975.14, AOAC,page 8 (by calculation) year:1993	Gravimetric
	Calories	AOAC,page 5 (by calculation) year:1993	Gravimetric
	Fibre	IT-me/CHI/04 (based on Pearson's Chemical Analysis of foods 8 <sup>th</sup> ed., page 23) AOAC 962.09, AOAC 993.21	Gravimetric
	Calcium	AOAC 920.199, AOAC 975.03, AOAC 983.19, AOAC 985.35, AOAC 991.25, BSI 5766 (part 11), LS 45 (Lebanese Standard)	Gravimetric and Titration
	Iron	IT-me/CHI/03 (based on AOAC 975.03 and AOAC 985.35, AOAC 944.02, LS 45	AAS and UV Spectrophotometer
	Phosphorus	IT-me/CHI/14 (based on AOAC 970.39 and AOAC 986.24)	UV Spectrophotometer
	Chloride	IT-me/CHI/15 (based on ISO 9297)	Titration
	Vitamins	IT-me/CHI/10 (Vit A based on ISO 12080-2, ISO 14565, NF EN 12823-1 and NF EN 12823-2) (Vit E based on NF EN 12822) (Vit C based on AOAC 967.21 and AOAC 985.33)	HPLC and Titration
	Aflatoxins	By ELISA: IT-me/CHI/09 (based on AOAC 977.16) and Veratox (Neogen) By HPLC: IT-me/CHI/16 (based on ISO 16050) M1: IT-me/CHI/17 (Based on IDF 171)	ELISA and HPLC
	Ochratoxins	By ELISA: IT-me/CHI/21 based on Veratox (Neogen) By HPLC: IT-me/CHI/22 based on AOAC 2000.03	ELISA and HPLC

<b>ITEMS, MATERIALS OR PRODUCTS TESTED</b>	<b>SPECIFIC TESTS OR PROPERTIES MEASURED</b>	<b>SPECIFICATION, STANDARD METHOD OR TECHNIQUE USED</b>	<b>*KEY EQUIPMENT OR TECHNOLOGY</b>
	Pesticides residues (for fruits and vegetables only)	IT-me/CHI/19 (based on Journal of AOAC International Vol 86:2, 2003)	GC-MS
	pH	AOAC 973.41 & ISO 4316	pH-meter
	Conductivity	ISO 7888	Conductivity meter
Vegetable oils	Iodine	AOAC 920.159	Titration
	Acidity	ISO 660 BS EN ISO 660	Titration
	UV extinction	SN EN ISO 3656	UV Spectrophotometer
	Peroxide value	AOAC 965.33	Titration

### III. Physico-chemical and Rheological

ITEMS, MATERIALS OR PRODUCTS TESTED	SPECIFIC TESTS OR PROPERTIES MEASURED	SPECIFICATION, STANDARD METHOD OR TECHNIQUE USED	*KEY EQUIPMENT OR TECHNOLOGY
Grain and flour. Cereals, pulses, feed, milled products and by-products in bulk and sac	Experimental milling	AACC 26-10A, AACC 26-21A, AACC 26-22, AACC 26-31, AACC 26-95	Specific reference mills Buhler MLU 202
	Moisture	ICC 110/1, AOAC 925.10, ISO 712, AACC 44-15A, NF EN ISO 712	Gravimetric
	Protein	ICC 105/2, AACC 46-10, AOAC 920.87, AOAC 979.09, ISO 20483	Digestion, distillation and titration
	Ash	ICC 104/1, AOAC 923.03, AACC 08-01, AACC 08-12	Gravimetric
	Purity of grains	ICC 102/1, ISO 605, ISO 7970	Conical divider, set of standard sieves
	Hectoliter weight	IT/LBF/03 Based on ISO 7971-3	Gravimetric
	Farinograph and Extensograph:	ICC 114/1, AACC 54-10, ICC 115/1, AACC 54-21	Brabender equipment-Germany
	Alveograph	ICC 121, AACC 54-30A, ISO 27971	Chopin equipment-France
	Falling number	ICC 107/1, ISO 3093, AACC 56-81B	Perten instruments-Sweden
	Gluten	ICC 155, ICC 158, ISO 21415-2, ISO 21415-4, AACC 38-12A	Perten instruments-Sweden
	Zeleny sedimentation	ICC 118, ICC 116/1, AACC 56-61A, AACC 56-60	Brabender mill.
	Sampling	ISO 24333, NF EN ISO 24333, AACC 45-01, AACC 64-50, AACC 64-60, AACC 64-70A, ICC 101/1, ICC 130, AOAC 925.08	Pneumatic sampler, conical probes, pelican sampler



#### IV. Electrical / Environmental Testing

ITEMS, MATERIALS OR PRODUCTS TESTED	SPECIFIC TESTS OR PROPERTIES MEASURED	SPECIFICATION, STANDARD METHOD OR TECHNIQUE USED	*KEY EQUIPMENT OR TECHNOLOGY
Household and similar electrical appliances	Resistance to heat	IT/ELC/22 based on: IEC 60695-10-2, IEC 60335-1 (Clause 30.1), NL EN 60335-1 (Clause 30.1)	Ball pressure, Compression test, oven
Power transformers, power supply units and similar products		IT/ELC/22 based on: IEC 60695-10-2 IEC 61558-1 (Clause 27.1), NL 216-1 (Clause 27.1)	
Plug and socket		IT/ELC/22 based on: IEC 60695-10-2 IEC 60884-1 (Clause 25)	
Circuit breakers		IT/ELC/22 based on: IEC 60695-10-2 IEC 60898-1 (Clause 9.14.2), NL 47 (Clause 9.14.2)	
Self-ballasted lamps		IT/ELC/22 based on: IEC 60695-10-2 IEC 60968 (Clause 11), NL IEC 60968 (Clause 10)	
Enclosures	Degree of protection IPX1 - IPX2	IT/ELC/23 based on IEC 60529 (Clause 14.1, 14.2.1, 14.2.2 and 14.3)	Drip box system
	Degree of protection IPX3 – IPX4	IT/ELC/24 based on IEC 60529 (Clause 14.1, 14.2.3 b, 14.2.4 b and 14.3)	Handheld spray nozzle
		IT/ELC/25 based on IEC 60529 (Clause 14.1, 14.2.3 a, 14.2.4 a and 14.3)	Oscillating tube
	Degree of protection IPX5 – IPX6	IT/ELC/26 based on IEC 60529 (Clause 14.1, 14.2.5, 14.2.6 and 14.3)	Jet nozzle
	Degree of protection IPX7 – IPX8	IT/ELC/27 based on IEC 60529 (Clause 14.1, 14.2.7, 14.2.8 and 14.3)	Water immersion (Barrel)
	Degree of protection IP1X to IP 6X (Access to hazardous part)	IT/ELC/35 based on IEC 60529 (Clause 12,12.1, 12.2 and 12.3)	Test probes, finger test, steel balls
	Degree of protection IP1X to IP 4X (Solid foreign object)	IT/ELC/35 based on IEC 60529 (Clause 13, 13.1, 13.2 and 13.3)	Test probes, finger test, steel balls

<b>ITEMS, MATERIALS OR PRODUCTS TESTED</b>	<b>SPECIFIC TESTS OR PROPERTIES MEASURED</b>	<b>SPECIFICATION, STANDARD METHOD OR TECHNIQUE USED</b>	<b>*KEY EQUIPMENT OR TECHNOLOGY</b>
Luminaire	Degree of protection IPX1	IT/ELC/23 based on IEC 60598-1 (Clause 9.1, 9.2.0 and 9.2.3)	Drip box system
	Degree of protection IPX3 – IPX4	IT/ELC/25 based on IEC 60598-1 (Clause 9.1, 9.2.4 and 9.2.5)	Oscillating tube
	Degree of protection IPX5 – IPX6	IT/ELC/26 based on IEC 60598-1 (Clause 9.1, 9.2.6 and 9.2.7)	Jet nozzle
	Degree of protection IPX7 – IPX8	IT/ELC/27 based on IEC 60598-1 (Clause 9.1, 9.2.8 and 9.2.9)	Water immersion (Barrel)
	Degree of protection IP3X to IP 4X (Solid foreign object)	IT/ELC/35 based on IEC 60598-1 (Clause 9.2.0)	Test probes, finger test, steel balls
Power transformers, power supply units and similar products	Degree of protection IP3X to IP 4X	IT/ELC/35 based on IEC 61558-1 (Clause 17.1.1 B) and NL 216-1 (Clause 17.1.1 B)	Test probes, finger test, steel balls
Household and similar electrical appliances	Protection against access to live parts	IT/ELC/28 based on IEC 60335-1 (Clause 8.1.1) and NL EN 60335-1 (Clause 8.1.1)	Finger test
Power transformers, power supply units and similar products		IT/ELC/28 based on IEC 61558-1 (Clause 9.1.2) and NL 216-1 (Clause 9.2)	
Audio video apparatus	Resistance to external forces	IT/ELC/34 based on IEC 60065 (Clause 9.1.7 a and b) and NL EN 60065 (Clause 9.1.7 a and b)	Finger test, unjointed finger, test hook

<b>ITEMS, MATERIALS OR PRODUCTS TESTED</b>	<b>SPECIFIC TESTS OR PROPERTIES MEASURED</b>	<b>SPECIFICATION, STANDARD METHOD OR TECHNIQUE USED</b>	<b>*KEY EQUIPMENT OR TECHNOLOGY</b>
Household and similar electrical appliances	Power input and current	IT/ELC/36 based on: IEC 60335-1 (Clause 10) and NL EN 60335-1 (Clause 10)	Multi-tester, Clamp meter
Lead acid batteries	Vibration resistance	IT/ELC/29 based on: IEC 60068-2-6 Test Fc: Vibration (sinusoidal), IEC 60095-1 (Clause 9.8) and NL 217-1 (Clause 9.8)	Vibration machine
Audio video apparatus		IT/ELC/31 based on IEC 60068-2-6 Test Fc: Vibration (sinusoidal), IEC 60065 (Clause 12.1.2) and NL EN 60065 (Clause 12.1.2)	
Lead acid batteries	Performance tests Batteries	IT/ELC/30 based on: IEC 60095-1 (Clause 9.1, 9.2), NL 217-1 (Clause 9.1, 9.2)	Capacity check
		IT/ELC/32 based on IEC 60095-1 (Clause 8.2.2, 8.2.4) NL 217-1 (Clause 8.2.2 and 8.2.4)	Charging
		IT/ELC/17 based on IEC 60095-1 (Clause 9.3.1 and 10) NL 217-1 (Clause 9.3.1 and 10) IT/ELC/33 based on IEC 60095-1 (Clause 9.10, 10) NL 217-1 (Clause 9.10, 10)	Cranking
Illuminating sources	Light emission test	IT/ELC/37 based on: IEC 60969 (Clause 5, 6, 7), NL IEC 60969 (Clause 5, 6, 7)	Integrating sphere, digital power meter, spectrophotometer
Household and similar electrical appliances	Provision for earthing	IT/ELC/38 based on: IEC 60335-1 (Clause 27.5), NL EN 60335-1 (Clause 27.5)	Multi-tester
Power transformers, power supply units and similar products		IT/ELC/38 based on: IEC 61558-1 (Clause 24.4), NL 216-1 (Clause 24.4)	
Circuit breakers	Glow wire test	IT/ELC/01 based on: IEC 60695-2-10, IEC 60898-1 (Clause 9.15), NL 47 (Clause 9.15)	Glow wire apparatus
Self-ballasted lamps		IT/ELC/01 based on: IEC 60695-2-10 IEC 60968 (Clause 12), NL IEC 60968 (Clause 11)	
Household and similar electrical appliances	Leakage current and electrical strength	IT/ELC/14 based on: IEC 60335-1 (Clause 16.2, 16.3), NL EN 60335-1 (Clause 16.2, 16.3)	AC power supply, multi-tester

ITEMS, MATERIALS OR PRODUCTS TESTED	SPECIFIC TESTS OR PROPERTIES MEASURED	SPECIFICATION, STANDARD METHOD OR TECHNIQUE USED	*KEY EQUIPMENT OR TECHNOLOGY
Incandescent lamps	Insulation resistance	IT/ELC/39 based on: IEC 60432-1 (Clause 2.6), NL 96-1 (Clause 2.6)	Multi-tester
Circuit Breakers	Test of Tripping characteristic	IT/ELC/40 IEC 60898 (Clause 8.6 & 9.10), NL 47 (Clause 8.6 & 9.10)	Power supplies
	Mechanical shock	IT/ELC/41 IEC 60898 (Clause 9.13.1), NL 47 (Clause 9.13.1)	Mechanical shock test apparatus

### V. Mechanical Testing

FIELD OF TEST	ITEMS, MATERIALS OR PRODUCTS TESTED	SPECIFIC TESTS OR PROPERTIES MEASURED	SPECIFICATION, STANDARD METHOD OR TECHNIQUE USED	*KEY EQUIPMENT OR TECHNOLOGY
Physico-Mechanical	Cement	Strength	PR/GCS/02 based on EN196-1	Compression testing machine
		Initial setting time	IT/GCS/18 based on EN196-3 (clause 6.2)	Vicat
	Ceramic tiles	Water absorption	IT/GCS/12 based on BS EN ISO 10545-3 (clause 5.1.1)	ISO water large
		Modulus of rupture	IT/GCS/11 based on BS EN ISO 10545-4	Flexi 1000
		Thermal expansion	IT/GCS/09 based on BS EN ISO 10545-8	Dilatometer
		Deep abrasion	IT/GCS/10 based on BS EN ISO 10545-6	Abrasimeter deep unglazed

## VI. Mechanical Calibration

FIELD OF TEST	RANGE	CALIBRATION AND MEASUREMENT CAPABILITY [EXPRESSED AS UNCERTAINTY(+)]	SPECIFICATION, STANDARD METHOD OR TECHNIQUE USED	EQUIPMENT
Calibration of conventional masses class E2 and lower	From 1 mg to 20 mg	0.003 mg	PR/MET/03: Mass Calibration (OIML R111-1; EA-4/02)	3 sets of masses from 1 mg to 20 kg Class E1, E2, F1  Susceptometer, Reference mass 10 g Reference of susceptibility 1 kg 3 reference magnets  8 comparators ranging from 6 g to 26 100 g  Ambient condition recorders  PRH Temp2000
	50 mg	0.004 mg		
	100 mg	0.005 mg		
	200 mg	0.006 mg		
	500 mg	0.008 mg		
	1 g	0.010 mg		
	2 g	0.012 mg		
	5 g	0.016 mg		
	10 g	0.020 mg		
	20 g	0.025 mg		
	50 g	0.03 mg		
	100 g	0.05 mg		
	200 g	0.10 mg		
	500 g	0.25 mg		
	1 kg	0.5 mg		
	2 kg	1.0 mg		
	5 kg	2.5 mg		
	10 kg	5.0 mg		
20 kg	10 mg			
Balances (on site and in permanent laboratories)	1 mg to 5 g	(3 to 16) $\mu$ g (class E2)	PR/MET/02: Balance calibration (EURAMET cg-18; EA-4/02)	Mass sets, Class E2 20 kg weights, Class M1 PRHTemp2000
	5 g to 40 kg	$2 \cdot 10^{-6}$ . Applied load "m" (class E2)		
	40 kg to 200 kg	$2 \cdot 10^{-5}$ . Applied load "m" (class M1)		

**Notes:**

- \* = As Applicable
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 Vice President