

ATILH, Frankreich - Zement 16/3215/06

Veranstalter des Ringversuchs: Association Technique de l'industrie des liants hydrauliques (ATILH)

Ringversuchsmaterial: Portlandzement CEM I 52.5 N

RV geschlossen: 2016 - 7

Literatur: Bericht Ringversuch

Hauptelemente [MA%]

	CRB	RV	1sRV	Z-Score
Al ₂ O ₃	5,030	5,150	0,090	-1,330
CaO	62,700	62,800	0,370	-0,270
Fe ₂ O ₃ -tot	2,740	2,810	0,040	-1,680
K ₂ O	0,880	0,880	0,020	0,000
MgO	1,940	1,950	0,060	-0,250
Na ₂ O	0,210	0,220	0,030	-0,500
P ₂ O ₅	0,470	0,480	0,020	-0,750
SiO ₂	19,270	19,490	0,220	-1,020
SrO	0,077	0,070	0,010	0,700
SO ₃	3,440	3,460	0,080	-0,250
TiO ₂	0,340	0,330	0,010	0,500
LOI	2,770	2,430	0,200	1,700

Legende

CRB: Ergebnisse CRB – **RV:** Ergebnisse Ringversuch -- **1s-RV:** Standardabweichung Ringversuch

Z-Score: Differenz des Messwertes vom Mittelwert des Ringversuchs -- * Wert nicht zertifiziert

**Interlaboratory testing programme 2016
Results from the first statistical analyses**

- European pilot laboratories (French pilot and European pilot)
- European laboratories (French plant laboratories + European plant laboratories and European cement user laboratories)
- Foreign laboratories (laboratories outside Europe)

First estimations for 138 laboratories (All method together)

Parameter	Nb Labo	Nb Results	Mean	Repro Std	CV (%)
Loss on ignition	128	168	2.43	0.10	4.00
SiO2	107	162	19.49	0.22	1.10
Al2O3	111	163	5.15	0.09	1.82
Fe2O3	110	159	2.81	0.04	1.50
CaO	109	159	62.80	0.37	0.59
MgO	111	160	1.95	0.06	3.17
SO3	121	228	3.46	0.08	2.25
Free lime	90	99	1.55	0.19	12.17
Insoluble residue	111	143	0.42	0.12	27.79
Na2O	108	156	0.22	0.03	12.98
K2O	112	162	0.88	0.04	4.22
TiO2	79	100	0.33	0.01	3.19
Chloride	105	140	0.07	0.01	8.87
P2O5	79	103	0.48	0.02	3.61
SrO	46	61	0.07	0.01	7.31
CO2	41	42	2.00	0.21	10.27
S--	34	34	0.02	0.02	111.5
Cr6+	37	37	<0.000002	-	158.7
Specific Gravity	113	116	3.14	0.02	0.55
Specific surface	120	128	4371	118	2.71
Corrected surface	115	123	4362	120	2.74
Normal consistency	119	136	27.6	0.79	2.86
Initial setting time	121	135	164	17	10.27
Soundness	109	132	0.67	0.44	65.88
Granulométrie 2.5µm	58	58	16.8	3.9	22.96
Granulométrie 12.5µm	58	60	49.6	5.1	10.20
Granulométrie 31.5µm	58	66	78.5	4.4	5.60
Granulométrie 80µm	108	108	97.9	1.8	1.84
Shrinkage 3d	16	18	186	67	36.32
Shrinkage 7d	16	18	406	60	14.90
Shrinkage 14d	16	18	569	70	12.35
Shrinkage 28d	16	18	685	69	10.10
Swelling 3d	10	14	54	44	81.47
Swelling 7d	9	13	78	47	61.32
Swelling 14d	9	13	106	70	65.41
Swelling 28d	10	14	126	69	54.48
Heat of hydration 41h	27	32	320	40.05	12.52
Heat of hydration 3d	25	30	332	39.34	11.83
Heat of hydration 5d	23	28	345	37.56	10.89
Heat of hydration 7d	11	14	313	36.06	11.51
Maximum heat exhaust rate	9	11	38.2	4.65	12.17
Age maximum rate	9	11	9.7	0.40	4.18
Workability	7	10	4.2	1.61	37.98
Fluidity	3	4	4.5	1.42	31.48
Clinker	36	44	92.0	2.50	2.72
Set regulator	27	34	5.5	0.28	5.16
C3S Mineralogy	29	29	52.6	4.17	7.93
C2S Mineralogy	28	28	18.6	3.83	20.62
C3A Mineralogy	31	31	7.8	0.85	10.93
C4AF Mineralogy	29	29	8.8	0.77	8.72
Free Lime Mineralogy	19	19	1.0	0.43	42.62
SO4Ca Mineralogy	20	20	4.8	1.02	21.29
Mean of weight of samples at demoulding	110	111	580.3	6.08	1.05
Bending 28 days	70	71	8.6	0.51	5.94
Compression 1 day	121	171	18.5	1.04	5.60
Compression 2 days	132	189	32.2	1.32	4.10
Compression 7 days	134	190	49.7	2.12	4.27
Compression 28 days	130	187	63.0	2.40	3.82

SYMBOLS OF METHODS

CHEMICAL DETERMINATIONS

	Loss on ignition	SiO ₂	Al ₂ O ₃	Fe ₂ O ₃	CaO	MgO	Alkies	SO ₃	Free lime	Insoluble residue	Cl	TiO ₂	P ₂ O ₅	SrO	
A	☐=1000°C T=20min	Atomic Absorption (AAS)											Atomic Absorption (AAS)		
B	☐<1000°C T=20min	Quinoléine							Glycerin Alcohol						
C	☐=1000°C T<20min	CH ₂ -CH ₂ -O	Complexometry						Glycol Complexometry						
D	☐<1000°C T>20min	Double Insolubilité													
E	☐<1000°C T=20min	NH ₄ Cl						Eltra	Ethylene Glycol						
G	☐=1000°C T=15min	Gelatin						Gravimetry	Glycol Acidimetry						
K*	☐=950°C T=15min	Double Insolubilité	Complexometry				Flame photo	Gravimetry		Gravimetry	AgNO ₃				
L	☐=1000°C T>20min							Leco	Glycol Conductimetry						
M		Plasma (ICP)										Plasma(ICP)			
P	☐<1000°C T=20min	HClO ₄					Flame photo				Potentiometry				
T	Thermo gravimetry							Turbidimetry	Thermo gravimetry						
X	☐<1000°C T<20min	X-ray fluorescence										X-ray fluorescence			

* CEN reference method

PHYSICAL DETERMINATIONS

	Specific gravity	Granulometer	Setting time test	Mechanical tests
A	ASTM – NBS standard	Alpine sieving	Automatic apparatus	AFNOR Sand, CEN Standard
B		Other sieving		AFNOR Sand, National Standard
C				National Sand, National Standard
D				National Sand, CEN Standard
G	Atilh standard			
L	Lafarge standard	Laser granulometer		
M			Manual test	

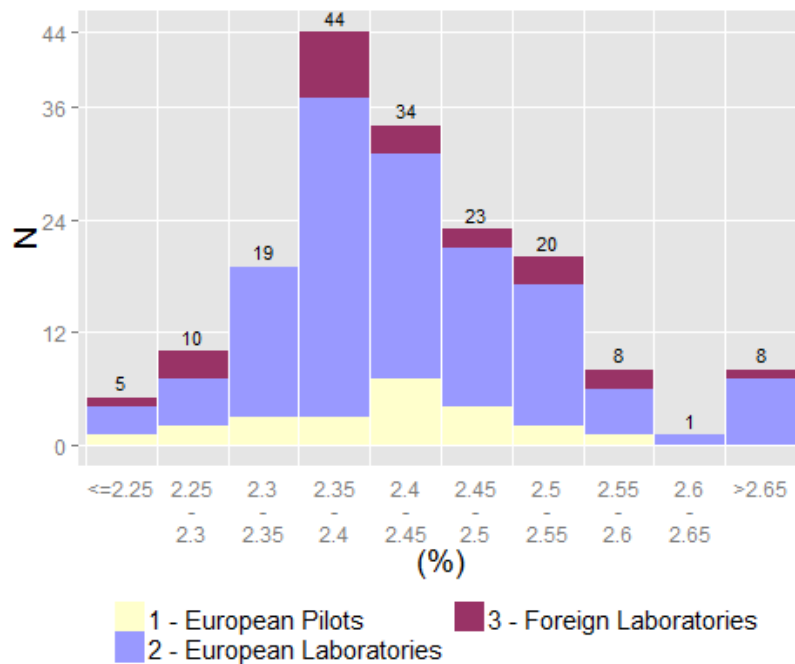
N : For the individual case (Physical, Chemical or Mechanical tests) not mentioned method or few results.

SYMBOLS BY STATISTICS

A.M.U.	All methods used
n	Number of test per laboratory
x	Arithmetic mean
ε	Precision of a measure of the mean
Repro Std	Standard of deviation
CV	Coefficient of variation (V%=S/x)
Lm 95%	Lower confidence limits after elimination of outliers
LM 95%	Upper confidence limits after elimination of outliers

Chemical Analyses

Loss on ignition (A.M.U)
Mean 2.43 +/- 0.02

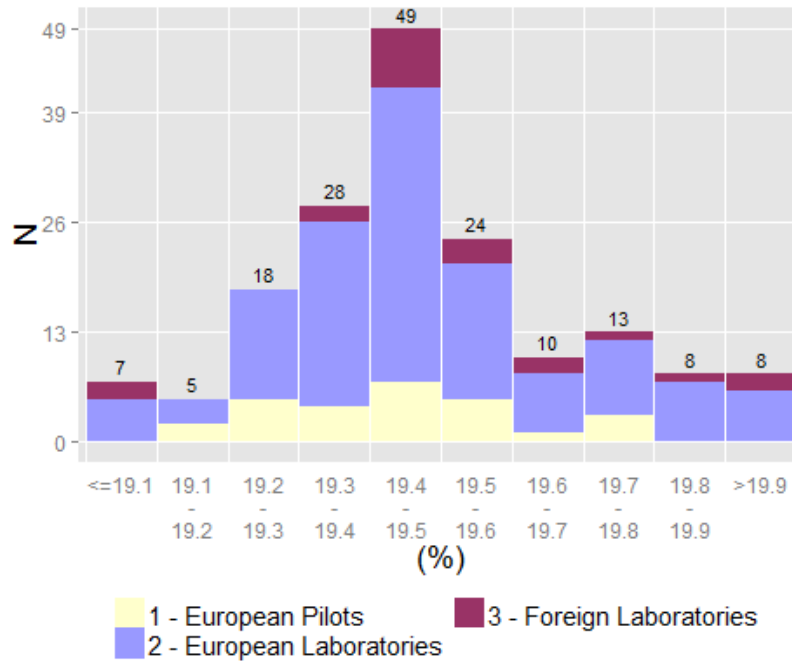


Loss on ignition - By Labo Group & Method

Labo Group	Method	Number of Results	Mean	ε (5%)	Repro Std	CV (%)	Lm95%	LM95%
1 - European Pilots	A.M.U	23	2.41	0.04	0.09	3.57	2.24	2.59
2 - European Laboratories	A.M.U	124	2.43	0.02	0.10	4.08	2.23	2.63
3 - Foreign Laboratories	A.M.U	21	2.42	0.05	0.10	4.10	2.21	2.62

Labo Group	Method	Number of Results	Mean	ε (5%)	Repro Std	CV (%)	Lm95%	LM95%
1 - European Pilots	D	6	2.39	0.07	0.07	2.75	2.22	2.56
1 - European Pilots	K	16	2.42	0.05	0.09	3.82	2.22	2.61
2 - European Laboratories	B	3	2.41	0.01	0.01	0.24	2.38	2.43
2 - European Laboratories	D	4	2.35	0.04	0.03	1.17	2.26	2.44
2 - European Laboratories	K	109	2.43	0.02	0.10	4.20	2.23	2.63
2 - European Laboratories	N	5	2.44	0.12	0.10	4.13	2.16	2.72
3 - Foreign Laboratories	D	3	2.45	0.17	0.07	2.86	2.15	2.75
3 - Foreign Laboratories	K	18	2.41	0.05	0.10	4.30	2.19	2.63

SiO2 (A.M.U)
Mean 19.49 +/- 0.04

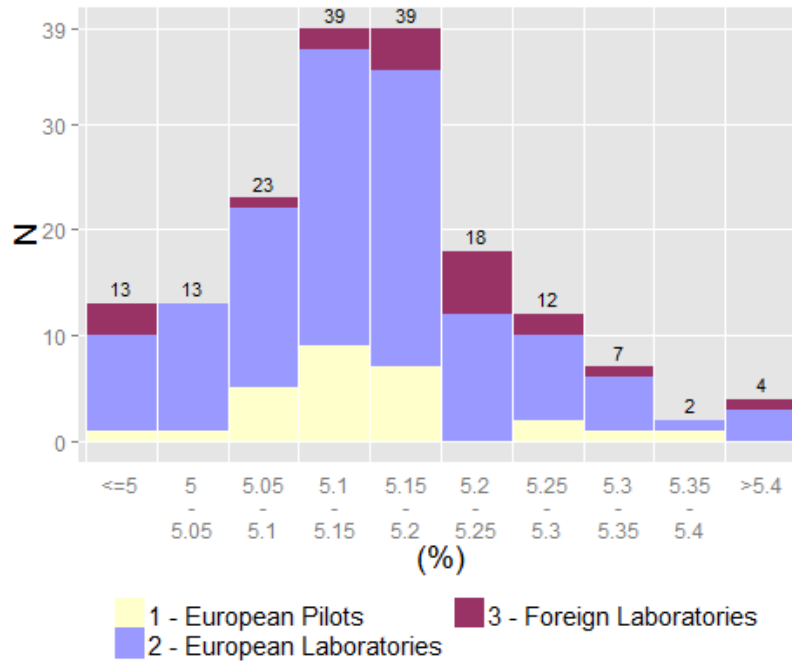


SiO2 - By Labo Group & Method

Labo Group	Method	Number of Results	Mean	ε (5%)	Repro Std	CV (%)	Lm95%	LM95%
1 - European Pilots	A.M.U	27	19.45	0.07	0.17	0.86	19.10	19.79
2 - European Laboratories	A.M.U	118	19.49	0.04	0.23	1.16	19.04	19.93
3 - Foreign Laboratories	A.M.U	17	19.55	0.11	0.20	1.05	19.12	19.99

Labo Group	Method	Number of Results	Mean	ε (5%)	Repro Std	CV (%)	Lm95%	LM95%
1 - European Pilots	K	8	19.31	0.11	0.13	0.67	19.01	19.62
1 - European Pilots	X	19	19.50	0.07	0.15	0.77	19.19	19.82
2 - European Laboratories	K	27	19.54	0.14	0.35	1.77	18.83	20.25
2 - European Laboratories	M	4	19.65	0.41	0.26	1.31	18.84	20.47
2 - European Laboratories	X	87	19.46	0.04	0.17	0.86	19.13	19.79
3 - Foreign Laboratories	K	2	19.77	4.32	0.48	2.43	13.66	25.88
3 - Foreign Laboratories	X	14	19.52	0.09	0.16	0.82	19.18	19.87

Al2O3 (A.M.U)
Mean 5.15 +/- 0.02

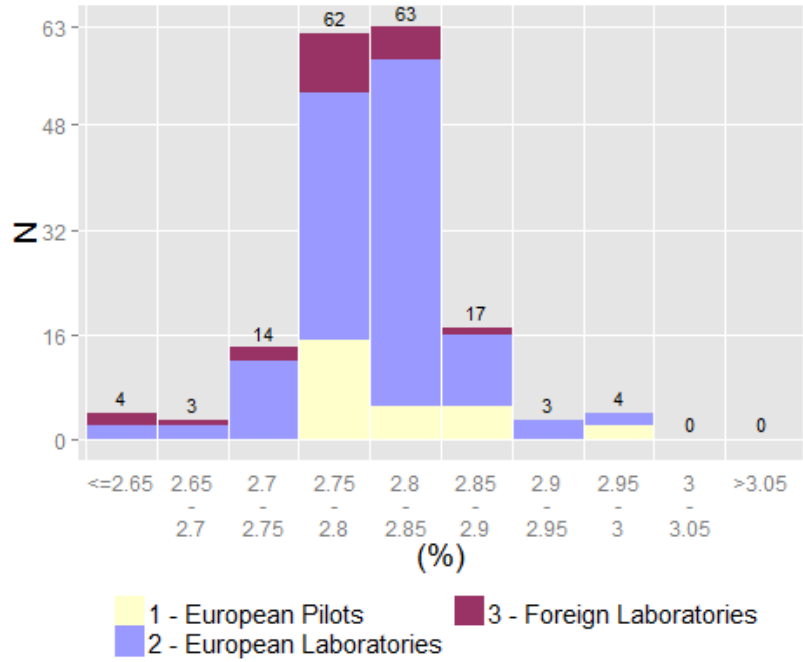


Al2O3 - By Labo Group & Method

Labo Group	Method	Number of Results	Mean	ε (5%)	Repro Std	CV (%)	Lm95%	LM95%
1 - European Pilots	A.M.U	26	5.14	0.03	0.08	1.49	4.98	5.30
2 - European Laboratories	A.M.U	118	5.15	0.02	0.09	1.81	4.96	5.33
3 - Foreign Laboratories	A.M.U	19	5.17	0.06	0.12	2.31	4.92	5.42

Labo Group	Method	Number of Results	Mean	ε (5%)	Repro Std	CV (%)	Lm95%	LM95%
1 - European Pilots	K	7	5.14	0.09	0.10	1.88	4.90	5.38
1 - European Pilots	X	19	5.14	0.03	0.07	1.38	4.99	5.29
2 - European Laboratories	K	28	5.17	0.05	0.12	2.27	4.93	5.41
2 - European Laboratories	M	4	5.17	0.12	0.08	1.48	4.93	5.42
2 - European Laboratories	X	85	5.14	0.02	0.08	1.65	4.97	5.30
3 - Foreign Laboratories	K	2	5.03	2.29	0.25	5.06	1.80	8.26
3 - Foreign Laboratories	M	1	5.30	.	.	.	.	.
3 - Foreign Laboratories	X	16	5.18	0.05	0.09	1.83	4.98	5.38

Fe2O3 (A.M.U)
Mean 2.81 +/- 0.01

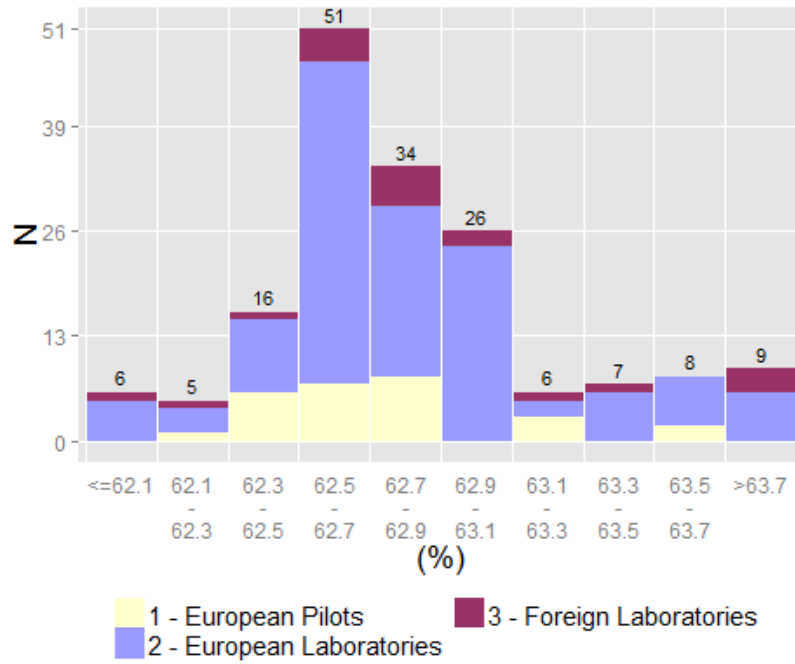


Fe2O3 - By Labo Group & Method

Labo Group	Method	Number of Results	Mean	ε (5%)	Repro Std	CV (%)	Lm95%	LM95%
1 - European Pilots	A.M.U	25	2.81	0.02	0.04	1.46	2.73	2.90
2 - European Laboratories	A.M.U	116	2.81	0.01	0.04	1.50	2.73	2.89
3 - Foreign Laboratories	A.M.U	18	2.79	0.02	0.04	1.55	2.70	2.88

Labo Group	Method	Number of Results	Mean	ε (5%)	Repro Std	CV (%)	Lm95%	LM95%
1 - European Pilots	K	7	2.84	0.05	0.05	1.74	2.72	2.96
1 - European Pilots	N	1	2.88	.	.	.	.	.
1 - European Pilots	X	17	2.80	0.01	0.03	1.03	2.74	2.86
2 - European Laboratories	A	1	2.84	.	.	.	.	.
2 - European Laboratories	K	27	2.82	0.02	0.05	1.65	2.73	2.92
2 - European Laboratories	M	3	2.86	0.19	0.08	2.73	2.52	3.20
2 - European Laboratories	X	85	2.80	0.01	0.04	1.35	2.73	2.88
3 - Foreign Laboratories	K	1	2.78	.	.	.	.	.
3 - Foreign Laboratories	M	1	2.82	.	.	.	.	.
3 - Foreign Laboratories	X	16	2.79	0.02	0.05	1.63	2.69	2.89

CaO (A.M.U)
Mean 62.8 +/- 0.07

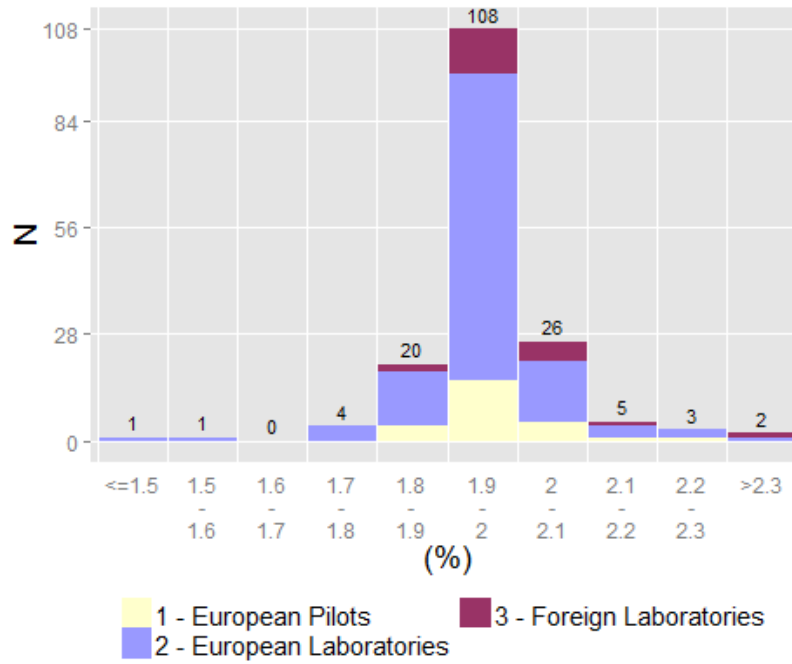


CaO - By Labo Group & Method

Labo Group	Method	Number of Results	Mean	ε (5%)	Repro Std	CV (%)	Lm95%	LM95%
1 - European Pilots	A.M.U	26	62.72	0.12	0.29	0.47	62.11	63.32
2 - European Laboratories	A.M.U	117	62.81	0.07	0.39	0.61	62.05	63.57
3 - Foreign Laboratories	A.M.U	16	62.85	0.21	0.39	0.62	62.02	63.68

Labo Group	Method	Number of Results	Mean	ε (5%)	Repro Std	CV (%)	Lm95%	LM95%
1 - European Pilots	K	7	62.79	0.35	0.38	0.60	61.87	63.71
1 - European Pilots	X	19	62.69	0.13	0.26	0.42	62.14	63.24
2 - European Laboratories	K	29	62.68	0.18	0.46	0.74	61.73	63.64
2 - European Laboratories	M	3	63.39	1.96	0.79	1.24	59.99	66.78
2 - European Laboratories	X	84	62.84	0.07	0.32	0.50	62.21	63.47
3 - Foreign Laboratories	K	2	63.28	7.62	0.85	1.34	52.50	74.06
3 - Foreign Laboratories	X	14	62.79	0.17	0.30	0.47	62.15	63.42

MgO (A.M.U)
Mean 1.95 +/- 0.01

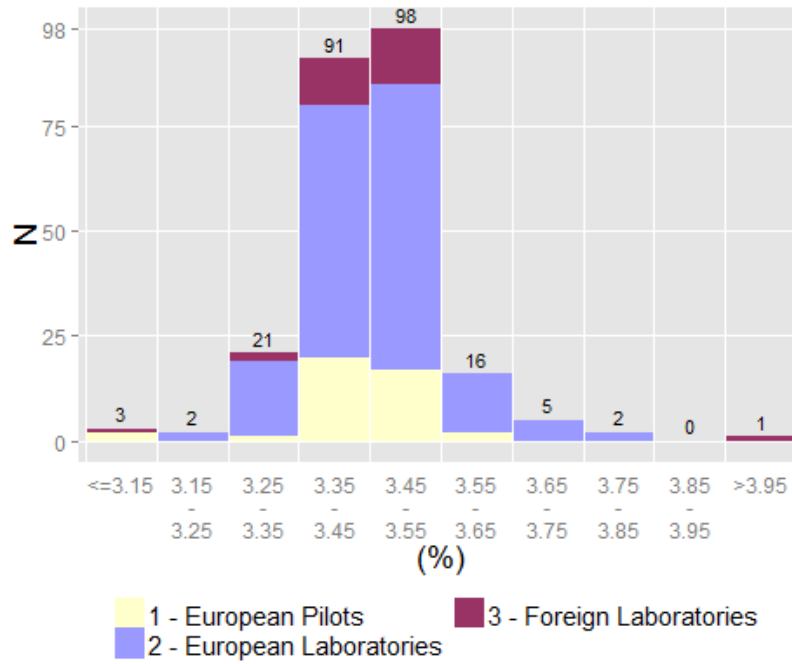


MgO - By Labo Group & Method

Labo Group	Method	Number of Results	Mean	ϵ (5%)	Repro Std	CV (%)	Lm95%	LM95%
1 - European Pilots	A.M.U	25	1.95	0.02	0.05	2.68	1.84	2.06
2 - European Laboratories	A.M.U	115	1.95	0.01	0.06	3.22	1.83	2.08
3 - Foreign Laboratories	A.M.U	20	1.98	0.03	0.07	3.40	1.83	2.12

Labo Group	Method	Number of Results	Mean	ϵ (5%)	Repro Std	CV (%)	Lm95%	LM95%
1 - European Pilots	K	8	1.98	0.05	0.06	2.95	1.85	2.12
1 - European Pilots	X	17	1.94	0.02	0.04	2.21	1.85	2.03
2 - European Laboratories	A	1	1.93	.	.	.	.	.
2 - European Laboratories	K	28	1.96	0.03	0.08	4.04	1.79	2.12
2 - European Laboratories	M	4	1.96	0.05	0.03	1.46	1.87	2.05
2 - European Laboratories	X	82	1.95	0.01	0.06	3.00	1.83	2.07
3 - Foreign Laboratories	M	1	1.94	.	.	.	.	.
3 - Foreign Laboratories	X	16	1.96	0.03	0.05	2.74	1.85	2.08

SO3 (A.M.U)
Mean 3.46 +/- 0.01

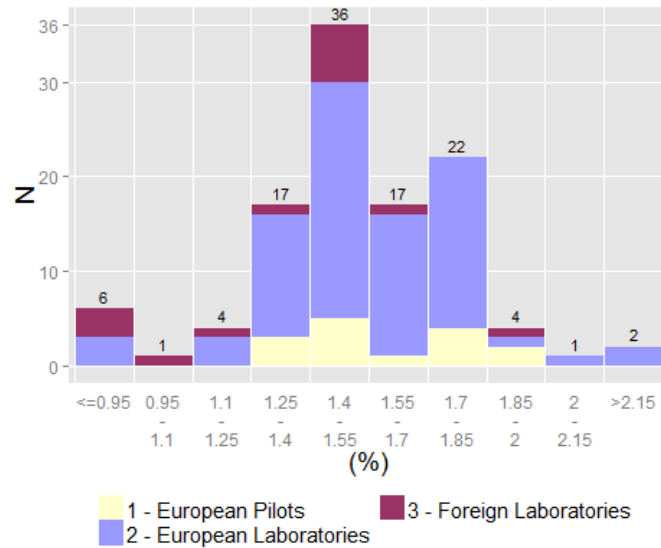


SO3 - By Labo Group & Method

Labo Group	Method	Number of Results	Mean	ε (5%)	Repro Std	CV (%)	Lm95%	LM95%
1 - European Pilots	A.M.U	40	3.46	0.02	0.06	1.65	3.34	3.57
2 - European Laboratories	A.M.U	162	3.46	0.01	0.08	2.44	3.29	3.62
3 - Foreign Laboratories	A.M.U	26	3.44	0.02	0.06	1.77	3.32	3.57

Labo Group	Method	Number of Results	Mean	ε (5%)	Repro Std	CV (%)	Lm95%	LM95%
1 - European Pilots	N	6	3.51	0.08	0.08	2.16	3.31	3.70
1 - European Pilots	K	17	3.43	0.03	0.05	1.52	3.32	3.55
1 - European Pilots	X	15	3.47	0.02	0.04	1.13	3.39	3.56
2 - European Laboratories	N	14	3.44	0.03	0.06	1.73	3.31	3.56
2 - European Laboratories	K	73	3.44	0.02	0.08	2.37	3.28	3.60
2 - European Laboratories	X	70	3.48	0.02	0.09	2.54	3.30	3.65
3 - Foreign Laboratories	K	10	3.42	0.03	0.05	1.39	3.32	3.53
3 - Foreign Laboratories	X	15	3.45	0.04	0.07	2.01	3.30	3.60

Free lime (A.M.U)
Mean 1.55 +/- 0.04

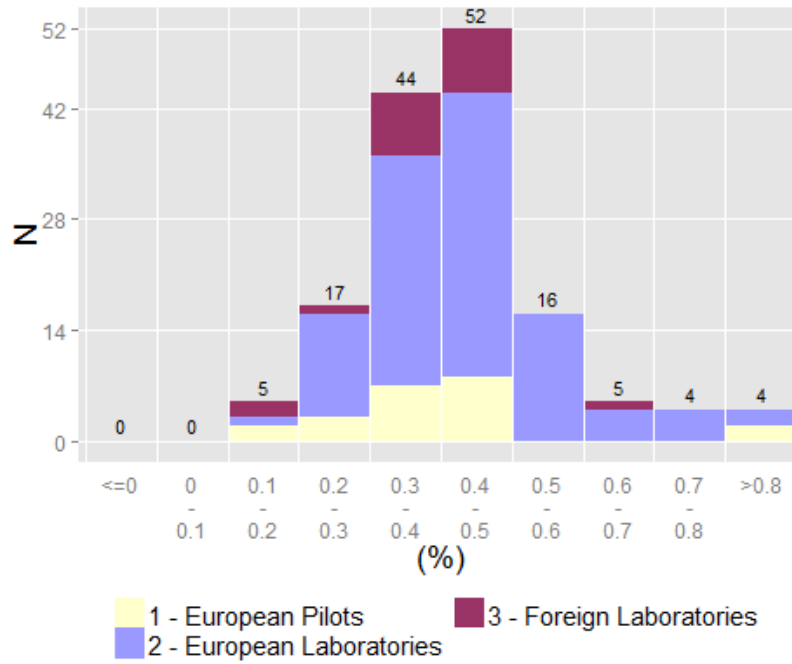


Free lime - By Labo Group & Method

Labo Group	Method	Number of Results	Mean	ε (5%)	Repro Std	CV (%)	Lm95%	LM95%
1 - European Pilots	A.M.U	15	1.59	0.11	0.21	13.00	1.15	2.04
2 - European Laboratories	A.M.U	75	1.55	0.04	0.19	11.93	1.18	1.92
3 - Foreign Laboratories	A.M.U	9	1.52	0.16	0.20	13.50	1.04	1.99

Labo Group	Method	Number of Results	Mean	ε (5%)	Repro Std	CV (%)	Lm95%	LM95%
1 - European Pilots	C	5	1.44	0.13	0.10	7.13	1.15	1.72
1 - European Pilots	G	7	1.75	0.18	0.20	11.45	1.26	2.23
2 - European Laboratories	N	5	1.42	0.21	0.17	11.79	0.96	1.89
2 - European Laboratories	B	3	1.62	0.39	0.16	9.59	0.95	2.28
2 - European Laboratories	C	23	1.45	0.05	0.11	7.89	1.21	1.68
2 - European Laboratories	G	39	1.64	0.06	0.18	10.84	1.28	2.00
2 - European Laboratories	N	5	1.44	0.25	0.20	13.70	0.89	1.99
3 - Foreign Laboratories	B	1	1.44	.	.	.	.	.
3 - Foreign Laboratories	C	4	1.46	0.25	0.16	10.61	0.97	1.96
3 - Foreign Laboratories	G	4	1.59	0.43	0.27	17.19	0.72	2.46

Insoluble residue (A.M.U)
Mean 0.42 +/- 0.02

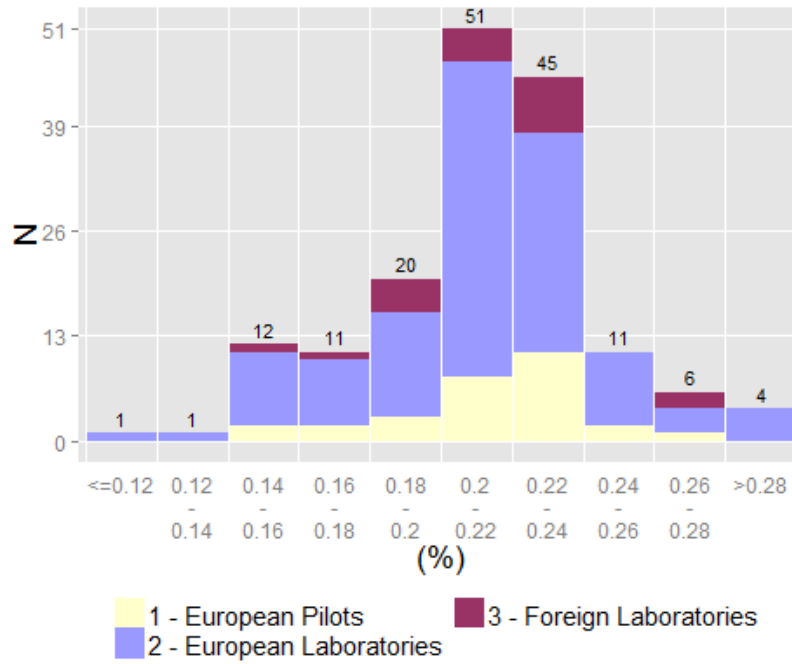


Insoluble residue - By Labo Group & Method

Labo Group	Method	Number of Results	Mean	ϵ (5%)	Repro Std	CV (%)	Lm95%	LM95%
1 - European Pilots	A.M.U	20	0.37	0.04	0.09	23.26	0.19	0.55
2 - European Laboratories	A.M.U	103	0.43	0.02	0.12	27.19	0.20	0.67
3 - Foreign Laboratories	A.M.U	20	0.38	0.05	0.11	29.86	0.14	0.61

Labo Group	Method	Number of Results	Mean	ϵ (5%)	Repro Std	CV (%)	Lm95%	LM95%
1 - European Pilots	K	20	0.37	0.04	0.09	23.26	0.19	0.55
2 - European Laboratories	K	102	0.43	0.02	0.12	27.10	0.20	0.67
3 - Foreign Laboratories	K	18	0.37	0.06	0.12	31.55	0.13	0.62

Na₂O (A.M.U)
Mean 0.22 +/- 0.01

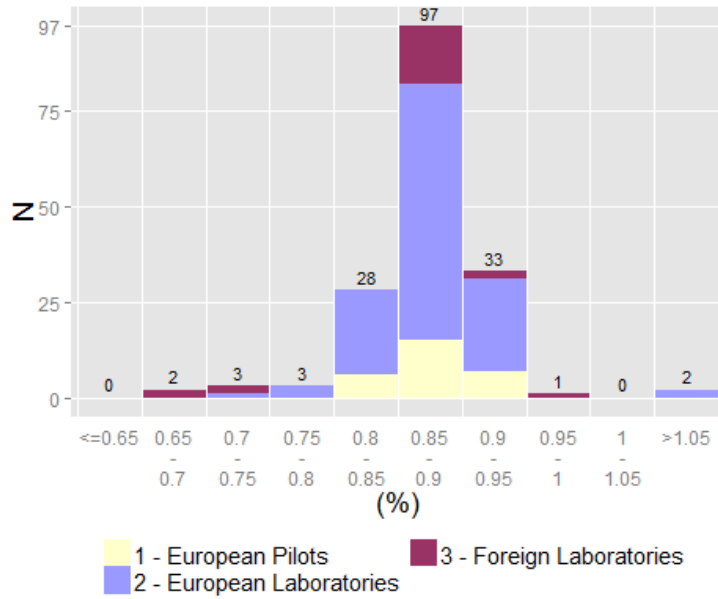


Na₂O - By Labo Group & Method

Labo Group	Method	Number of Results	Mean	ε (5%)	Repro Std	CV (%)	Lm95%	LM95%
1 - European Pilots	A.M.U	29	0.22	0.01	0.03	13.62	0.16	0.28
2 - European Laboratories	A.M.U	108	0.22	0.01	0.03	12.71	0.16	0.27
3 - Foreign Laboratories	A.M.U	19	0.22	0.01	0.03	14.14	0.15	0.28

Labo Group	Method	Number of Results	Mean	ε (5%)	Repro Std	CV (%)	Lm95%	LM95%
1 - European Pilots	K	7	0.23	0.03	0.04	16.26	0.14	0.32
1 - European Pilots	M	3	0.22	0.01	0.01	2.59	0.20	0.25
1 - European Pilots	X	18	0.21	0.01	0.03	13.68	0.15	0.27
2 - European Laboratories	A	5	0.24	0.01	0.01	2.24	0.23	0.26
2 - European Laboratories	K	20	0.21	0.01	0.03	15.28	0.14	0.28
2 - European Laboratories	M	7	0.23	0.01	0.01	6.08	0.19	0.26
2 - European Laboratories	X	76	0.21	0.01	0.03	12.47	0.16	0.27
3 - Foreign Laboratories	K	4	0.22	0.07	0.05	21.70	0.07	0.36
3 - Foreign Laboratories	M	1	0.23	.	.	.	.	.
3 - Foreign Laboratories	X	13	0.21	0.02	0.03	12.00	0.16	0.27

K2O (A.M.U)
Mean 0.88 +/- 0.01

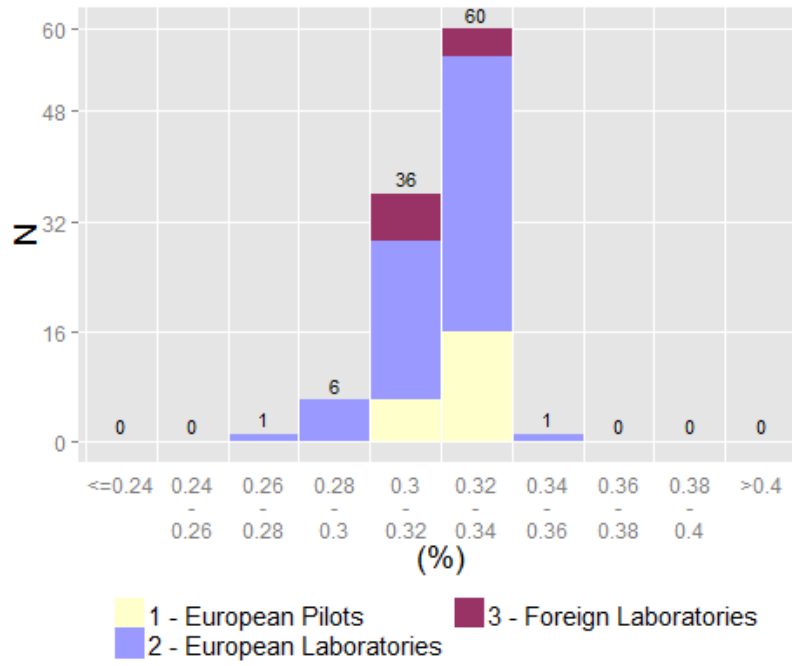


K2O - By Labo Group & Method

Labo Group	Method	Number of Results	Mean	ϵ (5%)	Repro Std	CV (%)	Lm95%	LM95%
1 - European Pilots	A.M.U	28	0.88	0.01	0.03	3.20	0.82	0.94
2 - European Laboratories	A.M.U	116	0.87	0.01	0.03	3.98	0.81	0.94
3 - Foreign Laboratories	A.M.U	18	0.88	0.03	0.06	6.63	0.76	1.01

Labo Group	Method	Number of Results	Mean	ϵ (5%)	Repro Std	CV (%)	Lm95%	LM95%
1 - European Pilots	A	1	0.87	.	.	.	.	.
1 - European Pilots	K	6	0.88	0.02	0.02	2.65	0.82	0.94
1 - European Pilots	M	3	0.87	0.05	0.02	2.40	0.78	0.96
1 - European Pilots	X	18	0.88	0.02	0.03	3.61	0.81	0.94
2 - European Laboratories	A	6	0.88	0.02	0.02	2.64	0.82	0.94
2 - European Laboratories	K	18	0.86	0.02	0.03	3.80	0.79	0.93
2 - European Laboratories	M	6	0.88	0.05	0.05	5.82	0.74	1.01
2 - European Laboratories	X	85	0.88	0.01	0.03	3.87	0.81	0.95
3 - Foreign Laboratories	K	2	0.89	0.13	0.01	1.59	0.71	1.07
3 - Foreign Laboratories	M	1	0.92	.	.	.	.	.
3 - Foreign Laboratories	X	15	0.88	0.04	0.06	7.22	0.74	1.02

TiO2 (A.M.U)
Mean 0.33 +/- 0

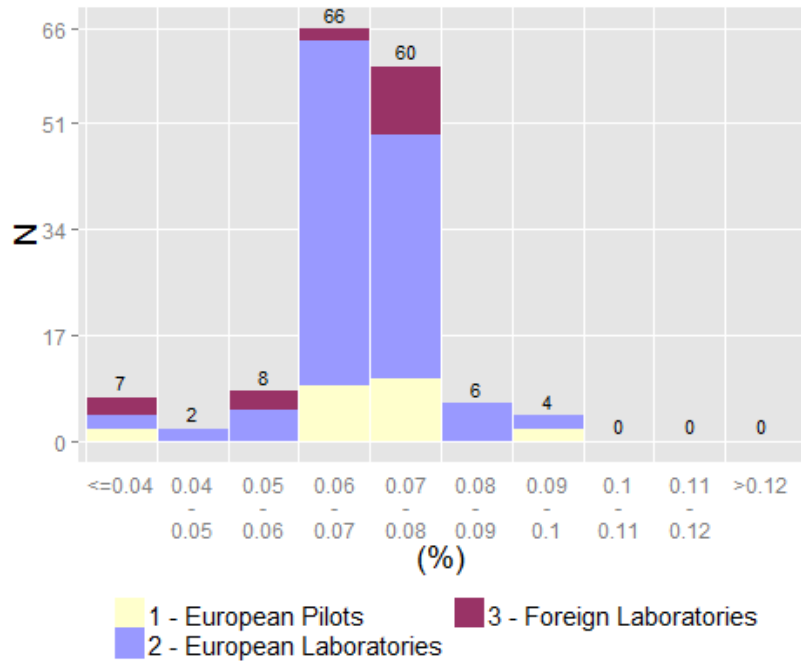


TiO2 - By Labo Group & Method

Labo Group	Method	Number of Results	Mean	ε (5%)	Repro Std	CV (%)	Lm95%	LM95%
1 - European Pilots	A.M.U	22	0.33	0.00	0.01	2.41	0.31	0.34
2 - European Laboratories	A.M.U	67	0.33	0.00	0.01	3.46	0.30	0.35
3 - Foreign Laboratories	A.M.U	11	0.32	0.01	0.01	2.59	0.30	0.34

Labo Group	Method	Number of Results	Mean	ε (5%)	Repro Std	CV (%)	Lm95%	LM95%
1 - European Pilots	X	22	0.33	0.00	0.01	2.41	0.31	0.34
2 - European Laboratories	N	5	0.33	0.02	0.02	5.13	0.28	0.37
2 - European Laboratories	M	1	0.35	.	.	.	.	.
2 - European Laboratories	X	60	0.33	0.00	0.01	3.27	0.30	0.35
3 - Foreign Laboratories	M	1	0.33	.	.	.	.	.
3 - Foreign Laboratories	X	10	0.32	0.01	0.01	2.55	0.30	0.34

Chloride (A.M.U)
Mean 0.07 +/- 0

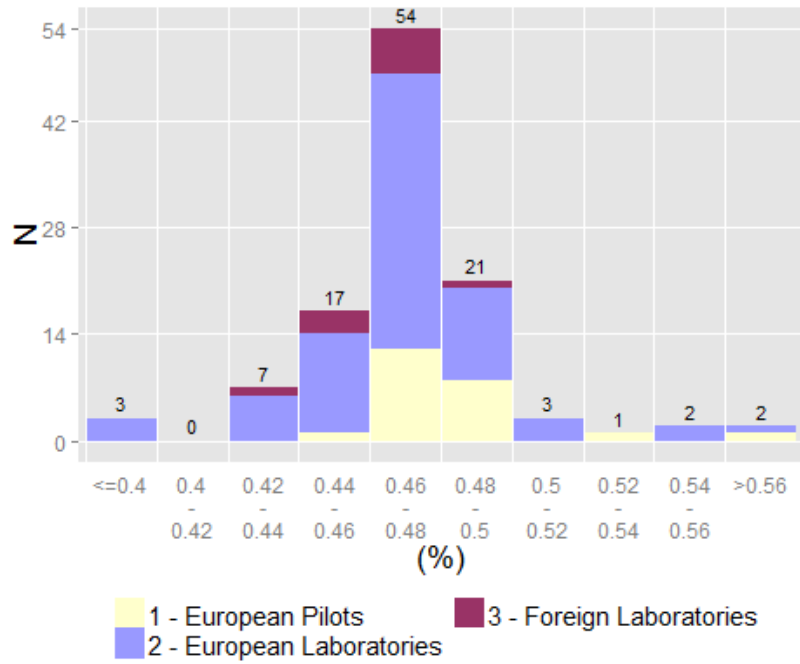


Chloride - By Labo Group & Method

Labo Group	Method	Number of Results	Mean	ε (5%)	Repro Std	CV (%)	Lm95%	LM95%
1 - European Pilots	A.M.U	21	0.08	0.00	0.01	9.26	0.06	0.09
2 - European Laboratories	A.M.U	103	0.07	0.00	0.01	8.27	0.06	0.08
3 - Foreign Laboratories	A.M.U	16	0.07	0.00	0.01	11.21	0.05	0.09

Labo Group	Method	Number of Results	Mean	ε (5%)	Repro Std	CV (%)	Lm95%	LM95%
1 - European Pilots	K	3	0.07	0.01	0.01	6.74	0.05	0.10
1 - European Pilots	M	8	0.07	0.00	0.01	7.57	0.06	0.09
1 - European Pilots	P	7	0.08	0.00	0.00	5.62	0.06	0.09
1 - European Pilots	X	3	0.08	0.03	0.01	14.43	0.03	0.14
2 - European Laboratories	K	17	0.07	0.00	0.00	5.91	0.06	0.08
2 - European Laboratories	M	28	0.07	0.00	0.00	6.86	0.06	0.08
2 - European Laboratories	P	27	0.07	0.00	0.01	7.04	0.06	0.08
2 - European Laboratories	X	28	0.07	0.00	0.01	11.64	0.05	0.09
3 - Foreign Laboratories	K	1	0.07	.	.	.	.	.
3 - Foreign Laboratories	M	7	0.07	0.01	0.01	13.22	0.05	0.09
3 - Foreign Laboratories	P	7	0.07	0.01	0.01	11.10	0.05	0.09
3 - Foreign Laboratories	X	1	0.08	.	.	.	.	.

P2O5 (A.M.U)
Mean 0.48 +/- 0

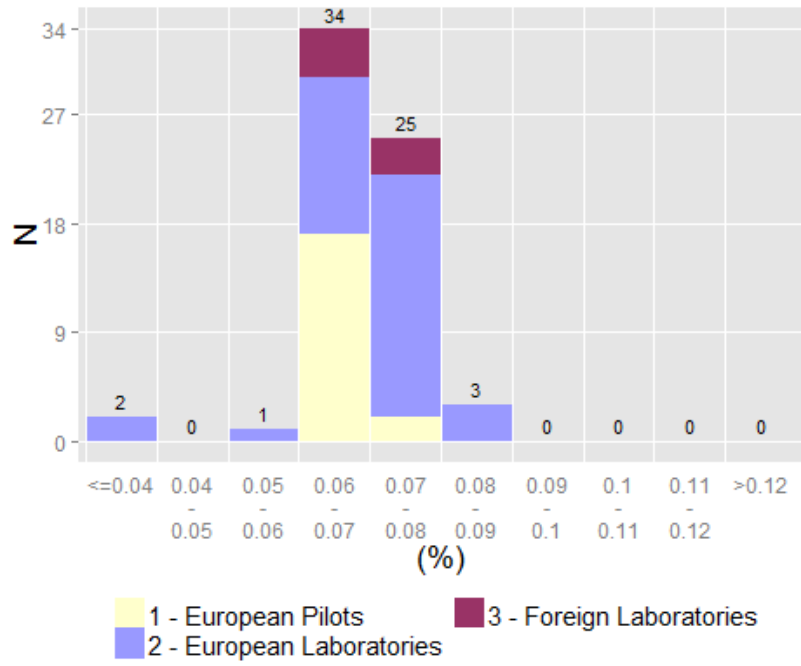


P2O5 - By Labo Group & Method

Labo Group	Method	Number of Results	Mean	ε (5%)	Repro Std	CV (%)	Lm95%	LM95%
1 - European Pilots	A.M.U	22	0.48	0.01	0.02	3.25	0.45	0.52
2 - European Laboratories	A.M.U	70	0.47	0.00	0.02	3.59	0.44	0.51
3 - Foreign Laboratories	A.M.U	11	0.47	0.01	0.02	3.61	0.43	0.51

Labo Group	Method	Number of Results	Mean	ε (5%)	Repro Std	CV (%)	Lm95%	LM95%
1 - European Pilots	X	21	0.48	0.01	0.02	3.33	0.45	0.52
2 - European Laboratories	N	4	0.49	0.00	0.00	0.00	0.49	0.49
2 - European Laboratories	M	1	0.46	.	.	.	.	.
2 - European Laboratories	X	65	0.47	0.00	0.02	3.61	0.44	0.51
3 - Foreign Laboratories	M	1	0.45	.	.	.	.	.
3 - Foreign Laboratories	X	10	0.47	0.01	0.02	3.46	0.44	0.51

SrO (A.M.U)
Mean 0.07 +/- 0

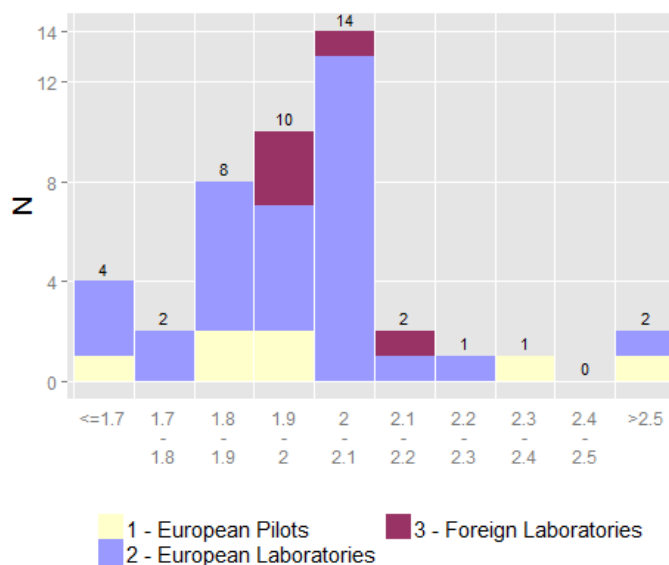


SrO - By Labo Group & Method

Labo Group	Method	Number of Results	Mean	ϵ (5%)	Repro Std	CV (%)	Lm95%	LM95%
1 - European Pilots	A.M.U	17	0.07	0.00	0.00	0.00	0.07	0.07
2 - European Laboratories	A.M.U	37	0.08	0.00	0.01	7.69	0.06	0.09
3 - Foreign Laboratories	A.M.U	7	0.07	0.00	0.01	7.20	0.06	0.09

Labo Group	Method	Number of Results	Mean	ϵ (5%)	Repro Std	CV (%)	Lm95%	LM95%
1 - European Pilots	X	17	0.07	0.00	0.00	0.00	0.07	0.07
2 - European Laboratories	N	1	0.07	.	.	.	.	.
2 - European Laboratories	M	1	0.07	.	.	.	.	.
2 - European Laboratories	X	34	0.08	0.00	0.01	7.74	0.06	0.09
3 - Foreign Laboratories	M	1	0.07	.	.	.	.	.
3 - Foreign Laboratories	X	6	0.08	0.01	0.01	7.30	0.06	0.09

CO2 (A.M.U)
Mean 2 +/- 0.08



CO2 - By Labo Group & Method

Labo Group	Method	Number of Results	Mean	ϵ (5%)	Repro Std	CV (%)	Lm95%	LM95%
1 - European Pilots	A.M.U	7	2.05	0.31	0.33	16.23	1.24	2.87
2 - European Laboratories	A.M.U	30	1.98	0.07	0.19	9.39	1.60	2.37
3 - Foreign Laboratories	A.M.U	5	2.01	0.10	0.08	4.12	1.78	2.24

S-- By Labo Group & Method

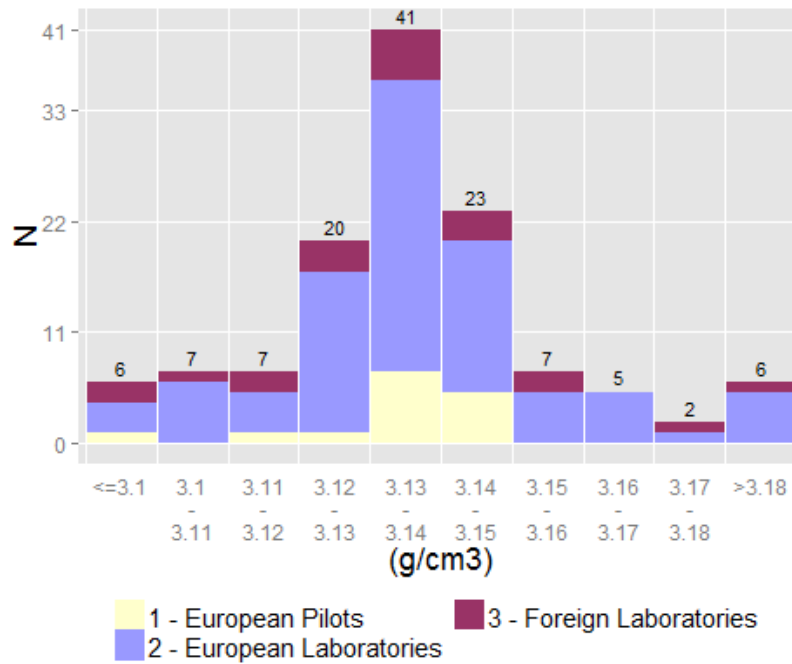
Labo Group	Method	Number of Results	Mean	ϵ (5%)	Repro Std	CV (%)	Lm95%	LM95%
1 - European Pilots	A.M.U	5	0.02	0.01	0.01	27.74	0.00	0.03
2 - European Laboratories	A.M.U	27	0.02	0.01	0.03	123.92	-0.03	0.07
3 - Foreign Laboratories	A.M.U	2	0.04	0.29	0.03	80.56	-0.36	0.44

Cr6+ - By Labo Group & Method

Labo Group	Method	Number of Results	Mean(ppm)	ϵ (5%)	Repro Std	CV (%)	Lm95%	LM95%
1 - European Pilots	A.M.U	3	0.00	0.00	0.00	75.17	-0.00	0.00
2 - European Laboratories	A.M.U	31	0.00	0.01	0.03	139.80	-0.04	0.09
3 - Foreign Laboratories	A.M.U	3	0.00	0.00	0.00	54.75	-0.00	0.00

Physical Tests

Specific Gravity (A.M.U)
Mean 3.14 +/- 0

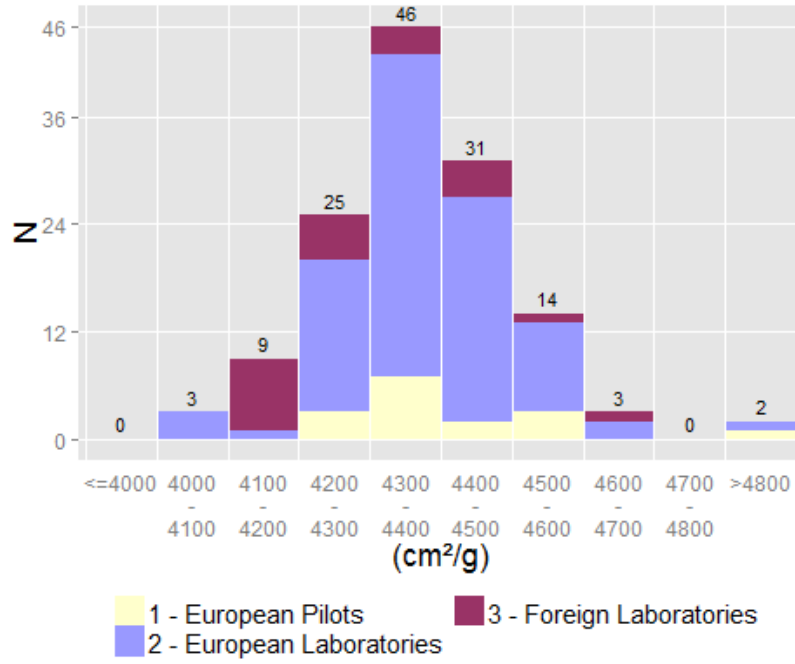


Specific Gravity - By Labo Group & Method

Labo Group	Method	Number of Results	Mean	ε (5%)	Repro Std	CV (%)	Lm95%	LM95%
1 - European Pilots	A.M.U	14	3.14	0.00	0.01	0.28	3.12	3.16
2 - European Laboratories	A.M.U	83	3.14	0.00	0.02	0.52	3.11	3.17
3 - Foreign Laboratories	A.M.U	19	3.13	0.01	0.02	0.76	3.08	3.18

Labo Group	Method	Number of Results	Mean	ε (5%)	Repro Std	CV (%)	Lm95%	LM95%
1 - European Pilots	N	3	3.14	0.01	0.01	0.18	3.12	3.17
1 - European Pilots	A	9	3.14	0.01	0.01	0.32	3.12	3.16
1 - European Pilots	V	2	3.15	0.06	0.01	0.22	3.06	3.23
2 - European Laboratories	N	8	3.14	0.02	0.01	0.30	3.11	3.17
2 - European Laboratories	A	33	3.15	0.00	0.01	0.44	3.12	3.17
2 - European Laboratories	V	42	3.14	0.01	0.02	0.55	3.10	3.17
3 - Foreign Laboratories	N	2	3.15	0.13	0.01	0.45	2.97	3.33
3 - Foreign Laboratories	A	6	3.14	0.01	0.01	0.44	3.10	3.17
3 - Foreign Laboratories	V	10	3.13	0.02	0.03	0.80	3.08	3.19

Specific surface (A.M.U)
Mean 4370.96 +/- 24.65

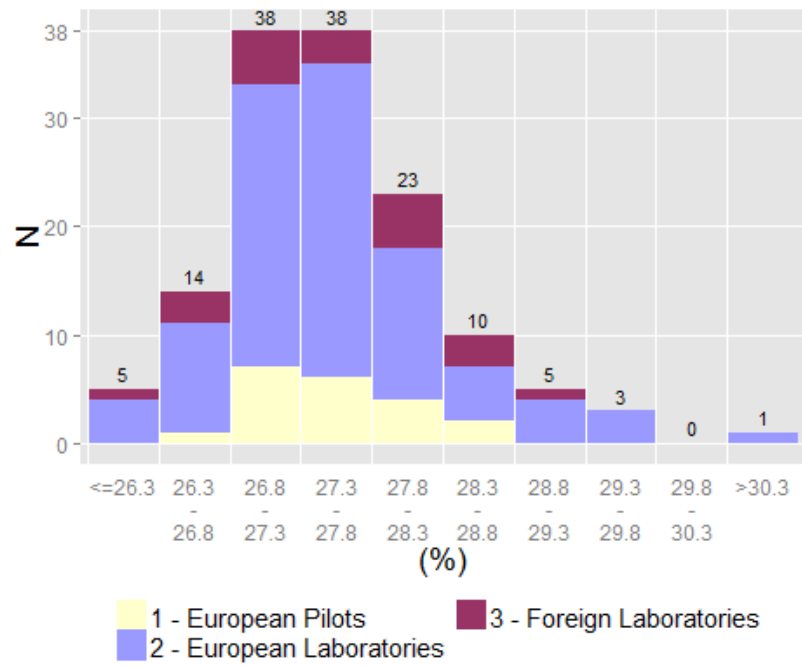


Specific surface - By Labo Group & Method

Labo Group	Method	Number of Results	Mean	ε (5%)	Repro Std	CV (%)	Lm95%	LM95%
1 - European Pilots	A.M.U	15	4387	64.80	117.01	2.67	4136.51	4638.42
2 - European Laboratories	A.M.U	91	4387	21.72	104.28	2.38	4179.65	4594.01
3 - Foreign Laboratories	A.M.U	22	4294	65.04	146.69	3.42	3988.98	4599.12

Labo Group	Method	Number of Results	Mean	ε (5%)	Repro Std	CV (%)	Lm95%	LM95%
1 - European Pilots	A	6	4393	133.85	127.54	2.90	4065.48	4721.19
1 - European Pilots	G	5	4336	59.94	48.27	1.11	4201.98	4470.02
1 - European Pilots	N	3	4411	441.56	177.75	4.03	3646.52	5176.15
2 - European Laboratories		31	4391	41.96	114.39	2.61	4157.10	4624.32
2 - European Laboratories	A	25	4391	40.30	97.63	2.22	4189.61	4592.59
2 - European Laboratories	G	22	4376	44.79	101.03	2.31	4166.17	4586.37
2 - European Laboratories	N	13	4387	65.22	107.92	2.46	4152.09	4622.37
3 - Foreign Laboratories	N	7	4267	160.98	174.06	4.08	3841.29	4693.14
3 - Foreign Laboratories	A	10	4337	107.72	150.59	3.47	3996.11	4677.41
3 - Foreign Laboratories	G	4	4228	143.78	90.36	2.14	3940.20	4515.30

Normal consistency (A.M.U)
Mean 27.6 +/- 0.16

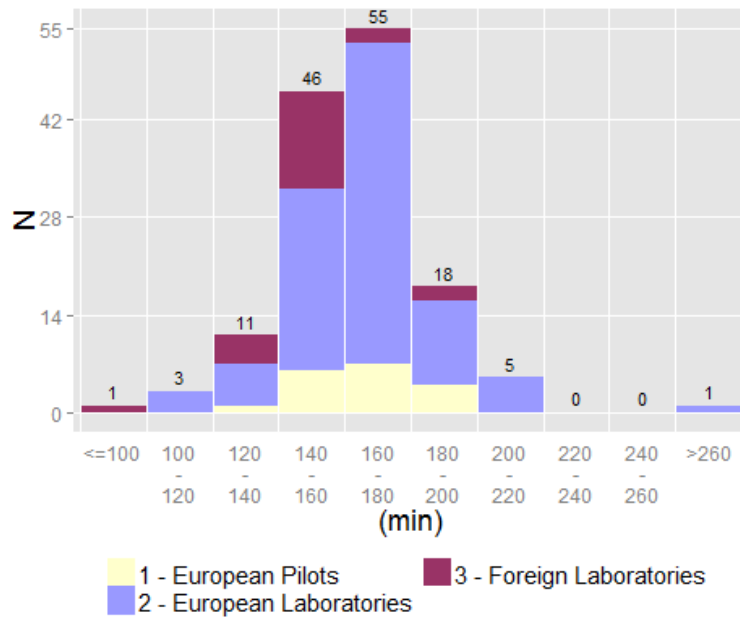


Normal consistency - By Labo Group & Method

Labo Group	Method	Number of Results	Mean	ϵ (5%)	Repro Std	CV (%)	Lm95%	LM95%
1 - European Pilots	A.M.U	20	27.5	0.23	0.49	1.79	26.50	28.57
2 - European Laboratories	A.M.U	95	27.6	0.17	0.84	3.03	25.94	29.26
3 - Foreign Laboratories	A.M.U	21	27.6	0.37	0.82	2.97	25.92	29.35

Initial setting time (A.M.U)

Mean 164.06 +/- 3.29



Initial setting time - By Labo Group & Method

Labo Group	Method	Number of Results	Mean	ε (5%)	Repro Std	CV (%)	Lm95%	LM95%
1 - European Pilots	A.M.U	18	168	8.21	16.51	9.83	133.17	202.83
2 - European Laboratories	A.M.U	95	167	3.38	16.60	9.96	133.76	199.69
3 - Foreign Laboratories	A.M.U	22	153	6.44	14.53	9.47	123.26	183.67

Labo Group	Method	Number of Results	Mean	ε (5%)	Repro Std	CV (%)	Lm95%	LM95%
1 - European Pilots	A	15	166	9.57	17.28	10.41	128.87	203.00
1 - European Pilots	M	2	180	63.53	7.07	3.93	90.15	269.85
2 - European Laboratories	N	3	146	25.13	10.12	6.91	102.81	189.86
2 - European Laboratories	A	71	169	3.90	16.48	9.73	136.60	202.34
2 - European Laboratories	M	21	160	6.49	14.26	8.89	130.64	190.13
3 - Foreign Laboratories	A	7	156	10.80	11.67	7.46	127.90	185.03
3 - Foreign Laboratories	M	13	154	9.38	15.53	10.05	120.71	188.37

Soundness - By Labo Group & Method

Labo Group	Method	Number of Results	Mean	ε (5%)	Repro Std	CV (%)	Lm95%	LM95%
1 - European Pilots		17	0.64	0.23	0.45	69.99	-0.31	1.59
2 - European Laboratories		100	0.68	0.09	0.44	64.92	-0.20	1.55
3 - Foreign Laboratories		15	0.69	0.27	0.49	71.96	-0.37	1.75

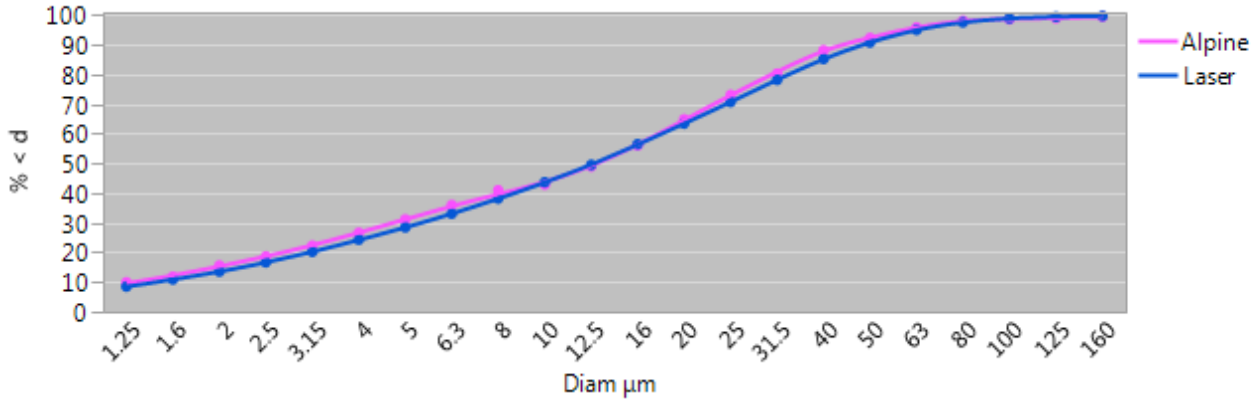
Workability - By Labo Group & Method

Labo Group	Method	Number of Results	Mean	ε (5%)	Repro Std	CV (%)	Lm95%	LM95%
1 - European Pilots		4	3.20	1.20	0.75	23.52	0.80	5.60
2 - European Laboratories		6	4.93	1.78	1.70	34.50	0.56	9.30

Fluidity - By Labo Group & Method

Labo Group	Method	Number of Results	Mean	ε (5%)	Repro Std	CV (%)	Lm95%	LM95%
1 - European Pilots		4	4.53	2.27	1.42	31.48	-0.01	9.06

Granulometry - Alpine / Laser



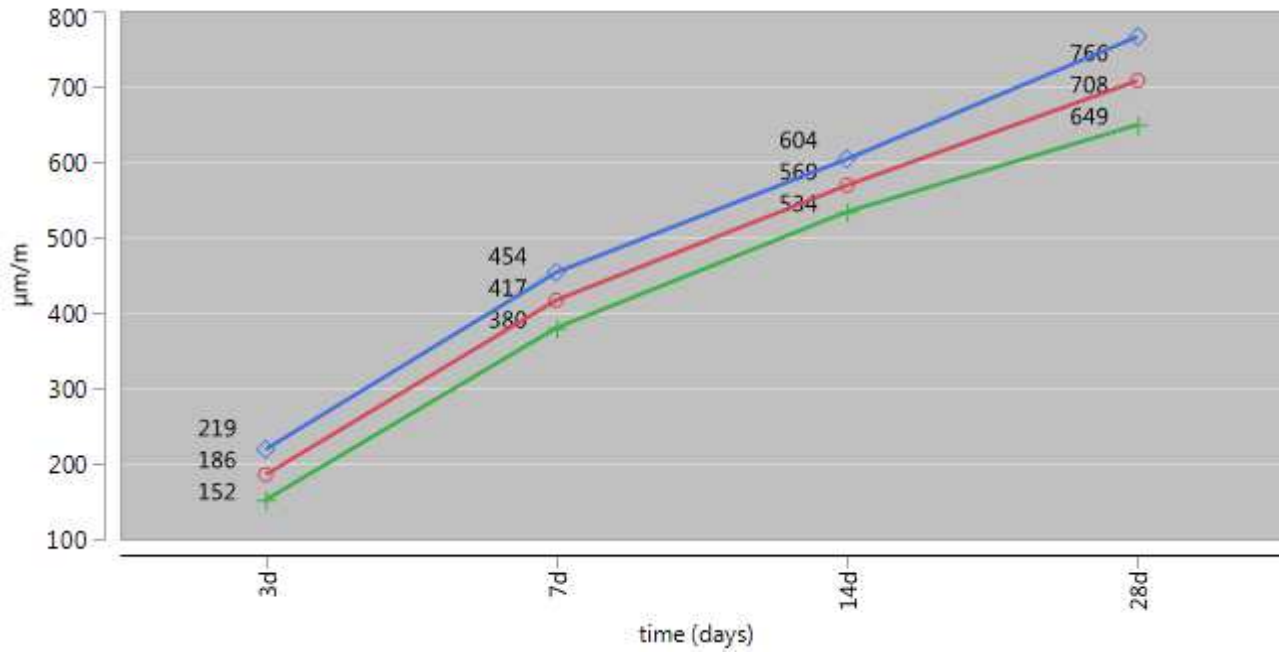
Granulometry - By Method

		Granulometry																					
		Mean																					
METHOD		1.25	1.6	2	2.5	3.15	4	5	6.3	8	10	12.5	16	20	25	31.5	40	50	63	80	100	125	160
Alpine		10.0	11.9	15.7	18.7	22.3	26.7	31.2	36.1	41.0	42.9	49.1	56.1	65.0	73.2	80.4	88.2	92.4	96.0	98.2	98.7	99.1	99.6
Laser		8.5	11.0	13.6	16.7	20.3	24.4	28.5	33.1	38.3	43.7	49.6	56.6	63.5	70.8	78.3	85.3	90.9	95.1	97.7	99.0	99.5	99.8

Granulometry - By Labo Group & Dimension

Labo Group						
Dimension	1 - European Pilots		2 - European Laboratories		3 - Foreign Laboratories	
	Mean	ε (5%)	Mean	ε (5%)	Mean	ε (5%)
	A.M.U	A.M.U	A.M.U	A.M.U	A.M.U	A.M.U
1.25	10.0	3.976	8.5	0.925	6.4	3.942
1.6	12.6	4.342	10.9	1.009	8.7	4.132
2	15.3	3.356	13.5	1.037	11.3	3.902
2.5	18.5	3.388	16.6	1.109	14.6	4.355
3.15	22.1	3.448	20.1	1.143	18.4	4.618
4	26.4	3.544	24.1	1.188	22.7	4.691
5	30.8	3.855	28.2	1.207	27.0	4.738
6.3	35.7	4.213	32.8	1.263	31.6	4.692
8	41.0	4.541	37.9	1.316	36.8	4.733
10	46.3	4.625	43.4	1.379	41.0	4.559
12.5	52.0	4.490	49.3	1.449	47.1	3.838
16	58.7	4.261	56.3	1.502	54.5	3.318
20	65.5	4.088	63.4	1.410	62.0	2.821
25	72.8	3.558	70.8	1.333	69.6	2.762
31.5	80.0	3.244	78.2	1.264	77.4	2.596
40	87.1	1.830	86.2	0.924	87.1	2.249
50	92.2	1.210	91.3	0.741	91.9	1.026
63	96.4	0.831	95.3	0.591	95.8	0.831
80	98.6	0.334	97.7	0.436	97.8	1.182
100	99.5	0.209	98.8	0.402	98.1	2.394
125	99.8	0.140	99.4	0.278	98.5	2.368
160	99.9	0.085	99.8	0.141	99.2	1.760

Shrinkage - Mean A.M.U



γ ○ — Mean + — Lmin95% ◇ — Lmax95%

Shrinkage 3d - By Labo Group & Method

Labo Group	Method	Number of Results	Mean	ε (5%)	Repro Std	CV (%)	Lm95%	LM95%
1 - European Pilots		7	163	64.08	69.29	42.40	-6.12	332.97
2 - European Laboratories		11	200	43.95	65.41	32.77	53.88	345.39

Shrinkage 7d - By Labo Group & Method

Labo Group	Method	Number of Results	Mean	ε (5%)	Repro Std	CV (%)	Lm95%	LM95%
1 - European Pilots		7	399	76.93	83.19	20.84	195.60	602.69
2 - European Laboratories		11	410	30.11	44.83	10.94	309.94	509.70

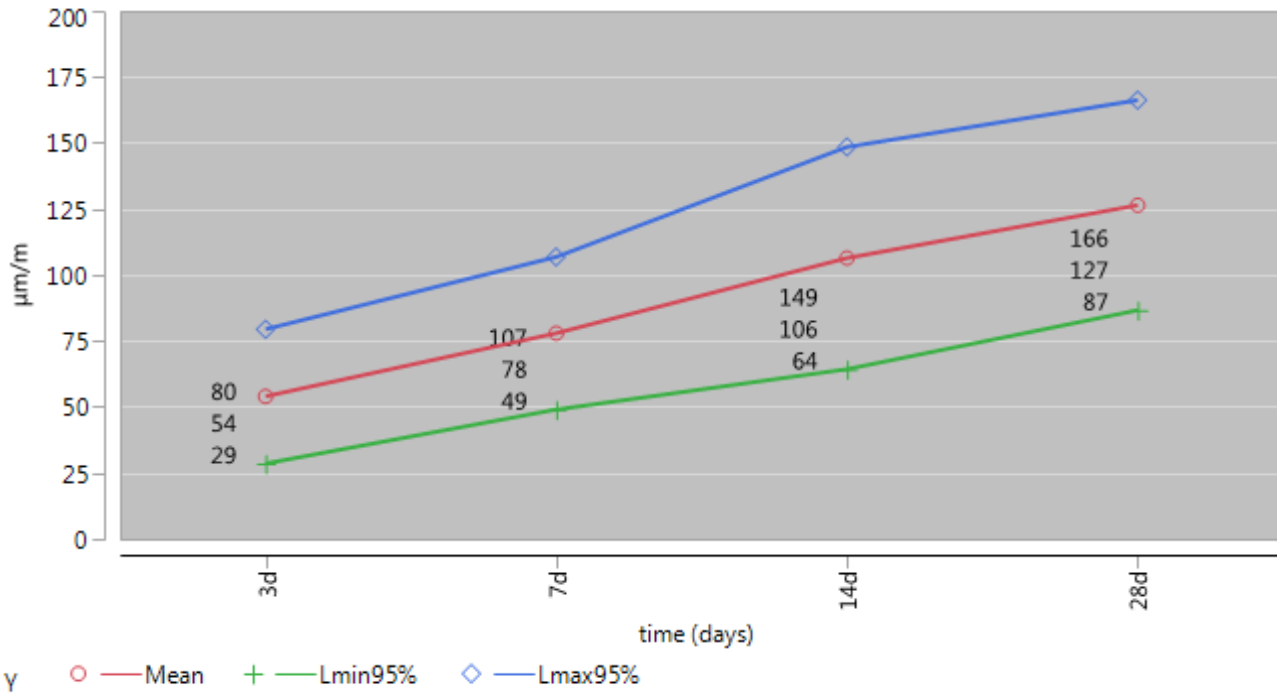
Shrinkage 14d - By Labo Group & Method

Labo Group	Method	Number of Results	Mean	ε (5%)	Repro Std	CV (%)	Lm95%	LM95%
1 - European Pilots		8	587	82.18	98.30	16.74	354.68	819.57
2 - European Laboratories		10	555	25.70	35.93	6.48	473.42	635.98

Shrinkage 28d - By Labo Group & Method

Labo Group	Method	Number of Results	Mean	ε (5%)	Repro Std	CV (%)	Lm95%	LM95%
1 - European Pilots		7	712	71.09	76.87	10.79	524.06	900.23
2 - European Laboratories		11	667	41.00	61.03	9.15	531.28	803.27

Swelling - Mean A.M.U



Swelling 3d - By Labo Group & Method

Labo Group	Method	Number of Results	Mean	ε (5%)	Repro Std	CV (%)	Lm95%	LM95%
1 - European Pilots		5	46	69.00	55.57	121.34	-108.49	200.09
2 - European Laboratories		9	59	30.19	39.27	66.95	-31.90	149.23

Swelling 7d - By Labo Group & Method

Labo Group	Method	Number of Results	Mean	ε (5%)	Repro Std	CV (%)	Lm95%	LM95%
1 - European Pilots		5	101	77.71	62.59	62.09	-72.97	274.57
2 - European Laboratories		8	64	27.48	32.87	51.56	-13.97	141.47

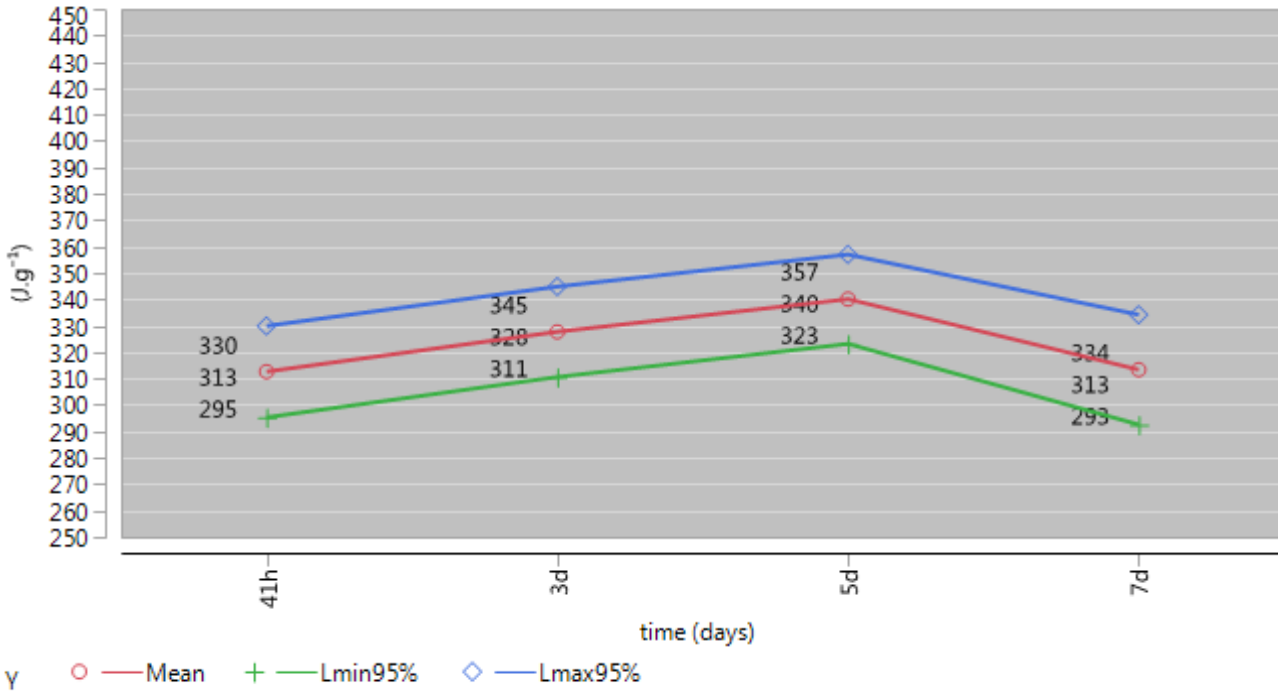
Swelling 14d - By Labo Group & Method

Labo Group	Method	Number of Results	Mean	ε (5%)	Repro Std	CV (%)	Lm95%	LM95%
1 - European Pilots		5	119	94.94	76.46	64.36	-93.49	331.09
2 - European Laboratories		8	99	57.90	69.26	70.14	-65.02	262.52

Swelling 28d - By Labo Group & Method

Labo Group	Method	Number of Results	Mean	ε (5%)	Repro Std	CV (%)	Lm95%	LM95%
1 - European Pilots		5	158	75.61	60.89	38.59	-11.26	326.86
2 - European Laboratories		9	109	53.88	70.09	64.24	-52.52	270.74

Heat of hydration - Mean A.M.U



Heat of hydration 41h - By Labo Group & Method (Semi-adiabatic method)

Labo Group	Method	Number of Results	Mean	ε (5%)	Repro Std	CV (%)	Lm95%	LM95%
1 - European Pilots		10	329	30.76	42.99	13.06	231.84	426.36
2 - European Laboratories		17	331	7.95	15.46	4.67	298.09	363.63
3 - Foreign Laboratories		5	264	65.03	52.37	19.81	118.99	409.81

Heat of hydration 3d - By Labo Group & Method (Semi-adiabatic method)

Labo Group	Method	Number of Results	Mean	ε (5%)	Repro Std	CV (%)	Lm95%	LM95%
1 - European Pilots		8	356	19.84	23.73	6.67	299.77	411.98
2 - European Laboratories		16	339	12.47	23.40	6.89	289.57	389.34
3 - Foreign Laboratories		6	283	52.84	50.35	17.81	153.23	412.10

Heat of hydration 5d - By Labo Group & Method (Semi-adiabatic method)

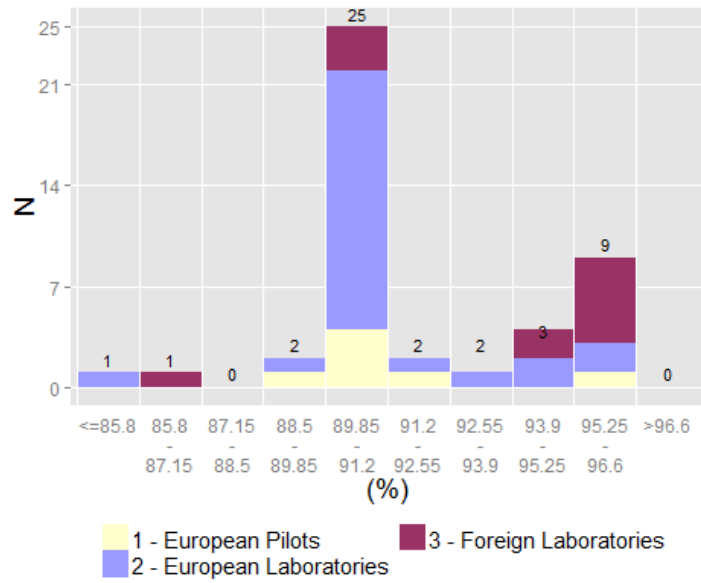
Labo Group	Method	Number of Results	Mean	ε (5%)	Repro Std	CV (%)	Lm95%	LM95%
1 - European Pilots		8	370	15.23	18.21	4.93	326.43	412.57
2 - European Laboratories		15	347	13.84	24.99	7.19	293.71	400.90
3 - Foreign Laboratories		5	298	64.85	52.23	17.55	152.59	442.61

Heat of hydration 7d - By Labo Group & Method (Solution method)

Labo Group	Method	Number of Results	Mean	ε (5%)	Repro Std	CV (%)	Lm95%	LM95%
1 - European Pilots		3	341	58.73	23.64	6.93	239.27	442.73
2 - European Laboratories		4	333	11.86	7.46	2.24	309.02	356.48
3 - Foreign Laboratories		7	291	34.17	36.95	12.71	200.17	380.97

Mineralogy

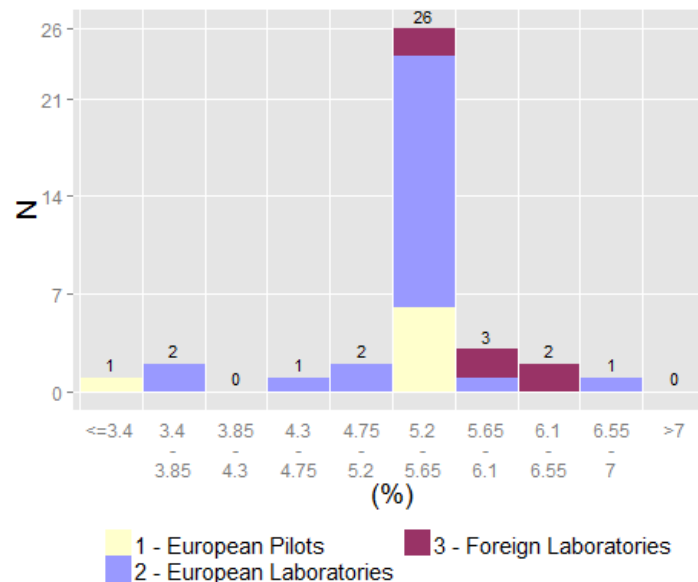
Clinker (A.M.U)
Mean 92.01 +/- 0.91



Clinker - By Labo Group & Method

Labo Group	Method	Number of Results	Mean	ε (5%)	Repro Std	CV (%)	Lm95%	LM95%
1 - European Pilots	N	7	91.6	1.92	2.08	2.27	86.47	96.64
2 - European Laboratories	N	25	91.3	0.76	1.85	2.03	87.52	95.17
3 - Foreign Laboratories	N	12	93.7	2.07	3.25	3.47	86.50	100.81

Set regulator (A.M.U)
Mean 5.52 +/- 0.12

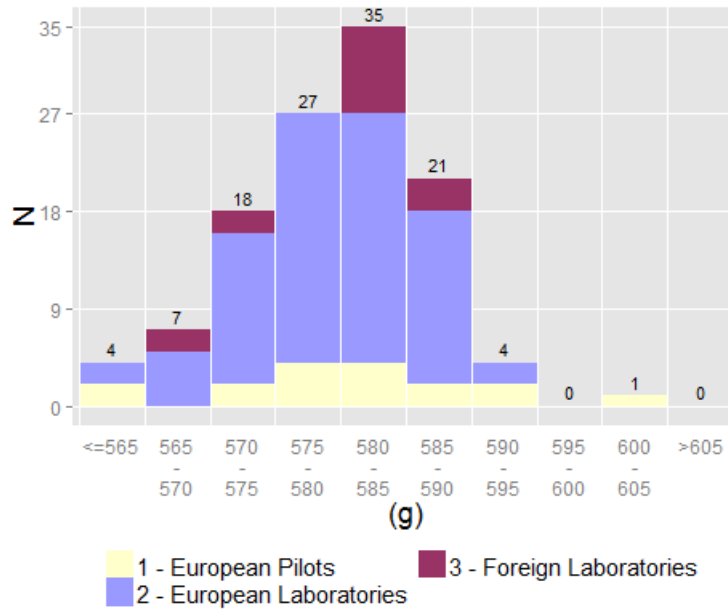


Set regulator - By Labo Group & Method

Labo Group	Method	Number of Results	Mean	ε (5%)	Repro Std	CV (%)	Lm95%	LM95%
1 - European Pilots	N	6	5.5	0.10	0.09	1.67	5.26	5.73
2 - European Laboratories	N	22	5.4	0.11	0.24	4.45	4.94	5.94
3 - Foreign Laboratories	N	6	5.8	0.39	0.37	6.37	4.87	6.78

Mechanical Tests

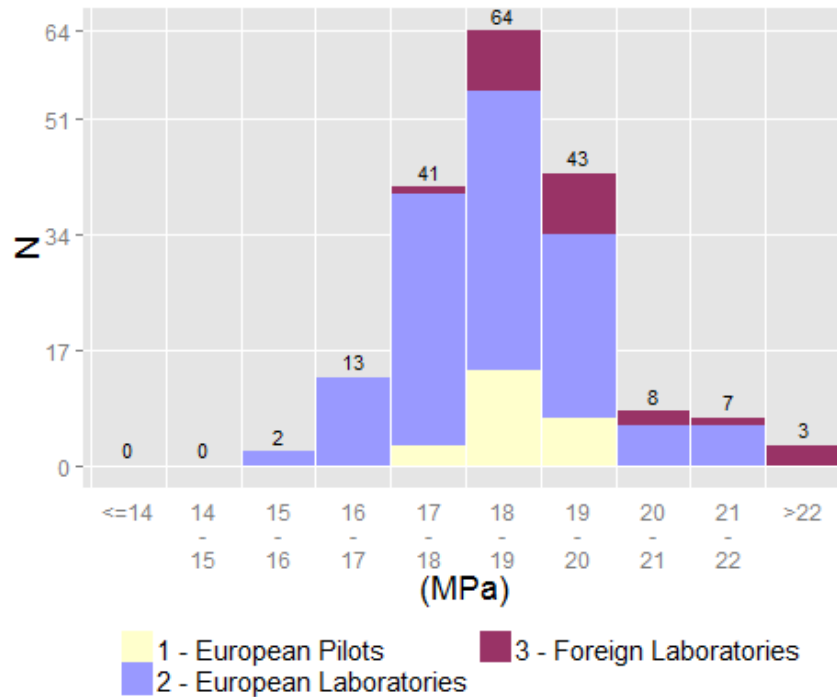
Mean of weight of samples at demoulding (A.M.U)
 Mean 580.31 +/- 1.36



Mean of weight of samples at demoulding - By Labo Group & Method

Labo Group	Method	Number of Results	Mean	ε (5%)	Repro Std	CV (%)	Lm95%	LM95%
1 - European Pilots		14	581.9	3.38	5.85	1.00	569.3	594.6
2 - European Laboratories		83	580.0	1.30	5.98	1.03	568.1	591.9
3 - Foreign Laboratories		15	580.4	4.02	7.26	1.25	564.8	595.9

Compression 1 day (A.M.U)
Mean 18.5 +/- 0.19

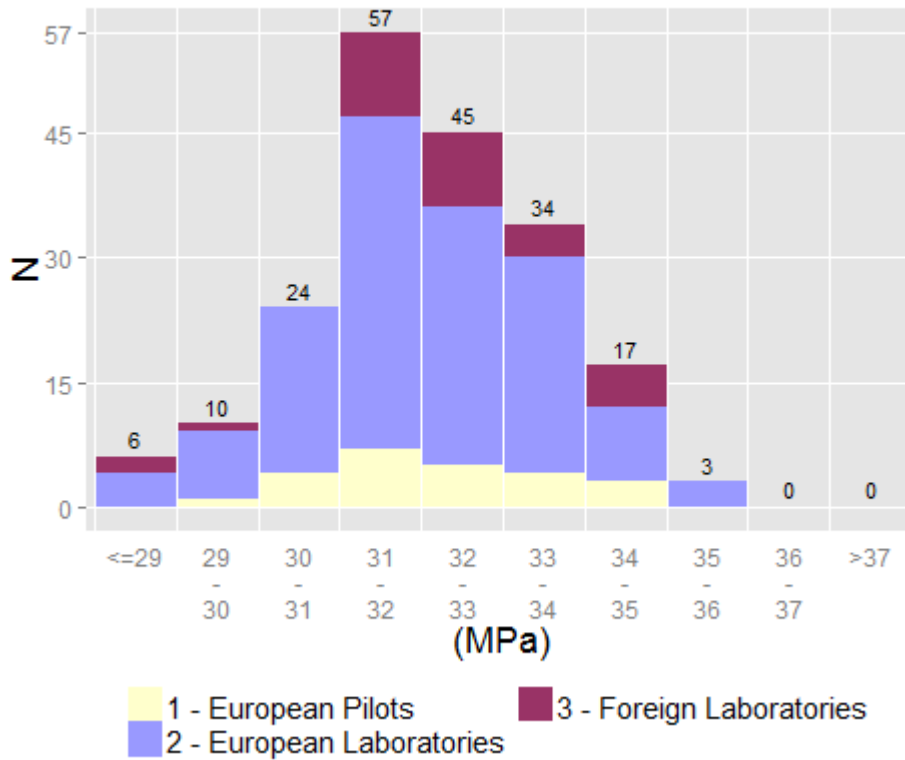


Compression 1 day - By Labo Group & Method

Labo Group	Method	Number of Results	Mean	ε (5%)	Repro Std	CV (%)	Lm95%	LM95%
1 - European Pilots	A.M.U	24	18.7	0.30	0.72	3.87	17.16	20.14
2 - European Laboratories	A.M.U	126	18.4	0.19	1.09	5.95	16.21	20.54
3 - Foreign Laboratories	A.M.U	21	19.1	0.35	0.77	4.02	17.48	20.67

Labo Group	Method	Number of Results	Mean	ε (5%)	Repro Std	CV (%)	Lm95%	LM95%
1 - European Pilots	A	21	18.7	0.35	0.76	4.07	17.09	20.26
1 - European Pilots	D	3	18.5	0.94	0.38	2.05	16.84	20.10
2 - European Laboratories	A	105	18.4	0.21	1.06	5.79	16.29	20.51
2 - European Laboratories	D	18	18.1	0.62	1.24	6.85	15.46	20.69
3 - Foreign Laboratories	A	6	19.0	0.29	0.28	1.47	18.31	19.75
3 - Foreign Laboratories	B	12	19.3	0.49	0.77	4.00	17.61	21.01
3 - Foreign Laboratories	C	3	18.2	2.49	1.00	5.49	13.92	22.54

Compression 2 days (A.M.U)
Mean 32.18 +/- 0.23

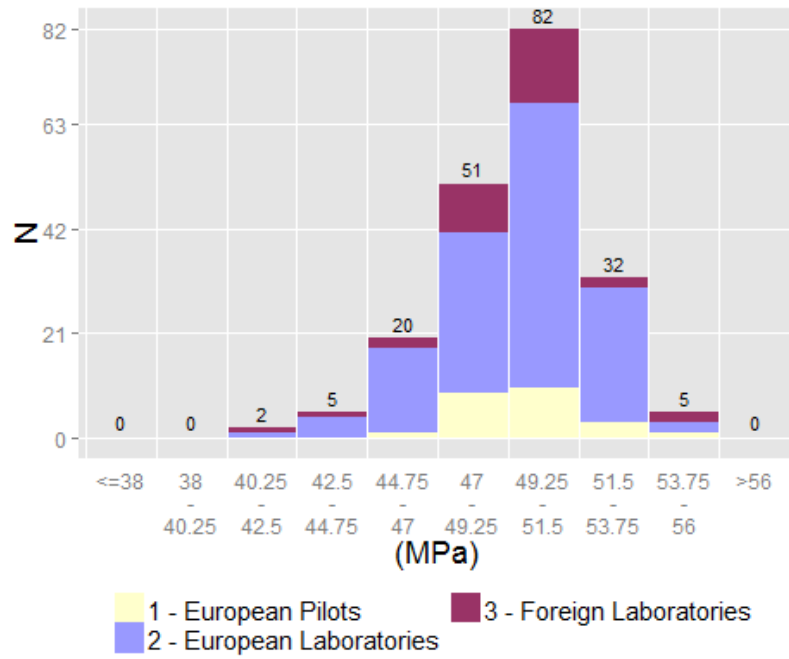


Compression 2 days - By Labo Group & Method

Labo Group	Method	Number of Results	Mean	ε (5%)	Repro Std	CV (%)	Lm95%	LM95%
1 - European Pilots	A.M.U	24	32.2	0.53	1.24	3.87	29.6	34.7
2 - European Laboratories	A.M.U	136	32.1	0.23	1.35	4.19	29.4	34.8
3 - Foreign Laboratories	A.M.U	29	32.6	0.46	1.20	3.68	30.2	35.1

Labo Group	Method	Number of Results	Mean	ε (5%)	Repro Std	CV (%)	Lm95%	LM95%
1 - European Pilots	A	21	32.0	0.55	1.21	3.77	29.5	34.6
1 - European Pilots	D	3	33.0	3.50	1.41	4.27	26.9	39.1
2 - European Laboratories	N	3	30.9	2.87	1.15	3.74	25.9	35.8
2 - European Laboratories	A	107	32.1	0.26	1.36	4.25	29.4	34.8
2 - European Laboratories	D	24	32.3	0.55	1.30	4.02	29.6	35.0
3 - Foreign Laboratories	A	10	32.8	0.86	1.20	3.65	30.1	35.5
3 - Foreign Laboratories	B	13	32.5	0.68	1.13	3.49	30.0	34.9
3 - Foreign Laboratories	C	4	32.4	2.12	1.33	4.11	28.2	36.7
3 - Foreign Laboratories	D	1	34.9	.	.	.	.	.

Compression 7 days (A.M.U)
Mean 49.72 +/- 0.36

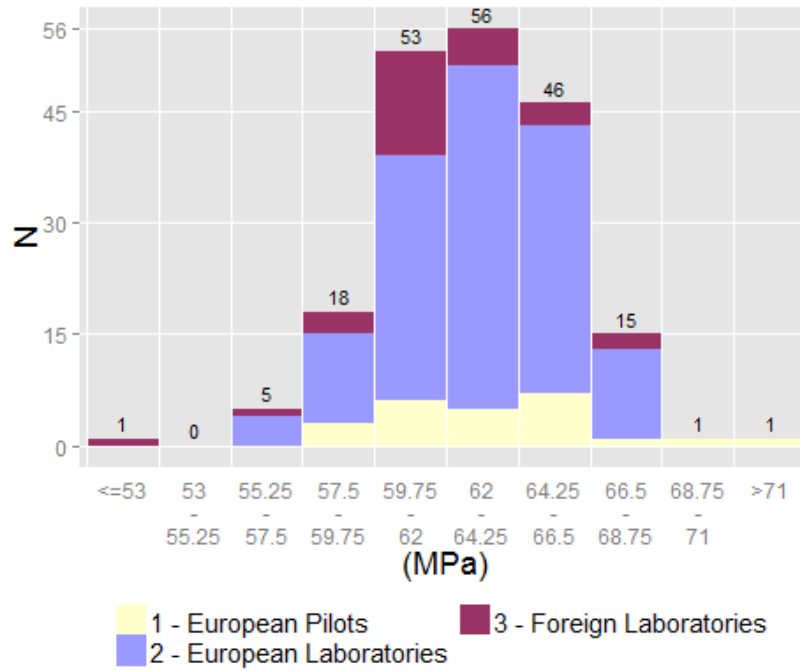


Compression 7 days - By Labo Group & Method

Labo Group	Method	Number of Results	Mean	ε (5%)	Repro Std	CV (%)	Lm95%	LM95%
1 - European Pilots	A.M.U	24	49.8	0.83	1.97	3.96	45.74	53.89
2 - European Laboratories	A.M.U	136	49.7	0.36	2.15	4.32	45.49	53.99
3 - Foreign Laboratories	A.M.U	30	49.5	0.81	2.18	4.41	45.03	53.96

Labo Group	Method	Number of Results	Mean	ε (5%)	Repro Std	CV (%)	Lm95%	LM95%
1 - European Pilots	A	21	49.5	0.83	1.83	3.70	45.7	53.3
1 - European Pilots	D	3	51.9	4.76	1.92	3.69	43.7	60.1
2 - European Laboratories	N	4	47.1	4.11	2.59	5.49	38.9	55.3
2 - European Laboratories	A	108	49.7	0.43	2.24	4.51	45.3	54.2
2 - European Laboratories	D	22	50.1	0.54	1.22	2.44	47.6	52.7
3 - Foreign Laboratories	A	10	50.5	1.09	1.53	3.03	47.0	54.0
3 - Foreign Laboratories	B	14	49.0	1.21	2.09	4.27	44.5	53.5
3 - Foreign Laboratories	C	4	49.9	4.61	2.89	5.80	40.7	59.1

Compression 28 days (A.M.U)
Mean 62.97 +/- 0.41



Compression 28 days - By Labo Group & Method

Labo Group	Method	Number of Results	Mean	ε (5%)	Repro Std	CV (%)	Lm95%	LM95%
1 - European Pilots	A.M.U	22	62.60	1.11	2.50	4.00	57.4	67.8
2 - European Laboratories	A.M.U	140	63.16	0.40	2.40	3.79	58.4	67.9
3 - Foreign Laboratories	A.M.U	25	62.32	0.95	2.30	3.69	57.6	67.1

Labo Group	Method	Number of Results	Mean	ε (5%)	Repro Std	CV (%)	Lm95%	LM95%
1 - European Pilots	A	20	62.3	1.15	2.45	3.93	57.2	67.5
1 - European Pilots	D	2	65.4	6.99	0.78	1.19	55.5	75.2
2 - European Laboratories	N	4	61.7	4.17	2.62	4.25	53.3	70.0
2 - European Laboratories	A	109	62.9	0.45	2.36	3.75	58.2	67.6
2 - European Laboratories	D	25	64.4	0.91	2.21	3.44	59.80	68.9
3 - Foreign Laboratories	A	6	63.1	1.40	1.33	2.11	59.71	66.6
3 - Foreign Laboratories	B	13	61.7	1.28	2.11	3.42	57.11	66.3
3 - Foreign Laboratories	C	4	62.6	5.95	3.74	5.98	50.65	74.5
3 - Foreign Laboratories	D	2	63.3	-	-	-	-	-