

CERTIFICATION TESTING UNECE n°22 Series 05 <i>Internal Identification Test: E5HC</i>	
Job Number	MAT 420857
Report	Code: GPX 3.5 Homologation Date: 06 /08/ 2018
Manufacturer	Name: Leatt® Corporation Address: No. 50 Kiepersol Crescent- Atlas Gardens Atlas Gardens Cape Town Republic of South Africa
Representative	It does not apply
Sample	Helmet model: GPX 3.5 Approval n°: - Stickers from n°: - to n°: - Batch n°: - Arrival date: 30/07/2018 Testing date: 01/08/2018

Essential Technical Data		
SIZE RANGE	YM(51-52) to XXL (63)	
SHELL MATERIAL	ABS	
WEIGHT	YS/YL/XS/S: 1270±50gr -M:1320 ±50gr -L 1350±50gr XL/XXL: 1470±50gr	
RETENTION SYSTEM	DD	
REFLECTIVE BANDS	Yes	
ENVIRONMENTAL CONDITIONS	Temperature	24°
	Humidity	60%

Used Machine	Identifier /Manufacturer	expiry Date
M0015 Tracking point of impact	LTB 1079 (AD Engineering)	Daily Check IO 7.2.13
A0059/M0003 Shock absorption	MAU 1006E/DLS 9000 (AD Engineering)	22/08/2018
M0044 Chin strap resistance	MSD 1009 (AD Engineering)	10/10/2019
M0001 Conditioning chamber: Freezer	T616/40 (OCRAS E ZAMBELLI)	09/09/2018
M0075 Conditioning chamber: Oven	ABX 700NE(IARP)	09/09/2018
M0030 Compressibility	CTE 1068 (AD Engineering)	21/05/2020
M0033 Chin strap efficiency	ROL 1103/E (AD Engineering)	27/05/2020

The helmet was tested in the different configurations with internal sun visor and other critical components.

GPX 3.5



GENERAL SPECIFICATION TEST			
Sizes:		YM(51-52)-YL(53-54)-XS (53-54) S (55-56) M (57- 58) L (59-60) XL (62)-XXL(63-64)	
Reference	General Specification	Result	
		Pass (or N/A)	Fail
6.1	Hard shell	X	
6.1	Impact absorption system (see test data in this report)	X	
6.1	Retention system	X	
6.2	Marked "Does not protect chin from impacts" (if applicable)	N/A	
6.4.1	Extent of protection	X	
6.4.2	Nape cylinder	X	
6.4.3	Protective padding	X	
6.5	Outer round surface – Auditive faculties	X	
6.6	Projections (2 mm)	X	
6.7	Rivets (h 2 mm, r 1 mm; h 2mm, r 2mm)	X	
6.8	Helmet interior	X	
6.9	Assembly	X	
6.10	Chin strap abrasion	X	
6.11 - 6.11.1	Retention system – Chin strap breadth (20 mm)	X	
6.11.2	Under-chin	X	
6.11.3	Chin strap regulation system	X	
6.11.4	Rigid parts	X	
6.11.5	Buckle – "Double D" or "Roll"	x	
6.11.6	Open strip	x	
6.11.7	Quick release (general requirement)	NAP	
6.11.8	Quick release (tests par. 7.3, 7.6, 7.7)	NAP	
6.11.9	Wrong buckle use	NAP	
6.12	Material properties (manufacturer declaration)	X	
6.13	Helmet breaking	X	
6.14, 6.14.3.1 6.14.3.2 6.14.3.3	Peripheral vision:	Lateral visual clearance 105°	X
		Upward visual clearance 7°	X
		Downward visual clearance 45°	X
6.16.1 to 6.16.6	Reflective parts (see test reports)	X	

SPECIFICATION	
H.F. Size	50 to 62
Impact point	B / P / X / R / S
Anvil	Kerbstone / Flat
Conditioning [°C]	
AMB	20 °C ± 5 °C with a relative humidity of 65% ± 5%, for more than 4 hours
LOW	-20 °C ± 5 °C , for more than 4 hours and less than 6 hours
HIGH	+50 °C ± 5 °C , for more than 4 hours and less than 6 hours
UV+H ₂ O	Ultraviolet radiation by a 125-watt xenon- 48 hours Water spray 4 to 6 hours, 1 litre per minute
Speed [m/s]	7.5 m/s + 0.15 m/s (5.5 + 0.15 m/s for the S point)
HIC	≤2400
Deceleration	≤ 275

SHOCK ABSORPTION TESTS

Ref. 7.3

Helmet size XXL(63-64)- GPX 3.5 ABS								
Sticker n°	Helmet Internal Id	H.F. Size	Impact point	Anvil	Cond. [°C]	Speed [m/s]	HIC ≤2400	Deceleration ≤ 275 [g]
-	18-1232	62	B	FLAT	AMB	7.51	1283	193
			X	FLAT		7.50	901	182
			P	FLAT		7.54	2109	221
			R	FLAT		7.50	894	204
-	18-1233	62	B	KERB	AMB	7.54	1134	199
			X	KERB		7.54	920	189
			P	KERB		7.54	1833	216
			R	KERB		7.54	1503	187
-	18-1234	62	B	KERB	+50	7.54	1256	199
			X	KERB		7.54	787	157
			P	KERB		7.54	1916	198
			R	KERB		7.54	1325	180
-	18-1235	62	B	FLAT	-20	7.54	786	187
			X	FLAT		7.50	890	169
			P	FLAT		7.51	2004	205
			R	FLAT		7.50	1444	183
			S	FLAT		5.50	337	107
-	18-1236	62	B	KERB	UV +WET	7.50	1414	163
			X	KERB		7.57	2024	215
			P	FLAT		7.52	1305	180
			R	FLAT		7.52	798	197

Helmet size XL(61-62)- GPX 3.5

Sticker n°	Helmet Internal Id	H.F. Size	Impact point	Anvil	Cond. [°C]	Speed [m/s]	HIC ≤ 2400	Deceleration ≤ 275 [g]
-	18-1239	62	B	KERB	+50	7.50	885	185
			X	KERB		7.51	985	201
			P	FLAT		7.50	1654	210
			R	FLAT		7.52	1987	200
-	18-1240	62	B	FLAT	-20	7.54	1631	198
			X	FLAT		7.51	1524	178
			P	KERB		7.50	852	156
			R	KERB		7.50	998	158
			S	FLAT		5.54	1024	102

Helmet size L(59-60) GPX 3.5

Sticker n°	Helmet Internal Id	H.F. Size	Impact point	Anvil	Cond. [°C]	Speed [m/s]	HIC ≤2400	Deceleration ≤ 275 [g]
-	18-1242	60	B	FLAT	AMB	7.51	1083	183
			X	FLAT		7.50	961	162
			P	FLAT		7.51	2169	220
			R	FLAT		7.54	1742	201
-	18-1243	60	B	KERB	AMB	7.50	1034	179
			X	KERB		7.54	930	165
			P	KERB		7.52	1893	206
			R	KERB		7.52	1533	177
-	18-1244	60	B	KERB	+50	7.50	1256	199
			X	KERB		7.54	777	147
			P	KERB		7.50	1906	188
			R	KERB		7.50	1345	170
-	18-1245	60	B	FLAT	-20	7.52	776	177
			X	FLAT		7.62	840	159
			P	FLAT		7.52	2054	215
			R	FLAT		7.52	1494	193
			S	FLAT		5.52	337	117
-	18-1246	60	B	KERB	UV +WET	7.52	1404	183
			X	KERB		7.57	2004	205
			P	FLAT		7.54	1325	180
			R	FLAT		7.50	796	187

Helmet size M(57-58)- GPX 3.5

Sticker n°	Helmet Internal Id	H.F. Size	Impact point	Anvil	Cond. [°C]	Speed [m/s]	HIC ≤ 2400	Deceleration ≤ 275 [g]
-	18-1249	57	B	FLAT	+50	7.51	973	172
			X	FLAT		7.50	901	162
			P	KERB		7.61	1137	164
			R	KERB		7.54	658	117
-	18-1250	57	B	KERB	-20	7.51	1157	248
			X	KERB		7.52	1057	255
			P	FLAT		7.54	1890	187
			R	FLAT		7.52	1257	162
			S	FLAT		5.57	371	101

Helmet size S(55-56) GPX 3.5

Sticker n°	Helmet Internal Id	H.F. Size	Impact point	Anvil	Cond. [°C]	Speed [m/s]	HIC ≤2400	Deceleration ≤ 275 [g]
-	18-1254	54	B	FLAT	AMB	7.50	798	130
			X	FLAT		7.54	879	154
			P	FLAT		7.52	1592	189
			R	FLAT		7.50	1246	157
-	18-1255	54	B	KERB	AMB	7.50	498	159
			X	KERB		7.52	478	149
			P	KERB		7.54	860	159
			R	KERB		7.50	546	109
-	18-1256	54	B	KERB	+50	7.54	679	137
			X	KERB		7.54	903	182
			P	KERB		7.54	868	143
			R	KERB		7.52	810	125
-	18-1257	54	B	FLAT	-20	7.50	837	144
			X	FLAT		7.52	803	154
			P	FLAT		7.50	1638	192
			R	FLAT		7.51	1213	159
			S	FLAT		5.50	416	146
-	18-1289	54	B	KERB	UV +WET	7.52	1538	182
			X	KERB		7.50	813	194
			P	FLAT		7.56	1239	240
			R	FLAT		7.50	699	157

Helmet size XS(53-54)- GPX 3.5

Sticker n°	Helmet Internal Id	H.F. Size	Impact point	Anvil	Cond. [°C]	Speed [m/s]	HIC	Deceleration
							≤ 2400	≤ 275 [g]
-	18-1260	54	B	FLAT	+50	7.51	825	159
			X	FLAT		7.54	723	142
			P	KERB		7.61	1030	160
			R	KERB		7.50	640	105
-	18-1261	54	B	KERB	-20	7.50	493	121
			X	KERB		7.52	443	111
			P	FLAT		7.52	1510	199
			R	FLAT		7.60	1183	156
			S	FLAT		5.57	499	126

Helmet size YL(53-54)- GPX 3.5

Sticker n°	Helmet Internal Id	H.F. Size	Impact point	Anvil	Cond. [°C]	Speed [m/s]	HIC	Deceleration
							≤ 2400	≤ 275 [g]
-	18-1263	54	B	FLAT	+50	7.50	1002	169
			X	FLAT		7.52	784	122
			P	KERB		7.60	1130	180
			R	KERB		7.52	650	115
-	18-1264	54	B	KERB	-20	7.50	463	131
			X	KERB		7.52	521	121
			P	FLAT		7.50	1530	189
			R	FLAT		7.61	1117	166
			S	FLAT		5.57	500	136

Helmet size YM(51-52) GPX 3.5								
Sticker n°	Helmet Internal Id	H.F. Size	Impact point	Anvil	Cond. [°C]	Speed [m/s]	HIC ≤2400	Deceleration ≤ 275 [g]
-	18-1265	50	B	FLAT	AMB	7.51	608	140
			X	FLAT		7.52	899	164
			P	FLAT		7.52	1492	199
			R	FLAT		7.51	1256	167
-	18-1266	50	B	KERB	AMB	7.50	469	199
			X	KERB		7.50	498	169
			P	KERB		7.52	830	139
			R	KERB		7.50	566	119
-	18-1267	50	B	KERB	+50	7.54	609	127
			X	KERB		7.54	913	192
			P	KERB		7.50	808	163
			R	KERB		7.50	800	135
-	18-1268	50	B	FLAT	-20	7.54	807	124
			X	FLAT		7.51	893	144
			P	FLAT		7.52	1568	182
			R	FLAT		7.51	1203	129
			S	FLAT		5.51	406	156
-	18-1269	50	B	KERB	UV +WET	7.52	1438	192
			X	KERB		7.50	803	184
			P	FLAT		7.56	1109	200
			R	FLAT		7.50	709	187

RETENTION SYSTEM STRENGTH TEST Ref. 7.6					
Helmet GPX 3.5 ABS				Extension	
Sticker n°	Helmet Internal Id	Size	Chin strap	Dynamic 35 [mm]	Residual 25 [mm]
-	18-1241	XL	<i>DD</i>	21	10

ROLL OFF TEST				Ref. 7.7
Sticker n°	Helmet Internal Id	Helmet Size	Chin strap	Roll off Angle ≤ 30°
-	18-1241	XL	<i>DD</i>	24

RETENTION SYSTEM STRENGTH TEST					Ref. 7.6	
Helmet GPX 3.5				Extension		
Sticker n°	Helmet Internal Id	Size	Chin strap	Dynamic 35 [mm]	Residual 25 [mm]	
-	18-1251	M	<i>DD</i>	20	10	

ROLL OFF TEST				Ref. 7.7	
Sticker n°	Helmet Internal Id	Helmet Size	Chin strap	Roll off Angle $\leq 30^\circ$	
-	18-1251	M	<i>DD</i>	22	

RETENTION SYSTEM STRENGTH TEST					Ref. 7.6	
Helmet GPX 3.5				Extension		
Sticker n°	Helmet Internal Id	Size	Chin strap	Dynamic 35 [mm]	Residual 25 [mm]	
-	18-1262	XS	<i>DD</i>	20	10	

ROLL OFF TEST				Ref. 7.7	
Sticker n°	Helmet Internal Id	Helmet Size	Chin strap	Roll off Angle $\leq 30^\circ$	
-	18-1262	XS	<i>DD</i>	23	

RETENTION SYSTEM STRENGTH TEST					Ref. 7.6	
Helmet GPX 3.5				Extension		
Sticker n°	Helmet Internal Id	Size	Chin strap	Dynamic 35 [mm]	Residual 25 [mm]	
-	18-1272	YM	<i>DD</i>	19	10	

ROLL OFF TEST				Ref. 7.7	
Sticker n°	Helmet Internal Id	Helmet Size	Chin strap	Roll off Angle $\leq 30^\circ$	
-	18-1272	YM	<i>DD</i>	21	

TEST FOR PROJECTION AND SURFACE FRICTION METHOD B					
Helmet Client Id	Helmet Internal Id	Test	Tested Point	Result	
				Pass	Fail
GPX 3.5	18-1252	Projection	Side Right	X	-
GPX 3.5	18-1253	Surface	Top	X	-

RIGIDITY TEST Ref. 7.5						
Helmet GPX 3.5			Load Direction	Deformation [mm]		
Sticker n°	Helmet Internal Id	Size		Initial (load 30N)	Max 40 [mm] (load 630N)	Final 15 [mm] (load 30N)
-	18-1237	XXL	Longitudinal	1	10	2
-	18-1238	XXL	Transversal	1	13	2

RIGIDITY TEST Ref. 7.5						
Helmet GPX 3.5			Load Direction	Deformation [mm]		
Sticker n°	Helmet Internal Id	Size		Initial (load 30N)	Max 40 [mm] (load 630N)	Final 15 [mm] (load 30N)
-	18-1247	L	Longitudinal	1	10	1
-	18-1248	L	Transversal	1	15	2

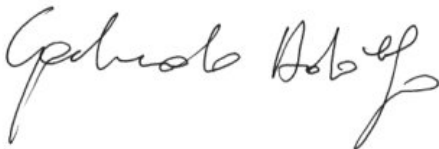
RIGIDITY TEST Ref. 7.5						
Helmet GPX 3.5			Load Direction	Deformation [mm]		
Sticker n°	Helmet Internal Id	Size		Initial (load 30N)	Max 40 [mm] (load 630N)	Final 15 [mm] (load 30N)
-	18-1258	S	Longitudinal	1	11	3
-	18-1259	S	Transversal	1	14	2

RIGIDITY TEST Ref. 7.5						
Helmet GPX 3.5			Load Direction	Deformation [mm]		
Sticker n°	Helmet Internal Id	Size		Initial (load 30N)	Max 40 [mm] (load 630N)	Final 15 [mm] (load 30N)
-	18-1270	YM	Longitudinal	1	12	1
-	18-1271	YM	Transversal	1	14	3

REFLECTIVE PARTS			
		Result	
Reference	Test	Pass or N/A	Fail
6.16.2	Reflective parts (Geometry requirements)	PASS	
6.16.3	Reflective parts (Colorimetric requirements)	PASS	
6.16.4	Reflective parts (Photometric requirements)	PASS	
6.16.5	Reflective parts (Resistance to external agents requirements)	PASS	
6.16.6	Reflective parts (Compatibility of materials requirements)	PASS	

THE SAMPLES TESTED MEET THE REQUIREMENTS OF THE REFERENCE NORM.

Laboratory Technician
(Adolfo Garlando)



Laboratory Manager
(Juan Pablo Cuesta)



QUALIFICATION TESTING UNECE n°22 Series 05 <i>Internal Identification Test: E5HQ</i>	
Job Number	MAT 420857
Report	Code: GPX 3.5 Qualification Date: 11 September 2018
Manufacturer	Name: Leatt® Corporation Address: No. 50 Kiepersol Crescent- Atlas Gardens Atlas Gardens Cape Town Republic of South Africa
Representative	It does not apply
Sample	Helmet model: GPX 3.5 Approval n°: 22R-050652-P Stickers from n°: 1 to n°: 3201 Batch n°: 0 Arrival date: 04/09/2018 Testing date: 11/09/2018

SIZE RANGE	YM(51-52) to XXL (63)
SHELL MATERIAL	ABS
WEIGHT	YS/YL/XS/S: 1270±50gr -M:1320 ±50gr -L 1350±50gr XL/XXL: 1470±50gr
RETENTION SYSTEM	DD
REFLECTIVE BANDS	Yes

ENVIRONMENTAL CONDISTIONS	Temperature	25.2°
	Humidity	54.9%

Used Machine	Identifier /Manufacturer	expiry Date
M0015 Tracking point of impact	LTB 1079 (AD Engineering)	Daily Check IO 7.2.13
A0059/M0003 Shock absorption	MAU 1006E/DLS 9000 (AD Engineering)	03/10/2018
M0002 Conditioning chamber: Freezer	ABX 700NE(IARP)	10/09/2019
M0075 Conditioning chamber: Oven	T616/40 (OCRAS E ZAMBELLI)	07/09/2019
M0044 Chin strap resistance	MSD 1009 (AD Engineering)	14/10/2020

The helmets are divided in n°		6 batches	10
Group n°	Size	helmets	
1	The largest size	10	
2	The largest size	10	
3	The largest size	10	
4	The largest size	10	
5	The largest size	10	
6	The Small Size	10	

Gruppe / Batch n° 1								
		Helmet size: XXL						
		Headform size: 62						
		Impact point: B						
		Anvil: KERB						
Sticker n°	Helmet Internal Id	Conditioning [°C]	Speed [m/s]	Real speed [m/s]	HIC <= 2400	Deceleration <= 275 [g]		
12	18-1626	+50	7.50	7,52	478	112		
40	18-1627			7,5	616	118		
33	18-1563			7,54	629	116		
21	18-1564			7,56	463	125		
41	18-1565			7,56	504	117		
37	18-1566			7,54	424	97		
38	18-1567			7,52	484	118		
32	18-1568			7,52	584	127		
48	18-1569			7,5	503	135		
23	18-1570			7,54	639	126		
$g_m = \sum g_i / 10$						119		
Standardabweichung / Standard deviation				$S = \left[\sum (g_i - g_m)^2 / 9 \right]^{1/2}$		10		
Bedingung / Condition				$g_m + 2.4 \cdot S \leq 275$		144		

Gruppe / Batch n° 2						
Helmet size:		XXL				
Headform size:		62				
Impact point:		X				
Anvil:		FLAT				
Sticker n°	Helmet Internal Id	Conditioning [°C]	Speed [m/s]	Real speed [m/s]	HIC <= 2400	Deceleration <= 275 [g]
52	18-1571	AMB	7.50	7,52	1932	223
15	18-1572			7,56	2062	222
25	18-1573			7,56	1874	220
47	18-1574			7,54	1780	211
44	18-1575			7,59	1925	216
51	18-1576			7,56	1983	219
45	18-1577			7,5	1963	229
28	18-1578			7,52	1865	226
16	18-1579			7,54	1880	221
30	18-1580			7,54	1974	222
$g_m = \sum g_i / 10$						221
Standardabweichung / Standard deviation				$S = \left[\sum (g_i - g_m)^2 / 9 \right]^{1/2}$		5
Bedingung / Condition				$g_m + 2.4 \cdot S \leq 275$		233


Gruppe / Batch n° 3						
Helmet size:		XXL				
Headform size:		62				
Impact point:		P				
Anvil:		FLAT				
Sticker n°	Helmet Internal Id	Conditioning [°C]	Speed [m/s]	Real speed [m/s]	HIC <= 2400	Deceleration <= 275 [g]
5	18-1581	AMB	7.50	7,54	2038	224
9	18-1582			7,54	2204	227
53	18-1583			7,54	2047	217
8	18-1584			7,58	1944	200
20	18-1585			7,54	1962	189
34	18-1586			7,6	2006	207
22	18-1587			7,54	2138	234
36	18-1588			7,58	1954	210
42	18-1589			7,59	2004	207
6	18-1590			7,5	1862	206
Mittelwert / Mean of the value $g_m = \sum g_i / 10$						212
Standardabweichung / Standard deviation				$S = \left[\sum (g_i - g_m)^2 / 9 \right]^{1/2}$		14
Bedingung / Condition				$g_m + 2.4 \cdot S \leq 275$		245


Gruppe / Batch n° 4						
Helmet size:		XXL				
Headform size:		62				
Impact point:		R				
Anvil:		FLAT				
Sticker n°	Helmet Internal Id	Conditioning [°C]	Speed [m/s]	Real speed [m/s]	HIC <= 2400	Deceleration <= 275 [g]
10	18-1591	AMB	7.50	7,56	2108	195
13	18-1592			7,54	2069	198
35	18-1593			7,52	2055	215
37	18-1594			7,54	2056	205
55	18-1595			7,5	2009	208
24	18-1596			7,56	2128	205
39	18-1597			7,54	2009	199
19	18-1598			7,52	1909	202
11	18-1599			7,58	2005	202
29	18-1600			7,58	2019	209
Mittelwert / Mean of the value					$g_m = \sum g_i / 10$	204
Standardabweichung / Standard deviation					$S = \left[\sum (g_i - g_m)^2 / 9 \right]^{1/2}$	6
Bedingung / Condition					$g_m + 2.4 \cdot S \leq 275$	218

Gruppe / Batch n° 5						
Helmet size:		XXL				
Headform size:		62				
Impact point:		S				
Anvil:		FLAT				
Sticker n°	Helmet Internal Id	Conditioning [°C]	Speed [m/s]	Real speed [m/s]	HIC <= 2400	Deceleration <= 275 [g]
27	18-1601	-20	5.50	5,5	258	94
49	18-1602			5,52	839	175
17	18-1603			5,52	483	148
14	18-1604			5,54	490	138
46	18-1605			5,56	466	158
7	18-1606			5,5	485	168
31	18-1607			5,52	465	156
18	18-1608			5,56	485	179
26	18-1609			5,51	493	158
43	18-1610			5,54	498	188
Mittelwert / Mean of the value					$g_m = \sum g_i / 10$	156
Standardabweichung / Standard deviation					$S = \left[\sum (g_i - g_m)^2 / 9 \right]^{1/2}$	26
Bedingung / Condition					$g_m + 2.4 \cdot S \leq 275$	220

Gruppe / Batch n° 6		
Helmet size: YM DD		
Conditioning: AMB		
Stickers n°	Din. Exten. <=35 [mm]	Res. Exten. <=25 [mm]
3	28	10
2	26	11
60	28	10
54	26	10
1	26	12
59	24	11
4	26	10
58	27	11
56	28	13
50	28	12
Xm	26,7	11,0
S	1,3	1,1
Xm+2,4*S	30	14

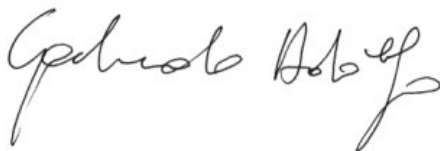
INFORMATION FOR WEARERS
Ref. 14

LABELLING		Result	
Reference	Test	Description or image	
	Method of Attachment to helmet at point of sale: - ...		
Specifies the following:			
14.1	"For adequate protection, this helmet must fit closely and be securely attached. Any helmet that has sustained a violent impact should be replaced"	PASS	
	if fitted with a non protective lower face cover: "Does not protect chin from impacts" together with the symbol indicating the unsuitability of the lower face cover to offer any protection against impacts to the chin.	NAP	
14.2	specific warning in the above-mentioned label: " 'Warning' - Do not apply paint, stickers, petrol or other solvents to this helmet".	PASS	
14.4	Bears a label showing the type or types of visor that have been approved at the manufacturer's request:	NAP	

MARKING		Result
Reference	Test	Description or image
	Method of Marking to the helmet: - ..	
Specifies the following:		
14.3	Protective helmet is clearly marked with its size and its maximum weight, to the nearest 50 grams, as placed on the market.	

THE SAMPLES TESTED MEET THE REQUIREMENTS OF THE REFERENCE NORM

Laboratory Technician
(Adolfo Garlando)



Laboratory Manager
(Juan Pablo Cuesta)

