

File Issue: 001	TEST SHEETS R110 CNG EQUIPMENT	GASTEC
Report Number: 124062	Gas/air mixer or Injector	Page: TM

Annex 4G: GAS/AIR MIXER OR INJECTOR	
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Key to Test-Sheets:	YES = YES	NA = Not Applicable	NT = Not Tested	NO = NO	Example:	YES-NA-NT-NO
Notes: When filling in Test Sheets, answers are crossed out which are not applicable for that clause.						

	Definition: a gas/air mixer is a device for introducing gaseous fuel into the engine intake manifold	
2.1	The material constituting the gas/air mixer or injector which is in contact with the CNG shall be compatible with the CNG. In order to verify this compatibility the procedure specified in annex 5D has to be used.	See below
2.2	The gas/air mixer or injector shall conform to requirements of class 1 or 2 components, according to their classification	See below
2.4	Electrical operated components containing CNG shall comply with the following (i) They shall have a separate ground connection (ii) The electrical system of the component shall be isolated from the body (iii) The injector shall be in closed position when the electric current is switched off	YES-NA-NT-NO YES-NA-NT-NO YES-NA-NT-NO
5A	Overpressure or strength	YES-NA-NT-NO
5B	External leakage	YES-NA-NT-NO
5C	Internal leakage	YES-NA-NT-NO
5D	CNG compatibility	YES-NA-NT-NO
5E	Corrosion resistance	YES-NA-NT-NO
5F NO	Resistance to dry heat	YES-NA-NT-NO
5G NO	Ozone ageing	YES-NA-NT-NO
5H Temperature cycle		YES-NA-NT-NO
5L Durability test		YES-NA-NT-NO
5N	Vibration resistance	YES-NA-NT-NO
5O	Operating temperatures	YES-NA-NT-NO

Job Reference: 124062	Initials: ce
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File Issue: 001	RESULT SHEET R67-01 LPG EQUIPMENT R67-01 revision 2: 29 march 2006	GASTEC
Report Number: 124062	Gas injection device or injector	Page: TM

Annex 11: GAS INJECTION DEVICE, OR GAS MIXING PIECES, OR INJECTORS AND THE FUEL RAIL	
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Key to Test Sheets:	YES = YES	NA = Not Applicable	NT = Not Tested	NO = NO	Example:	YES-NA-NT-NO
Notes: When filling in Test Sheets, answers are crossed out which are not applicable for that clause.						

	Annex 11/1 Gas injection device or injector		
1.2	Component classification : Class 1		YES-NA-NT-NO
1.3	Classification pressure 3.000 kPa		YES-NA-NT-NO
1.4	Design temperatures -20 °C to 120 °C		YES-NA-NT-NO
1.5	General design rules -meets paragraph 6.15.2 -meets paragraph 6.15.2.1 -meets paragraph 6.15.3.1 -meets paragraph 6.15.4.1		YES-NA-NT-NO YES-NA-NT-NO YES-NA-NT-NO YES-NA-NT-NO
1.6	The component meet the applicable test procedures: - Over pressure test Annex 15, par. 4 - External leakage Annex 15, par. 5 - High temperature Annex 15, par. 6 - Low temperature Annex 15, par. 7 - LPG compatibility Annex 15, par. 11 - Corrosion resistance Annex 15, par. 12 <i>TNO</i> - Resistance to dry heat Annex 15, par. 13 TNO Results <i>TNO</i> - Ozone ageing Annex 15, par. 14 TNO Results Creep Annex 15, par. 15 Temperature cycle Annex 15, par. 16		YES-NA-NT-NO YES-NA-NT-NO YES-NA-NT-NO YES-NA-NT-NO YES-NA-NT-NO YES-NA-NT-NO YES-NA-NT-NO YES-NA-NT-NO YES-NA-NT-NO YES-NA-NT-NO

Job Reference: 124062	Initials: BS
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File Issue: 003	RESULT SHEETS R110 CNG EQUIPMENT OVERPRESSURE TEST	GASTEC Page: RM 01/00
Report Number: 124062		

Product: 1/18C101

Tested in accordance with:			
Approval requirement:	Regulation 110		
Annex:	5A		
Testing Equipment (when no accuracy is specified the Gastec standard applies)			
Hydraulic pressure equipment	100666	Gastec no. 111322	Calibrated (✓) Operation OK (✓)
Pressure gauge, when tested pneumatically		111322	
Stopwatch		111322	
Test Conditions			
Safety precautions:			
- safety rules for high pressures Gastec reference HP1			
- safety rules for use of gas cylinders, reference CP16-3.			
- Test is to be performed before and after the durability test.		Complies (✓)	N.A. (✓)
- The samples are filled with water and slowly pressurised.		✓	
- The samples surface shows no visible cracks as a result of this test.		✓	
- Retest a new sample with a pressure gauge with accuracy +5% if samples have failed			✓

Test Results	Requirement				sample no.: before After		sample no.: before after		sample no.: before after	
Moment of test	Before/after									
Classification of component:	0	1	2	3						
Test pressure (kPa)	1.5 x wp	2 x wp	2 x wp	2 x wp						
Test time	≥ 1min				4 Bar		4 Bar		4 Bar	
Rupture	No				✓		✓		✓	
Permanent distortion	No				✓		✓		✓	
Test dated	To be monitored				05/10/23		05/10/23		05/10/23	

Conclusion		
Requirement		
Samples meet requirement	Complies (✓)	N.A. (✓)
Remarks:		

Wp = working pressure

Wp = 2 Bar

Job Reference: 124062	Initials: CB
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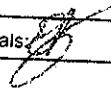
File Issue: 003	RESULT SHEET R110 CNG EQUIPMENT VIBRATION RESISTANCE TEST	 Page RM 02/00
Report Number: 124062		

Product:	Injector
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Tested in accordance with:			
Approval requirement:	Regulation 110		
Annex:	5N		
Testing Equipment (when no accuracy is specified the Gastec standard applies)		Gastec no.	Calibrated (✓)
Resonance equipment		000599	Operation OK (✓)
Stroboscope (check 17 Hz with stroboscope)		111162	
Test Conditions			
Safety precautions:-			
Component shall be vibrated for 2 hours at 17 Hz with amplitude 1.5 mm		Complies (✓)	N.A. (✓)
Resonance test are carried out along each of three orthogonal axes			

Test results		CO90942	
External leakage test annex 5B (additional)		Sample no.:	Sample no.:
Internal leakage test annex 5C		see RM 07/00	see RM
Visual inspection after test		see RM 08/00	see RM
Test date	no mechanical failures to be monitored	07-11-2007	

Conclusion		
Requirement		
Samples meets requirement	Complies (✓)	N.A. (✓)
Remarks:		
Stroboscope available from calibration group		

Job Reference: 124062	Initials: 
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File Issue: 004	RESULT SHEET R110	GASTEC
Report Number: <i>126062</i>	CNG EQUIPMENT	
	CORROSION TESTS (Salt spray)	Page RM <i>03/00</i>

Product:	<i>Injector</i>
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Tested in accordance with:			
Approval requirement:	Regulation 110		
Annex:	5E		
Article:	1		
Task instructions:	ISO 9227		
Testing Equipment (when no accuracy is specified the Gastec standard applies)		Gastec no.	Calibrated (✓) Operation OK (✓)
Salt spray equipment		<i>110930</i>	✓
Stopwatch			✓
Thermometer			
Test Conditions			
Safety precautions:-			
- Before testing the sample is cleaned and dried at ambient temperatures < 40 °C		Complies (✓)	N.A. (✓)
- All connections and openings are closed		✓	
- During testing the sodium chloride concentration is 50±5g/L		✓	
- The average rate of collection of solution is checked (1-2ml/h/80cm²)		✓	
- After testing the sample is cleaned and dried at ambient temperatures < 40 °C		✓	

Test results	Requirement	Sample no.:	Sample no.:
Date and time starting the test	Timing aspects to be monitored	<i>05-12-2007</i>	
Date and time stopping the test	Timing aspects to be monitored	<i>11-12-2007</i>	
Salt spray testing time	144 h	✓	
Ambient temperature during testing	35±2°C	✓	
Store time at room temperature	0.5 - 1h	✓	
Test to be performed after the endurance test are:			
Hydrostatic strength	According to 15.4	See page RM <i>03/00</i>	See page RM
External leakage at ambient, low and high temp	According to 15.5, 15.6 and 15.7	See page RM <i>03/00</i>	See page RM

Conclusion		
Requirement	Complies (✓)	N.A. (✓)
Samples meet requirement	✓	
Remarks:		

Job Reference: <i>126062</i>	Initials: <i>EB</i>
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File Issue: 003	RESULT SHEET R110	GASTEC
Report Number: 12/062	CNG EQUIPMENT	
	CORROSION TESTS (Ammonia)	Page RM 04/00

Product: Impulse

Tested in accordance with:			
Approval requirement:	Regulation 110		
Annex:	5E		
Task instructions:	ISO 15500-2		
Testing equipment (when no accuracy is specified the Gastec standard applies)		Gastec no.	Calibrated (✓)
Ammonia test equipment			Operation OK (✓)
Stopwatch		11/20/08	✓
Microscope			✓
Thermometer			
Test conditions			
Safety precautions:-			
- Three new samples shall used		Complies (✓)	N.A. (✓)
- Before testing the sample is cleaned and dried at ambient temperatures < 40 °C		✓	
- All connections and openings are closed		✓	
- Before testing the ammonia concentration have a specific gravity of 0.94		✓	
- Position of the samples is 40mm above the ammonia		✓	
- After testing the sample is cleaned and dried at ambient temperatures < 40 °C		✓	

Test results		0090943	
Date and time starting the test	Requirement	Sample no.:	Sample no.:
Date and time stopping the test	Timing aspects to be monitored	22-01-2008	
Exposure time in ammonia	Timing aspects to be monitored	23-01-2008	
Ambient temperature during testing	24 h	✓	
Result at magnification of x25	34±2°C	✓	
Test to be performed after the endurance test are:	No cracks	✓	
External leakage test	See page RM....	07/00	
Internal leakage test	See page RM....	08/00	

Conclusion		
Requirement	Complies (✓)	N.A. (✓)
Samples meet requirement	✓	
Remarks:		

Job Reference: 12/062	Initials: <u>EF</u>
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File Issue: 003	RESULT SHEET R110	GASTEC
Report Number: 124062	CNG EQUIPMENT	
	EXTERNAL LEAKAGE TEST	Page: RM 05/00
including high and low temperature		

Product:	Injector
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Tested in accordance with:			
Approval requirement:	Regulation 110		
Annex:	5B		
Testing Equipment (when no accuracy is specified the Gastec standard applies)		Gastec no.	Calibrated (✓)
Oven		1638 000870	✓
Cooler		109817	✓
Pressure gauge		100666	✓
Leakage gauge			✓
Stopwatch		111324	✓
Test Conditions			
Safety precautions:			
- safety rules for high temperature, Gastec reference HT1			
- safety rules for high pressures, Gastec reference HP1			
- safety rules for use of gas cylinders, reference CP16-3			
		Complies (✓)	N.A. (✓)
- The sample has conditioned for 8 hours (at least) at the test temperature		✓	
- The sample is slowly pressurised after the 8 hours of conditioning at the test temperature		✓	
- The test sample is submerged in the test fluid for at least 60 sec, preferred is 900 sec		✓	
- When air bubble(s) are detected after 60 sec, leakage is considered to be > 15 cc/h.		✓	

Test Results	Requirement		sample no.: CC70741	
Test temperature			room temperature	
Moment of test			-65°C / 120°C *	
Classification of component			-20°C / -40°C *	
Test pressure				
External leakage				
Test date				

Conclusion		
Requirement	Complies (✓)	N.A. (✓)
Samples meets requirement		
Remarks:		

- Cross out which is not applicable
- Wp = working pressure =
Wp = 2 Bar

Job Reference: 124062	Initials: EB
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File Issue: 003	RESULT SHEET R110 CNG EQUIPMENT INTERNAL LEAKAGE TEST	 Page: RM 03/00
Report Number: 12602		

Product: Injector

Tested in accordance with:			
Approval requirement:	Regulation 110		
Annex:	5C		
Testing Equipment (when no accuracy is specified the Gastec standard applies)		Gastec no.	Calibrated (✓) Operation OK (✓)
Flow meter (for metal to metal seat only)			
Pressure gauge			✓
Leakage gauge			✓
Stopwatch		111324	✓
Test Conditions			
Safety precautions:			
- Safety rules for high pressures Gastec reference HP1			
- Safety rules for use of gas cylinders, reference CP16-3			
- Seat leakage is tested after testing the external leakage		Complies (✓)	N.A. (✓)
- The sample is submerged in water (metal to metal seats excluded) and slowly pressurised		✓	
- Test is carried out at room temperature		✓	
- The test time is at least 120 sec, preferred is 900 sec		✓	
- When air bubble(s) are detected after 120 sec, seat leakage is considered to be above the limits (for metal to metal seats leakage shall be less than 0.47 dm ³ /sec, as indicated below)			✓

Test Results	Requirement	090741		090742		090743	
		sample no.:		sample no.:		sample no.:	
Moment of test	Corrosion test, temperature cycle test	before	after	before	after	before	after
Test pressure (kPa)	Between 0 and 4.5 x wp. 2x	4 Bar	4 Bar	4 Bar	4 Bar	4 Bar	4 Bar
Seat leakage	No air bubble(s) / < 0.47 dm ³ /sec	✓	✓	✓	✓	✓	✓
Test date	To be monitored	05/12/07	23/12/07	05/12/07	23/12/07	05/12/07	23/12/07

Conclusion		
Requirement		
Samples meet requirement	Complies (✓)	N.A. (✓)
Remarks:		

- * Cross out which is not applicable
- Wp = working pressure 2 Bar

Job Reference: 12602	Initials: EF
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File Issue: 003	RESULT SHEET R110 CNG EQUIPMENT	 Page: RM 06/00
Report Number: 126062	CNG COMPATIBILITY, according ISO 1817	

Product: TKM BLACK 7515

Tested in accordance with:			
Approval requirement:	Regulation 110		
Annex:	5D		
Task instructions:	ISO 1817		
Testing Equipment (when no accuracy is specified the Gastec standard applies)		Gastec no.	Calibrated (✓) Operation OK (✓)
Balance		101489	
Oven		102886	
Test Conditions			
Safety precautions: No open fire and no smoking			
- After each test zero point of the balance is checked		Complies (✓)	N.A. (✓)
- When the test sample is provided with inlayers, these inlayers shall not affect the weight of the test sample.			

Test results	Before Immersion		After immersion 72h in N-pentane		Change in volume ≤ 20%	After storage for 48 h at 40°C	Weight loss: max. decrease of 5%
	Above water	Under water	Above water	Under water			
Sample description							
1	0.26290	0.12228	0.26344	0.12218	0.00	0.26260	0.00
2	0.25833	0.11934	0.25913	0.11999	0.00	0.25838	0.00
3	0.21266	0.09822	0.21366	0.09851	0.00	0.21300	0.00
1							
2							
3							
1							
2							
3							
1							
2							
3							
Test date	22-01-08	22-01-08	25-01-08	25-01-08		28-01-08	

Conclusion	
Requirement	
Samples meet requirement	Complies (✓) N.A. (✓)
Remarks:	

Job Reference: 126062 Initials: CB

File Issue: 003	RESULT SHEET R67-01 LPG EQUIPMENT R67-01 revision 2 HYDROSTATIC STRENGTH	GASTEC Page: RM 10/00
Report Number: 124062		

Product:	Impulse
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Tested in accordance with:			
Approval requirement:	Regulation 67-01		
Annex:	15		
Article:	4		
Testing Equipment (when no accuracy is specified the Gastec standard applies)			
Hydraulic pressure equipment	Gastec no.	Calibrated (✓)	Operation OK (✓)
Pressure gauge, when tested pneumatically	100666	✓	✓
Stopwatch	111326	✓	✓
Test Conditions			
Safety precautions:			
- safety rules for high pressures Gastec reference HP1			
- safety rules for use of gas cylinders, reference CP16-3.			
- Test is to be performed before and after the corrosion test	Complies (✓)	N.A. (✓)	
- The samples are filled with water and slowly pressurised	✓		
- The samples surface shows no visible cracks as a result of this test	✓		
- Retest a new sample with a pressure gauge with accuracy +5%, if samples have failed		✓	

Test Results	Requirement				sample no.:		sample no.:		sample no.:	
	Before/after Corrosion test				before	after	before	after	before	after
Classification of component	1	2	2A	3	2a	2a	2a	2a	2a	2a
Test pressure (kPa) *	6750	1015	270	6750	270kPa	270kPa	270kPa	270kPa	270kPa	270kPa
Test time	≥ 10 min				✓	✓	✓	✓	✓	✓
Rupture	No				✓	✓	✓	✓	✓	✓
Permanent distortion	No				✓	✓	✓	✓	✓	✓
Test dated	To be monitored				03/12/07	23-01-08	03/12/07	23-01-08	03/12/07	23-01-08

Conclusion		
Requirement		
Samples meet requirement	Complies (✓)	N.A. (✓)
Remarks:		

Wp = 1Bar

Job Reference: 124062	Initials: <i>[Signature]</i>
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File Issue: 003	RESULT SHEET R67-01	GASTEC
Report Number: 124062	LPG EQUIPMENT R67-01 revision 2: 29 march 2006	
CORROSION TESTS (Salt spray)		Page RM 11/00

Product:	Injector
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Tested in accordance with:			
Approval requirement:	Regulation 67-01		
Annex:	15		
Article:	12.1		
Task instructions:	ISO 9227		

Testing Equipment (when no accuracy is specified the Gastec standard applies)			
Salt spray equipment	Gastec no. 110930	Calibrated (x)	Operation OK (v)
Stopwatch			
Thermometer			

Test Conditions		
Safety precautions:-		

- Before testing the sample is cleaned and dried at ambient temperatures < 40 °C	Complies (v)	N.A. (v)
- All connections and openings are closed		
- During testing the sodium chloride concentration is 50+5gr/L		
- The average rate of collection of solution is checked (1-2ml/h/80cm ²)		
- After testing the sample is cleaned and dried at ambient temperatures < 40 °C		

Test results			
Date and time starting the test	Requirement	Sample no.:	Sample no.:
Date and time stopping the test	Timing aspects to be monitored	05-12-2007	
Salt spray testing time	Timing aspects to be monitored	11-12-2007	
Ambient temperature during testing	144 h		
Store time at room temperature	35±2°C		
Test to be performed after the endurance test are:	0.5 -1h		
Hydrostatic strength	According to 15.4	See page RM 10/00	See page RM
External leakage at ambient, low and high temp	According to 15.5, 15.6 and 15.7	See page RM 11/00	See page RM

Conclusion		
Requirement		
Samples meet requirement	Complies (v)	N.A. (v)
Remarks:		

Job Reference: 124062	Initials: [Signature]
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File Issue: 003	RESULT SHEET R67-01	GASTEC
Report Number: <u>126062</u>	LPG EQUIPMENT R67-01 revision 2: 29 march 2006	
	CORROSION TESTS (Ammonia)	Page RM <u>12/100</u>

Product: <u>Impulor</u>

Tested in accordance with:			
Approval requirement:	Regulation 67-01		
Annex:	15		
Article:	12.2		
Task instructions:	ISO 6957		
Testing equipment (when no accuracy is specified the Gastec standard applies)			
Ammonia test equipment	Gastec no.	Calibrated (✓)	Operation OK (✓)
Stopwatch	<u>111324</u>		
Microscope			✓
Thermometer			
Test conditions			
Safety precautions:-			
- Before testing the sample is cleaned and dried at ambient temperatures < 40 °C.	Complies (✓)	N.A. (✓)	
- All connections and openings are closed	✓		
- During testing the ammonia concentration is pH 10.0	✓		
- After testing the sample is cleaned and dried at ambient temperatures < 40 °C.	✓		

Test results		<u>CO90763</u>	
Date and time starting the test:	Requirement	Sample no.:	Sample no.:
Date and time stopping the test:	Timing aspects to be monitored	<u>22-01-2008</u>	
Exposure time in ammonia	Timing aspects to be monitored	<u>23-01-2008</u>	
Ambient temperature during testing	24 h	✓	
Result at magnification of x10 to x15	25±6°C	✓	
Test to be performed after the endurance test are:	No cracks	✓	
Hydrostatic strength	According to 15.4	See page RM <u>10/50</u>	See page RM
External leakage at ambient, low and high temp	According to 15.5, 15.6 and 15.7	See page RM <u>5/50</u>	See page RM

Conclusion		
Requirement		
Samples meet requirement	Complies (✓)	N.A. (✓)
Remarks:		

Job Reference: <u>126062</u>	Initials: <u>EB</u>
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File Issue: 003	RESULT SHEET R67-01	GASTEC
Report Number: 12/062	LPG EQUIPMENT R67-01 revision 2	
	EXTERNAL LEAKTIGHTNESS	Page: RM 13/00
	including high and low temperature	

Product: Detector

Tested in accordance with:			
Approval requirement:	Regulation 67-01		
Annex:	15		
Article:	5, 6, 7		
Testing Equipment (when no accuracy is specified the Gastec standard applies)			
Oven	Gastec no.	Calibrated (✓)	Operation OK (✓)
Cooler	000890	✓	✓
Pressure gauge	100879	✓	✓
Leakage gauge	100666	✓	✓
Stopwatch	11321	✓	✓
Test Conditions			
Safety precautions:			
- safety rules for high temperature, Gastec reference HT1			
- safety rules for high pressures, Gastec reference HP1			
- safety rules for use of gas cylinders, reference CP16-3			
- The sample has conditioned for 8 hours (at least) at the test temperature;		Complies (✓)	N.A. (✓)
- The sample is slowly pressurised after the 8 hours of conditioning at the test temperature;		✓	
- The test sample is submerged in the test fluid for at least 60 sec, preferred is 900 sec;		✓	
- When air bubble(s) are detected after 60 sec, leakage is considered to be > 15 cc/h.			✓

Test Results	Requirement	sample no. 070961					
Test temperature		room temperature		65°C / 120°C *		-20°C	
Moment of test *	Corrosion / creep / endurance / cycle test	before	after	before	after	before	after
Classification of component	-4 -2 2A -3	2a	2a	2a	2a	2a	2a
Test pressure (kPa) *	4500 675 180 6750	180 kPa	180 kPa	180 kPa	180 kPa	180 kPa	180 kPa
External leakage	< 15cc/h	✓	✓	✓	✓	✓	✓
Test date	To be monitored	05/10/23	05/12/24	05/28/24	11/07/25	02/28	

Conclusion		
Requirement	Complies (✓)	N.A. (✓)
Samples meet requirement	✓	
Remarks:		
After the endurance test, leakage testing is only required at room temperature.		

* Cross out which is not applicable

Wp = 1 Bar

Job Reference: 12002	Initials: LB
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File Issue: 003	RESULT SHEET R67-01	GASTEC
Report Number: 124068	LPG EQUIPMENT R67-01 revision 2: 29 march 2006	
	SEAT LEAKAGE	Page: RM 16/00

Product: <i>Imprta</i>

Tested in accordance with:			
Approval requirement:	Regulation 67-01		
Annex:	15		
Article:	8		
Testing Equipment (when no accuracy is specified the Gastec standard applies)		Gastec no.	Calibrated (✓)
Flow meter (for metal to metal seat only)			Operation OK (✓)
Pressure gauge		100666	✓
Leakage gauge			✓
Stopwatch		111324	✓
Test Conditions			
Safety precautions:			
- Safety rules for high pressures Gastec reference HP1			
- Safety rules for use of gas cylinders, reference CP16-3			
- Seat leakage is tested after testing the external leakage.		Complies (✓)	N.A. (✓)
- The sample is submerged in water (metal to metal seats excluded) and slowly pressurised.		✓	
- Test is carried out at room temperature		✓	
- The test time is at least 120 sec, preferred is 900 sec.		✓	
- When air bubble(s) are detected after 120 sec, seat leakage is considered to be above the limits (for metal to metal seats leakage shall be less than 500 cc/h, as indicated below).			✓

Test Results	Requirement	sample no.:	sample no.:	sample no.:
Moment of test	Endurance test	before	after	before
Test pressure (kPa)	0-3000 50-3000 0-2300	180 kPa	180 kPa	180 kPa
Seat leakage *	No air bubble(s) / < 500 cc/h	180 kPa	180 kPa	180 kPa
Test date	To be monitored	05/12/07	23/01/08	05/12/07

Conclusion		
Requirement		
Samples meet requirement	Complies (✓)	N.A. (✓)
Remarks:		
After the endurance test, leakage testing is only required at room temperature.		

* Cross out which is not applicable

Wp=1 Bar

Job Reference: 124068	Initials: <i>[Signature]</i>
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File Issue: 003	RESULT SHEET R67-01	GASTEC
Report Number: 12/062	LPG EQUIPMENT R67-01 revision 2: 29 march 2006 LPG COMPATIBILITY FOR SYNTHETIC MATERIALS, according to ISO 1817	
		Page: RM 18 19/100

Product: FRMBLACK 7515

Tested in accordance with:			
Approval requirement:	Regulation 67-01		
Annex:	15		
Article:	11		
Task Instructions:	ISO 1817		
Testing Equipment (when no accuracy is specified the Gastec standard applies)		Gastec no.	Calibrated (✓) Operation OK (✓)
Balance		101489	✓
Oven		102886	✓
Test Conditions			
Safety precautions: No open fire and no smoking			
- After each test zero point of the balance is checked		Complies (✓)	N.A. (✓)
- When the test sample is provided with inlayers, these inlayers shall not affect the weight of the test sample.		✓	✓

Test results		Before Immersion		After immersion 72h in N-pentane		Change in volume	After storage for 48 h at 40°C	Weight loss: max. decrease of 5%
Sample description		Above water	Under water	Above water	Under water	≤ ± 20%		
①	1	0.26290	0.12228	0.26366	0.12298	0.00	0.26260	0.00
②	2	0.25833	0.11936	0.25913	0.11999	0.00	0.25833	0.00
③	3	0.22266	0.09829	0.21366	0.09851	0.00	0.21300	0.00
	1							
	2							
	3							
	1							
	2							
	3							
	1							
	2							
	3							
Test date		22-01-08	22-01-08	25-01-08	25-01-08		28-01-08	

Conclusion	
Requirement	
Samples meet requirement	Complies (✓) N.A. (✓)
Remarks:	✓

Job Reference: 12/062 Initials: CB