

Ginde Pipes SA
Att: Mr. N Cronje
P.O. Box 4679
Rietvalleirant
0174

Your ref : Electronic
Our ref : AH190d
Enquiries : B.Felemu
Tel no : (012) 428-6304/7005
Page : 1 of 3
Date : 14-05-2008

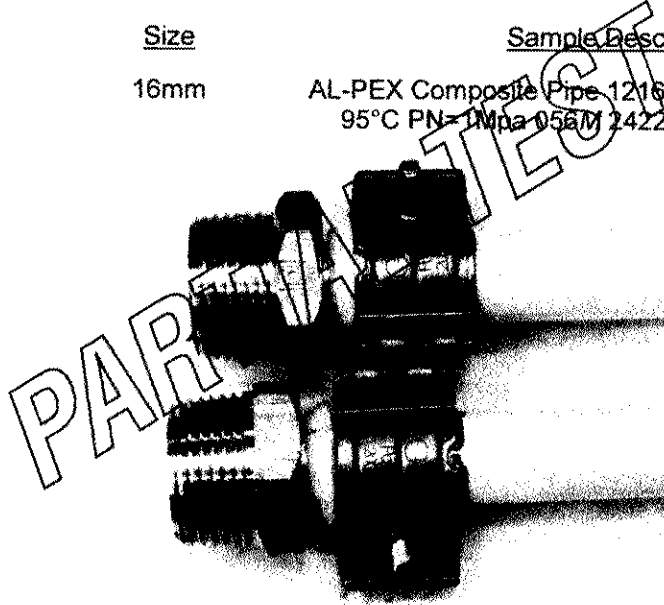
TESTING TO SANS 21003-5:200X**0 SUMMARY**

A partial specification test was performed on the Ginde multilayer pipes and fittings submitted. The Ginde multilayer pipes and fittings passed these tests Refer to Clause 4 for the detail of the test performed, clause 7 for a summary of the results.

1 DESCRIPTION OF SAMPLE

The following Ginde multilayer pipes and fittings were submitted by Mr. N. Cronje of the company Ginde pipes SA.

<u>Sample No.</u>	<u>Size</u>	<u>Sample Description</u>
AH190d	16mm	AL-PEX Composite Pipe 1216-RX Hot Water Tmax = 95°C PN=1Mpa 056M 24223461725362044954

**2 REPORT CONDITIONS**

The contents of this test report refers to the sample/s detailed above and does not infer that the above samples (or any other similar samples) are SABS approved for quality and/or performance

In the instance where this report is used to verify compliance with the JASWIC Acceptance Scheme, the validity of the test reports shall not exceed a period of one (1) year.

3 SAMPLE SUBMITTED

The Ginde multilayer pipes and fittings were received in good condition and were suitable for testing.

Date sample received :29-02-2008
Date test started :29-02-2008
Date test completed :29-02-2008

4 TEST REQUESTED

To test the Ginde multilayer pipes and fittings for partial compliance with the requirements of SANS 21003-5:200X.

5 METHODS OF TESTING

Methods used according to SANS 21003-5:200X.

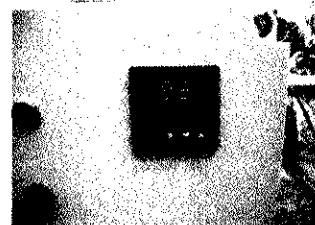
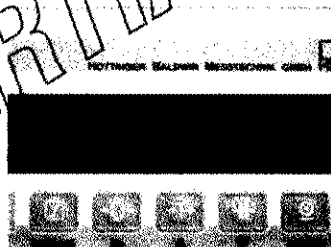
6 SUBCONTRACTING OF LABORATORIES

When applicable all tests will be performed by the Mechanical and fluid technology Laboratory. All metallic, tensile and chemical analysis's will be subcontracted to Scrooby's approved subcontracted laboratory

5.4 Pull-out test



Hot Pull out



	<u>Time duration (min)</u>	<u>Force</u>	<u>Temperature</u>
1	0 – 25 Minutes	201	95°c
2	25 - 30 Minutes	220	95°c
3	30 - 35 Minutes	240	95°c
4	35 - 40 Minutes	260	95°c
5	40 - 45 Minutes	295	95°c
6	45 - 50 Minutes	330	95°c
7	50 - 55 Minutes	350	95°c
8	55 - 60 Minutes	400	95°c
Results: Complied			
9	61 - 64 Minutes	430	95°c
10	64 - 80 Minutes	480	95°c
11	80 - 90 Minutes	550 - 580	95°c
12		Maximum 590	

When tested in accordance with EN 712 using the test parameters given in table 4 the joint assemblies shall withstand the pull-out force without being separated. The force *F* shall be calculated from the following equation:

$$F = \frac{\pi}{4} \times d_n^2 \times p_D$$

This test was performed by SABS Commercial (Pty) Ltd, an affiliate of the SABS. This report relates only to the specific sample(s) tested as identified herein. It does not imply SABS approval of the quality and/or performance of the item(s) in question and the test results do not apply to any similar item that has not been tested. (Refer also to the complete conditions printed on the back of official test reports.)

where

F is the force, expressed in N;

d is the nominal outside diameter of the pipe in mm.

p_D^n is the design pressure of 4, 6, 8 or 10 bar, as applicable in MPa. In the case of the classification "all classes" the design pressure shall be 10 bar, in MPa.

Table 4 — Test parameters for pullout force

1	2	3				4		5	6
		Application class							
	All application classes	Class 1	Class 2	Class 4	Class 5				
Maximum design temperature T_{max} (°C)	-	80	80	70	90				
Test temperature, T_{max} (°C)	23	95	95	80	95				
Test duration, t (h)	1	1	1	1	1				
Pullout force F (N)	$1.5 \times F$	F	F	F	F				
Number of test pieces	3	3	3	3	3				
NOTE The pull out test has to be performed at 23 °C and at T_{max} for the relevant application class.									


Result: Complied.

7 SUMMARY OF RESULTS


The Ginde multilayer pipes and fittings tested partial complied with the relevant requirements of SANS 21003-5:200X.

GENERAL

All tested samples will be disposed of if not collected within 3 months from date of this report



 Mr. B. Felenu
 Test Officer
 Mech & Fluid Technology



 Mr. K. Delst
 Head of Lab
 Mech & Fluid Technology

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