NEW ZEALAND AGRICULTURAL ENGINEERING INSTITUTE

LINCOLN COLLEGE CANTERBURY NEW ZEALAND

PUBLIC TEST REPORT NO T/49 April 1971

LABORATORY TESTS FOR TRENCH LAID PLASTIC DRAINAGE PIPE OF UP TO 4 INCHES DIAMETER

ENTRANT: Novoplast, Porirua

MANUFACTURER: Novoplast, Porirua

SUMMARY:

A full description of test procedures and equipment is contained in Project Report P/3 of the New Zealand Agricultural Engineering Institute issued in July 1968.

The samples of pipe submitted for test satisfied the requirements of the test procedure in all respects. The detailed results of the testing are given in this report.

NEW ZEALAND AGRICULTURAL ENGINEERING INSTITUTE

LABORATORY TEST RESULTS FOR TRENCH LAID PLASTIC DRAIN PIPE

PIPE DETAILS

Manufacturer: Novoplast - Porirua
Supplier for test: Novoplast - Porirua
Material: Unplasticised P.V.C.

Nominal Dia: 4 inches
Weight per foot: 4.8 oz
Jointing Method: Sleeve
Standard Length: 500ft coils
20ft lengths

IMMEDIATE STRENGTH (using Unconfined Compression Apparatus) Date: Feb. 1971

Deflection (1/1000")	46	90	127	165	200	239	283	330
Load Dial Gauge (1/10,000")	15	30	45	60	75	90	105	120
Load (lbs)	4.7	9.5	14.2	19.0	23.6	28.5	33.1	38.0
Load x 1.5 (lbs)	7.1	14.2	21.4	28.5	35.5	42.6	49.6	57.0
Temperature (°C)	20°C							

Immediate Strength (from plot) = 22.5 lbs/ft/1/8"

CREEP STRAIN

Date: Feb. 1971

Time:	5 min.	1 hr	6 hr	24 hr	4 days	7 days
Dial Gauge (1/1000")	46	56	60	68	92	93
Temperature (°C)	17°C					

Creep Strain = $0.093/4.00 \times \frac{100}{1} = 2.32\%$

IMPACT DURABILITY

Date: Feb. 1971

Temperature Prior to Test (°C) $0°C \pm 1°C$

Sample Number	1	2	3	4	5	6	7	8	9	10
4"										
8"										
12"										
16"										
20"										
24"										
28"							x			
32"									x	
36"					x					
40"	OK	OK	OK	OK		OK		OK		x

Impact Durability = 94%

Variability = 25.4%

LONGITUDINAL FLEXIBILITY

Date: Feb. 1971 Kinking: NIL Fatigue: NIL

WATER INTAKE Date: March 1971

Sand Hydraulic Conductivity: 0.04 in/sec at 20°C.

Source of Water for Test: Piped N.Z.A.E.I. Water Supply

Standardised Flow of Test Tube: 2.64 gpm

Standardised flow of Comparison Tube: 4.16 gpm

% Intake: 63%

RESULTS SUMMARY

Immediate Strength: 22.5 lbs/ft/1/8"

Comment: PASS

Impact Durability: 94% % resistant 25.4 % variability

Comment: PASS

Creep Strain: 2.32 Deflection % N.D.

Comment: PASS

Water Intake: 63 % intake

Comment: PASS

Longitudinal Flexibility:

Comment: PASS

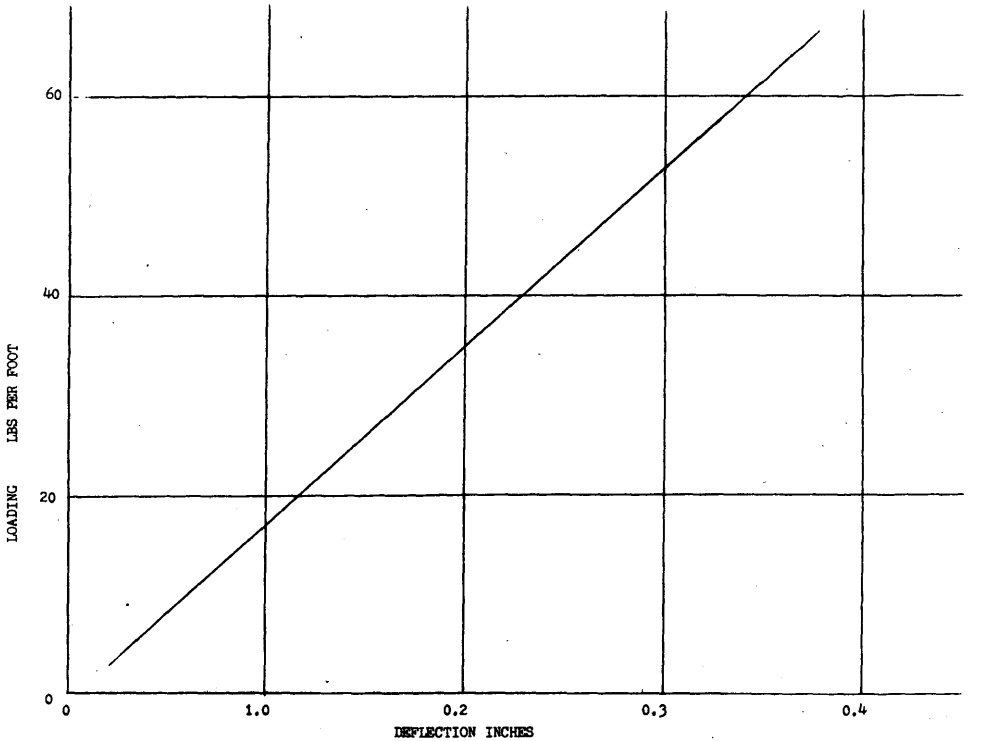
GENERAL COMMENT

The samples of pipe tested satisfied the requirements of the test procedure in all respects.

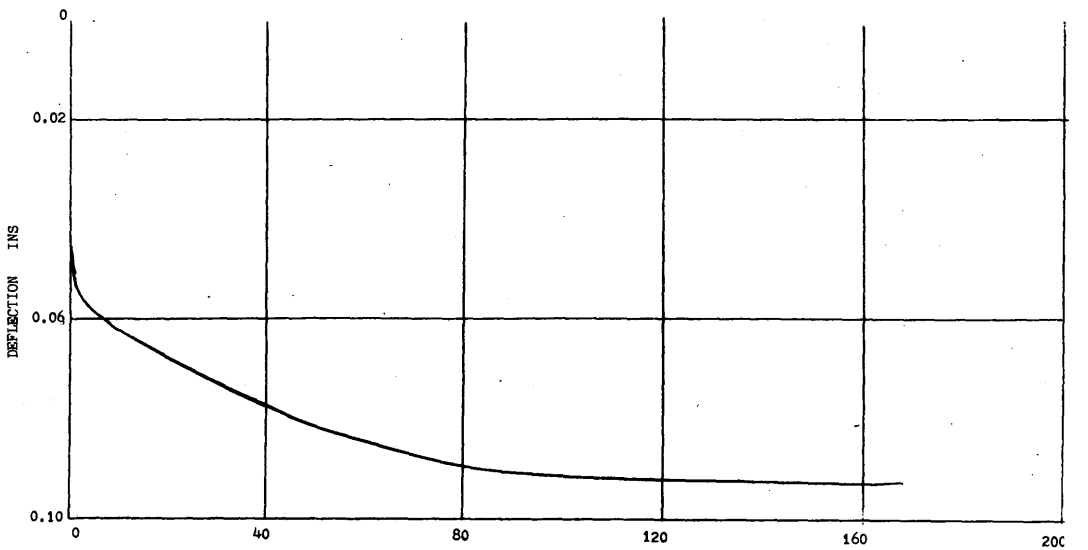
Testing Officer [redacted].....

Date ...28/4/71.....

Acting Director... [redacted] .....



APPENDIX ONE IMMEDIATE STRENGTH CURVE



APPENDIX TWO CREEP STRENGTH GRAPH