

NEW ZEALAND AGRICULTURAL ENGINEERING INSTITUTE

LINCOLN COLLEGE

CANTERBURY



PUBLIC TEST REPORT NO T/50

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.

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: 2½ inches
 Weight per foot: 3.4 oz
 Jointing Method: Sleeve
 Standard Length: 500ft coils
 20ft lengths

IMMEDIATE STRENGTH (using Unconfined Compression Apparatus) Date: August 1971

Deflection (1/1000")	12	25	36	46	56	67	77	88
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)	15°C.							
Immediate Strength (from plot) =	40 lbs/ft/1/16"							

CREEP STRAIN

Date: August 1971

Time:	5 min.	1 hr	6 hr	24 hr	4 days	7 days
Dial Gauge (1/1000")	66	66	69	78	89	94
Temperature (°C)	20°C					
Creep Strain =	$0.094 / 2.5 \times \frac{100}{1} = 3.75\%$					

IMPACT DURABILITY

Date: August 1971

Temperature Prior to Test (°C) 0°C ± 1°C

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

Impact Durability = 83%

Variability = 27.7%

LONGITUDINAL FLEXIBILITY

Date: August 1971 Kinking: NIL Fatigue: NIL

WATER INTAKE

Date: August 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: 2.95 gpm
Standardised flow of Comparison Tube: 4.04 gpm
% Intake: 73%

RESULTS SUMMARY

Immediate Strength: 40 lbs/ft/1/16"
Comment: PASS Sample did not deflect 1/8" in load range as specified in Project Report P/3.

Impact Durability: 83% resistant 27.7% variability
Comment: PASS

Creep Strain: 3.75 Deflection % N.D.
Comment: PASS

Water Intake: 73% intake
Comment: PASS

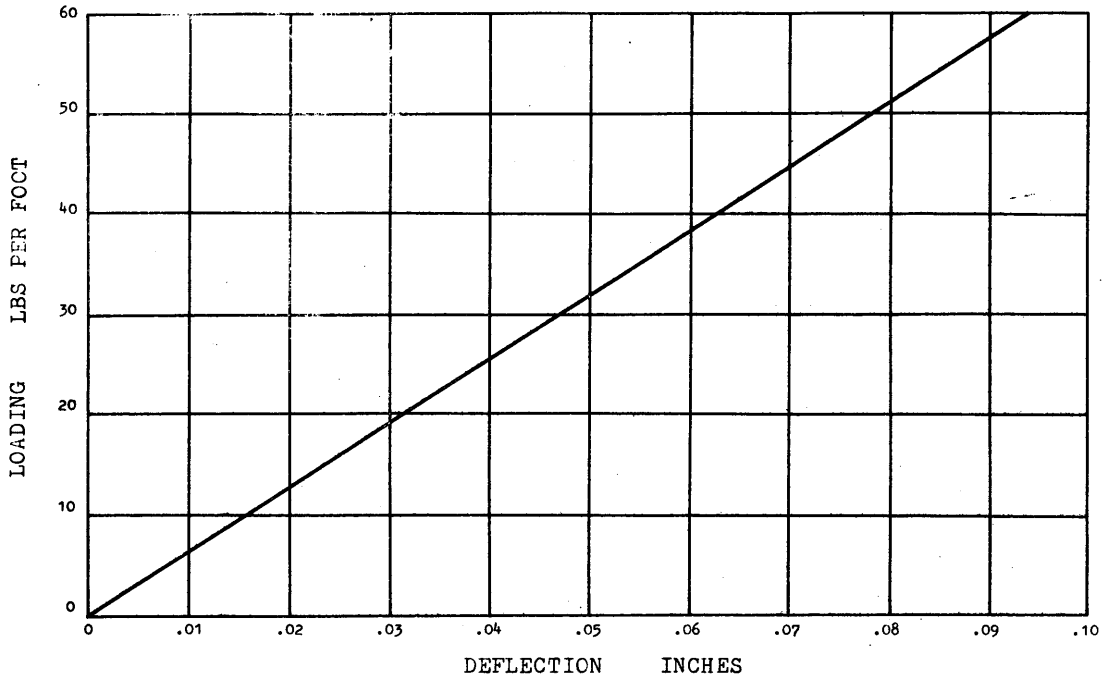
Longitudinal Flexibility:
Comment: PASS

GENERAL COMMENT

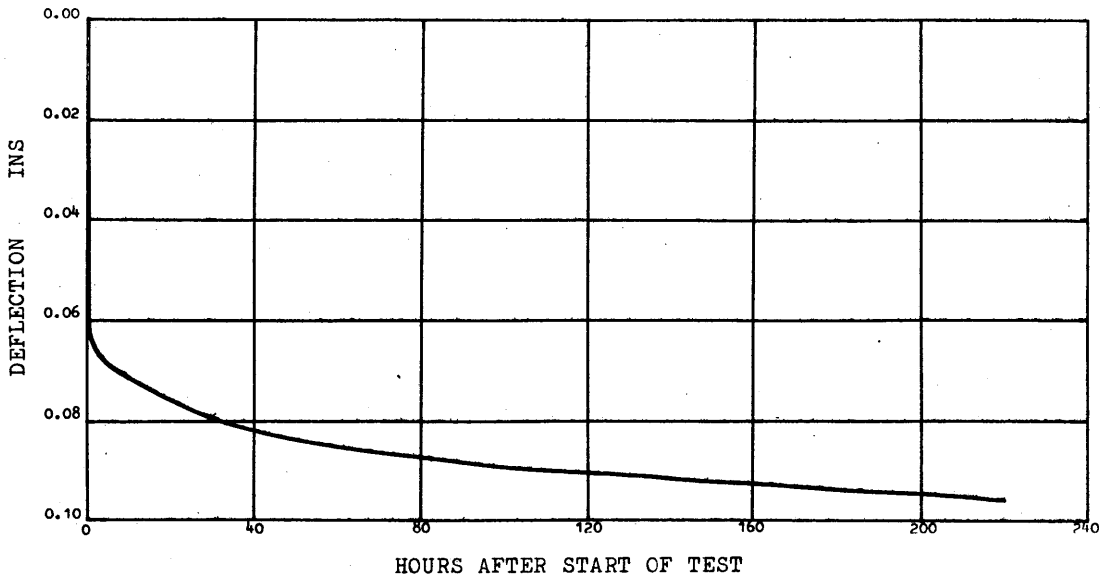
The samples of pipe tested satisfied the requirements of the test procedure in all respects.

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Date 30/8/71

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APPENDIX ONE IMMEDIATE STRENGTH CURVE



APPENDIX TWO CREEP STRENGTH GRAPH