Project : Quality Assurance
Location : Production Stock
Client : Road Metals Company Limited
Contractor : Various
Sampled by : David Ohs (Road Metals)
Date sampled : 15 January 2025
Sampling method : NZS 4407: 2015 (2.4.6.3.2)
Sample description : NZTA M/4 AP20
Sample condition : Damp as received
Source : Waimakariri Quarry

Project No :	6-JRMCO.16/6LC
Lab Ref No :	CH12314
Client Ref No :	Chris Newcombe

Particle Size Distribution

Sieve Size (mm)	Percentage Passing Sample	Percentage Passing Limits
63.0	-	100 - 100
37.5	-	100 - 100
19.0	100	100 - 100
9.5	70	55 - 75
4.75	43	33 - 55
2.36	30	22 - 42
1.18	19	14 - 31
0.600	13	8 - 23
0.300	10	5 - 16
0.150	7	0 - 12
0.075	6	0 - 8

% passing the finest sieve is obtained by difference

Grading Shape Control

Fraction (mm)	% Within Fraction Sample	% Within Fraction Limits
9.5 - 2.36	40	20 - 46
4.75 - 1.18	24	9 - 34
2.36 - 0.600	17	6 - 26
1.18 - 0.300	9	3 - 21
0.600 - 0.150	6	2 - 17

Crushing Resistance

% Fines @ Spec. Load	-	%
Specification	-	%
Crushing Resistance	-	kN
Nom Aggregate Size	-	mm
Specified Load	-	kN

Broken Faces Content of Aggregate

Fraction (mm)	Percentage by Weight Sample	Percentage by Weight Lower Limit
19.0 - 9.5	78	70
9.5 - 4.75	70	70

Plasticity Index

Sample PI	-
Specification	<= 5

Clay Index

Sample CI	0.5
Specification	<= 3

Sand Equivalent (Washed, Mechanical Shaking)

Sample SE	-
Specified	>= 40

TNZ M/4 2006 AP20
Particle Size Distribution

Legend: Lower Limit-Coarse, Upper Limit-Fine, Sample
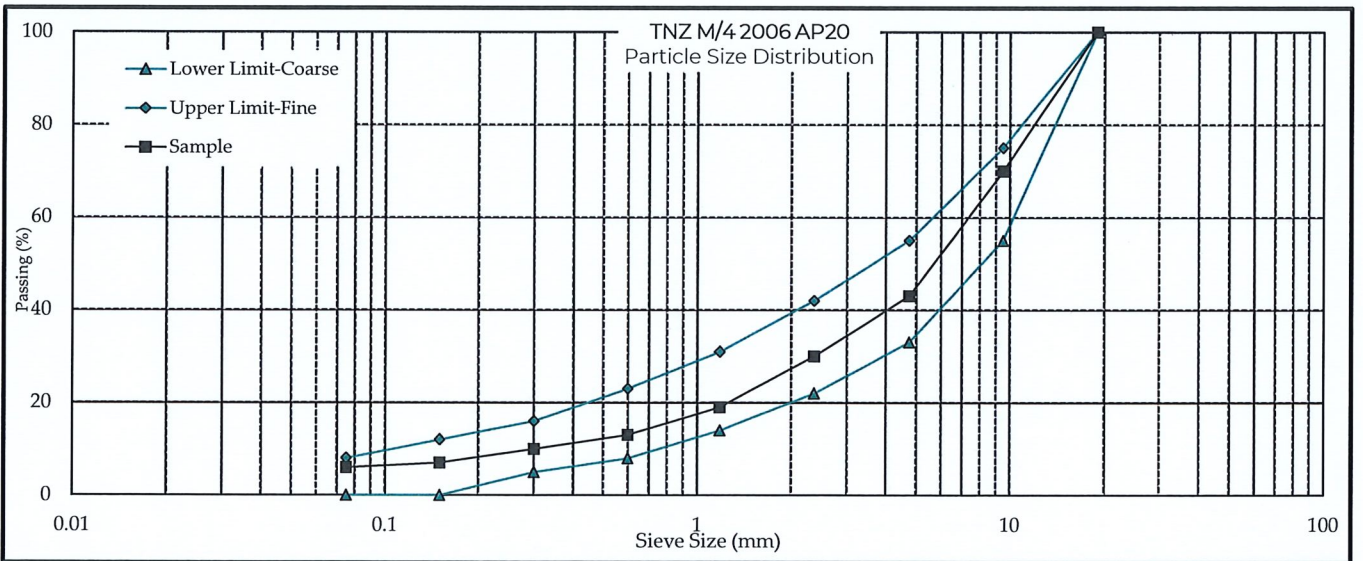
Test Methods

Particle Size Distribution	NZS 4407 : 2015 : Test 3.8.1	Broken Faces Content of Aggregate	NZS 4407 : 2015 : Test 3.14
		Clay Index	NZS 4407 : 2015 : Test 3.5

Date tested : 20 January 2025
Date reported : 28 January 2025

Sampling is covered by IANZ Accreditation
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All information supplied by Client

Approved Signatory

Designation : Laboratory Manager
Date : 28 January 2025

ACCREDITED
IANZ
TESTING LABORATORY

All tests reported herein have been performed in accordance with the laboratory's scope of accreditation

PF-LAB-040 (19/01/2022)

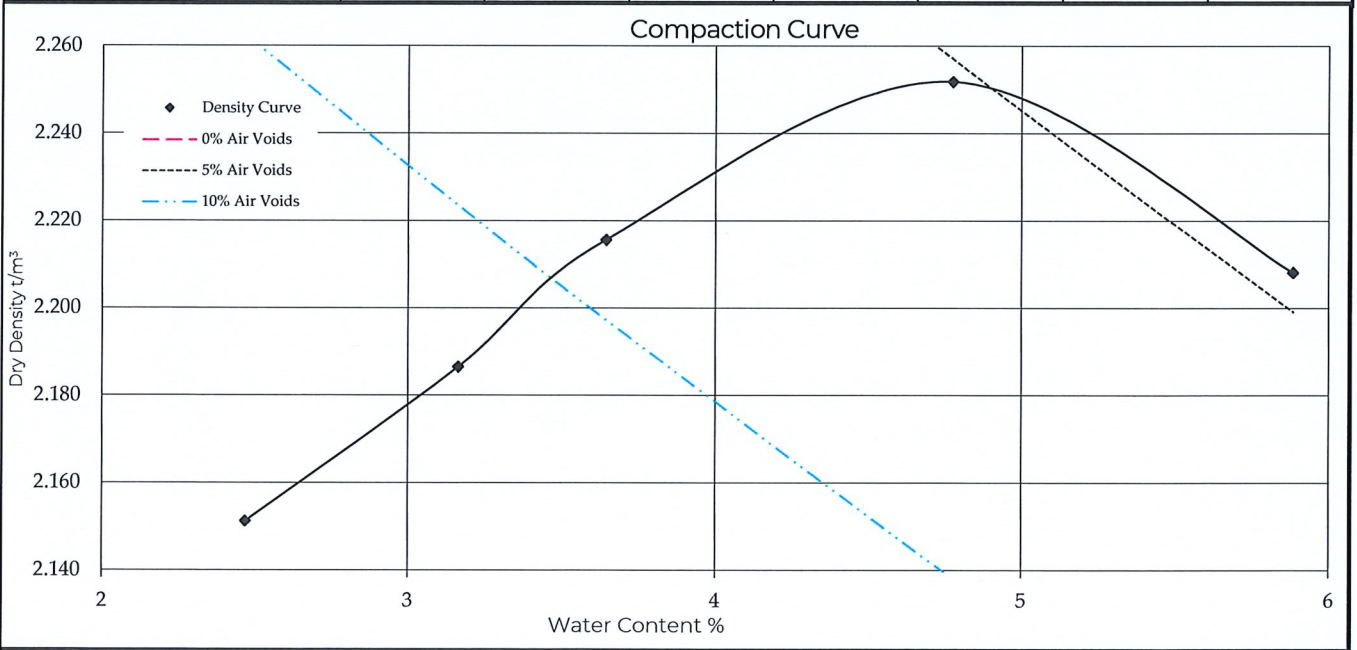# DRY DENSITY / WATER CONTENT RELATIONSHIP
VIBRATING COMPACTION

Project :	Quality Assurance
Location :	Production Stock
Client :	Road Metals Company Limited
Contractor :	Various
Sampled by :	David Ohs (Road Metals)
Date sampled :	15 January 2025
Sampling method :	NZS 4407: 2015 (2.4.6.3.2)
Sample description :	NZTA M/4 AP20
Sample condition :	Damp as received
Solid density :	2.68 t/m³ (Assumed)
Source :	Waimakariri River Quarry

Project No :	6-JRMCO.16/6LC
Lab Ref No :	CH12314
Client Ref No :	Chris Newcombe

Test Results

Maximum dry density	2.26	t/m³	Natural water content	3.2	%
Optimum water content	4.8	%	Fraction tested	Whole	

Sample ID		-1%	Nat	+1%	+2%	+3%		
Bulk density	t/m³	2.204	2.256	2.296	2.359	2.338		
Water content	%	2.5	3.2	3.6	4.8	5.9		
Dry density	t/m³	2.151	2.187	2.216	2.252	2.208		
Sample condition		Moist Hard	Wet Firm	Wet Firm	Wet Firm	Saturated Soft		

Compaction Curve

Legend:
- ♦ Density Curve
- – – 0% Air Voids
- - - - - 5% Air Voids
- –·– 10% Air Voids

Y-axis: Dry Density t/m³ (2.140 to 2.260)
X-axis: Water Content % (2 to 6)

Test Methods		Notes
Compaction	NZS 4402 : 1986 : Test 4.1.3	

Date tested :	23 January 2025
Date reported :	28 January 2025

Sampling is covered by IANZ Accreditation
This report may only be reproduced in full

Approved Signatory

Designation :	Laboratory Manager
Date :	28 January 2025