GUIDE TO MINIMUM SAMPLE MASSES FOR CIVIL ENGINEERING LABORATORY TESTS (NEW ZEALAND STANDARDS)

SOIL

Nominal Size (mm)	Minimum field sample mass	Moisture Content	Cone Penetration	Liquid Limit	Plastic Limit	Linear Shrinkage	Solid Density of Coarse, Medium and Fine Soils	Particle-size distribution by Sieving		Particle-size Distribution by Hydrometer	Organic Matter Content by Ignition	pH Value by Electro metric method	Allophane Content	Standard & Heavy Compaction	Vibrating Compaction	Maximum and Minimum Density	CBR	Density by Wax Immersion	Unconfined Compressive Strength	One-dimensional Consolidation
								Size (mm)	Mass (kg)											
>90% passing 63mm	30kg	3kg	1kg split to 200g passing 425µm	1kg split to 250g passing 425µm	100g split to 30g passing 425µm	800g split to 150g passing 425µm	1.5kg coarse and medium or 1kg fine	75	75	1kg split to 50 to 100g passing 63µm	3.5kg	600g	30g	25kg passing 19mm	80kg passing 37.5mm	<19mm - 50kg <37.5mm - 160kg	10kg with 6.5kg passing 19mm	>50g	>38mm and D >6x max particle size 2:1 H/D ratio	>58mm diameter
>90% passing 20mm	3kg	300g						63	50		600kg									
>90% passing 2mm	0.5kg	30g						53	40		150kg									
								37.5	15											
								26.5	5											
								191	2											
								13.2	1											
								9.5	0.5											
								6.7	0.2											
								<2	0.15											

ROAD AGGREGATE

Nominal size (mm)	Minimum field sample mass (kg)	Moisture content	Cone Penetration	Plastic Limit	Clay Index	Sand Equivalent	Solid Density <19mm	Solid Density >19mm	Particle-size distribution by sieving	Cleanness Value	Crushing Resistance to a Specified Load	Weathering Quality Index	Los Angeles Abrasion	Size & Shape	Broken faces	CBR
AP 100	150	6kg	260g passing 425µm	260g passing 425µm	As per moisture content then 8g passing 75µm	500g passing 4.75mm	1000g dry	1000g dry	50kg	2500g ± 125g	3.5kg passing 13.2mm and retained on 9.5mm	2kg ± 5g passing 19mmand retained on 9.5mm and 3kg ± 5g passing 9.5mm and retained on 4.75mm	Different gradings to make up a 5kg sample	5kg riffled into1kg sub Samples then split into 100 specimens	>37.5mm - 5kg 37.5-19mm - 5kg 19-9.5mm - 0.5kg 9.5-4.75mm - 0.2kg	10kg with 6.5kg passing 19mm
AP 75	100	6kg							25kg							
AP 65	70	6kg														
AP 50	50	6kg							10kg							
AP 40	35	4kg														
AP 25	30	3kg							5kg							
AP 20	25	2kg														
AP 14	15	1kg							0.5kg							
AP 9.5	10	0.5kg														
AP 5	10	0.1kg							0.2kg							

CONCRETE AGGREGATE

Nominal size (mm)	Minimum field sample mass	Sieve	Moisture content	Density and absorption	Cleanness	Lightweight Particles	Unit Mass and Voids Content	Crushing Resistance of Coarse Aggregate	Weathering Resistance of Coarse Aggregate	Sand Equivalent	Voids Content Flow Time and Percentage of Oversize Material in Sand	Flakiness Index and Elongation	Angularity	Alkali Reactivity Fast Test	Sodium Sulphate Soundness Test
75	100kg	30kg	12kg	3kg	20000±1000g	Sand 100g to 200g coarser than 300µm	75-37.5mm - 90kg 37.5-26.5mm - 30kg 26.5-13.2mm - 15kg 13.2-4.75mm - 10kg	10.5kg passing 13.2mm and retained on 9.5mm Gives three subsamples of 3.5kg	2kg ± 5g passing 19mm and retained on 9.5mm and 3kg ± 5g passing 9.5mm and retained on 4.75mm	500g passing 4.75mm	2.5kg dry mass	63mm - 50kg 40mm -15kg 28mm - 5kg 20mm - 2kg 14mm -1kg 10mm - 0.5kg <3mm - 0.1kg	At least 10kg of the predominant size from the grading	10kg coarse aggregate 5kg sand	Coarse 63-37.5mm - 5kg 37.5-19mm - 1.5kg 19-9.5mm - 1kg 9.5-4.75mm - 0.3kg
37.5	35kg	15kg	6kg	2.5kg	10000±500g										Fine <9.5mm -100g each size specified
26.5	30	10	4	2	2500±125										
19	25	8	3	2	2500±125										
16	20	6	3	1.5	2500±125										
13.2	15	4	2	1.5	2500±125										
9.5	10	1	1	1.5	2500±125										
Sand	5	0.2	0.5	2	N/A										

GEOTECHNICS