

Procedure Checklist FM 1-T002: Sampling Aggregates

		P	F	N/A
A. Flowing Aggregate Stream (Bins or Belt Discharge)				
1.	Use a container that will catch the entire section of the material as it's discharged, without overflowing.			
2.	Take each increment from the entire cross section of the material discharge stream.			
3.	Obtain a minimum of three approximately equal increments.			
4.	Combine the increments to form a field sample.			
5.	Ensure that the size of the field sample equals or exceeds the approximate minimum mass needed or stated in Table 1 attached.			
B. Conveyor Belt				
6.	Stop the conveyor belt and insert two templates conforming to the shape of the belt into the aggregate stream.			
7.	Space the templates so the material between will yield an increment of the required mass.			
8.	Carefully scoop the material between the templates into a suitable container.			
9.	Collect the fines with a brush and dustpan and add to the container.			
10.	Obtain a minimum of three approximately equal increments.			
11.	Combine the increments to form a field sample.			
12.	Ensure that the size of the field sample equals or exceeds the approximate minimum mass needed or stated in Table 1 attached.			
C. Conveyor Belt (Automatic Sampler)				
13.	Sampler removes entire cross section of conveyor belt.			
14.	All fines removed from conveyor belt.			
15.	Entire belt cut entering collection container.			
16.	Obtain a minimum of three approximately equal randomly selected increments.			
17.	Combine increments to make field sample.			
18.	Ensure that the size of the field sample equals or exceeds the approximate minimum mass need or stated in Table 1 attached.			
D. Stockpiles (Manual Sampling)				
19.	Shove a board vertically into a pile just above the sampling point. (Coarse aggregate)			
20.	Take increments from the top third, mid-point, and bottom third of the volume of the pile. (Coarse Aggregate)			
21.	Remove the outer layer and sample from the material beneath. (Fine Aggregate)			
22.	Insert the appropriate sampling tube randomly to extract increments. (Fine Aggregates)			
23.	Obtain a minimum of five increments. (Fine Aggregate)			
24.	Combine the increments to form a field sample. (Coarse & Fine Aggregate)			
25.	Ensure that the size of the field sample equals or exceeds the approximate minimum mass needed or stated in Table 1 attached.			
E. Transportation Units (Manual Sampling)				
26.	Excavate a minimum of three trenches at points across the unit that will give an estimate of the characteristics of the load.			
27.	Ensure the trench bottom is level and the trench is 12 in both width and depth.			
28.	Obtain an increment by pushing a shovel downward into the material. (Coarse Aggregate)			
29.	Obtain a minimum of three increments from approximately equally spaced points along each trench. (Coarse aggregate)			
30.	Insert the appropriate sampling tube to extract the appropriate number of increments. (Fine Aggregate)			
31.	Combine the increments to form a field sample. (Coarse & Fine Aggregate)			
32.	Ensure that the size of the field sample equals or exceeds the approximate minimum mass needed or stated in Table 1.			
F. Roadway (Bases and Sub-bases)				
33.	Mark areas or place a metal template over specific areas from which increments will be taken.			
34.	Remove the material throughout the full depth.			

35.	Exclude any underlying material.			
36.	Combine the increments to form a field sample.			
37.	Ensure that the size of the field sample equals or exceeds the approximate minimum mass recommended in Table 1.			
G. Power Equipment (generally a rubber wheeled front –end loader)				
38.	Remove the material from the bottom of the stockpile, across the entire cross sectional face of the stockpile.			
39.	Production should not be occurring on the face during sampling.			
40.	The loader should operate in a direction perpendicular (90 degrees) of the way the stockpile was created.			
41.	The face should be opened as many times as required to make material cascade from the top to bottom of the stockpile.			
42.	With the bucket scooped upwards parallel to the slope.			
43.	One loader bucket of material should be collected from the middle of the face.			
44.	The bucket should be gently lowered to about 3 to 4 feet above the surface and the material allowed to slowly rolled out with a downward tilt of the bucket.			
45.	The mini stockpile is then back dragged across the upper 1/3 of the mini stockpile, leaving it at least 18 inches high, to expose the center mass to be sampled.			
46.	Samples shall be taken across the flattened pile along the original center line, not closer than 1 foot from the edges, taken by pushing a square tipped shovel inserted vertically to its full depth in at least 3 locations in the flattened stockpile.			
47.	Repeat for 2 more mini stockpiles.			
48.	Composite material from the 3 mini stockpiles to form sample.			

Table 1 Size of Samples	
Maximum Nominal Size of Aggregates	Approximate Minimum Mass of Field Samples, lb
Fine Aggregate	
No. 8	22
No. 4	22
Coarse Aggregate	
3/8 in.	22
1/2 in	35
3/4 in.	55
1 in.	110
1 1/2 in.	165
2 in.	220
2 1/2 in.	275
3 in.	330
3 1/2 in.	385

Remarks: Comparison Criteria: N/A

Date: _____ Technician: _____ IA Observer: _____

Technician's E-mail Address: _____

Employer's/ Supervisor's E-mail Address: _____