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| **STANDARD OPERATING PROCEDURE**  Calcium Carbonate Testing |

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## Purpose

## The purpose of adding the calcium carbonate in the polymer recipes is to make the processing easier and to reduce the cost. The purpose of testing calcium carbonate is to check its tap density, coating, particle size and volatile matter.

## Scope

This test method covers the determination of the filler coated calcium carbonate.

## Responsibilities

Trainee Engineer REC/ Lab Engineer

## Coating Test:

* Take 2g of sample calcium carbonate.
* Take 150ml of water in the beaker.
* Put calcium carbonate into the beaker. And stir it.
* Left the beaker for 72 hours.
* After 3 days check the beaker if the calcium carbonate is not dissolved then it is okay. If it is dissolved in the water then it is not coated calcium carbonate. And not suitable for our system.

1. **Tap Density (g/cc)**

* Take an empty cylinder of 10ml and weigh it.
* Fill coated calcium carbonate about 7-8 ml and tap it smoothly on a rubber pad/ soft surface for 50 times.
* Again weigh the cylinder and calculate mass of sample by subtracting empty cylinder weight from filled cylinder.
* Volume can be measured from the cylinder. Calculate tap density by using formula:

## Volatile Matter (%)

* Take 30g of calcium carbonate in a china dish and place it in an oven at 220o C for 10 minutes.
* After given time again weigh the sample and calculate the difference between initial and final weights.
* It will give the percentage of volatile matters in the sample. Formula is as follow:

## Particle Size Analysis

For particle size analysis, 500g sample is dispatched to BRCC Unit#2. PSA is done by using Horiba LA-960 Laser Particle Size Analyzer. The LA-960 uses Mie Scattering (laser diffraction) to measure particle size of suspensions or dry powders. Ideal particle size for our system is ranges between 1.5-7.0 µm.

## Associated Documents and Records

* Testing of additives

**AMENDMENT HISTORY**

|  |  |  |  |
| --- | --- | --- | --- |
| **REV. #** | **DCR#** | **SECTION** | **AMENDED TEXT** |
| 1 |  | 5,6,7 | Added Section No. 5,6 and 7 |
| 1 |  | 8 | Testing of additives |
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\* All changes made in the document are notified in the Amendment History Table.