CCIL / LABORATORY INSPECTION CHECKLIST

Standard Test Method for Insoluble Residue in Carbonate Aggregates

ASTM D3042-03

APPARATUS:

1. Sieves: 203.2 mm (8.0") in dia. conforming to ASTM E11? .........................

<table>
<thead>
<tr>
<th>Metric</th>
<th>Imperial</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.5 mm</td>
<td>¾ in.</td>
</tr>
<tr>
<td>4.75 mm</td>
<td>No. 4</td>
</tr>
<tr>
<td>2.36 mm</td>
<td>No. 8</td>
</tr>
<tr>
<td>1.18 mm</td>
<td>No. 16</td>
</tr>
<tr>
<td>600 µm</td>
<td>No. 30</td>
</tr>
<tr>
<td>300 µm</td>
<td>No. 50</td>
</tr>
<tr>
<td>150 µm</td>
<td>No. 100</td>
</tr>
<tr>
<td>75 µm</td>
<td>No. 200</td>
</tr>
</tbody>
</table>

Note 1: Sieve requirements for Determining the Plus 75 Size fraction and Total Acid Insoluble Residue Content: 4.75 mm, 2.36 mm, 1.18 mm, 600 µm, 300 µm 150 µm and 75 µm.

1. Balance: Minimum capacity of 15 kg and in accordance with D4753 Class GP5? ....
2. Oven: Capable of maintaining a uniform temperature of 110 ± 5.0°C (230 ± 9°F)?
3. Jar mill or a magnetic stirrer or other such agitation equipment? ....................
4. Bunsen Burner or Hot Plate? .................................................................
5. Receiving Tank: Made of nonreactive material? ...........................................
6. Rapid Filter Paper (acid resistant): .........................................................
7. Borosilicate Glass Containers: For performing acid leaching test? .................
8. pH Paper or pH Meter: .............................................................................

REAGENT

1. Reagent grade chemicals conforming to the Committee on Analytical Reagents of the American Chemical Society? .................................................................
   - Hydrochloric Acid (6 N) ............................................................................

SAMPLES

1. Representative samples reduced by splitting or quartering and in accordance with the Sampling Section of C136? .................................................................
2. Test sample consisting of P/9.5mm – R/4.75 mm after washing? .....................
3. Test samples made up of separate fractions or combined aggregate gradings? ....
4. Dry test sample to constant mass at 110 ± 5.0°C (230 ± 9°F)? ........................
5. Oven dry sample used with a minimum of 500 g? ........................................

PROCEDURE:

For Determining the Plus 75 µm (No. 200) Size Fraction of Insoluble Residue

a. Prepared test samples in triplicate for each aggregate sampled? ........................................

b. Placed an aggregate sample in a suitable borosilicate glass container (minimum
of 500 g)? ................................................................................................................

Note 2: Container shall be vented to permit gas from the reaction to be drawn away.

c. Slowly added 1000 mL of 6 N hydrochloric acid (HCl)? ............................................

Note 3: Excessive effervescence or foaming to subside before any further addition
of solution.

d. Agitated gently the container and contents by hand until excessive effervescence
has subsided? ............................................................................................................

Important: Refer to Warning Clause 7.3 for safety precautions.

e. Placed container and contents on an agitating device? ..............................................

f. Container checked periodically until there is no obvious bubbling – begin to decant
the solution and proceed to add approximately 300 mL of the 6 N HCl and check for
reaction? ....................................................................................................................

Note 4: Continue agitation (if bubbling is observed) until reaction subsides – repeat
procedure “f”.

g. No reaction is observed, container is heated gently over a Bunsen burner or hot
plate? .........................................................................................................................

h. If no reaction observed during heating - decant acid solution and add water to the
aggregate in the glass container to thoroughly dilute the acid? ..............................

i. Residue in container has a pH of more than 5.5? ......................................................

j. Washed diluted solution and aggregate residue over a pre-weighed 75 µm sieve and
into a receiving tank followed by rinsing using the same procedure? ......................

k. Sieve and residue dried in a 110 ± 5.0°C (230 ± 9.0° F) oven? ................................

l. Inspected for particle agglomeration? ........................................................................

m. Dry sieved residue (no agglomeration present) from aggregate over pre-weighed
nested sieves? ...........................................................................................................

Procedure for Determining the Total Acid Insoluble Residue Content

a. Repeated procedure from “a” to “i” as indicated under the Plus 75 µm Size
Fraction of Insoluble Residue? ..................................................................................

b. Washed diluted solution and aggregate residue over a pre-weighed nested sieves
and into a receiving tank? .......................................................................................
c. Rinsed each sieve individually over lower sieves into receiving tank? .................... ___
d. Sieves and residue dried in oven at 110 ± 5.0°C (230 ± 9.0° F)? ......................... ___
e. Determine mass of residue (X) when sieves have cooled to room temperature? ... ___

Example:

(Mass of Dried Sieve + Residue) – (Original mass of dry clean sieve) = Mass of residue

f. Pre-weighed filter papers and evaporating dish? .............................................. ___
g. Poured the diluted solution (pH of more than 5.5) contained in the receiving tank
through a 75 µm (No. 200) sieve and then through acid resistant rapid filtering paper
placed in glass funnels? ............................................................................................ ___
h. Thoroughly rinsed with additional water? ............................................................ ___
i. Filtration complete, transferred paper and residue into an evaporating dish and
placed in oven at 110 ± 5.0°C (230 ± 9.0° F) for 24 h? ........................................... ___
j. Determine mass of residue passing the 75 µm (No. 200) sieve? ............................... ___

Example:

(Mass of dish, filters and residue) – (mass of clean filters and dish) = Mass of residue

k. Placed the 75 µm (No. 200) sieve plus residue obtained during filtering process in
oven at 110 ± 5.0°C (230 ± 9.0° F)? ........................................................................... ___
l. Determine mass of 75 µm (No. 200) sieve and residue upon reaching room
Temperature? ............................................................................................................. ___

Example:

(Mass of 75 µm sieve and residue) – (mass of clean 75 µm sieve) = Mass of residue (Y)
m. Placed this quantity (Y) with quantity established in (X)? ...................................... ___
n. Examined residue – Refer to C294 (Descriptive Nomenclature)? ........................... ___

CALCULATIONS

1. In accordance with Clause 9.1, 9.2 and 9.3? ......................................................... ___

REPORTING

1. In accordance with Section 10.0? ................................................................. ___
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COMMENTS:

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