2027 CCIL Asphalt Correlation

BC MB NB NL NS PE SK Superpave Gyratory Compaction – Lab Mix (GY) Instructions

Review your shipping address shown in the portal and update it if there are any changes through the request for services. When you receive your samples, review the shipment before signing off with the shipper.

IMPORTANT NOTE: Type A Superpave mix design (GY) laboratories are required to carry out testing **only** on lab prepared samples below. Type A laboratories are **NOT** required to carry out additional testing on Type B mix compliance (PSS) plant mix samples.

Lab Mix Samples

In your shipment, you should have received 1 bag of coarse aggregate each **(I-GYCA-N and II-GYCA-N)** and 1 bag of fine aggregate each **(I-GYFA-N and II-GYFA-N)** along with asphalt cement **(I-GYAC-N and II-GYAC-N)** have been provided.

Aggregate Preparation

On receipt of the bulk samples of coarse and fine aggregate, dry the samples to constant mass and size the **coarse** aggregate (down to 2.36 mm size) and pass 2.36 mm portion.

Note 1: To ensure that all laboratories receive identical samples, the fine aggregate samples have been recombined from individual sieve sizes. Before commencing any testing, these samples should be **carefully but thoroughly mixed** (each fine aggregate separately) by running through a mini-splitter several times.

Note 2: Pay attention to the notes included with the weigh cards for each mix.

Mix Preparation

1) For Gyratory samples **(2 samples for each mix)** combine the dried aggregate and asphalt cement in the proportions indicated in the Weigh Card tables for **Material I** and **Material II**. Mass of the sample to be consistent with those included in the appropriate weigh card.
2) An additional sample using the same proportions of dried aggregate and asphalt cement shall be produced for Maximum Theoretical Relative Density (MRD); minimum mass of 1500g.
3) The mixing temperature and compaction temperature shall be as indicated on the appropriate mix design weigh card form.
4) Mixture conditioning for both Gyratory and MRD samples shall be carried out at the mixture compaction temperature indicated on the weigh card ±3°C for 2h ± 5 minutes (as indicated in the latest revision of AASHTO R30). Proceed immediately with compaction.

For Material I: N_{ini} = 8, N_{des} = 100
For Material II: N_{ini} = 9, N_{des} = 125

The same Superpave Gyratory Compactor shall be used to compact both materials.
5) The specimens can be extruded from the mold immediately after compaction.

Sample Testing

1) Follow D2726 (latest revision) for the determination of the Bulk Relative Density (BRD) of the gyratory samples.
2) Follow D2041 (latest revision) for the determination of the Maximum Theoretical Relative Density (MRD) of the separate samples blended for this purpose.

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Report

1) Maximum Theoretical Relative Density (MRD) for gyratory mix
2) Bulk Relative Density for gyratory compacted samples
3) Percent G_{mm} at N_{ini}.
4) The calculated percent air voids of the compacted specimen (N_{design}) to nearest 0.1%
5) Manufacturer, Model, and Serial number of the Superpave Gyratory Compactor used to compact the samples.

An example of a completed report form is shown on page 4.

Your report form should have compaction to N_{max} removed, if it is not, please enter 0.

All test results shall be reported online and submitted by **2027 January 25, Monday.**

Remember: Your lab's worksheets must be submitted through the portal with your correlation report. Please combine all worksheets for each portal report into a single pdf prior to uploading. You are required to keep all original worksheet hard copies in a secure dedicated location such as a sealed envelope that is available to CCIL upon request. Do not courier/mail/fax/e-mail the worksheets to CCIL.

DO NOT send reports and worksheets by fax.

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Superpave Gyratory Specimens – Material I

Weigh Card (mass in grams)

Mass Type		Coarse Aggregate I-GYCA-N					Fine Aggregate I-GYFA-N	Dust***	Asphalt Cement I-GYAC-N
		12.5mm *	9.5mm	4.75mm	2.36mm	Pass ** 2.36mm			
Individual		**89.2**	**779.5**	**1,273.2**	**116.6**	**27.4**	**2,110.1**	**219.8**	**284.2**
Cumulative		**89.2**	**868.7**	**2,141.9**	**2,258.5**	**2,285.9**	**4,396.0**	**4,615.8**	**4,900**

Mixing Temperature: **144°C** Compaction Temperature: **133°C**

AC Content (by Total Mix Mass): **5.80%** This Equates to **6.16%** by Aggregate Mass

Notes:

1. * Is material retained on the 12.5mm sieve to be discarded? **No.**
2. ** Is material passing the 2.36mm sieve material from coarse aggregate to be discarded? **No.**

OR

Has the pass 2.36mm sieve material been included in the component package? **No.**

3. *** Has dust been supplied separately? **Yes. In a separate bag with fine aggregate, GYFA.**
4. Aggregates may exhibit stripping. Do NOT use antistripping additive.
5. Masses provided for Superpave Gyratory Specimens are to be adjusted proportionally to provide Maximum Theoretical Relative Density (MRD) test samples.

Superpave Gyratory Specimens – Material II

Weigh Card (mass in grams)

Type Mass		Coarse Aggregate II-GYCA-N					Fine Aggregate II-GYFA-N	Dust***	Asphalt Cement II-GYAC-N
		12.5mm *	9.5mm	4.75mm	2.36mm	Pass ** 2.36mm			
Individual		**61.0**	**577.0**	**1,262.0**	**113.0**	**73.0**	**2,260.0**	**151.0**	**267.0**
Cumulative		**61.0**	**638.0**	**1,900.0**	**2,013.0**	**2,086.0**	**4,346.0**	**4,497.0**	**4,764.0**

Mixing Temperature: **155°C** Compaction Temperature: **140°C**

AC Content (by Total Mix Mass): **5.60%** This Equates to **5.94%** by Aggregate Mass

Notes:

1. * Is material retained on the 12.5mm sieve to be discarded? **No.**
2. ** Is material passing the 2.36mm sieve material from coarse aggregate to be discarded? **No.**

OR

Has the pass 2.36mm sieve material been included in the component package? **No.**

3. *** Has dust been supplied separately? **Yes, In a separate bag with the fine aggregate, GYFA.**
4. Aggregates may exhibit stripping. Do NOT use antistripping additive.
5. Masses provided for Superpave Gyratory Specimens are to be adjusted proportionally to provide Maximum Theoretical Relative Density (MRD) test samples.

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Canadian Council of Independent Laboratories

Gyratory Lab Mix Report - Certification Program

- **CCIL Confidential Lab #** CCIL 999
- **Lab Name:** Demo Lab
- **Tested by:**
  - ○ Lab Technician
  - ○ Supervisor / Manager
  - ◉ Not listed

Please specify

Super Technician

Gyratory Lab Mix Report

Test	A-GY-xxx a	A-GY-xxx b	- Avg	B-GY-xxx a	B-GY-xxx b	- Avg
MSG (G_{mm} by ASTM 2041)	2.510	2.508	2.509	2.515	2.519	2.517
BRD @ N_{des}	2.425	2.416	2.420	2.431	2.431	2.431
BRD @ N_{ini}	2.146	2.150	2.148	2.168	2.156	2.162
% G_{mm} @ N_{ini}	85.5	85.7	85.6	86.2	85.6	85.9
% Air Voids (@ N_{des})	3.4	3.7	3.6	3.3	3.5	3.4

Compactor Calibration

Internal Angle (1.16 deg.)

Comments