



## **CCIL LABORATORY CERTIFICATION: A MEASURE OF RELIABILITY**

*How certification benefits your laboratory and enhances confidence in testing results*

Imagine you're a building or infrastructure owner, a consultant or a specifier and you will require concrete, asphalt or aggregate for a construction project. You're going to want to ensure that your project is built with materials that meet the quality standards you demand.

But how can you guarantee that this happens?

The answer is simple, you would want to choose products that meet your specifications and are tested by laboratories which have the appropriate certification from the Canadian Council of Independent Laboratories (CCIL).

Since 1993, CCIL has operated certification programs for laboratories involved in construction materials testing. For asphalt and aggregate testing, there are now three programs, one in Ontario, one in Alberta and one in British Columbia which also includes laboratories in Saskatchewan, Manitoba, New Brunswick and Newfoundland. For concrete testing there is a national program. All of these programs demonstrate that a certified lab has experienced and trained staff, the right equipment, and the most up-to-date systems and procedures that are necessary to consistently provide quality testing services.

Those involved in construction turn to independent testing laboratories that are certified because they know that they're going to highly trained personnel with a commitment to quality and who use appropriate testing equipment and up-to-date test procedures. Quite simply, certification programs demonstrate laboratories technical competence.

So how does it work?

CCIL Certification programs require asphalt and aggregate labs to participate in annual proficiency testing programs. For all certification programs, the laboratories are audited on a regular basis. Qualified third- party CCIL auditors carry out their lab audits based primarily on ISO Standard 17025. Through this, CCIL provides impartial, confidential and objective assessment in all laboratory and laboratory technician certification activities.

CCIL also strives to have the best relationship with the laboratories in an effort to improve results and raise standards of testing. These relationships are unique to CCIL certification and have yielded major success with all of the certification programs.

Since its inception in 2007, the B.C. asphalt and aggregate laboratory certification program has grown over 400% and the number of CCIL certified laboratories in Western Canada reached record levels in all areas in 2016 with a total of 323 certifications west of Ontario: 84 aggregate laboratory certifications, 79 asphalt laboratory certifications and 160 in concrete – numbers that continue to increase year after year.

“We’ve seen significant growth since we’ve become affiliated with CCIL. It’s come and been accepted by all participants and now it’s the standard across the board,” says Jason Jackson, Manager of Field Services at the BC Ministry of Transportation. “By far, the majority of soil and paving labs are affiliated with CCIL in British Columbia.”

“The beautiful thing is that they provide an inspector and they check our technique. They find stuff we don’t find and make us look harder at our own equipment. We are more careful because of CCIL, because of that level of detail and the frequency of how often they make us check our equipment.”

Laboratory certification and accreditation programs improve the quality of testing. This is evidenced in data taken from an Ontario Ministry of Transportation (MTO) study by Vasavithasan and Rogers in 2006, as well as from CCIL collected data from before and after the introduction of CCIL certification programs into British Columbia and Alberta. Prior to the introduction of Ontario CCIL aggregate laboratory certification in 1998, test variations examined were significantly wider as shown in the following Figures 1 and 2.

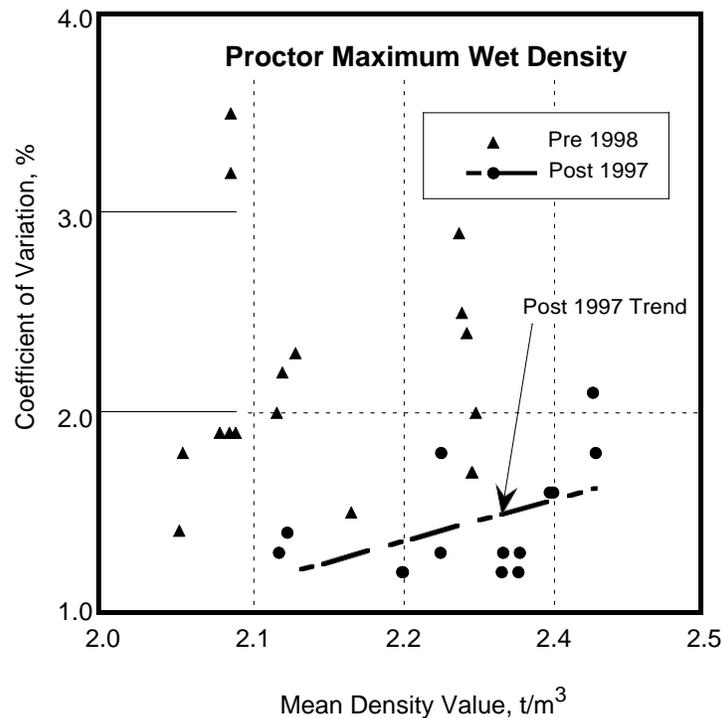


Figure 1: Multi-laboratory coefficient of variation for the Proctor density tests, after Vasavithasan and Rogers (2006)

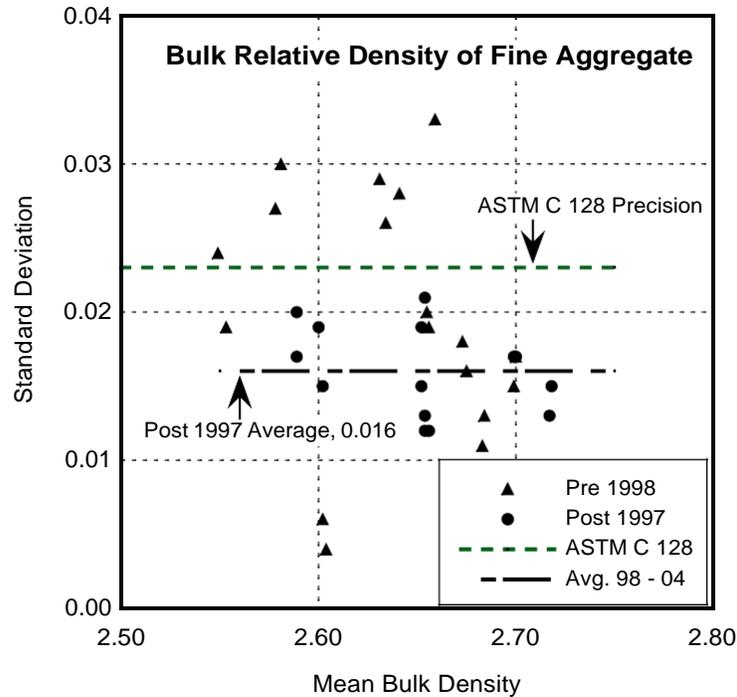


Figure 2: Multi-laboratory coefficient of variation for the density test of fine aggregate, after Vasavithasan and Rogers (2006)

As shown, after aggregate certification was introduced, tremendous improvements were seen. As a result of the participation in the proficiency-testing program and the regular laboratory inspections, test variations noticeably decreased by more than 50 percent. Regular laboratory inspections from CCIL ensures that test equipment are properly maintained and calibrated, testing is done by proficient staff, and uniform test procedures are used resulting in a significant reduction in test variations.

Data compiled by CCIL from the B.C. and Alberta proficiency testing program from 2008 – 2016 also shows tremendous improvements in test result variations. The standard deviation of the various tests were significantly higher in 2008 compared to 2016 which support the findings from the MTO study.

“We joined because we want to know the current state of industry testing, we want to know, in terms of the BC ministry, how we do on testing – Are we consistent? Are we the same as Ontario and Alberta? Are we cutting edge?” says Jackson. “CCIL makes sure we’re doing it right. It’s elevated our game, our staff, and our team.”

The results from the three asphalt and aggregate programs confirm significant improvements in test result variations *after* laboratory certification. Regular laboratory inspections as well as

CCIL's annual proficiency test program are directly linked to the immense improvements in standard deviation.

“Alberta Transportation undertakes laboratory inspections for on-site QC/QA testing services but does not have an inspection program for stationary labs providing asphalt mix designs,” says Roadway Construction Standards Specialist, Jim Gavin. “The CCIL laboratory inspection and certification program fills that gap and supplements our oversight activities towards the quality management of asphalt mix design and on-site compliance testing.”

CCIL has become the largest laboratory certification organization in the country. As of 2016 there are over 830 certifications for asphalt, aggregate and concrete testing in total across Canada. Laboratories are certified in almost all provinces, benefiting regulators, owners, contractors, material producers and testing labs who are assured of the highest standards of test results.

But certification is not only a wise investment for building and infrastructure owners, consultants and specifiers. Becoming a CCIL certified laboratory ensures that the lab and technicians become a part of the industry gold standard. Considering these benefits, certification not only makes sense financially, it is the best return on investment.

CCIL certification promotes a culture of quality work for all involved in the construction industry – regulators, owners, construction companies, engineers and testing firms. CCIL's certification programs are time-tested and are a win-win to all stakeholders.

To find out more, please visit: <http://ccil.com/certification/certification-overview>