

	<b>DEPARTMENT OF COMMERCE</b> National Institute of Standards and Technology National Voluntary Laboratory Accreditation Program	<b>ISSUE DATE:</b> December 14, 2012
	<b>ASSESSOR BULLETIN</b>	<b>NUMBER:</b> AB-18-2012 <b>LAP:</b> Calibration
<b>SUBJECT:</b> Gage Block Comparison with Dissimilar Materials		

The purpose of this bulletin is to provide guidance to assessors relative to the assessment of laboratories performing comparisons of gage blocks of dissimilar materials.

The results of the last two rounds of gage block proficiency tests (PTs) indicate a need for many of the laboratories to improve their performance in a specific area of this discipline. Over a third of the laboratories, 7 of 19, that reported doing chrome gage blocks had unsatisfactory results for their PT due to the chrome measurements. Two additional laboratories did not have an unsatisfactory PT overall, but did have one chrome block with an  $E_n > 1$ . In the latter case, the PT consisted of 26 measurements, thereby allowing one measurement outside of the limit. In sum, almost half of the participating laboratories had concerns in this area.

A common denominator among the laboratories with PT concerns was that they had only steel masters and were doing a chrome-to-steel comparison. Many of these labs reported the same uncertainty as their steel-to-steel comparison measurements.

NVLAP believes one way to encourage performance improvement in the area of chrome calibrations is to provide additional assessment scrutiny of it. However, as chrome calibrations are rare, this subject might not come up under normal assessment sampling. Therefore, at assessments where no observation of a chrome calibration is possible, NVLAP requests that assessors query the laboratories about how they would perform such a calibration. Assessors must determine if the laboratory is familiar with the added uncertainty contributors associated with doing comparisons between different materials. Specifically, assessors are directed to ask to review an uncertainty budget and a calibration certificate of a chrome calibration.

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