A suggested method for developing maturity calibration curve is to cast a minimum of 17 cylinders from a specified trial batch prior to placing on site concrete. These 17 cylinders will be cast and cured in accordance with standard procedures for curing specimen cylinders. Two of these 17 cylinders will have intelliRock maturity loggers placed in them and activated.

IMPORTANT NOTE: All 17 test cylinders must be cured TOGETHER and in the same way:

Embed the intelliRock maturity logger directly in the center of the cylinder. Cure the cylinders per specifications.

IMPORTANT NOTE: Be sure to activate the intelliRock maturity loggers when cylinders are cast!

To activate loggers follow the procedure below:

1. Attach the leads from the embedded intelliRock maturity logger to the reader.
2. Select F2: Start Logging
3. Select F2: (NONE) or follow the menu instructions to enter the Job Name
4. Select F2: (NONE) or follow the menu instructions to enter a Location Name
5. Press the ‘ENTER’ key to accept the Datum temperature of 0.
6. The logger will return to the main menu. An ‘R’ will display in the upper right hand corner indicating that the logger is running.
7. You can now disconnect the logger.
The 15 cylinders without intelliRock maturity loggers will be broken compressively in groups of three at five different intervals, or as the project engineer directs.

**BREAK THREE CYLINDERS**

Each time a set of three cylinders is broken, **immediately** take the Current Reading from each of the two cylinders containing intelliRock maturity loggers. This is done by connecting the logger wires to the reader and the selecting F1: Current Reading options. Record the resulting strength and maturity readings.

**TAKE MATURITY READINGS**

Using the intelliRock Strength Maturity Spreadsheet input the PSI information from each compressive break and the corresponding maturity readings taken from the two intelliRock loggers. The spreadsheet will take that information and plot the first point of the calibration curve.

**IMPORTANT NOTE:** Download the Strength Maturity Spreadsheet at [www.engius.com](http://www.engius.com).
Repeat this process at specified intervals to complete the calibration curve. It is up the engineer to decide when these five break points will occur.

Some examples:
Standard 6 sack mix: 1, 3, 7, 14, 28 days (ASTM C 1074-98 recommended intervals)
High early: 12 hour, 1, 2, 4, 7 days
High early (faster): 4, 6, 8, 12, 24 hours (patching applications)
Slow setting: 7, 14, 28, 42, 56 days

Generally, the maturity data that is of most interest comes from early in the maturity cycle. The expected strength development of the placed concrete and the strength regions of interest influence the determination of cylinder break intervals. If extra data points are necessary, additional cylinders can be cast at the beginning of the process to create those additional breaks and data points.

When completed the calibration curve represents corresponding strength numbers for each maturity reading. For example, if it is determined that 4300 degree CH corresponds to 3000 PSI, then during the curing process the engineer is looking for maturity of 4300 degree CH in order to proceed with construction activities, e.g. opening to construction, sawing, post-tensioning, stripping of forms and reshoring or other activities.