

Connecticut Concrete Aggregate Quarries

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September 24, 2019 | 2019-R-0213

Issue

This report answers several questions about concrete aggregate quarries in Connecticut, in a Q&A format, in the context of the “crumbling foundations” issue (i.e., foundations that have deteriorated due to the presence of pyrrhotite). It also provides links to related resources.

How many quarries are in Connecticut?

According to Aggregates Manager Magazine’s [2019 Industry Atlas](#), the state has 30 quarries producing crushed stone and 42 quarries producing sand and gravel. Crushed stone, sand, and gravel are quarried concrete aggregate components.

What government-imposed standards must aggregate quarries meet?

No Connecticut agency is responsible for overseeing quarries’ production of aggregate, with regard to product quality. However, quarries are subject to various zoning, safety, and environmental laws, which vary depending on quarries’ specific operations.

According to information provided by the Connecticut Construction Industries Association, at the local level quarries may need to obtain, among other things, an excavation permit or zoning (special permit) approval, inland wetlands approval, and an explosives (blasting) permit from the local fire marshal. With regard to state oversight, among other requirements, quarries may need to obtain Department of Energy and Environmental Protection permits related to [stormwater](#), [water diversion](#), [water discharge](#), and [air quality](#). And at the federal level, quarries may be subject to, among others,

laws concerning [mine safety](#), [environmental protection](#), [explosives](#), and [dredging or filling navigable waters](#).

Does anyone check aggregate for quality?

As noted above, quarries are not subject to governmental quality standards for the aggregate they produce. However, aggregate cannot be incorporated into concrete that will be used in a regulated setting (e.g., building or road construction) unless it meets specified standards.

According to the Connecticut Construction Industries Association, quarries voluntarily implement quality control plans, as described below, to ensure the aggregate they produce meets their customers' needs. For concrete aggregate for use in constructing buildings, for example, this generally means that the quarry ensures that their aggregate complies with [ASTM C33](#). As explained in OLR Report [2019-R-0211](#), the Connecticut State Building Code requires concrete used in most buildings or structures to be made with aggregate that complies with [ASTM C33](#). (ASTM C33 sets standards for deleterious materials in aggregate and establishes acceptable aggregate sampling and testing methods.)

Additionally, according to the Office of the State Building Inspector, once aggregate is mixed into concrete for a project, the mixed product is often checked for consistency and structural strength before it is used (i.e., a slump test). However, slump tests are not routinely done before pouring concrete for single-family dwellings; instead, contractors rely on their experience with the supplier's product and the supplier's reputation, according to the Connecticut Construction Industries Association.

If a quarry is selling aggregate in a manner that is unfair or deceptive, the quarry may be subject to a [Connecticut Unfair Trade Practices Act](#) (CUTPA) suit, among other suits ([CGS § 42-110a et seq.](#); [Conn. Agencies Regs. § 42-110b-1 et seq.](#)).

Quality Control Plans

According to [this excerpt](#) from the Indiana Department of Transportation's certified aggregate technician manual, extraction and processing methods influence aggregate's quality. Thus, quarries generally have quality control plans in place to ensure that the aggregate they produce meets their customers' needs. According to the Connecticut Construction Industries Association, a quality control plan for an aggregate quarry might include the following components, among others:

- 1. Procedures applicable to excavation and mining:**

- Requiring the removal of overburden (the rock and soil above the material being excavated) and requiring blasted rock be kept free from overburden
- Requiring material to be excavated “side-to-side” across the rock face so that the plant processes uniform material
- Requiring daily visual inspections by loader operators and quarry superintendent

2. Procedures applicable during processing:

- Washing and screening material to ensure uniformity
- Testing final product to ensure it meets applicable specifications

3. Procedures applicable to stockpiling:

- Keeping materials separate to avoid contamination
- Visually inspecting stockpiles to ensure uniformity

4. Procedures applicable to testing:

- In addition to visual inspections throughout the day, requiring quality control staff to perform laboratory tests regularly; processing and shipping cease if testing reveals a concern

Additional Resources

The following links provide additional information on quarries in Connecticut and the aggregate production process.

- Aggregates Manager Magazine’s [2019 Industry Atlas](#) provides a list of each crushed rock, sand, and gravel quarry in Connecticut. A map of such quarries is available on page 35.
- [Chapter 5](#) of the Indiana Department of Transportation’s certified aggregate technician manual provides a step-by-step description of the aggregate production process, including information on how each stage of production may impact a product’s final quality.
- Additional information on contemporary quality control methods for aggregate quarries is available in an October 12, 2018, [Aggregate Managers Magazine article](#).

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