

## SAMPLING OF SHINGLES FOR COMPLIANCE TO CSA STANDARDS

Asphalt shingles that conform to Canadian Standards Association (CSA) specifications have a proven track record of performance, meeting or exceeding customer expectations.

When compliance to CSA standards or manufacturer's specifications needs to be established for a specific lot of shingles, there is a CSA-approved method for sampling the lot which should be followed. The methodology covers timing, sample size and sample selection.

### When to Sample

The CSA shingle standard A123.5-05 is designed for the evaluation of products "as manufactured". There is a reason for this. From the time of production until installation on a roof, shingles are stored, transported and handled under widely varying conditions of temperature, humidity and light exposure. There is an option that allows for testing at a time "agreed upon between the purchaser/user and the manufacturer/supplier". That said, the "as manufactured" stipulation in the Standard advises limiting the time of sampling to as soon as possible after the products are produced.

### How to Sample

The CSA standard for asphalt shingles prescribes very clearly a proper sampling method to ensure test data fairly represent the shingles being manufactured. A random bundle or even a few random bundles do not constitute valid samples. Sampling should be "lot-based", that is, material selected should be representative of:

- **a production lot** (material produced continuously in a shift without a change in colour, weight or class); or
- **a shipment** (be it a single truckload or a shipment to a jobsite, of a product of the same brand, colour, weight and class).

ASTM D228 prescribes that a random sample selection consists of five bundles from lots of 1000 bundles or less. For lots over 1000 bundles, a formula is used to determine the minimum number of bundles to select.

Randomness is the key. It is essential that every bundle in the lot has the same chance of being selected. This includes the bundle on the bottom row of the least accessible pallet.

(Over)

If the correct number of bundles is selected and the criteria of randomness are satisfied, the user can have reasonable confidence that the sample is representative of the lot and that similar results would be obtained if different bundles in the lot were tested. The user can, thus, be confident about the conclusions drawn from the testing of product samples.

Conversely, by selecting and testing only an individual shingle, or part of a shingle, or even five bundles without using the randomness criteria, the tester cannot infer that the results of the sample will apply to the remainder of the stock in the warehouse or jobsite or to the specific brand of shingles. The tester can only infer that the results apply to the specific product being tested.

Product testing should be performed at laboratory facilities that understand the applicable standards, sampling process and test methods, and that have appropriate test equipment and trained personnel.