

Recycled Asphalt Pavement Toolkit

LAFARGE CANADA ASPHALT RECYCLING PROCESS FAQs

As a key partner in the initiative, Lafarge Canada has offered this informational resource. Lafarge Canada provides sustainable construction materials and services including asphalt and recycled asphalt pavement (RAP). While there are other RAP production methods, this document provides answers to frequently asked questions about Lafarge Canada's asphalt recycling processes. These measures reduce waste in the construction industry and lower associated harmful greenhouse gas emissions. The processes described here are best practices that Lafarge Canada has developed and improved upon over many years. Other RAP producers may have their own processes.

Where does Lafarge Canada get the rubble for processing RAP?

All asphalt roads across Canada must be replaced regularly. This process creates hundreds of thousands of tonnes of asphalt rubble available for use. Much of this rubble is sent back to asphalt plants or landfills. Lafarge Canada's asphalt plants are located in urban environments, many of which accept and store asphalt waste. Their locations are strategic and result in decreased transportation related greenhouse gas emission for movement of asphalt to project sites and rubble back to the asphalt plants.

How much RAP does Lafarge Canada process annually in Greater Vancouver?

Across the Greater Vancouver Area, Lafarge Canada accepts approximately 150,000 tonnes of rubble and processes tens of thousands of tonnes as RAP back into new asphalt each year. For every tonne of rubble accepted at Lafarge asphalt plants, approximately 50% is processed into RAP for reuse. The volume of incoming rubble exceeds the allowable RAP content for municipal and provincial projects. As municipalities begin to increase RAP content limits, significant amounts of asphalt waste can be reduced.

How does Lafarge Canada quality control the rubble for RAP?

Incoming rubble to Lafarge's plants is inspected by site operations at arrival for contamination. Any contaminated material is rejected. If approved, loaders separate the material (road base vs pavement) into appropriate stockpiles. To process RAP, a feedstock of material is made for the crusher by a loader, further separating any road base that may contaminate the RAP. The RAP crusher has gradation screens based on historical configuration and past lab testing. Gradation testing of the RAP is completed every 500 tonnes at Lafarge's labs which are certified by the Canadian Council of Independent Laboratories (CCIL).

How do gradation tests ensure high-quality RAP?

The gradation tests include a particle size analysis and a check on the asphalt content of the RAP. These checks verify that the RAP will mimic the physical properties required in the mix designs. From these results, the asphalt plants can adjust the binder addition if the asphalt content is too high or low. As well, if gradation is found to be out of spec, too small or big, the plants have the option of reprocessing the RAP or setting it aside for a different design. This is where historical information on crushing screen size is important, to prevent any failures in gradation that might cause the pile to be set aside for further processing.