Factsheet

Asphalt recycling

We recycle empty bottles. Why not our streets as well?

Few industries have a greater responsibility to find solutions for climate-neutral, socially responsible and circular business practices than the construction industry. We must rethink technologies and processes. The goal isn't just to develop new materials or bring them to the market, but also to reprocess materials at the end of their life cycle, to reintroduce them into the loop and reuse them in new projects.

In the field of transportation infrastructures, STRABAG has been recycling reclaimed asphalt for several years already, reusing it in compliance relevant quality standards.

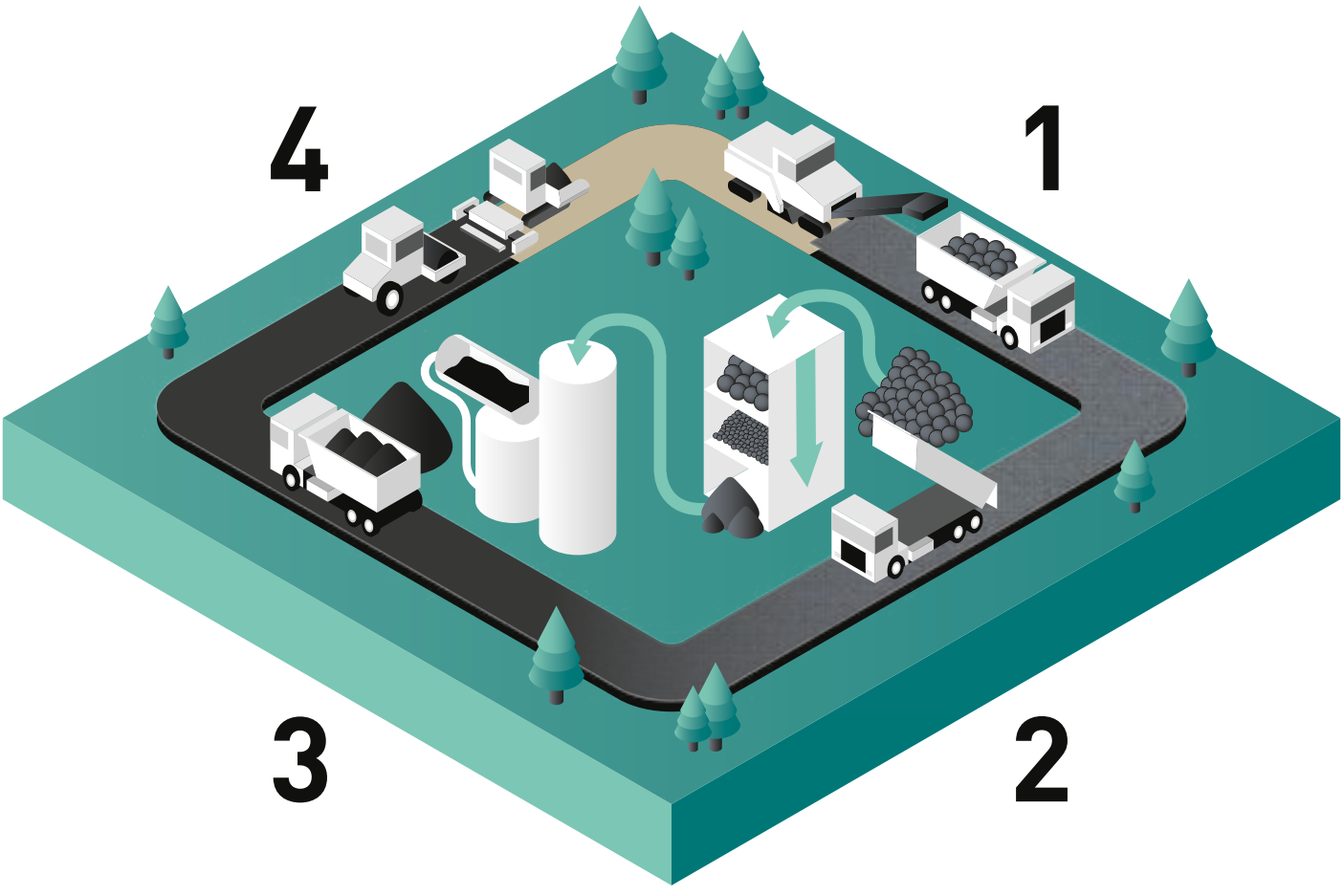
How does asphalt recycling work?

The recycling process of asphalt is similar in principle to the recycling of plastic bottles or used glass.

Asphalt recycling involves the removal of old, brittle or cracked asphalt by breaking away entire slabs or milling it off in layers using an asphalt milling machine. The old asphalt is then taken to an official asphalt collection point to be processed for reuse. First, the asphalt is broken down even more and sieved, until only pieces with a grain size of less than 22 mm remain. A certain amount of this crushed and sifted old asphalt, which is similar in appearance to gravel, can be added to new material at the asphalt mixing plant to produce new asphalt from reclaimed asphalt.

There are basically two ways at the asphalt mixing plant in which the recycled asphalt can be mixed into the new material: cold or warm. In the case of cold mix asphalt, up to 25 % of the required quantity can be added as recycled material. With warm mix asphalt, it is much more – theoretically, even up to 100 %.

Another way to reuse recycled asphalt is as an unbound base course after crushing and screening. An unbound base course is what is placed as a base under the actual asphalt surface during road construction.



The recycling process:
1. Removal of old asphalt
2. Transport offsite
3. Reprocessing and admixture in asphalt mixing plant
4. Construction of new road

Conserving fossil resources through asphalt recycling

Conventional asphalt production uses bitumen as a binder to glue together the asphalt aggregates. Bitumen is a petroleum product obtained from fossil-based crude oil. Recycled asphalt already contains bitumen. So asphalt recycling not only cuts down on the need to mine new rock deposits, but also reduces fossil resource use.

STRABAG already recycles its asphalt!

STRABAG produces around 16 million tons of asphalt every year.

In the tender documents for road construction projects, clients often specify exactly how much recycled asphalt may be added to the mix. Sometimes a specific percentage is provided, in other cases the specification of required product properties clarifies how much recycled asphalt can be used in the project. In STRABAG's opinion, however, far more recycled asphalt could be used than is often the case.

Maximum recycling in Baden-Würtemberg

In Germany, the individual county's federal states regulate the recycling percentages in the construction of asphalt roads. In Baden-Württemberg we are allowed to work with higher quotas. Under a "maximum recycling" scheme Baden-Württemberg permits the use of up to 80 % reclaimed asphalt in the base course and binder layer and up to 50 % in the asphalt concrete surface. Hamburg, Schleswig-Holstein and Saxony-Anhalt also allow a higher proportion of reclaimed material.

Technology with enormous potential

STRABAG is constantly pushing the limits of what is technically possible in asphalt recycling, for example by conducting research into how to best achieve high recycling rates while maintaining high standards of product quality. The findings over the past few years have shown that there is still plenty of potential for improving the recycling rates. The legally permissible percentage of reclaimed asphalt added during asphalt production could be significantly higher without having to fear any loss in quality. To put our research into practice, we are in talks with the relevant authorities and with clients to create uniform standards and to convince them to allow more recycled asphalt than is usually the case. Because STRABAG sees asphalt recycling as an important contribution to more sustainability and resource conservation.

Austria's most modern asphalt mixing plant is located in Hausleiten in Lower Austria. Through the warm addition of recycled material, mixtures with up to 70 % recycled content are already being produced at Hausleiten.

STRABAG truly believes in the technology of asphalt recycling. Our ultra-modern asphalt mixing plant, such as the one in Hausleiten, Austria, can in theory produce asphalt with 100 % recycled content. Division manager Reinhard Kerschner using recycled asphalt to pave his own private driveway shows what is currently possible.

Watch the interview with Reinhard Kerschner here.