TS-RECOVERY

Ecological management of road demolition waste

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An ecological perspective on waste management options for road rubble containing tar

ts-recovery.de

> TAR CONTAMINATION IN ROADS

Sustainable management of road rubble

Road demolition waste must be tested for possible tar contamination

When roads are reconstructed or maintained, road demolition waste is produced that can be contaminated with harmful substances due to the earlier use of tar. Under the name TS-RECOVERY, we offer our customers all economically and ecologically sensible options for managing road demolition waste containing tar in accordance with waste legislation.

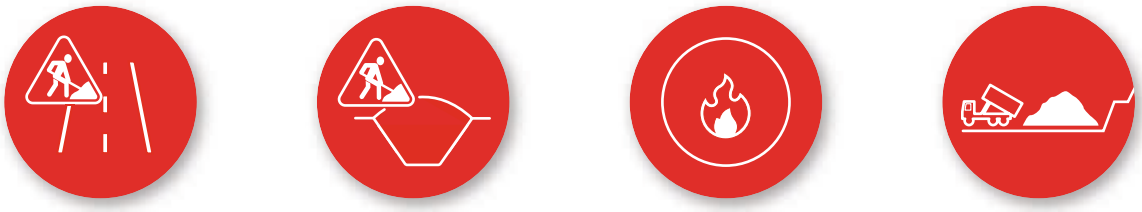
Longstanding road contamination

For many decades, until the end of the 1980s, tar and mixtures of tar and bitumen were used in road construction alongside other binders. Tar contains polycyclic aromatic hydrocarbons (PAHs), some of which are considered carcinogenic. If certain limit values are exceeded, road rubble containing tar is classified as hazardous. For this reason, mineral waste in the form of road rubble produced from road maintenance measures must first be tested for possible tar contamination in order to determine its further use.

Options at a glance

The decision whether road demolition material should be reused in road construction, landfill construction or thermally treated depends on both the pollutant load and the individual framework conditions of the project.

The pollutant level of road demolition waste is a decisive factor for determining disposal options



Road construction | Landfill construction | Thermal treatment | Disposal

Recovery in road construction
The reuse of road rubble in road construction in Germany for example is regulated according to the Länderarbeitsgemeinschaft Abfall (LAGA) and the Forschungsgesellschaft für Straßen- und Verkehrswesen (FGSV). Road demolition waste is assigned to a so-called recovery class depending on the PAH content and the phenol index. Depending on this class, corresponding reuse options are defined.

Recovery at landfills
According to the German Landfill Ordinance, road demolition waste containing tar can be used as a secondary construction material for landfill sites. In addition to its use, such as for modelling the landfill body or for designing the cubature, the material is also suitable for use in technical functional layers, such as a protective layer for plastic sealing membranes, in the leachate layer or as drainage material in the drainage layer.

Thermal treatment
In the Netherlands, a thermal treatment process has been developed with the aim of cleaning the material by thermally removing the tar. The resulting cleaned material quality is comparable to the original aggregate, which enables complete material recovery. In cooperation with corresponding Dutch recycling plants, we also offer this treatment alternative to our customers.

Disposal at landfills
Within our group of companies, we offer the possibility of safe disposal for all types of mineral waste that cannot be recycled. We safely dispose of highly contaminated or hazardous road demolition waste containing tar at appropriate landfill sites.

For several years, the City of Hamburg has been a partner in a waste management contract with REMEX, which aims at the thermal cleaning of tar-contaminated and tar-suspicious road rubble

Evaluate ecological opportunities

When it comes to the disposal of waste, ecological aspects are gaining importance. Since the possibility of reuse in road construction is being increasingly excluded, the options that remain are thermal treatment, reuse as a secondary landfill construction material or disposal in landfill.

Landfill or thermal treatment?

The Heidelberg based environmental and sustainability institute ifeu conducted the study "An ecological perspective on disposal options for road rubble containing tar"[1], which can provide assistance in identifying the most ecologically favourable waste management routes. The authors name the transport route and type of transport to the landfill or thermal treatment plant as decisive factors for the ecological assessment of the waste management option. It is recommended to assess each project individually in this respect.

Landfilling remains an option

Currently, the Netherlands is the only country with relevant capacities for the thermal treatment of road demolition waste containing tar. Landfills, on the other hand, are available in many places. It is therefore understandable that due to the distances between construction sites and thermal treatment plants, the use of regional landfill disposal and recovery options often remains an ecologically sensible solution.

The complete "ifeu study" can be downloaded (in German) via **> remex-solutions.de/ifeu-studie**

[1]Knappe, Florian; Reinhardt, Joachim: Entsorgung von tarhaltigem Straßenaufbruch aus ökologischer Sicht. Ifeu Institute for Energy and Environmental Research, Heidelberg, May 2017.

Waste management services at a glance

Within our group of companies, we offer a full range of management options for tar-contaminated road demolition waste under the brand name TS-RECOVERY: This includes thermal cleaning as well as recycling and recovery as a secondary aggregates for road and landfill construction or conventional disposal at landfill sites.

> Our range of services

- Examination of the tar pollutant load and classification of the waste type
- Management of both non-hazardous and hazardous road demolition waste
- Individual advice on ecological and economical waste management options
- Safe and waste-compliant interim storage of the road demolition waste containing tar
- Partial processing of the road demolition waste at our sites
- Logistics services from the point of origin via interim storage to the recycling or disposal plant

> Additional service portfolio for thermal recovery option

- Delivery of the material to our partner companies in the Netherlands
- Notification of the waste in cooperation with responsible German and international authorities
- Organisation of loading and transport by truck and ship
- Documentation of the entire process
- Proof of sustainable and correct recovery in accordance with waste legislation

TS-RECOVERY

The REMEX Group combines special construction material solutions and service concepts for the waste management industry, construction sector and industrial production under the name REMEX Solutions. The portfolio includes secondary aggregates GRANOVA and REMEXIT as well as the services PP-LANDFILL for cooperation in landfill projects and TS-RECOVERY for the management of road demolition waste containing tar.

T +49 211 17160-195
remex-solutions.de // granova.de // remexit.de // pp-landfill.de
ts-recovery.de