

Rundvirke Lifecycle – an established recycling system for impregnated poles and sleepers

We take care of network owners' and track constructors' discarded impregnated poles and sleepers.

The system is based on the handling, separation and processing of reusable timber at our plants. Ludvika and Kälarna have collection stations for recycled timber and solid fuel furnaces for incinerating creosote fuel.

Reclaimed creosote impregnated timber is part of a recycling process that has been **adapted to form a cycle**. The renewable raw material is impregnated with an organic impregnation solution which, after 50-70 years, is recycled as fuel; some of which is used to heat our drying sheds. The ash from the fuel furnace fulfils the Swedish Forest Agency's requirements for forest dispersal.

Discarded impregnated timber is **classed as hazardous waste** according to the Swedish Chemicals Agency and the Swedish Environmental Protection Agency and must be transported by an approved haulier to a collection station licensed for hazardous waste.

Hazardous waste may not be transferred to private persons, but only for professional and industrial purposes in certain approved areas of use. Please refer to Swedish chemical agency directions for use .

Additionally, it is the responsibility of the party transferring the timber to provide written information about the permitted areas of use. CCA impregnated timber shall also be individually marked with the text "only for professional use, contains arsenic."

In the field, the transferring party has great difficulties in establishing which impregnation solution has been used on the timber with any certainty, and therefore has little opportunity to provide the recipient with the correct information. To prevent establishing a hotbed of legislative breaches, all assessment on the issue of suitable areas for recycling should be carried out at the industrial site, which has the equipment necessary for the separation of the impregnation solution and resources for marking, cleaning and processing.

Logistics is an integral part of our main business, which is the production of impregnated poles and sleepers. Using our adapted vehicles, we collect dismantled and discarded poles at high-tension line construction sites when delivering new poles. Sleepers are delivered to collection stations, mainly by rail.

Recycling of discarded poles and sleepers primarily aims to **reuse** as much as possible of the reclaimed timber for commercial specialist products. Examples of specialist products are piles, construction on marine sites and stay anchors. It is mainly timber that is impregnated with metallic salts and some large creosote poles that we reuse through various processes or adaptation.

Material that is not suitable for recycling is separated for **energy production**. Creosote impregnated timber is chipped for fuel and used in solid fuel furnaces sited within the industrial area. Creosote chippings are a cheap and efficient fuel.

Discarded timber that is impregnated with metallic salts, and which cannot be used in other products, is sent to Sakab for use as fuel energy in combined power and heat production. The plant in Kumla deals with the heavy metals in the flue gases and ash.

Collection of poles/sleepers

Pole transports take place from storage yards around Sweden to the nearest collection station. Collection always takes place in association with other transports so that the vehicles always make return journeys carrying a load. Sleeper transports take place from storage areas at the railway station.

Acceptance inspection

An acceptance inspection takes place according to well established routines that ensure further handling. Because we are certified according to ISO 90002 and 14002, all of Rundvirke Lifecycle's routines and documents are part of the management system.

Sorting

It has been proven to be extremely risky to try to visually establish which impregnation solution is used in old creosote or CCA impregnated poles or sleepers. Therefore we use portable analysis equipment at the collection stations. It is an x-ray analyser that measures elements using ionised radiation; within five seconds it can account for eleven elements ranked according to ppm. All poles or sleepers undergo an extremely thorough control so that we are absolutely certain which impregnation solution the timber contains. After being marked the material is separated depending on whether it is to be recycled or used for energy purposes.

Processing

During processing all the returned timber has any metal or plastic removed from it. Adjustments in the form of crosscutting or drilling may be made depending on the final product. Some sawing may also be necessary. New impregnation occurs on a small scale.

Delivery

Specialist products are transported to customers in association with the collection of raw materials or discarded poles. There are no sales to private persons.