

LEAD SHEET

AN UNRIVALLED PEDIGREE AMONG BUILDING MATERIALS



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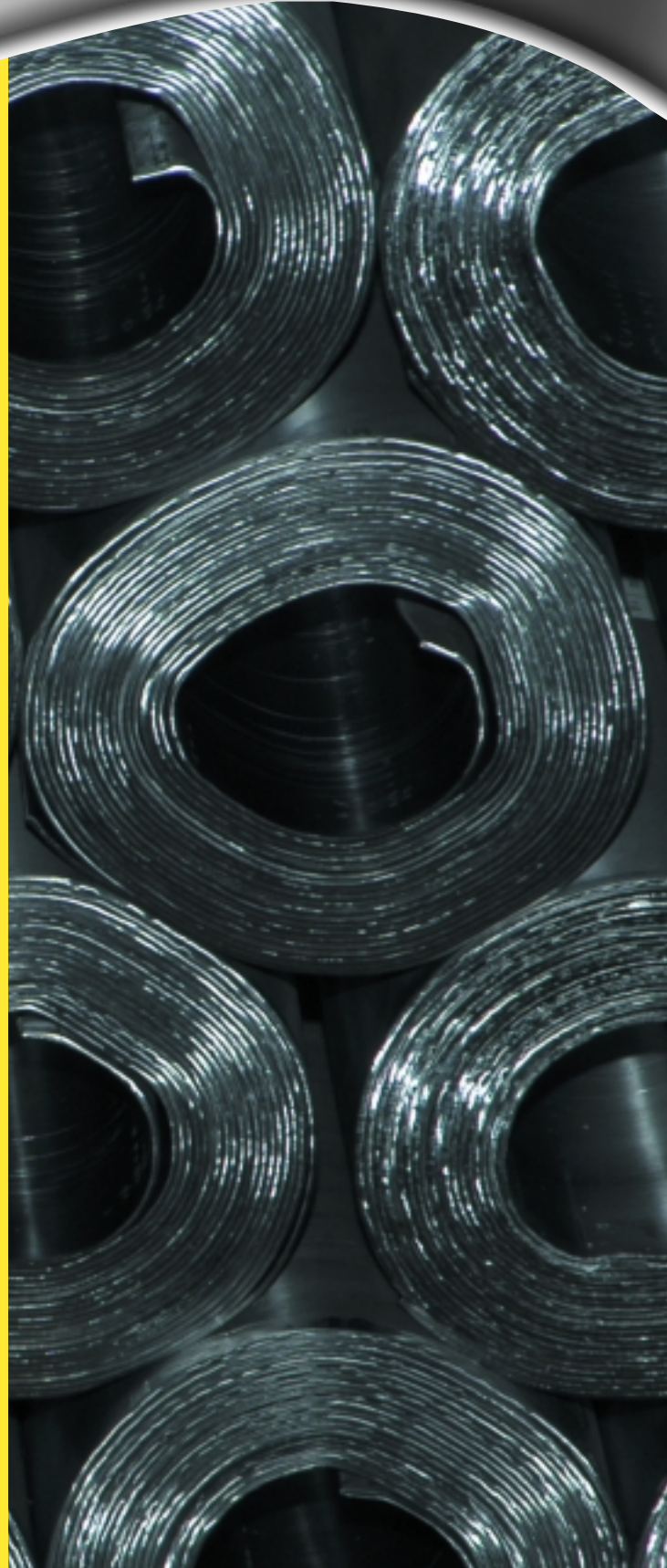
Lead Sheet the facts

Lead Sheet has a remarkable history. For centuries the material has been used as a thoroughbred building material. Why should this be so? The simple answer is that it is easy to apply and provides a unique means of weather sealing buildings for extremely long periods. Examples of the longevity of the material can be seen throughout Europe, typically on historic monuments.

In the context of environmental management, materials that not only have the ability to be recycled but also have an established recovery and collection system are being recognised as essential to ensure a sustainable future.

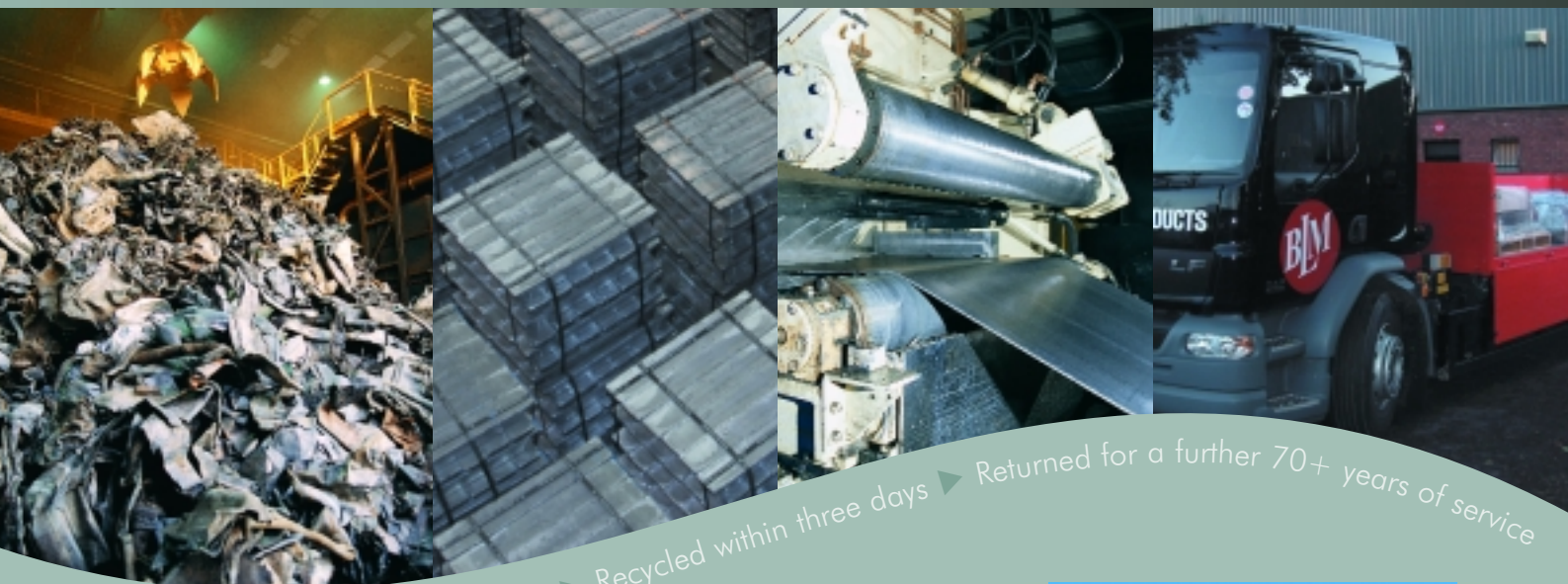
Many producers have made claims that their materials are environmentally friendly. Unfortunately, this is not always the case as only by close scrutiny of the whole life cycle of products can such a claim be fully substantiated.

Lead sheet has an established recycling infrastructure. This involves safe, physical recycling, carried out under stringent environmental controls and results in a **metal recovery rate in excess of 95%**.



SCRAP LEAD; NEVER A WASTE - IT IS A RAW MATERIAL FOR NEW PRODUCTS

A continuous cycle of recycling



Recovery from over 70 years of service ▶ Recycled within three days ▶ Returned for a further 70+ years of service

The lifetime story of lead sheet

Much of the raw material used to form lead sheet is retrieved from the building demolition process. During demolition, lead sheet easily becomes detached from adjacent materials. The collection of lead sheet is therefore a simple task of placing the material into suitable containers, typically pallets, ready for collection. Scrap lead retrieved this way can either be transported to a scrap collection point or be

collected directly from the demolition site. Over 95% of available lead is recovered from building demolitions because it has a viable resale value.

Other sources include reclamation from high lead content products such as car batteries where the same lead may have served as a constituent part many times over.



The collection and transportation phase

From the collection point, the scrap lead is sent to sites like BLM's plant at Welwyn Garden City that convert the material into new lead sheet. The collection and transportation of the material is a closely monitored according to environmental legislation. This system is based on

being able to trace the movement of the lead from the demolition site to the scrap handling facility and from here onwards to the re-processing site. Materials received at re-processing points are stored under cover.

The reprocessing stages

The first process involved in the recycling of scrap lead is the initial melt stage. This is carried out at just above the lead melting temperature of 327 °C, and is when non lead items are removed. This is followed by a metal refining stage to bring the material within the metallurgical specification BS 12588, which is the European quality standard for lead sheet. Lead oxides that appear during the processes are sent to specialist lead smelting centres for a further stage of recovery.

All scrap recycling facilities are closely monitored by Heath and Environmental Agencies to ensure recovered materials are safely treated.

With the metal in a refined state the next stage is to produce slabs for a forming process.

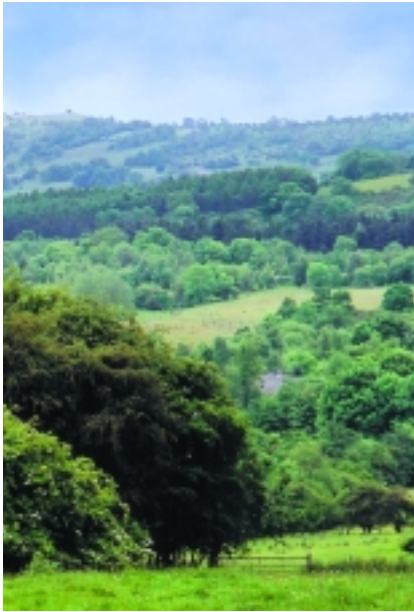
Forming is carried out on sophisticated rolling mills that squeeze the slabs making them progressively thinner until a final gauge is achieved. The average thickness for most applications is around 2mm although this will depend on application. Frequently the whole recycling process, from scrap to final lead sheet, is completed in just a matter of days. The flexibility and softness of the material allows producers to supply lead in various lengths and widths, according to customer's requirements.



The product - a variable function unit with infinite life

When fitted correctly lead sheet will last for centuries. This is because it corrodes at a very slow rate and, if the correct technical guidance notes are followed, then the material quite simply out lasts the building. Some concern has been expressed with regard to whether the minute levels of corrosion products affect the environment. However, studies have shown very clearly that lead particles remain inert within the soil. It must also be remembered that lead is a naturally occurring element found widely within the earth's crust.

Unquestionable environmental performance - what is the alternative?



The environmental profile of lead in general has been questioned. The same questions have been applied to lead sheet despite the unquestionable service life, the ease of recycling and the well established retrieval and collection system of lead from building demolition. Some synthetic materials have claimed superior environmental performance.



However, investigations by a well respected independent research organisation came to the following conclusion: -

"The assessment showed that the environmental impact of lead sheet is more favourable than the alternatives. The main reason is that the product life time of the alternative to lead is shorter than that of lead"

The life cycle of lead sheet has been compared to that of alternative synthetic building materials, and it was found that lead was the most favourable option. Conversion of scrap to new lead sheet places minimal impact on global warming due to low melting temperature.

The efficient and effective metal recovery demonstrates a first class "closed loop" product management system. The alternative would be the waste of a valuable and versatile resource.

Lead sheet provides a unique example of a sustainable product with proven centuries of safe, continuous use.



KEY NOTE SUMMARY

1. Centuries of safe use as a building material
2. Extremely high recovery rates
3. Low energy conversion due to low melting temperature
4. Synthetic alternatives shown to have inferior life cycles
5. Outlasts feasible alternative metal roofing products
6. Stringent environmental controls applied to a recycling infrastructure

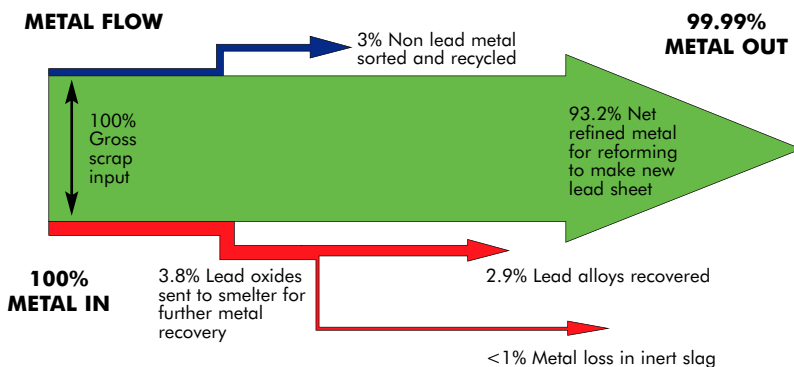


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The flow diagram of lead scrap recovery



RECYCLABLE AND 100% RECYCLED