

We buy 5 billion aluminium drink cans every year – each one can be recycled back into metal to make ‘new’ drink cans, over and over again.

One of the largest aluminium can recycling plants in Europe is in Warrington, Cheshire. This plant recycles cans collected in the UK and other European countries.

Here’s how the process works:

Step 1

Aluminium cans arrive at the recycling plant in large blocks, or bales. These bales are loaded onto a conveyor, which takes them to the shredder.

Step 2

The shredder chops the cans into small pieces. The pieces are about the size of a 50p coin. This is so that it is easier to remove all the inks and coatings used to decorate and protect the can. It also makes the metal melt faster in the furnace.

Step 3

The shredded cans are passed under a very powerful magnet. This removes any traces of steel. Drink cans are made of steel too, and can be recycled – but not in this factory! Because the steel cans are magnetic, they can be separated from the aluminium using this powerful magnet.

Step 4

The aluminium shreds move along the conveyor into the decoater.

Here the decoration is removed from the shredded cans. The decoater blows hot air through the shreds and the inks and coatings vaporise.

The decoating process also warms the shreds up, so that they melt faster when they reach the furnace. The hot gases are removed and cleaned.

Step 5

The decoated shreds are fed into the furnace.

The furnace is heated to 700C – this is a low melting point for a metal.

At this stage of the process, other chemicals are added to make the aluminium the correct composition. Any impurities rise to the surface of the molten aluminium, forming a layer of ‘dross’. Dross is removed using a special ‘scraping’ tool and this is also taken for recycling.

Step 6

The molten aluminium is transferred to another furnace.

This ‘holding furnace’ is where the metal waits to be cast into ingots.

The holding furnace tilts very gradually to pour the hot, molten aluminium. The metal flows into moulds, which are suspended over a pit about 10m deep. As it enters the mould, it is cooled by a curtain of water that surrounds the mould. As the aluminium cools, it hardens and becomes heavier. This makes the base of the mould lower into the pit so that more aluminium flows into the mould. Gradually, an ingot is formed.

Step 7

The finished ingots are lifted from the casting pit by an overhead crane. It takes about three hours to cast the ingots. The factory makes three ingots at a time. Each is 9 metres long and weighs 27 tonnes – and contains 1.5 million recycled aluminium drink cans. The ingots are loaded onto a truck and despatched to the rolling mill. At the rolling mill, the ingots are rolled into a very, very thin sheet, which is used by the can making company to make new drink cans for us to buy in supermarkets, cafes and from vending machines. And the whole process starts all over again!

