

BLÜCHER® Sustainability

Sustainable drainage solutions



BLÜCHER®

K E E P I N G U P T H E F L O W

STAINLESS STEEL DRAINAGE SYSTEMS

Environmental benefits

Stainless steel as a material has many environmental benefits in its production, use and recyclability.

Feature	Benefit
Tensile strength	Can use thinner material than other metallic systems because of high strength to weight ratio.
Corrosion resistant	Avoids the use of alternative materials that require more maintenance or earlier replacement
Hygienic	Non toxic, smooth surfaces, easily cleaned and sterilised
Low maintenance	Reduction in cleaning
Long lifetime	No replacement needed
Whole life cycle costs	Long life, minimal maintenance and strong residual value
Fire resistant	Withstands high temperatures
100% recyclable	Not used in landfill
No degradation	Can be recycled indefinitely without loss of properties
High value scrap price	Strong stainless steel recycling industry
New material contains 70% recycled material	Reduces the need for primary raw material and makes an above average contribution to global environmental protection by reducing the depletion of non-renewable resources. Producing -from scrap rather than primary resources significantly reduces energy used, CO2 emissions and waste.



Stainless steel production



Stainless steel can be manufactured from either 100% primary raw material or 100% scrap (re-cycled) material or a mixture of primary and recycled material. The energy consumed in new stainless steel manufactured from 100% re-cycled material is only 31% compared to the energy used in stainless steel manufactured from 100% primary raw material.

Due to the increasing demand for stainless steel and its long useful life, there is not enough chromium or nickel based scrap to satisfy demand for new material to be made purely from scrap. However, because stainless steel can be re-cycled indefinitely without degradation of its properties and is 100% recyclable at the end of its life, any primary raw materials used in the manufacture of new stainless steel is actually invested into the future steel cycle. The total energy embodied in stainless steel decreases by increasing the recycled content.

Stainless steel is produced by adding alloying elements including chromium, nickel and molybdenum to typically 70% scrap, which is then charged in an Electric Arc Furnace for melting. It then has the carbon reduced in an Argon Oxygen Decarburization vessel before being transferred as a liquid into a continuous casting machine. The slabs are then reheated and are hot rolled into bands or billets. Further processing of the hot-rolled material by cold rolling results in the coils and strip sheet to manufacture welded pipe and fittings.

Modern steel mills ensure that high yields are achieved to minimise the waste throughout the production process. Overall, emissions released into air and water are only 5% of the level of 20 years ago.

Stainless steel production can be energy intensive, therefore increasing the need to maximise energy efficiency has seen the introduction and development of computer controlled production systems.

Acid recovery systems recover 80% of pickling acid via fume and acid scrubbers.

Dust & Fume extraction units are used to reduce levels of emissions (down 40% since 2001). Dust from the gasses released in the furnace and AOD are collected and recycled to reclaim the metallic compounds. Water is used for cooling and is filtered and re-cycled up to 100 times prior to discharge.

Slag from the furnace has the metal reclaimed before being used for hard-core in road building.

Typically 65% of CO₂ emissions are in manufacturing and 35% in transportation of raw material and finished goods. Stainless steel, because of its high tensile properties can be used in thinner profiles therefore producing lower levels of CO₂ emissions in transportation when compared to other, heavier materials.



Benefits of BLÜCHER® EuroPipe

BLÜCHER R&D is focused on continuous improvement and innovation in both product and processes. BLÜCHER recognises its responsibility towards the environment. Minimising emissions and waste and using raw materials and energy efficiently are our goals.

Features

Modern efficient high tech production methods and equipment

All waste recycled back to the steel producers or re-used in other processes

Push fit joints

Thin walls

Smooth surfaces

Reduced whole life cycle costs

No painting or coating required

No fumes in the case of fire

Recyclable

Stainless steel offers many positive sustainability benefits to the construction sector. Its durability, longevity, aesthetics, whole life costs and superior corrosion resistance makes it the material of choice for many applications.



Benefits

Minimises rejection or waste

Re-cycled into new material or products

Can be dismantled and re-sited avoiding the need for re-cycling.

Less CO2 emissions in transportation compared to other metallic systems

Reduction in blockages

Better value for money

Cleaner for recycling

Non toxic

Quick win option as defined by WRAP/ARUP



KEEPING UP THE FLOW