

Brass Strip

Keith Ingram

William West (Birmingham) Ltd

Introduction

- Family Business
- Origins Late 19th Century
- Manufacture copper, brass and phosphor bronze strip

Brass Alloys and Specifications

- Produce range of brass alloys
- BS EN 1652:1998 Specifies properties by
 - tensile strength and elongation
 - hardness and grain size
- Company recycles 1700 tonnes of brass per annum

Induction Melting Furnace

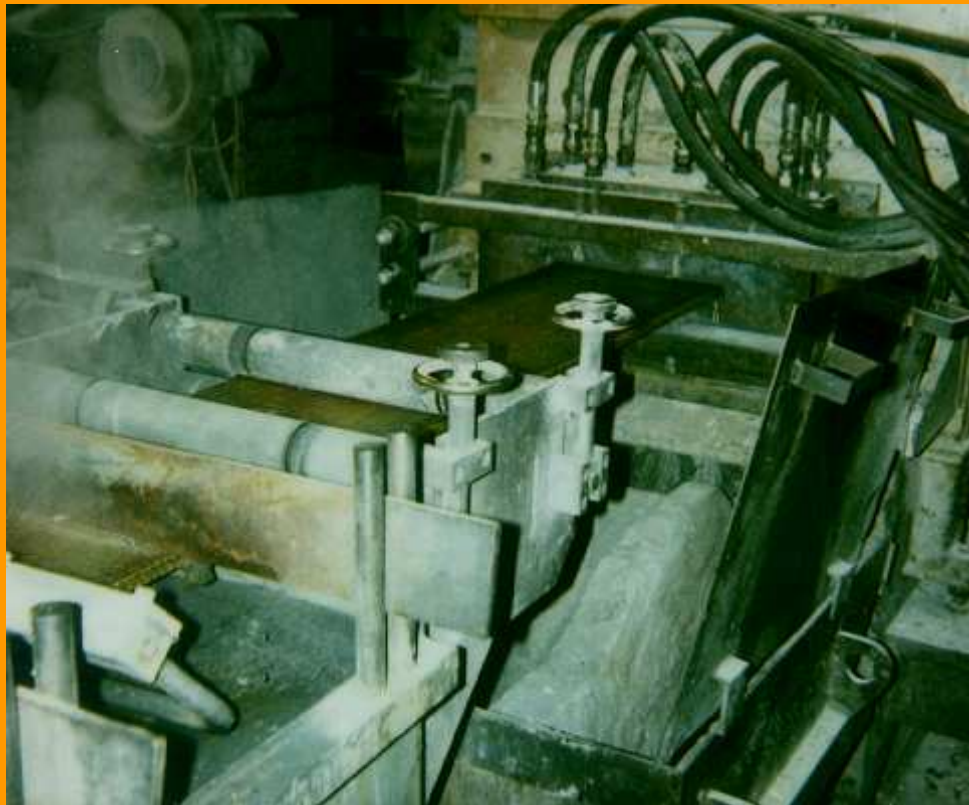


Slag removal from molten brass

Casting

- Brass scrap melted in electric induction furnaces
- Adjustments made to CuZn ratio
- Transferred to Holding Furnace
- Continuously cast strip 15mm thick by 334mm wide at 175mm/min
- Coiled into coils weighing 1350KGs

Continuous Casting



Cast strip emerging from water cooled die

Milling

- Coils milled to improve surfaces
- Yields coil of 1200KG for processing
- Milled swarf remelted

1st Stage Rolling

- Cold rolled on 4 Hi Breakdown Mill
- Thickness of strip reduced, width remains the same
- Typical reduction in thickness 26%-40%
- Material Annealed
- Further 50% reduction

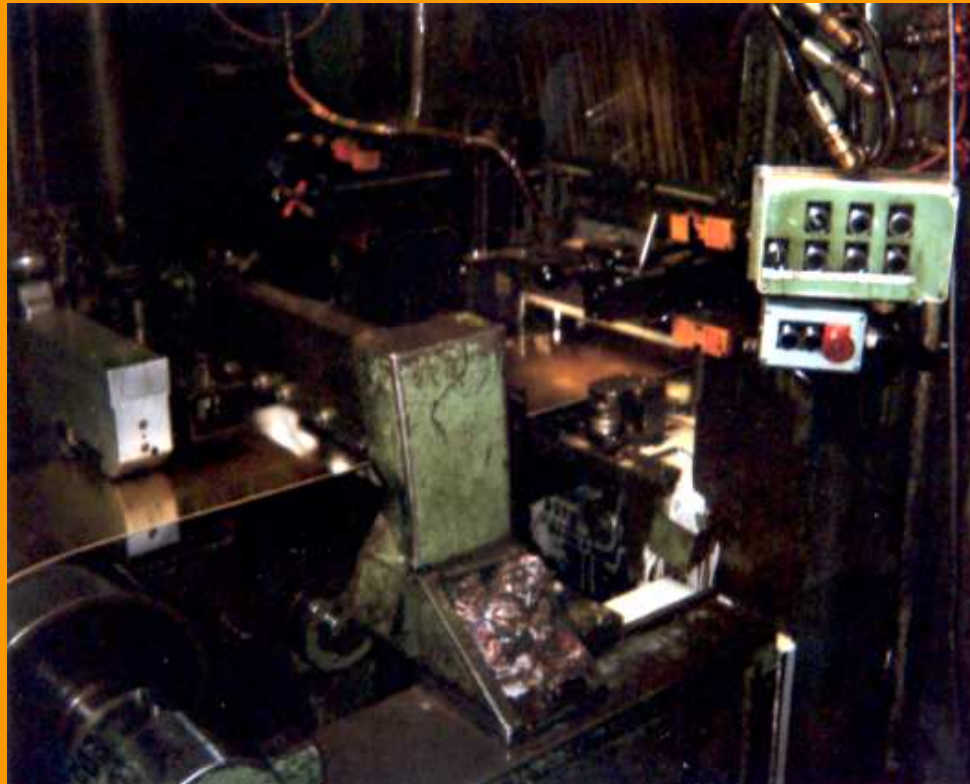
1st Stage Rolling cont

- Strip reduced to 4mm
- Annealed
- Pickled to removed surface oxides

Finish Rolling

- Customers specify weight, alloy, gauge, width and temper or tensile strength
- These are achieved by further cold rolling and heat treatment
- Soft brass <80HV with grain size less than 0.03mm is required for deep drawing
- Brasses need to be stress relieved at 200°C to avoid stress corrosion

Finishing Mill



8 inch rolling mill

Shearing Machine



Strip sheared to width

Brass Strip Components

- Door and Window Furniture
- Gliding metals used for jewellery, medallions etc often plated or enamelled
- Coinage eg £1 & £2 coins
- Other uses include automobile components, light fittings, electrical and electronic equipment etc