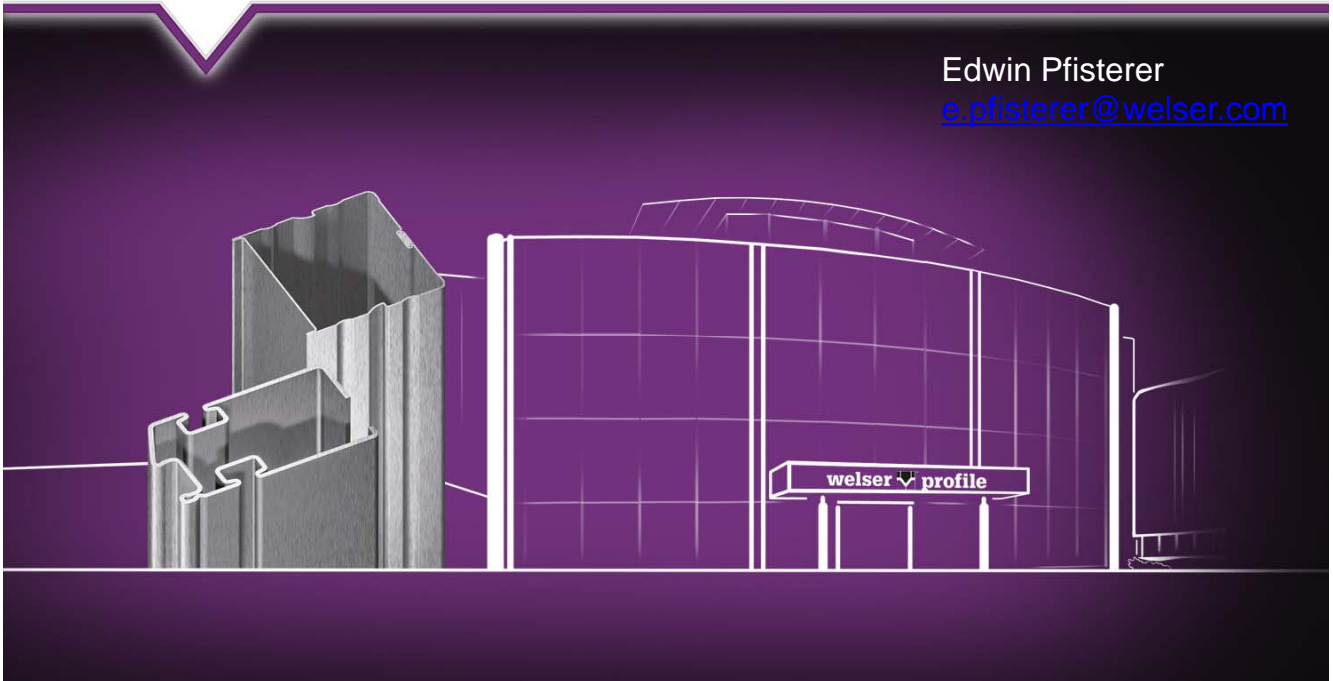


Welser Profile

Functional and design related rollforming solutions

Edwin Pfisterer
e.pfisterer@welser.com



Key Facts

1,850 motivated employees

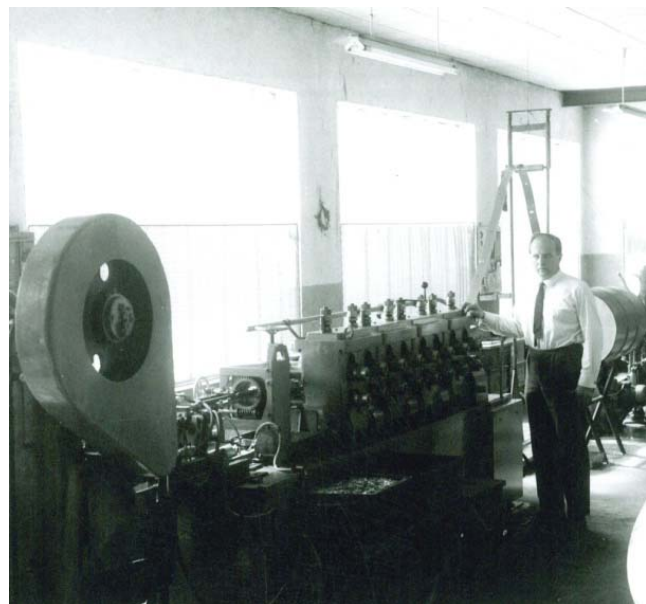
Continuous development of our roll forming process

100% customised solutions

More than 20,000 profiles produced to date

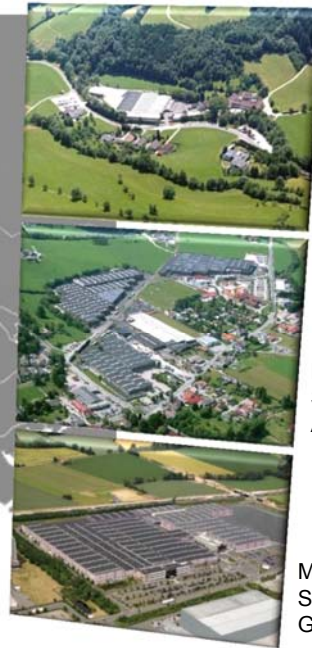
More than 50 years experience in roll forming

Long history in metalforming - dating back to 1664, when Adam Welsers started with his blacksmith



Key Facts

Locations



Headquarters
Ybbsitz
AUSTRIA

Manufacturing
Site Gresten
AUSTRIA

Manufacturing
Site Bönen
GERMANY

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Roll Forming

Process in general



- ✓ Established technology
- ✓ Variable lengths without additional tooling costs
- ✓ Complex geometries feasible



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Roll Forming

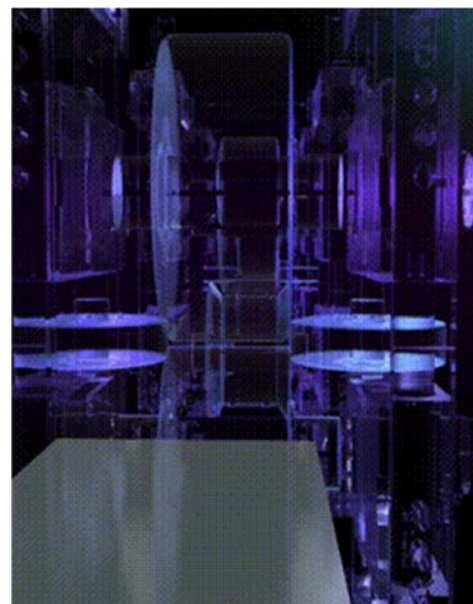
Possibilities and advantages

- ✓ All metals easy to handle
- ✓ Closed / welded cross sections possible
- ✓ Variable length without additional costs (same cross section)
- ✓ Integration of additional production steps capable
- ✓ Undercuts easy to realise
- ✓ Deviations of the material easy to adjust in process
- ✓ High accuracy and repeatability

Roll Forming

Special technologie at Welsers

- ✓ Multi-chamber cross sections possible
- ✓ Thickness Optimisation
 - ✓ Thickness reduction
 - ❖ Strip width considerably increased
 - ✓ Grooving
 - ❖ Strip width marginally increased
 - ✓ Pressure-forging
 - ❖ Strip width slightly decreased
- ✓ Punching and embossing to meet customers' individual requirements
- ✓ Thread moulding integrated in to the punching tool
- ✓ Own engineering departement and tool shop



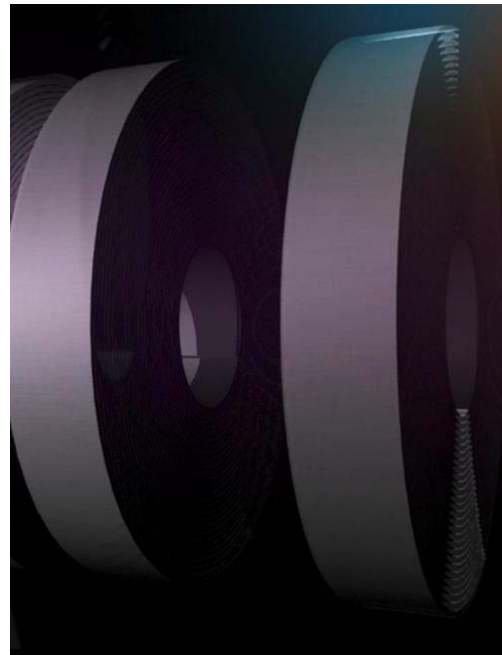
Material

all kinds of metals for roll forming

- ✓ Forming of all grades of
 - ❖ Steel and
 - ❖ Stainless-Steel

 - ❖ Prepainted
 - ❖ Galvanised

- ✓ Forming of non-ferrous materials
 - ❖ Aluminium
 - ❖ Copper
 - ❖ Titanium
 - etc.



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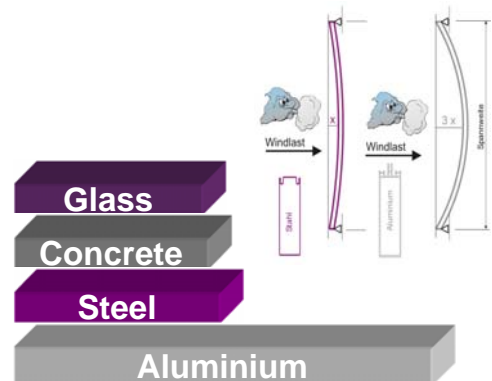
Material

Advantages of steel compared to aluminium

- ✓ Elastic modulus
 - ✓ Bowing under load is a third of AL – having the same load -> cross section can be reduced by using steel

- ✓ Thermal expansion
 - ✓ steel is similar to glass and concrete, this is much less than AL

- ✓ Safety and physical protection
 - steel has advantages in:
 - ✓ fire protection
 - ✓ Steel-constructs can be designed for all fire-resistance gradings
 - ✓ burglar resistance and vandalism
 - ✓ Perfect for security
 - ✓ long-life cycle and usability
 - ✓ i.g. doors in public buildings
 - ✓ Ecology and recycling
 - ✓ Due to the longer lifetime, 100% recyclable



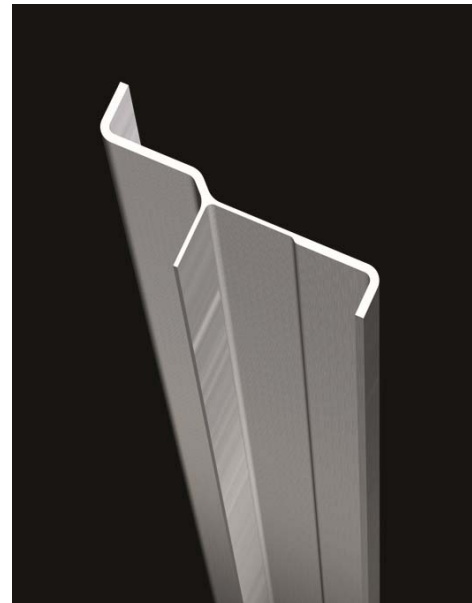
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Innovative Concepts

special cross sections with integrated functions

■ Split Material

- ✓ Material is split over several stages during the roll forming process, without any chip removing process
- ✓ Requirement:
 - Integrate flanges for easier assembling
- ✓ Advantage:
 - 100% function-oriented solution with additional weight reduction



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Innovative Concepts

special cross sections with integrated functions

■ Discontinuous profiles

- ✓ Process integrated variable geometry in longitudinal direction
- ✓ Requirement:
 - Form follows function – special geometry was needed
- ✓ Advantage:
 - Bespoke solution with continuous material-thickness along the length

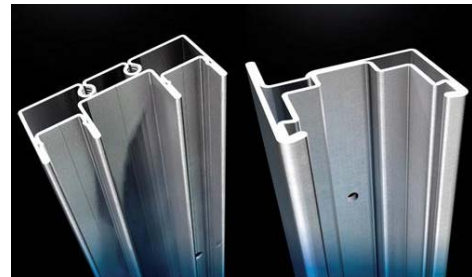


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Innovative Concepts

samples from steel doors and windows

- Sliding door frame
 - ✓ Requirements:
 - Cross section with integrated thread for easy corner connection
 - ✓ Advantage:
 - Innovative cross section for easy assembling to avoid any welding operation, corrosion resistant by producing it out of stainless steel

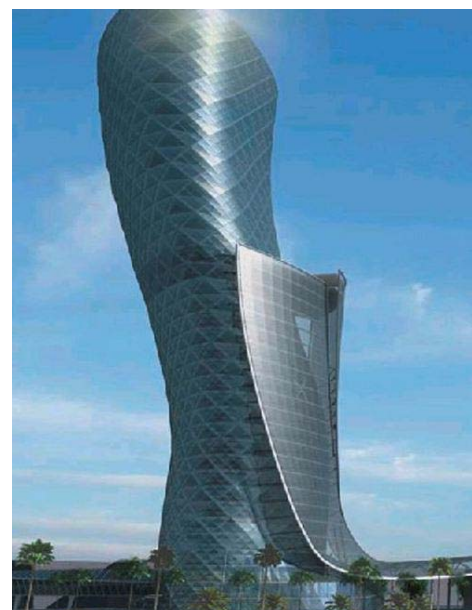


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Innovative Concepts

samples from facades

- Fassade profiles
 - ✓ Requirement:
 - Special cross sections for single use
 - ✓ Advantage:
 - Special, 100% fit to customer steel cross sections for using all the benefits of steel in the facades of sky scrapers



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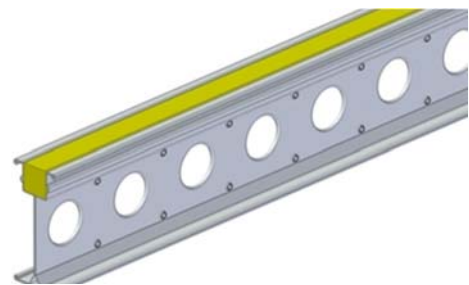
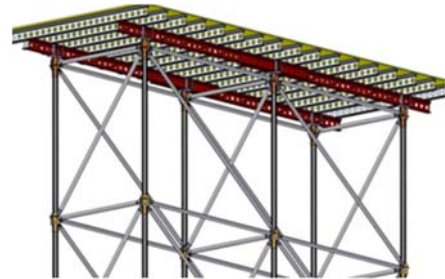
Samples

innovative samples beside steel construction

■ Steel-beam floor formwork

- ✓ Requirement:
 - Replace timber by steel and keep the weight nearly at the same level

- ✓ Advantage:
 - Innovative cross sections and integrated stamping operations makes the bar more rigid and reducing the size makes it also light - Efficient material use in complex cross sections and intelligend stamping operations with self-made tools



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Samples

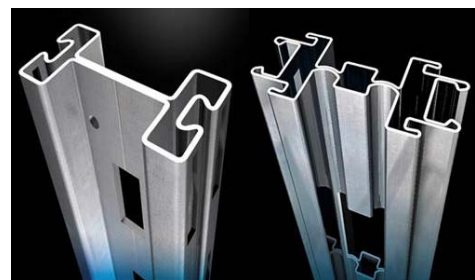
innovative samples beside steel construction

■ Wall partitioning profiles

- ✓ Requirement:
 - Slim view, lightweight and integrated functions

- ✓ Advantage:
 - Made of one single strip with highest accuracy, prepunched holes and preassembled gaskets

- ✓ Disadvantage:
 - Unfortunately invisible in use



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Samples

innovative samples beside steel construction

- Thermal insulated frame profile

- ✓ Requirement:

- Integrated plastic strips for thermal insulation

- ✓ Advantage:

- Fixation and integration of two plastic insulators for special frames used in difficult thermal areas



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Samples

innovative samples beside steel construction

- Special profiles for excavators

- ✓ Requirement:

- Highest accuracy and repeatability, narrow tolerances all over the length

- ✓ Advantage:

- 100% function oriented by using high performance roll forming concepts



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Samples

innovative samples beside steel construction

- Turntable Ladder

- ✓ Requirement:

- load-optimised cross section – reduced weight - maximum strength



- ✓ Advantage:

- 100% customised, multi chamber cross section with profiles made out of different steel grades and different thicknesses



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Samples

innovative samples beside steel construction

- Steel tracks for Snow Groomers

- ✓ Requirement:

- Microcrack free holes and notches, perfect weld seam and high strength material for a long lifetime



- ✓ Advantage:

- By intelligent use of different processes high quality profiles



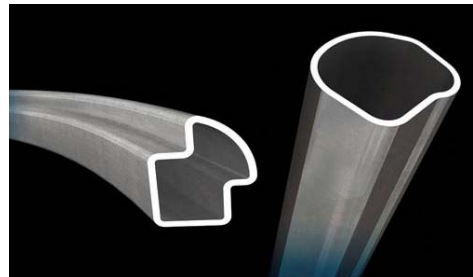
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Samples

innovative samples beside steel construction

▪ Bended cab profiles

- ✓ Requirement:
 - Smooth surface, high accuracy in the cross section and in the bended frame



- ✓ Advantage:
 - Several bending machines for all dimensions of cabine- and door-frame profiles in several steel grades



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19

Samples

innovative samples beside steel construction

▪ Outer frame for curtainsider

- ✓ Requirement:
 - Cross section with high quality and integrated functions



- ✓ Advantage:
 - Bespoke solution over several processes – roll forming, punching holes and notches, laserwelding, variable lengths without additional setup time



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20

Samples

innovative samples beside steel construction



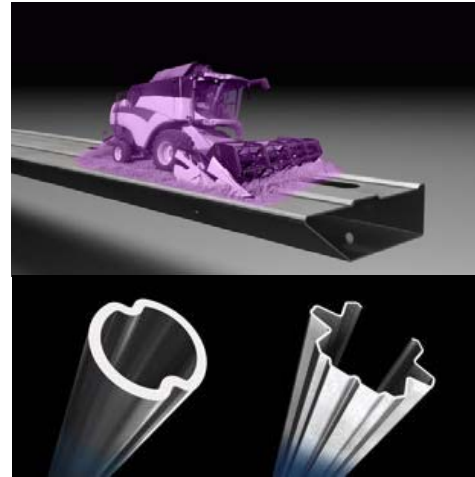
- Sickle bar for harvesters

- ✓ Requirement:

- Highest accuracy all over the length, assembly group sealed by welding

- ✓ Advantage:

- Perfect match of all single profiles by assembling all at Welser, best function is guaranteed. Assembly group used as a gear box

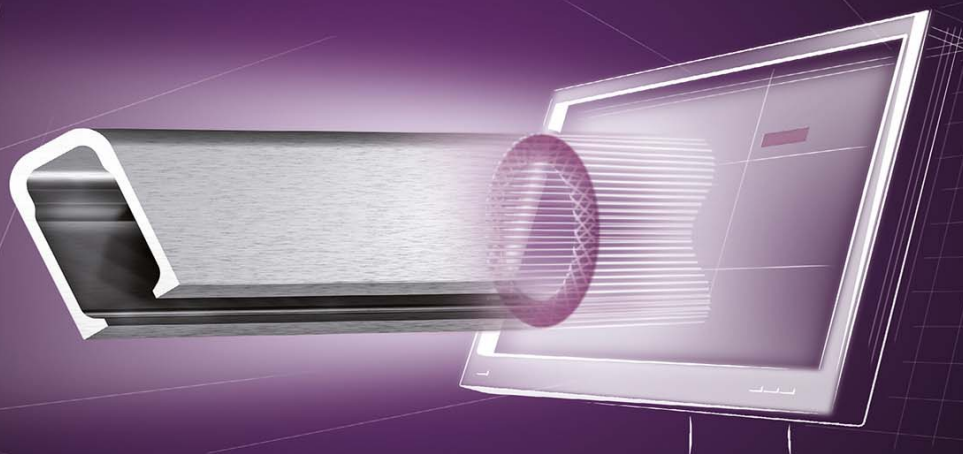


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21

Thank you for your attention!

Die Unternehmensgruppe Welser Profile



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Visit us in Hall 8.2, booth 118