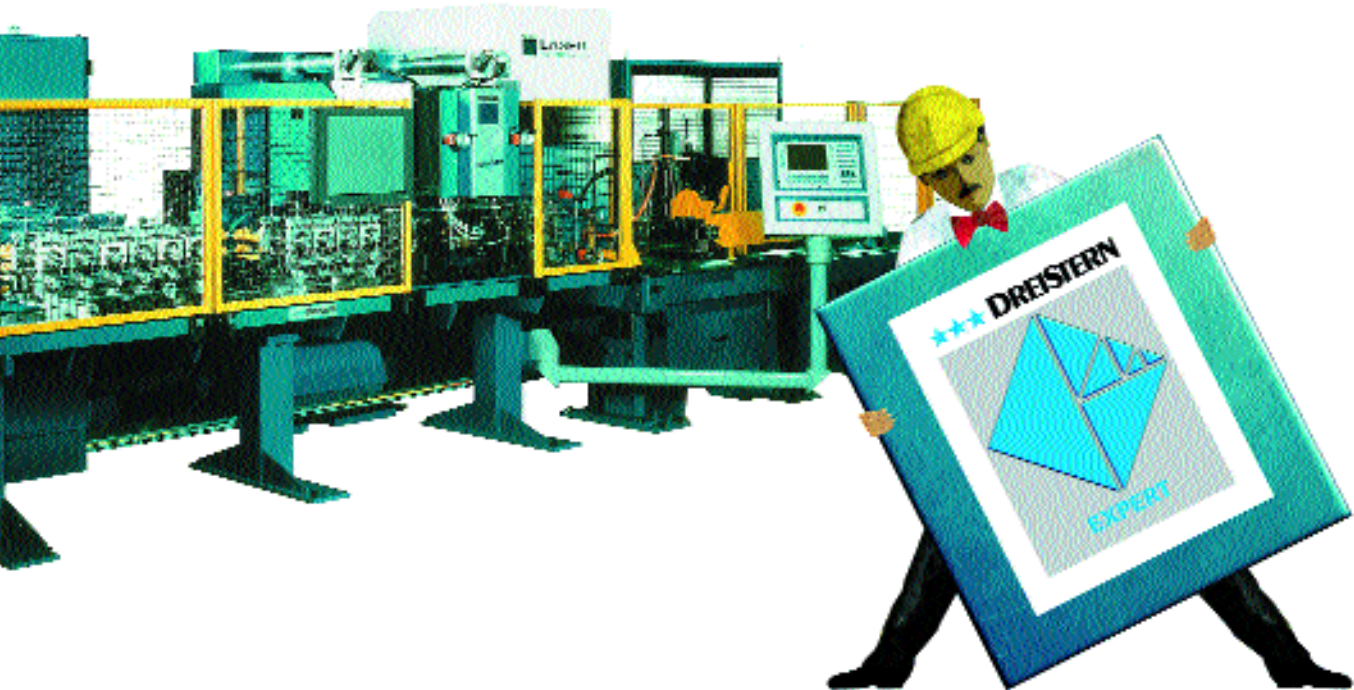


## Production units for composite profiles<sup>\*</sup>



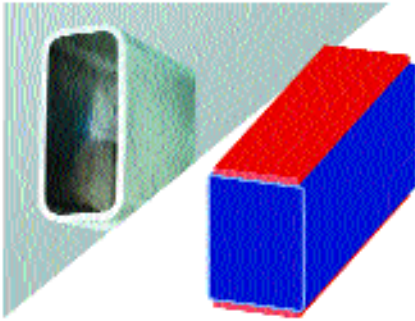
### What are composite profiles<sup>\*</sup>

Composite profiles are composed of two or more strips or profiles, which are permanently bonded to each other e.g. by Laser welding. Components can be of different thickness or even composed of different metals.

### Why composite profiles<sup>\*</sup>

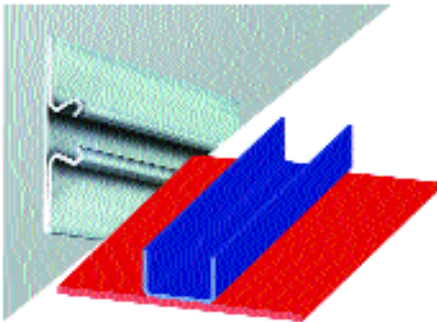
In the past, composites had been applied in air and space travel. The main objective has been to reduce weight. Thanks to a combination of various materials and sheet metal thicknesses, much more can be achieved:

- <sup>\*</sup> Saving material costs
- <sup>\*</sup> Reducing production change-over and set-up time
- <sup>\*</sup> Facilitating ready-to-install subassemblies



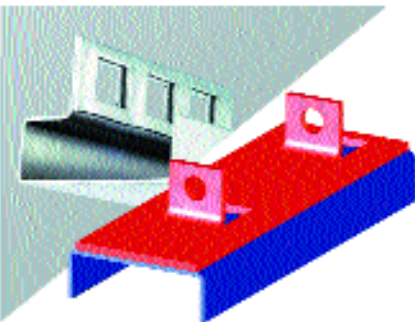
### Basic example 1: Saving material costs

Up till now, profiles were of uniform thickness. Composite profiles, on the other hand, are provided with a reduced thickness in areas of less strain and a slightly increased sheet metal thickness in areas of greater strain. **This saves material.** In this particular case **nearly 30%**, while still allowing for the same strength in the horizontal axis.



### Basic example 2: Reducing change-over times

Rollforming tools for complex profile shapes have to be tested at length and cause long tool change-over and set-up times. Thanks to composite profiles, profile complexity is drastically reduced. For example a lap can be replaced by a flat base, **thus reducing the number of forming stations by 50%**. Testing and change-over time can be saved down correspondingly.



### Basic example 3: Facilitating ready-to-install subassemblies

Punching patterns are deforming often during rollforming or cause deformations to the profile shape. Composite profiles are different: All punching and bending operations are carried out on the flat strip. The functional elements produced in that way do not undergo any forming process, but are continually welded in line to the base profile. The result: **Precision parts without any deformation** to the punching pattern or to the profile form.

## Possible material combinations

- Fine-grained steel with ordinary carbon steel
- Ordinary carbon steel with hardened steel
- Stainless steel with galvanized steel
- Austenitic steel with ferritic steel

## Structure of a production unit

