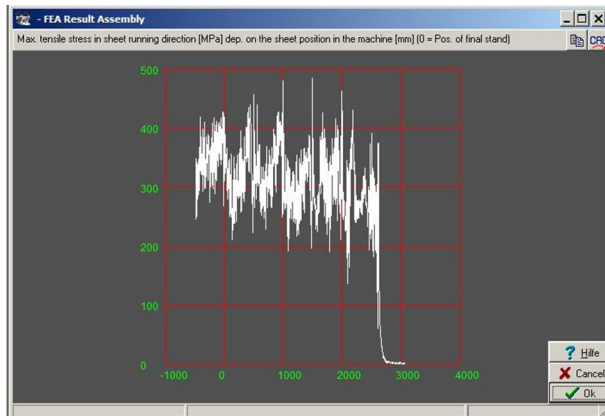


What's New? – Rel. 5.2

Postprocessor for LS-DYNA

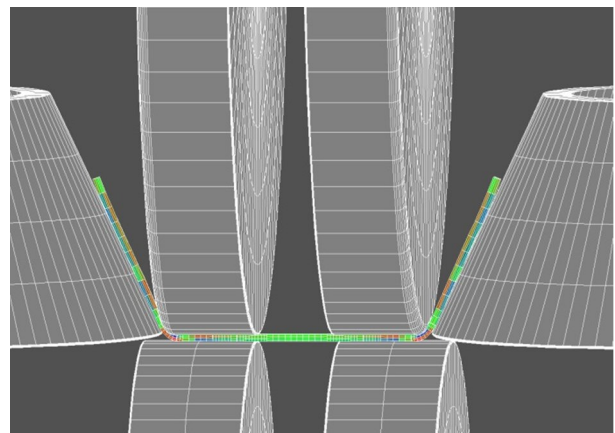
Additionally to the preprocessor (new feature of rel. 5.1) a powerful postprocessor is available in the new release of the roll form design software **UBECO PROFIL**. This enables the designer to evaluate the result of the FEA simulation in order to check before manufacturing, whether the roll tools are able to produce the desired product. The postprocessor opens the **LS-DYNA** output files (file format .d3plot) and shows the result on the **PROFIL** screen. In case of symmetric profiles, only one half is simulated because of saving calculation time. The postprocessor adds the second half by mirroring.

Graphs



The **PROFIL** postprocessor creates graphs that show the transversal and longitudinal stress, the strain, and the sheet thickness reduction as a function of the sheet position in the machine. These graphs are tailored to the special needs of roll form designers and help to evaluate the FEA result.

Sectional Views

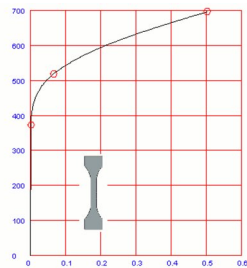


Sectional views of the sheet within the rolls, at any machine position, or after leaving the machine are created by key-press. The rolls can be inserted (as 2D cross section or as 3D solids alternatively) in order to check the position of the sheet within the roll tools. Inserting the designed flower pattern enables target/actual comparison.

Stress and strain are shown as a color spectrum. The assignment of stress and strain to colors can be modified by movable sliders. Optionally, stress and strain of the top and bottom sheet surface can be shown or of the sheet center only.

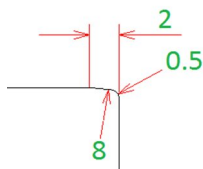
The simulation is proceeded by using a strip with a finite length (in reality, the strip nearly has unlimited length). The length for simulation is user-defined. Because the behavior of a finite and an unlimited strip is different, the leading and the rear edge can get unrealistic deformations. In order to mask this affect out during evaluation, a selectable count of rows can be cut off at the leading and the rear edge.

Import Stress-Strain-Curve



In case the stress-strain-curve is determined by a tensile test according to DIN standard, a text file or an Excel table with the value pairs of stress and strain can be imported. To check the imported values, the curve is displayed graphically.

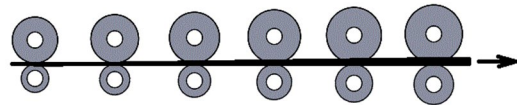
Double Fillet



A double fillet is created at a roll corner with a larger and a smaller radius. The large radius is needed if track markers on the sheet surface caused by production tolerances of the rolls should be avoided, e.g. of split rolls. The small radius is useful to avoid damage of the roll corners and operator's hands injury during handling operations. PROFIL created the fillets with tangential connections.

More info: www.ubeco.com

Lead (Strip Tension)



It's a common practice to keep the strip under tension by gradually increasing the roll pitch diameters. Thus also the circumferential speed of the rolls is increased from stand to stand. This causes strip tension in sheet running direction and prevents vertical buckling. Also the spring back of the profile legs is reduced between the stands. After choosing the increment PROFIL inserts the appropriate working diameters in all stands.

Modifying Machine Parameters

Stand:	Final Stand	Cut	300,000
Calibration Factor [%]		Copy	
		Paste	
		Delete	
		Copy To All	
Shaft	Bottom	Top	Right
Ø Shaft:	50,000	50,	52,000
Working-Ø:	127,000	177,	150,000
Ref. Point x:	200,000	200,000	200,000
Ref. Point y:	150,000	153,000	150,000
Incl. Angle:			

The new function **Copy To All** (called from the context menu in the machine window) enables modifying of machine parameters in all stands at the same time.

Drawing Scale



Possibly a customer sends an inquiry with a profile drawing that is not drawn in the drawing scale 1:1. In order to import the proper dimensions, the drawing scale can be preset. PROFIL recalculates all coordinates.