

# THE PHOSPHATE-FREE WIRE FOR COLD MASSIVE FORMING

In the past, wire that had a phosphate-coated surface was used almost exclusively in the production of complex cold extrusion parts. However, besides the advantages in the manufacturing process, there are also disadvantages in the subsequent course of the process, resulting from the phosphate-coated surface. The removal of phosphate coating on the pressed parts, for example, is a very cost-intensive and pollutive procedure.

establish wire with a phosphate-free surface as primary material in for a long time. Lüling has risen to this challenge and, in close cooperation with their customers and academic institutions, has developed a solution that will meet the high demands of the cold forging industry.

Moreover, there is a danger of a delta ferrite formation, subject to component type and class of tensile strength, when the pressed parts are subsequently treated thermally. These are only some reasons why the cold compressing industry has attempted to

## Variation of coatings:

Ausführung	+U	+AC	U+C	+AC+LC	U+C+AC+LC
In-Line coating*			X	X	X
Conversion coating	X	X			
Conversion coating+ lubricant*			X	X	X
Conversion coating+ polymer coating	X	X	X	X	X

\* The lubricant will be chosen depending on the application and the forging process.

The production can be carried out either in an immersion process or in-line. This means that we can offer our zero-P™ in all variations and coils. (See graph above)

We are at your disposal for any enquiries or information.

The variations are endless and are agreed upon with the customer in advance, taking the technical feasibility into consideration. This will depend on the forming process and the intended application.



## NO PHOSPHATE – MANY ADVANTAGES



- processing on molding press involving multiple steps is technically possible
- complex forming degrees feasible
- no delta ferrite formation during subsequent thermal treatment



- reduced pollution of pressing lubricant
- no phosphate residue to pollute the environment
- no cost-intensive and obligatory declaration of waste disposal
- no nitrates or heavy metals in waste waters



- no expenditure of time for cleaning phosphate remainders
- prolonged durability of tools and other indirect materials
- no costs for removal of phosphate coating

Our production and delivery possibilities:

PACKAGING	DIMENSIONS
coils	1.00 mm up to 36.00 mm
traverse wound coils	2.50 mm up to 18.00 mm

