# Wear Resistant Coating of Punching Tools by Metal-Matrix-Composites

*Enabling Industries Through Refurbishing & Remanufacturing*

## Motivation and Relevance

- Tools that are susceptible to wear can be coated in a resource-saving and cost-effective manner to prevent scrap
- Manufacturing companies in all industries use tools whose service life can be increased

## Approach

- Highspeed Directed Energy Deposition
- Feed rate of 20 m/min
- Material combinations of 1.2888 + TiC and or WC
- Coating of tool blanks to produce punches by wire erosion

## Results

- Hardness of coating after heat treatment up to 1000 HV
- Nearly defect free coatings with each material system
- Increased service life compared to uncoated tools up to 10x and compared to AlNi-coated PM-steels over 50%

## Research Area

- Tools & Dies, DED Coatings, Resource Efficiency

## Partners

Oetzbach Edelstahl
Werkzeugstahl · Bearbeitung · Härterei

HS Stehling Stanztechnik
Werkzeugbau • Spezial-Ziehwerkzeuge • Stanzteile • Ziehteile

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