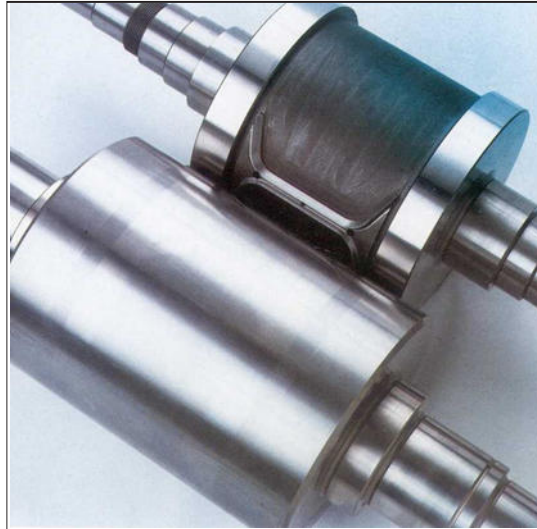


## PSB27 Nonwoven Case Study



### Industry:

Nonwoven - Rotary Die Cutting

### Description of Tool:

10" Diameter rotary cutting die for nonwoven material.  
Specifically the die for a pad final cutter.

### Description of manufacturing process and case study:

- The rotary crush die was originally made from D2, which was replaced by PSB27.
- The replacement was done because PSB27 has approximately 3X more wear resistance than D2 in cold work applications.
- The result was a 2.5 times increase in parts produced before tooling change/regrind.
- Another positive result was seen in the regrinding.
  - The D2 tooling needed 0.040" taken off during regrind.
  - The PSB27 needed only 0.015" taken off during regrind, allowing for additional rework of the same tool.
- The combination of these two factors resulted in 5X the tooling life.

### Tool Performance:

| Original Performance   | Improved Performance with new solution                               |
|--|--|
| Original tool steel grade: <b>D2</b>                           | New tool steel grade: <b>PSB27</b>                                   |
| Mode of failure: <b>Micro crack indications</b>                | Mode of failure: <b>No indication of micro cracks during review.</b> |
| Operational data: <b>34 million pieces cut before regrind.</b> | Operational data: <b>84 million pieces cut before regrind.</b>       |
| Diameter reduction during regrind: <b>0.040"</b>               | Diameter reduction during regrind: <b>0.015"</b>                     |
| Total parts cut per tool: <b>102 million</b>                   | Total parts cut per tool: <b>504 million</b>                         |