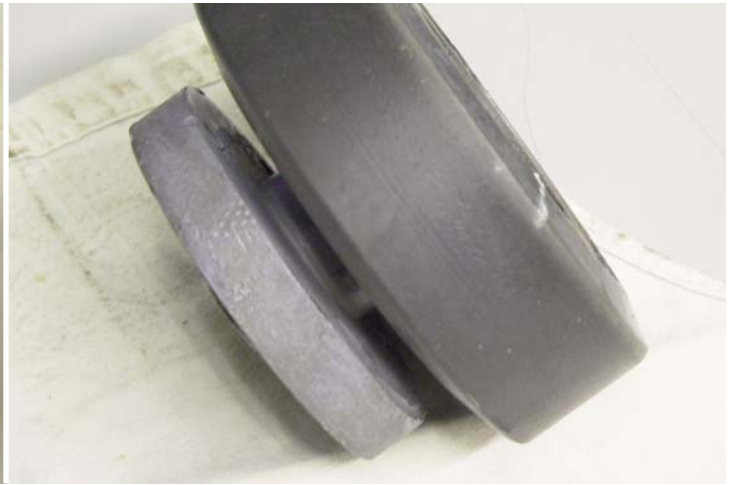


## HEAVY-DUTY VEHICLE MANUFACTURING - PRODUCTION LINE



*Since the introduction of Curbell's NyMetal wheels in this application, the customer has ended all product line stoppage from wheel failure. The NyMetal wheels have been in place for over two years without a single part failure.*

### APPLICATION

Wheels of production line transfer cart

### MATERIAL REPLACED

Urethane wheels cast around stainless steel hubs

### ISSUES AND CHALLENGES

Chemical exposure and heavy loads caused the delamination and separation of urethane from steel, delaminated wheels caused part failure and stopped production lines

### SOLUTION

NyMetal® wheels

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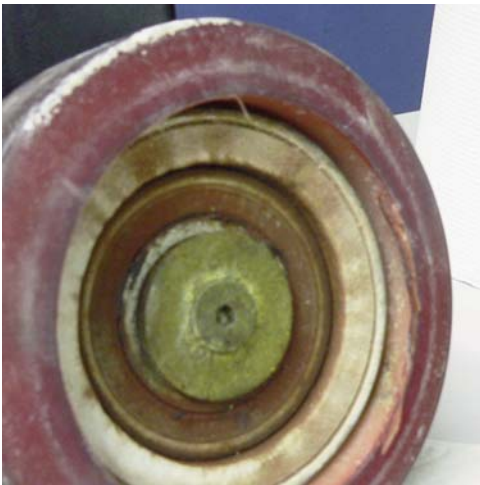
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Many nylon wheels and gears have internal stresses caused by introducing a metal bearing or hub into the inside diameter of the wheel. These additional stresses usually result in cracking or uneven wear, leading to a shorter life span of the part.

The manufacturing process of NyMetal® allows it to succeed under conditions where similar materials fail. NyMetal is manufactured by casting the nylon directly onto and curing it around the metal core. The stress that often exists in material that has been press-fit around bearings or hubs is avoided in this process. The low internal stress allows NyMetal parts to have longer life spans than other materials. Therefore, the material has the potential to drastically reduce cost for the end-user by allowing the production to continue for longer intervals without part failures. NyMetal parts can also increase time between scheduled maintenance down-time.



NyMetal users also have the ability to mix-and-match their metal core material with many grades of nylon to get the best match for a specific application. There are many metal core materials to select from including several grades of steel and stainless steel. There are ten standard grades of nylon to choose from including Nylon 6, internally lubricated, and FDA compliant grades. In addition to the standard formulations, NyMetal parts can also be made from custom grades.

One of Curbell's customers discovered the benefits of NyMetal parts when they introduced the material into their Heavy-Duty Vehicle Manufacturing production line. The NyMetal parts replaced wheels that were constructed of urethane that had been cast around steel hubs. The wheels were part of a transfer cart used to transport a vehicle cab shell along the conveyor line. The manufacturing process of the urethane wheels left stress in the urethane material. The constant heavy load and repeated exposure to chemicals caused the urethane wheels to delaminate, or separate from the steel. When the urethane delaminated, the wheels would jam, stopping the entire production line. The customer upgraded to NyMetal wheels from Curbell Plastics, which have been in place for over two years without a single failure. In those two years, the customer has not reported any delamination of the transfer cart wheels.



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