

BOWLING GREEN METALFORMING – A MAGNA COMPANY ENVIRONMENTAL, HEALTH & SAFETY CASE STUDY



The FRAME MASTER – A Dura Blend Lumber Brand Product

PROBLEM - WOOD STORAGE UNITS

Bowling Green Metalforming – A Magna Company, is a first tier, world class manufacturing supplier of truck frames to Ford Motor Company. The company is located in Bowling Green, Kentucky. Once the frames finish the manufacturing process, they are stacked, bolted together and moved to an outdoor storage lot. Historically, the frames were being stored on common railroad timbers. Wood is greatly impacted by weather, environmental conditions, species and wildlife. These conditions often led to accelerated degradation of the wood framing. The Company often needed to replace the railroad timbers which is costly. Additionally, the Company personnel were concerned that wood deterioration could cause potential damage to the expensive truck frames, but an accident, possible fatality could occur during the loading or unloading process of the frames if they were stored on deteriorating wood.

PROCESS - PARTNERSHIPS

A Bowling Green Metalforming employee, who is a volunteer firefighter, was familiar with the Turtle Plastics' Dura Crib/Dura Stat/Dura Blend Lumber products as they are widely used in the fire/rescue industry. This employee took a proactive approach to sustainable safety products and spoke to their materials handling manager about the re-engineered plastic blocking made by Turtle Plastics as an alternative to the dangerous wood railroad ties.

Turtle Plastics is a women-owned and operated company located in Ohio and proudly manufacturers in the United States. Turtle Plastics is a global leader in providing innovated environmental, health and safety products made from 100% recycled plastic.

SOLUTION - THE FRAME MASTER

With the leadership of Dennis Hildebrandt of Turtle Plastics, a solution-based partnership was formed with Bowling Green Metalforming to create a customized sustainable solution to the historic use of railroad timbers. Since the nature of the blocking of the frames required static load transfer, Turtle Plastics suggested using its Dura Blend Lumber composite blocking as the alternative to the wood railroad ties. The Dura Blend Lumber blocks were tooled to create a "cradle" to meet the dimensional and weight load for each new frame. The newly created custom product was named the "Frame Master." The Frame Master product is highly compatible with Bowling Green Metalforming's corporate culture and mission as "an industry leader in health, safety and environmental practices in all of our operations with the intention, through technological innovation and process efficiencies, to minimize the impact of our operations on the environment and to provide safe and healthful working conditions."

The Frame Master product meets the criteria as a top choice Environmental Health & Safety product since:

1. Railroad timbers are notoriously known to release hazardous chemicals in their surrounding environment, affecting both the natural environment as well as potential injuries to employees. The Turtle Plastics Frame Master would eliminate this problem.
2. The Frame Master is made from 100% recycled plastic. The product can be recycled at the end of its life which supports Bowling Green Metalforming's corporate social responsibility initiatives.
3. Re-engineered plastic is durable, safe and hygienic as compared to wood.

CONCLUSION – REDUCE, REUSE & RECYCLE

The automotive industry will continue to transform. Turtle Plastics has demonstrated that its product lines can effectively be adapted to innovation while minimizing cost expenditures for its customers. For example, in 2015, Ford Motor Company changed its truck body from steel to aluminum which resulted in a redesign of size, shape and weight for the truck frames. For Bowling Green Metalforming, this meant that their existing Frame Masters would not fit the newly designed aluminum frames. Instead of having to repurchase all new storage units, Bowling Green Metalforming was able to utilize several of the Turtle Plastics environmental programming:

1. Although the existing Frame Masters were several years old;, Turtle Plastics offered market value for the raw material of the existing Frame Masters;
2. Turtle Plastics was able to reuse more than 50% of the existing dura stat blocks of the older model Frame Master. These were re-engineered as part of the new frame designs;
3. Bowling Green Metalforming did not need to landfill any of the old Frame Masters creating an economical and sustainable solution;
4. Significant cost savings were realized through:
 - a. Raw material re-purchase.
 - b. Reuse of exiting Dura Blend Lumber blocks reduced the number of new Dura Blend Lumber that had to be purchased.

WOOD

- Non-hygienic and absorbent to liquids and bodily fluids.
- Unreliable strength and consistency.
- Species inconsistencies.
- Material degradation due to knots or splits.
- Harbors insects and rodents.
- Not weather resistant.
- Splinters can cause harm to workers.
- Disposable and not eco-friendly.



TURTLE PLASTICS' FRAME MASTER PRODUCTS

- Hygienic – washable, resistant to most industrial chemicals
- 100% recycled plastic formula. engineered for strength and consistency.
- Reliable manufacturing process.
- Consistent quality.
- Sustainable.
- Unmatched strength – stronger than oak.
- Safer and more cost effective than wood.
- Weather resistant.
- Splinter free.
- Customizable sizes.



THE FRAME MASTER INDOOR/OUTDOOR STORAGE SOLUTION

Made in the USA from 100% recycled plastic.
For more information call 1-800-756-6635 or go to <https://www.turtleplastics.com/resources/>.

! WARNING	
	CRUSH HAZARD. -Product failure can cause load to fall resulting in SERIOUS INJURY OR DEATH. -Do not overload product. -Do not place weight unevenly or on a single point of contact on the Frame Master. -Do not go underneath or climb over any equipment while equipment is on the Frame Master. -Do not unbolt product. -Do not use vertically.
	TIPPING HAZARD. -Unbalanced load could cause injury or property damage. -Distribute weight evenly over the Frame Master. -Do not go underneath or climb over any equipment while equipment is on the Frame Master. -Do not unbolt product. -Do not use vertically.

CAUTION	
	CRUSH HAZARD. -Product failure can cause property damage. -Do not overload product. -Do not place weight unevenly or on a single point of contact on product. -Do not unbolt product. -Do not use vertically.

CAUTION	
	TIPPING HAZARD. -Unbalanced load can cause property damage. -Distribute weight evenly onto Frame Master. -Do not unbolt product. -Do not use vertically.