KYDEX THERMOPLASTICS

Weight Savings

Thermoplastics vs. Fiber Reinforced Plastic

INTRODUCTION

Traditionally, interior designers and part manufacturers have relied on fiberglass reinforced plastics (FRP) to gain notableweight savings over metal components while retaining stiffness comparable to metal.

Designers can gain even more weight savings with high-strength, lightweight thermoplastic materials. Thermoplastic partsprovide considerable weight savings over FRP while retaining strength and rigidity.

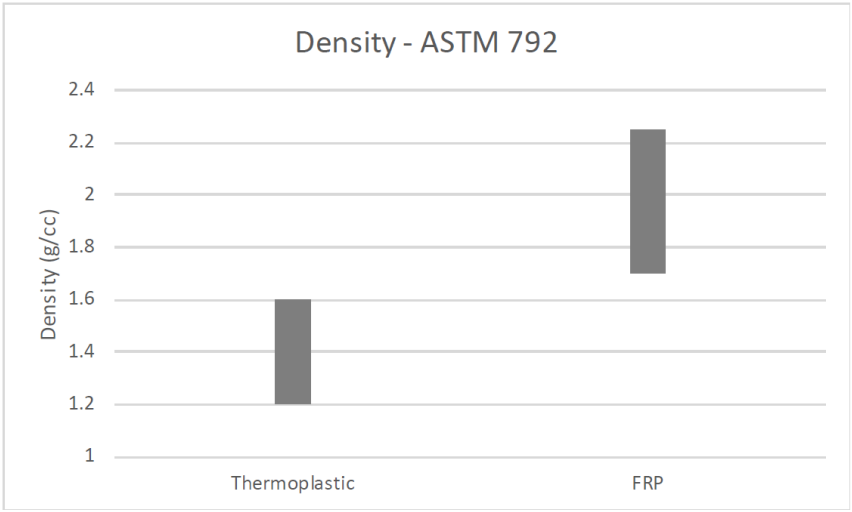
A PART-BY-PART COMPARISON

The left seat back in the image at right was manufactured using thermoplastic and weighs only 6 lbs./2.7 kg. In comparison, the same part manufactured using FRP weighs over 10 lbs./4.5 kg. This represents over 40 percent of weight savings gained by switching to thermoplastic.

The list of parts that can be manufactured with thermoplastics is extensive. It includes seat backs, arm rests, window masks, equipment housings, and more. Switching multiple components to thermoplastics can lead to substantial savings.

The table below illustrates the density of thermoplastic compared to FRP.

THERMOPLASTIC FRP



Although the density of FRP parts can vary depending on the method of production and the materials used, the thermo-plastic parts evaluated in this case have shown overall weight savings ranging from 30 percent to 50 percent compared to FRP.

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THE CONCLUSION

The accompanying weight savings of thermoplastics could significantly lower the overall weight of the part. Lighter parts are safer to move and easier to handle, which means less strain on anyone required to move carts and equipment.

Lighter parts are also more economical in the transportation industry. Thermoplastics can significantly lower the weight of buses, rail cars, or planes, increasing overall energy efficiency and reducing operating costs and emissions.

For more information, please contact your regional Sales Manager.

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