LIGHTWEIGHT AFTERMARKET FRAMES.

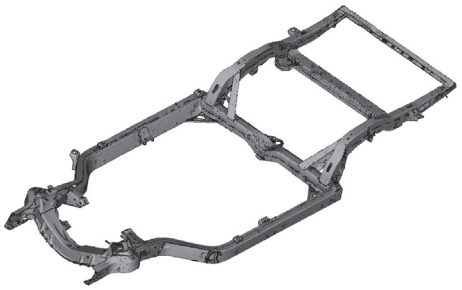
MODERN THINKING BROUGHT TO CLASSIC APPLICATIONS.

Introducing the first of its kind: a lightweight alternative for replacing frames on nearly any classic car. Lighter weight. Increased strength. Improved stiffness. It's forward-looking engineering, applied to some of the greatest vehicles in history.

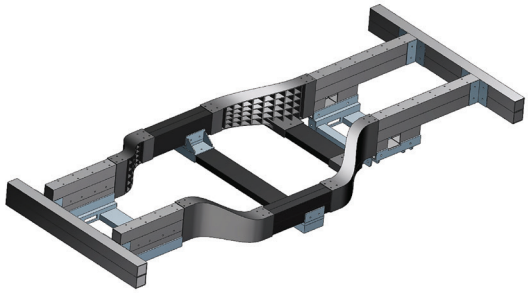
MICHIGAN MANUFACTURING TECHNOLOGY CENTER

WHAT IT IS

Through a unique collaboration, and by applying a holistic design approach, we have engineered a family of frames that allows you to have all of the classic styling using a new, lighter, safer foundation.



C2 CORVETTE EXISTING FRAME



NEW LIGHTWEIGHT C2 AFTERMARKET FRAME

33% LIGHTER

150% STIFFER

450% STIFFER

FAQ

HOW DOES THE LIGHTWEIGHT DESIGN COMPARE TO THE PRODUCTION C2 CORVETTE FRAME?

The lightweight frame is 150% stiffer in torsion, 450% stiffer in bending and is 33% (89 pounds) lighter.

HOW CAN THIS FRAME BE COST COMPETITIVE WITH A STEEL FRAME WHEN IT USES MATERIALS THAT ARE MORE EXPENSIVE THAN STEEL?

This frame uses a holistic design approach that reduces material weight by >30%, uses the most cost effective lightweight materials for each part, eliminates primer/paint, replaces destructive spot welds with high performance and continuous bonds, uses inexpensive tooling and minimizes the number of tools required, is self-fixturing, minimizes the parts count, and is engineered to minimize assembly labor.

HOW DOES THE TORSIONAL STIFFNESS OF THE LIGHTWEIGHT FRAME COMPARE TO OTHER SPORTS CARS?

The torsional stiffness of this frame with a contemporary body is 27,700 NM/degree. For comparison, the torsional stiffness of a Lotus Evora is 26,600 NM/degree and a Ferrari F430 is 27,600 NM/degree.

IS THIS FRAME SAFE IN CRASHES?

This frame uses energy absorbing front and rear modules similar to those used on the Lotus Evora and the C7 Corvette to help protect the occupants.

WHAT IS THE QUALITY OF THIS FRAME?

High quality was a design requirement. The lightweight frame is engineered to be easily assembled and to maintain a consistent net build for all key dimensions with OEM level tolerances.

HOW DURABLE IS A GLUED JOINT?

Structural adhesives, combined with mechanical fasteners, have been used successfully on Lotus sports cars for more than 20 years. To date, Lotus reports that there has not been a single failure related to the bonded joints. Many new cars, including the C7 Corvette, Jaguar, Ford and Range Rover use structural adhesives to bond body/chassis parts together.

CAN THIS FRAME DESIGN BE ADAPTED FOR OTHER REPLICA CAR BODIES?

This frame is easily configurable and can be “morphed” to fit virtually any body width and length with no expensive tooling changes.

BROUGHT TO YOU BY the Michigan Manufacturing Technology Center, a representative of the MEP National Network.

PARTNERED WITH Lightweight Innovations for Tomorrow (LIFT), The Institute for Advanced Composites Manufacturing Innovation (IACMI) and the University of Tennessee, Center for Industrial Services Institute for Public Service.

For more information, visit:
THE-CENTER.ORG/LIGHTWEIGHT-FRAMES