Safety is no accident.

CAPE-Abilities

The Center for Advanced Product Evaluation (CAPE®) is a dedicated staff of full time engineering and technical experts, ready to help you make your products better, stronger, and safer. Based on the campus of IMMI®, our parent company, CAPE utilizes in-house engineering expertise to fulfill internal testing for IMMI, as well as providing unique, customized testing for our transportation customers.

What sets us apart is our capacity to offer you a wide variety of testing capabilities as well as a staff specialized in developing plans that meet your testing objectives. CAPE has conducted product development testing for prominent commercial vehicle manufacturers, as well as specialized testing for customers with very unique needs. With the support of CAPE, IMMI has introduced groundbreaking safety products for commercial vehicle platforms, as well as products in use by today’s most prominent child seat manufacturers.

Recognizing the critical nature of providing timely results, CAPE provides preliminary video footage and test data within an hour of test completion for review and analysis. Final test results, including photography, data files, data summary, and a full report are delivered via electronic files or FTP within days of the test. File conversion and video editing services are available. Test results and data become the exclusive property of the customer, and the customer’s confidentiality is assured at every step of the process.

And we have the flexibility you need. Got a tight deadline? Call us. CAPE is pleased to work one-on-one with our customers to come up with a plan that will work for all involved – on time and on budget.

Bringing Safety to People®

CAPE has the distinct privilege to serve a wide variety of customers with their testing needs.

- Child Seating
- Commercial Trucks
- Fire/EMS
- Legal Defense/Accident Analysis
- Motor Coach/Transit
- Off-Road/UTV
- Construction/Farm
- Military
- School Bus
- Motorsports
- Automotive
- Inventors

Equipment

With the help of detailed data and images from crash testing, rollover testing, applied mechanics, and environmental testing, clients can assess performance of occupant protection products, as well as study multiple aspects of crashworthiness to aid in the development of future products. Our facilities and equipment are sized to handle an extremely broad range of test specimens from a single restraint system such as a child seat to a full size tractor/trailer vehicle.
At CAPE, we’re built big to test big. Barrier crash tests are used to evaluate and improve crashworthiness of the entire occupant environment. CAPE can conduct testing for product development, validation to FMVSS standards, and product liability defense.
School Bus

CAPE has conducted more school bus crash tests and child seating tests than any other test house in the world. We easily prioritize our external customers to get tests scheduled and completed quickly, and we perform testing to the most common standards: 210, 220, 222, and 225.
Rollover Center

The only known machine of its kind, CAPE’s 90-degree dynamic rollover impact machine was designed to better understand how injuries occur in a rollover.

- Accommodates large vehicle cabs.
- Can be adjusted to various roll conditions.
- Has been correlated to actual tractor-trailer rollover tests.
Airbag & Pyrotechnic Deployment
With specialized instrumentation, high-speed video and CAPE expertise, you can evaluate your inflatable restraints and pyrotechnic devices at our award winning facility. We provide a dedicated room with sand filled walls for testing and deploying pyrotechnic devices, including airbags. Environmental chambers allow temperature conditioning prior to deployment.

Computational Analysis and Simulation Services
CAPE’s modeling and simulation technologies are used for accident reconstruction, product evaluation, vehicle crash, component stress analysis, and more. Specialized software and engineering expertise allow CAPE to perform modeling and simulation on a myriad of products exposed to several different types of events. CAPE engineers can perform linear FEA, non-linear analysis, lumped mass models, kinematic analyses, and many other simulation methodologies.

Cab Integrity Testing
Fire apparatus, commercial truck, school bus, and many other manufacturers trust CAPE to ensure their vehicles’ structural integrity meets industry safety standards. We perform three tests to SAW specifications J2420 and SAE J2422.

Drop Tower
CAPE is home to an enhanced drop tower capable of handling test loads of 600 pounds dropped from a distance of 20 feet. Like our previous tower, it can also conduct a variety of smaller component and helmet tests.

We’re building a legacy of safety one milestone at a time.

1998 CAPE® opens.
1998 Performs first barrier crash test with a commercial truck.
1999 Conducts the first bus-to-bus crash performed in the U.S. in three decades.
2002 CAPE conducts full scale frontal impact crash test of IndyCar racing car.
2004 CAPE conducts full scale rear impact crash test of IndyCar racing car.
2007 CAPE certified as an FIA test house.
2010 First test house to test the effectiveness of seat belts on motorcoaches.
2011 CAPE expands to a 49,000 square foot facility.
2011 CAPE wins Crash Test Facility of the Year award.
2012 CAPE partners with IMIS for a series of events designed to improve driver safety in motorsports.
2013 CAPE conducts live school bus crash demonstration for media, advocates, first responders and lawmakers at School Bus Safety 101.
2014 IMTA Truck Crash.
Sled Testing

CAPE is equipped with not one but three different kinds of sleds to simulate the forces of a crash for component level testing. Efficient pulse development enables CAPE to duplicate the deceleration from actual vehicle crashes or to accurately meet a wide variety of regulatory standards. CAPE’s sled testing offers you an efficient, repeatable and less resource-intensive tool to evaluate your products.

Acceleration Servo Sled

- Only known independent test house in the USA with a sled of this capability.
- Hydraulic braking enables extremely accurate pulse correlation compared to older technology.
- Holds payloads up to 6,600 pounds.

Bending Bar Deceleration Sled

- Various sled platforms measuring up to 20 feet x 8.5 feet.
- Capable of payloads up to 8,800 lbs.
- Can test small systems (such as vehicle seats) up to entire vehicles.
- Capable of speeds up to 65 mph.

Hydraulic Sled

- Dedicated to testing infant seats, child seats, and boosters.
- Tests to FMVSS 213 and CMVSS 213 standards, but can be modified to test other standards.
- Reaches speeds up to 30 mph.
- Combined with a seat inversion machine, can also be used to certify infant and child seats to FAA aircraft standards.
Rolling Laboratory

CAPE engineers can answer complex questions at our customers' facilities, in the field, or at off-site proving grounds. Using specialized instrumentation, portable data acquisition, and high speed video systems, CAPE can equip your vehicles for accident reconstruction, studies of restraint performance, and comfort assessments, as well as input on airbag sensor development.
Cannon/Linear Impact

- Simulates and tests impacts on a variety of products including helmets, seats, windows, or anything that might be subject to a blunt force impact.
- A 3-axis impactor frame allows for quick setup and test execution.
- Capable of evaluating the energy absorption characteristics of various materials, including foam.
Material Strength Testing

- Servo-hydraulic tensile-compression machine analyzes the strength, durability, and environmental resistance of your products.
- Can help you define material properties of fabrics, foams, plastics, composites, and metals throughout the linear-elastic and non-linear domains.

Quasi-Static Load Testing

- Home to two state-of-the-art quasi-static load test centers.
- Has conducted over 3,000 FMVSS 207/210 pull tests.
- Can test in multiple occupant positions to FMVSS 207, 210, 220, 222, 225, ECE R14, ECE R17, SAE J386, SAE J1948, SAE J2292, FMCSR 393.76, and ISO 6683.

Vibration

- Replicates ride testing and similar vibration cycles.
- Duplicates field measurements.
- Run industry standard profiles.
- Can test loads up to 250 lbs. with a stroke up to 2 inches.
- Can operate at vibration cycles from 5 to 2000 cycles per second (Hz).

As a division of IMMI, CAPE was born out of a mission of Bringing Safety to People®, and that is a goal we’ve met every day since day one.

You know you have a good thing when people can’t say enough about it. At CAPE, our customers have lots to talk about.

“American Seating has used CAPE for numerous crash tests and FMVSS test evaluations. The facility is excellent, and the staff is both technically expert as well as very cooperative. CAPE has always made the extra effort to meet our schedule needs as well as making the process of testing products truly enjoyable. I strongly endorse CAPE’s testing services.”

Keith A. McDowel
Vice President of Engineering
American Seating Company
The Center for Advanced Product Evaluation (CAPE®) is a state-of-the-art, independent testing facility on the campus of IMMI® in Westfield, Indiana. Home to the biggest barrier block in the world, CAPE was designed and built to specialize in the testing and validating of large commercial vehicles. Every day, CAPE works with numerous industries to make their vehicles and products safer, including: child restraints, commercial truck, Fire/EMS, military, motorcoach, motorsports, off-road, school bus, and UTV.

CAPE excels at customized and confidential testing, bringing together premiere equipment, service, and expertise to provide customers with the data they need to support their most complex decisions.

At CAPE, safety is our way of life.

The Center for Advanced Product Evaluation (CAPE), is the only crash test facility of its kind in the world. We have the equipment and expertise to help our customers improve their products through unsurpassed quality, credibility, responsiveness, and precise results.

That's what it means to be “CAPE Tested.”

Learn more at capetesting.com