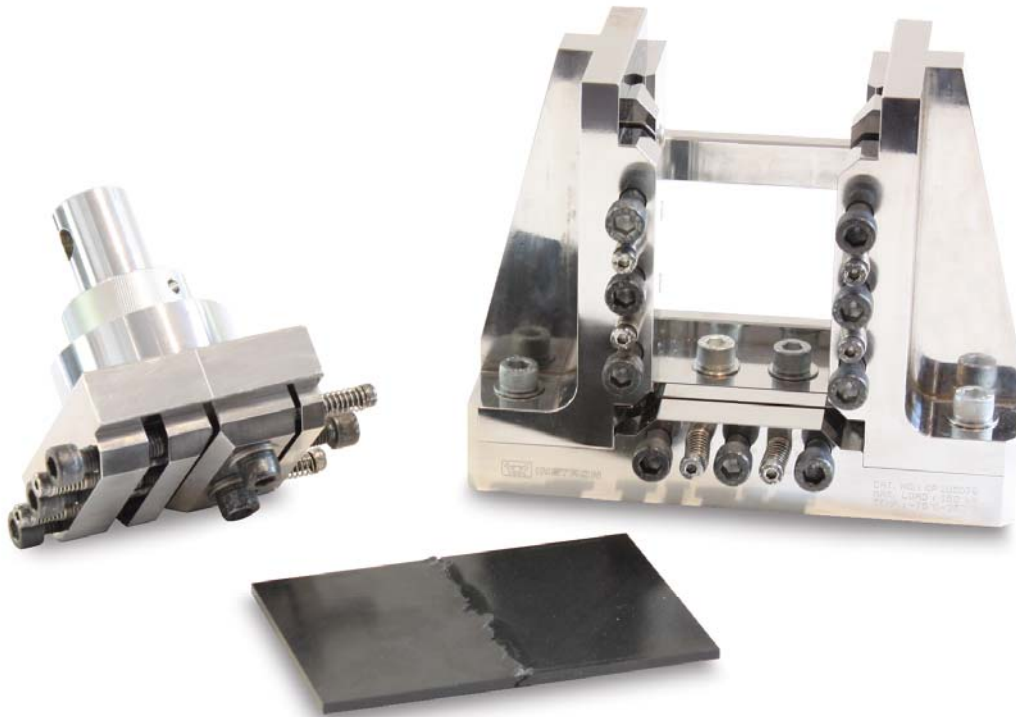


Composites Test Fixtures | Compression After Impact, AITM 1-0010



The “Airbus CAI” fixture is used to test the impact resistance of carbon and other fiber-reinforced plastic (CFRP) composite laminates. These materials are prone to great reduction in compressive strength even when the impact load is insufficient to cause visible damage. The post-impact compression test is used widely to assess the relative performance of different composite laminates with different fiber matrix combinations. In the first part of the test the laminates are subjected to low-velocity impact loading simulating tool drops and flying debris. Specimens then undergo a compression after impact (CAI) test on an electromechanical or servohydraulic testing machine.

Principle of Operation

The CAI test measures the residual strength of a composite laminate after being damaged by an impact. The CAI fixture conforms to the specification in Airbus AITM 1-0010 and incorporates clamps on all four sides of the specimen. The fixture provides clamping on all four edges of the specimen.

The specimen - usually a composite laminate - is impacted at a specified energy as described in the standard. The impact test is performed with an impact test machine fitted with a specimen clamping fixture conforming to AITM 1-0010. The specimen is placed in the fixture and end-loaded to failure in compression.

Features and Benefits

- Conforms to AITM 1-0010
- Simple to use
- Stainless steel construction for easy maintenance and durability
- Suitable for non-ambient temperatures

Related Products

Refer to CEAST 9300 Series for details of impact testing fixtures conforming to AITM 1-0010.

Specifications

Catalog Number	-	CP105079
Test Standard	-	AITM 1-0010
Maximum Load	kN kgf lbf	150 15,000 33,000
Temperature Range	°C °F	-75 to +250 -103 to +482
Specimen Thickness (Nominal)	mm in	1 to 10 0.04 to 0.39
Specimen Size (Width × Height)	mm in	100 × 150 3.94 × 5.9

Mechanical Connection

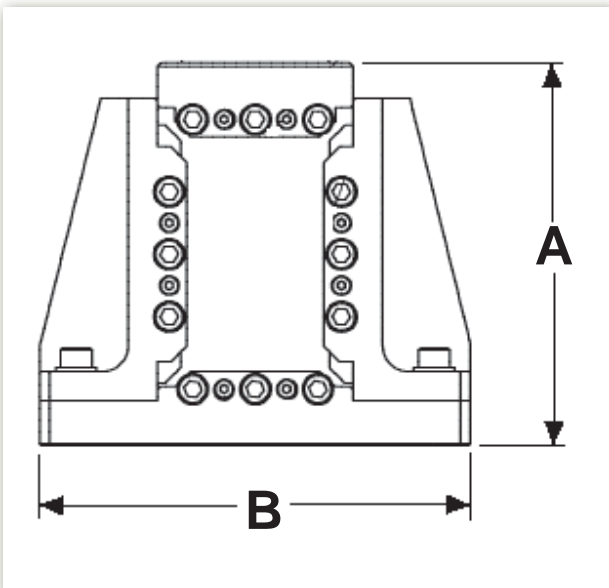
Upper Interface (Note 1)	-	Requires compression platen minimum diameter 50 mm (2 in)
Lower Interface (Note 1)	-	Requires compression platen minimum diameter 150 mm (6 in)

Dimensions

Effective Length (A)	mm in	200 8.0
Overall Width (B)	mm in	220 8.4

Material	-	Stainless steel with hardened end loading plates
Weight (Approximately)	kg lb	15 32

Note 1: Platens not included.



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