



FALLING WEIGHT IMPACT TESTER - TORONFWI™-UL SERIES

UL651A, UL651, ASTM D 2444

Falling Weight Impact Tester – ToronFWI™-UL Series is designed to assess the impact resistance of rigid PVC conduits with precision and reliability. Featuring a user-friendly touchscreen, adjustable drop height, and advanced safety mechanisms, it delivers accurate results for quality control and compliance testing.

APPLICATIONS

Drop Weight Impact Tester ToronFWI™ -ULA

UL651A, UL651, ASTM D 2444

Drop Weight Impact Tester ToronFWI™-ULA is designed to assess the impact resistance of rigid PVC (40/80) conduits and HDPE pipes.

Test samples are struck by a falling weight—of defined mass and shape—released from a specific height onto marked points around the sample's circumference. This process helps determine the actual impact resistance rate of a batch or a continuous production run from an extruder.

To conduct the test, simply place the sample on the V-block, close the chamber, and start the test. The striker is automatically raised into position by the internal drive system within the drop tube.

Two testing methods are available: the round-the-clock method and the staircase method.

Falling Weight Impact Tester / Drop Weight Impact Tester

Drop Weight Impact Tester ToronFWI™ -UL

UL651A, UL651 --- Schedule 40 and 80 rigid PVC conduit,

The ToronFWI™ -UL is designed to evaluate the resistance of rigid PVC (40/80) conduits to external impact.

Each test specimen is struck by a falling striker of specified mass and shape, dropped from a known height onto the sample. To meet the standard, at least seven out of ten specimens must show no cracks or tears greater than 1/32 inch.

Falling Weight Impact Tester – ToronFWI-UL Series

FEATURES

Falling Weight Impact Tester - ToronFWI™ -UL Series Features

A full-color touchscreen provides an intuitive interface for setting test parameters, ensuring clear visuals and straightforward operation. The system features a pneumatic anti-rebound mechanism that catches the striker after impact. Controlled by a fast-response air cylinder with adjustable pressure, the catcher plate is made from high-strength metal and impact-absorbing polyurethane for enhanced durability and safety.

Each PVC conduit size is equipped with a dedicated solid steel plate to simplify and stabilize specimen placement. A specially designed guide tube and air hose minimize air resistance while eliminating contact between the striker and the guide tube, ensuring precise and consistent testing.

Impact height is adjustable from 100 mm to 3350 mm. Built-in safety features include interlocked specimen doors, a striker window guard, and upper/lower travel limits. The test will only initiate when all access points are securely closed, providing a

safe and controlled testing environment.

TECHNICAL SPECIFICATIONS

Falling Weight Impact Tester Technical Specifications

Model	Specifications
ToronFWI™-UL – Designed exclusively for UL651A testing	• Test standard: UL651A • Impact height: 100mm to 3350mm • Striker weights: 9.1kg (ø51) and 34kg (ø150) • Test specimen outside diameter: 1/2" to 6" (12.7-152.4mm) • Pipe length: 150mm • Display: Touch screen • Pneumatic control fixing test specimens
ToronFWI™-ULA – Dual-standard model supporting UL651A and ASTM D2444	• Test standards: UL651A and ASTM D 2444 • Display: Touch screen • Impact height: 100mm to 3350mm • UL 651 Strikers: 9.1kg (ø51) and 34kg (ø150) • ASTM D 2444 tups: Tup A, B and C • ASTM D 2444 mass of tup: 6, 12, 20 and 30lb (2.7, 5.4, 9.1 and 13.6kg) • UL651A pipe outside diameter: 1/2" to 6" (12.7-152.4mm), 150mm length • ASTM D 2444 pipe: 1/2" to 6" (12.7-152.4mm) OD, 300mm pipe length • Pneumatic control fixing test specimens

Model	Specifications
ToronFWI™-ULAX – Advanced version with broader pipe size compatibility and ASTM D2444 test flexibility	• Test standards: UL651A and ASTM D 2444 • Display: Touch screen • Impact height: 100mm to 3350mm • UL 651 Strikers: 9.1kg (φ51) and 34kg (φ150) • ASTM D 2444 tups: Tup A, B and C • ASTM D 2444 mass of tup : 6, 12, 20 and 30lb (2.7, 5.4, 9.1 and 13.6kg) • UL651A pipe outside diameter: 1/2" to 6", 150mm pipe length • ASTM D 2444 pipe outside diameter: 10-630mm , 300mm pipe length • Pneumatic control fixing test specimens

Drop Weight Impact Tester ToronFWI™-UL Technical Specifications

Parameter	Specification
Impact height range	100mm to 3350mm
Height error	±3mm
Striker weights	9.1kg (φ51) and 34kg (φ150)
Test specimen specifications	Outside diameter: 1/2" to 6" Specimen length: 150mm
Anti-rebound catching rate	100%
Specimen fixation	Pneumatic control system
Automatic functions	Tup zeroing, specimen zeroing, tup resetting
Main frame dimensions	800mm (L) × 650mm (W) × 4350mm (H)

Drop Weight Impact Tester ToronFWI™ -ULA Technical Specifications

Parameter	Specification
Impact height	100mm to 3350mm
Height error	±3mm
UL 651 Striker weight	9.1kg (φ51) and 34kg (φ150)
ASTM D 2444 tups	Tup A, B and C
ASTM D 2444 mass of tup	6, 12, 20 and 30lb (2.7, 5.4, 9.1 and 13.6kg)
UL651A pipe specifications	Outside diameter: 1/2" to 6", specimen length: 150mm
ASTM D 2444 pipe specifications	Outside diameter: 10mm to 630mm, specimen length: 300mm
Anti-rebound catching rate	100%
Specimen fixation	Pneumatic control
Automatic functions	Tup zeroing, test specimens zeroing, tup resetting
Control Unit dimensions	550mm(L) × 650mm(W) × 1100mm(H)
Main frame dimensions	800mm(L) × 650mm(W) × 4800mm(H)



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