

IMPACT PENDULUM FOR ENERGIES UP TO 15/25/50 J

The various methods allow for the determination of the necessary energy to break a specimen – having a known cross-section - then calculating its resilience value at a given conditions. The potential energy of the hammer is known and it varies depending on the hammer's shape, weight and release angle. The absorbed energy to break the specimen can be determined after measuring the ascent angle of the hammer after the impact. The test methods to perform with this structure are Charpy, Izod and Tensile Impact. Differences among these test methods are related to the way the specimen is mounted and how it is impacted.

Charpy method:

The specimen, rectangular shaped, is positioned horizontally and is broken with one oscillation of the hammer only; the impact line is centred between the two specimen supports.

Izod method:

Specimen, rectangular shaped, is blocked at one end in vertical position and it is broken with one oscillation of the hammer only; the impact line is at a fixed distance from the blocking point of the specimen.

Tensile impact method:

Specimen is inserted in two blocking brackets and it is broken with only one oscillation of the hammer which stresses the specimen, dumb-bell shaped, along its longitudinal axis.

TECHNICAL DATASHEET

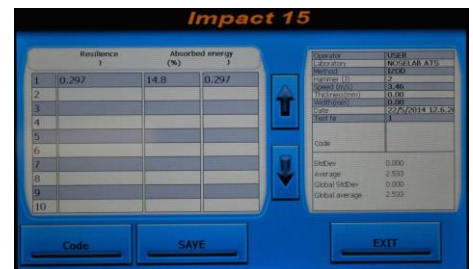


Main specifications:

- Structure which contains all electric and mechanical devices with metal guards and plexiglass door.
- Electronic crosswise levelling system
- Centring system for Charpy specimens
- Safety systems:
 - double "PULL" type hammer release
 - side safety shield (polycarbonate)
 - breaking
 - system slows down the descent of the hammer after the impact.
- **User interface with 7-inch touch-screen display** to input test parameters and display the energy and the resilience values after the impact
- Multilanguage data display and data settings
- Auto-test functions when switching on and troubleshooting coding
- Automatic display of the ascent angle and of both the potential energy and actual speed of the impact
- Braking system to slow down the descent of the hammer after the impact
- Storing up to thousand of tests
- USB port for connection to PC
- Dimensions: 980 x 265 810 h mm
- Power supply: 230 V, single phase, 50/60 Hz; 0.1 kVA
- Weight:
 - 16010200 (up to 15J) approx. 125 kg
 - 16010204 (up to 25J) approx. 150 kg
 - 16010207 (up to 50J) approx. 200 kg.

The interface allows the management of the tests, and analysis through statistical average and standard deviation of up to 20 specimens, as well as the ease by the operator to enter the data to store and display such as:

- Name and department of the laboratory
- Date and Name of operator
- Number of the test
- Test reference standard (Izod-Charpy)
- Code or any reference of the tested material
- Specimen conditioning after its notching or before the test
- Description (type) of the notch and reference standard



Reference standards

ASTM	D256	D6110	D1822	D4812
DIN	51222			
ISO	179	180	8256	

Code Description

16010200	Pendulum Impact 15J with Touch Screen
16010204	Pendulum Impact 25J with Touch Screen
16010207	Pendulum Impact 50J with Touch Screen



SETUP AND HAMMERS

CHARPY TEST

Shoulder for Charpy test include:

- 2 shoulders to fix on the main structure - distance adjustable: 42, 62, 72, 102 mm.
- Basic shoulders can locate samples 15 mm. high, 10 mm wide.
- Spacers to locate different samples
- 1 pair of spacers for samples 4 mm wide, for flatwise tests
- 3 pairs of spacers for 10, 6, 4 mm high samples for edgewise tests

According to DIN 53453, ISO 179

HAMMER	Code	Description
	16010271	Shoulders w/ spacers
	16010231	1.00J Charpy Hammer
	16010232	2.00J,4.00J,5.00J Charpy Hammer
	16010233	7.50J, 15.00J Charpy Hammer
	16010234	25.00J Charpy Hammer
	16010235	50.00J Charpy Hammer

According to ASTM D 6110

HAMMER	Code	Description
	16010270	Shoulders w/ spacers for Charpy test
	16010239	2.75J Charpy Hammer
	16010240	5.50J Charpy Hammer
	16010241	11.00J Charpy Hammer
	16010242	22.00J Charpy Hammer

IZOD TESTS

According to ASTM D 256, ASTM D 4812, ISO 180

VICE	Code	Description
	16010280	Standard Izod vice with spacers
	16010281	Fast clamping Izod vice - automatic specimens centering, with spacers (alternative to Code 16010280)
HAMMER	16010250	1.00J Izod hammer
	16010249	2.75J Izod hammer
	16010251	5.50J Izod hammer
	16010252	11.00J Izod hammer
	16010253	22.00J Izod hammer

TENSILE IMPACT TESTS

According to ISO 8256 method A

VICE	Code	Description
	16010290	Tensile impact vice, complete
	16010260	2-4 J tensile impact vice ISO, DIN
	16010261	7.5-15 J Tensile impact vice ISO, DIN
	16010262	25 J Tensile impact vice ISO, DIN

According to ISO 8256 method B

VICE	Code	Description
	16010301	2.75J Hammer 3.46 m/sec
	16010302	7,5-15J hammer 3.46 m/sec
	16010352	Mobile support for 1610301
	16010353	Mobile support for 1610302

NOSELAB ATS manufactures a wide range of hammers, to meet standard requirements in the various test methods. Correct positioning of the hammers in their seat is guaranteed by a pin mounted on the top of them. Correct calibration is guaranteed by their design and manufacture, thanks to which no mounting adapters are necessary on their upper part.

Shoulders and spacers for Charpy Impact tests can be positioned in their seats with no possibility of assembling or dimensional errors. The seats, designed in strict accordance with the standards, are part of the main structure to guarantee necessary rigidity during the impact, while the centring tool installed on the instrument guarantees the exact positioning of the Charpy specimen.

Izod tests can be performed with standard or fast clamping vice; the latter is equipped for entering the specimen with the notch, and guarantees a constant pressure on the specimen, in accordance with the standards.

OPTIONAL ACCESSORIES

Besides the accessories dedicated to the performance of tests according with various standards, we propose also:
 -Option to vary the hammer falling angle and the impact speed
 -Instrumented Hammers on request (*)
 -Optional Conditioning system for tests at temperature different from ambient available (-50°C /+200°C)

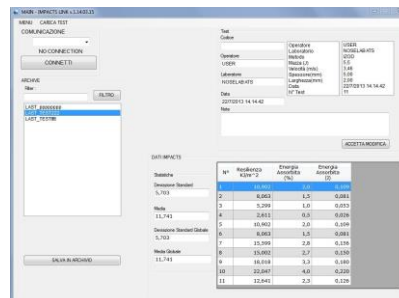
Code	Description
16010222	Varying angle device
00100103	Impact Link Software USB Cable

Varying Angle Device (16010222)

This option is an easy to install mechanical facility which can vary the release of the hammer within a range from 30° to 140°.

The display shows the speed and the impact energy referred to the angle of release automatically.

The varying angle is a device which makes Impact Pendulum a more flexible instrument, and really complies with the needs of operators performing tests at different speeds or energies.



Impact Link Software (00100103)

Statistical Software for storage, manage and print test report. Exporting data in csw format (Excel compatible)

