

# Dropped Object Impact Test Machine

## Determining the impact capacity of materials and products

Oceanengineering facilities in Niteroi, Brazil and Rosyth, Scotland conduct dropped object impact tests to confirm the maximum allowable impact energy of a product.

The test mass is dropped onto the test sample from a controlled height to simulate impacts of falling objects or clashing of products and structures that may occur during installation or operation.

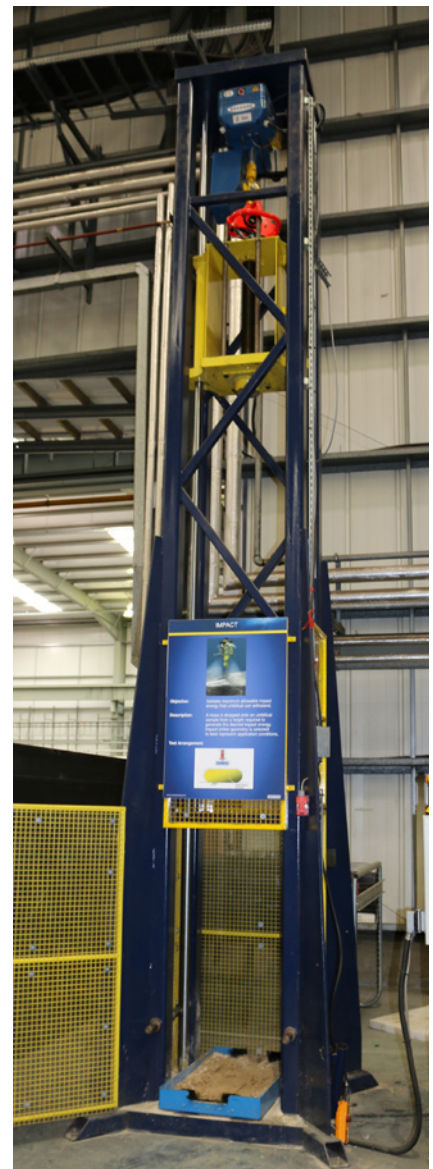
Inspection is carried out after testing to confirm acceptable results.

### FEATURES

**Impact energy from 0.5 kJ to 49 kJ**

**Maximum dropped mass 2,200 lb / 2,500 kg**

**Configurable strikers and bedding**



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## Determining the impact capacity of materials and products

Our impact test machinery is capable of conducting tests on a wide range of products that can be positioned in the 'drop object' tower. The test can be repeated with different impact energies or different product orientations until a failure is observed.

### Example Test Samples:

- » Umbilicals, cables, and subcomponents
- » Flexible pipelines
- » Rigid pipelines
- » Impact protection accessories
- » Interfaces and hardware

### Post Test Acceptance

Visual and dimensional inspection of the test sample, including sample dissection, if required, can be incorporated into the scope of a test.

### Advantages of Completing Testing

- » Design and/or analysis validation
- » Advancement of overall knowledge and understanding of products
- » Verification of compliance with industry standards
- » Risk mitigation

### Safety

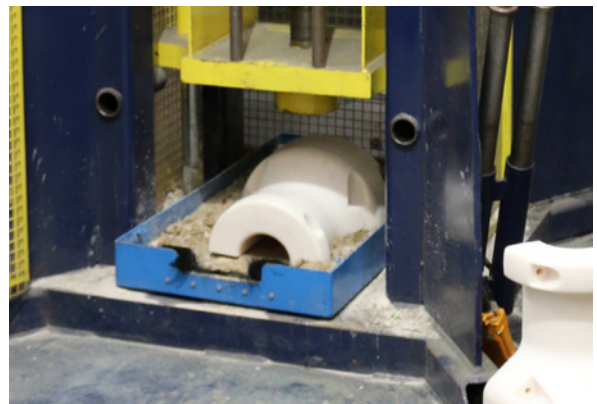
- » Interlocked safety doors
- » Energy isolation safety pins
- » All tests are conducted after review of a job specific JSEA



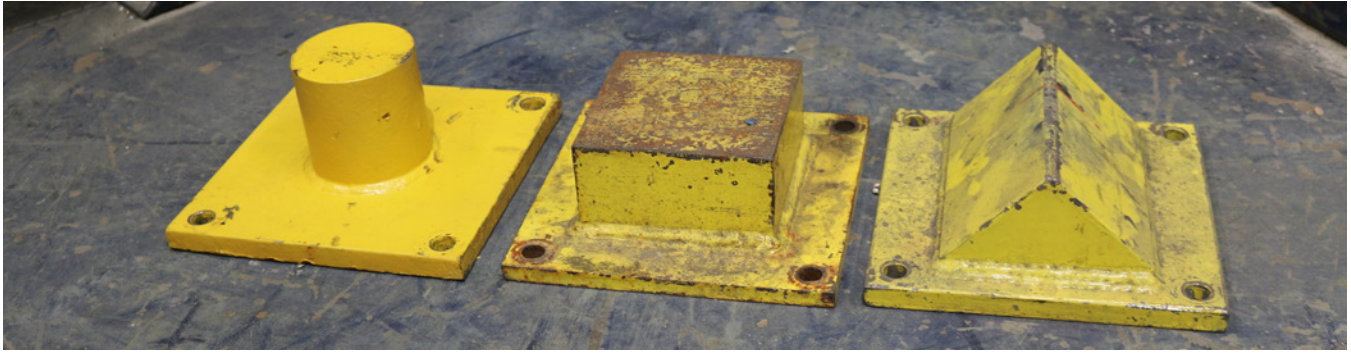
Flexible monobore jumper



Vertebrae Bend Restrictor (VBR)



Examples of striker profiles (Circular, flat, V-shaped wedge)



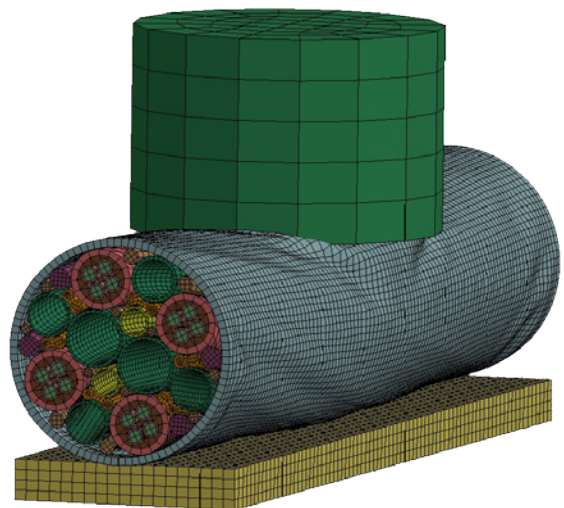
## Technical Data

	Rosyth	Niteroi
Maximum drop height	13 ft / 4.0 m	6.5 ft / 2.5 m
Maximum dropped mass	2,200 lb / 1,000 kg (including striker)	5,511 lb / 2,500 kg (including striker)
Impact Energy	0.5 kJ to 40 kJ	0.5 kJ to 4.9 kJ
Striker profiles	Customizable based on application requirements Standard flat, circular, or V shaped wedge profiles available	
Base material	Sand or solid metallic base are standard options. Other materials may be used upon request.	
Maximum sample size (LxW)	36 in x 20 in / 900 mm x 500 mm	31 in x 20 in / 800 mm x 500 mm
Industry standards	API 17E / ISO 13628-5 DNV-RP-F107 Bespoke tests/procedures to client requirements	
Recorded parameters	Impact load, height, test temperature, sample deformation, component ovalization, and functional component testing	
Safety controls	Job specific JSEA Interlocked safety doors Energy isolation safety pins	Job specific JSEA Designated barricaded areas
Calibration	UKAS accredited calibration	Accredited calibration
Results	Electronic test report	

## Impact Analysis Services

Oceaneering can also carry out 3D Finite Element Analysis (FEA) to predict the impact resistance and component stresses and strains of complex assemblies such as subsea umbilicals.

Used in conjunction with an impact test, FEA provides a strong basis for the assessment of a product's impact resistance.





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