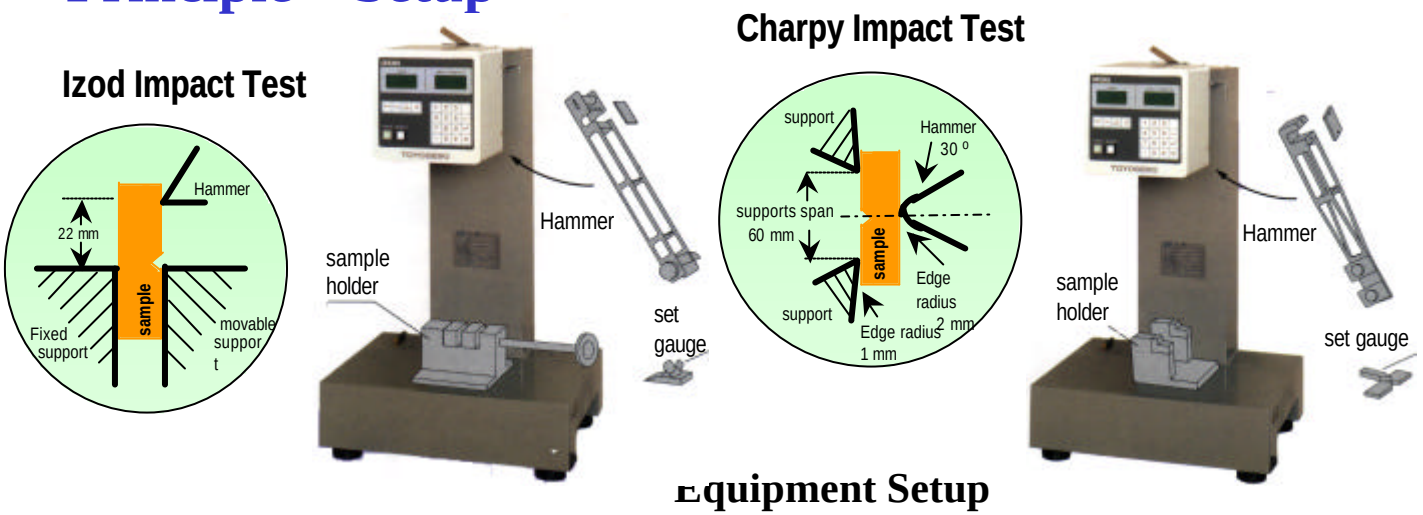
Mechanical Properties

Digital Impact Tester - Izod / Charpy

Principle ~ Setup



Equipment Setup

Analysing example

Determine Impact Strength of ABS

Izod Method (JIS K7110)

To compensate energy loss due to friction :

$$E = WR[(\cos\beta - \cos\alpha) - (\cos\alpha - \cos\alpha`)(\alpha + \beta / \alpha + \alpha`)]$$

Test Conditions :

α : Hammer lift up angle, 150 °

$\alpha`$: Swing up angle without sample, 149 °

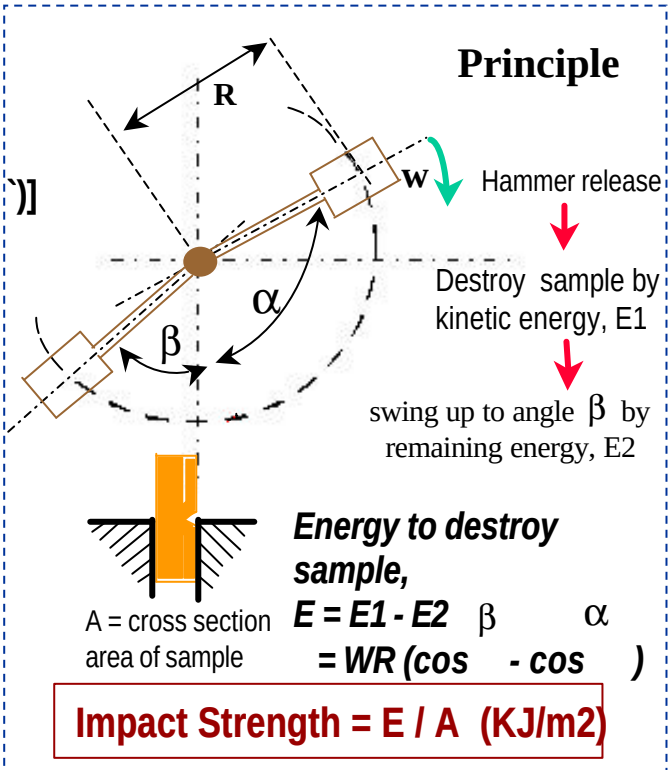
WR :Moments of Hammer, 5.906 Nm

A : cross section area of sample, 0.00032 m^2

Results :

β : Swing up angle after hitting sample, 137.8 °

Impact Strength of ABS = 2.16 KJ/m^2



Equipment capability

Test Method	Information	Test conformation	Operating conditions
Izod Impact Test	Determine impact energy required to destroy sample	ASTM - D256 JIS - K7110 ISO - 180	Hammer lift up angle : 150° Hammer impact velocity: 3.5 m/sec (JIS & ISO) 3.46 m/sec (ASTM)
Charpy Impact Test	[Impact Resistance of plastics materials]	ASTM - D256 JIS - K7111 ISO - 179	Hammer lift up angle : 150° Hammer impact velocity: 2.9 m/sec (JIS) 3.8 m/sec (ISO) 3.46 m/sec (ASTM)