# Selection of Polymeric Materials [ How to Select Design Properties from Different Standards

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Monografía

Today engineers, designers, buyers and all those who have to work with plastics face a dilemma. There has been a proliferation of test methods by which plastic properties are measured. The property data measured by these test methods are not identical and sometimes have large differences. How are engineers, designers, buyers going to decide the type and resin grade and their property data? Which are the valid test methods? The right plastic property data are the difference between success and failure of a design, thus making the property selection process critical. For the first time th



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Mechanical Properties of Polymeric Materials; 2.1 Introduction; 2.2 Comparison Tables of Mechanical Properties; 2.3 Comparison of ASTM and ISO Mechanical Test Standards; 2.4 Tensile Testing (ASTM D-638); 2.5 Tensile Strength Effects Caused by Cross-Head Speeds; 2.6 Molecular Orientation Effects 2.7 Compounding Processes and Properties of Glass Reinforced Polymeric Materials2.8 Effects of Fiber Glass on Polymeric Materials Properties; 2.9 Tensile Stress Effects Caused by Fiber Glass Orientation; 2.10 Weld Line Effects on Injection Molded Products; 2.11 Temperature Effects on the Behavior of Polymeric Materials; 2.12 Effects of Moisture on Nylon Properties; 2.13 Flexural Testing (ASTM D-790); 2.14 Compressive Strength Testing (ASTM D-695); 2.15 Shear Strength Testing (ASTM D-732); 2.16 Stress-Strain Curves and Load Type Comparison; 2.17 Creep, Rupture, Relaxation, and Fatigue 2.18 Tensile Creep Testing2.19 Flexural Creep Testing; 2.20 Isochronous Stress-Strain Curves; 2.21 Procedure for Applying Creep Modulus; 2.22 Creep Rupture; 2.23 Stress Relaxation; 2.24 Fatigue Characteristics; 2.25 Impact Strength Testing; 2.26 Impact Fracture Mechanism; 2.27 Pendulum Impact Tests; 2.28 Gardner Drop Weight Impact Testing (ASTM D-3029); 2.29 Falling Weight Tower Impact Testing; 2.30 Instrumented Impact Testing; 2.31 Instrumented High Speed Horizontal Plunger Impact Tester; 2.32 Instrumented Impact Testing (Dynatup®); 2.33 Product Design Analysis Using Dynatup® Test Data 2.34 Miscellaneous Impact TestingChapter 3. Thermal Properties of Polymeric Materials; 3.1 Introduction; 3.2 Thermal Properties for Elevated Temperatures; 3.3 Introduction to ISO Testing Standards; 3.4 Melting Temperature Test (ASTM D-3418); 3.5 Vicat Softening Temperature Test (ASTM D-1525); 3.6 Glass Transition Temperature (ASTM E-1356); 3.7 Brittleness Temperature (ASTM D-746); 3.8 Continuous Service Temperature Test (ASTM D-794); 3.9 UL Temperature Index (UL 746); 3.10 Heat Defiection Temperature Test (ASTM D-648); 3.11 Soldering Heat Resistance Performance 3.12 Coeffi cient of Linear Thermal Expansion Testing (ASTM D-696)

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