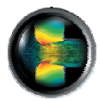
IDAC

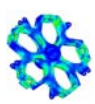
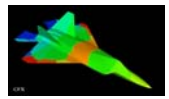
'Finite Element Analysis & Computational Fluid Dynamics Consultants'

presents

Engineering Material Properties Database

In ANSYS Workbench Material Library Format

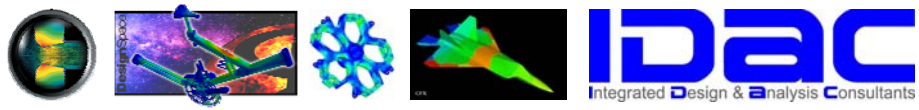


IDAC
Integrated Design & Analysis Consultants

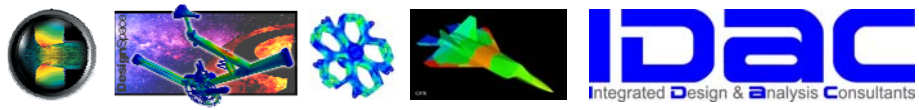
Background to IDAC Material Properties Database

- Many Engineers spend a great deal of time researching material properties information for use in finite element analysis solutions.
- Various material properties resources are available to engineers performing finite element analysis but specific material properties are often difficult to find.
- In addition to providing software sales and training services, IDAC runs a growing engineering analysis consultancy business and is often required to research material properties data for its customers.
- In 2004, IDAC committed to compiling its own ‘in house’ material properties database based on ANSYS software. IDAC proceeded to develop this through 2005 where we made it commercially available as an aid to engineers and analysts performing finite element analysis investigations.



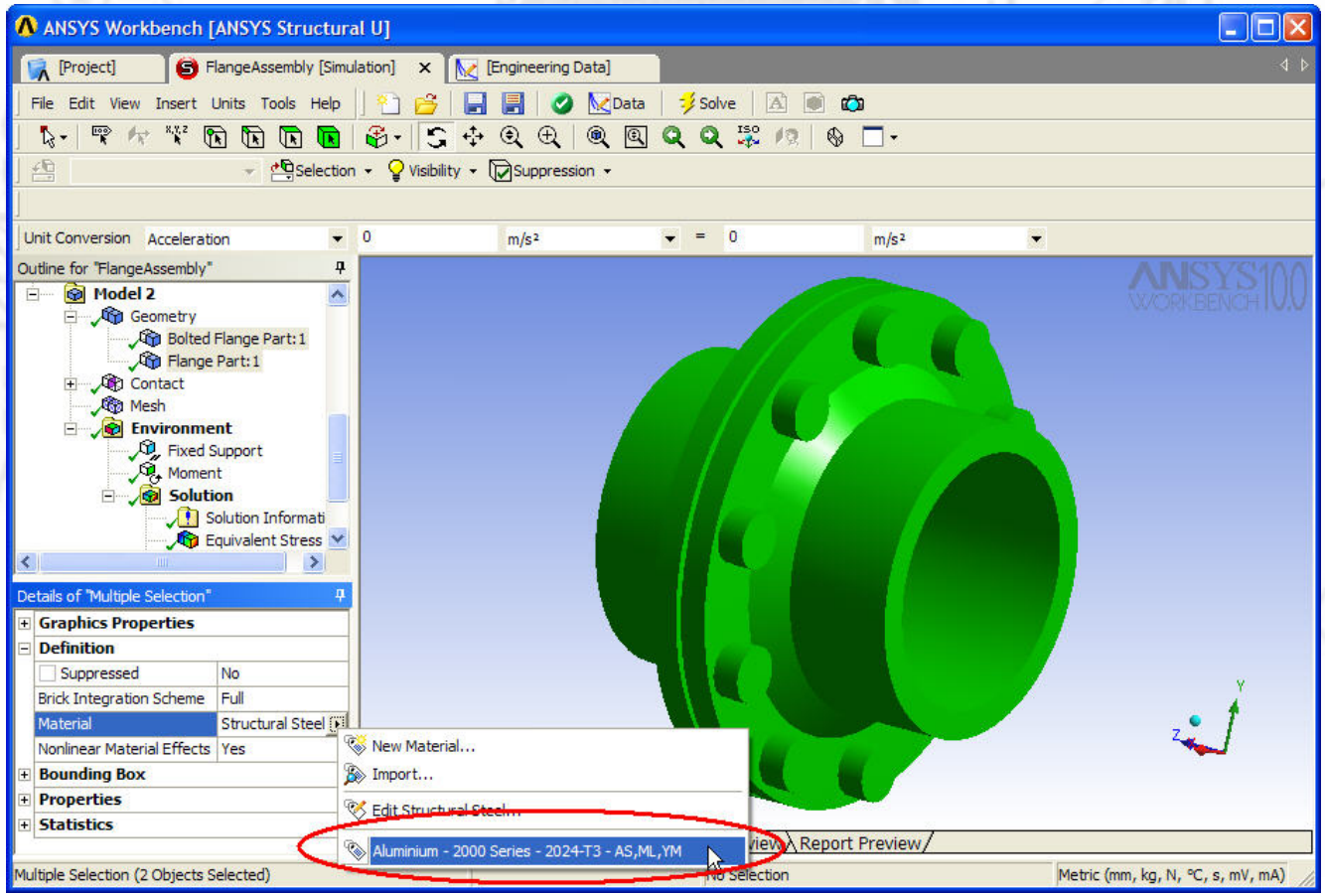
IDAC **Engineering Material Properties Database**
Comes in two versions:

A 250 materials version:	**A 150 non-linear materials version:**
• Young's Modulus • Poisson's Ratio • Density • Thermal Expansion • Yield Strength • Ultimate Strength • Thermal Conductivity.	• Standard properties (re 250 materials database) • Alternating Stress (fatigue) – 69 Curves • Multi-linear Isotropic Hardening (stress-strain) – 69 Curves • Temperature-Dependent Poisson's Ratio – 9 Curves • Temperature-Dependent Thermal Conductivity – 8 Curves • Temperature-Dependent Thermal Expansion – 6 Curves • Temperature-Dependent Young's Modulus – 87 Curves • Uniaxial Test (hyperelastic behaviour) – 4 Curves



IDAC **Engineering Material Properties Database Is available as an ANSYS Workbench database:**

- Available for ANSYS Workbench versions 9.0 and 10.0 software releases.
- Both materials data libraries can be imported into ANSYS directly:



Future to IDAC Material Properties Database

- The IDAC material properties database is growing all the time. We have just finished adding 150 new materials, containing:
  - Standard properties (250)
  - Alternating Stress (fatigue) (69)
  - Multi-linear Isotropic Hardening (stress-strain) (69)
  - Temperature-Dependent Poisson's Ratio (9)
  - Temperature-Dependent Thermal Conductivity (8)
  - Temperature-Dependent Thermal Expansion (6)
  - Temperature-Dependent Young's Modulus (89)
  - Uniaxial Test (hyperelastic behaviour) (4)
  - That's 254 Non-Linear material curves!!!
- ANSYS Classic Data
- FEA Software Neutral Windows Based GUI
- PDA Version