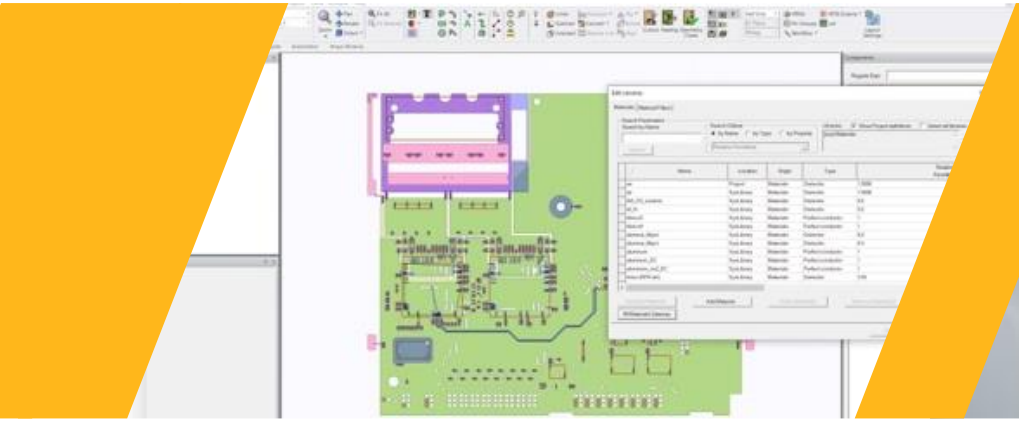
# Release 2022 R1 Highlights

## Ansys Granta MI, Granta Selector, MDS, EduPack

# Ansys Material Intelligence for Ansys Electromagnetic Simulation



## Bring Material Intelligence to Ansys Electromagnetic Simulation

- ✓ Save time, add traceability and improve EM simulation accuracy.
- ✓ Access a new range of 7,200+ EM material records in native AEDT solvers.
- ✓ Manage, protect and access control your company's own EM material data.

## Machine Learning for Intelligent Additive Manufacturing

- ✓ Easy-to-use machine learning application embedded in Granta MI™ for Additive.
- ✓ Process parameter optimization to reduce the need for 'trial & error' approach.
- ✓ Curve fitting for functional data in Granta's MatAnalyzer tool.

## The Latest Material Data for Any Application

- ✓ All-new Advanced EM Material: PCB laminates, magnets and EM shielding/absorbing material.
- ✓ Enhanced range of 105,000 polymer material records, including non-linear properties.
- ✓ Latest versions of Senvol and ecoinvent for sustainability updates to MaterialUniverse™

EM = Electromagnetic
AEDT = Ansys Electronics Desktop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# Granta 2022 R1 in numbers

## NEW Electromagnetic Material Data

**7,200+**

Material records for low and high frequency electromagnetic applications.

## Total Polymers Available

**105,000**

Polymer material records now available, including additional non-linear materials

## Ansys Electronics Desktop tools with Material Intelligence

**5 of 5**

Granta products now integrate with Ansys Maxwell, HFSS, SIWave, IcePak and Twin Builder


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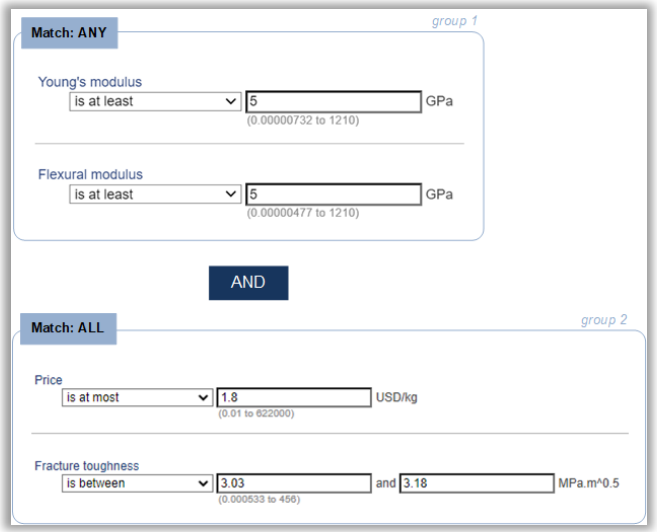
# 2022 R1: Product Release Detail

# Ansys Granta MI – Core & Integrations

- **Granta MI Core functionality**
  - ✓ New OneMI Export App – replacement for Toolbox
  - ✓ Conditional logic (AND/OR) searching in Viewer – highly requested feature
  - ✓ Added support in Explore for curve data in tabular data – another highly requested feature for easy access by end users




- **Granta MI Integrations**
  - ✓ Ansys Electronics Desktop support
  - ✓ Enhanced Python STK support – providing analytics support
  - ✓ New version support - Creo 8, Enterprise connect for TC13 plus

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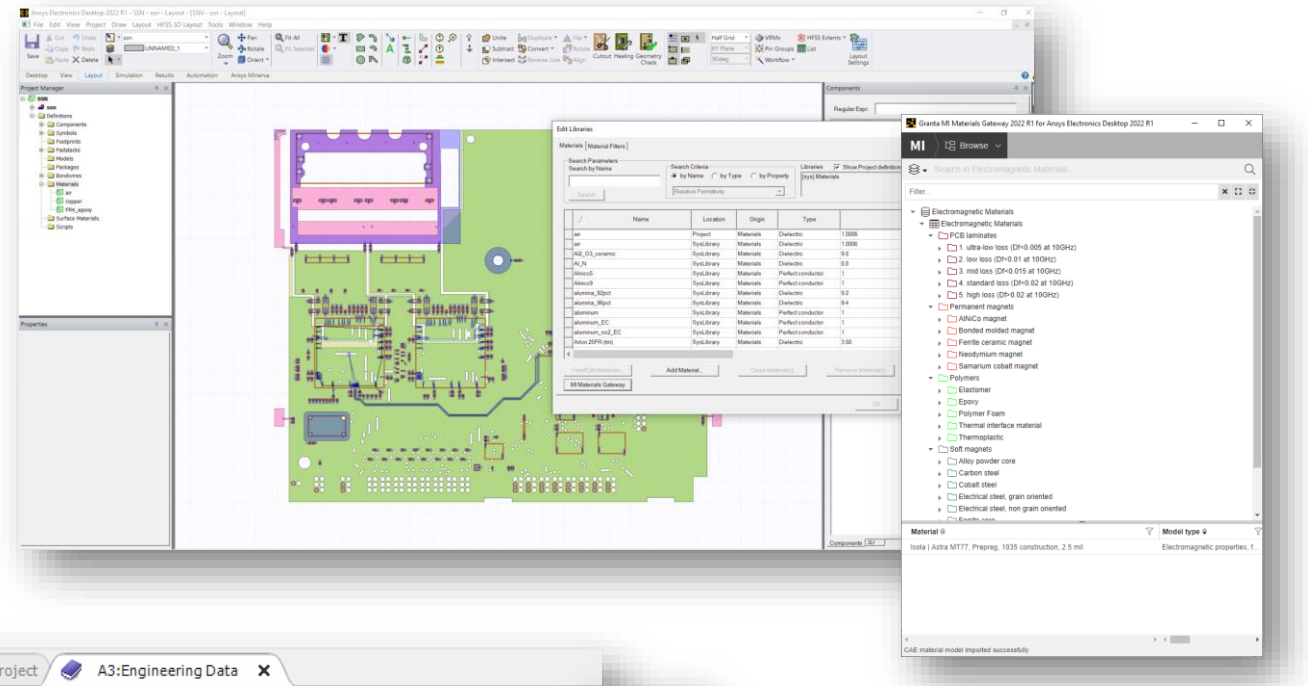
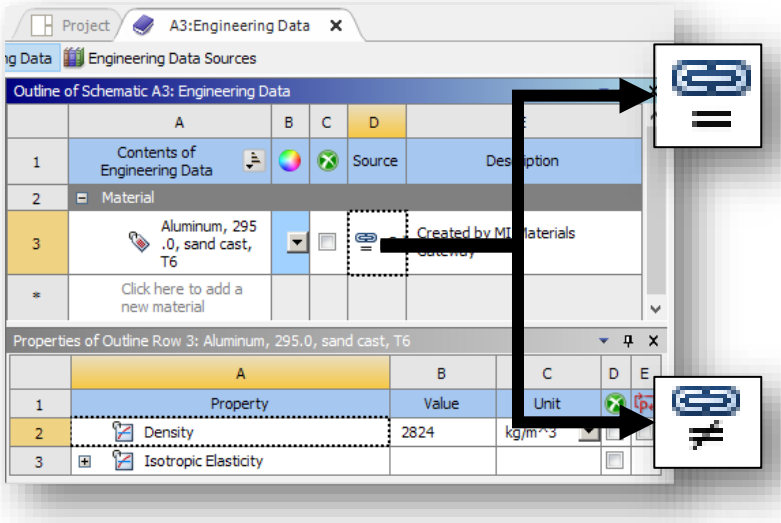
# Granta MI Integrations

- **Ansys Electronics Desktop (AEDT) support**
  - ✓ Direct integration to Ansys Electronics Desktop started from the Edit Libraries menu

- **Enhanced Python STK support – providing analytics support with examples for:**
  - ✓ Data comparison
  - ✓ Test data analysis
  - ✓ Statical calculation

- **New version support**
  - ✓ Creo 8
  - ✓ NX 1980
  - ✓ ANSA 22
  - ✓ TC with NX Gateway for TC 13 and NX version 1926, 1953, or 1980
  - ✓ WB Gateway – traceability feature
  - ✓ EC for TC 13






Material is the same as the imported source from Granta MI

Material has changed with respect to the imported source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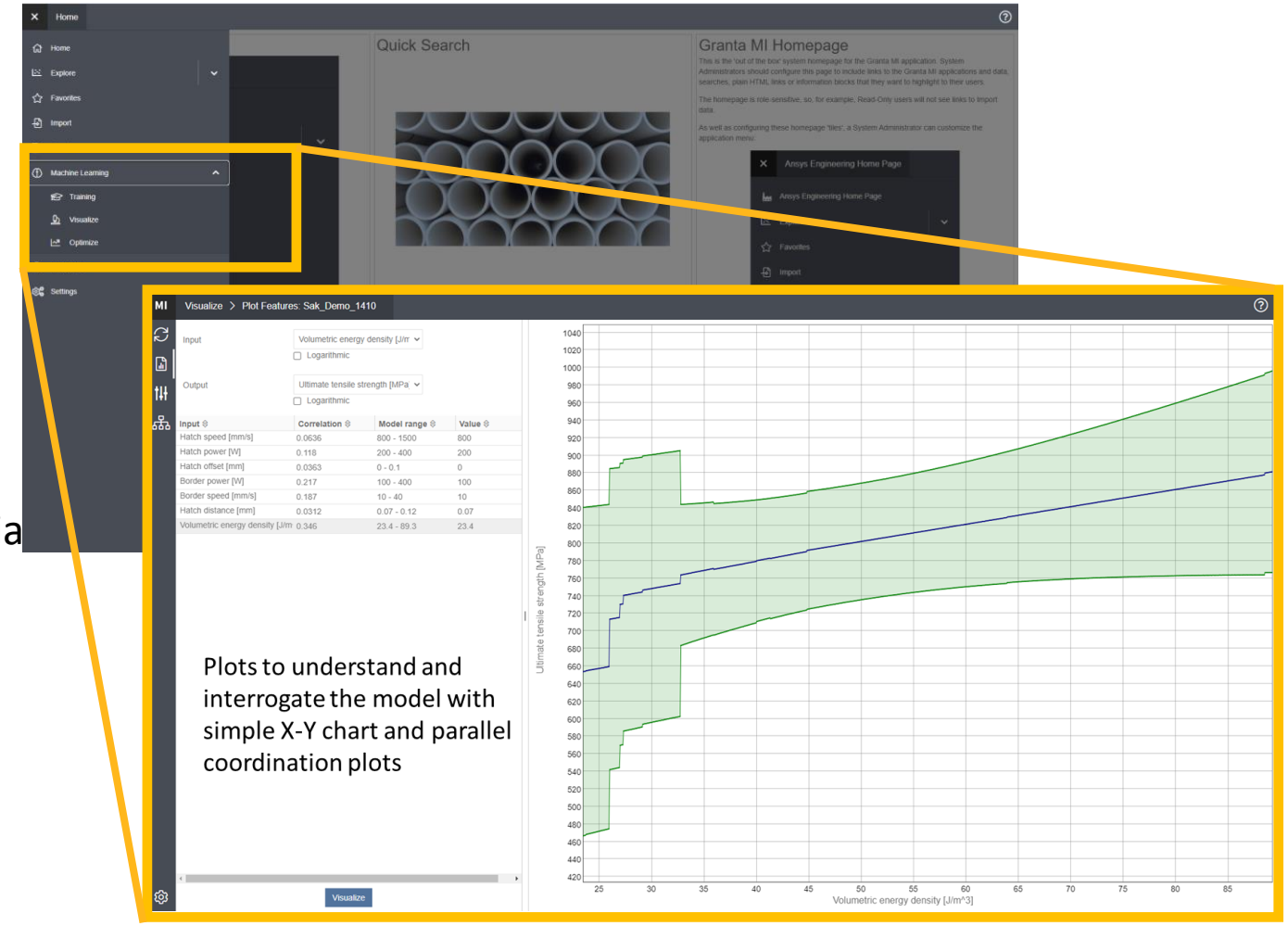
# Granta MI for Additive Manufacturing and Restricted Substances

- **Additive Manufacturing (AM)**
  - ✓ Machine Learning (easy to use) for AM
  - ✓ Curve fitting for functional data in MatAnalyzer
  - ✓ Enhanced AM machine log importers

- **Restricted Substances & Sustainability**
  - ✓ Update to latest regulatory legislation
  - ✓ Extended Python STK for large BoM analysis
  - ✓ Broad sustainability data update for all main materia types in MaterialUniverse™





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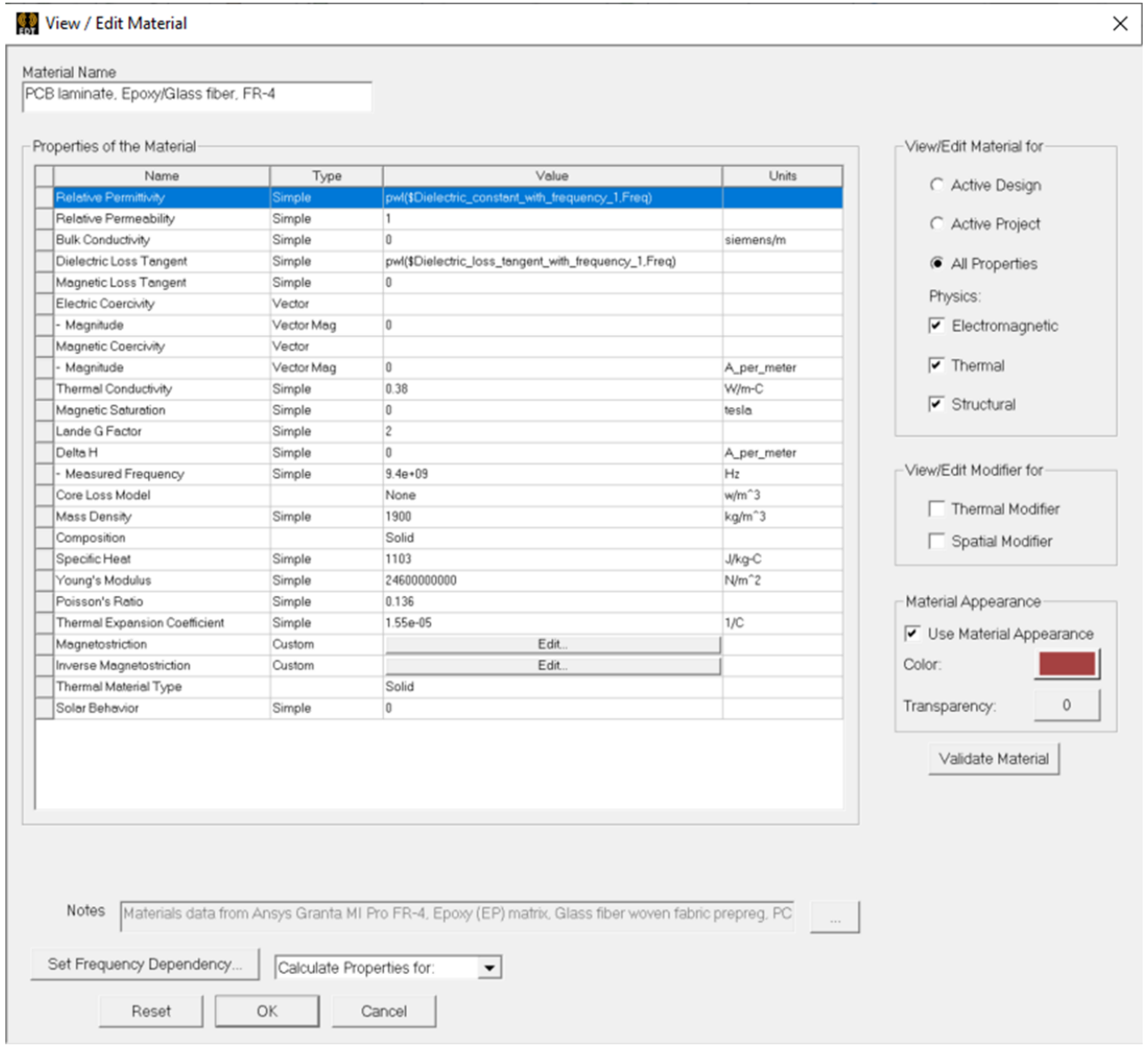
# MI Pro

- **Granta MI Pro functionality**
  - ✓ Added support for electromagnetics fast start data management
  - ✓ Schema & data update for HFSS and Maxwell for improved high frequency and magnetic simulation





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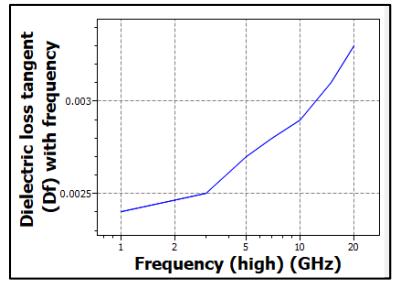
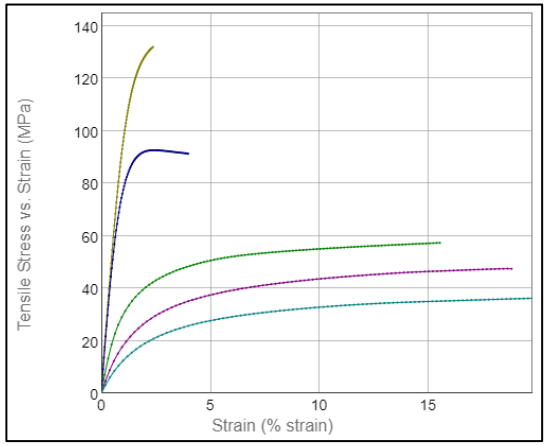
# Core Data & Advanced Data Bundles (covers Granta Selector)

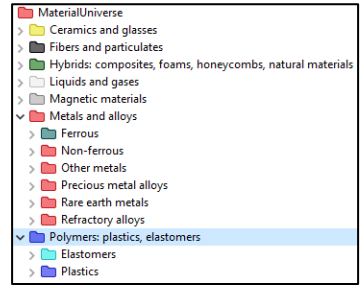
- **Electromagnetics**
  - ✓ Release of the new **Electromagnetics** product for **Granta Selector** and **Granta MI**
  - ✓ Data for PCBs, soft magnets, hard magnets and EM-absorbing materials
  - ✓ Available for searching, selection and export of key material properties to **Ansys Electronics Desktop**, **Workbench** and **Motor CAD**.




- **Polymers**
  - ✓ Updated with the most recent data, now bringing total polymers to >105,000 and total additives to >15,600 (data and polymer grades from MOCOM)
  - ✓ Includes simulation ready data for true stress (transformed from plastic stress-strain) and creep model parameters. +1000 records have true stress-strain data for viewing and export
  - ✓ New “Nonlinear simulation” subset enables users to easily find records populated simulation-ready attributes




- **Data**
  - ✓ MaterialUniverse™ – Updated price data. Significant update to sustainability and eco data incorporating the latest values from ecoinvent 3.7.1. Links included to Electromagnetic materials
  - ✓ Additive Manufacturing – Latest version of Senvol™ data, including >200 new materials processed by AM and >100 new AM machines. Data updates to existing records.





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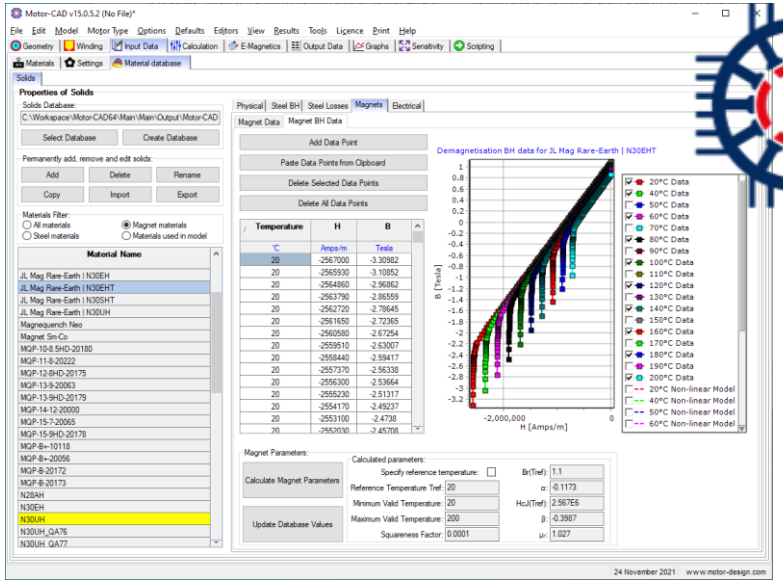
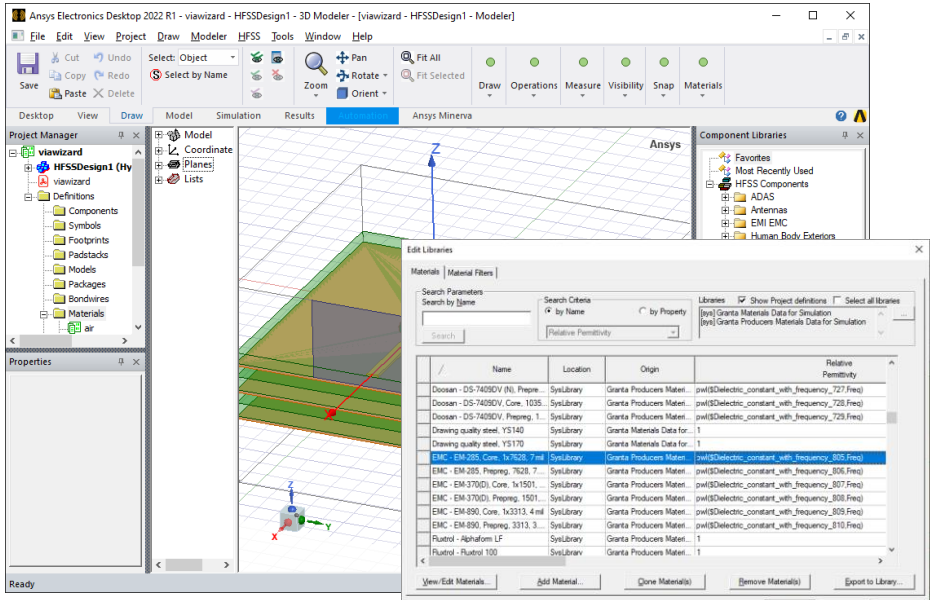
# Material Data for Simulation (MDS)



- **MDS now included in Motor-CAD**
  - ✓ 1400+ simulation-ready soft and hard magnetic materials now available in Motor-CAD

- **MDS Producers library (PCB data)***
  - ✓ Addition of 47 new PCB material records, including Df and Dk vs frequency curves.
  - ✓ Supplementing 72 existing PCB records with additional property data

- **MDS Materials Library (updated properties)**
  - ✓ New molar mass data for 15 fluid materials in Discovery
  - ✓ Dielectric constant and dielectric loss tangent vs frequency added for generic PCB laminate material*
  - ✓ Update of .amat format, including changing core loss format to single line per curve and reordering of properties*



*available in Ansys Electronics Desktop (AEDT)



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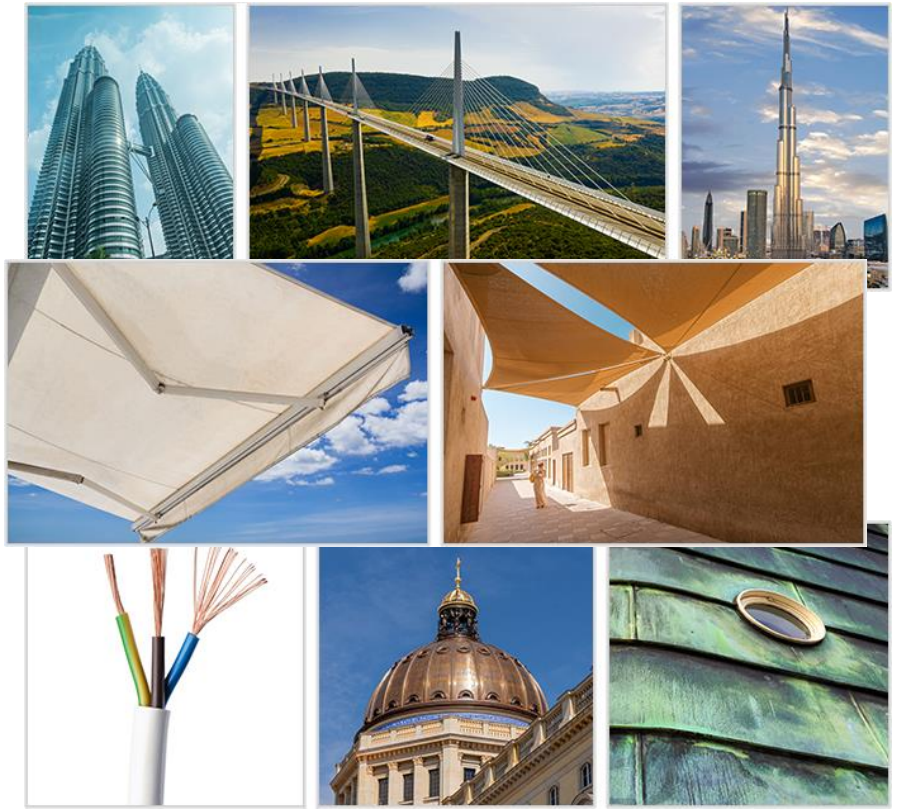
# EduPack

- **Refreshed database for introductory Built Environment teaching**
  - ✓ Previous *Architecture* database has been updated with additional materials and properties, plus refreshed material images to engage students



- **Updates to data across all databases**
  - ✓ Embodied energy and carbon footprint for all main material families updated across all databases, using ecoinvent 3.7.1
  - ✓ The Level 3 Polymer database has been updated with the most recent data in the Global Polymers-Plastics table, also with new simulation-ready data for true stress-strain and creep model parameters

- **Updates to resources for students and academics**
  - ✓ Updated tutorial videos for students
  - ✓ Updated teaching resources on the new Ansys Education Resources site for educators
  - ✓ New ‘Introduction to Materials’ free Ansys Innovation Course

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Education Resources


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