



GRANTA EDUPACK

# Release Notes

## 2022 R1

### **/ Updated database for teaching Built Environment subjects >>**

The refreshed *Built Environment* database now contains additional materials, additional properties and new images to engage students in Architecture, Civil Engineering and other subjects related to the built environment.

### **/ The latest sustainability data across all databases >>**

Engage students in questions of product life cycles and eco design with the latest energy and carbon footprint data from *ecoinvent*, now updated in all databases.

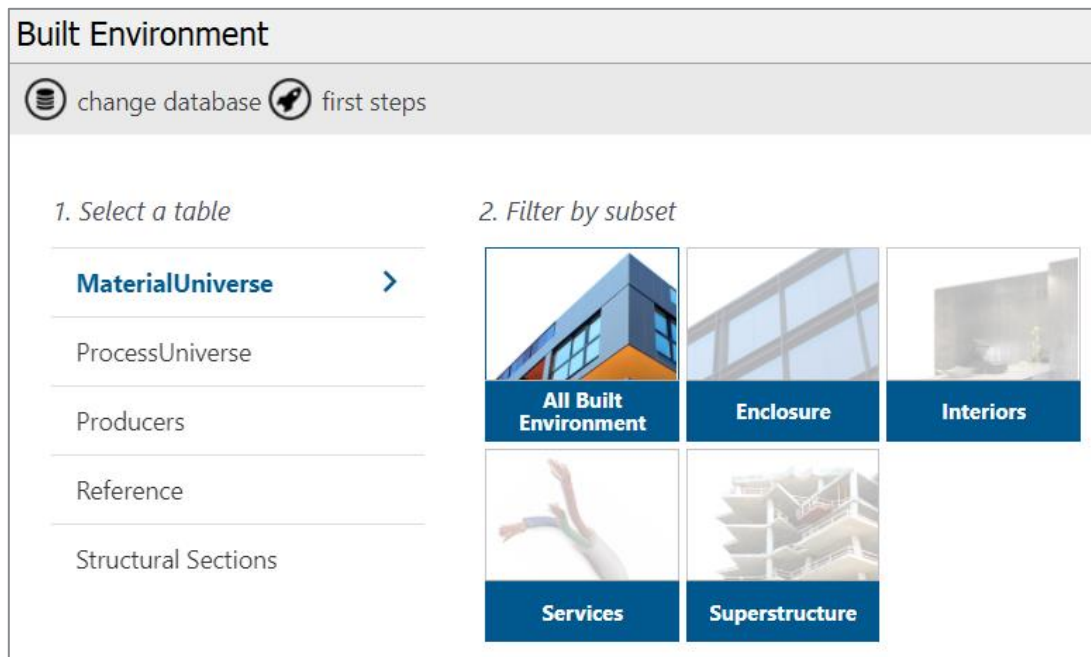
### **/ Engaging, simulation-ready data >>**

Inspire your students with the latest materials data, including updated prices in *MaterialUniverse* and enhanced simulation-ready data for polymeric materials in the *Global Polymers Plastics* table.

# 1 What's new?

## 1.1 Inspire students with the refreshed *Built Environment* database

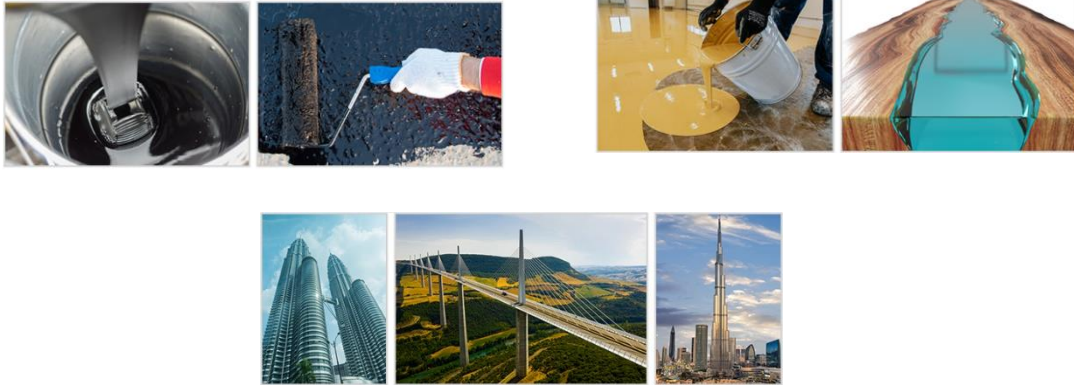
This release, the *Architecture* database has been thoroughly reviewed, updated, and its name is changed to better reflect the cross-disciplinary nature of the data.



The refreshed *Built Environment* database now contains:

- Six new records for commonly-used fibers
  - Patented steel wire
  - Polyamide fiber (Nylon-6)
  - Polyester fiber (Dacron)
  - Polypropylene fiber
  - Jute fiber
  - Palm fiber
- New or revised data for records including *Bitumen*, *Straw bale*, *Geotextiles* and other fabrics
- Three new attributes (*Date first used*; *Minimum service temperature*; *Annual world production, principal component*)
- Updated flammability ratings

- Refreshed or updated images and illustrations for the majority of material datasheets



*Benefits:*

- Engage introductory students in Built Environment-related courses with new images of relevant buildings, interiors or other applications of materials
- Explore the usage of materials in the built environment over time by using the *Date First Used* attribute
- Explore global world production of key materials and the associated impact on global CO2 emissions, using the *Annual World Production* attribute
- Introduce students to more fibers that may be used as composite reinforcement in built structures

## 1.2 Latest data updates

### MaterialUniverse

*MaterialUniverse forms the core of the Granta EduPack databases. MaterialUniverse data across all Level 1, 2 and 3 databases has been updated at this release.*

The following updates and improvements have been made for this release:

- Updated Embodied Energy and CO2 Footprint with ecoinvent 3.7.1

An extensive update of the embodied energy and CO2 footprint data has been performed incorporating the latest values from version 3.7.1 of ecoinvent. The impacted attributes are:

- Embodied energy, primary production (virgin grade)
- CO2 footprint, primary production (virgin grade)
- Embodied energy, primary production (typical grade)
- CO2 footprint, primary production (typical grade)

- Updated Material prices

New prices are available for all 4,000+ materials in MaterialUniverse. These have been generated using a price model, based on data from the world commodity markets.

#### *Benefits:*

- Access the latest version of this unique dataset that covers technical, economic, and environmental properties for over 4,000 materials.
- Up to date price and environmental data for all levels of teaching, enabling better use with Eco Audit functionality and better selection for environmental or economic objectives.

## 1.3 Simulation-ready data for polymeric materials

### Global Polymers - Plastics

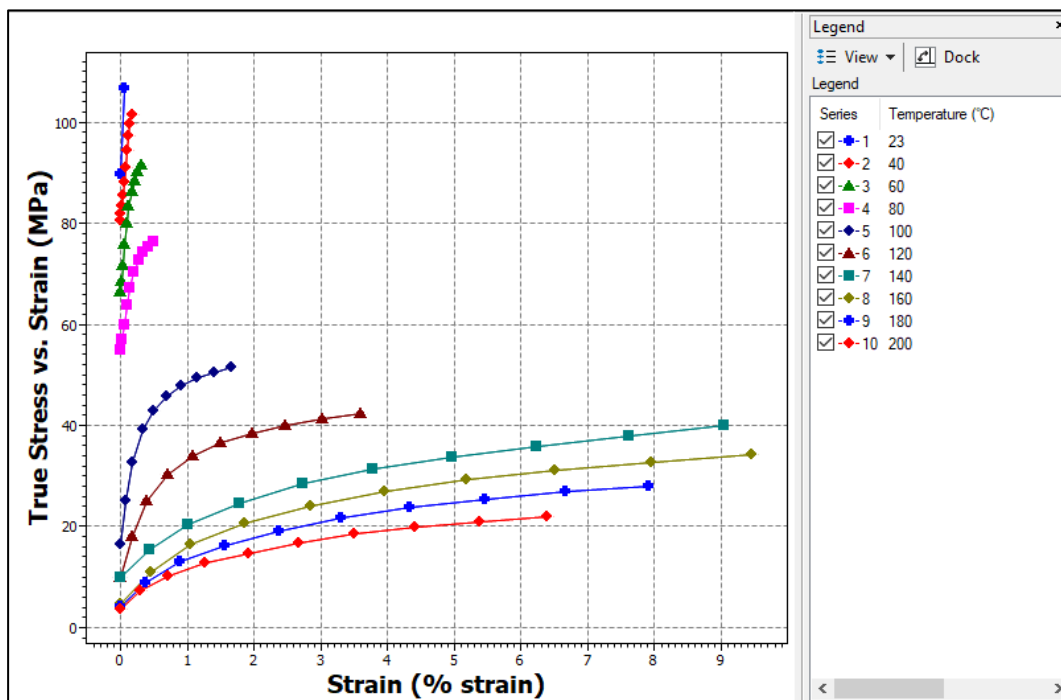
*Global Polymers - Plastics* is part of the Level 3 Polymer database, which is not available in Granta EduPack Introductory

Data provided by UL Prospector has been updated to include the latest data and addition of new plastics, bringing the total number to over 105,000 manufacturer datasheets.

The *Global Polymers – Plastics* data table has also been enhanced to better support use of the data in simulation. Both the original data and ‘simulation-ready’ data is presented, where the simulation-ready data has undergone transforms to ensure it can be used in FEA material models. Previously, some of these transforms were done during the export process.

Simulation-ready data exists for:

- True stress – plastic strain transformed from tensile stress vs. strain – over 7300 curves now available across over 1500 records.
- Creep Model Parameters from a creep model applied to tensile creep test data



A new Subset called *Nonlinear simulation* enables users to find records that have simulation-ready attributes populated easily. A corresponding Layout called *Simulation properties* allows simulation-ready attributes to be easily found on datasheets, and as part of these changes, curve data attributes have been moved on the datasheet to sit alongside relevant point data values.

Several new grades of plastic have been added from Mocom (formerly Albis)

- 11 grades for ABS+PC, PA6, PA66, PP+EPDM, PP and PPS
- Non-linear data for the following has been added:
  - Tensile stress vs. strain
  - Tensile modulus vs. temperature
  - Specific heat capacity vs. temperature
  - Thermal expansion coefficient vs. temperature
  - Thermal conductivity vs. temperature

*Benefits:*

- Use the latest data to compare and select plastics grades from different producers
- Find alternative polymer grades based on property profile, using the 'Find Similar' tool
- Identify plastic grades based on application, key features, performance, agency ratings, regional availability, etc.
- Export key technical linear and non-linear properties for simulation

## 2 Feedback

We welcome your feedback on any improvements you would like to see in the *Granta EduPack* system, its data, or documentation.

Please send us your ideas by emailing [granta-education-team@ansys.com](mailto:granta-education-team@ansys.com).

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Published in the U.S.A.

Document version: EDU22-RN.02

Published: January 2022