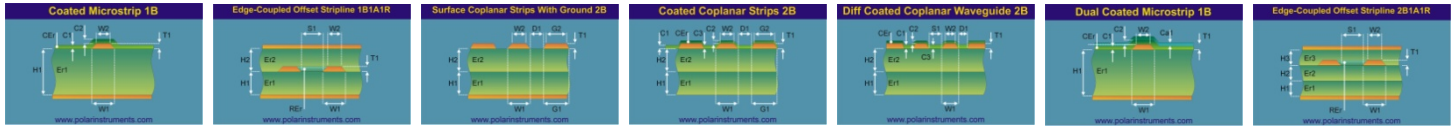
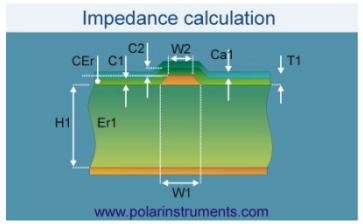
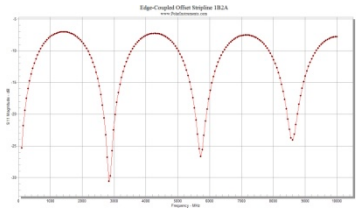
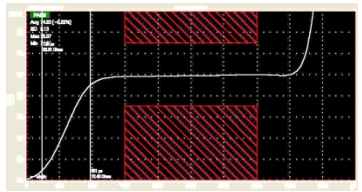
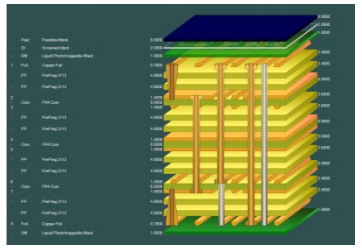
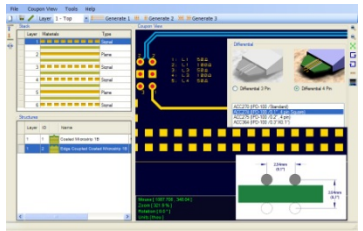






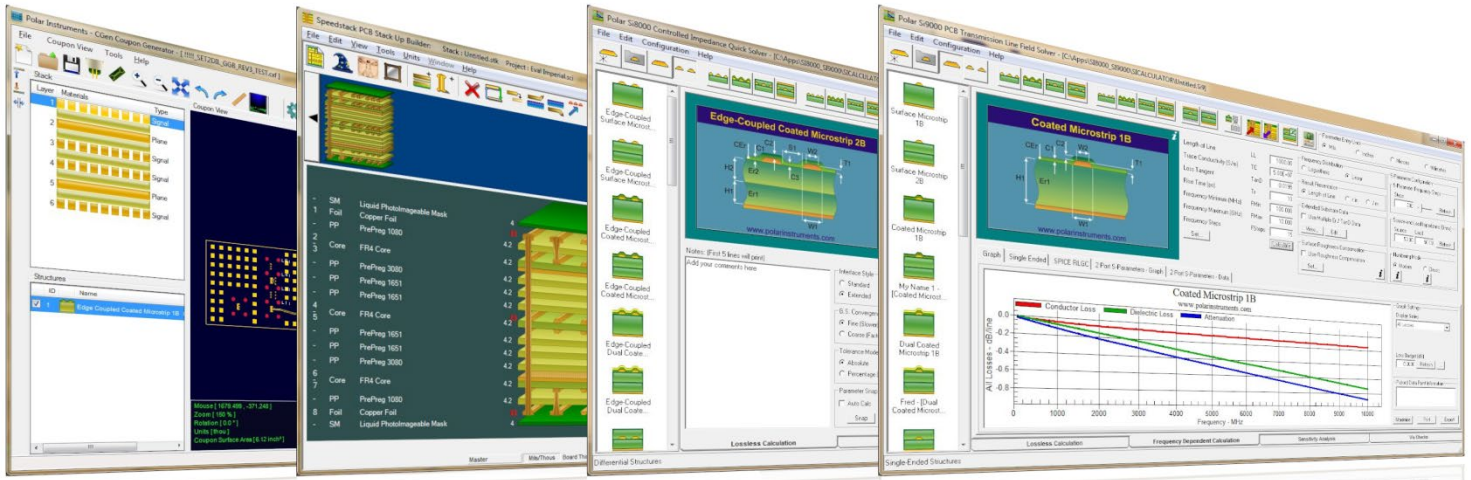






Speedstack 2021 Preview

Richard Attrill – March 2021 (Rev 2)



Introducing Speedstack 2021

Welcome to a preview of Speedstack 2021.

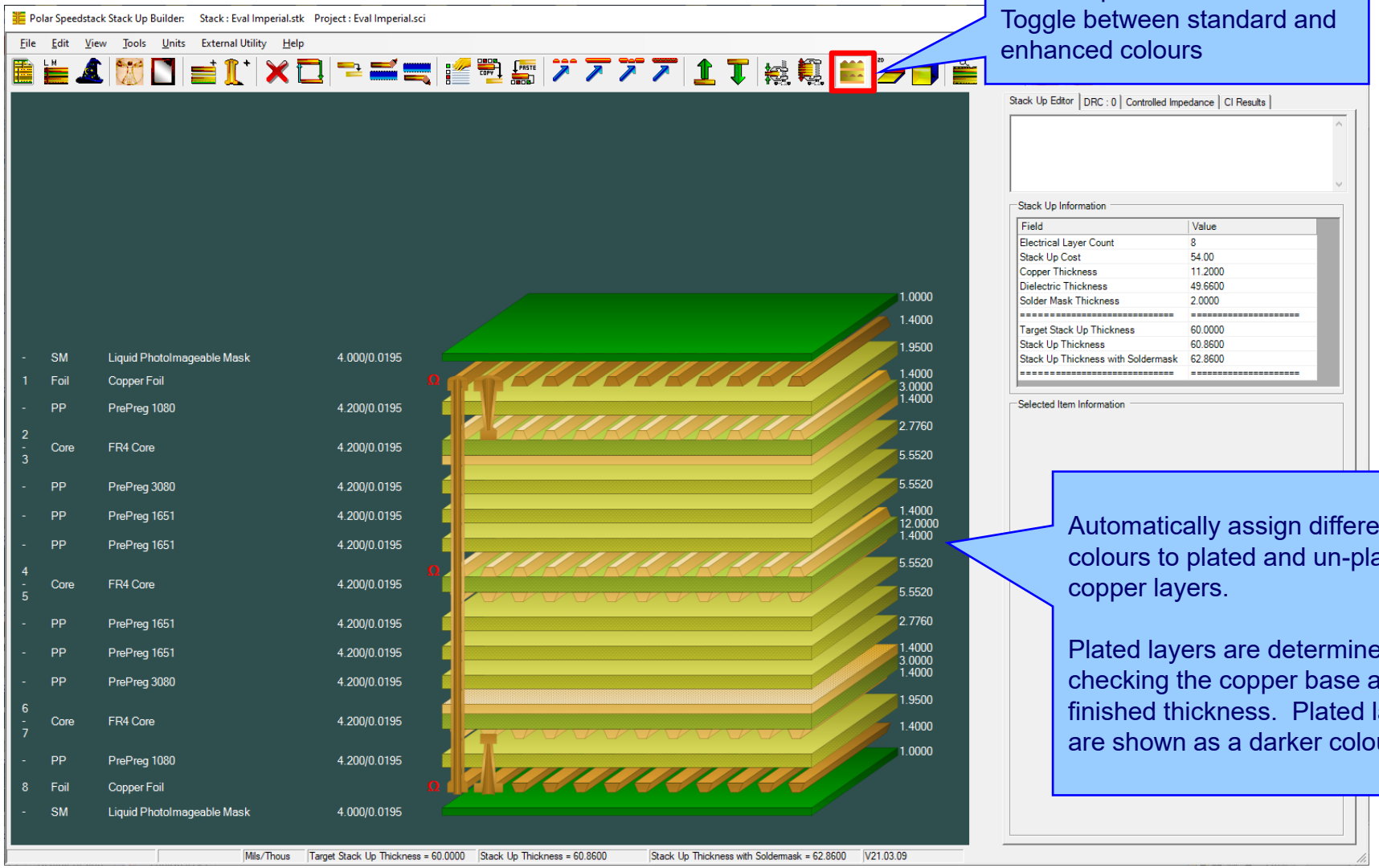
We have introduced a number of new features that have been requested through our Polarcare software maintenance service.

If you would like to have a web-based demonstration please contact your local Polar office, details are shown on the last slide of this presentation.

Please note: the Speedstack units have been set to Mils in the following screen grabs

Speedstack v21.03 (March 2021)

New Apply Plating Colours toolbar option

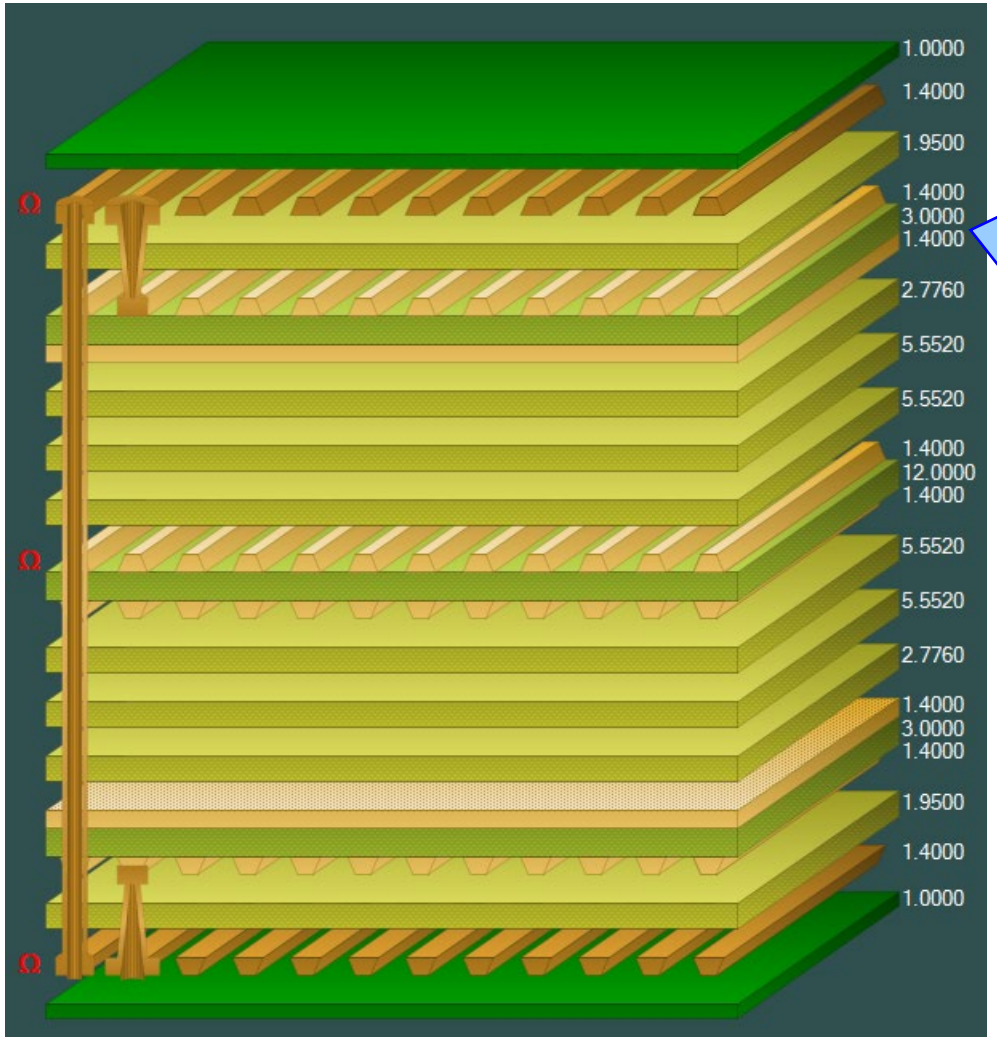


New Apply Plating Colours toolbar option.
Toggle between standard and enhanced colours

Automatically assign different colours to plated and un-plated copper layers.

Plated layers are determined by checking the copper base and finished thickness. Plated layers are shown as a darker colour

New Apply Plating Colours toolbar option



Plated Copper Layers

During PCB fabrication drill holes commonly have copper applied to the barrel wall by an electroplating process. This provides an interconnect between copper layers in the stack up.

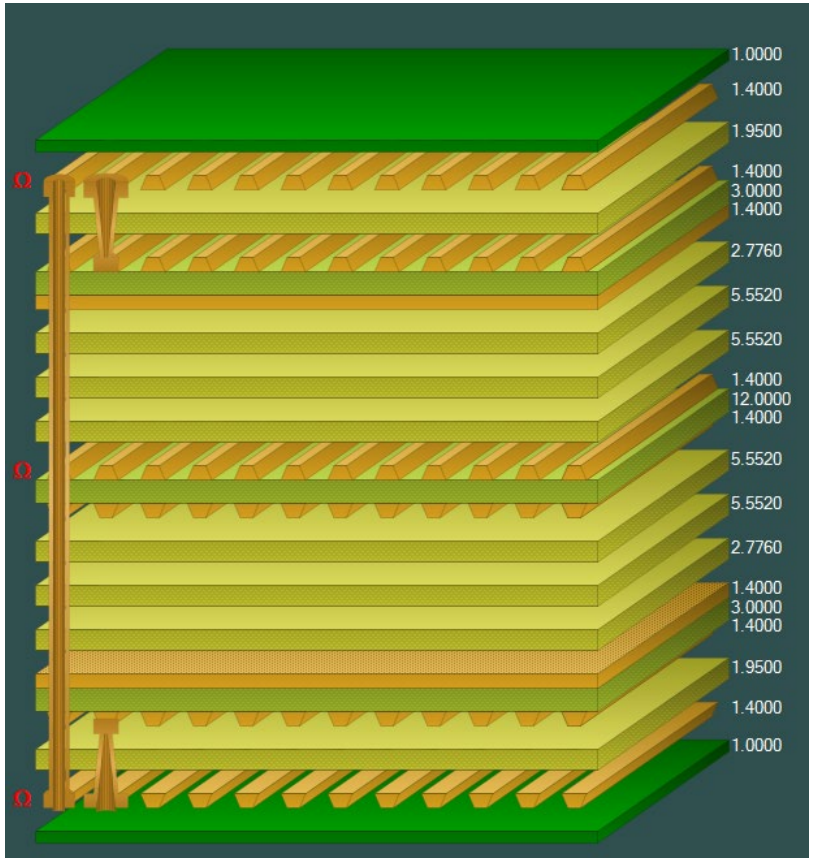
This electroplating process often results in additional copper also being applied to the exposed copper layers where the mechanical drill starts / ends.

It is important to account for this additional plated copper thickness when calculating the overall stack up thickness and controlled impedance / insertion loss structures.

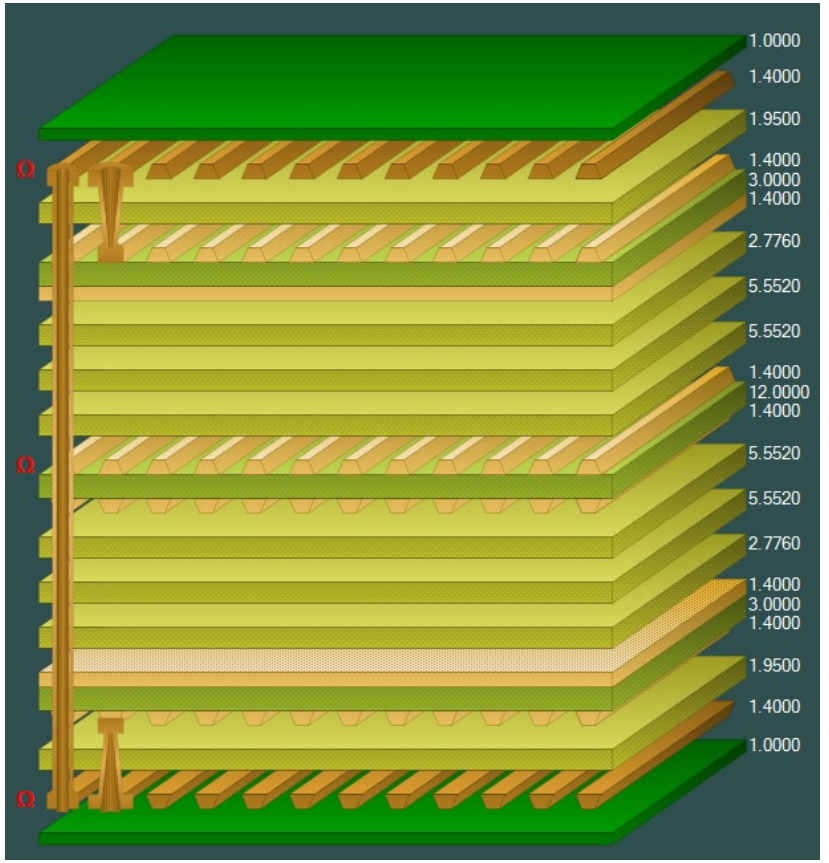
Speedstack has always allowed this additional plating thickness to be applied to the relevant copper layers. With v21.03 this has been enhanced further with automatic colour assignments to the plated and un-plated layers

New Apply Plating Colours toolbar option

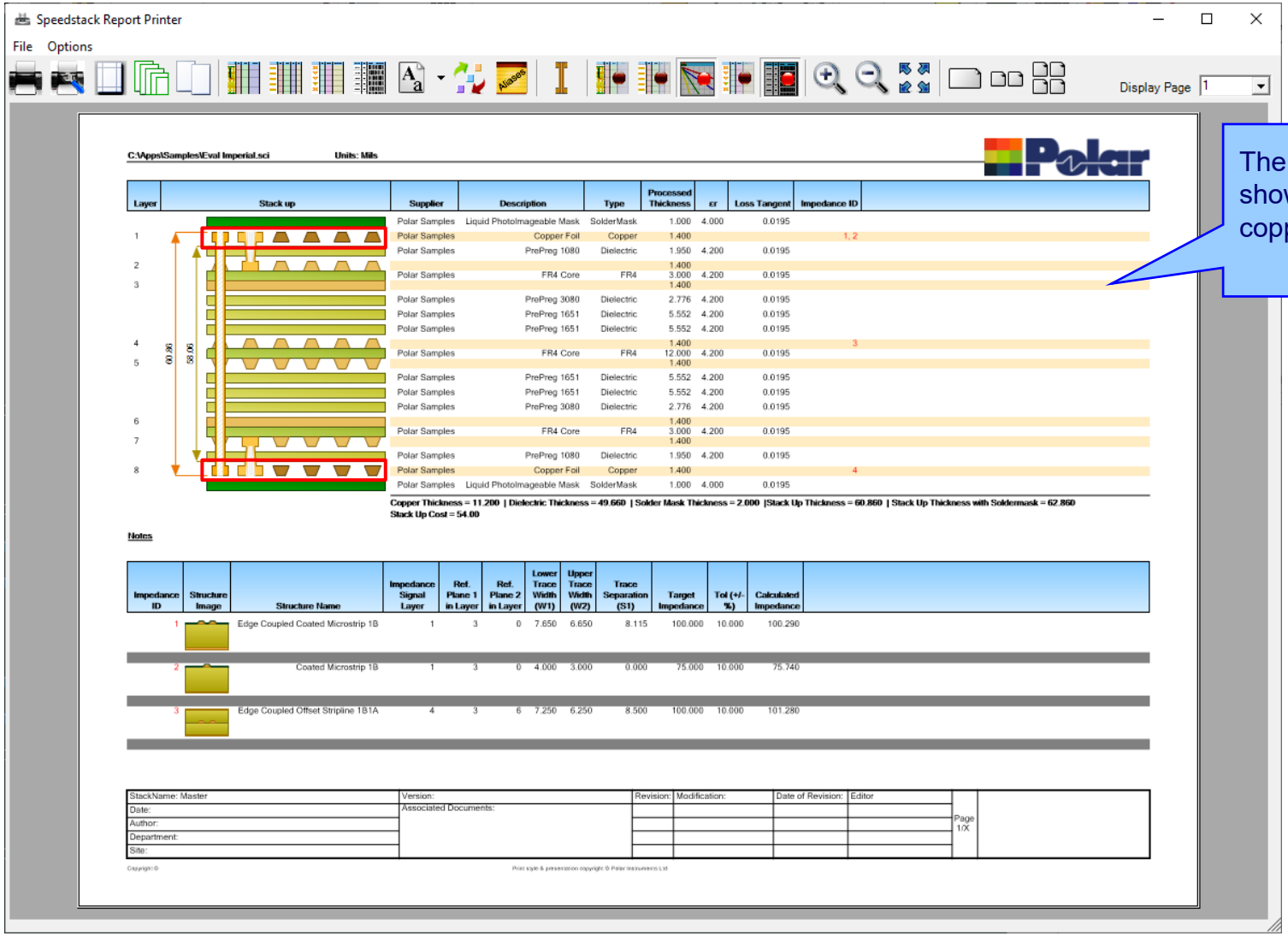
Standard Colours



Apply Plating Colours

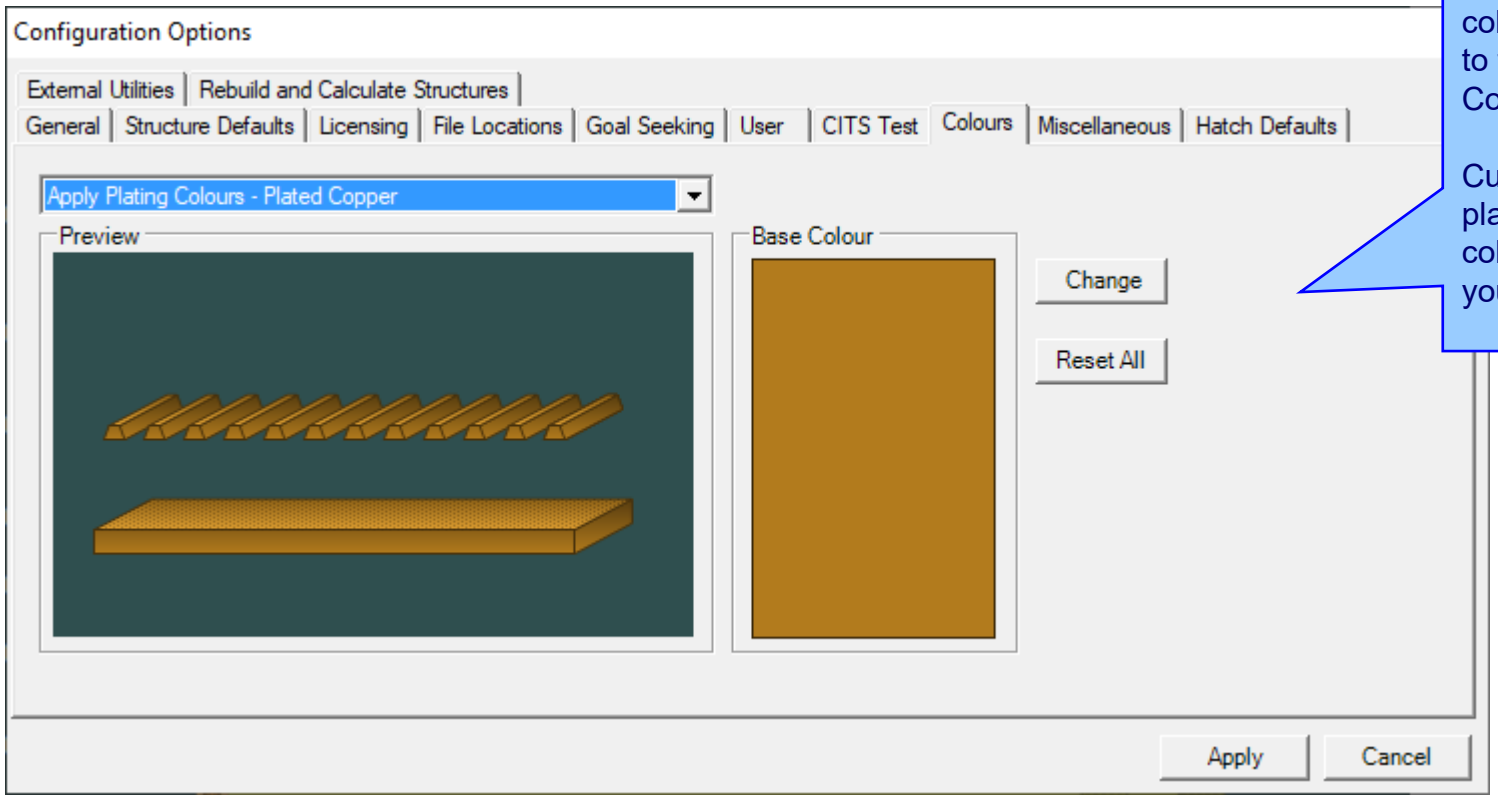


New Apply Plating Colours toolbar option



The technical report will also show the plated and un-plated copper layers.

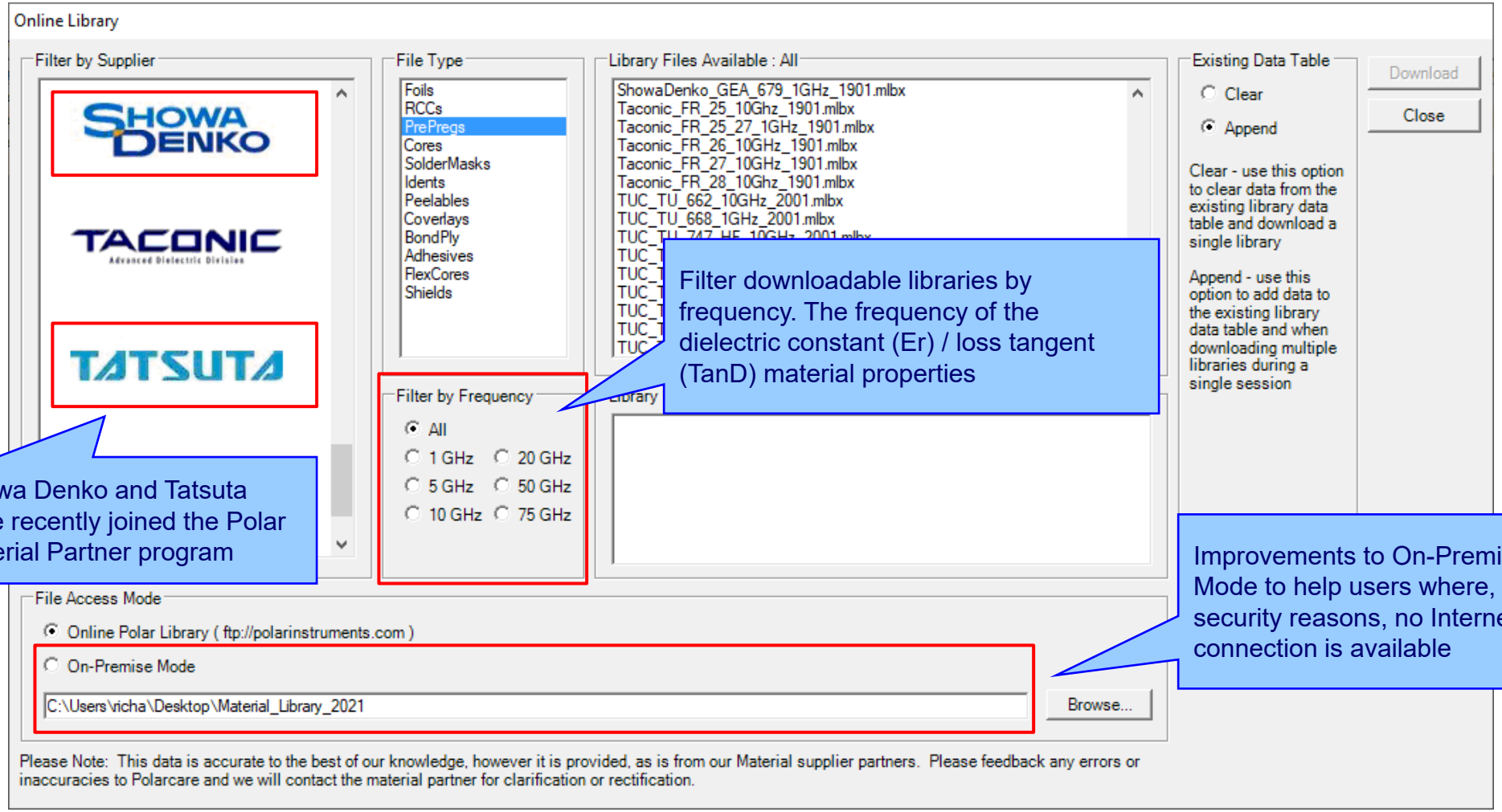
New Apply Plating Colours toolbar option



Two new user-definable colours have been introduced to the Speedstack Configuration Options.

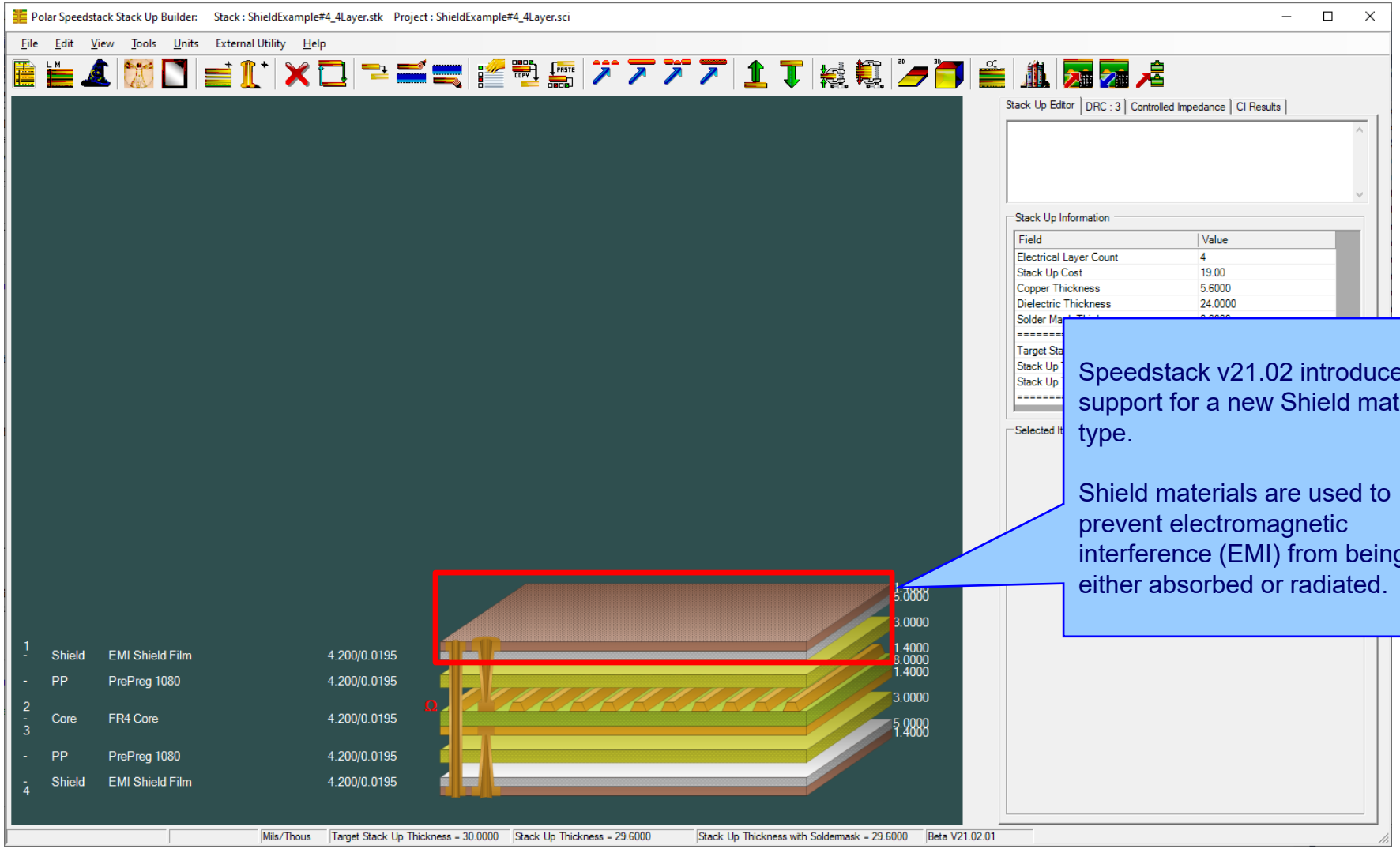
Customise the Plated and Un-plated colours to suit existing colour schemes adopted by your organisation

Online Library enhancements



Speedstack v21.02 (February 2021)

New Shield material

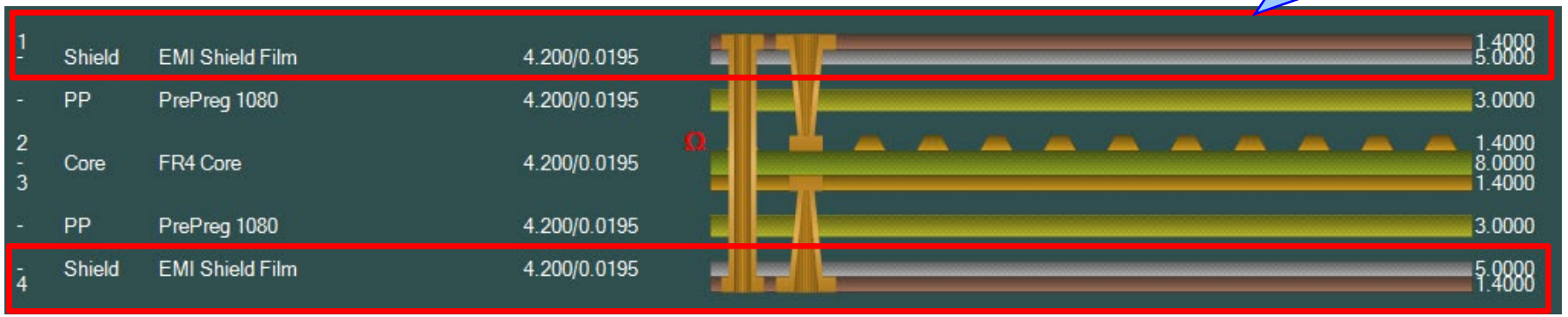


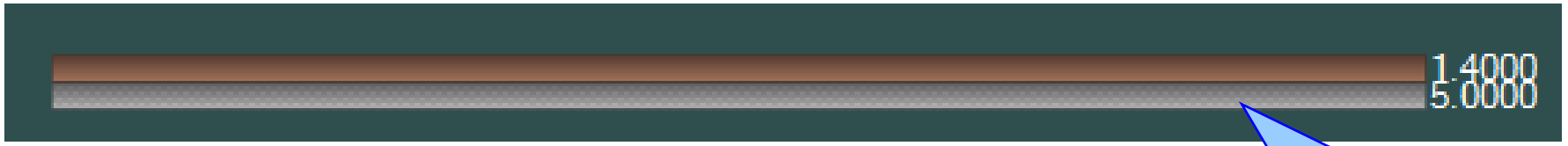
Speedstack v21.02 introduces support for a new Shield material type.

Shield materials are used to prevent electromagnetic interference (EMI) from being either absorbed or radiated.

New Shield material

Shields are typically applied to the outer layer(s) of the stack up

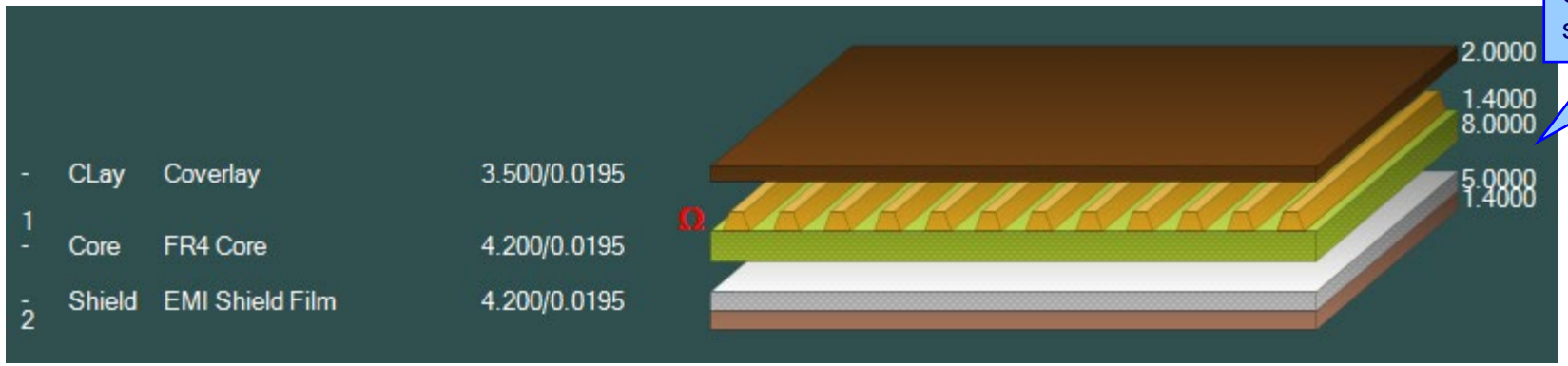


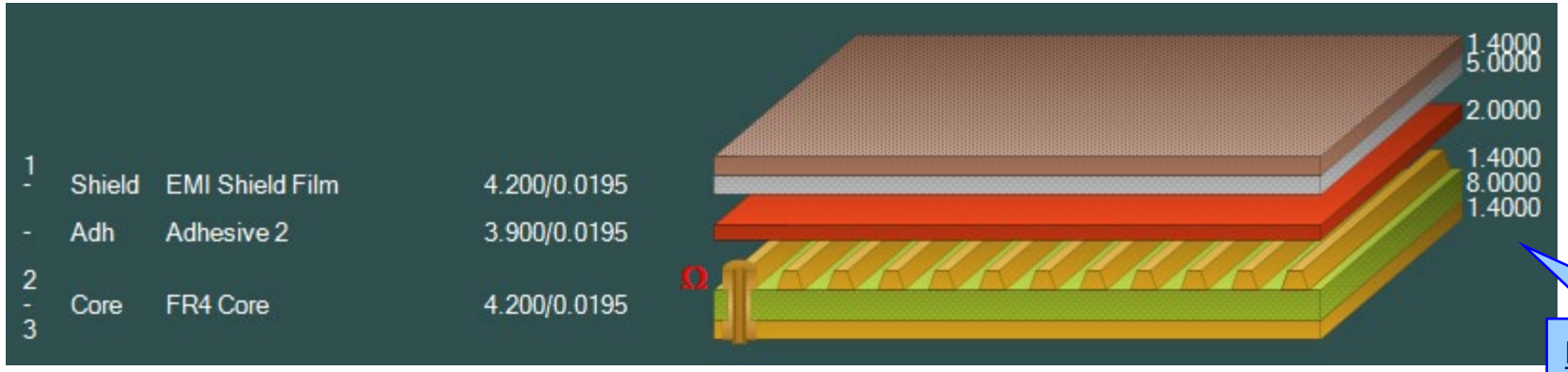


They consist of a shield layer (brown) and dielectric adhesive (silver)

Shield material examples

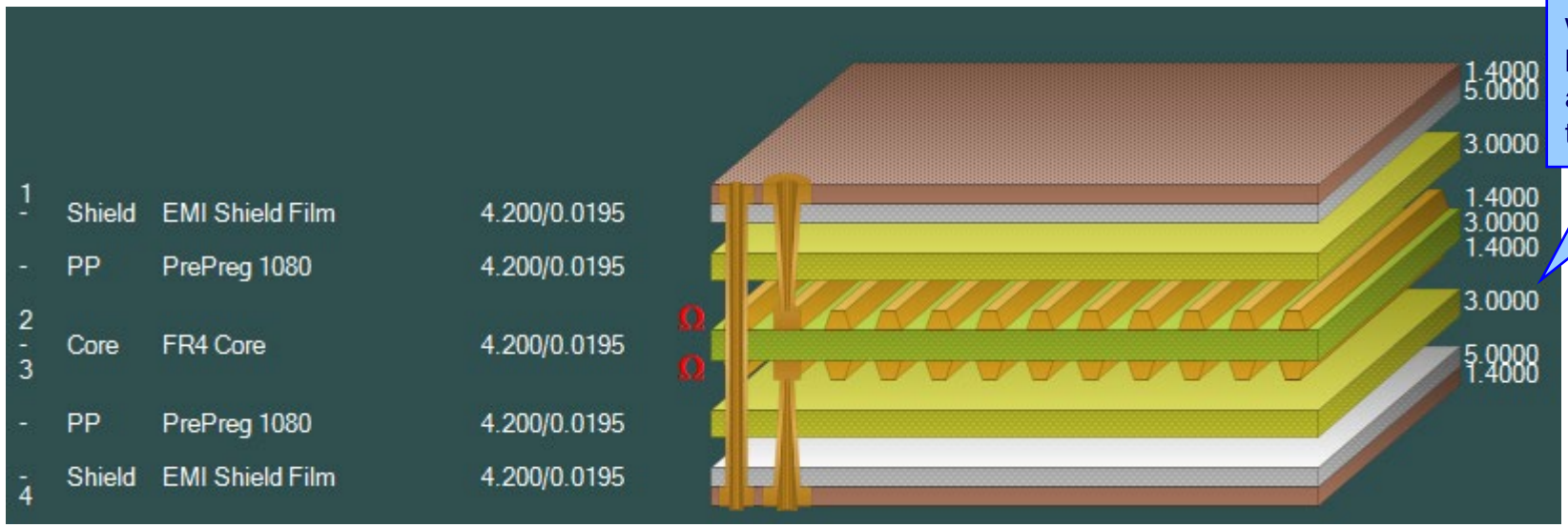
Example #1
Single-sided core, coverlay above trace, shield below



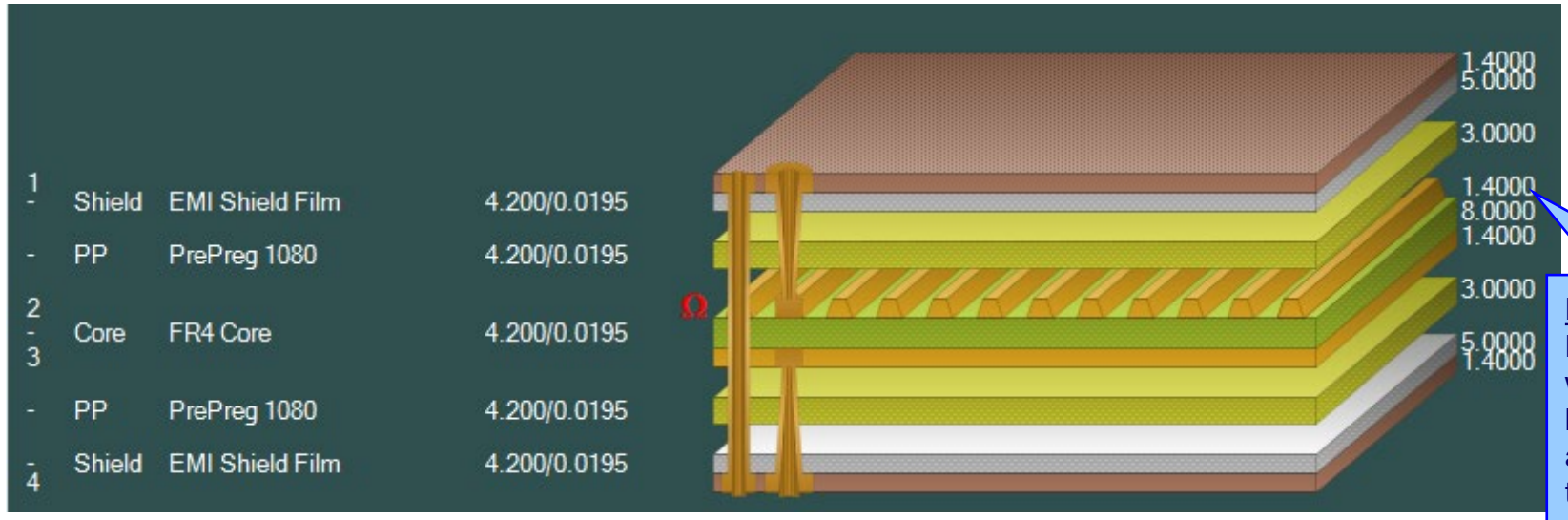


Example #2
Double-sided core, adhesive and shield above

Shield material examples

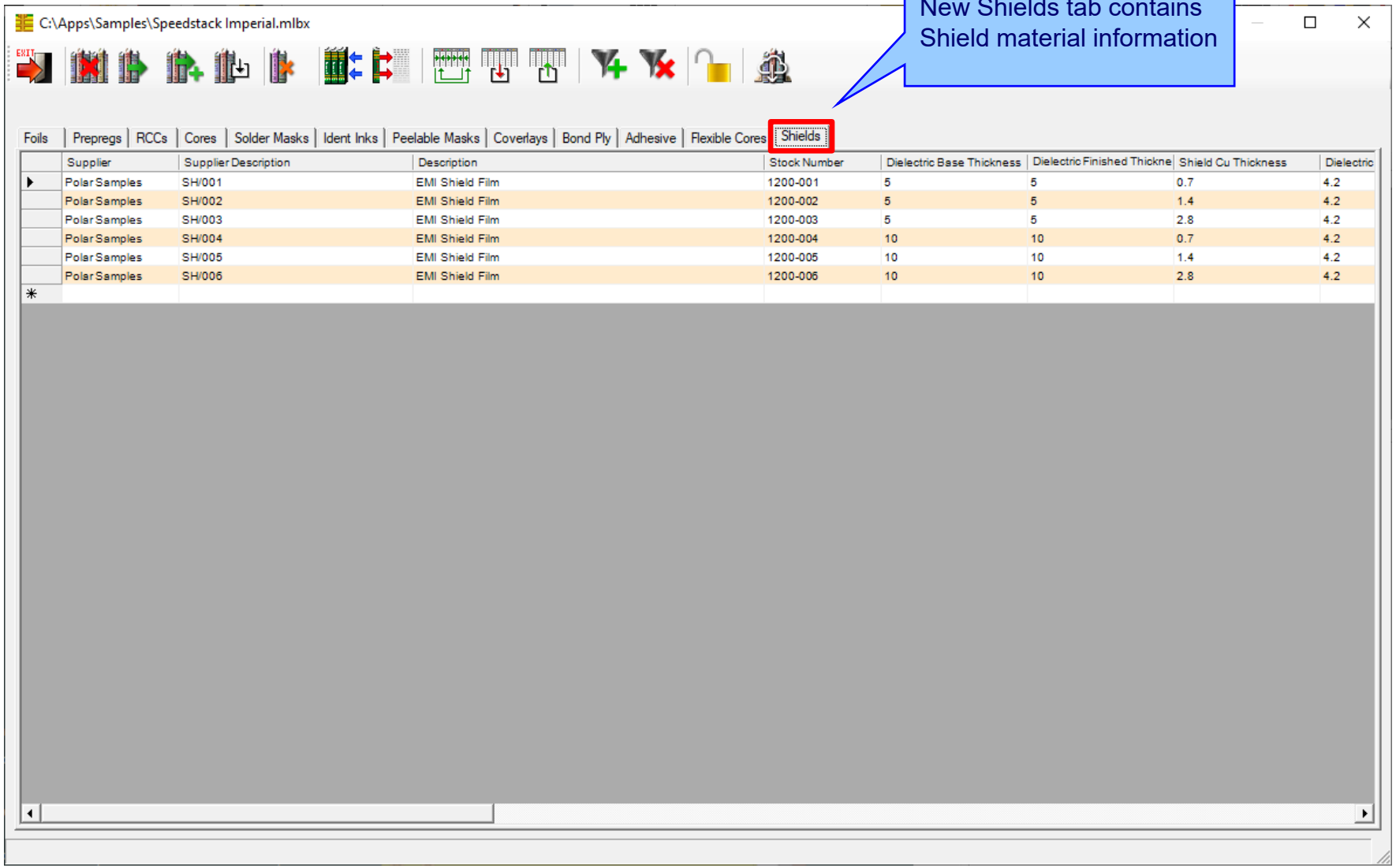


Example #3
Double-sided core with two signal trace layers with shield above and below trace layers



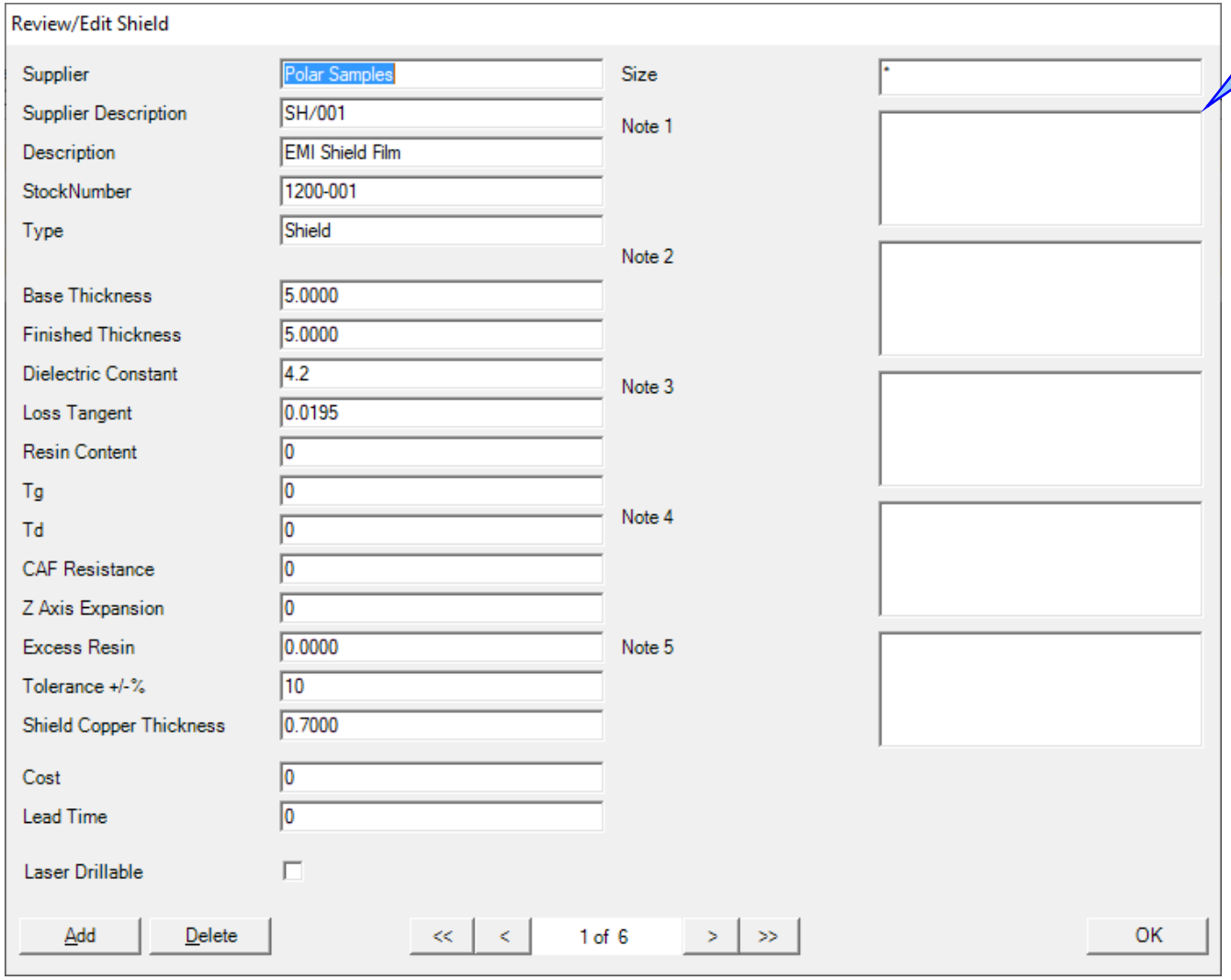
Example #4
Double-sided core with one signal trace layer with shield above and below trace layers

Material library enhancements



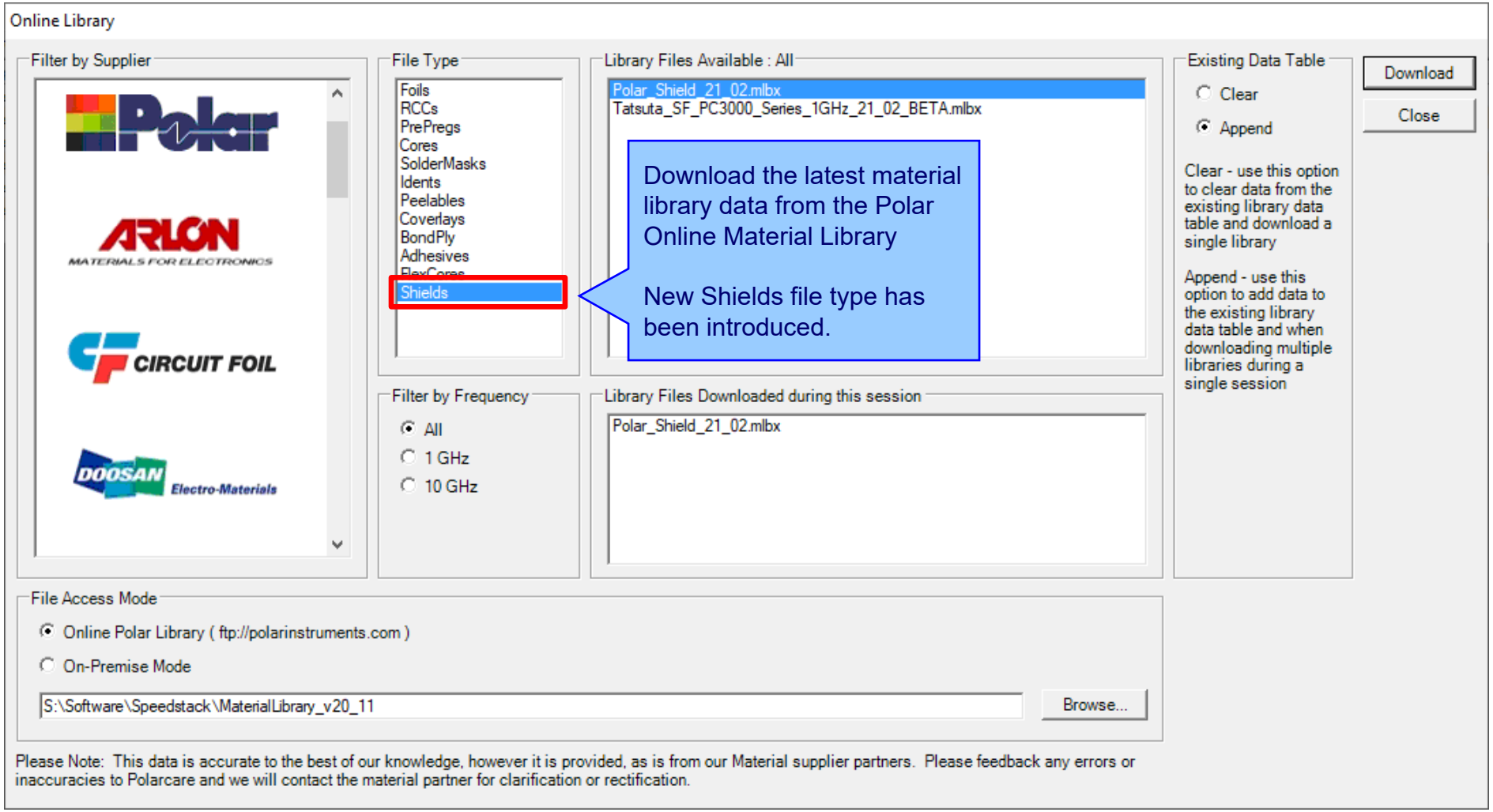
Supplier	Supplier Description	Description	Stock Number	Dielectric Base Thickness	Dielectric Finished Thickne	Shield Cu Thickness	Dielectric
Polar Samples	SH/001	EMI Shield Film	1200-001	5	5	0.7	4.2
Polar Samples	SH/002	EMI Shield Film	1200-002	5	5	1.4	4.2
Polar Samples	SH/003	EMI Shield Film	1200-003	5	5	2.8	4.2
Polar Samples	SH/004	EMI Shield Film	1200-004	10	10	0.7	4.2
Polar Samples	SH/005	EMI Shield Film	1200-005	10	10	1.4	4.2
Polar Samples	SH/006	EMI Shield Film	1200-006	10	10	2.8	4.2

Material library enhancements

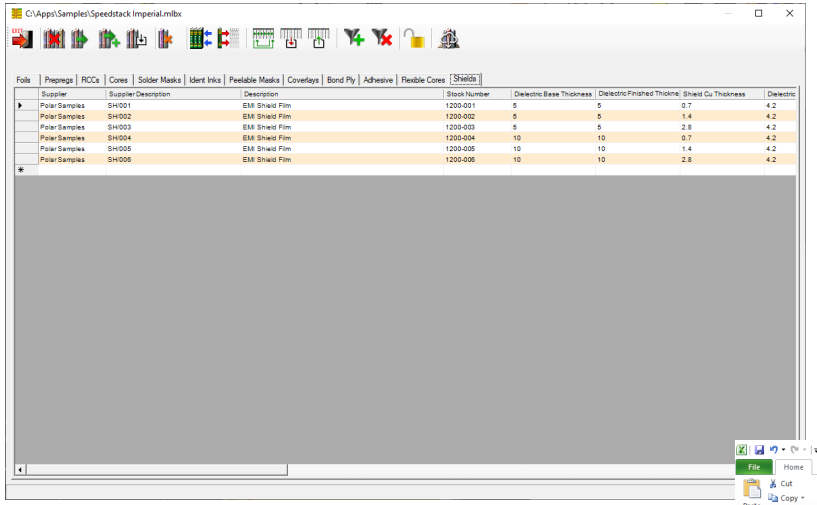


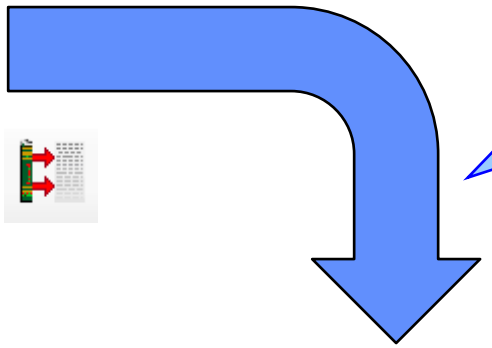
Material library Edit Shield dialog

Online Library enhanced to support Shield materials

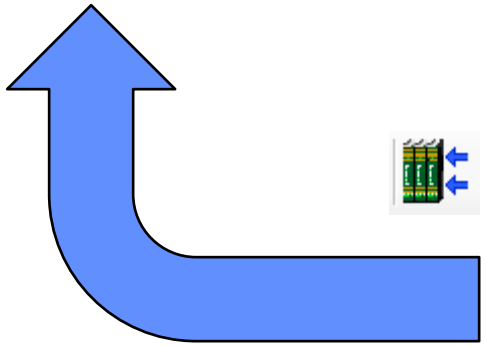


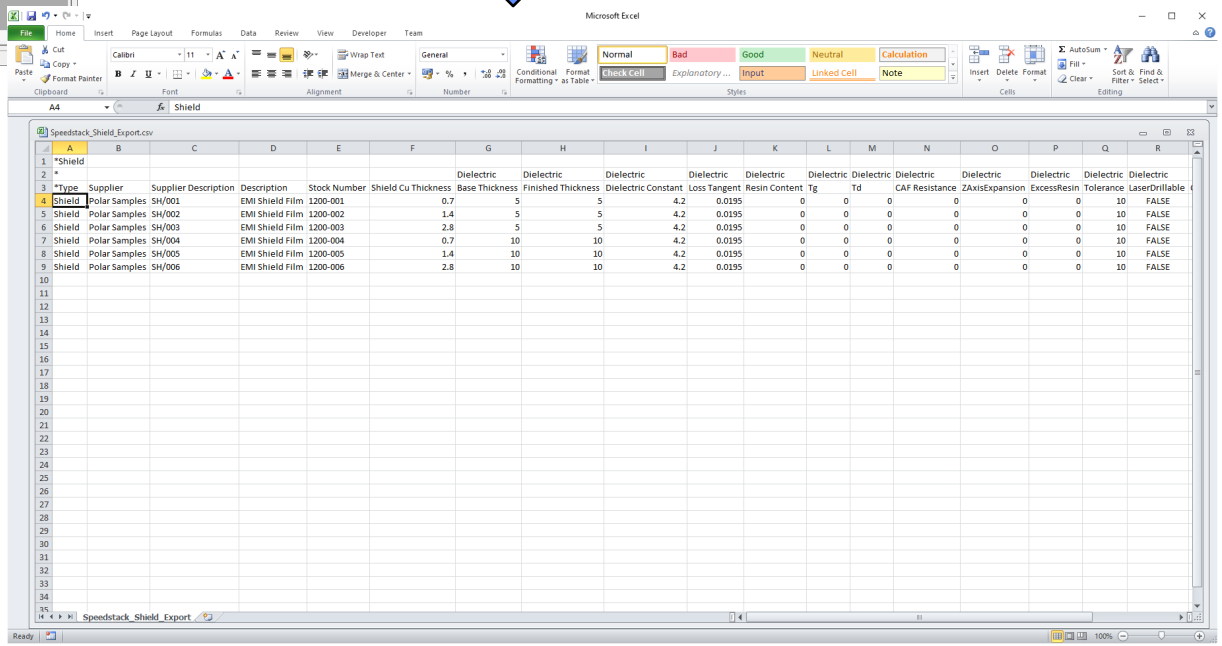
Export / Import Shield library to Excel



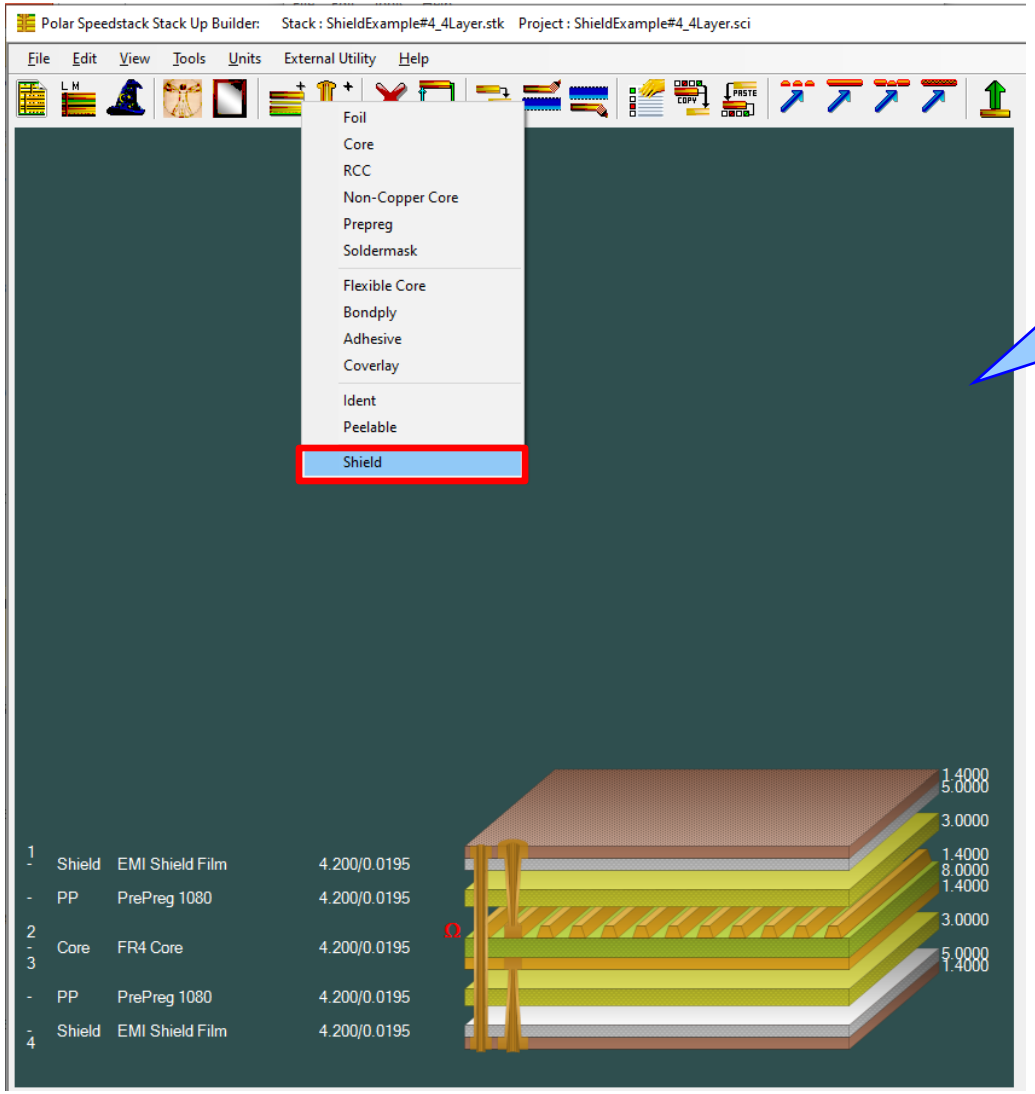


It is possible to export / import Shield library data with 3rd part tools like Excel





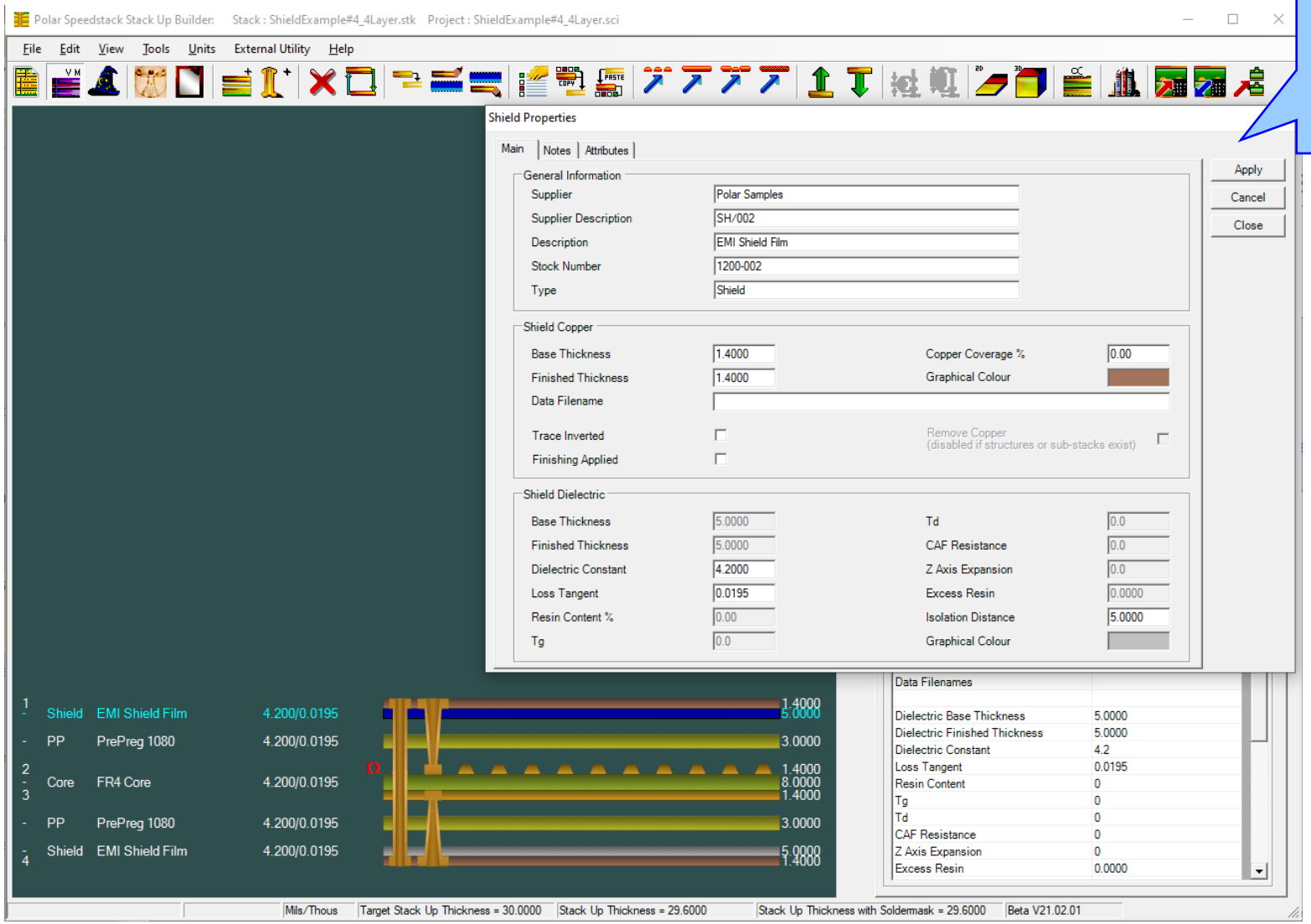
Stack up editor enhancements



Stack Up editor enhancements:

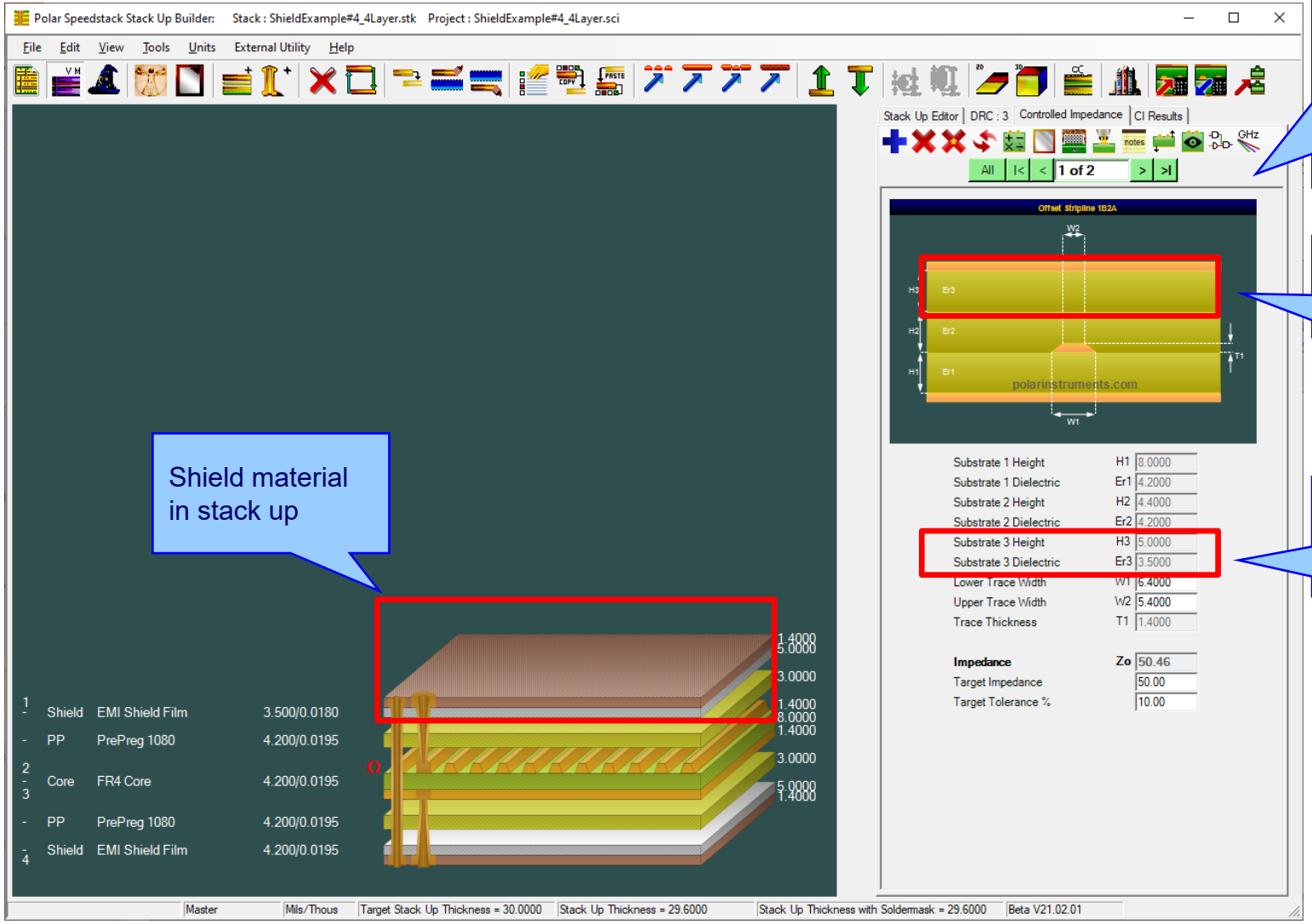
Shield material options to add, delete, swap, move up, move down, symmetry and set properties

Shield properties



View and customise the Shield properties. Useful in 'what-if' scenarios

Controlled impedance and insertion loss calculations



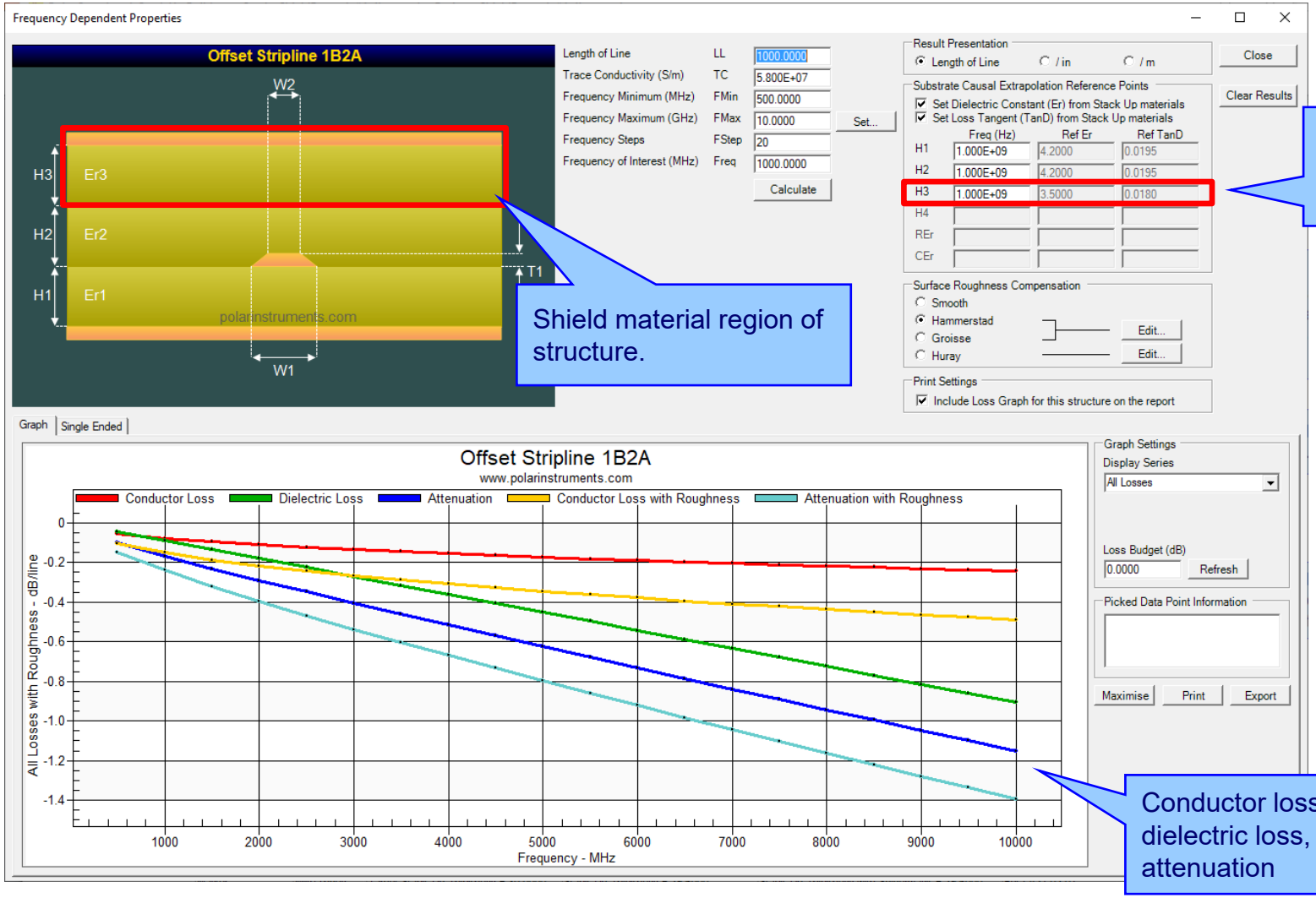
Shield material in stack up

Impedance and insertion calculations support the new Shield material type.

Shield material region of structure.

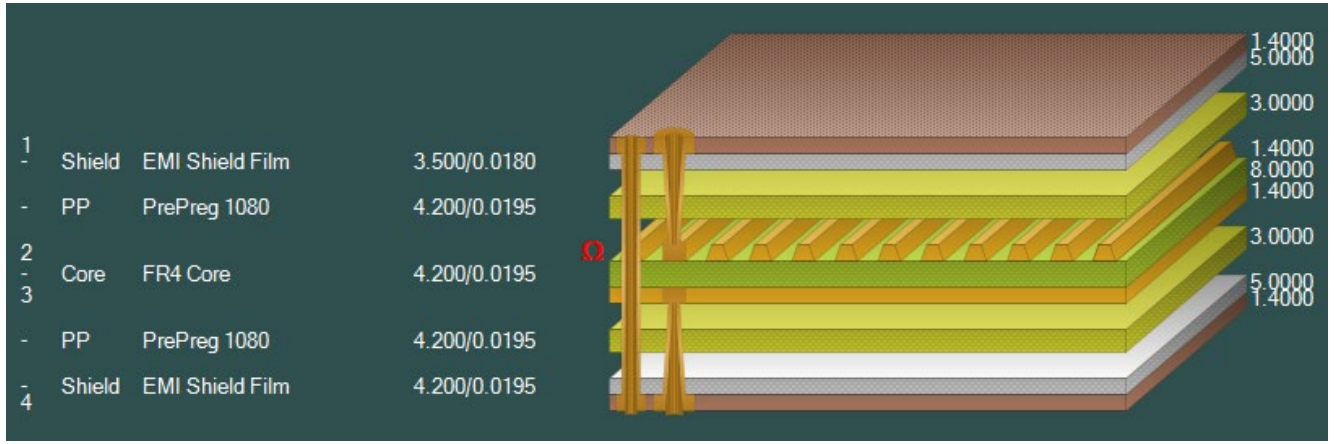
Shield adhesive height / thickness dimension and dielectric constant.

Controlled impedance and insertion loss calculations



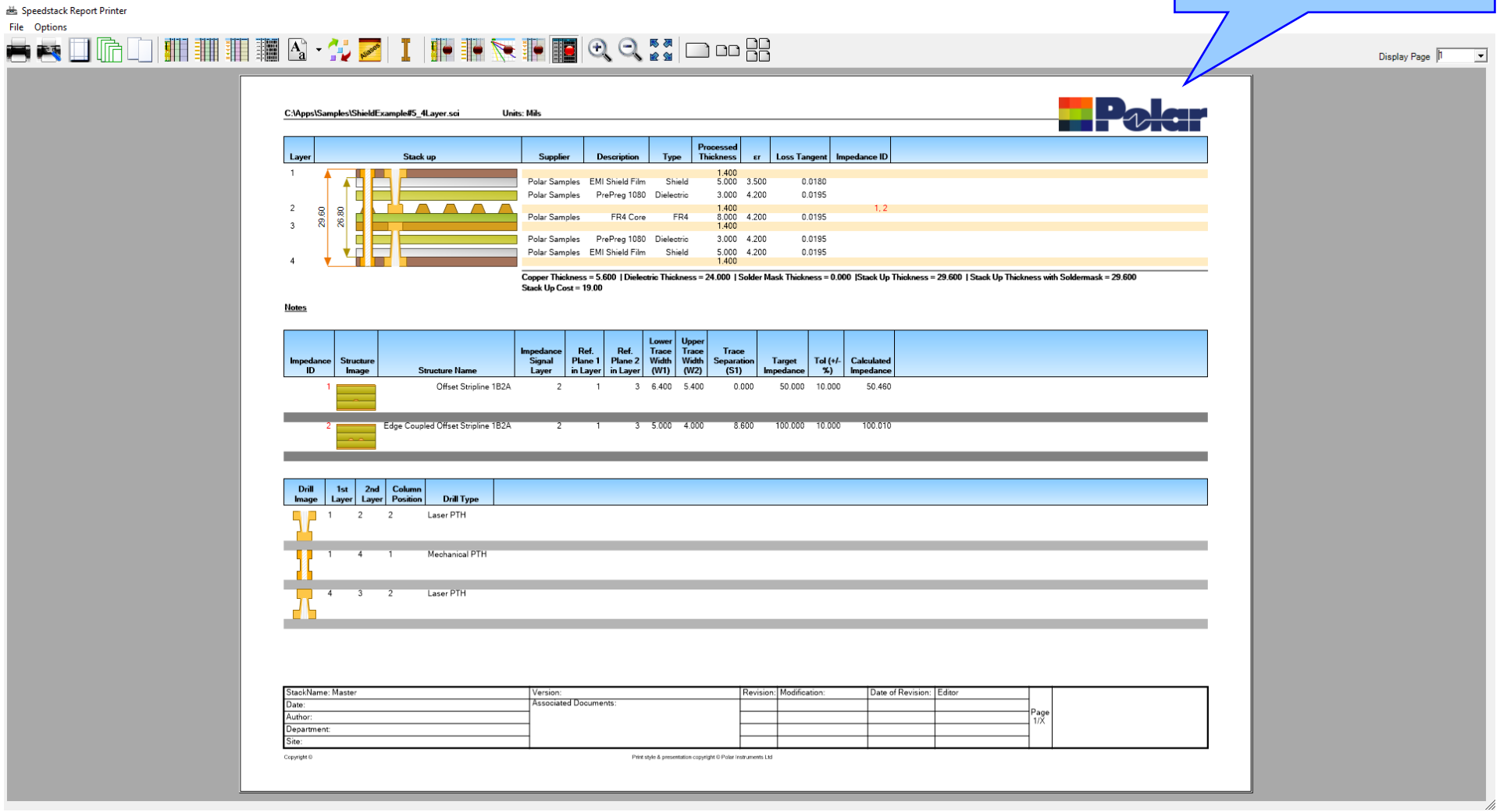
Controlled impedance and insertion loss calculations

Please note: Speedstack is capable of supporting many shield types for stack up design and documentation. However, it is important to use the correct type of shield material for controlled impedance and insertion loss applications. They are often designated by the shield vendor as 'for high speed signal transmission applications'.



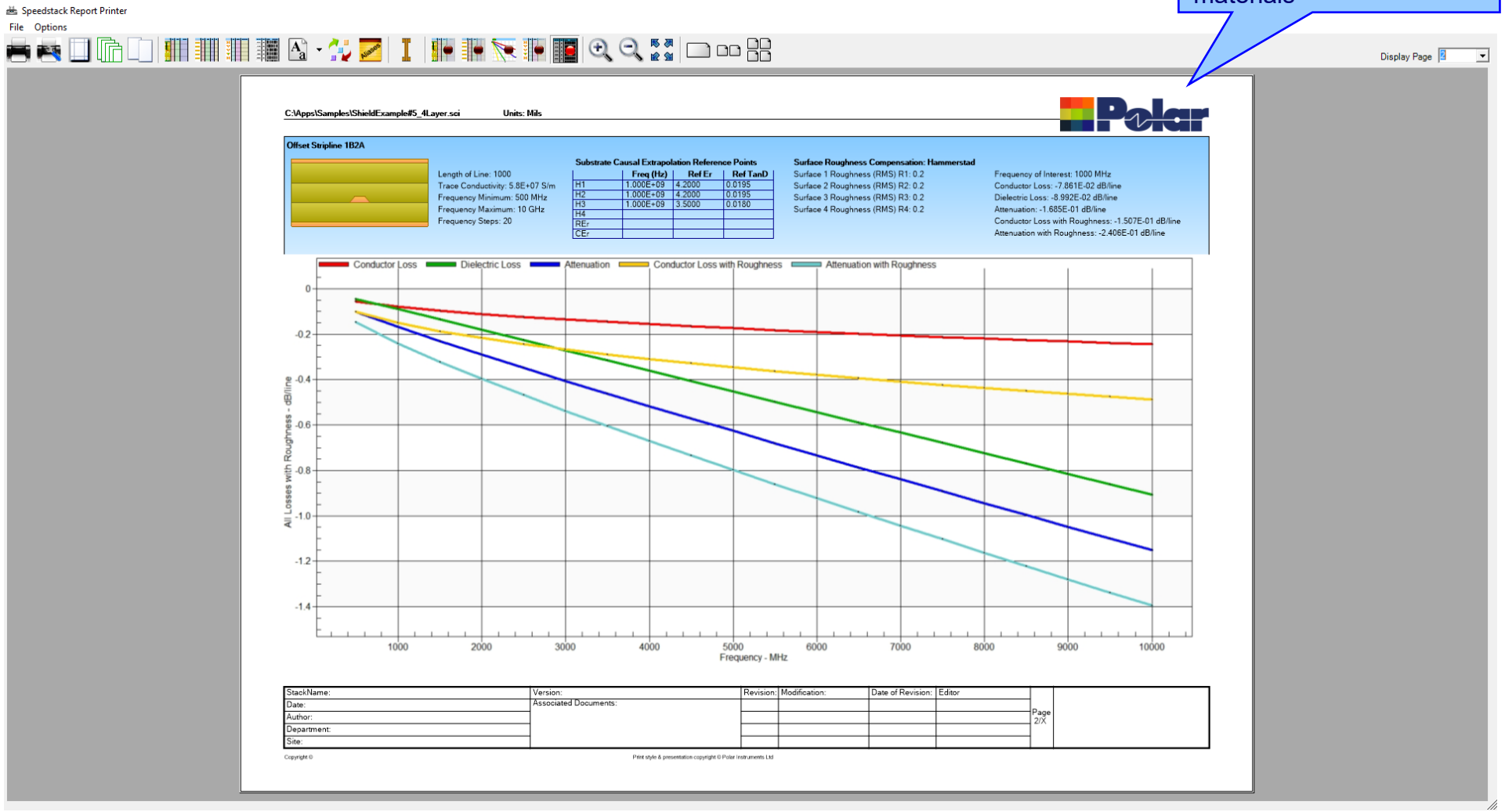
Technical report enhancements

Technical report showing shield materials



Technical report enhancements

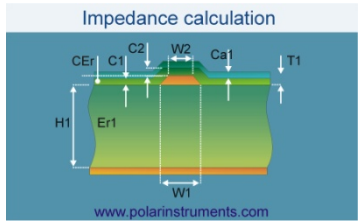
Insertion loss report supporting shield materials

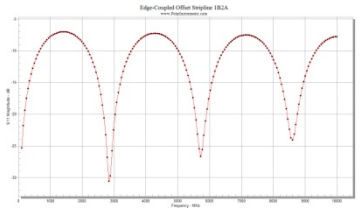


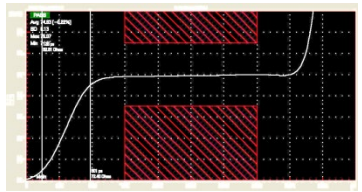
Import / Export enhancements

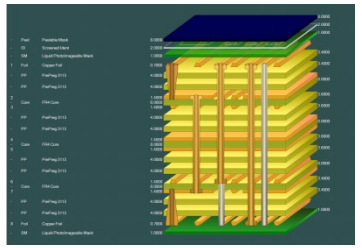
The following Import / Export options have been updated to support the new shield material introduced with Speedstack 2021:

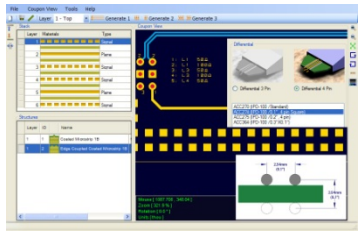
- XML STKX v20.00 and SSX v10.00 import / export options
- CSV export option
- Gerber / DXF export option



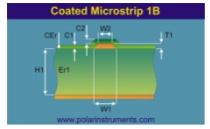


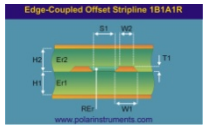


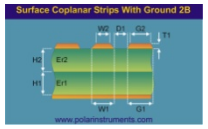


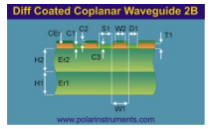


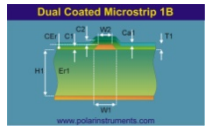
Thank you for viewing this Speedstack 2021 preview. If you have questions we would be delighted to help you. Your local contact information is contained on the following slide

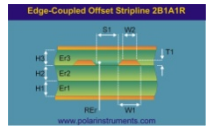


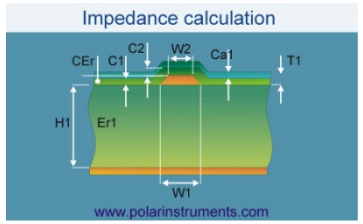


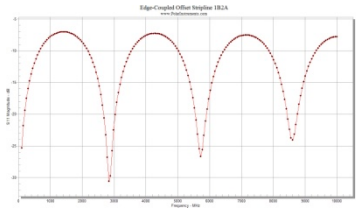


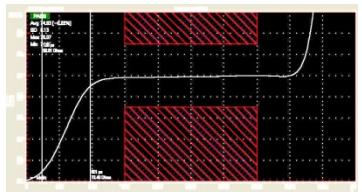


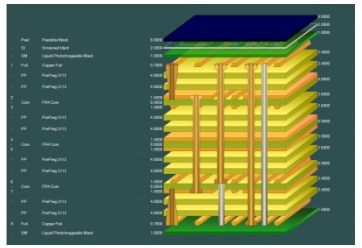


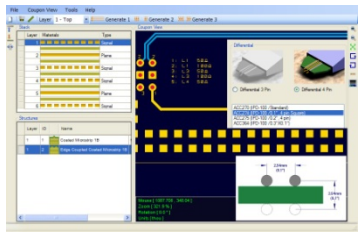












For more information:

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