ODEON material sheet guide for material suppliers

ODEON's acoustical material exchange format allows easy import of material manufacturers' material data into ODEON.

The acoustic data that can be imported includes absorption coefficients in 1/1 and 1/3 octaves, and scattering coefficients in 1/3 octave bands which can all be used in calculations inside ODEON. Additionally, diffusion coefficients in 1/3 octaves can also be imported to display in graphs inside ODEON – although they are not used in a meaningful way in calculations and are displayed only for informative purposes.

Additional freely chosen parameters are allowed as explained further below.

Keep in mind that most acoustic materials are produced and marked in local markets, therefore we do normally not include commercial materials in the default material database. Instead, we make it easy to for the ODEON user to import manufacturers' material data into ODEON – with relevant data (e.g. referring to local legislation/standards)– see red headers.

- You may delete the "Quick index" section for the final version of your file.

- Blue headers indicate headers that are recognized by ODEON to be handled in a specific way, i.e.: making use of the absorption coefficients, or showing the company logo in the interface. **Blue headers must not be renamed** in order to be properly handled by ODEON.

- Blue headers with an asterisk indicate columns where it is required to have data.

- Red headers are headers you can freely rename to list any property. The data cells can contain numbers and/or text. Here are some ideas for properties to include in red columns:
    - For suspended ceilings: Thickness [cm, mm, or inches], cavity depth, weight,
    - For perforated panels: Hole size [mm], Hole cc [mm], perforation %, suspension [mm]
    - Others: module size, fire safety rating, humidity resistance, backing material, wall-mounted vs. free-hanging, colour, ISO absorption class, additional comments.

- Text cells and red header names can contain characters from specific languages (e.g.: Danish, Chinese, etc.) additional to standard alphanumeric.

- Columns where the headers don’t have asterisks (whether blue or red) are optional to fill. Leave data cells blank if unneeded.

- "Company name*", "Product name*", and "Product summary" will be concatenated as the material description in ODEON 19 or newer.

- "Company name*" is mandatory for compatibility with ODEON versions 18 and older. If the material is generic rather than belonging to a company (e.g.: a type of concrete or wood), simply enter a space in the "Company name*" column.

- “Category” is a searchable property, so makes it easier to search in the Material List for a material intended for a specific surface, e.g.: “Floor”, “Wall”, “Ceiling”. Other forms of categorization may be used, e.g.: “Generic” and “Special”. There is no need for certain categories, e.g. “Audience”, which are likely be included in the description of the material Product Name or Product Summary.

- In ODEON 18 or older, the red columns will also be concatenated into the material description. In ODEON 19 or newer, red columns are displayed in a table in the Material Information window.

- Columns K to R (63Hz, 125Hz*, 250Hz*...) are for the absorption coefficients in **full octave bands**, according to ISO354. These values must not exceed 1.0. If 1/3 octave values are not included, then Odeon 19 and later will derive 1/3 octave values from the full octave values.

- Decimal separators for numerical values can either be periods (.) or commas (,).

- Absorption 1/1 octave bands from 125 Hz to 4 kHz are required. If the 63 Hz and/or the 8 kHz octave bands are left blank, ODEON will extrapolate from neighboring values (since all 8 octave bands are required within ODEON).

- For compatibility with ODEON versions 18 and older, “Company name”, “Product name”, and the absorption coefficients in full octave bands must stay in their default columns (A, B, and K-R respectively).

- Columns starting with "url" are meant to contain a URL linking directly to a file.

- "url-logo" is for the company logo.

- "url-image" is for an image of the product itself.

- "url-logo", "url-image", and "url-cross-section" can take graphics in any of the following formats: jpg, jpeg, png (most recommended), bmp, emf, gif, ico, svg, tee, tga, tif, tiff, wbmp, webp.
    - If an image on the manufacturer's home page is stored in a database, some additional information may be added to the URL for access. E.g. If a webp image is stored in a Firebase database, the URL to the image may contain the following query: "...webp**?alt=media&token=5dd8c288-4242-411a-a53f-b4089bcbbbf5**". If the parameters in the query successfully grant access to the image, then ODEON can get the image.

- "url-webpage" can link to anywhere on your webpage: home page, product page, contact form, etc.

- "url-brochure" and "url-report" can include graphics or PDF documents.

- Columns showing an "A" and a frequency (A50Hz, A63Hz, A80Hz...) are for absorption coefficients **in 1/3 octave bands**. These values can exceed 1.0. These coefficients are optional to include, but if included, they must at least cover the range from 100 Hz to 5000 Hz, otherwise they will be ignored. If coefficients are missing in the 50-80 Hz range and/or the 6300-10000 Hz range, ODEON can extrapolate them from neighboring values.

- Columns showing an "S" and a frequency (S50Hz, S63Hz, S80Hz...) are for **scattering coefficients in 1/3 octave bands** from 0.0 to 1.0 (ISO 17497-1). These coefficients are optional to include, but if included, they must at least cover the range from 100 Hz to 5000 Hz, otherwise they will be ignored. If coefficients are missing in the 50-80 Hz range and/or the 6300-10000 Hz range, ODEON can extrapolate them from neighboring values.

  Columns showing a "D" and a frequency (D50Hz, D63Hz, D80Hz...) are for **diffusion coefficients in 1/3 octave bands** from 0.0 to 1.0 (ISO 17497-2). They are not used in ODEON calculations, and are only shown for informative purposes. These coefficients are optional to include, but if included, they must at least cover the range from 100 Hz to 5000 Hz, otherwise they will be ignored. If coefficients are missing in the 50-80 Hz range and/or the 6300-10000 Hz range, ODEON can extrapolate them from neighboring values.

- From column S and onwards (starting at the dashed line), headers/columns can freely be reordered or removed (even blue headers, such as scattering coefficients). Additional custom headers behaving as red columns can also be added anywhere in this zone. You should not repeat headers with the same name.