# EPD Data Format – Details

## About this document

This document provides additional information for software developers who want to integrate support for the ILCD+EPD data format into their software applications.

## EN 15804 - Modules

The following modules according to EN 15804 are supported:

A1  
A2  
A3  
A1-A3  
A4  
A5  
B1  
B2  
B3  
B4  
B5  
B6  
B7  
C1  
C2  
C3  
C4  
D

These values are binding for use in the @module attribute.

## Physical properties

Physical product or material properties can be modelled by embedding MatML (<http://www.matml.org/>) markup as shown in the examples below.

The following property name identifiers are currently supported for declaring non-scaling material properties (property name like „grammage“ and „gross density“ are binding; there are single spaces between multiple words):

|  |  |  |
| --- | --- | --- |
| **property identifier** | **unit** | **description** |
| *bulk density* | kg/m^3 | kilograms per cubic metre |
| *grammage* | kg/m^2 | kilograms per square metre |
| *gross density* | kg/m^3 | kilograms per cubic metre |
| *layer thickness* | m | metres |
| *productiveness* | m^2 | square metres |
| *linear density* | kg/m | kilograms per metre |
| *conversion factor to 1 kg* |  |  |

The following examples show how to express the individual properties. *(Material)* can be any text and *(Value)* the decimal value with a dot (.) as decimal separator (e.g. *42.1*).

grammage

<mat:MatML\_Doc xmlns:mat="http://www.matml.org/">  
 <mat:Material>  
 <mat:BulkDetails>  
 <mat:Name>***(Material)***</mat:Name>  
 <mat:PropertyData property="pr2">  
 <mat:Data format="float">***(Value)***</mat:Data>  
 </mat:PropertyData>  
 </mat:BulkDetails>  
 </mat:Material>  
 <mat:Metadata>  
<mat:PropertyDetails id="pr2">  
 <mat:Name>grammage</mat:Name>  
 <mat:Units description="kilograms per square metre" name="kg/m^2">  
 <mat:Unit>  
 <mat:Name>kg</mat:Name>  
 </mat:Unit>  
 <mat:Unit power="-2">  
 <mat:Name>m</mat:Name>  
 </mat:Unit>  
 </mat:Units>  
 </mat:PropertyDetails>  
 </mat:Metadata>  
</mat:MatML\_Doc>

gross density

<mat:MatML\_Doc xmlns:mat="http://www.matml.org/">  
 <mat:Material>  
 <mat:BulkDetails>  
 <mat:Name>***(Material)***</mat:Name>  
<mat:PropertyData property="pr1">  
 <mat:Data format="float">***(Value)***</mat:Data>  
 </mat:PropertyData>  
 </mat:BulkDetails>  
 </mat:Material>  
 <mat:Metadata>  
<mat:PropertyDetails id="pr1">  
 <mat:Name>gross density</mat:Name>  
 <mat:Units name="kg/m^3" description="kilograms per cubic metre">  
 <mat:Unit>  
 <mat:Name>kg</mat:Name>  
 </mat:Unit>  
 <mat:Unit power="-3">  
 <mat:Name>m</mat:Name>  
 </mat:Unit>  
 </mat:Units>  
 </mat:PropertyDetails>  
 </mat:Metadata>  
</mat:MatML\_Doc>

bulk density  
  
<mat:MatML\_Doc xmlns:mat="http://www.matml.org/">  
 <mat:Material>  
 <mat:BulkDetails>  
 <mat:Name>***(Material)***</mat:Name>  
 <mat:PropertyData property="pr3">  
 <mat:Data format="float">***(Value)***</mat:Data>  
 </mat:PropertyData>  
 </mat:BulkDetails>  
 </mat:Material>  
 <mat:Metadata><mat:PropertyDetails id="pr3">  
 <mat:Name>bulk density</mat:Name>  
 <mat:Units name="kg/m^3" description="kilograms per cubic metre">  
 <mat:Unit>  
 <mat:Name>kg</mat:Name>  
 </mat:Unit>  
 <mat:Unit power="-3">  
 <mat:Name>m</mat:Name>  
 </mat:Unit>  
 </mat:Units>  
 </mat:PropertyDetails>  
 </mat:Metadata>  
</mat:MatML\_Doc>

layer thickness

<mat:MatML\_Doc xmlns:mat="http://www.matml.org/">  
 <mat:Material>  
 <mat:BulkDetails>  
 <mat:Name>***(Material)***</mat:Name>  
 <mat:PropertyData property="pr4">  
 <mat:Data format="float">***(Value)***</mat:Data>  
 </mat:PropertyData>  
 </mat:BulkDetails>  
 </mat:Material>  
 <mat:Metadata><mat:PropertyDetails id="pr4">  
 <mat:Name>layer thickness</mat:Name>  
 <mat:Units name="m" description="metres">  
 <mat:Unit>  
 <mat:Name>m</mat:Name>  
 </mat:Unit>  
 </mat:Units>  
 </mat:PropertyDetails>  
 </mat:Metadata>  
</mat:MatML\_Doc>

productiveness

<mat:MatML\_Doc xmlns:mat="http://www.matml.org/">  
 <mat:Material>  
 <mat:BulkDetails>  
 <mat:Name>***(Material)***</mat:Name>  
 <mat:PropertyData property="pr5">  
 <mat:Data format="float">***(Value)***</mat:Data>  
 </mat:PropertyData>  
 </mat:BulkDetails>  
 </mat:Material>  
 <mat:Metadata><mat:PropertyDetails id="pr5">  
 <mat:Name>productiveness</mat:Name>  
 <mat:Units name="m^2" description="square metres">  
 <mat:Unit power="2">  
 <mat:Name>m</mat:Name>  
 </mat:Unit>  
 </mat:Units>  
 </mat:PropertyDetails>  
 </mat:Metadata>  
</mat:MatML\_Doc>

linear density

<mat:MatML\_Doc xmlns:mat="http://www.matml.org/">  
 <mat:Material>  
 <mat:BulkDetails>  
 <mat:Name>***(Material)***</mat:Name>  
 <mat:PropertyData property="pr6">  
 <mat:Data format="float">***(Value)***</mat:Data>  
 </mat:PropertyData>  
 </mat:BulkDetails>  
 </mat:Material>  
 <mat:Metadata><mat:PropertyDetails id="pr6">  
 <mat:Name>linear density</mat:Name>  
 <mat:Units name="kg/m" description="kilograms per metre">  
 <mat:Unit>  
 <mat:Name>kg</mat:Name>  
 </mat:Unit>  
 <mat:Unit power="-1">  
 <mat:Name>m</mat:Name>  
 </mat:Unit>  
 </mat:Units>  
 </mat:PropertyDetails>  
 </mat:Metadata>  
</mat:MatML\_Doc>

conversion factor to 1 kg

<mat:MatML\_Doc xmlns:mat="http://www.matml.org/">  
 <mat:Material>  
 <mat:BulkDetails>  
 <mat:Name>***(Material)***</mat:Name>  
 <mat:PropertyData property="pr7">  
 <mat:Data format="float">***(Value)***</mat:Data>  
 </mat:PropertyData>  
 </mat:BulkDetails>  
 </mat:Material>  
 <mat:Metadata><mat:PropertyDetails id="pr7">  
 <mat:Name>conversion factor to 1 kg</mat:Name>  
 <mat:Units name="-" description="none">  
 <mat:Unit>  
 <mat:Name>-</mat:Name>  
 </mat:Unit>  
 </mat:Units>  
 </mat:PropertyDetails>  
 </mat:Metadata>  
</mat:MatML\_Doc>