

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
<i>bulk density</i>	kg/m ³	kilograms per cubic metre
<i>grammage</i>	kg/m ²	kilograms per square metre
<i>gross density</i>	kg/m ³	kilograms per cubic metre
<i>layer thickness</i>	m	metres
<i>productiveness</i>	m ²	square metres
<i>linear density</i>	kg/m	kilograms per metre
<i>conversion factor to 1 kg</i>		

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:PropertyDetails>
  </mat:Metadata>
</mat:MatML_Doc>

```

```

        <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>

```