Additional EPD content required by: BIFMA PCR for Office Furniture Workspace Products

BioEdge® Edgebanding

Data

Background

This product specific declaration was created by collecting product data for $1 \, m^2$ of BioEdge® edgebanding for three reference products, table, kitchenette, and classroom cabinet.

Allocation

The allocation methods used were examined according to the updated allocation rules in ISO 21930:2017 and $% \left({{\rm{s}}_{\rm{s}}} \right)$ were determined to be in conformance; no updates to allocation methods were made.

Scenarios and additional technical information

Cut-off criteria

For the inclusion of mass and energy flows are 1% of renewable primary resource (energy), 1% nonrenewable primary resource (energy) usage, 1% of the total mass input of that unit process, and 1% of environmental impacts. The total of neglected input flows per module does not exceed 5% of energy usage, mass, and environmental impacts. The only exception to these criteria is substances with hazardous and toxic properties, which must be listed even when the given process unit is under the cut-off criterion of 1% of the total mass. No known flows are deliberately excluded from this declaration. Biogenic carbon is included in reported results.

| Table: Resource use | e, output and waste | flows, and carbon | emissions and | removals per | functional un | it |
|----------------------------|---------------------|-------------------|---------------|--------------|---------------|----|
| | · · | | | | | |

| Parameter | Unit | A1-A2 | A3 | Α4 | A5 | B1 | B2 | B3-B7 | C1 | C2 | СЗ | C4 | Total |
|-----------|------|-------|----|----|----|----|----|-------|----|----|----|----|-------|
| | | | | | | | | | | | | | |

Resource use indicators

| Renewable primary energy used as energy carrier (fuel) | MJ, LHV | 7.46E+00 | 7.49E-01 | 6.68E-04 | 6.74E-01 | 0 | 3.39E-01 | 0 | 0 | 2.00E-05 | 0 | 9.00E-04 | 9.22E+00 |
|--|------------|------------|----------|----------|----------|---|----------|---|---|----------|---|----------|----------|
| Renewable primary resources with energy content used as material | MJ, LHV | 4.10E+00 | 1.79E-01 | 0 | 2.14E-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4.49E+00 |
| Total use of renewable primary resources with energy content | MJ, LHV | 1.16E+01 | 9.28E-01 | 6.68E-04 | 8.88E-01 | 0 | 3.39E-01 | 0 | 0 | 2.00E-05 | 0 | 9.00E-04 | 1.37E+01 |
| Non-renewable primary resources used as an energy carrier (fuel) | MJ, LHV | 7.25E+00 | 4.02E+00 | 5.19E-01 | 1.81E+00 | 0 | 2.55E-01 | 0 | 0 | 1.55E-02 | 0 | 2.65E-02 | 1.39E+01 |
| Non-renewable primary resources with energy content used as material | MJ, LHV | 7.59E-01 | 0 | 0 | 3.79E-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7.97E-01 |
| Total use of non-renewable primary resources with energy content | MJ, LHV | 8.01E+00 | 4.02E+00 | 5.19E-01 | 1.84E+00 | 0 | 2.55E-01 | 0 | 0 | 1.55E-02 | 0 | 2.65E-02 | 1.47E+01 |
| Secondary materials | kg | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Renewable secondary fuels | MJ, LHV | 0 | 0 | 0 | o | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Non-renewable secondary fuels | MJ, LHV | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Recovered energy | MJ, LHV | 0 | 0 | 0 | o | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Use of net fresh water resources | m3 | 1.88E+00 | 3.82E-01 | 1.14E-02 | 4.83E-01 | 0 | 3.40E-01 | 0 | 0 | 3.42E-04 | 0 | 1.75E-02 | 3.11E+00 |
| Output flows and wast | e category | y indicate | ors | | | | | | | | | | |
| | | | | | | 0 | | | | | | | |

| Hazardous waste disposed | kg | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
|--|----|----------|----------|----------|----------|---|----------|---|---|----------|---|----------|----------|
| Non-hazardous waste disposed | kg | 1.88E-02 | 4.22E-02 | 0 | 1.11E-02 | 0 | 0 | 0 | 0 | o | 0 | 1.54E-01 | 2.26E-01 |
| High-level radioactive waste, conditioned, to final repository | kg | 6.64E-05 | 1.31E-04 | 1.97E-07 | 2.10E-05 | 0 | 6.19E-06 | 0 | 0 | 5.88E-09 | 0 | 3.64E-07 | 2.26E-04 |
| Intermediate- and low-level radioactive waste, conditioned, to final repository | kg | 2.73E-07 | 1.45E-07 | 7.73E-08 | 5.80E-08 | 0 | 1.33E-08 | 0 | 0 | 2.31E-09 | 0 | 2.00E-09 | 5.72E-07 |
| Components for re-use | kg | 3.98E-04 | 0 | 0 | 1.99E-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4.18E-04 |

| Materials for recycling | kg | 1.02E-02 | 2.95E-05 | 0 | 7.46E-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1.77E-02 |
|-------------------------------|---------|----------|----------|---|----------|---|---|---|---|---|---|---|----------|
| Materials for energy recovery | kg | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exported energy | MJ, LHV | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Carbon emissions and removals

| Biogenic carbon removal from product | kg CO ₂ | 3.77E-01 | 0 | 0 | 1.88E-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3.96E-01 |
|---|--------------------|----------|----------|---|----------|---|---|---|---|----------|---|----------|----------|
| Biogenic carbon emission from product | kg CO ₂ | 3.77E-02 | 5.45E-02 | 0 | 4.61E-03 | 0 | 0 | 0 | 0 | 1.26E-06 | 0 | 2.88E-01 | 3.85E-01 |
| Biogenic carbon removal from packaging | kg CO ₂ | 2.06E-02 | 2.05E-02 | 0 | 2.05E-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4.31E-02 |
| Biogenic carbon emission from packaging | kg CO ₂ | 2.06E-02 | 0 | 0 | 2.16E-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4.21E-02 |
| Biogenic carbon emission from combustion of waste from renewable sources used in production processes | kg CO ₂ | 7.54E-03 | 1.51E-02 | 0 | 1.42E-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2.41E-02 |
| Calcination carbon emissions | kg CO ₂ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Carbonation carbon removals | kg CO ₂ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Carbon emissions from combustion of waste from non-renewable sources used in production processes | kg CO ₂ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Kitchenette: Resource use, output and waste flows, and carbon emissions and removals per functional unit

| Parameter | Unit | A1-A2 | A3 | A4 | A5 | B1 | B2 | B3-B7 | C1 | C2 | С3 | C4 | Total |
|-----------|------|-------|----|----|----|----|----|-------|----|----|----|----|-------|
| | | | | | | | | | | | | | |

Resource use indicators

| Renewable primary energy used as energy carrier (fuel) | MJ, LHV | 4.30E+01 | 4.32E+00 | 3.85E-03 | 3.89E+00 | 0 | 1.95E+00 | 0 | 0 | 1.15E-04 | 0 | 5.19E-03 | 5.32E+01 |
|--|---------|----------|----------|----------|----------|---|----------|---|---|----------|---|----------|----------|
| Renewable primary resources with energy content used as material | MJ, LHV | 2.36E+01 | 1.03E+00 | 0 | 1.23E+00 | 0 | 0 | 0 | 0 | 0 | o | 0 | 2.59E+01 |
| Total use of renewable primary resources with energy content | MJ, LHV | 6.66E+01 | 5.35E+00 | 3.85E-03 | 5.12E+00 | 0 | 1.95E+00 | 0 | 0 | 1.15E-04 | 0 | 5.19E-03 | 7.91E+01 |
| Non-renewable primary resources used as an energy carrier (fuel) | MJ, LHV | 4.18E+01 | 2.32E+01 | 2.99E+00 | 1.04E+01 | 0 | 1.47E+00 | 0 | 0 | 8.95E-02 | 0 | 1.53E-01 | 8.01E+01 |
| Non-renewable primary resources with energy content used as material | MJ, LHV | 4.37E+00 | 0 | 0 | 2.19E-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4.59E+00 |
| Total use of non-renewable primary resources with energy content | MJ, LHV | 4.61E+01 | 2.32E+01 | 2.99E+00 | 1.06E+01 | 0 | 1.47E+00 | 0 | 0 | 8.95E-02 | 0 | 1.53E-01 | 8.47E+01 |
| Secondary materials | kg | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Renewable secondary fuels | MJ, LHV | 0 | 0 | o | 0 | 0 | 0 | 0 | 0 | o | 0 | 0 | 0 |
| Non-renewable secondary fuels | MJ, LHV | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Recovered energy | MJ, LHV | 0 | o | 0 | o | 0 | 0 | 0 | 0 | o | 0 | 0 | 0 |
| Use of net fresh water resources | m3 | 1.08E+01 | 2.20E+00 | 6.59E-02 | 2.78E+00 | 0 | 1.96E+00 | 0 | 0 | 1.97E-03 | 0 | 1.01E-01 | 1.79E+01 |

Output flows and waste category indicators

| Hazardous waste disposed | kg | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
|---|--------------------|----------|----------|----------|----------|---|----------|---|---|----------|---|----------|----------|
| Non-hazardous waste disposed | kg | 1.08E-01 | 2.43E-01 | 0 | 6.40E-02 | 0 | 0 | 0 | 0 | o | 0 | 8.89E-01 | 1.30E+00 |
| High-level radioactive waste, conditioned, to final repository | kg | 3.83E-04 | 7.57E-04 | 1.14E-06 | 1.21E-04 | 0 | 3.57E-05 | 0 | 0 | 3.39E-08 | 0 | 2.10E-06 | 1.30E-03 |
| Intermediate- and low-level radioactive waste, conditioned, to final repository | kg | 1.58E-06 | 8.37E-07 | 4.46E-07 | 3.35E-07 | 0 | 7.68E-08 | 0 | 0 | 1.33E-08 | 0 | 1.15E-08 | 3.30E-06 |
| Components for re-use | kg | 2.29E-03 | 0 | 0 | 1.15E-04 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2.41E-03 |
| Materials for recycling | kg | 5.88E-02 | 1.71E-04 | 0 | 4.30E-02 | 0 | 0 | 0 | 0 | o | 0 | 0 | 1.02E-01 |
| Materials for energy recovery | kg | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exported energy | MJ, LHV | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | o | 0 | 0 | 0 |
| Carbon emissions and | removals | | | | | | | | | | | | |
| Biogenic carbon removal from product | kg CO ₂ | 2.17E+00 | 0 | 0 | 1.09E-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2.28E+00 |
| Biogenic carbon emission from product | kg CO ₂ | 2.17E-01 | 3.14E-01 | 0 | 2.66E-02 | 0 | 0 | 0 | 0 | 7.24E-06 | 0 | 1.66E+00 | 2.22E+00 |
| Biogenic carbon removal from packaging | kg CO ₂ | 1.19E-01 | 1.18E-01 | 0 | 1.18E-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2.49E-01 |
| Biogenic carbon emission from packaging | kg CO ₂ | 1.19E-01 | 0 | 0 | 1.24E-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2.43E-01 |
| Biogenic carbon emission from combustion of waste from renewable sources used in production processes | kg CO ₂ | 4.35E-02 | 8.73E-02 | 0 | 8.20E-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1.39E-01 |
| Calcination carbon emissions | kg CO ₂ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Carbonation carbon removals | kg CO ₂ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Carbon emissions from combustion of waste from non-renewable sources used in production processes | kg CO ₂ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Classroom cabinet: Resource use, output and waste flows, and carbon emissions and removals per functional unit

| Parameter | Unit | A1-A2 | A3 | Α4 | A5 | B1 | B2 | B3-B7 | C1 | C2 | СЗ | C4 | Total |
|------------------------|------|-------|----|----|----|----|----|-------|----|----|----|----|-------|
| Resource use indicator | ſS | | | | | | | | | | | | |

| | - | | | | | | | | | | | | |
|--|---------|----------|----------|----------|----------|---|----------|---|---|----------|---|----------|----------|
| Renewable primary energy used as energy carrier (fuel) | MJ, LHV | 3.33E+01 | 3.35E+00 | 2.99E-03 | 3.02E+00 | 0 | 1.51E+00 | 0 | 0 | 8.92E-05 | 0 | 4.02E-03 | 4.12E+01 |
| Renewable primary resources with energy content used as material | MJ, LHV | 1.83E+01 | 8.00E-01 | 0 | 9.56E-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2.01E+01 |
| Total use of renewable primary resources with energy content | MJ, LHV | 5.17E+01 | 4.15E+00 | 2.99E-03 | 3.97E+00 | 0 | 1.51E+00 | 0 | 0 | 8.92E-05 | 0 | 4.02E-03 | 6.13E+01 |
| Non-renewable primary resources used as an energy carrier (fuel) | MJ, LHV | 3.24E+01 | 1.80E+01 | 2.32E+00 | 8.08E+00 | 0 | 1.14E+00 | 0 | 0 | 6.94E-02 | 0 | 1.19E-01 | 6.21E+01 |
| Non-renewable primary resources with energy content used as material | MJ, LHV | 3.39E+00 | 0 | 0 | 1.70E-01 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3.56E+00 |
| Total use of non-renewable primary resources with energy content | MJ, LHV | 3.58E+01 | 1.80E+01 | 2.32E+00 | 8.25E+00 | 0 | 1.14E+00 | 0 | 0 | 6.94E-02 | 0 | 1.19E-01 | 6.57E+01 |
| Secondary materials | kg | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Renewable secondary fuels | MJ, LHV | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Non-renewable secondary fuels | MJ, LHV | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Recovered energy | MJ, LHV | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Use of net fresh water resources | m3 | 8.40E+00 | 1.71E+00 | 5.11E-02 | 2.16E+00 | 0 | 1.52E+00 | 0 | 0 | 1.53E-03 | 0 | 7.81E-02 | 1.39E+01 |

Output flows and waste category indicators

| Hazardous waste disposed | kg | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
|--|---------|----------|----------|----------|----------|---|----------|---|---|----------|---|----------|----------|
| Non-hazardous waste disposed | kg | 8.40E-02 | 1.89E-01 | 0 | 4.96E-02 | 0 | 0 | 0 | 0 | 0 | 0 | 6.89E-01 | 1.01E+00 |
| High-level radioactive waste, conditioned, to final repository | kg | 2.97E-04 | 5.87E-04 | 8.80E-07 | 9.40E-05 | 0 | 2.77E-05 | 0 | 0 | 2.63E-08 | 0 | 1.63E-06 | 1.01E-03 |
| Intermediate- and low-level radioactive waste, conditioned, to final repository | kg | 1.22E-06 | 6.49E-07 | 3.46E-07 | 2.59E-07 | 0 | 5.96E-08 | 0 | 0 | 1.03E-08 | 0 | 8.95E-09 | 2.56E-06 |
| Components for re-use | kg | 1.78E-03 | 0 | 0 | 8.89E-05 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1.87E-03 |
| Materials for recycling | kg | 4.56E-02 | 1.33E-04 | o | 3.33E-02 | 0 | 0 | 0 | 0 | o | 0 | 0 | 7.91E-02 |
| Materials for energy recovery | kg | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Exported energy | MJ, LHV | 0 | 0 | 0 | 0 | 0 | o | 0 | 0 | 0 | 0 | 0 | 0 |

Carbon emissions and removals

| Biogenic carbon removal from product | kg CO ₂ | 1.69E+00 | 0 | 0 | 8.43E-02 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1.77E+00 |
|---|--------------------|----------|----------|---|----------|---|---|---|---|----------|---|----------|----------|
| Biogenic carbon emission from product | kg CO ₂ | 1.69E-01 | 2.44E-01 | 0 | 2.06E-02 | 0 | 0 | 0 | 0 | 5.61E-06 | 0 | 1.29E+00 | 1.72E+00 |
| Biogenic carbon removal from packaging | kg CO ₂ | 9.19E-02 | 9.18E-02 | 0 | 9.19E-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1.93E-01 |
| Biogenic carbon emission from packaging | kg CO ₂ | 9.19E-02 | 0 | 0 | 9.64E-02 | 0 | 0 | 0 | 0 | 0 | 0 | o | 1.88E-01 |
| Biogenic carbon emission from combustion of waste from renewable sources used in production processes | kg CO ₂ | 3.37E-02 | 6.77E-02 | 0 | 6.36E-03 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1.08E-01 |
| Calcination carbon emissions | kg CO ₂ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Carbonation carbon removals | kg CO ₂ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Carbon emissions from combustion of waste from non-renewable sources used in production processes | kg CO ₂ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |