

ENVIRONMENTAL LABELING CRITERIA FOR GLASS PRODUCTS

ARTICLE 1- These criteria have been established under the Environmental Label Regulation dated 19.10.2018 and numbered 30570.

ARTICLE 2- 'Glass products' covers the following sub-product groups:

- a) Float glass products: Flat, transparent soda lime silicate glass products manufactured by continuous casting and floatation technique.
- b) Glass packaging products: Bottles and jars in various volumes and colours used in the fields of food, alcoholic and non-alcoholic beverages, pharmaceuticals, and personal care.
- c) Glassware products: All glassware products produced by hand or automated production.

The following products are not included in the 'glass products' product group:

- Solar glasses
- Home appliance glasses
- Automotive glasses
- Mirrors
- Glass fibre

ARTICLE 3- In order for the products in the 'glass' product group to be awarded the Environmental Label within the scope of the Environmental Label Regulation, the criteria specified in this document must be fulfilled.

ARTICLE 4- The Environmental Label criteria as well as assessment and verification requirements established for the product group of 'glass' will be valid for 5 (five) years. The criteria may be updated within a five-year period when deemed necessary by the Environmental Labelling Board. The period of validity of the criteria may be extended based on the approval of the Environmental Labelling Board.

Assessment and Verification Requirements

The specific assessment and verification requirements are indicated within each criterion.

Where the applicant is required to provide declarations, documentation, analyses, test reports or other evidence to show compliance with the criteria, these may originate from the applicant and/or its supplier/suppliers and/or their supplier/suppliers in accordance with the current situation.

Where appropriate, test methods other than those indicated for each criterion may be used if the Ministry accepts their equivalence.

The Ministry recognizes the tests performed by laboratories accredited by an accreditation body that is a party to the International Laboratory Accreditation Association (ILAC) - Mutual Recognition Agreement (MRA) according to TS EN ISO/IEC 17025. TÜRKAK accredited organizations can be accessed at <https://secure.turkak.org.tr/kapsam/search>. TS EN ISO/IEC 17025 accreditation condition is not required if it is documented that there is no accredited organization for the test method, which is mandatory within the scope of evaluation and verification requirements.

When generating data on the classification of substances or mixtures, the provisions of the "Regulation on the Test Methods to be Applied in the Determination of the Physico-Chemical, Toxicological and Ecotoxicological Properties of Substances and Mixtures" published in the second repeated Official Gazette dated 11.12.2013 and numbered 28848 or methods that have been validated in accordance with internationally recognized scientific principles or international procedures should be considered.

The applicant must have fulfilled the necessary obligations under the Environmental Law and the current legislation that came into force pursuant to this law. Accordingly, the applicant is obliged to submit other documents required by the Ministry, such as the EIA Decision, Environmental Permit and License Certificate, Zero Waste Certificate, etc.

Where appropriate, the Ministry may require supporting information/documentation and may carry out independent verification.

CRITERIA

I. Criteria for Float Glass Products

Criterion 1. Raw Material Extraction Management

The requirements indicated in Table 1 must be met for extraction activities for raw materials used in the production of float glass.

Table 1. Required Documents for Float Glass Production Raw Material Extraction Activities

Requirements
1. "EIA Positive" Decision, "EIA Not Required" Decision or EIA Opinion
2. Topographic map and satellite image showing the location of the raw material field (quarry)
3. License to Start and Operate a Business
4. Operating License
5. Reclamation Plan

Assessment and verification: The applicant will provide relevant data and documents, including a map of the area. If the mining activity related to the supply of raw materials is not directly managed by the producer, the necessary documents should be submitted by requesting from the enterprise from which the raw material is procured.

The "Reclamation Plan" should be prepared within the framework of the "Reclamation of Land Degraded by Mining Activities" which was published in the Official Gazette dated 23.01.2010 and numbered 27471.

Criterion 2. Selection of Raw Materials

The requirements listed below apply to both raw and secondary or recovered materials used in manufacturing processes as well as semi-finished products (mixtures) purchased.

Criterion 2.1. Hazard Statements That Raw Materials Should Not Have

In the float glass production or application process, substances or mixtures classified with one of the following or combinations of the hazard statements included in the "Regulation on Classification, Labelling and Packaging of Substances and Mixtures" published in the Official Gazette dated 11.12.2013 and numbered 28848, cannot be found in the float glass product more than 0.1% by weight:

H340 (May cause genetic defects)

H341 (Suspected of causing genetic defects)

H350 (May cause cancer)

H350i (May cause cancer by inhalation)

H360F (May damage fertility)

H360D (May damage the unborn child)

H360FD (May damage fertility. May damage the unborn child)

H360Fd (May damage fertility. Suspected of damaging the unborn child)

H360Df (May damage the unborn child. Suspected of damaging fertility)

H361d (Suspected of damaging the unborn child)

H361f (Suspected of damaging fertility)

H361fd (Suspected of damaging fertility. Suspected of damaging the unborn child)

H400 (Very toxic to aquatic life)

H410 (Very toxic to aquatic life with long-lasting effects)

H411 (Toxic to aquatic life with long-lasting effects)

H412 (Harmful to aquatic life with long-lasting effects)

H413 (May cause long-lasting harmful effects to aquatic life)

Assessment and verification: The applicant must submit safety data sheets for all substances to control the hazard statements of all substances used in the product. In this declaration, the provisions of the "Regulation on Classification, Labelling and Packaging of Substances and Mixtures" which entered into force by being published in the Official Gazette No. 28848 on 11 December 2013, should be taken into account.

Criterion 2.2. Use of External Cullet as Raw Material

Among the raw materials used in the production of float glass, there should be the cullet obtained externally, and it should be used not less than 3% on the basis of the weight of the glass product.

Assessment and verification: The applicant, together with the declaration of compliance with the criteria stated above, must provide the raw material blend recipe and information on the amount of externally supplied cullet used, the supporting documentation (external cullet slip/invoice, etc.), and the calculation showing the ratio of external cullet per kg product weight.

Criterion 3. Production Process

Criterion 3.1. Recycling of Internal Cullet Generated During the Production Process

At least 99% of the internal cullet generated during the float glass production process must be recycled and used in production.

Assessment and verification: The applicant, together with the declaration of compliance with the criteria mentioned above, must submit a calculation based on the mass-balance tables showing the raw material blend recipe, the technical details of the cullet collection system for the plant, and the ratios of cullet recycled through this system in a given production period.

Criterion 3.2. Energy Consumption

In float glass production, the energy consumed in all processes should not exceed the "7.5 MJ/kg glass product" limit value.

Assessment and verification: The applicant must provide the results and supporting documents (natural gas bill, electricity bill, etc.) by calculating the energy consumption per 1 kg of product according to the instructions in "Technical Annex for Glass Products – E1". In float glass products that require additional process steps (laminated glass, coated glass, etc.), the energy consumption of additional process steps should not be included.

Criterion 3.3. Air Emissions

The dust (particulate matter) concentration in the emission released to the air from the raw material preparation process should not exceed 5 mg/Nm³.

Assessment and verification: The applicant must provide the relevant calculation and test reports.

Emissions released from the furnace to the air during the melting process should not exceed the limit values given in Table 2.

Table 2. Float Glass Production Melting Furnace Air Emission Limit Values¹

Suggested Parameters		Limit Value (mg/Nm ³)	Limit Value (mg/kg melted glass)
Nitrogen oxides (as NO ₂)		<800	<2000
Sulphur oxides (as SO ₂)	Natural gas	<500	<1250
	Fuel oil	<1300	<3250
Particulate matter		<20	<50
HCl		<25	<62.5
HF		<4	<10
Σ (As, Co, Ni, Cd, Se, Cr _{VI})*		<1 ¹	<2.5
Σ(As, Co, Ni, Cd, Se, Cr _{VI} , Sb, Pb, Cr _{III} , Cu, Mn, V, Sn)*		<5	<12.5
Se (for coloured glass)		<3	<7.5

* Not applicable for float glass products coloured with selenium

Assessment and verification: The applicant must provide appropriate documentation, test reports, and calculation for each emission parameter indicated above, following the approach/methods set out in the “Glass Products Technical Annex – E2”.

Criterion 4. Waste Management

Float glass production facilities must have waste management plans, including the recycling and/or disposal of wastes arising from production, and the waste management plan must comply with the Waste Management Regulation, which was published in the Official Gazette dated 02.04.2015 and numbered 29314.

Assessment and verification: For the relevant sites, the applicant must submit the waste management plan prepared within the scope of the "Waste Management Regulation" which was published in the Official Gazette dated 02.04.2015 and numbered 29314.

Criterion 5. Packaging

The materials used for packaging the float glass product must be suitable for reuse or recycling or must be made of 70% by weight recycled material.

Assessment and verification: The applicant must provide a copy of the product packaging together with a declaration of conformity corresponding to all requirements.

Criterion 6. Fitness for Use

The float glass product must comply with the relevant TSE, ISO, CEN or equivalent standard according to its suitability for use, and the performance values declared for the intended use must also meet national requirements.

Assessment and verification: Together with the details and results of test procedures, a declaration of fitness for use should be provided on the basis of all other information regarding best practices for the end-user. According to the Construction Products Regulation (305/2011/EU), a construction material is considered to be suitable for use, provided that it complies with the relevant harmonized standard or a European Technical Assessment, the declared performance values for its intended use also meet national requirements and do not contradict the legislation. Mark of conformity for building materials; 'CE' provides manufacturers with an easily recognizable attestation of conformity and is considered adequate in this context.

¹ Best Available Techniques (BAT) Reference Document for the Manufacture of Glass (2013)

Criterion 7. User Information

Relevant user information about the product, its proper and best general and technical use, as well as its storage should be included on the packaging and/or in the documentation accompanying the product.

Assessment and verification: The applicant must provide a copy of the packaging and/or the label information placed on the packaging.

Criterion 8. Information Appearing on the Environmental Label

An Environmental Label with the dimensions of 5x5 cm will be placed on the product packaging. The following information will be placed on the product along with the environmental label:

- a. Document number in 10-point font below the label
- b. "The use of Environmental Label in this product has been approved by the Ministry of Environment, Urbanisation and Climate Change in accordance with the Environmental Label Regulation published in the Official Gazette dated 19.10.2018 and numbered 30570 due to its environmental performance." statement should be included.

Assessment and verification: The applicant must provide a copy of the product packaging and/or the text placed inside the packaging.

II. Criteria for Glass Packaging Products

Criterion 1. Raw Material Extraction Management

The requirements indicated in Table 3 must be met for extraction activities for raw materials used in the production of glass packaging.

Table 3. Required Documents for Glass Packaging Production Raw Material Extraction Activities

Requirements
1. "EIA Positive" Decision, "EIA Not Required" Decision or EIA Opinion
2. Topographic map and satellite image showing the location of the raw material field (quarry)
3. License to Start and Operate a Business
4. Operating License
5. Reclamation Plan

Assessment and verification: The applicant will provide relevant data and documents, including a map of the area. If the mining activity related to the supply of raw materials is not directly managed by the producer, the necessary documents should be submitted by requesting from the enterprise from which the raw material is procured.

The "Reclamation Plan" should be prepared within the framework of the "Reclamation of Land Degraded by Mining Activities" which was published in the Official Gazette dated 23.01.2010 and numbered 27471.

Criterion 2. Selection of Raw Materials

The requirements listed below apply to both raw and secondary or recovered materials used in manufacturing processes as well as semi-finished products (mixtures) purchased.

Criterion 2.1. Hazard Statements That Raw Materials Should Not Have

In the glass packaging production or application process, substances or mixtures classified with one of the following or combinations of the hazard statements included in the "Regulation on Classification, Labelling and Packaging of Substances and Mixtures" published in the Official Gazette dated 11/12/2013 and numbered 28848, cannot be found in the glass packaging product more than 0.1% by weight:

H340 (May cause genetic defects)

H341 (Suspected of causing genetic defects)

H350 (May cause cancer)

H350i (May cause cancer by inhalation)

H360F (May damage fertility)

H360D (May damage the unborn child)

H360FD (May damage fertility. May damage the unborn child)

H360Fd (May damage fertility. Suspected of damaging the unborn child)

H360Df (May damage the unborn child. Suspected of damaging fertility)

H361d (Suspected of damaging the unborn child)

H361f (Suspected of damaging fertility)

H361fd (Suspected of damaging fertility. Suspected of damaging the unborn child)

H400 (Very toxic to aquatic life)

H410 (Very toxic to aquatic life with long lasting effects)

H411 (Toxic to aquatic life with long lasting effects)

H412 (Harmful to aquatic life with long lasting effects)

H413 (May cause long lasting harmful effects to aquatic life)

Assessment and verification: The applicant must submit safety data sheets for all substances to control the hazard statements of all substances used in the product. In this declaration, the provisions of the "Regulation on Classification, Labelling and Packaging of Substances and Mixtures" which entered into force by being published in the Official Gazette No. 28848 on 11 December 2013, should be taken into account.

Criterion 2.2. Use of External Cullet as Raw Material

Among the raw materials used in the production of glass packaging, there should be the cullet obtained externally, and the amount per 1 kg of glass product should comply with the limit values given in Table 4.

Table 4. The Amount of External Cullet in Glass Packaging Production

Glass packaging colour	External cullet amount (% external cullet in 1 kg glass packaging)
Flint (Colourless)	≥ %20
Amber	≥ %40
Others	≥ %70

Assessment and verification: The applicant, together with the declaration of compliance with the criteria stated above, must provide the raw material blend recipe and information on the amount of externally supplied cullet used, the supporting documentation (external cullet slip/invoice, etc.), and the

calculation showing the ratio of external cullet per kg product weight.

Criterion 3. Production Process

Criterion 3.1. Recycling of Internal Cullet Generated During the Production Process

At least 99% of the internal cullet generated during the glass packaging production process must be recycled and used in production.

Assessment and verification: The applicant, together with the declaration of compliance with the criteria mentioned above, must submit a calculation based on the mass-balance tables showing the raw material blend recipe, the technical details of the cullet collection system for the plant, and the ratios of cullet recycled through this system in a given production period.

Criterion 3.2. Energy Consumption

In glass packaging production, the energy consumed in all processes should not exceed the “7.7 MJ/kg glass product” limit value.

Assessment and verification: The applicant must provide the results and supporting documents (natural gas bill, electricity bill, etc.) by calculating the energy consumption per 1 kg of product according to the “Technical Annex for Glass Products – E1” instructions.

Criterion 3.3. Air Emissions

The dust (particulate matter) concentration in the emission released to the air from the raw material preparation process should not exceed 5 mg/Nm³.

Assessment and verification: The applicant must provide the relevant calculation and test reports.

Emissions released from the furnace to the air during the melting process should not exceed the limit values given in Table 5.

Table 5. Glass Packaging Production Melting Furnace Air Emission Limit Values²

Suggested Parameters		Limit Value (mg/Nm ³)	Limit Value (mg/kg melted glass)
Nitrogen oxides (as NO ₂)		<800	<1200
Sulphur oxides (as SO ₂)	Natural gas	<500	<750
	Fuel oil	1200	1800
Particulate matter		<20	<60
HCl		<20	<30
HF		<5	<8
Σ (As, Co, Ni, Cd, Se, Cr _{VI})		<1*	<1.5
Σ(As, Co, Ni, Cd, Se, Cr _{VI} , Sb, Pb, Cr _{III} , Cu, Mn, V, Sn)		<5	<7.5

* When Se compounds are used for decolourization of the glass, the limit value is taken as 3 mg/Nm³.

Assessment and verification: The applicant must provide appropriate documentation, test reports, and calculation for each emission parameter indicated above, following the approach/methods set out in the “Glass Products Technical Annex – E2”.

² Best Available Techniques (BAT) Reference Document for the Manufacture of Glass (2013)

Criterion 4. Waste Management

Glass packaging production facilities must have waste management plans, including the recycling and/or disposal of wastes arising from production, and the waste management plan must comply with the Waste Management Regulation, which was published in the Official Gazette dated 02/04/2015 and numbered 29314.

Assessment and verification: For the relevant sites, the applicant must submit the waste management plan prepared within the scope of the "Waste Management Regulation" which was published in the Official Gazette dated 02/04/2015 and numbered 29314.

Criterion 5. Packaging

The materials used for packaging the glass packaging product must be suitable for reuse or recycling or must be made of 70% by weight recycled material.

Assessment and verification: The applicant must provide a copy of the product packaging together with a declaration of conformity corresponding to all requirements.

Criterion 6. Fitness for Use

The glass packaging product must comply with the relevant TSE, ISO, CEN or equivalent standard according to its suitability for use, and the performance values declared for the intended use must also meet national requirements.

Assessment and verification: Together with the details and results of test procedures, a declaration of fitness for use should be provided on the basis of all other information regarding best practices for the end-user.

Criterion 7. User Information

Relevant user information about the product, its proper and best general and technical use, as well as its storage should be included on the packaging and/or in the documentation accompanying the product.

Assessment and verification: The applicant must provide a copy of the packaging and/or the label information placed on the packaging.

Criterion 8. Information Appearing on the Environmental Label

An Environmental Label with the dimensions of 5x5 cm will be placed on the product packaging. The following information should be included with the Environmental Label.

- a. 10-point document number below the label
- b. "The use of Environmental Label in this product has been approved by the Ministry of Environment, Urbanisation and Climate Change in accordance with the Environmental Label Regulation published in the Official Gazette dated 19.10.2018 and numbered 30570 due to its environmental performance." statement should be included.

Assessment and verification: The applicant must provide a copy of the product packaging and/or the text placed inside the packaging.

III. Criteria for Glassware Products

Criterion 1. Raw Material Extraction Management

The requirements indicated in Table 6 must be met for extraction activities for raw materials used in the production of glassware.

Table 6. Required Documents for Glassware Production Raw Material Extraction Activities

Requirements
1. "EIA Positive" Decision, "EIA Not Required" Decision or EIA Opinion
2. Topographic map and satellite image showing the location of the raw material field (quarry)
3. License to Start and Operate a Business
4. Operating License
5. Reclamation Plan

Assessment and verification: The applicant will provide relevant data and documents, including a map of the area. If the mining activity related to the supply of raw materials is not directly managed by the producer, the necessary documents should be submitted by requesting from the enterprise from which the raw material is procured.

The "Reclamation Plan" should be prepared within the framework of the "Reclamation of Land Degraded by Mining Activities" which was published in the Official Gazette dated 23.01.2010 and numbered 27471.

Criterion 2. Selection of Raw Materials

The requirements listed below apply to both raw and secondary or recovered materials used in manufacturing processes as well as semi-finished products (mixtures) purchased.

Criterion 2.1. Hazard Statements Raw Materials Should Not Have

In the glassware production or application process, substances or mixtures classified with one of the following or combinations of the hazard statements included in the "Regulation on Classification, Labeling and Packaging of Substances and Mixtures" published in the Official Gazette dated 11/12/2013 and numbered 28848, cannot be found in the glassware product more than 0.1% by weight:

H340 (May cause genetic defects)

H341 (Suspected of causing genetic defects)

H350 (May cause cancer)

H350i (May cause cancer by inhalation)

H360F (May damage fertility)

H360D (May damage the unborn child)

H360FD (May damage fertility. May damage the unborn child)

H360Fd (May damage fertility. Suspected of damaging the unborn child)

H360Df (May damage the unborn child. Suspected of damaging fertility)

H361d (Suspected of damaging the unborn child)

H361f (Suspected of damaging fertility)

H361fd (Suspected of damaging fertility. Suspected of damaging the unborn child)

H400 (Very toxic to aquatic life)

H410 (Very toxic to aquatic life with long lasting effects)

H411 (Toxic to aquatic life with long lasting effects)

H412 (Harmful to aquatic life with long lasting effects)

H413 (May cause long lasting harmful effects to aquatic life)

Assessment and verification: The applicant must submit safety data sheets for all substances to control the hazard statements of all substances used in the product. In this declaration, the provisions of the "Regulation on Classification, Labelling and Packaging of Substances and Mixtures" which entered into force by being published in the Official Gazette No. 28848 on 11 December 2013, should be taken into account.

Criterion 2.2. Use of External Cullet as Raw Material

Among the raw materials used in the production of glassware, there should be the cullet obtained externally, and it should be used not less than 20% on the basis of the weight of the glass product.

Assessment and verification: The applicant, together with the declaration of compliance with the criteria stated above, must provide the raw material blend recipe and information on the amount of externally supplied cullet used, the supporting documentation (external cullet slip/invoice, etc.), and the calculation showing the ratio of external cullet per kg product weight.

Criterion 3. Production Process

Criterion 3.1. Recycling of Internal Cullet Generated During the Production Process

At least 99% of the internal cullet generated during the glassware production process must be recycled and used in production.

Assessment and verification: The applicant, together with the declaration of compliance with the criteria mentioned above, must submit a calculation based on the mass-balance tables showing the raw material blend recipe, the technical details of the cullet collection system for the plant, and the ratios of cullet recycled through this system in a given production period.

Criterion 3.2. Energy Consumption

In glassware production, the energy consumed in all processes should not exceed the "20 MJ/kg glass product" limit value.

Assessment and verification: The applicant must provide the results and supporting documents (natural gas bill, electricity bill, etc.) by calculating the energy consumption per 1 kg of product according to the "Technical Annex for Glass Products – E1" instructions.

Criterion 3.3. Air Emissions

The dust (particulate matter) concentration in the emission released to the air from the raw material preparation process should not exceed 5 mg/Nm³.

Assessment and verification: The applicant must provide the relevant calculation and test reports.

Emissions released from the furnace to the air during the melting process should not exceed the limit values given in Table 7.

Table 7. Glassware Production Melting Furnace Air Emission Limit Values³

Suggested Parameters		Limit Value (mg/Nm ³)	Limit Value (mg/kg melted glass)
Nitrogen oxides (as NO ₂)		<1500	<3750
Sulphur oxides (as SO ₂)	Natural gas	<300	<750
	Fuel oil	<1000	<250
	Electricity	<100	<25
Particulate matter		<20	<60

³ Best Available Techniques (BAT) Reference Document for the Manufacture of Glass (2013)

HCl	<20	<60
HF	<5	<15
Σ (As, Co, Ni, Cd, Se, Cr _{VI})*	1	3
Σ (As, Co, Ni, Cd, Se, Cr _{VI} , Sb, Pb, Cr _{III} , Cu, Mn, V, Sn)*	<5	<15
Se**	<1	<3

* Except for glasses where selenium compounds are used for decolorization.

** When Se compounds are used for decolourization of the glass.

Assessment and verification: The applicant must provide appropriate documentation, test reports, and calculation for each emission parameter indicated above, following the approach/methods set out in the “Glass Products Technical Annex – E2”.

Criterion 4. Waste Management

Glassware production facilities must have waste management plans, including the recycling and/or disposal of wastes arising from production, and the waste management plan must comply with the Waste Management Regulation, which was published in the Official Gazette dated 02/04/2015 and numbered 29314.

Assessment and verification: For the relevant sites, the applicant must submit the waste management plan prepared within the scope of the "Waste Management Regulation" which was published in the Official Gazette dated 02/04/2015 and numbered 29314.

Criterion 5. Packaging

The materials used for packaging the glassware product must be suitable for reuse or recycling or must be made of 70% by weight recycled material.

Assessment and verification: The applicant must provide a copy of the product packaging together with a declaration of conformity corresponding to all requirements.

Criterion 6. Fitness for Use

The glassware product must comply with the relevant TSE, ISO, CEN or equivalent standard according to its suitability for use, and the performance values declared for the intended use must also meet national requirements.

Assessment and verification: Together with the details and results of test procedures, a declaration of fitness for use should be provided on the basis of all other information regarding best practices for the end-user.

Criterion 7. User Information

Relevant user information about the product, its proper and best general and technical use, as well as its storage should be included on the packaging and/or in the documentation accompanying the product.

Assessment and verification: The applicant must provide a copy of the packaging and/or the label information placed on the packaging.

Criterion 8. Information Appearing on the Environmental Label

An Environmental Label with the dimensions of 5x5 cm will be placed on the product packaging. The following information will also be placed on the product along with the environmental label:

- c. Document number in 10-point font and number below the label

- d. “The use of Environmental Label in this product has been approved by the Ministry of Environment, Urbanisation and Climate Change in accordance with the Environmental Label Regulation published in the Official Gazette dated 19.10.2018 and numbered 30570 due to its environmental performance.” statement should be included.

Assessment and verification: The applicant must provide a copy of the product packaging and/or the text placed inside the packaging.

TECHNICAL ANNEX FOR GLASS PRODUCTS

E1 – Energy Consumption Calculation

In the calculations of the energy consumption per 1 kg of product in sub-product groups of float glass/glass packaging/glassware for which Environmental Label application is made, the energy resources used in all production processes for the relevant product are taken into account. The energy units are converted to MJ by using the lower calorific values of the fuels given in Annex 2 of the "Regulation on Increasing the Efficiency in the Use of Energy Resources and Energy" (Table E 1). In case of the use of other fuels, the calorific value used for energy calculation is indicated. Electricity refers to the net electricity imported from the grid and internal electricity production measured as electrical energy. In the calculation of energy consumption, all energy streams entering all process components for the production are taken into account.

Production Period	Start Date		End Date		
Float Glass / Packaging Glass / Glassware Production (kg)					
Fuel type	Density	Consumption Amount	Unit	Conversion Factor	Energy (MJ)
Natural gas	0.670 kg/m ³		Nm ³	34.5	
LPG			kg	45.6	
LPG	2.477 kg/m ³		Nm ³	113.0	
Gasoline fuel			kg	43.5	
Diesel fuel	0.830 kg/L		kg	42.7	
Gas oil	0.780 kg/L		kg	34.7	
Fuel Oil No:4			kg	40.2	
Fuel Oil No:5	0.920 kg/L		kg	41.9	
Fuel Oil No:6	0.940 kg/L		kg	41.3	
Coke			kg	30.1	
Hard coal			kg	25.5	
Coking duff			kg	25.1	
Lignite (for heating and industrial purposes)			kg	12.6	
Elbistan lignite			kg	4.6	
Petroleum coke			kg	31.8	
Naphta			kg	43.5	
Electricity			kWh	3.6	
Total energy (MJ)					
Specific energy consumption (MJ/kg product)					

E2 – Air Emissions

In the calculation of air pollutant emissions, the following approach/method is applied:

- a) Pollutant measurements are carried out by applying the monitoring and measurement methods defined by the "Regulation on the Control of Industrial Air Pollution", which came into force after being published in the Official Gazette dated 03.07.2009 and numbered 27277.
- b) Pollutant concentrations are taken as annual average values calculated over daily averages for continuously measured parameters. For parameters that are not measured continuously, the averages of the measurements defined by the "Regulation on the Control of Industrial Air Pollution" are reported.
- c) The mass flow rate of pollutants is calculated by considering the volumetric flow rate of air emissions and the measured pollutant concentrations.
- d) The mass load of pollutant is calculated per kg weight of the product, taking into account the time during which the production is carried out.
- e) Sampling represents the production evaluated within the scope of the Environmental Label application.