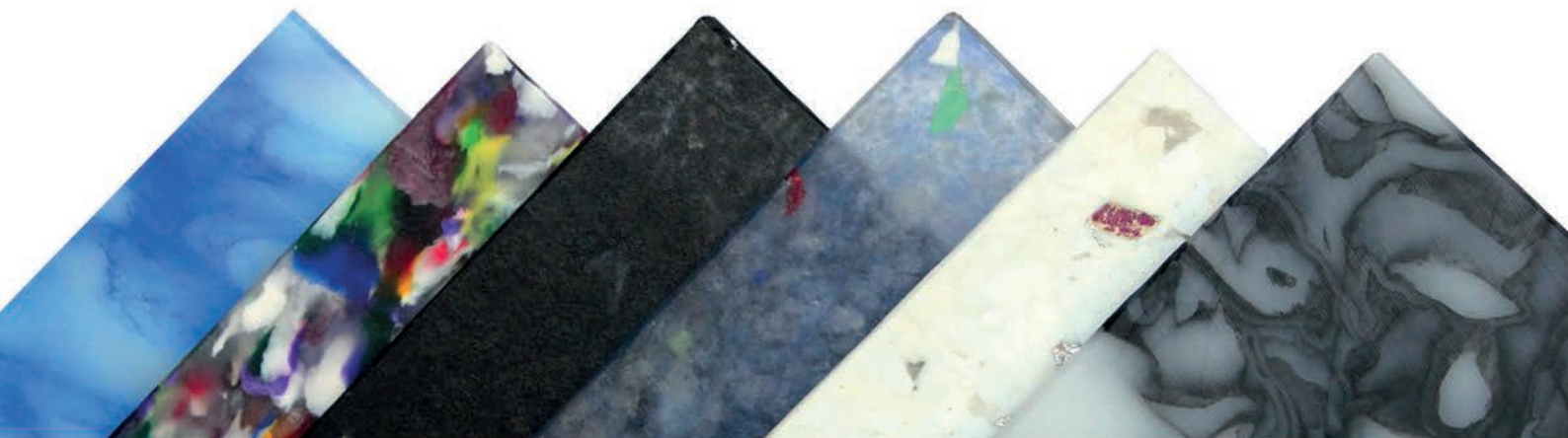


Smile Plastics

Materials guidelines



Smile Plastics

Materials guidelines

Every smile plastics panel is a unique material and is made by hand selected recycled plastics. Although sorted into specific types it can not be guaranteed that each panel is only made of one type of recycled plastics and could be a mixture of different recycled plastics. These different combinations of recycled plastics will greatly affect material properties so the data sheets are only indicative of what our recycled materials may actually perform like.

These data sheets can provide guidelines for how to use Smile Plastics materials but are only indications and may not represent the actual material being used in the products.

No guarantees or warranties can be given or are implied in respect of these guidelines.



Alba

Made from waste yoghurt pots

HIPS

| | Unit | Base | Capping |
|----------------------------------|-------------------|-----------------------|---------|
| Physical | | | |
| Density | g/cm ³ | 1,05 | 1,05 |
| Mechanical | | | |
| Izod Impact Strength (notched) | J/m | 85 | 85 |
| Flexural Strength | MPa | 35 | 35 |
| Tensile Strength | MPa | 20 | 20 |
| Falling Dart Impact Strength | J | 12 | 12 |
| Thermal | | | |
| Vicat Softening Temperature | °C | 95 | 92 |
| Heat Deflection Temperature | °C | 81 | 76 |
| Flammability Rating | | HB | HB |
| Thermal Coefficient of expansion | m/m-K | 80 x 10 ⁻⁶ | |



Charcoal

Made from plastic packaging

PET/PETCOPOLYESTER

| | Unit | |
|--|-------------------|------|
| Physical | | |
| Density | g/cm ³ | 1,27 |
| Mechanical | | |
| Izod Impact Strength | kJ/m ² | 7 |
| Flexural Strength | MPa | 55,3 |
| Tensile Strength (yield) | MPa | 37,1 |
| Tensile Strength (break) | MPa | 18,2 |
| Tensile Modulus of Elasticity | MPa | 1540 |
| Thermal | | |
| Max. service temperature | °C | 65 |
| Vicat Softening Temperature (10N) | °C | 83 |
| Vicat Softening Temperature (50N) | °C | 79 |
| Heat Deflection Temperature A (1.8 MPa) | °C | 68 |
| Heat Deflection Temperature B (0.45 MPa) | °C | 72 |



Kaleido

Made from recycled plastic bottles

PET/PETCOPOLYESTER

| | Unit | |
|--|-------------------|------|
| Physical | | |
| Density | g/cm ³ | 1,27 |
| Mechanical | | |
| Izod Impact Strength | kJ/m ² | 7 |
| Flexural Strength | MPa | 55,3 |
| Tensile Strength (yield) | MPa | 37,1 |
| Tensile Strength (break) | MPa | 18,2 |
| Tensile Modulus of Elasticity | MPa | 1540 |
| Thermal | | |
| Max. service temperature | °C | 65 |
| Vicat Softening Temperature (10N) | °C | 83 |
| Vicat Softening Temperature (50N) | °C | 79 |
| Heat Deflection Temperature A (1.8 MPa) | °C | 68 |
| Heat Deflection Temperature B (0.45 MPa) | °C | 72 |

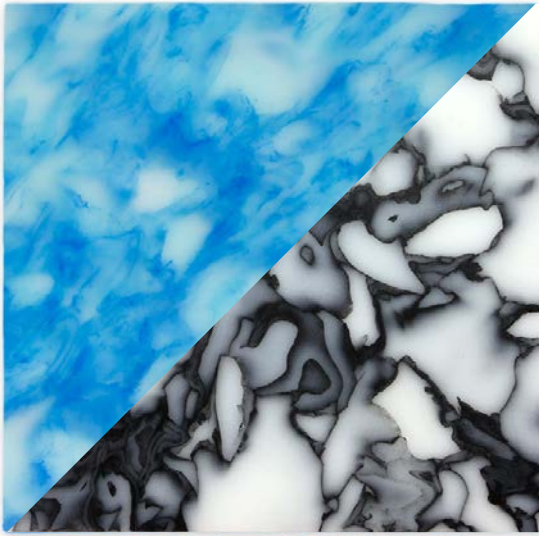


Ocean

Limited Edition material made from plastic packaging

PET/PETCOPOLYESTER

| | Unit | |
|--|-------------------|------|
| Physical | | |
| Density | g/cm ³ | 1,27 |
| Mechanical | | |
| Izod Impact Strength | kJ/m ² | 7 |
| Flexural Strength | MPa | 55,3 |
| Tensile Strength (yield) | MPa | 37,1 |
| Tensile Strength (break) | MPa | 18,2 |
| Tensile Modulus of Elasticity | MPa | 1540 |
| Thermal | | |
| Max. service temperature | °C | 65 |
| Vicat Softening Temperature (10N) | °C | 83 |
| Vicat Softening Temperature (50N) | °C | 79 |
| Heat Deflection Temperature A (1.8 MPa) | °C | 68 |
| Heat Deflection Temperature B (0.45 MPa) | °C | 72 |



Blue/Black Dapple

Made from chopping boards and plastic packaging

HDPE (PE300)

| | Unit | |
|--|-------------------|------------------------|
| Physical | | |
| Density | g/cm ³ | 0,95 |
| Water absorption at saturation in water of 23°C | % | <0,1 |
| Water absorption at saturation in air of 23°C / 50% R.H. | % | <0,1 |
| Mechanical | | |
| Tensile strength at yield and break | MPa | 17 |
| Tensile modulus of elasticity | MPa | 700 |
| Compression test (1% strain after 1,000 hrs) | MPa | 3 |
| Charpy impact strength – Unnotched | kJ/m ² | No break |
| Charpy impact strength – notched | kJ/m ² | No break |
| Ball indentation hardness | N/mm ² | 48 |
| Shore hardness D | D | 62 |
| Thermal | | |
| Melting temperature (DSC, 10°C/min) | °C | 130 |
| Thermal conductivity at 23°C | W/m-K | 0,4 |
| Heat Deflection Temperture A (1.8 MPa) | °C | 44 |
| Heat Deflection Temperture B (0.45 MPa) | °C | 75 |
| Coefficient of linear thermal expansion (23 & 100°C) | m/m-K | 150 x 10 ⁻⁶ |
| Max allowable service temperature in air: | | |
| For short periods | °C | 90 |
| Continuously | °C | 80 |
| Min service temperature | °C | -60 |
| Flammability | | |
| “Oxygen Index” | % | <20 |
| Electrical | | |
| Electrical strength | kV/mm | 45 |
| Volume resistivity | Ω cm | >10 ¹⁴ |
| Surface resistivity | Ohm | >10 ¹² |
| Dissipation factor tan Δ at 1 MHz | | 0.0002 |

Smile Plastics

Reimagined Materials.
Designed to Inspire.