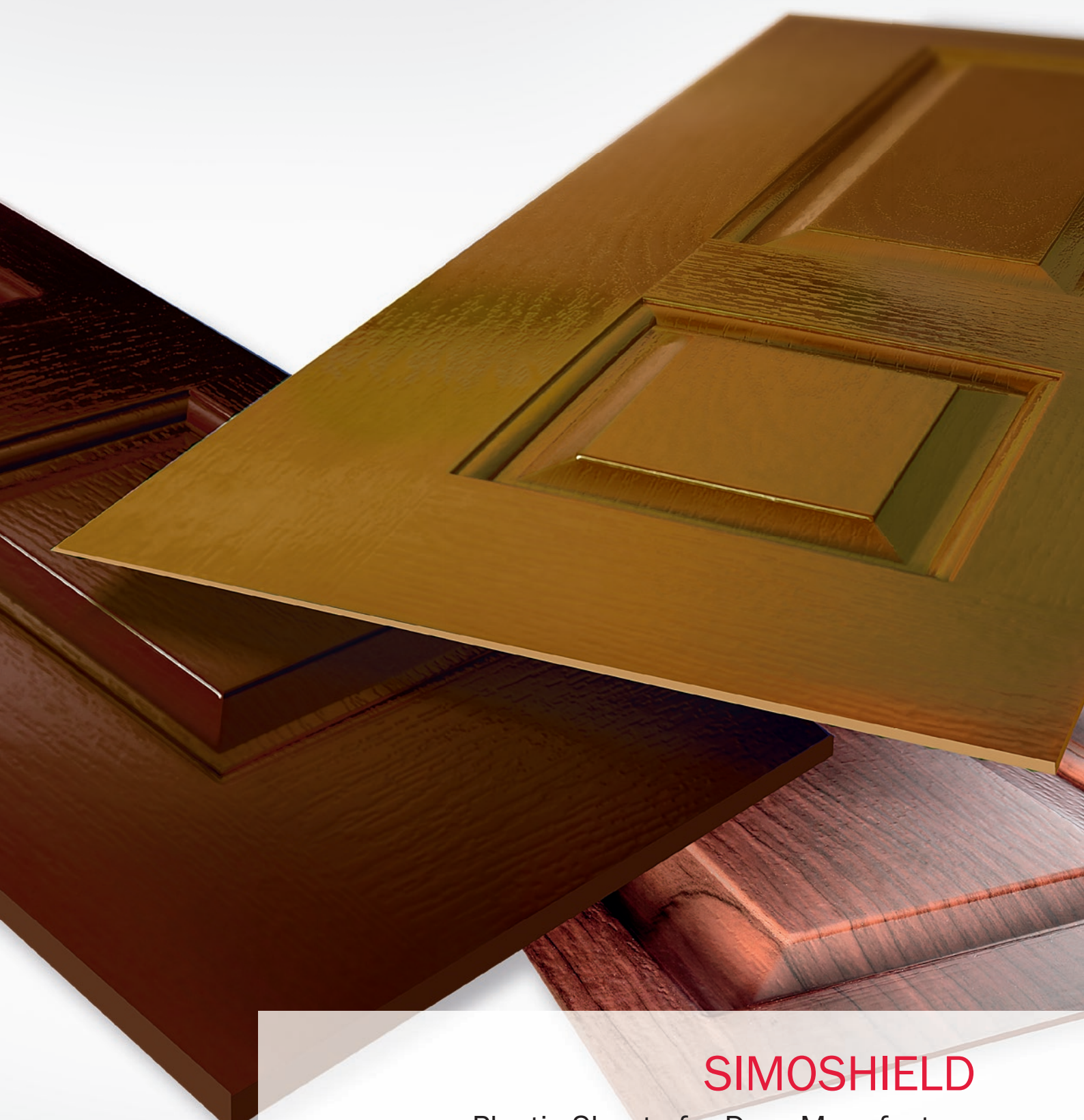


The SIMONA logo is positioned in the top right corner of the page. It consists of the word "SIMONA" in a bold, white, sans-serif font, centered within a solid red rectangular background.

SIMONA

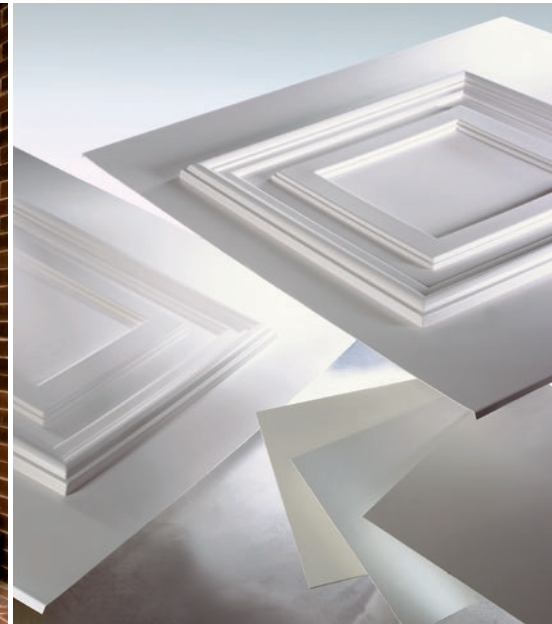


SIMOSHIELD

Plastic Sheets for Door Manufacture

GLOBAL THERMOPLASTIC SOLUTIONS

SIMOSHIELD – Stylish Design, Superb Processing



SIMOSHIELD encompasses a range of PVC-T sheets with a visible and palpable woodgrain finish. They are specially designed for door manufacture.

SIMOSHIELD is produced using an innovative laminating process. The decorative foils are applied to coloured SIMONA® PVC-T sheets during extrusion in a single operation. There is no wood decor to apply afterwards – a significant economic advantage.

Incorporating premium-quality decorative foils by RENOLIT, SIMOSHIELD sheets offer a “protective shield” against UV influences and reduce heat build up. This makes them the perfect choice for outdoor applications.

SIMOSHIELD sheets have outstanding thermoforming properties and are suitable for a wide range of processing methods.

Impressive features

- UV- and weather-resistant
- Minimised risk of cracking and bowing
- Very easy to thermoform
- IR-reflective (decorative sheets)
- High impact resistance
- Low water absorption
- Service temperature range from – 20 °C to + 60 °C
- Cadmium- and lead-free production
- REACH- and RoHS-compliant



Many different fields of application

- Door manufacture by means of thermoforming
- External doors and gates
- Panelling
- Designer articles with a woodgrain look
- Garage doors



+ Minimised risk of cracking and bowing

Sheets made of SIMONA® PVC-T show no signs of thermally induced instability (cracking or bowing) even after lengthy use. This is attributable to the special stability of SIMONA® PVC-T. What is more, the SST foil technology developed by RENOLIT makes SIMOSHIELD particularly heat reflective.

+ Sheets with a sun protection

The decorative foils used for SIMOSHIELD sheets include the Solar Shield Technology (SST) developed by RENOLIT. Therefore, the foiled sheets remain cooler, as well as offering greater dimensional stability and crack resistance to ensure a longer service life.



+ SIMONA's promise of quality

In accordance with our general warranty statements, we give a ten-year warranty on SIMOSHIELD within Europe. For further information, please contact our Technical Service Centre.

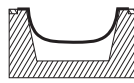


SIMOSHIELD – Specially Designed for Door Manufacture

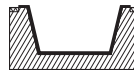


Various methods of thermoforming SIMOSHIELD

Female forming with pneumatic pre-stretching

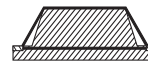


Pneumatically pre-stretched



Vacuum applied

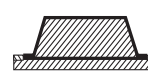
Male forming with mechanical or pneumatic pre-stretching



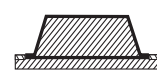
Mechanically pre-stretched



Pneumatically pre-stretched



Vacuum applied



Vacuum applied

Excellent thermoformability

SIMOSHIELD sheets have excellent thermoforming properties and allow a significant reduction in cycle times, ensuring greater economy and superior quality.

SIMOSHIELD sheets may be hot-formed to make thin-walled components as well as large-area components within a wide temperature range. The quality of hot-formed components chiefly depends on uniform warming of the sheets on the thermoforming line, preferably from both sides.

Outstanding benefits

Processing SIMOSHIELD is easy and highly efficient. Even complex shapes and undercuts can be achieved with the thermoforming process.

In sheet production the fine embossed textures of SIMOSHIELD remain highly tactile and visible, even after the thermoforming process. SIMOSHIELD can be thermoformed without pre-drying, provided the sheets have been stored and processed according to our recommendations. These product features represent significant benefits for door manufacturers, as well as delivering added value for end customers.

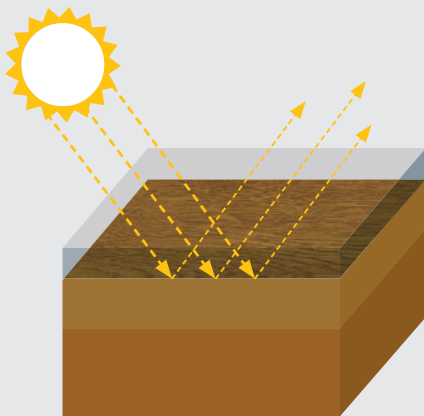
Processing capability

- Thermoforming
- Hot forming
- Glueing
- Die cutting
- Welding
- Laser cutting
- Water-jet cutting
- Sawing
- Screw fixing
- Drilling
- Milling

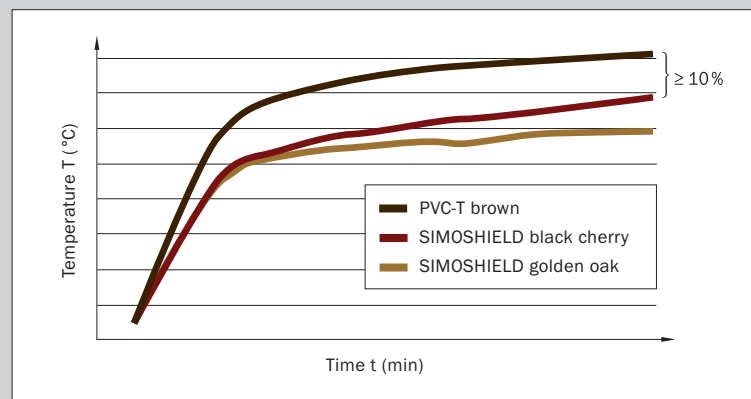
For further details, please refer to our work.infos.

SIMOSHIELD – Combining the Benefits of Plastic with a Woodgrain Look

Function of RENOLIT-SST foil (IR-reflective)



Comparison of the rise in temperature of SIMOSHIELD and SIMONA® PVC-T based on ASTM D 4803-97



The graph shows the significant differences in the rise of temperature in PVC-T compared to foiled SIMOSHIELD sheets.

Solar Shield Technology

For optimum performance only RENOLIT foils with the Solar Shield Technology (SST) are used in SIMOSHIELD.

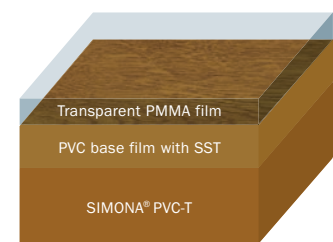
In the case of plastic doors it is infrared radiation that is mainly responsible for the rise in temperature. Special constituents in the decorative foil reflect the radiation in this wavelength range like a mirror. A rise in temperature is considerably reduced by the reflection of infrared radiation.

Many advantages

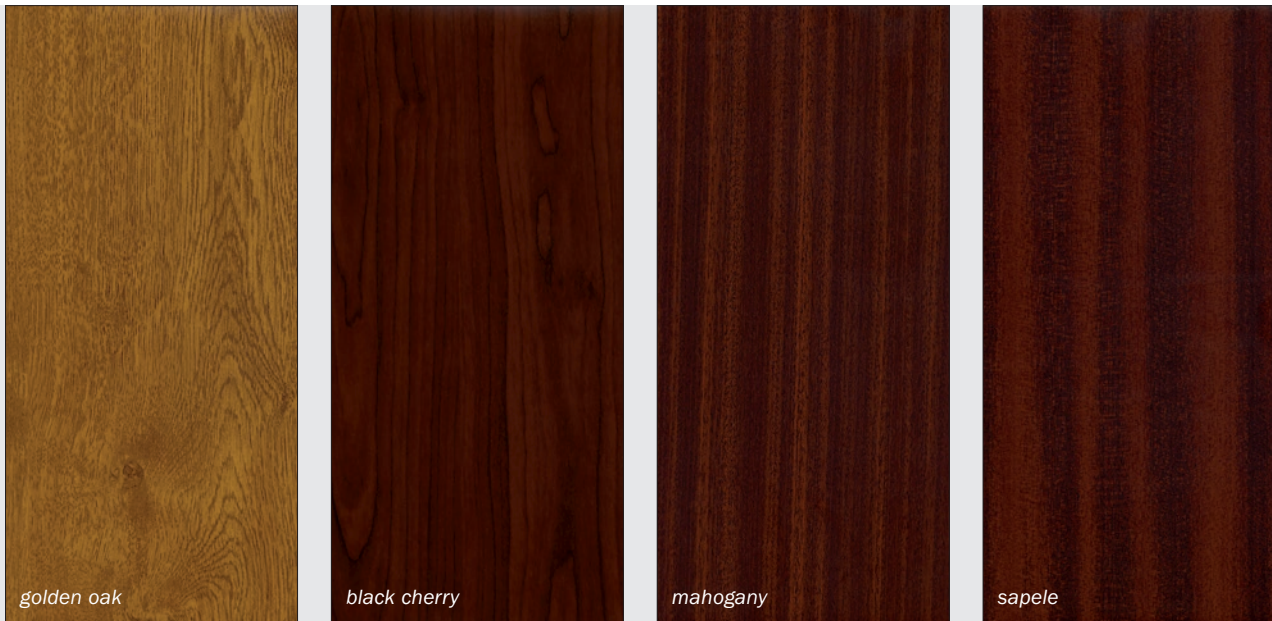
The decorative foils used in SIMOSHIELD have a thickness of 290 µm with embossing and are provided with IR reflection. They have the characteristic look and feel of woodgrain.

Glue-free, integral joining of the foil and sheet material ensures maximum protection against delamination. The embossed texture is modified in such a way that it remains intact even after the thermoforming process.

Layer design of SIMOSHIELD



SIMOSHIELD – Product Range and Material Specifications

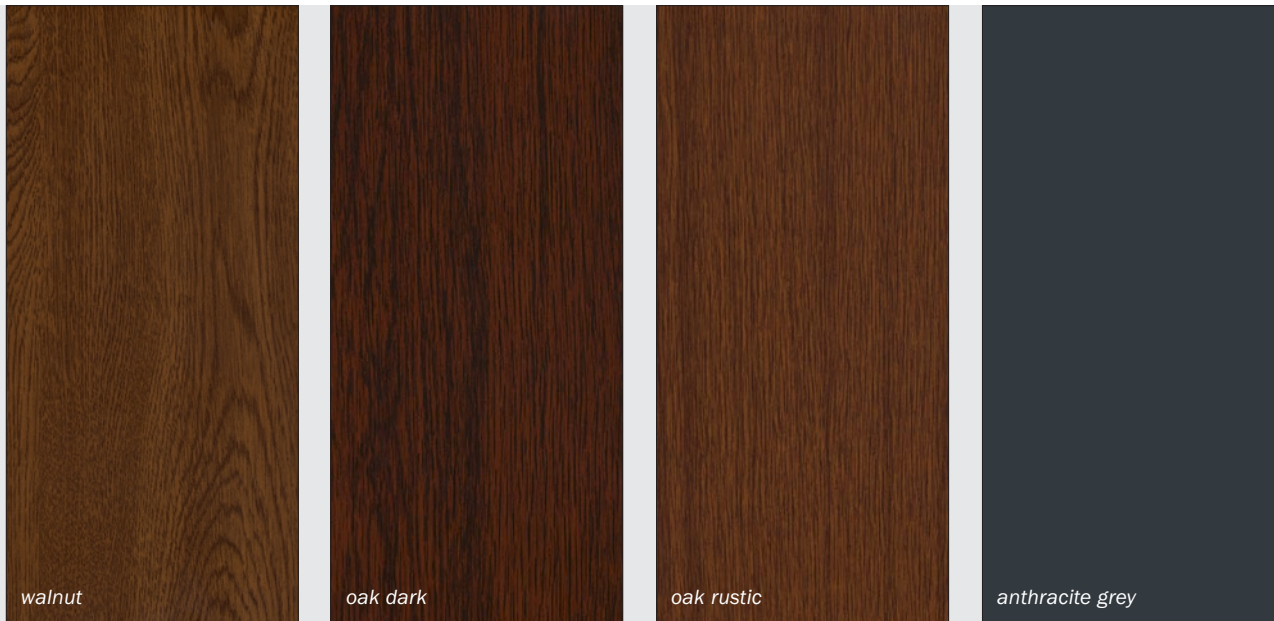


Product range

	SIMOSHIELD	SIMONA® PVC-T
Extruded sheets (sizes/thicknesses in mm)		
2,175 x 975	1.5 (including decorative foil)	1.4
2,000 x 860	1.5 (including decorative foil)	–
2,000 x 855	–	1.4
Colours	golden oak, black cherry, mahogany, sapele, walnut, oak dark, oak rustic, anthracite grey	choice of whites, caramel, brown

Material specifications

Density, g/cm ³ , DIN EN ISO 1183	1.370	1.460
Yield stress, MPa, DIN EN ISO 527	50	55
Tensile modulus of elasticity, MPa, DIN EN ISO 527	2,500	3,500
Temperature range, °C	- 20 to +60	- 20 to +60
Vicat temperature, °C	+ 72	+ 74
Fire behaviour	DIN 4102	B1 low flammability
	BS 476	Class 1



Special types on request

On request, SIMOSHIELD sheets can also be supplied in other sizes and thicknesses as well as in other designs from the RENOLIT range.

Embossed sheets

On request, we manufacture white, caramel and brown SIMONA® PVC-T sheets with special grain structure.

Availability

Various sizes, thicknesses and decors are available from stock. Please contact our sales department for further details concerning availability:

Phone +49(0)67 52 14-0
 Fax +49(0)67 52 14-211
 sales@simona.de

SIMONA Advisory Service

Our staff at the Technical Service Centre will be happy to advise you:

- on issues concerning further processing and professional thermoforming
- by offering theoretical and practical training sessions

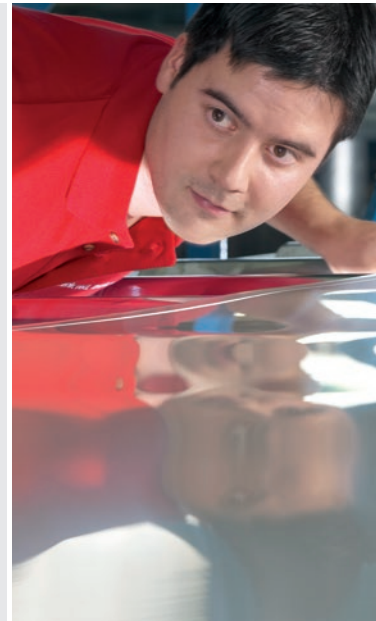
Phone +49(0)67 52 14-587
 Fax +49(0)67 52 14-302
 tsc@simona.de

Welcome to SIMONA – Put Your Trust in Quality and Expertise

SIMONA is acknowledged as one of the leading producers and development partners in the field of thermoplastics. Drawing on our outstanding abilities in process engineering, we specialise in the production of sheets, finished parts, profiles, welding rods, rods, pipes, fittings and valves tailored to the most exacting standards.

Certified quality

Our products and services are designed to deliver the very best quality imaginable. The management systems operated by SIMONA AG with regard to quality, the environment and energy resources are certified in accordance with DIN EN ISO 9001, DIN EN ISO 14001 and DIN EN ISO 50001.



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Plant III

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