

# SIMONA



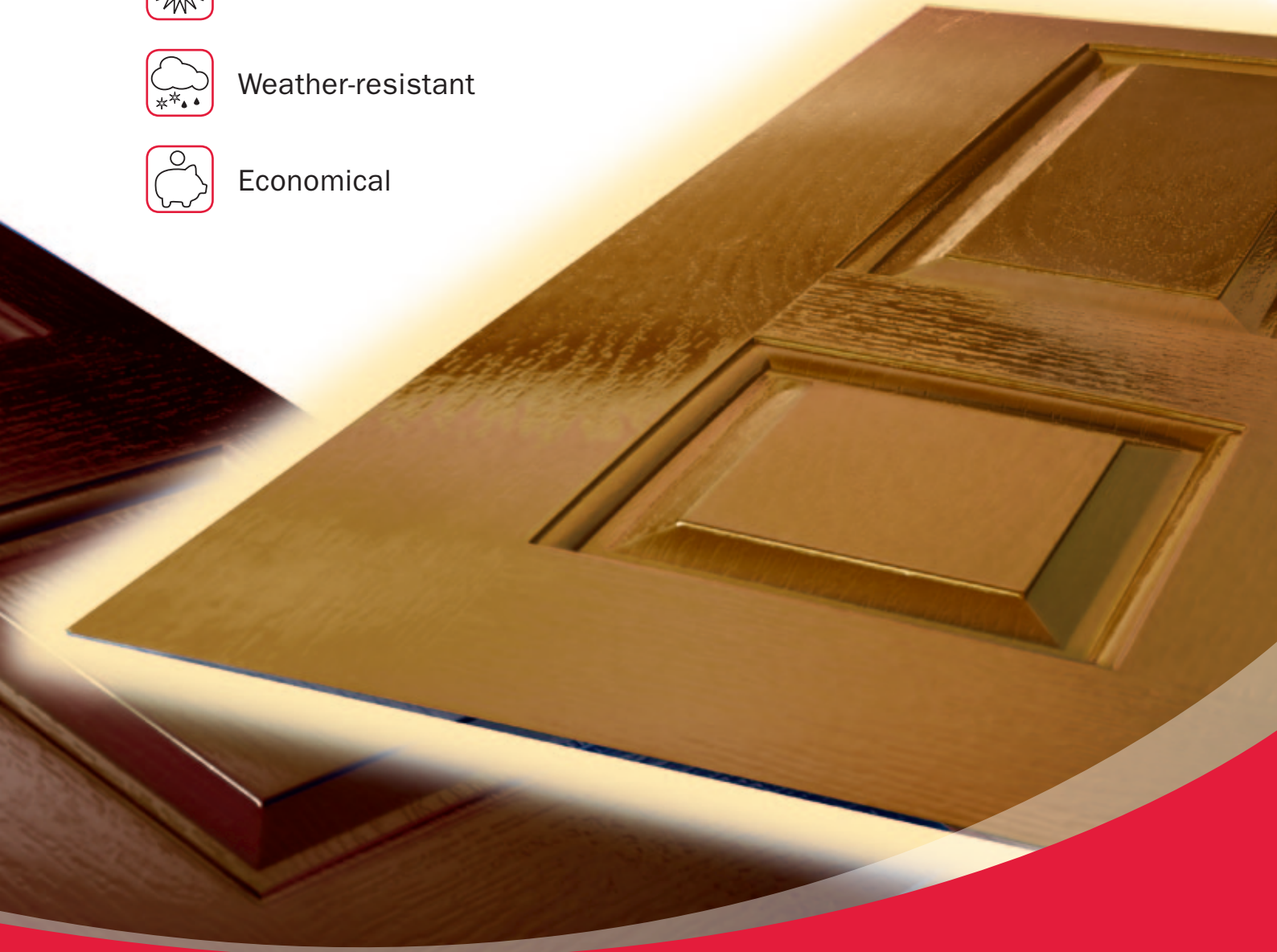
UV-resistant



Weather-resistant



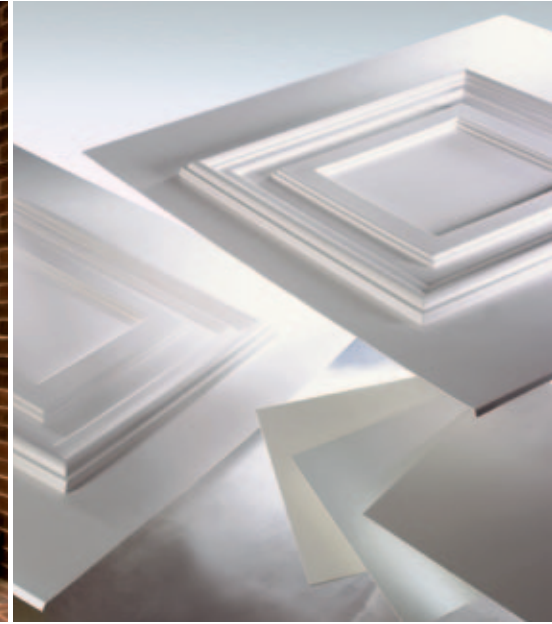
Economical



## SIMONA<sup>®</sup> SIMOSHIELD

Plastic Sheets for Door Manufacture

# SIMONA® SIMOSHIELD – Stylish Design, Superb Processing



## **SIMONA® SIMOSHIELD**

The newly developed SIMONA® SIMOSHIELD sheets are PVC-T sheets with a tactile, visible wood-grain. They are specially designed for door manufacture.

SIMONA® 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.

SIMONA® 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
- Best colour match to RENOLIT profiles
- Service temperature range from –20 °C to +60 °C
- REACH- and RoHS-compliant
- 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 SIMONA® SIMOSHIELD particularly heat reflective.

**+ Sheets with a sun protection**

The decorative foils used for SIMONA® SIMOSHIELD sheets include the new 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 SIMONA® SIMOSHIELD within Europe.

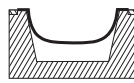


# Door Manufacture with SIMONA® SIMOSHIELD

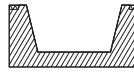


## Various methods of thermoforming SIMONA® SIMOSHIELD

### Female forming with pneumatic pre-stretching

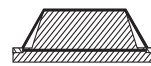


Pneumatically pre-stretched

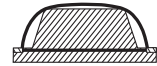


Vacuum applied

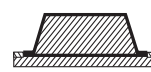
### Male forming with mechanical or pneumatic pre-stretching



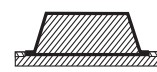
Mechanically pre-stretched



Pneumatically pre-stretched



Vacuum applied



Vacuum applied

### Excellent thermoformability

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

SIMONA® 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 SIMONA® 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 SIMONA® SIMOSHIELD remain highly tactile and visible, even after the thermoforming process. SIMONA® 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.

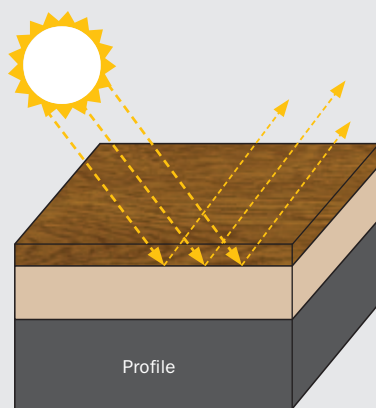
### Processing capability

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

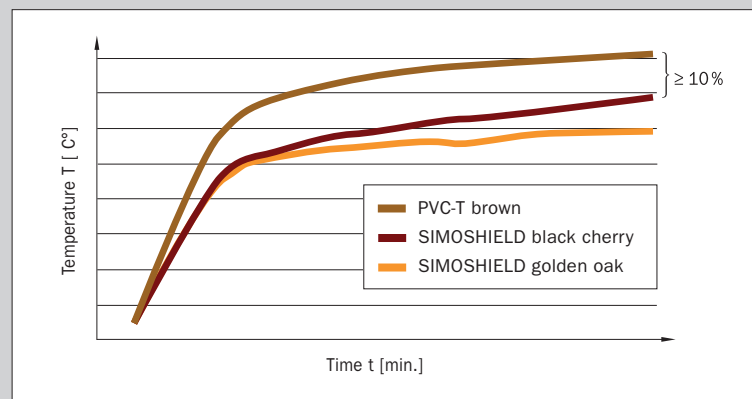
For further details, please refer to our work.infos.

# Combining the Benefits of Plastic with a Woodgrain Look – SIMONA® SIMOSHIELD

## Function of RENOLIT SST foil (IR-reflective)



## Comparison of the rise in temperature of SIMONA® 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

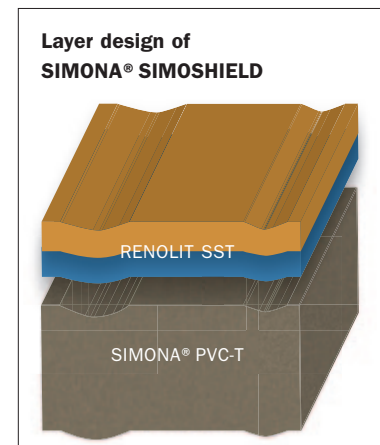
For optimum performance only RENOLIT foils with the new Solar Shield Technology (SST) are used in SIMONA® SIMOSHIELD.

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.

## New-generation decorative foils

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

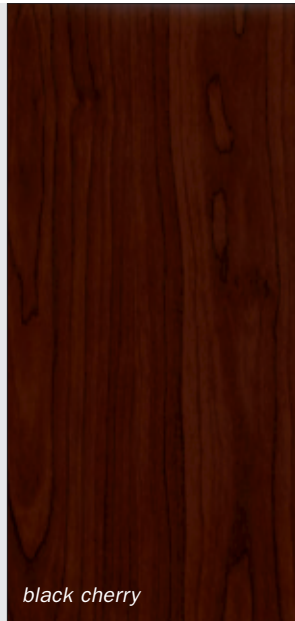
Glue-free, integral joining of the foil and sheet material ensures maximum protection against delamination. The embossed texture is modified in such a way that it remains intact even after the thermoforming process.



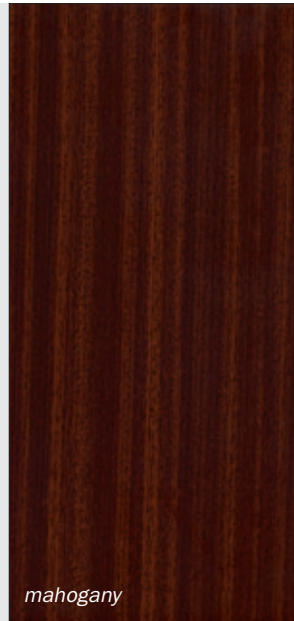
# Product Range and Material Specifications



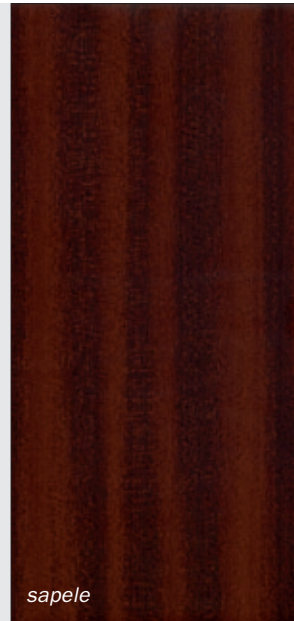
golden oak



black cherry



mahogany



sapele

## Product range

### SIMONA® SIMOSHIELD

#### Formats and thicknesses (in mm)

2175 x 975	1.5 (including decorative foil)
2000 x 860	1.5 (including decorative foil)
Colours	golden oak black cherry mahogany sapele walnut

### SIMONA® PVC-T

#### Formats and thicknesses (in mm)

2175 x 975	1.4
2000 x 855	1.4
Colours	choice of whites caramel brown

Other formats, thicknesses and decors from the RENOLIT range are available on request. For further information, please contact our Sales Department.

## Material specifications

	SIMONA® SIMOSHIELD	SIMONA® PVC-T
Density ISO 1183, g/cm <sup>3</sup>	1.420	1.420
Tensile modulus of elasticity DIN EN ISO 527, MPa	≥ 2700	≥ 2700
Yield stress DIN EN ISO 527, MPa	50	50
Elongation at break DIN EN ISO 527, %	18	18
Temperature range, °C	-20 up to +60	-20 up to +60
Vicat temperature, °C	+72	+72
Impact strength DIN EN ISO 179, kJ/m <sup>2</sup>	no break	no break
Fire behaviour		B1 low flammability
- DIN 4102	—	Class 1
- BS 476	—	



**Special types on request**

On request, we are able to offer SIMONA® SIMOSHIELD sheets with the desired RENOLIT design.

**Embossed sheets**

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

**Availability**

Many dimensions and thicknesses are available ex stock. For further information, please contact our Business Unit Industry, Advertising & Structural Engineering:

Phone +49 (0) 67 52 14-0  
 Fax +49 (0) 67 52 14-211  
 industry@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

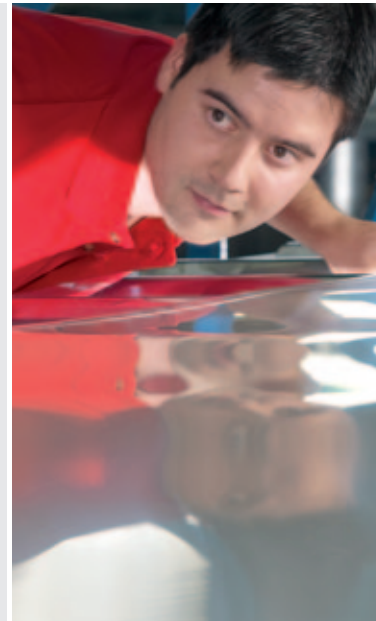
Phone +49(0)67 52 14-587  
 Fax +49(0)67 52 14-302  
 tsc@simona.de

# Put Your Trust in Quality and Expertise

**SIMONA is able to offer you an extensive range of semi-finished thermoplastics worldwide. Our comprehensive portfolio of products encompasses pipes, fittings, valves, sheets, rods, profiles, welding rods and finished parts for a diverse range of applications.**

## **Certified quality**

Our products and services give you the best quality imaginable. SIMONA AG's Quality and Environmental Management System is certified to DIN EN ISO 9001 : 2008 and DIN EN ISO 14001 : 2005.



## **SIMONA AG**

**Teichweg 16  
D-55606 Kirn  
Germany**  
Phone +49(0)67 52 14-0  
Fax +49(0)67 52 14-211  
mail@simona.de  
www.simona.de

## **PRODUCTION SITES**

**Plant I/II**  
Teichweg 16  
D-55606 Kirn  
Germany  
Phone +49(0)67 52 14-0  
Fax +49(0)67 52 14-211

**Plant III**  
Gewerbstraße 1-2  
D-77975 Ringsheim  
Germany  
Phone +49(0)78 22 436-0  
Fax +49(0)78 22 436-124

**SIMONA Plast-Technik s.r.o.**  
U Autodílen 23  
CZ-43603 Litvínov-Chudeřín  
Czech Republic

**SIMONA AMERICA Inc.**  
64 N. Conahan Drive  
Hazleton, PA 18201  
USA

**SIMONA ENGINEERING  
PLASTICS (Guangdong) Co. Ltd.**  
No. 368 Jinou Road  
High & New Technology  
Industrial Development Zone  
Jiangmen, Guangdong  
China 529000

## **SALES OFFICES**

**SIMONA S.A. Paris**  
Z.I. 1, rue du Plant Loger  
F-95335 Domont Cedex  
Phone +33(0)1 39 35 49 49  
Fax +33(0)1 39 91 05 58  
domont@simona-fr.com

**SIMONA S.A. Angers**  
Z.I. 20, Bld. de l'Industrie  
F-49000 Ecoflant  
Phone +33(0)2 41 37 07 37  
Fax +33(0)2 41 60 80 12  
angers@simona-fr.com

**SIMONA UK LIMITED**  
Telford Drive  
Brookmead Industrial Park  
GB-Stafford ST16 3ST  
Phone +44(0)1785 222444  
Fax +44(0)1785 222080  
mail@simona-uk.com

**SIMONA AG SCHWEIZ**  
Industriezone  
Bäumlimattstraße 16  
CH-4313 Möhlin  
Phone +41(0)61 8559070  
Fax +41(0)61 8559075  
mail@simona-ch.com

**SIMONA S.r.l. ITALIA**  
Via Padana  
Superiore 19/B  
I-20090 Vimodrone (MI)  
Phone +39 02 25 08 51  
Fax +39 02 25 08 520  
mail@simona-it.com

**SIMONA IBERICA  
SEMIELABORADOS S.L.**  
Doctor Josep Castells, 26-30  
Polígono Industrial Fonollar  
E-08830 Sant Boi de Llobregat  
Phone +34 93 635 41 03  
Fax +34 93 630 88 90  
mail@simona-es.com  
www.simona-es.com

**SIMONA-PLASTICS CZ, s.r.o.**  
Zděbradská ul. 70  
CZ-25101 Říčany-Jažlovice  
Phone +420 323 63 78 3-7/-8/-9  
Fax +420 323 63 78 48  
mail@simona-cz.com  
www.simona-cz.com

**SIMONA POLSKA Sp. z o.o.**  
ul. H. Kamieńskiego 201-219  
PL-51-126 Wrocław  
Phone +48(0)71 3 52 80 20  
Fax +48(0)71 3 52 81 40  
mail@simona-pl.com  
www.simona-pl.com

**SIMONA FAR EAST LIMITED**  
Room 501, 5/F  
CCT Telecom Building  
11 Wo Shing Street  
Fo Tan  
Hongkong  
Phone +852 29 47 01 93  
Fax +852 29 47 01 98  
sales@simona.com.hk

**SIMONA ENGINEERING PLASTICS  
TRADING (Shanghai) Co. Ltd.**  
Room C, 19/F, Block A  
Jia Fa Mansion  
129 Da Tian Road, Jing An District  
Shanghai  
China 200041  
Phone +86 21 6267 0881  
Fax +86 21 6267 0885  
shanghai@simona.com.cn

**SIMONA AMERICA Inc.**  
64 N. Conahan Drive  
Hazleton, PA 18201  
USA  
Phone +1 866 501 2992  
Fax +1 800 522 4857  
mail@simona-america.com  
www.simona-america.com