UV TECH

U.V. RADIATION ABSORPTION

To prevent polymer damage, UV absorbing additives are coextruded into the outer side of the panels to shield out UV-B and UV-A sections of solar spectrum

Features and Benefits

Polycarbonate UV stabilized panels with outstanding weathering resistance enabling lifetime extension in outdoor glazing applications...
The measured benefits are:

✳ Panel with overall superior mechanical and aesthetic performance retention
✳ Very low colour change during service life
✳ Minimal surface roughness development *(refer to chart)**
✳ Excellent yellowing resistance after prolonged sun exposure *(refer to chart)**

Performance guaranteed over time

UV- Tech stabilization provides better resistance to atmospheric contaminants than standard polycarbonate panels. It maintains excellent mechanical and aesthetic properties, even after prolonged exposure to solar radiation. Minimal surface degradation results in a low surface roughness that guarantees:

✳ High level of polycarbonate panel clarity and transparency
✳ Resistance to dust buildup on panel surface
✳ Durable self-cleaning under natural rain

Overall UV stabilization treatment allows for a longer lifetime of up to +50% enabling less maintenance costs, better resources utilization and replacement of traditional building materials such as high value glass.

UV TECH
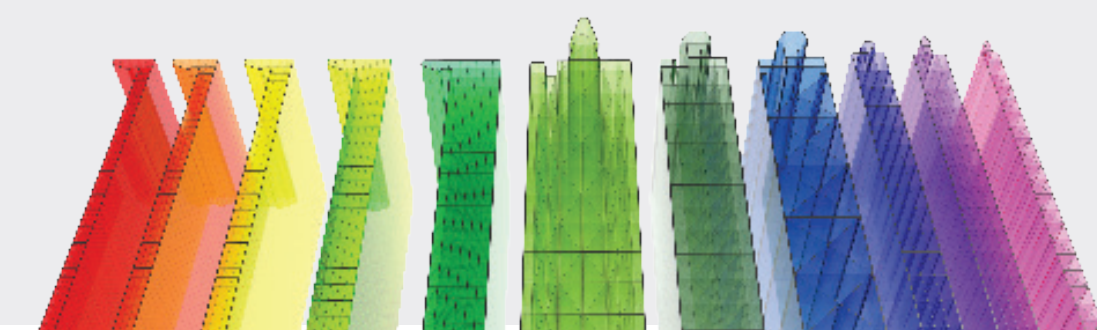
EXTENDED LIFETIME POLYCARBONATE OUTDOOR SOLAR EXPOSURE
PROTECTIVE TREATMENT

SPECIAL WARRANTY
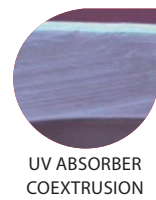**15 YEARS**
POLYCARBONATE SYSTEMS

Gallina USA
POLYCARBONATE SYSTEMS & SHEETS

Gallina USA
Address: 4335 Capital Circle Janesville,WI 53546
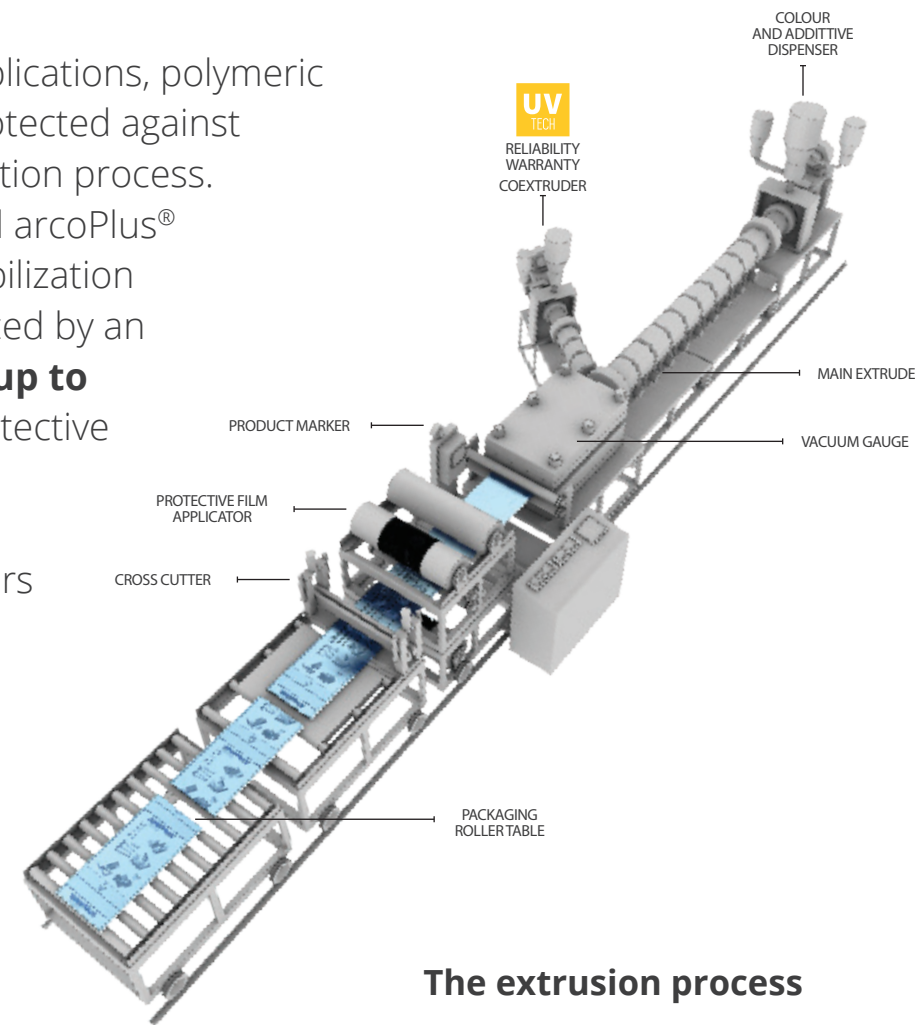Phone: (888)463-3342 Mail: info@gallinausa.com | Web: www.gallinausa.com

UV-TECH TREATMENT
Protective coextrusion with UV-Absorbers

UV ABSORBER COEXTRUSION

For extended lifetime applications, polymeric substrates have to be protected against the natural solar degradation process. PoliCarb®, PoliComp® and arcoPlus® panels with UV-TECH stabilization treatment are characterized by an **extended warranty of up to 15 years**, thanks to a protective coextruded outer layer, using a selection of high performance UV-absorbers which are highly stable and effective over time

UV
RELIABILITY WARRANTY COEXTRUDER

COLOUR AND ADDITIVE DISPENSER

MAIN EXTRUDER

PRODUCT MARKER

VACUUM GAUGE

PROTECTIVE FILM APPLICATOR

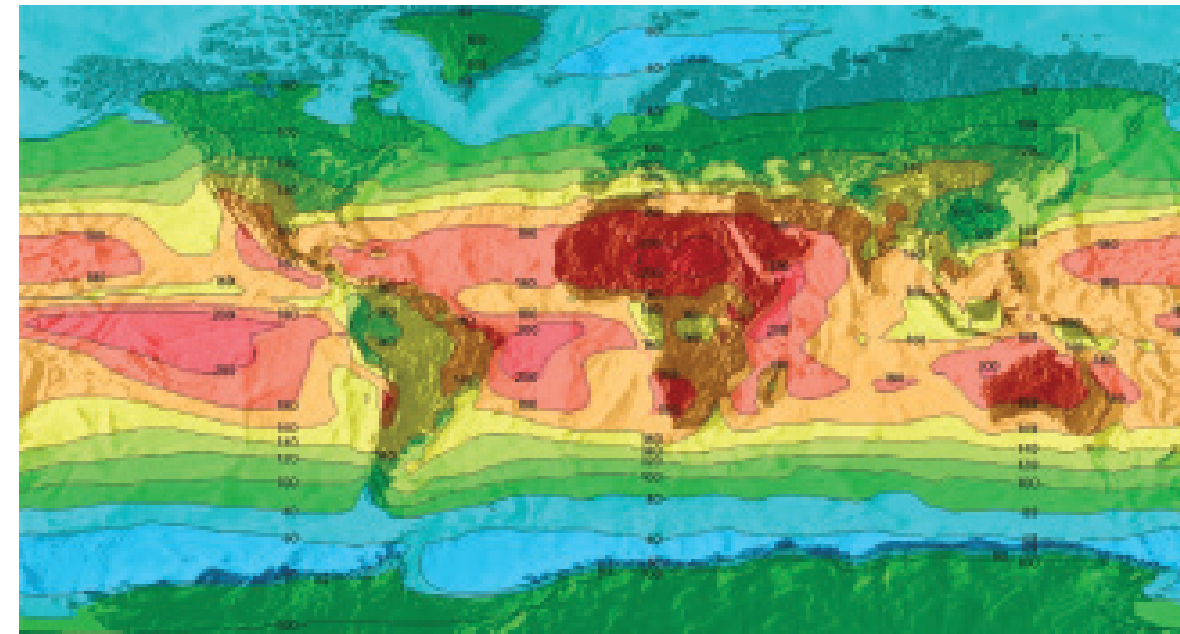CROSS CUTTER

PACKAGING ROLLER TABLE

The extrusion process

Dott.Gallina manufacturing is known for its high degree of technical know-how. This has delivered "in house" creation of all production machinery, thus allowing diverse product customization which meets the necessary building and construction regulations.

UV-TECH
High Performance polycarbonate sheets. Technological research developed by dott.gallina srl

---

SOLAR RADIATION
Distribution of solar irradiation according to latitude and season

Intensity SPECTRUM at Earth's surface

5%
ULTRAVIOLET 295-400 (NM)

43%
VISIBLE 400-700 (NM)

52%
NEAR INFRARED 700-2500 (NM)
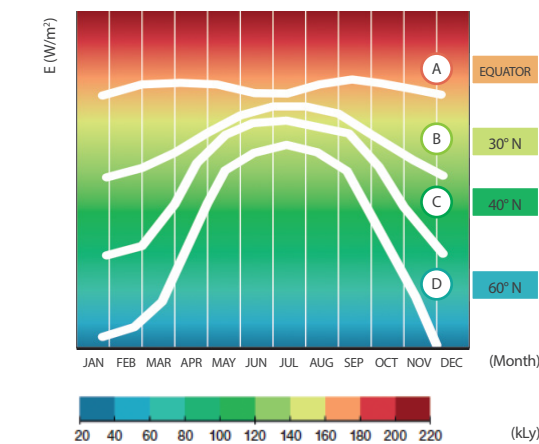
UV-A and UV-B rays represent only 5% of total solar energy but can cause damage to construction materials such as polymers.

GAMMA RAYS	X RAYS	ULTRA VIOLET	VISIBLE SPECTRUM	INFRA RED	MICRO WAVES	RADIO WAVES

UV | VISIBLE LIGHT

VUV	UVC	UVB	UVA

100   200   300   400   500   600   700
WAVELENGHT (nm)
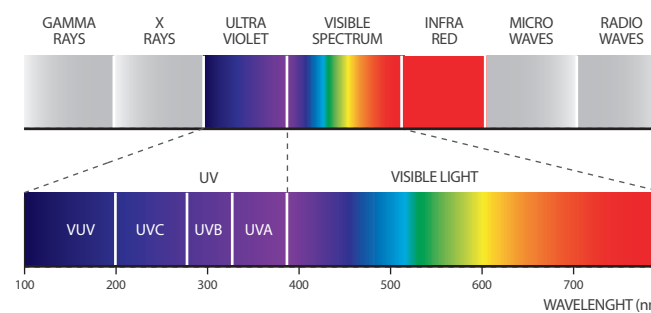
Yearly average solar irradiance

E (W/m²)

A EQUATOR
B 30° N
C 40° N
D 60° N

JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC (Month)

20 40 60 80 100 120 140 160 180 200 220   (kLy)

EXTENDED LIFETIME POLYCARBONATE
OUTDOOR SOLAR EXPOSURE APPLICATIONS

SPECIAL WARRANTY
15 YEARS
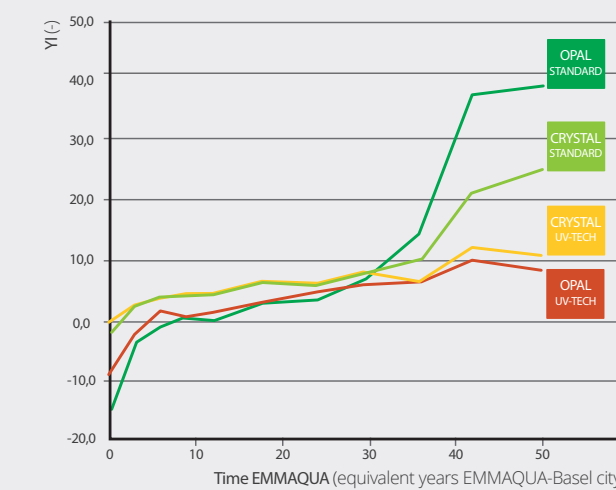POLYCARBONATE SHEETS

EMMAQUA TEST

■■BASF
We create chemistry

With a target to confirm weathering resistance close to real life, arcoPlus® samples were exposed in Arizona desert under the EMMAQUA outdoor accelerated weathering protocol for 4 years. Samples were collected on a monthly basis for evaluation to check the aesthetic and mechanical performance. The below charts highlight how UV-TECH stabilization treatment influences polycarbonate panel properties
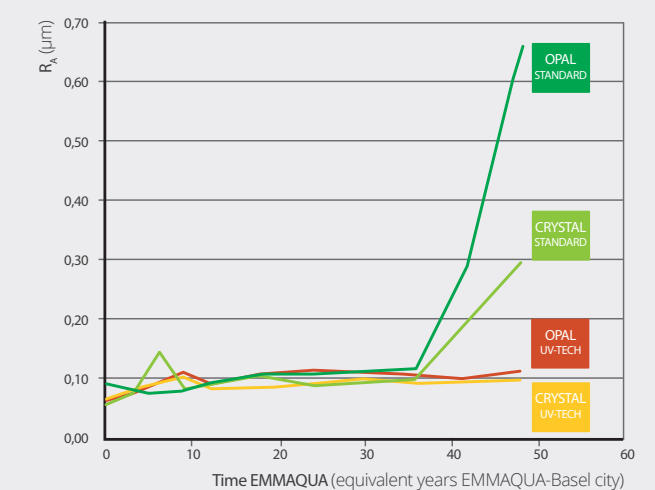
Yellowness index*
Lower yellowness means more transparency, more mechanical resistance and proper cleaning.

YI (-)

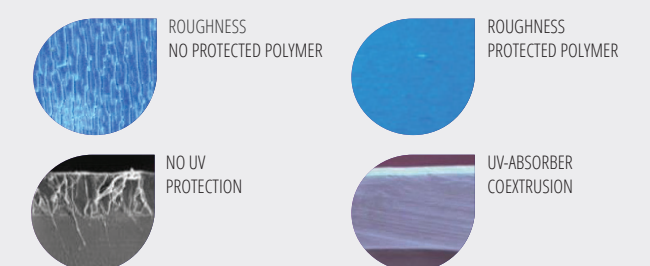OPAL STANDARD
CRYSTAL STANDARD
CRYSTAL UV-TECH
OPAL UV-TECH

Time EMMAQUA (equivalent years EMMAQUA-Basel city)

Surface roughness*
Lower roughness means more transparency, more mechanical resistance and proper cleaning.

Rₐ (μm)

OPAL STANDARD
CRYSTAL STANDARD
OPAL UV-TECH
CRYSTAL UV-TECH

Time EMMAQUA (equivalent years EMMAQUA-Basel city)

Umbrella metaphor

Just as it's necessary to protect the body using sunscreen, polycarbonate panels need to be protected from solar radiation. An outer layer functionalized with UV absorbers can be compared to the umbrella effect protecting against weathering damage.

Microscopic view of surface

ROUGHNESS NO PROTECTED POLYMER
ROUGHNESS PROTECTED POLYMER
NO UV PROTECTION
UV-ABSORBER COEXTRUSION