

A R Q M A T

MATERIAL EXTERIOR GRADE

BUILDING
FAÇADES

MATERIAL EXTERIOR GRADE

BUILDING FAÇADES

MATERIAL EXTERIOR GRADE	6
APPLICATIONS	6
ITEM SPECIFICATIONS	6
MECHANICAL AND PHYSICAL PROPERTIES	9
DIMENSIONAL STABILITY	9
ENVIRONMENTAL COMPATIBILITY	12
CLEANING	12
REMOVAL OF GRAFFITI	12
HOW PANELS ARE PRODUCED	17
CERTIFICATIONS	21
CE MARKING	21
WORKING LIFE	21
VENTILATED FAÇADE	24
THE BENEFITS OF RAINSCREEN	24
THE BENEFITS OF SUNSCREEN	24
DIGITAL PRINT	35



Façades



Balconies



Sunscreens



Street Furniture



Outdoor Signage

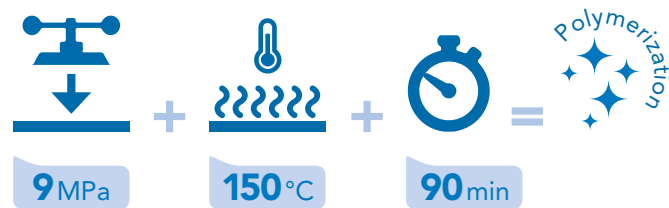


MATERIAL EXTERIOR GRADE

ARQMAT facade is a self-supporting, compact high pressure laminate (HPL), having a weathering resistant decorative surface suitable for exterior applications. Complies with the requirements settled by the standard EN 438:2016 - part 6.

ARQMAT facade core layers consist of sheets of cellulose fibres impregnated with thermosetting phenolic resins. The decorative surfaces consist of one or more layers of cellulose fibres having both technical and aesthetic functions; these layers are impregnated with thermosetting resins suitable for exterior use.

The manufacturing process consists in the simultaneous application of heat (150°C) and pressure (9 MPa) in multi opening presses where the polycondensation of the resins takes place. ARQMAT facade can be manufactured both as single or double decorative sided laminate.



APPLICATIONS

ARQMAT facade is a durable material available in a broad range of decors and colours, having high technical performances and is particularly suitable for the construction sector where it is an excellent alternative to traditional materials. It is typically used in wall cladding, façades, balustrades covering, balconies partition wall, as well as for the production of urban furniture and for outdoor signage. Besides, is particularly suitable for the construction of ventilated façades.

Is available in both standard version and flame retardant version.

ITEM SPECIFICATIONS

Below are the item specifications of ARQMAT facade for tendering procedure requirements: self-supporting, compact high pressure laminate (HPL) for exterior application of type, consisting of layers of cellulose fibres impregnated with phenolic thermosetting resins and having at least one (or more) surface layers of decorative paper impregnated with thermosetting resins, all the layers being bound together by means of a high pressure process (as described in the standard EN 438:2016 - part 6).





MECHANICAL AND PHYSICAL PROPERTIES

Properties are such that the material can be exposed to the combined action of sunlight and atmospheric agents such as rain, hail, wind, salt, without any significant changes occurring to its decorative features and its technical performances.

The natural variations of temperature and humidity do not affect the physical properties of **ARMAT facade**. It is resistant to extreme climatic shock; climatic changes (such as sudden changes in temperature from -30°C to $+70^{\circ}\text{C}$ and air that from being very dry reaches 90% relative humidity) do not have any effect on the panels properties and appearance.

The action of anthropogenic pollutant gases and/or acid rain is negligible. Neither the flaking of the decorative layer, nor its delamination from the core does not occur.



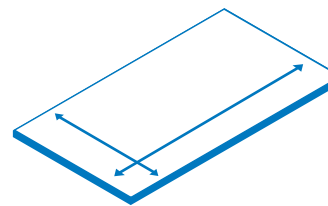
DIMENSIONAL STABILITY

The specific compactness of **ARQMAT facade** ensures an excellent combination of mechanical characteristics such as impact resistance and flexural strength.

The panel's homogeneity and its high density ensure high resistance to the extraction of mechanical fixing elements such as screws, rivets, etc.

As a result of natural climatic changes, **ARQMAT facade** undergoes a moderate change in its dimensions; it contracts when the humidity decreases and expands when humidity increases.

For this reason it is strictly recommended to precondition the material in the place where it is going to be applied in. If this is not feasible or if the climatic conditions are characterised by wide variations in temperature or humidity levels, some arrangements are necessary during design and assembly. These arrangements must always be discussed in advance with the local representative.



- **Aesthetically attractive**
- **Strong and tough**
- **Eco-sustainable**
- **Weathering resistant**
- **Non corrosive**
- **Easy to maintain**
- **Excellent fire behaviour**
- **Resistant to termites**



Private Home
"Casa O"
Capoterra (IT)
2004

ENVIRONMENTAL COMPATIBILITY

ARQMAT facade is not a health hazardous material and does not pollute the environment. It consists of cellulose fibres (70%) and thermosetting resins (30%), and it does not contain asbestos or heavy metals. It does not release gases, fumes, solvents or liquid substances.

The percentage of the renewable raw materials used for the production of ARQMAT facade is large. Residues from the manufacturing process and waste of end use can be stored and conferred to controlled landfills as equivalent to urban waste plant according to national and/or local regulations. In view of its high calorific value can be burned in energy to waste plant.

ARQMAT facade has also obtained a positive life cycle assessment based on the ISO 14040 standard series, aimed at quantifying the environmental impact of the product considering the raw materials, the energy used for its manufacturing and the emissions produced in all the phases of the material's working life, from the production process to disposal.

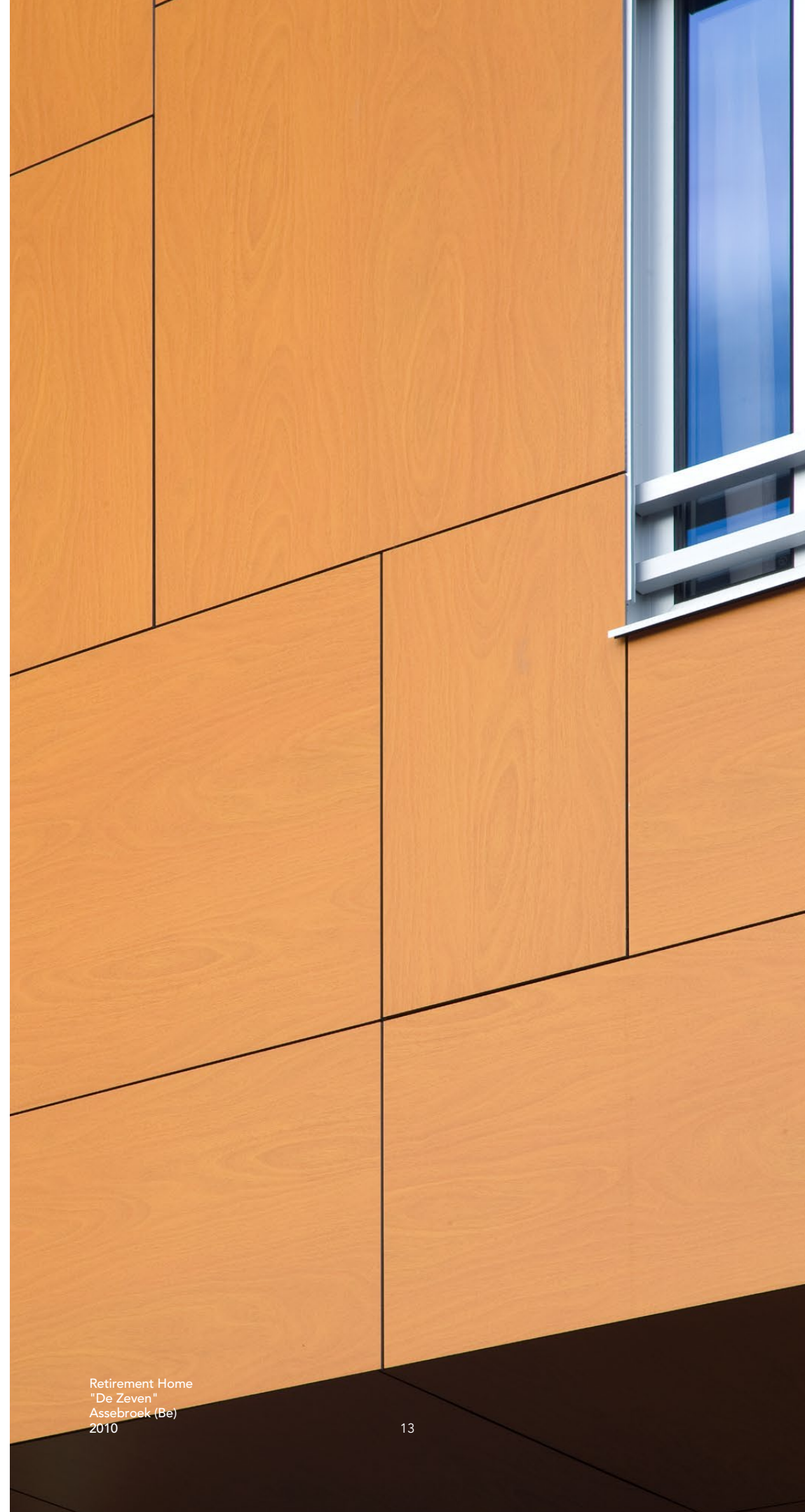


CLEANING

The surface of ARQMAT facade does not require any specific cleaning. Any dirt or residues of cutting or assembling operations can be removed with ordinary, non-abrasive household detergents using paper, sponges or soft cloths. Rinsing to remove all detergent and drying carefully is recommended to avoid the formation of haloes. Ordinary dirt on the installed panels can be removed with ordinary, non-abrasive household detergents. In all cases excessive rubbing, as well as improper tools, may cause abrasion and/or scratches, therefore any cleaning procedure have to be done gently.

REMOVAL OF GRAFFITI

ARQMAT facade's resistant chemical nature together with its closed structure do not allow spray paints, various types of inks or emulsion paints to adhere to the surface and/or to penetrate inside. No preventive treatment against graffiti or wall writing is necessary. If the surface of ARQMAT facade has been soiled or for specific cleaning needs, please contact the local representative.







HOW PANELS ARE PRODUCED

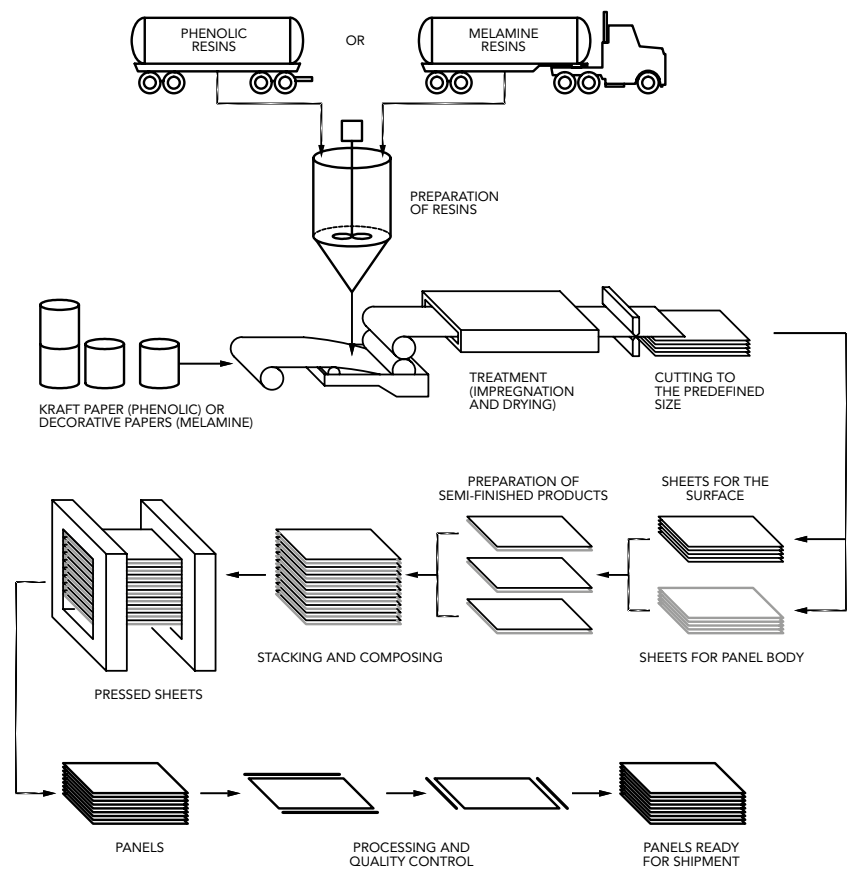
The rolls of kraft paper and decorative paper are first put on enormous unwinders, unwound and treated (impregnation in liquid resin bath followed by oven drying and cutting to a defined size).

The kraft paper used for the core of the panels is impregnated with phenolic thermosetting resins, whereas the decorative paper used for the surface is treated with thermosetting melamine resins. This decorative paper (which is made mainly of pigments and/or inks and cellulose pulp) is specifically designed so that it can maintain high levels of resistance to sunlight radiation (including UV rays, visible rays and IR), thus ensuring a good colourfastness .

Kraft paper sheets are stacked up and joined to the decorative paper to make a panel of a specified thickness. Approximately 50 sheets of kraft paper and at least two sheets of decorative paper are needed to make a standard panel (double sided) with nominal thickness of 10 mm.

The stack-up of impregnated sheets are placed into multi-daylight presses and subjected to the simultaneous application of heat (at the temperature of 150 °C) and pressure (9 MPa). The polycondensation reaction takes place leading to the formation of chemical cross-linking structure where both the phenolic and the melamine resins are firmly chemically bonded together .

The panels produced this way are then trimmed and subjected to a final inspection, so that later are ready to be shipped.







CERTIFICATIONS

ARQMART declares that the ARQMART facade collection has obtained various national product certifications, issued by Certification Bodies such as CSTB (France), UBAtc/BUtgb (Belgium), KIWA (Netherlands), DIBt (Germany), BBA (United Kingdom) and IAPMO UES (USA). The most recent version of the certificates listed above is available on request from local ARQMART representative.

CE MARKING

In compliance with the EU Reg. 305/2011 "Construction Products Regulation" (CPR) ARQMART facade has obtained assessment and verification of constancy of performance (AVCP) according to the requirements of the Annex ZA of standard EN 438-7:2005. The product therefore has CE marking. The standard version of ARQMART facade (thickness equal to or higher than 6 mm) has CE marking as well.

WORKING LIFE

During the period of time that corresponds to the warranty, ARQMART facade's characteristics do not change or their variations are so slight that no replacement of the panel is necessary (the material remains compliant with its essential requirements).

However, it is important to bear in mind that the conditions of installation, exposure (weather conditions, latitude, orientation, altitude, tilt, air pollution) and maintenance can affect deterioration and aging speed.



VENTILATED FAÇADE

Covering façades with ARQMAT panels offers a number of advantages in terms of protection from humidity and energy savings, using the benefits of creating a ventilated façade that also acts as rainscreen.

The principle on which the ventilated façade is based on is the creation of a chamber of moving air between the covered wall and the external cover. This air chamber allows air to flow with a "chimney effect", i.e. an air current directed upwards as a result of the different density of cold air and hot air. There are two main aims to this:

- ✓ keeping the covered wall and the panel dry all the time (avoiding condensation) in the winter;
- ✓ dispersing the heat irradiated from the external cover in the summer.

It is easy to create a fire-resistant cover with a ventilated façade all that is necessary is to use fireproof materials in the insulation layer, in the substructure and in the cover. Flame retardant bulkheads of stainless steel need to be set in the ceilings between floors to prevent the flames from spreading through the ventilation chamber.

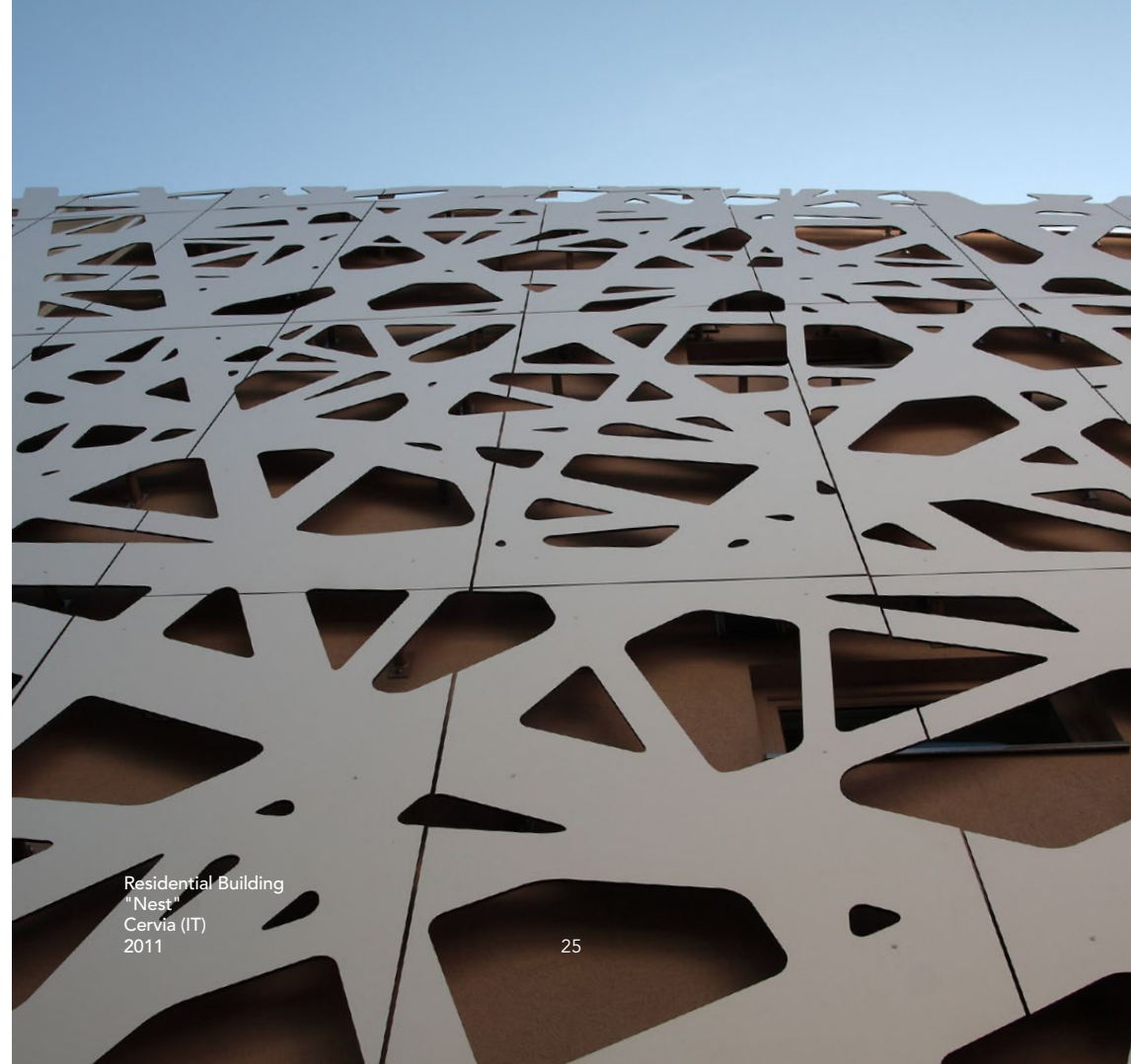
THE BENEFITS OF RAINSCREEN

The benefits arising from using a rainscreen made with ARQMAT panels lie in the fact that this screen protects against pouring rain and against moisture seepage, so that there is ventilation in the chamber between the cover and the wall, behind the screen. By actively contributing to improving the thermoenergetic performance of the outer walls the screen also has positive effects on the energy efficiency of the building as a whole.



THE BENEFITS OF SUNSCREEN

The use of ARQMAT panels to make a shading system is aimed mainly at achieving a reduction in the overheating of buildings in excessively sunny or hot periods. Increases in internal temperatures lead to the use of air conditioning systems, which is an expensive solution subject of much debate, in view of its negative effect on the environment (emission of greenhouse gases). Usually at the peak of summer the high solar irradiation is mainly blocked by the shading device, which reflects or absorbs it, acting as a barrier against excessive heat. In the winter the incident light (from the sun that is low on the horizon) is not affected by a sunscreen. The shading in this case is weak because of the space between the slats (if the shading device has been installed in its traditional orientation, with horizontal slats).









Shopping Center
"Eurospar"
Asiago (IT)
2015



Office Building
Park
Chambéry (FR)
2013



College Studio
"Waverley"
Birmingham (UK)
2016

32



Company
"Fioretti"
Macerata (IT)
2005

33

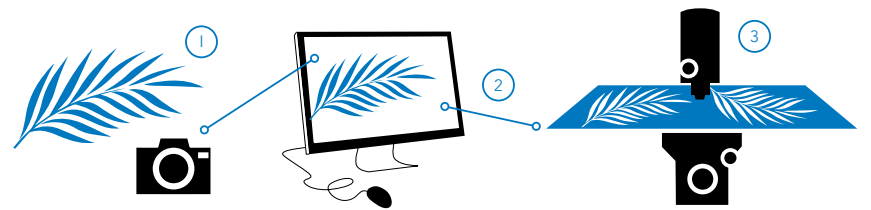


DIGITAL PRINT

Digital print technology makes ink-jet four-colour printing possible directly from electronic media.

The refined quality of the digital print allows to achieve very fine textures and special colour shades, even for extremely complex pictures. The minimum quantity limits required by traditional print with printing cylinders no longer exist. The final result is of considerable impact and very faithful to the original product. Creativity is free from conditioning and industry is closer than ever to the wishes of customers.

ARQMAT facade with digital printing maintains its high levels of resistance to weathering in exteriors applications.





TRIENNALE







Preschool
"Brabbel"
Anversa (BE)
2008



Preschool
Bad Salzungen (DE)
2010





info@arqmat.com

www.arqmat.com

MATERIAL EXTERIOR GRADE

BUILDING
FAÇADES