



MM GRATES



we support your needs



THE COMPANY

M.M. srl has been dealing in the Fiberglass Reinforced Plastics (FRP) industry from over 30 years. The company, continuously growing, offers a wide range of products, an efficient project department, the possibility to develop feasibility studies of new gratings, corrosion studies, structural calculations for composite materials and consultant work.



taylor made



THE TECHNOLOGY

MM gratings are produced with the own and unique RTM technology (Resin Transfer Moulded). This technology is based on the polymerization of the grates in a closed mold that guarantees a more regular and even reticulation of the resin and the lowest environmental impact. Specific and appropriate machines have replaced the hard handwork processing.



**AZIENDA CON SISTEMA DI
GESTIONE PER LA QUALITÀ
CERTIFICATO DA DNV
=UNI EN ISO 9001:2000=**

THE FRP

The FRP is better known as FIBERGLASS and is a composite material obtained by the union of glass fibers and polyester resins. This material is formed by thermosetting polyester resins and reinforcing glass fibers.

Resin ensures high corrosion resistance and glass fibers bring out high mechanical resistance which offer to the composite material all the physical, chemical and mechanical features that turn out to be suitable in various uses.

THE ADVANTAGES

- **IT RESISTS TO CORROSION**

The resins used for their production make the grates unalterable even if they come in contact with almost any chemical compound.

- **IT'S DIELECTRIC**

FRP does not conduct electricity.

- **IT DOESN'T SOFTEN TO HEAT**

The resins are thermosetting therefore they do not soften to medium-high temperatures.

- **IT'S WEATHERPROOF AND RESISTS TO U.V. RAYS**

FRP is great when used outdoors because weather agents and sun rays do not damage them at all.

- **IT'S LIGHT**

Their specific weight is of 1,4 kg/dm³. They are easy to move and they do not weigh on the supporting structures.

- **MAINTENANCE IS NOT REQUIRED**

Install and leave.



- **IT'S RESISTANT**

Glass fibers give the mechanical resistance to the product and its resistance/weight ratio is higher than that of steel.



MM GRATING - APPLICATION FIELDS

CHEMICAL AND PHARMACEUTICAL INDUSTRY

At the beginning M.M. gratings were made for the chemical industry. The high resistance range of gratings are still produced with pure resin and without additives. Thanks to our production process glassfibers are coated with a thick layer of resin. They are resistant to almost all acids and basis and are the perfect product to apply in corrosive environments.



FOOD INDUSTRY

Light, easy to clean, safe thanks to antiskid surface, comfortable for workers, M.M. grating meets food industry requirements. Tested for food contact.

MANUFACTURING INDUSTRY

The walkways made with FRP gratings are safe and comfortable for workers, easy to install and maintenance free. Products range is completed by M.M. parapets.



MINING, METALWORK AND GALVANIC PLANTS

M.M. gratings are safe, easy to install, light, antiskid also in a high humidity level environment, corrosion resistant and insulating.

OFF SHORE

Safe, light, resistant, maintenance free, easy to install, fire retardant: all features of M.M. gratings that cope with off shore requirements. Mini and micro meshes are also available.



PRODUCTION-TRANSFORMATION-TRANSPORT ELECTRIC ENERGY

Due to their insulating and light-weight characteristics M.M. gratings with covered surface are the perfect product for cable tray covers and are suitable for pedestrian and vehicles loads.

The range is completed with housing angulars and frames for covers.

M.M. gratings and profiles are also the answer to other requirements as insulating enclosures, walkways, dielectric protections.

MM GRATING - APPLICATION FIELDS

URBAN DESIGN

Easy to install, wear resistant and weatherproof, safe thanks to the antiskid surface, the M.M. gratings can be used for the protection of trees and decorative fountains and lightshaft covers.

Thanks to its resistance to brackish environment M.M. gratings are the perfect product for wharfs.



TELECOMMUNICATIONS

Insulating and radio transparent, M.M. gratings can be used to cover wells, realize walkways or enclosures. Insulating and radio transparent little pylons or antenna bases can be realized by using M.M. profiles.

RAIL TRANSPORT

Insulating, light, radio transparent, M.M. gratings (also with covered surface) solve many problems of transport infrastructures. Covering of wells and tunnels, rain drainage wells, walkways, enclosures, dielectric interruption are some possible uses.



NAVAL INDUSTRY

Light, resistant to brackish environment and corrosion, antiskid and fire resistant: M.M. gratings answer to safety requirements on board. They do not need maintenance.

Gratings are also available with conductive resin for installations in Ex areas (oil tankers and gas carriers). Approved by important Naval Registers.

ECOLOGY

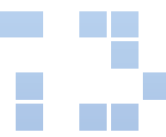
Easy to install, safe, resistant to corrosion and humidity M.M. gratings can be used in waste water treatment plants. Available also with covered surface.

The product range is completed by M.M. parapets, which are not expensive and easy to install.



OTHER APPLICATIONS










M.M. gratings features answer also to the various requirements of: Car wash plants, tanneries, electronic industry, breedings, wine plants, aqueducts, coastal storing yards, etc.



All MM gratings are produced with meniscus surface and with a machine gauged thickness and subsequent gelcoat protection finishing treatment.

Their surface is antiskid level R13-V10 according to the DIN E 51130 norm.

OPEN SURFACE GRATING

PRODUCT	MESH	THICKNESS	TECHNICAL SHEET
	100 x 30 (92 x 22)	28	SCH30/28
		38	SCH30/38
	38 x 38 (31 x 31)	25	SCH38/25
		30	SCH38/30
		38	SCH38/38
	40 x 40 (32 x 32)	28	SCH40/28
		38	SCH40/38
	50 x 30 (42 x 22)	28	SCH50/28
		38	SCH50/38
	52 x 52 / 26 x 26 (19 x 19)	30	SCH52/30
		40	SCH52/40
		52	SCH52/52
	60 x 60 / 60 x 30 (52 x 22)	55	SCH60/55
	38 x 38 / 12 x 12 (8 x 8)	30	SCH12/30
	100 x 50 / 100 x 25 (92 x 17)	55	SCH100/55
	100 x 60 (92 x 52)	28	SCH60/28

PRODUCT	MESH	THICKNESS	TECHNICAL SHEET
	100 x 30	35	SCH30/28C
	38 x 38	28	SCH38/25C
		43	SCH38/38C
	40 x 40	35	SCH40/28C
		45	SCH40/38C
	52 x 52 / 26 x 26	55	SCH52/52C
	60 x 60 / 60 x 30	60	SCH60/55C
	100 x 50 / 100 x 25	60	SCH100/55C
	38 x 38	44	SCH38/38DC

All technical sheets are available on www.mmgrigliati.it

STANDARD PRODUCTS:

- ISOPHTALIC RESIN
- FIRE RESISTANT RESIN




CUSTOMIZED PRODUCTS

- BISPHENOLIC OR VINYLESTER RESIN
- CUT AND SHAPED ACCORDING TO DRAWINGS
- REINFORCED WITH DIFFERENT FIBERS
- SPECIFIC RESINS FOR SPECIAL USES

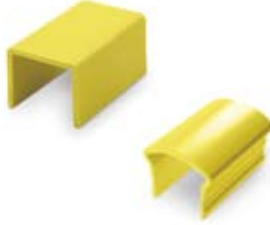







PULTRUDED PROFILES




STRUCTURAL PROFILES

	SECTION	DIMENSIONS
TYPE I		100 x 200 x 10 150 x 75 x 8
TYPE C		300 x 100 x 15 200 x 60 x 10 150 x 45 x 8 90 x 35 x 8
TYPE T		100 x 100 x 10 75 x 75 x 8

PARAPET PROFILES

	SECTION	DIMENSIONS
HANDRAIL		60 x 50 x 5 60 x 60 x 5 ERG
ROD		50 x 50 x 5
KICK STRIP		150 x 5
SIDE STRIP		55 x 5
		40 x 5
		26 x 19

PROFILES FOR DIFFERENT USES

	SECTION	DIMENSIONS
L ANGLAR		100 x 60 x 10 50 x 50 x 10 75 x 45 x 8 45 x 35 x 8 60 x 60 x 5 50 x 50 x 5 45 x 45 x 5 40 x 40 x 5 35 x 35 x 5
RUNG		28 x 21.3
RECTANGULAR		80 x 50 x 5 85 x 25 x 3 58 x 25 x 3

All technical sheets are available on www.mmgrigliati.it

MM technical staff provides designs and projects of all the carpentries required.

ENCLOSURES

MM enclosures do not require operating costs because they need no maintenance and no earthing. They are also used indoors as bordering of live appliances.



POWER STATION

MAIN APPLICATIONS

- POWER PLANTS
- GEOTHERMAL PLANTS
- TRELLISES
- TRANSFORMERS
- RAILWAY SUBSTATIONS
- RAILWAY TUNNEL NICHES

GATES

MM gates are built with FRP gratings and profiles. They are supplied preassembled and complete of all fixing accessories.



PARKING



GATES

CE MM gates are credited with the CE trademark according to the 89/106/CEE regulation for building materials and are tested under the UNI EN 13241-1 norm.

PARAPETS, GANGWAYS, LADDERS AND STAIRWAYS



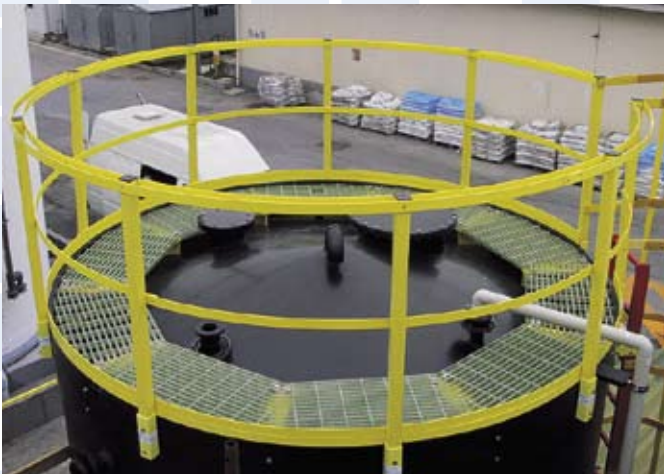
PARAPETS AND GANGWAYS

MM profiles can be used for the construction of parapets, ladders, stairways and gangways. The features of MM profiles enable the construction of lightweight, resistant and long lasting structures.

Profiles are generally supplied in yellow color (which complies with the main safety standards) but on request other colors can be provided.

Structures built with MM gratings and profiles require no maintenance.

Parapets, ladders, stairways and gangways are built accordingly to the European ISO 14122 norm and to the requirements of single countries.



LADDERS

MM ladders are built with FRP profiles by fixing the rungs to the rods with FRP pins.

The backshield is entirely made with FRP profiles assembled with S.S. screws. The fixing of the ladder is made with FRP or S.S. anchor clamps.



STAIRWAYS

M.M. stairways are built with FRP pultruded profiles, FRP gratings and S.S. accessories according to the ISO 14122-1-2-3 norm.

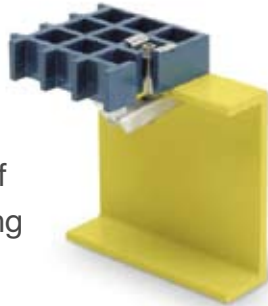
The stairways can be supplied preassembled, complete of parapet and designed in different inclinations.



ACCESSORIES

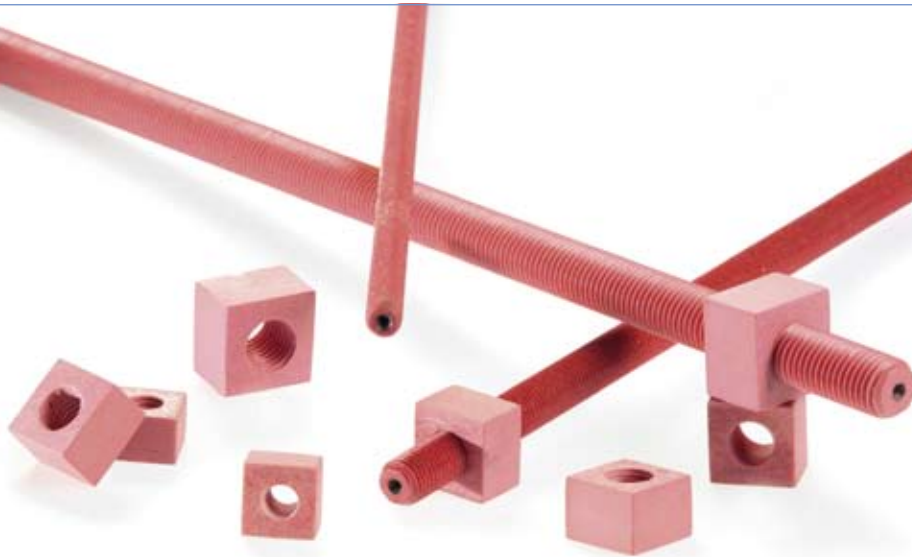
FIXING CLAMPS

For the grating fastening and the structure assembling we stock a wide range of S.S. fixing and connecting clamps, available at any time.



FRP BOLTS AND NUTS

Bolts and nuts in FRP are a complete assurance against corrosion. Insulating and non magnetic tie bars can be used with the guaranty of a tight fastening, a strong cutting resistance and a high axial strain. No more insulating problems and no more earthing is required.



LIFTING DEVICES

Polypropylene adjustable supports variable from 75 to 550 mm

Tubular FRP supports dimensions 50x50x5 mm with cross-cut



STEPS

Grating steps
With or without front plate
Self-bearing or framed



COMPODECK

**The only composite grating
classified L1.**

ACCORDING TO U.S. COAST GUARD STANDARDS

NEW PRODUCT

PATENTED BY MM

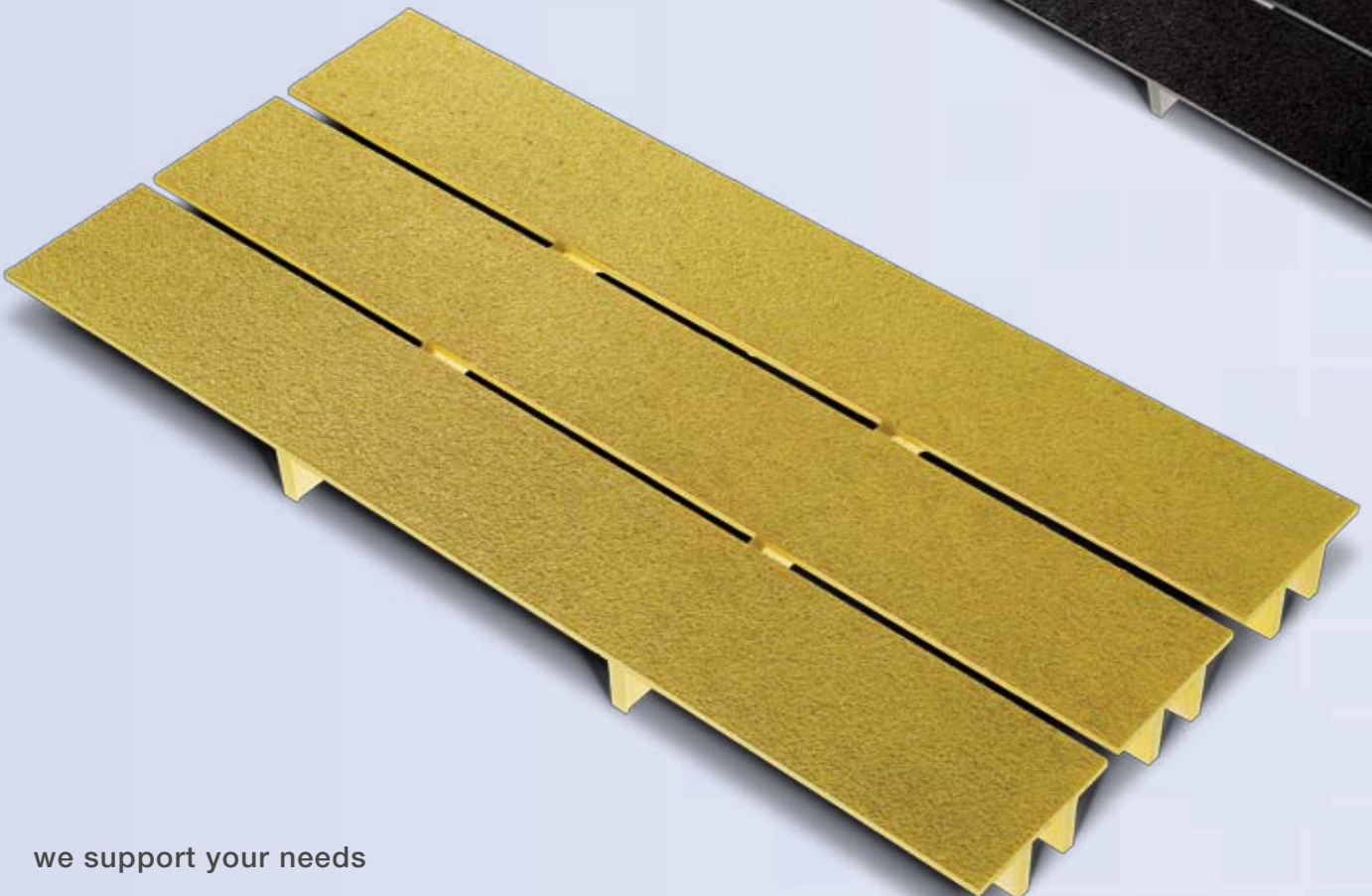
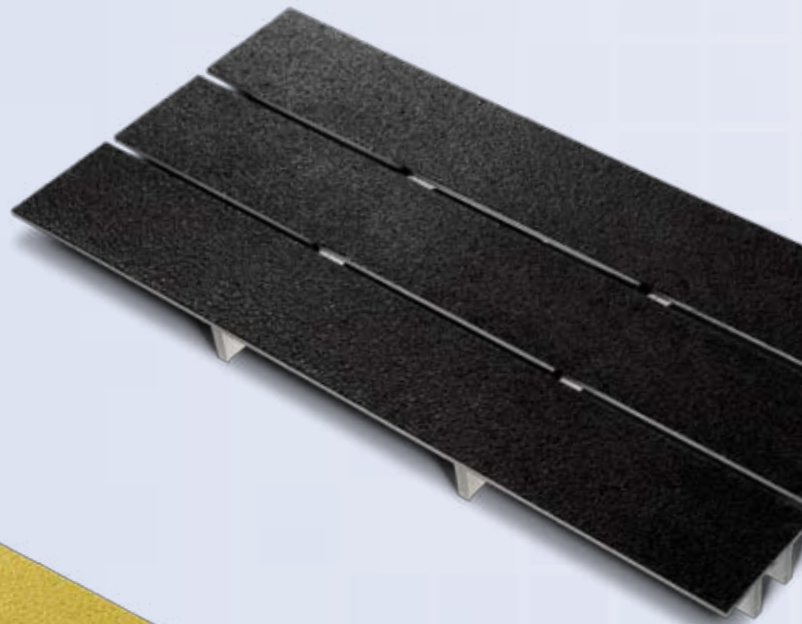
This innovative grating puts together the common composite features to the fire resistance that no other product could boast.

Compodeck has stood the fire resistance and structural integrity tests after being exposed to fire for 60 minutes (norm ASTM E84-05 and USCG PFM 2-98).

It has been designed to meet the high safety standards required by the US Coast Guard and mainly employed in the marine field. It is used in escape ways or fire fighting areas.

SUGGESTED APPLICATIONS

- **ESCAPE WAYS**
- **FIRE FIGHTING AREAS**

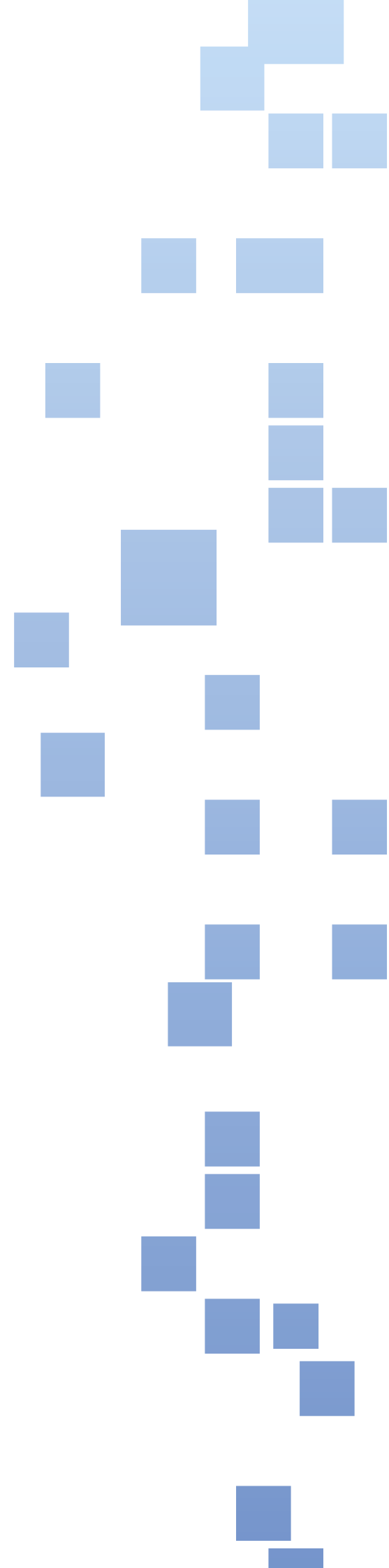


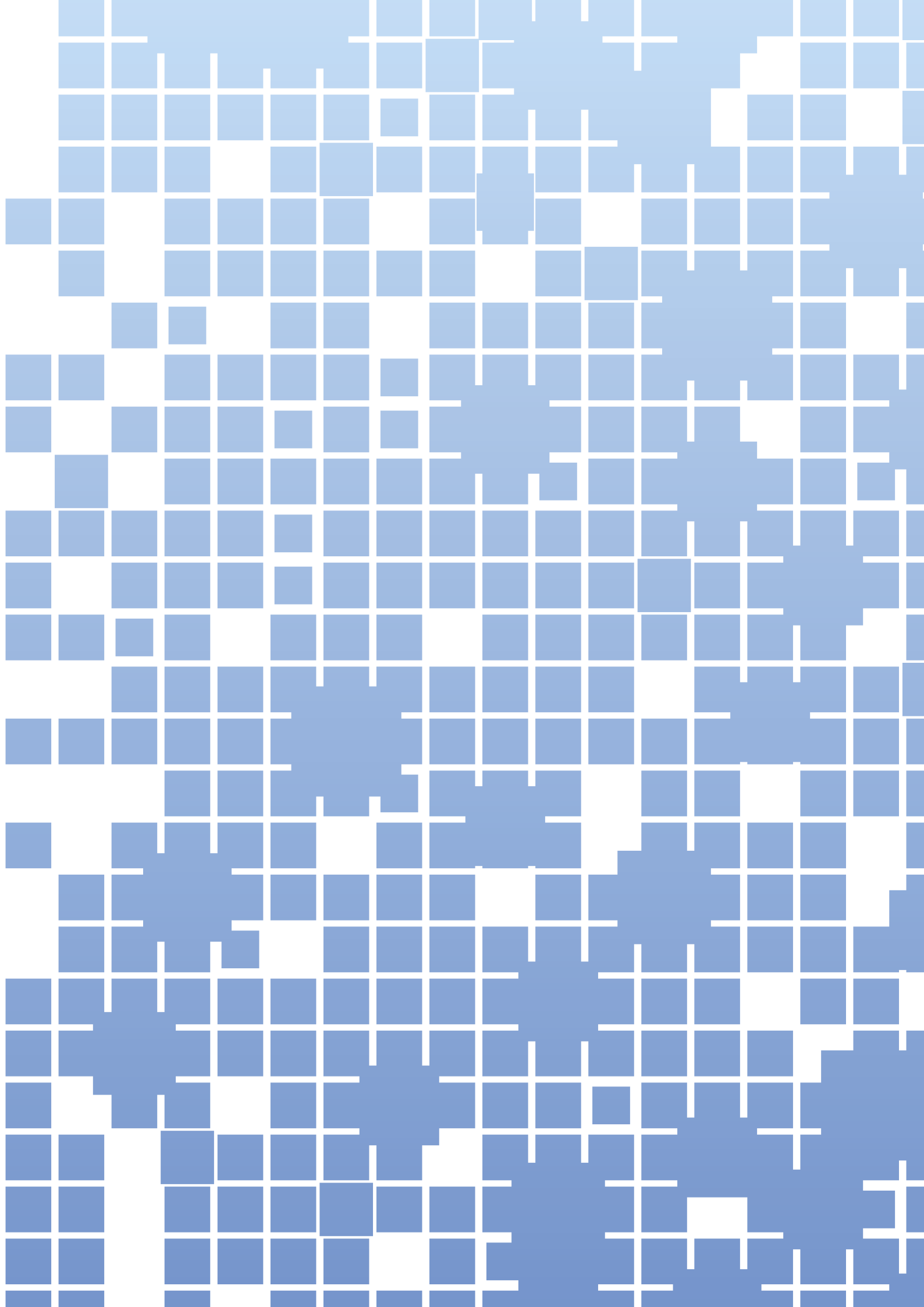
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concept by
www.interlaced.it

print
Tipografia Soriano (Udine)

edition 06/2009







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