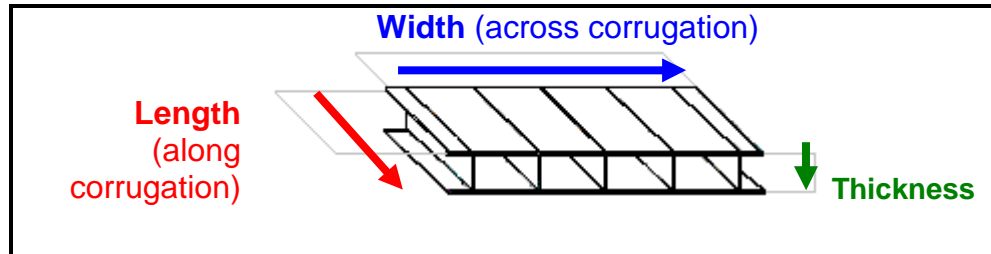


TECHNICAL SPECIFICATION ST-GQ-GAL-CPL1



Dimensions of the sheet must be expressed in mm, indicating:

Length X Width X Thickness

First dimension given is always flute direction

Basic component: Copolymer polypropylene (C₃H₆)n(C₂H₄)m

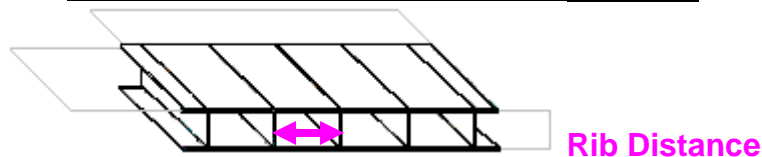
CHARACTERISTICS		FEASIBILITY	ACCEPTANCE CRITERIA	TESTING PROCEDURE NO:
	Length (sheets)	From 600 to 6.000 mm *	+/- 1%	7
	Length (rolls)	From 50 mt. to Ø max. roll 1 mt		
W I D T H	Standard flute sheet	From 400 to 2700 mm	+/- 3 mm	7
	Semilarga flute sheet	From 400 to 2050 mm		
	Triple wall sheet	From 400 to 2100 mm		
	Rolls without core	From 300 to 1200 mm		
	Rolls with core (internal diameter 152.4 mm 6'')	From 300 to 1300 mm		
	Rolls with core (internal diameter 201 mm)	From 300 to 2400 mm		
Diagonals difference		///	< 0.5 % up to max 10 mm	8
T H I C K N E S S	Standard flute sheet	From 1.8 to 5.0 mm	+/- 0.1 mm	9
	Semilarga flute sheet	From 3.5 to 8.0 mm		
	Triple wall sheet	From 7.0 to 11,0 mm		
	(rolls)	From 1.8 to 2.5 mm		
D E N S I T Y	Standard flute sheet	From 240 to 1500 gsm	+/- 10% up to 1.000 gsm +/- 5% more then 1.000 gsm	10
	Semilarga flute sheet	From 450 to 2000 gsm		
	Triple wall sheet	From 800 to 3000 gsm		

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(rolls)	From 250 to 450 gsm		
Master opacity level	///	+/- 5 % by comparison with sample of reference	12
Planarity	///	Max. 1 wave and +/- 0.5% length / width	14
Appearance	Evaluation made by the quality control personnel in comparison with the sample of reference		18

Smaller dimensions can be achieved with further working after extrusion.

Density limits given by thickness and rib distance



Standard flute – rib distance 3,2 – 3,5 mm									
Thickness mm		1.8	2.0	2.5	3.0	3.5	4.0	4.5	5
Density Gsm	Min	240	250	350	400	600	700	850	900
	Max	350	700	800	1.200	1.500	1.500	1.500	1.500

Semilarga flute – rib distance 4,5 mm								
Thickness mm		3.5	4,0	4.5	5.0	6.0	7.0	8.0
Density Gsm	Min	450	500	600	650	1.000	1.500	1.500
	Max	600	800	800	1.500	2.000	2.000	2.000

Triple Wall flute – rib distance 5,3 mm					
Thickness mm		7.0	8.0	10.0	11.0
Density Gsm	Min	800	1.450	1.750	2.400
	Max	1.500	2.500	3.000	3.000

Coefficient of thermal expansion: value included between 100-200 $\mu\text{/}^\circ\text{C/m}$

Chemical features


Polypropylene guarantees waterproof properties and resistance against the majority of alkaline products, salts solutions, solvents and heavy mineral acids at temperatures lower than 60°C. They can be on the other side etched by heavy oxidative agents, nitric acid, hydrogen peroxide and chlorosulphonic acid. Waving can be caused by a prolonged aliphatic, aromatic and chlorinated hydrocarbons etching.

Possible treatments – on Customer's request when asking for quotation

1) Printing treatment

- ≥ 46 dyne / cm for every kind of flute type and thickness except layer pads
- on both sides of the sheet
- Average duration 6 months under proper stocking conditions (i.e. packaged sheets properly stocked in dry places)

We recommend as a good practice to check and record corona treatment before printing process and report any anomalies to Karton technical departments

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2) Antistatic / conductive treatment

	Feasibility	Resistivity (Ω)	Duration of treatment	Colour
Conductive sheets (volumetric)	All densities	$10^3 - 10^4$	Permanent	Black
Conductive sheets (superficial) *	Density > 700gsm	$10^3 - 10^4$	Permanent	Black
Dissipative sheets (volumetric)	All densities	$10^6 - 10^8$	Permanent	Black
Dissipative sheets (superficial) *	Density > 700gsm	$10^6 - 10^8$	Permanent	Black
Antistatic sheets**	All densities	$10^9 - 10^{11}$	1 year	Any colour

* For densities lower than 700 gsm please contact our sales office at number + 39 0434 788811.

**The resistivity that could be obtained is influenced by the environmental humidity, that is necessary to obtain the resistivity level above-written. In order to have a duration of treatment of one year is necessary to avoid to wash and rub the surface of the sheet, because the additive would lose his effectiveness.

3) Anti UV treatment

- Depending on the duration of UV exposure, ask for adequate treatment grade.

4) Flame Retardant treatment

- The flame retardant treatment gives to the sheet flame retardant properties.

Other processes available

- Back trimming and die-cutting **performed under standard temperature conditions** (the tolerance on length and width of the sheets is reduced to +/- 1 mm during these procedures).
- Die cutting: please note that standard die-cutting guarantees a cleaning of scraps of 96% approximately. Consequently, a possible presence of scraps in a percentage not exceeding 4% has to be taken into consideration. Only at the express written request of the customer, agreed with our sales / quality department, it is possible to increase the effectiveness of the cleaning of scraps up to a percentage equal to 99-100%.
- Edge sealing (only for layer pads, the tolerances on length and width of the sheets are reduced to +/- 5 mm)
- Microperforation (only on one side of the sheet) for density < 800gsm
- Print
 - Flexo printing on line 1 colour on both sides of the sheet. Max dimensions of printing 450x 90 mm
 - Positioned flexo printing off the line, up to 5 colours. Max dimensions of printing 2030*1300 mm
 - Screen printing off the line.

We would like to inform you that our flexographic, digital serigraphic print etc. are water resistant in normal using conditions; safe uses can be considered i.e. advertisement vertical panels, fruit and vegetable boxes and other applications which imply only temporary contact with water. Water should be always allowed to drip and dry out prior to use. Whenever material must be stored outdoors (i.e. building and construction materials) we do recommend to follow strictly the following advices:

- Strictly avoid stagnant water to stay over prints for prolonged time, and therefore avoid storing outdoors material that is laying horizontally exposed to rainfall without adequate protection;

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- Should be unavoidable storing outdoors material that is laying horizontally exposed to rainfall, please remember always to protect the material with adequate waterproof protections such as PE film or similar;
- It is preferable to store the material vertically, in order to allow proper water drainage and dry out prior to safe use;
- Before using, please always check out for any residual water that could have penetrated the flutes, and only use it after water has been properly drained and dried out.

Under no circumstances our company will acknowledge claims or non conformities due to immersion of printed polypropylene articles since this is not a validated and foreseen application for our products.

Suggested product use

- Store at room temperature. Cartonplast sheets can withstand peak temperatures included between -20°C < x < 120°C without damage.
- Working temperature range is included between : -20°C < T°C < +60°C
- Before other processes make sure that all the material reach a temperature higher than 15°C in every part of it.
- Instructions for Protecting Covering Materials: Please mind putting the printed side of the board always facing up. The printed side should never be in direct contact with protected surfaces. Please mind sealing carefully each board with adequate adhesive tape.

Regulatory requirements

- Regulation 1907/2006/CE of 18th December 2006 (REACH) and subsequent amendments
- Safety Data Sheet: In accordance to the REACH Regulation, this product is an article for which is not required to issue the product safety data sheet.
- Other requirements available upon request prior to obtain a commercial offer.

Packaging

- On wooden pallets, packed with shrinking film, strips and side corner protectors.

Please note that our standard packaging is not to be considered as "waterproof". Whenever downloading of good is planned to happen outdoor and this procedure applies also in case of bad weather conditions and it is therefore foreseen a risk for water to drip on goods inwards, the customer can request specific waterproof packaging. Our sales offices will quote specifically for waterproof packaging. This risk assessment remains a specific responsibility of the end customer.

Basic technical conditions of supply

- Flute type and colour are features agreed with Customer by comparison with the sample of reference.
- Conformity of the material to particular laws (i.e. food contact, toys, etc.) can be certified and declared only on Customer's request white asking for quotation.
- Selling units of measurement: no. of pieces, possible requests in kilo are converted in pieces using density
- You have to keep the identification label of the product to go back easily over the product.
- All the processes and the controls on the product take place in standard temperature conditions.