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# **Aqua - Plus Pipes**

(Polypropylene PPR)

INTERPLANT ACIA-PLUS PP-R TYPE DESIXES-SENIZZOZ DIN BOZZ-ZO SKI AZZE-UNE-EN 183 15874 AFHOR N BOL/GOOZEG BE 6526 MAGE S

#### SDR 6 - PPR 80 PIPES

Interplast manufactures PP Random type 3 pipes and fittings with dimension from 20 mm to 160 mm with applications in plumbing-heating-cooling installations, in industry (transfer of liquids and compressed air) and in networks that run the risk of electrochemical corrosion.

Aqua plus pipes are manufactured in green colour in aligned segments 4 meters each. They can be manufactured in black stabilized color for UV protection. It is also available in rolls 100m each in 20mm dimension.

The pipes bear a printing per meter, indicating the trade name, outer diameter, wall thickness, operating pressure at ambient temperature, manufacturing specifications, (EN, DIN, UNE), certifying institutes (EVETAM, SKZ, AENOR, DVGW, WRAS) and a code number stating the time and date of production.

The structure of the material and the smooth surface texture ensure low friction losses resulting in low resistance and low pressure drop in the piping. In addition the material used significantly reduces the noise generated and limits its transmis- sion through the pipes. This can help produce pipes with thinner walls and bigger water flow.

As a result instalations with Aqua Plus Pipes, it is possible to transfer bigger water/fluid flows using smaller pipes dimention.







PRODUCED DIMENSIONS OF AQUA PLUS PPR 80 PN 20 SDR 6						
EXTERNAL DIAMETER (mm)	WALL THICKNESS (mm)	INTERNAL DIAMETER (mm)	WATER CAPACITY (I/m)	PIPE WEIGHT (kgr/m)	PACKAGING (m)	
20	3,4	13,2	0,137	0,172	100	
25	4,2	16,6	0,216	0,267	80	
32	5,4	21,2	0,353	0,435	60	
40	6,7	26,6	0,556	0,671	40	
50	8,4	33,2	0,866	1,050	16	
63	10,5	42,0	1,385	1,650	12	
75	12,5	50,0	1,963	2,340	8	
90	15,0	60,0	2,827	3,400	4	
110	18,4	73,2	4,208	5,040	4	

# **Advantages**

- High resistance of the pipes and the fittings on hydraulic shock (at pressures greater than 130 bar at ambient temperature).
- Lifespan of more than 50 years for temperatures of 20°C to 90°C and operating pressure 6-26 bar.
- Temperature Peaks of 110°C at 4 bar operating pressure do not affect the Aqua-Plus system.
- Excellent corrosion resistance. Very good performance even in areas with very hard water.





# Aqua-Plus Pipes reinforced with fiberglass made by PPR 112

Interplast, apart from the one layer polypropylene Random pipes manufactures polypropylene three-layer pipes PP-R MRS 11.2 MPa (new generation of PPR) with fiberglass and wall thickness that corresponds to SDR 7.4 and SDR 11.

The polypropylene used for the multilayered pipes Aqua-Plus-Fiberglass(with mechanical support in the middle layer) is characterized as polypropylene random with high mechanical

endurance and long lifespan, in contrast to the single layer PP-R in the category MRS 8.0 MPa (PP-R 80). Press endurance of pipes PP-R 112 with SDR 7,4 at 20°C is 20% greater in relation to the pipes PPR 80.

The Aqua-Plus-GF pipes are designed, manufactured and tested for their quality according to the International Standards that are valid for the simple layer polypropylene pipes (EN ISO 15874 & DIN 8077/78) and in accordance with the specific directive HR 3.28 of the German Institute SKZ.

#### The advantages of this new type are:

- Reduction of the thermal linear expansion by 50% in relation to the simple polypropylene pipes
- •Increase of the mechanical endurance of the pipe in the inner hydrolic pressures per 20% (for the SDR 7,4).
- Increase in the chemical endurance of the pipe against to corrosion
- High stiffness of the pipes
- Greater quantity of conveyed water
- Increase in the life of service
- •The thermal welding of the new pipes with the polypropylene fittings are carried out in the same easy way as in the single layer PPR pipes







PROI	DUCED DIMENS	ONS OF AQUA	PLUS GF PPR 112	2 PN20 SDR 7	,4
EXTERNAL DIAMETER (mm)	WALL THICKNESS (mm)	INTERNAL DIAMETER (mm)	WATER CAPACITY (I/m)	PIPE WEIGHT (kgr/m)	PACKAGING (m)
20	2,8	14,4	0,163	0,158	100
25	3,5	18,0	0,254	0,246	80
32	4,4	23,2	0,423	0,394	60
40	5,5	29,0	0,660	0,613	40
50	6,9	36,2	1,029	0,955	16
63	8,6	45,8	1,647	1,500	12
75	10,3	54,4	2,323	2,135	8
90	12,3	65,4	3,358	3,058	4
110	15,1	79,8	4,999	4,576	4
125	17,1	90,8	6,472	5,891	4
160	21,9	116,2	10,599	9,538	4
200	27,4	145,2	16,550	17,900	4

PRODUCED DIMENSIONS OF AQUA PLUS GF PPR 112 PN 12,5 SDR 11						
EXTERNAL DIAMETER (mm)	WALL THICKNESS (mm)	INTERNAL DIAMETER (mm)	WATER CAPACITY (I/m)	PIPE WEIGHT (kgr/m)	PACKAGING (m)	
32	2,9	26,2	0,539	0,261	60	
40	3,7	32,6	0,834	0,412	40	
50	4,6	40,8	1,307	0,638	16	
63	5,8	51,4	2,074	1,010	12	
75	6,8	61,4	2,959	1,410	8	
90	8,2	73,6	4,252	2,030	4	
110	10,0	90,0	6,359	3,010	4	
125	11,4	102,2	8,199	3,910	4	
160	14,6	130,8	13,430	6,380	4	
200	18,2	163,6	21,010	9,950	4	
225	20,5	184,0	26,577	12,600	4	
250	22,7	204,6	32,861	15,500	4	
315	28,6	257,8	52,172	24,600	4	





# Aqua Plus reinforced with fiberglass made by PP-RCT 125

The Aqua-Plus-GF PP-RCT 125 pipes are designed, manufactured and tested for their quality according to the E.U. standards that are valid for the conventional polypropylene pipes (EN ISO 15874 & DIN 8077/78) and in accordance with the specific directive HR 3.28 of the German Institute SKZ.

The Aqua-Plus pipes PPRCT 125 are manufactured with wall thicknesses that corresponds to SDR 9, with possibility of continuous operation under pressure of 20 bar at 20°C(PN 20) for time period more than 50 years and to SDR with possibility of continuous operation under pressure of 10 bar at 20°C(PN 10) for the same period of time.

PPRCT 125 is one of the latest advancement in polypropylene material, having a more complex crystaline structure (Polypropylene Random Crystallinity Temprature).

#### PP-RCT 125 main advantages:

**-Higher mechanical strength conventional PPR**, according to EN 15874 and DIN 8077, especially in high temperatures.

For example, standared PPR, at 80°C with SDR 7.4 for 25 years will have max operating pressure 5.1 bar while the PPRCT 125, at 80°C with SDR 9 for 25 years, will have max operating pressure at 7.2 bar. Using PP-RCT be able to produce pipes with thinner wall: thickness and increasing the quality of the piping network.

-Excellent aging resistance

Abore advantages make it suitable for higher temperature applications such as district heating and in extremely demanding cooling installations, even when temperature reaches 100°C.



PROD	UCED DIMENSI	ONS OF AQUA	PLUS GF PPRCT 1	25 PN 20 SDF	R 9
EXTERNAL DIAMETER (mm)	WALL THICKNESS (mm)	INTERNAL DIAMETER (mm)	WATER CAPACITY (I/m)	PIPE WEIGHT (kgr/m)	PACKAGING (m)
32	3,6	24,8	0,483	0,313	60
40	4,5	31,0	0,754	0,487	40
50	5,6	38,8	1,182	0,755	16
63	7,1	48,8	1,869	1,200	12
75	8,4	58,2	2,659	1,690	8
90	10,1	69,8	3,825	2,440	4
110	12,3	85,4	5,725	3,620	4
125	14,0	97,0	7,386	4,660	4
160	17,9	124,2	12,109	7,620	4
200	22,4	155,2	18,908	11,900	4

PRODUCED DIMENSIONS OF AQUA PLUS GF PPRCT 125 PN 10 SDR 17						
WALL THICKNESS (mm)	INTERNAL DIAMETER (mm)	WATER CAPACITY (I/m)	PIPE WEIGHT (kgr/m)	PACKAGING (m)		
9,5	141,0	15,614	4,330	4		
11,9	176,2	24,383	6,750	4		
14,8	220,4	38,151	10,500	4		
18,7	277,6	60,493	16,700	4		
	WALL THICKNESS (mm) 9,5 11,9 14,8	WALL THICKNESS (mm)  9,5 141,0 11,9 176,2 14,8 220,4	WALL THICKNESS (mm)  9,5  141,0  15,614  11,9  176,2  24,383  14,8  220,4  38,151	WALL THICKNESS (mm)  9,5  141,0  15,614  4,330  11,9  176,2  24,383  6,750  14,8  220,4  38,151  10,500		







# **Aqua Plus with Aluminium layer**

The Aqua-Plus pipes with aluminium layer are designed, manufactured and tested for their quality according to the standards that are valid for the standard polypropylene pipes. Aqua-Plus-AL pipes are manufactured from PPR 112 and wall thicknesses that corresponds to SDR 7,4, with possibility of continuous operation under pressure of 20 bar at 20°C(PN 20) for a time period more than 50 years.

# **ADVANTAGES**

- Reduced of thermal linear expansion by 60% compared to single layer polypropylene pipes.
- Increased impact recistance.
- Increased mechanical strength against internal hydraulic pressure by 15%.

The thermal-welding of the Aqua Plus - AL pipes with the polypropylene fittings is as easy as in simple pipes, after their ends being processed with a scraper.

	EXTERNAL DIAMETER (mm)	WALL THICKNESS (mm)	INTERNAL DIAMETER (mm)	WATER CAPACITY (I/m)	PIPE WEIGHT (kgr/m)	PACKAGING (m)
Ī	20	2,8	14,4	0,163	0,158	100
	25	3,5	18,0	0,254	0,246	80
	32	4,4	23,2	0,423	0,394	60
	40	5,5	29,0	0,660	0,613	40
	50	6,9	36,2	1,029	0,955	16
	63	8,6	45,8	1,647	1,500	12
	75	10,3	54,4	2,323	2,135	8
	90	12,3	65,4	3,358	3,058	4
	110	15,1	79,8	4,999	4,576	4

<sup>\*</sup>External diameter calculated in table after aluminum layer and outside PPR layer be scraped







# Table of service life

The EN and DIN standards are exceeded due to raw material quality and highly quality characteristics of the additives.

**Due to the high level laboratory equipment of the company** (thermal cyclingtester) is possible to check the mechanical strength of the raw materials and **to derive the corresponding** hydraulic resistance diagrams and to determine the strength of our pipes in relation to temperature and service live duration.

	TABLE OF SERVICE LIFE					
Temperature (o C)	Service life in years	Operating pressure PPR 80 SDR 6 (bar)	Operating pressure PPR 112 SDR 7,4(bar)	Operating pressure PPRCT 125 SDR 9(bar)	Operating pressure PPR 112 SDR 11(bar)	Operating pressure PPRCT 125 SDR 17(bar)
10	1	35,2	36,2	35,6	22,8	17,8
	5	33,1	35,1	34,5	22,1	17,3
	10	32,3	34,7	34,1	21,9	17,0
	25	31,2	34,1	33,5	21,5	16.6
	50	30,4	33,6	33	21,2	16,5
	100	29,6	33,2	32,6	20,9	16,2
20	1	29,9	31,5	31,3	19,9	15,7
	5	28,3	30,5	30,3	19,3	15,2
	10	27,5	30,1	29,9	19,0	15,1
	25	26,7	29,6	29,4	18,6	14,7
	50	25,9	29,2	29	18,4	14,6
	100	25,1	28,8	28,6	18,1	14,4
30	1	25,6	27,3	27,3	17,2	13,6
	5	24,0	26,4	26,4	16,6	13,2
	10	23,2	26,0	26,0	16,4	13,0
	25	22,4	25,5	25,5	16,1	12,7
	50	21,9	25,1	25,1	15,8	12,3
40	1	21,6	23,5	23,6	14,8	11,7
	5	20,3	22,6	22,7	14,3	11,3
	10	19,7	22,3	22,4	14,1	11,1
	25	18,9	21,8	21,9	13,8	11,0
	50	18,4	21,5	21,6	13,6	10,7







TABLE OF SERVICE LIFE						
Celsius Degrees (o C)	Service life in years	Operating pressure PPR 80 SDR 6 (bar)	Operating pressure PPR 112 SDR 7,4(bar)	Operating pressure PPRCT 125 SDR 9(bar)	Operating pressure PPR 112 SDR 11(bar)	Operating pressure PPRCT 125 SDR 17(bar)
50	1 5 10 25 50	18,3 17,1 16,5 16,0 15,5	20,1 19,3 19,0 18,6 18,3	20,5 19,7 19,4 19,0 18,7	12,6 12,2 12,0 11,7 11,5	10,4 10,2 10,0 9,9 9,7
60	1 5 10 25 50	15,5 14,4 13,9 13,3 12,9	17,0 16,3 16,0 15,7 15,4	17,7 17,0 16,7 16,4 16,1	10,7 10,3 10,1 9,9 9,7	8,4 8,2 8,1 7,9 7,8
70	1 5 10 25 50	13,1 12,0 11,6 9,9 8,5	14,3 13,7 13,5 13,1 12,9	15,4 14,8 14,6 14,2 14,0		
80	1 5 10 25	10,9 9,6 8,0 6,4	11,9 11,4 11,2 10,9	13,4 12,9 12,7 12,4		





# **Aqua Plus Prins**

Aqua Plus Prins are factory made pre-insulated PPR pipes, are insulated externally with uniform insulation of closed cell polyurethane rigid foam. Polyurethane foam substantially overlaps, the quality characteristics defined by the standard EN 253. The outside layer is made by PVC in accordance with standard EN 1329 and free of Pb.

The advantages of Aqua Plus Prins compared to the tranditional insulation systems are:

- -Ideal system for visible and non-visible district heating and cooling piping networks.
- -Reducing of energy losses up to 57%
- -Zero maintenance costs for 50 years.
- -Sparse and simple bracketing due to the low thermal and the low bending of pre insulated pipes.
- -Tower linear thermal expansion compared to copper pipes.
- -Reduced instalation cost by minimizing expansions loops and quantity of required supports.
- -Increased mechanical strength.
- -Zero condensations.

DIAMETER OF PPR CARRIER PIPE (mm)	EXTERNAL DIAMETER OF PVC SLEEVE PIPE (mm)
32	63
40	75
50	90
63	100
75	125
90	140
110	160
125	200
160	225
200	250
250	315
315	400





Upon request Interplast SA can produce pipes with polyethylene outer layer, as well as the production of pipes with a bigger outer cross-section.

Pre-insulated pipes are accompanied by a full range of fittings.

POLYURETHANE DA	ATA
Technical Data (mm)	FIXED FOAM POLYURETHANE (mm)
Density	> 60 kg / m3
Closed cell content	> 88 %
Water absorption	< 10 % (Vol)
Compressive strength deformation 10%	> 0.3 N/mm2
Shearing resistance	> 0.12 N/mm2
Tangent shearing resistance	> 0.20 N/mm2
Thermal conductivity coefficient in 20° C	< 0.021 W/mK

# **Application Area**

- -Visible-non visible heating cooling networks and DHW piping networks
- -Visible-non visible district heating systems
- Underground networks for distribution of hot and cold water
- -Industrial cooling networks













# **Certified Fittings Aqua plus PN 25**

The fittings are manufactured in accordance with DIN 16962 from Polypropylene Random (Type 3) and available in **dimensions from 20 mm to 315 mm**. For their production the company uses raw material with a low melt flow index, identical to that of its pipes so that the mechanical strength of the pipe does not differ from that of the fittings. They are produced with a wall thickness equivalent to 25 bar.

Reinforced pressure tests (80 bar compared to 64 bar for the PN20 series).

The PP-R overlaps the male brass inserts on the inside.

The brass parts are reinforced, heavy-duty and low hardness (105 Brinell) thus eliminating the possibility of cracking, which is particularly common in fittings with female threading.

## REFERENCE LIST



Interplast is placed in the first place of plastic pipes for building installations of water supply and heating networks in Greek market due to constant increasing course. At the same time the increased export activity are showing off with plenty of projects in all manufacturing sectors in Europe and in USA, in Africa and in Middle East. In Greece, the first place is proved by our participation in hotel and airports constructions, commercial shops, hospitals and residences.

Pre-insulated PPr system has been widely accepted despite the short time it is placed in the Greek and international market. It was presented on Climatherm Energy 2016. Low linear expansion, constant thermal insulation properties and long-term resistance in solar radiation make the product innovative in the pre-insulation of hydraulic networks, convincing the technical world to trust it in the most demanding applications.

### reference list

Stead growth of Interpast, has secured a leading position in the Greek market and worldwicely in the plastic pipe sales for water supply and HVAC systems.

At the same time, the increasing export activity is proven through the large number of projects in all construction sectors in Europe and the Middle East.

This is evident from our participation in a large number of construction projects for hotels, hospitals, shops and housing.

#### I. Olympic Projects

- Olympic Village, Athens
- Athens International Airport El. Venizelos, Spata
- · Attiko metro, Athens
- Olympic Rowing and Canoeing Centre, Schinias
- · Olympic Weight-lifting Centre, Nikaia
- Olympic Press Centre, Maroussi
- Olympic Beach Volley Centre, S.E.F.N. Faliro
- Olympic Indoor Gymnasium and Table Tennis Hall, Galatsi
- Peace and Friendship Stadium, N. Faliro
- Press Village, Pallini, Athens
- Press Village, Zografou, Athens
- Press Village, Maroussi, Athens
- Basket Ball and Fencing facilities, Helliniko
- Baseball, Softball and Hockey facilities, Helliniko
- Building installations for the starting point of the Marathon route. Marathon



#### II. Offices - Shops

- Arwa Tower, Doha, Qatar
- "The Mall", Shopping and Leisure Centre, Neratziotissa, Maroussi
- "Mediterranean Cosmos", Shopping and Leisure Centre, Thessaloniki
- Central Offices of the Agricultural Bank of Greece, Sygrou Ave.
- National Insurance Offices building, Sygrou Ave.
- Hondos Center department store, Thessaloniki
- Greek Embassy, Austria
- · Rex Bank, Vienna
- Attiki Bank, Thessaloniki
- Thalassokosmos" Aquarium, Heraklion, Crete
- Saida Mall Tyre, Lebanon
- Ministry of Housing , Bahrain





#### III. Hotels

- St. Regis Hotel & Residential Towers, Doha, Qatar, Luxury Hotels
- Grande Bretagne, Athens, Luxury Hotels
- Domes of Elounda, Elounda, Luxury Hotels
- Murex Hotel, 5★, Lebanon
- Holiday Inn, 5¢, Attiki Odos motorway, Athens
- President, 5★, Athens
- Lydra Mariott, 5\*(Thalassotherapy Section), Nicosia, Cyprus
- Aphrodite Intercontinental, 5★, Cyprus
- Electra Palace, 5\*, Thessaloniki
- Palirroia, 5x, Halkida
- Grecotel Olympia Riviera, 5★, Killyni
- Aldemar Royal Olympian, 5\*, Pyrgos, Ilia
- Meliton-Porto Karras, 5★, Halkidiki
- Ilion Mare, 5★, Thassos
- Aldemar Knossos Royal, 5★, Crete
- Aldemar Royal Mare, 5★, Crete
- Olympian Village, 5★, Ilia
- Grand Serrai, 5★, Ioannina
- Apollonia, 5★, Heraklion
- Zorbas, 5★, Tigaki Kos
- Gaia Palace, 5☆, Mastihari Kos
- Blue Lagoon, 5★, Kos
- Iberostar Astir Odysseus, 5★, Tigaki Kos
- Lindosbay, 5★, Lindos Rhodes
- Grecotel Imperial, 5★, Karaiskaiki Sq., Athens
- Paradise, 5★, Kallithea Rhodes
- Ixian Grand, 5★, Ialysos Rhodes



#### reference list





#### IV. Residences

- Bab Al Rayyan 400 Village Villas, Doha, Qatar
- · Alia Apartments, Bucharest, Romania
- Garden View, Sin El Fil, Lebanon.
- Jawad & Jaffer Villa, Bahrain
- Green Lake Residences, Bucharest, Romania
- West Park, Bucharest, Romania
- Monaco Towers, Bucharest, Romania
- Vile Curtea Domneasca, Bucharest, Romania
- Raoucheh residence Verdun, Lebanon
- Chalet Ziad Mohsen Dalloul Faqra, Lebanon
- Villa Karageuzian Faqra, Lebanon
- Villa Badro Faqra, Lebanon
- Riyad Villa, Bahrain
- · Alawi Villa, Bahrain
- Students' halls of residence, Zografou
- · Housing for earthquake victims, Ano Liossia, Athens
- Council housing, Thessaloniki
- Council housing, Komotini
- Council housing, Tavros, Athens
- Housing units, Ministry for the Environment and Public Works, Thessaloniki
- · Council housing, Ag. I. Rendi, Athens

#### V. Hospitals

- Kavala General Hospital
- Igoumenitsa General Hospital
- 424 Military Hospital, Thessaloniki
- Genesis Maternity clinic, Thessaloniki
- Hospital Al Salam, Tripoli, Lebanon
- Al Arcoub Hospital Tyre, Lebanon
- Dialysis Center, Doha, Qatar

#### **VI. Educational Institutions**

- University installations (Laboratories), Nikosia, Cyprus
- Aley Technical School, Lebanon
- Bioclimatic schools of lalysos, Afantou and Kremasti, Rhodes
- School Al Salam Akkar / Akroum, Tripoli, Lebanon.
- Children village, Tripoli, Lebanon.
- Qatar State Mosque, Doha, Qatar.







# Aquaplus

# reference list Aquaplus Prins

The new product has been widely accepted despite the short time it is placed in the Greek and international market. it was presented on Climatherm Energy 2016. Low linear expansion, constant thermal insulation properties and long-term resistance in solar radiation make the product innovative in the pre-insulation of hydraulic networks, convincing the technical world to trust it in the most demanding applications.

#### I. Hotels

- Amathus Beach, Rhodes 5\*
- Rodos Palace, Rhodes 5\*
- Palladium, Rhodes 5\*
- Olympic Palace, Rhodes 5\*
- Atlantica Imperial Resort, Rhodes 5\*
- Atlantica Sensatori Resort, Rhodes 5\*
- Mayia Exclusive Resort, Rhodes 5\*
- Lindian Village, Rhodes 5\*
- Sun Beach Resort, Rhodes 4\*
- Blue Lagoon City Hotel, Kos 5\*
- Καράβια, Kos 5★
- Atlantica Porto Bello Beach, Kos 4\*
- Robinson Club Daidalos, Kos 4\*
- Porto Carras Resort, Chalkidiki 5\*
- Eagle Palace, Chalkidiki 5\*
- Sani Club, Chalkidiki 5\*
- Sani Dunes, Chalkidiki 5\*
- Ikos Oceania Resorts, Chalkidiki 5\*
- Anthemus Sea Beach, Chalkidiki 4\*
- Hotel Stanley, Athens 4\*
- Santo Maris, la Sandorine 5\*
- Kassadra Bay, Skiathos 5\*
- Hotel Xenia, Skiathos 5\*
- Punda Beach Resort, Paros 5\*
- HapiMag Resort, Porto Cheli 4★
- Lyttos Beach, Hersonissos Crete 4★
- Nana Imperial Hotel, Hersonissos Crete 5\*
- Atlantica Mare Village, Agia Napa, Cyprus 5☆
- Adams Beach, Agia Napa, Cyprus 5\*
- Le Meridien, Lemesos, Cyprus 5\*
- Radisson Blu, Larnaka, Cyprus 5★
- Epirus Palace, Ioannina 5★
- MarBella Corfu, Corfu 5★
- Ikos Dassia, Corfu 5\*
- Hotel Butrinti, Agioi Saranta, Abania 5\*
- Iveagh Gardens, Dublin, Ireland 4\*
- Domes of Elounda, Luxury Hotel, Elounda, Crete

#### II. Prefabricated buildings

• Hot Spot προσφύγων, Thiva





#### III. Winery & Brewery

- G. Boutaris Winery, Naousa, Imathia
- Winery of Ampeloes, Kavala
- · Domaine Vivlia Chora, Kavala
- Domaine Zafiraki, Tyrnavos, Larissa
- Domaine Charalambaki, Heraklion, Crete
- Domaine Kostas Lazaridis, Drama
- Macedonian Brewery, Drama
- Domaine Vourvoukeli, Avdira Xanthi

#### IV. Packaging - Raw Materials

- PAPADAKIS, Cooling chambers banana ripening, Crete
- ALKYON, Fruit Packer, Kavala Industrial Area
- ANATOLI, Fruit Pack, Imathia
- BOURAKIS, maintenance chambers, Anchialos of Thessaloniki
- Wonderplant, Hydroponics Greenhouse Tomato, Petroussa, Drama
- Escarcom, Processing of Frozen Fruit and Vegetables, Skydra, Pella

#### V. Industries

- · Coca Cola, Cyprus
- · Greek Fertilizers, Kavala
- KOLIOS SA Milk Industry, Kilkis
- TORRE COOPERLAT, Industry Ice cream, Kilkis
- Esti Foods, Food Industry, New Jersey, USA
- Genepharm, Medicine Industry, Pallini Attica

#### VI. Public and private buildings

- Luxury 2.500m² villa in Lefkada, Ionian Islands, Ionian Islands
- Condominium, Uppsala, Sweden
- Pafos Courts, Cyprus
- M-MARITIME, Marine Offices Company, Athens
- Rhodes National Airport
- Skiathos Airport
- Theodoropoulos School, Korakies, Chania
- Papanikolaou Hospital Thessaloniki
- OTE TV, Kifissia Athens