



Refrigeration Systems in Supermarkets

Your Application
→ our System



COOL-FIT® 3 in 1

- Top Quality
- Minimum On-Site Time



Complete System

- | COOL-FIT® ABS: 16 mm to 315 mm (3/8" to 12")
- | COOL-FIT® ABS Plus: 25 mm to 225 mm (1" to 9")
- | Pipe, fittings, valves, measurement and control

Parameters

- | 150 psi
- | COOL-FIT® ABS: -40°C to +60°C (-40°F to 140°F)
- | COOL-FIT® ABS Plus: -50°C to +40°C (-58°F to 104°F)

Suitable Mediums

- | Water
- | Iced Water
- | Ice Slurries
- | Salt Solutions
- | Organic Salt Solutions
- | Glycol Solutions
- | Alcohol Solutions
(not for use with refrigerants, e.g., R22, ammonia, CO₂, R407 etc.)

Plastic Piping System

COOL-FIT® ABS Plus is a complete pre-insulated plastic piping system for secondary cooling and refrigeration piping systems. The system is based on the tried and tested COOL-FIT® ABS plastic system from GF Piping Systems, in use since 1986, now with the option for pre-insulated pipe and fittings with black outer jackets.

The result: minimum on-site time, considerable cost savings and top quality.

Jacket Pipe

HD-PE to DIN 8075 black

Carrier Pipe COOL-FIT® ABS

- 150 psi rated, cement jointed ABS plastic pipe
- 5 meter (16.4 ft) lengths
- ABS Pipe to ISO 15493



COOL-FIT® ABS Plus is suitable for outdoor applications, because the black PE is UV resistant.

The system is vapor-tight and 100% water-tight.

Thanks to the new, revolutionary COOL-FIT® nipples for joining inside pipe diameters, the PUR insulation does not need to be removed before performing a joint. The joints use the tried and tested solvent cement joining technique with TANGIT ABS.

Hard Polyurethane Foam (PUR)

- Thermal conductivity 0.026 W/m.K (at 50°C)
- Foamed using polyol and isocyanate (no freons)
- Expansion coefficient 0.04 mm/m.K
- Core density > 2.8ft/ft³
- Average cell sizes 0.5mm

COOL-FIT® – for secondary and indirect Refrigeration Systems

The design of refrigeration systems in supermarkets is going through a state of flux not seen since the conception of man-made refrigeration some 130 years ago. The main drivers concern the environment and compliance to local and global regulations to reduce refrigerant charges.

The economic implications of any re-design are of major interest to the market. What will be the optimum design of a supermarket refrigeration system in the future that conforms to both present and future environmental laws while being cost effective?

The supermarket business the world over is concerning itself with this question, and numerous “new” designs and layouts are being evaluated. Everyone is working to the same fundamental goal: an environmentally friendly (i.e., zero ODP and GWP), no extra investment cost, lower running and maintenance costs, supermarket.

Secondary refrigeration

To achieve these goals, it would appear certain that secondary piping will be playing a major role in the supermarket design of the future. Whether in CO₂ cascade systems with MT indirect glycol refrigeration, or complete indirect systems with salt solutions for both LT and MT, secondary systems will play an important part in the future efficient

maintenance-free running of the complete refrigeration plant.

From USA to Scandinavia, through Southern Europe to Australia, numerous companies have now proven that when correctly designed and using dedicated components, secondary systems can provide lower running costs, increase quality of food (weight loss reduced) and improve reliability by reducing maintenance.

The only open question would appear to be investment costs; the costs of the components can increase investment costs. The primary reason for this is the present relatively low demand for secondary components. As demand from end-users increases, the investment costs will rapidly decrease. Experience in areas of the world where secondary systems are commonly used has shown that investment can be reduced to present levels compared to a traditional direct HCFC systems.

“Investigation of Secondary Loop Supermarket Refrigeration Systems” prepared for the “Californian Energy Commission, May 2004” is an independent study of the economic implications of a secondary refrigeration system in a supermarket. It is available to the general public; please ask for a copy.

Indirect refrigeration

The forgotten son: the secondary piping system. The material and system of choice is critical for the cost/performance ratio of any piping system, whether refrigerant system or secondary refrigerant system. The material to be used for refrigerant gas must not, *should* not actually, be the same as for a 38% glycol solution at 44 psi. GF Piping Systems has developed a dedicated piping system designed to suit the specific needs of indirect refrigeration, namely COOL-FIT®.

Combine reliability with speed

By combining the tried and tested COOL-FIT® ABS system with valves and measurement and control devices with the pre-insulated COOL-FIT® ABS PLUS, the contractor can reduce his time on-site to an absolute minimum and help reduce material costs, while standard ABS fittings will show material cost savings compared to copper in these sizes.

Full technical pre and post sales support

As well as world-wide local technical support staff, GF Piping Systems has a home page with an online calculation tool for all relevant engineering calculations, as well as product range information and joining instructions.

www.cool-fit.georgfischer.com

Refrigeration Systems in Supermarkets



Top Quality

You get what you pay for! No need to sub-contract insulation work, plus guaranteed efficiency thanks to factory manufactured pre-insulated pipe and fittings. No condensation or ice build-up even under the most extreme conditions.

MT- & LT-Systems

	Medium	Medium Temperature	Ambient	Humidity	COOL-FIT® ABS Plus
MT-System	Propylene Glycol	-6°C (21°F)	+23°C (73°F)	70%	no condensation
LT-System	Temper 40	-33°C (91°F)	+23°C (73°F)	70%	no condensation

Excellent Efficiency

COOL-FIT® can improve the efficiency of your secondary system by up to 40%. With a thermal conductivity, lambda value of 0.026W/m.K thanks to top quality high density PUR insulation.

	COOL-FIT® ABS Plus	
	90 mm (3")	160 mm (6")
U-Value [W/m.K]	0.325	0.362

Energy loss 1000m of 110 mm (4") pipe, using Propylene Glycol at 21°F (-6°C), ambient 73°F (+23°C).

	COOL-FIT® ABS Plus 110/180
Energy Loss [W]	9417

COOL-FIT® is about 35% more efficient than most other off-the-shelf insulations traditionally used.



Complete Plastic Piping System

No corrosion. Reduce maintenance to a minimum. Both externally and internally, ABS plastic does not corrode, thus offering reliability and an excellent lifespan. COOL-FIT® ABS is designed for a lifespan of 25 years.

The COOL-FIT® ABS system includes pipe, fittings, transition fittings to copper, manual valves and measurement and control devices. All completely plastic, designed and manufactured by GF Plastic Piping Systems.

No Welding Equipment

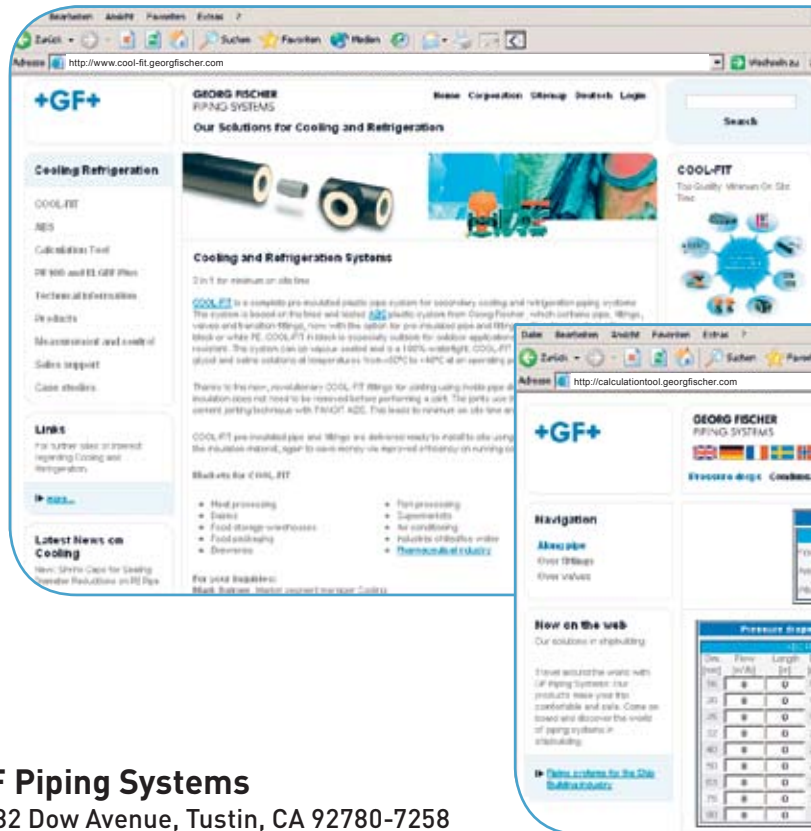
Speedy, reliable installation.

No welding or specialist joining equipment is required for a safe and reliable installation. The system uses the tried and tested TANGIT solvent cement jointing technique, in use for 40 years.

Low Weight

Ideal for hanging below ceilings. Low density plastics allow easy handling on-site with a simple cost effective pipe support system.

Weight [kg per 100m]	COOL-FIT ABS	Copper
50 DN 40	52	291



Please find more information concerning other applications and segments of GF Piping Systems:

www.piping.georgfischer.com → Solutions

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