UNDERFLOOR HEATING

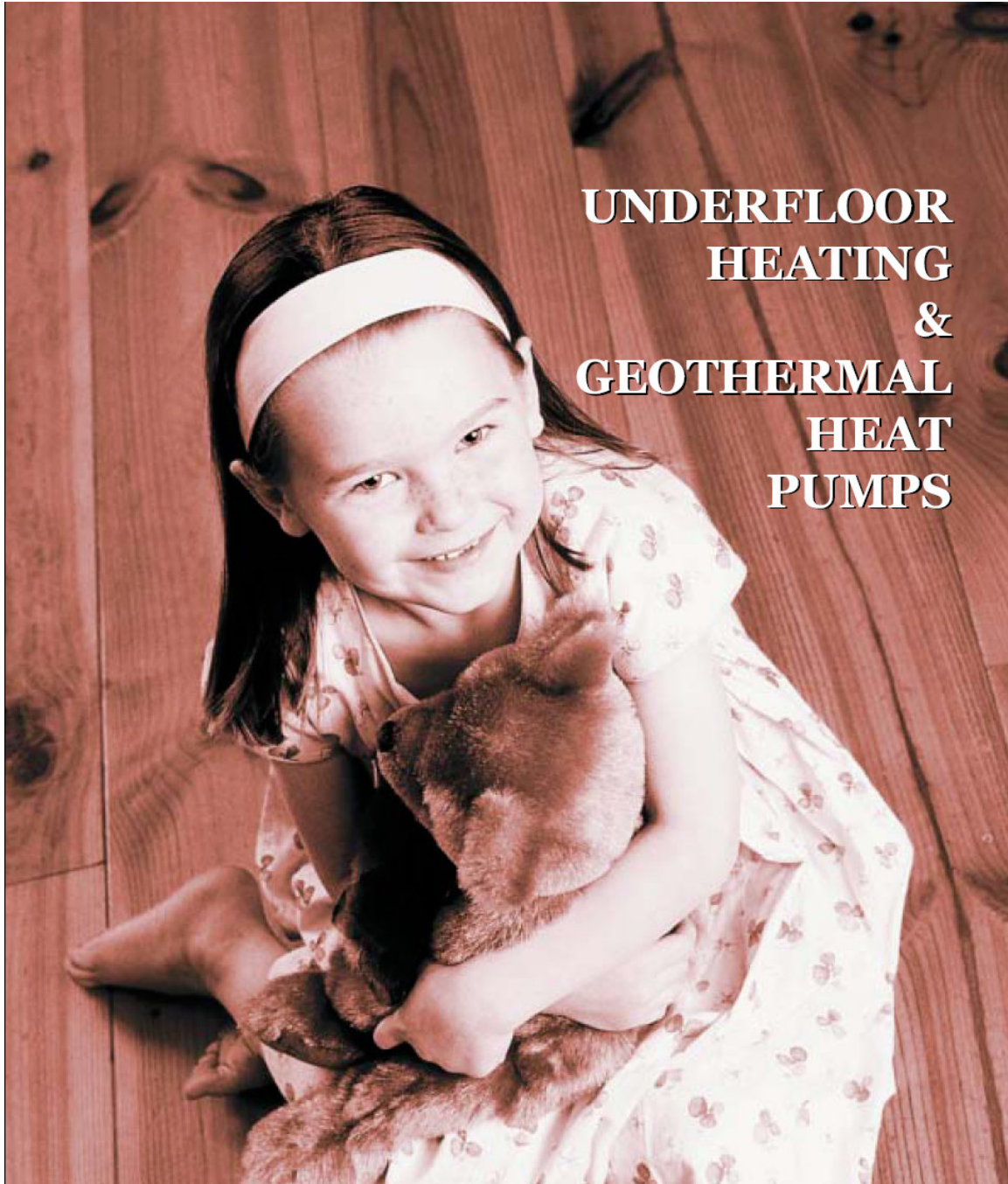~~~~~~

Heat-Tech Solutions Ltd. 16 Dublin Rd Kilkenny
Tel 056 77 23324 Fax 056 77 23809
Email: sales@heattech.ie   Web: www.heattech.ie

UNDERFLOOR
HEATING
&
GEOTHERMAL
HEAT
PUMPS

Underfloor Heating works!

You can have the comfort, and economy that only a great Underfloor Heating system can give. **Flexypipe**™ installed by Heat-Tech gives you innovative advantages of Underfloor Heating with solid guaranteed reliability.
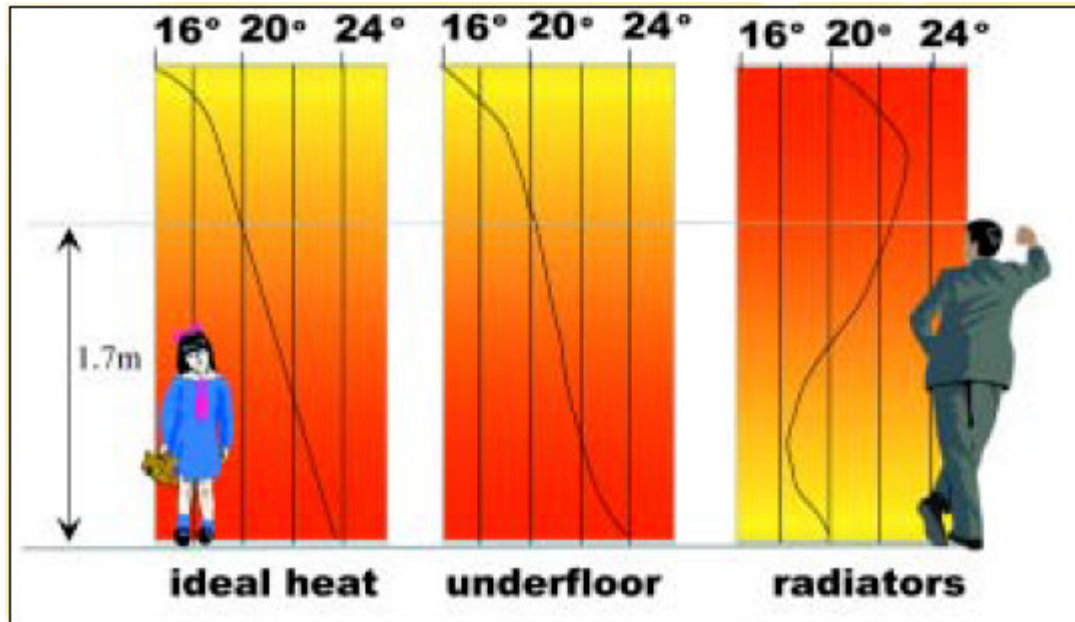
Comfort

Underfloor Heating feels better because it is better!

More than 70% of the heat your floor gives off is in the form of radiant heat that is heat in its most direct form. This is the same warmth you feel standing in a patch of strong sunlight. The floor beams heat at you. You feel warm more quickly and at a lower air temperature than you would with any other system. This is heat as nature designed it!

Underfloor Heating puts heat where it should be, around you. In stark contrast to legacy heating systems, the warmest part of the Underfloor Heating room is the floor and the area immediately above it.

Scientists tell us that an "ideal " heating system would put heat at our feet with comparatively lower temperature at our heads. Underfloor Heating is as close to this "ideal" heating system as you can get.

Children spend 87% more time sitting or lying on floors than adults so they benefit even more from this difference. Legacy systems, which rely on convection, the upward movement of warm air, trap and waste valuable heat in a "warm blanket" under your ceiling.

Health

Relying on radiated rather than convected heat has the added advantage of eliminating cold, ankle nipping floor draughts and the upward movement of dust from the floor area on to furniture. Dust Mites, a main cause of asthma, find Underfloor Heating floors very inhospitable. Not alone can they not breed in the floor but the circulation of the mites and their detritus is virtually eliminated. Underfloor Heating is the choice for health and hygiene.

Economy

By delivering so well on comfort, Underfloor Heating delivers real economy.

With Underfloor Heating the heat emitter is the entire floor. With such a large area giving off heat, Underfloor Heating can use lower, gentler temperatures. Typically, floor temperatures range from 18°-24°c. Your boiler can work at its lowest, most efficient temperature settings, 55°-60°c. This can mean a 15% saving over similar room temperatures delivered through other systems by the same boiler.

Because the heat is predominantly very effective radiant heat and the system causes no convection draughts, comfort temperatures are lower. Thermostats are set to 18°-19°c in main living areas instead of the more usual 21°c. Every 1°c thermostats are turned back means a 10% saving in fuel.

Underfloor Heating is the ideal system to take advantage of a Geothermal Heat Pump because water goes into the floors at the heat pump's efficient temperature range of 32°-39°c. Heat Pumps deliver unparalleled economy by using the energy you pay for to collect and concentrate nature's free heat. (See our heat pumps section)

Space Saving

You do not build a house to share it with a big bulky heating system.

Even the smallest radiator has a "footprint", the area it needs clear around it to function well. Often the heating element is misplaced under a widow so not to "break" another wall, sending expensive heat out the window. Underfloor Heating eliminates all these constraints. Underfloor Heating saves space by tucking everything beneath your feet. Design your rooms any way YOU want, put furniture anywhere, the heating system will never be in the way.

Thermostat Control

Control is the soul of Heat-Tech Solutions. By using high quality thermostats and a logic controller craft built for each installation, SK Services offers full zone control in each room as standard. This means that each discreet room has a wall mounted thermostat which whose signal will switch in and out the boiler, open the required manifold valves and switch on the pump as required. This is the ultimate in zone control.

We offer fully programmable Logic Controllers in multi-heat source applications or very large thermostat collections.

Only fully controlled systems can give you the comfort and economy that Underfloor Heating can provide. An Underfloor Heating system should be judged on its controls.

Any Floor Covering

You can use almost any floor covering with our system. Properly laid, at the correct moisture (8-11%) wooden floors are ideal. Nothing is as kind to your solid wooden floor as our gentle, caressing heat. Remember heat does not warp wood, moisture does.

Thousands of homes throughout North America, Canada, Scandinavia, Northern Europe and Ireland have Underfloor Heating fitted beneath wooden floors. Wooden floors are the most popular floor covering with Underfloor Heating. Hard, cold surfaces like slate or ceramic tiles are transformed into soft warm luxury with Underfloor Heating.

Carpets, vinyls and woven fibre matting all work very well so there is no end to the possibilities.

Installation

The floor build-ups are exceptionally straightforward and easily meet the 2002 Building Regulations.

Ground floor is achieved with a 100mm/4" subfloor covered with 50mm/2" of Polyurethane insulation. Pipe is installed on the insulation and covered with a 75mm/3" screed. (This build-up is featured as an unheated floor in Building Regulations 2002, Schedule L, illus.26)

Joisted first or subsequent floors have 12mm ply/OSB screwed and glued to the joists. 50mm/2" Batons are secured at 400mm/16" centers. Pipe is laid between the batons and covered with a concrete infill. Floorboards are secured carefully to the batons.

Pipe is laid without joins under the finished floor. All pipe loops return to the manifold, the systems central station. This discreet unit carries the valves that regulate the system. A mixing valve, when on, combines the newly warmed water from your boiler with the return water from the floors to give the gentle, even heat that makes Underfloor Heating so attractive.
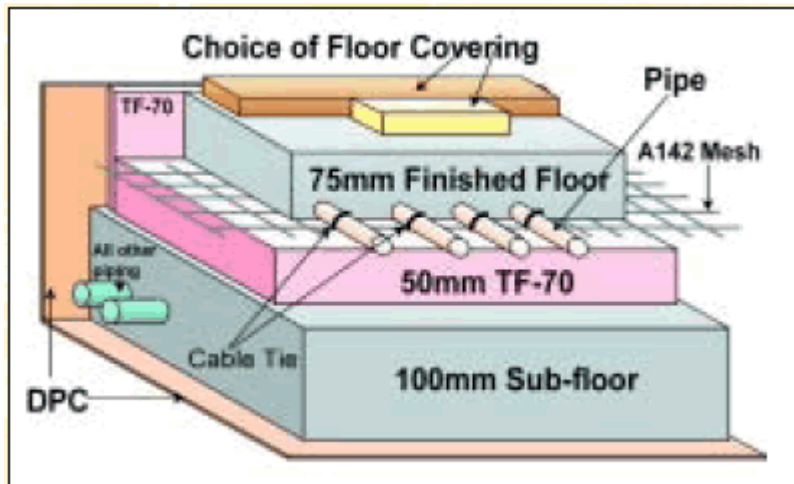
Any Heat Source

Our Underfloor Heating system is so flexible that you can use almost any heat source. Any central heating boiler or cooker can be used to provide the heat. There is a huge range of cookers, boilers, high efficiency condenser-boilers and all in a wide range of fuels.

Better still using Underfloor Heating opens the possibility of using a Geothermal Heat Pump, the heating technology that saves you money.
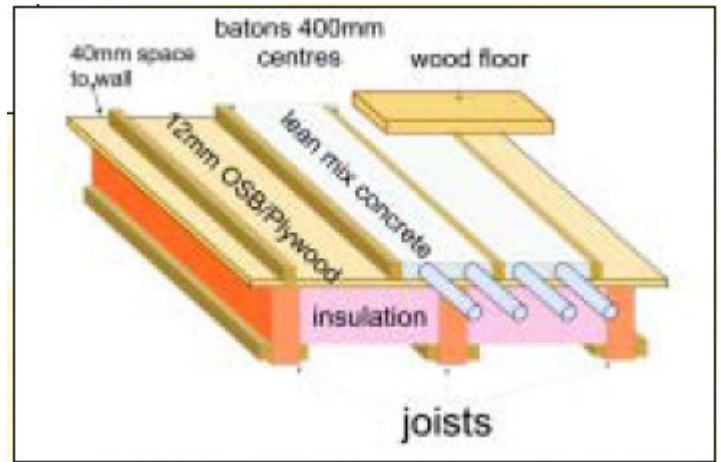
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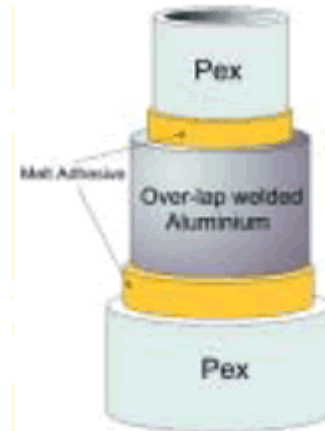

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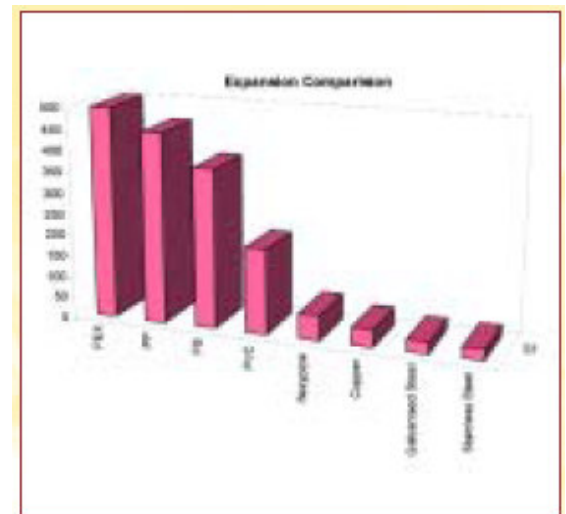
Technical Data for Flexypipe™

Flexypipe™ is a composite of 5 layers. The innermost & outside layers are high-density polyethylene (HDPE). These layers are tightly bonded with melt adhesive to the mid-layer aluminum core. This pipe is not only extremely robust, long-lasting & Oxygen impermeable but also smooth-walled, toxin-free & highly resistant to the growth of micro-organisms

Pipe Diameter	16.20mm
Minimum Burst Pressure	5MPa
Minimum Pipe Ring strength	2500n
Long Term Hydrostatic Strength	2.7mpa
Working Pressure	1Mpa
Thermal Conductivity	0.45W/m.k
Roughness Coefficient/Hydraulic Function	0.0007mm
Coefficient of Heat Expansion	25x10-6m/m.k
Burning Resistance	B1/GB8624

Flexypipe™'s low Coefficient of Heat Expansion means it behaves closer to copper or steel than to its plastic counterparts with their large expansion.

Pipe	Expansion over 50m at 50ºc difference
PEX	500mm
PP	450mm
PB	375mm
PVC	200mm
Flexypipe™	59.5mm
Copper	41.25mm
Galvanized Steel	28.5mm
Stainless Steel	27.5mm

Corrosion Resistance

The High Density Polyethylene layers are non-polar & very stable. At normal working temperatures it does not dissolve in any known solution & is resistant to attack by acid, alkali or corrosive salts.

Oxygen Permeability

Flexypipe™'s longitudinally overlap-welded Aluminum core creates an Oxygen impermeable layer within the pipe. **Flexypipe™** easily not only meets the standard set by Din 4726 for O2 dissolution at rising temperature over 24 hour period but beats that standard by 50%.

Longevity

Weathering tests show that **Flexypipe™** retains enormous strength over time. After 50 years the pipe should still have a minimum burst pressure of between 1.8MPa - 1.9Mpa. (1Mpa=1 Mega-Pascal=10bar), well ahead of either PEX or single layer HD-PE. This would indicate a working life well in excess of 50 years.

Flexypipe™ is widely certified by national governments.

Country	Certification	Country Certification
Canada	CSA B137 9-M91	Israel ISI: 340
Canada	CSA B137 10-M91	Germany DIN EN ISO 9001
USA	ASTM F1281	UK WQC
USA	ASTM F1282	UK BS: 7291
Germany	SKZ	Australia AS: 146
Germany	TÜV ISO9001	

Price

You can get a free, no obligation quotation from us by forwarding a plan of your House or project to us, either by post, fax or e-mail. Let us have as many dimensions as possible & be sure to include a contact address and telephone number.

Heat-Tech Solutions Ltd., 16 Dublin Rd., Kilkenny

Tel: 056-7723324   Fax: 056-7723809   email:heattech@eircom.net