COIL HEAT EXCHANGERS

SPC

Coil Heat Exchangers for Air Heating and Cooling

Energy efficient solutions

SPC The Company

SPC is a specialist manufacturer and supplier of fan convectors, coil heat exchangers, and HVAC equipment to the public and private sector.

SPC leads the way in HVAC technology and in responsiveness to customer needs. We thrive on innovation, on new technologies and new challenges. We stand for irresistible quality, exceptional customer care, and whole-life value for money.

For more than 20 years, we've applied our ingenuity to the heating, cooling, and dehumidifying of indoor environments - and to the delivery of HVAC equipment that withstands the grind of daily use. The result is a range of products that are aesthetic, robust, and economical to run.

But new ideas are never developed in isolation. They come from a service culture that takes pride in putting customers first. We listen and, if asked, we advise; we offer free site surveys - and we always return your calls.

Our mission is simple - to become your first-choice HVAC supplier, and to be the one company that provides a solution that exactly matches your needs.

Key facts about SPC:

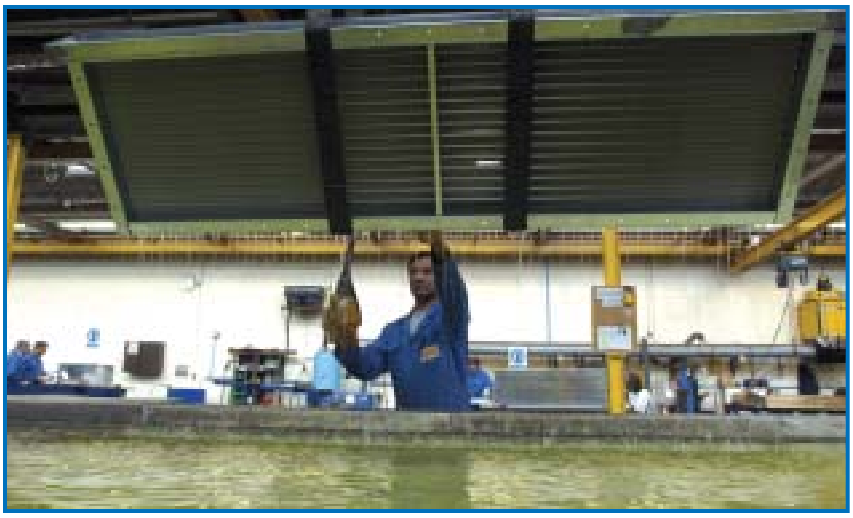
- Our mission is to be your first choice for HVAC equipment
- Major supplier to local government and commercial sectors
- Unrivalled regional sales and technical support team
- Free site check / survey
- Free self-selection software package
- ISO 9001 and Investor in People
- Registered provider of approved CIBSE CPD courses

Introduction

SPC manufacture heating and cooling coils to suit most water, refrigerant and steam fed systems. Electric Heater batteries are also available as part of the standard product range.

SPC offer a bespoke solution to your requirements utilising our excellent technical support, computer aided selection and design, as well as our efficient manufacturing processes. A comprehensive range of material and casing options are always available.

SPC also offers solutions for heat recovery systems with our run around coils and associated pump packs. As an alternative, heat pipe heat recovery devices can be designed around your application.



SPC

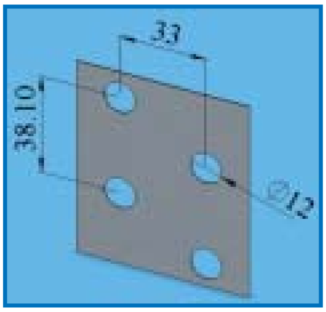
Water Coils

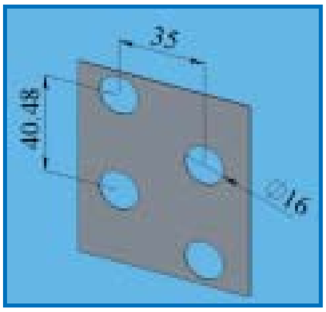
SPC manufacture coils to suit most low grade, low, medium and high temperature water as well as chilled water and glycol systems.

All coils are designed to suit the application, so can be tailored to suit the physical constraints, pressure drop requirements or environmental / economic considerations.

All water coils are tested to a minimum of 22 bar g air under water. Coils can be manufactured from a wide range of materials and casing styles and will terminate in plain copper tails, threaded or flanged pipe connections. Connections can be fitted with vent & drain points and / or test points if required.

Coils are built from either 12 or 16mm tubes on pitches as below: fin sizes are therefore a multiple of these pitch dimensions. In single section, a coil can be manufactured to maximum of 2m in height but multiple sections can be provided if required. The width can be up to 4.5m.





12mm tube coils offer the most economical solution in most cases; however 16mm tube will offer benefit on larger coils where fluid pressure drops may be lower.

Refrigerant Coils

SPC design & manufacture condenser and DX (evaporator) coils to suit most commonly used refrigerants: R22, R134a, R407C & R404A.

Coils can be designed with a number of refrigerant circuits, interlaced or split in face. Hot gas inlets can be added to provide additional control or defrost facility.

DX coil complete with reverse cycle inlet

All coils are tested to a minimum of 22 bar g air under water, dried, vacuum tested, nitrogen charged and sealed.

Refrigerant coils terminate in plain copper tails sized to suit duty and number of circuits.

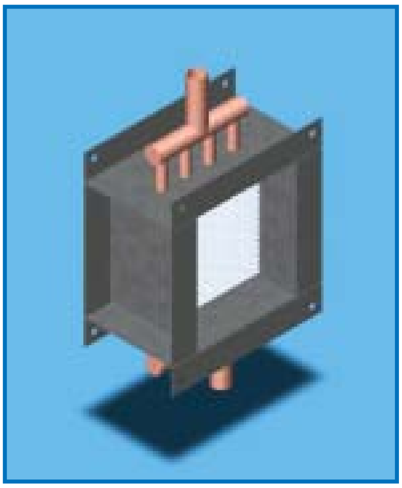
SPC can also manufacture coils for heat pump systems allowing operation in both evaporating and condensing (reverse cycle) modes.

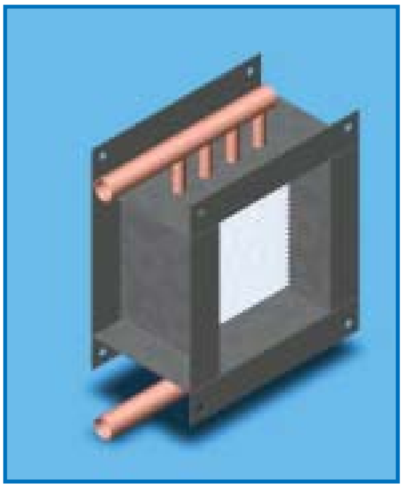
Steam Coils

SPC manufacture steam coils for use against working pressures of up to 8 bar g (175 deg C).

All steam coils are manufactured from thick walled copper tubes (16mm only) and heavy gauge copper headers with flow drilled holes for a strengthened joint.

In order to prevent condense laying in the tubes, which is likely to cause premature coil failure due to water hammer, SPC recommend a 'straight through vertical' design with steam and condense headers on opposite sides of the coil.





Connections can be arranged top and bottom or from the ends of the headers on the same side.

Alternatively a horizontal arrangement with sloping tubes and connections on opposite sides can be offered. This arrangement is available for both horizontal and vertical airflows.

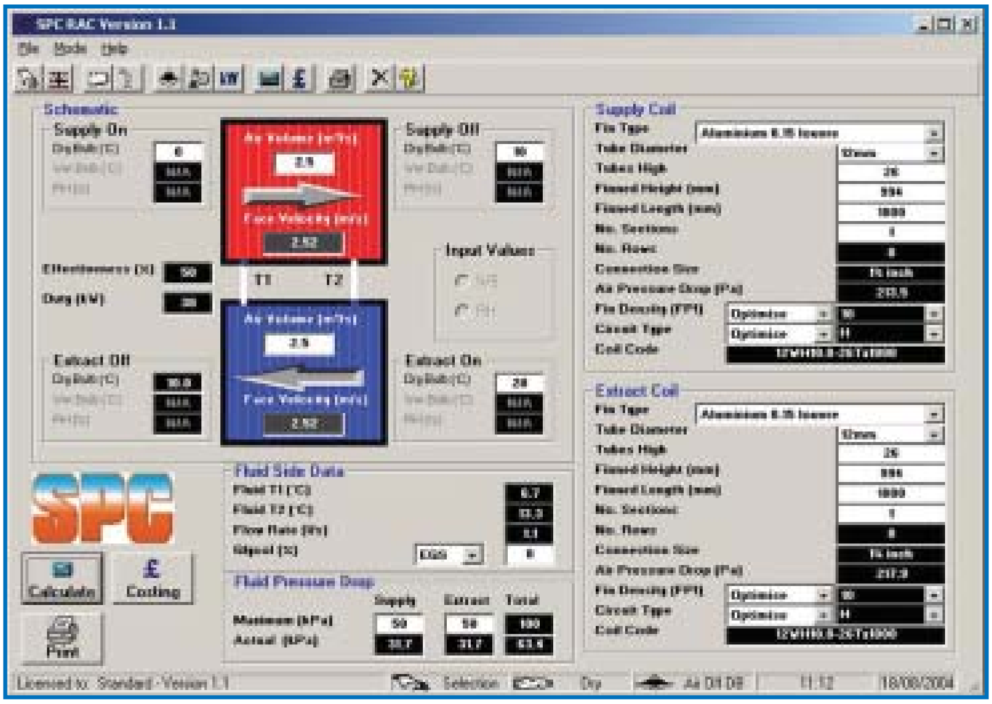
Where necessary SPC will provide coils split into a number of sections. Each section will have separate steam / condense connection and will need to be trapped independently.

The maximum finned size recommended is 32 tubes (1300mm) x 2500 wide / high depending on orientation.

Run Around Coils

SPC offer matched run around coils to recover waste heat from extract ducts / units and add this heat into cold supply air.

Run around coils are ideally suited to applications where the supply and extract ducts are remote from each other. Significant energy savings can be made, especially with larger air volumes and a large temperature difference between supply & extract.



SPC have developed a self selection program to specify pairs of matched supply & extract coils. The program will also calculate annual energy savings and pay back periods.

The supply & extract coils are linked via interconnecting pipework and a pump pack to circulate the water or glycol solution. Glycol should be used wherever there is a potential for freezing of the water.
Concentrations of up 25% are recommended;
this has a freezing point of -11 deg C.

SPC also offer a range of pump packs to suit most run around coil systems.

Where the airstreams are adjacent, heat pipes may be used as a more efficient alternative. Please see our *SPC Heat Pipes* brochure for details.

Materials

Tubes:

All SPC coils are manufactured from copper tubes either 12mm or 16mm o/d. The standard wall thickness is 0.4mm. Increased thicknesses of 0.7mm for our 12mm tube and 0.9mm for 16mm are available, typically for steam and HTHW applications.

Fins:

SPC offer a variety of fin materials and coatings:

Material	Finish Available	Thickness
Aluminium	Plain untreated	0.15, 0.25 & 0.4mm
	Vinyl coated	0.15mm only
Copper	Plain untreated	0.15mm only
	Pre tinned	
	Electro-tinned after manufacture	

For unsurpassed corrosion protection SPC recommend Blygold fin coating which offers a guarantee against corrosion. Please see our *Blygold* brochure for further details.

Fins for 12mm tubed coils are also available in two profiles:

Louvered Offers excellent heat transfer properties giving the most compact and economical solution.

Rippled Offers a low resistance to airflow; important where minimal air pressure drops are required.

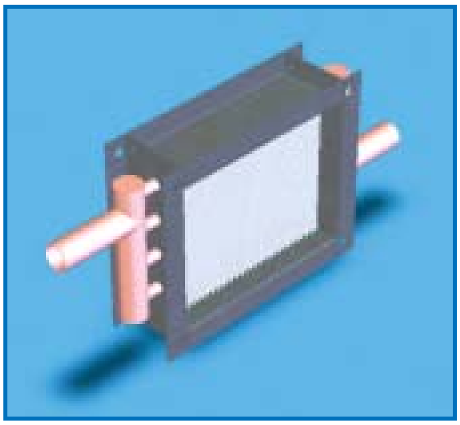
Fins for 16mm tubed coils are available with deep ripple profile only.

Casings:

Available in a wide range of materials including:

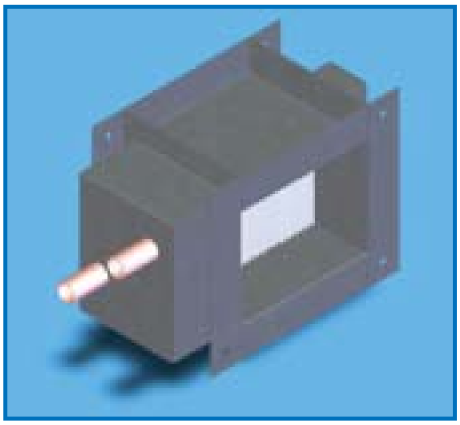
Material	Thickness
Galvanised steel	Supplied in 16g thickness as standard Other thicknesses available on request
Stainless steel – 304 & 316	
Aluminium	Supplied in 16g thickness only
Brass	
Copper	

Casings



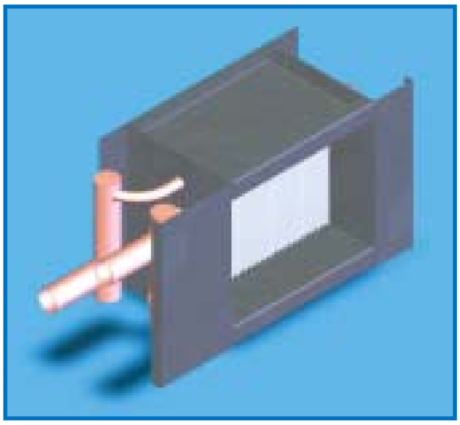
Economy / Standard

- Flanged casings to suit general ductwork applications.
- Flanges supplied pre-drilled to aid installation.
- 'Economy' casings offer a compact and economical solution for smaller duct mounted heating coils.
- For 'Standard' cased cooling coils, drain pan under fin block only.



Enclosed

- Flanged casing to suit high pressure ductwork applications. Complete with sealed cover boxes over headers and return bends to prevent air leakage.
- Suitable for insertion into ductwork systems to DW144 class A & B.
- For cooling coils, drain pan extends under headers and bends.



Unitary

- Casing to suit insertion into AHU or similar.
- Complete with baffle plates as required to prevent air bypass.
- Overall size can be tailored to suit requirements.
- For cooling coils, drain pan extends under headers and bends.

Other configurations are available to suit your specific requirements, including coils for inclusion in air curtains and other original manufacturer equipment. Various end plate arrangements and replacement elements provide flexibility of choice for custom applications.

Cooling coils can be supplied with drain pans to suit application: (flat, sloping, removable).

General arrangement drawings available on request.

Electric Heaters

SPC offer a full range of electric heater batteries.

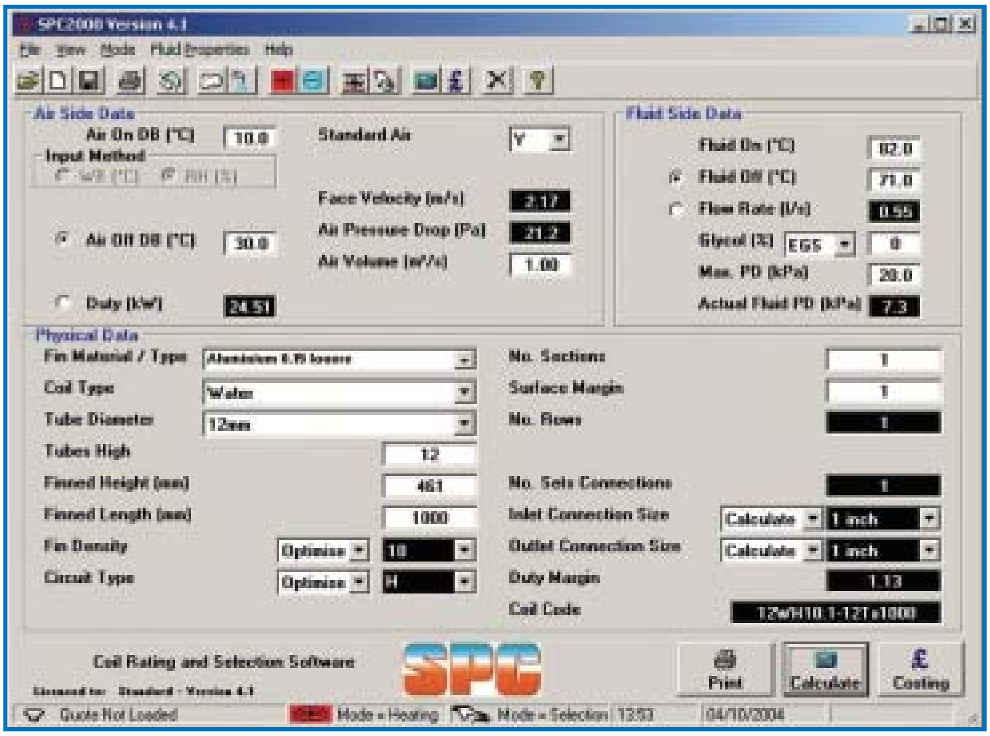
The most popular designs are rectangular and circular duct mounted heaters. Rectangular heater casings from grey stove enamelled 18g mild steel, circular heaters from 18g galvanised steel with dimensions to suit ductwork.

- Complete with electric elements of Incoloy 800 stainless steel sheaths which can be banked together in a number of stages if required.
- Duties available from 0.5 to 400kW.
- Sheathed elements are inherently 'safe' and comply with most popular specifications.
- All heaters supplied with high temperature thermal cut-out, available with manual or auto reset to suit. Auto reset cut-outs also available with additional contact for connection to warning light or control panel.

Stab-in type heaters for insertion into existing ductwork and heaters to suit air handling units also available on request.

Software

SPC have developed a self-selection program for all types of coil (water, glycol, refrigerant & steam) which is freely available from our website www.spcoils.co.uk or on CD-rom.



A program to select matched pairs of run around coils is also available.

CPD Presentation

SPC are able to offer a CIBSE approved presentation on coil heat exchangers and their application in the HVAC industry. Please contact our office for further details.

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INVESTOR IN PEOPLE

Ref: CHX1 Issue 1